

# DICTIONARY of PHARMACY

Dennis B. Worthen  
Editor in Chief



standards

patients

professionals

students

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*Dennis B. Worthen, PhD*  
*Editor in Chief*

## Dictionary of Pharmacy



*Pre-publication*  
*REVIEWS,*  
*COMMENTARIES,*  
*EVALUATIONS . . .*

**"T**his dictionary offers everything you always wanted to know about pharmacy and medical terms. It is a valuable resource for pharmacy students and pharmacists to sort out the alphabet soup of health care. Well done."

**Mary Euler, PharmD**  
*Assistant Dean,*  
*University of Missouri–Kansas City*  
*School of Pharmacy;*  
*Executive Director, Phi Lambda Sigma*



**"D**ictionary of Pharmacy serves as a comprehensive reference and overview of terminology and concepts relevant to students, faculty, and practitioners. The terminology definitions and cross-list referencing system provide a quick and efficient method to research terminology, abbreviations, and weights and measures pertaining not only to

pharmacy but also complementary information related to health care professions. The inclusion of all the schools of pharmacy and professional associations provides the reader with an up-to-date listing for responses to questions and networking.

The addition of documents of interest to all in the profession including the Oath of a Pharmacist, Pledge of Professionalism, Code of Ethics for Pharmacists, and the Principles of Practice for Pharmaceutical Care provides an overall perspective of the profession as a member of the health care team. This additional information leads one to understand the depth and breadth of the profession. *Dictionary of Pharmacy* is a reference that will be beneficial for all future and current practitioners."

**Elliott M. Sogol, RPh, PhD, FAPhA**  
*Associate Professor and Director*  
*of Academic Affairs,*  
*Department of Clinical Research,*  
*Campbell University School of Pharmacy,*  
*Morrisville, NC*

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*More pre-publication*

*REVIEWS, COMMENTARIES, EVALUATIONS . . .*

**"T**his book is a unique compilation of information for all strata of practice, from professional pharmacy students to specialized practitioners. It includes a convenient listing of all schools/colleges of pharmacy and professional associations, and a thorough, comprehensive listing of medical abbreviations. It is a convenient medical, law, statistics, and pharmaceutical dictionary 'all

in one.' *Dictionary of Pharmacy* is a great reference for beginning professional pharmacy students to have for the duration of their education in pharmacy school and has value as an appropriate reference for practicing pharmacists as well."

**Nicholas G. Popovich, PhD**

*Professor and Head,  
Department of Pharmacy Administration,  
University of Illinois at Chicago*



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To pharmacy students and practicing pharmacists  
for their work to ensure positive medication outcomes  
in the patients they serve



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## About the Editor in Chief

**Dennis B. Worthen, PhD**, is Lloyd Scholar at the Lloyd Library and Museum in Cincinnati, Ohio. He is an adjunct professor at the University of Cincinnati College of Pharmacy, where he teaches the history of pharmacy. He retired from Procter & Gamble Health Care in 1999 after 23 years of service, most recently as Director of Pharmacy Affairs.

Dr. Worthen received a BA from the University of Michigan, and from Case Western Reserve University he earned two MS degrees and a PhD. From 1986 to 1989, he was awarded an Allied Irish Bank visiting professorship at the College of Pharmacy at Queen's University in Belfast, Northern Ireland. In 1996 he received the American Institute of the History of Pharmacy Fischelis Grant for his research on pharmacy in World War II.

Dr. Worthen is the co-author of *Pharmaceutical Education in the Queen City: 150 Years of Service 1850-2000* (Haworth) and the author of *Pharmacy in World War II* (Haworth). He is the editor of *A Road Map to a Profession's Future: The Millis Study Commission on Pharmacy*, to which he also contributed, and is editor in chief of the *Procter & Gamble Pharmacist's Handbook*. He has published more than 60 papers in professional journals.

Dr. Worthen is a contributing author to the *International Journal of Pharmaceutical Compounding* and is the author of the "Heroes of Pharmacy" series for the *Journal of the American Pharmaceutical Association*. In 1998, he was the founding co-editor of the Pharmaceutical Heritage book series of The Haworth Press, Inc., a series devoted to publishing books covering historical aspects of pharmacy, and is editor in chief of Haworth's Pharmaceutical Products Press.

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# User's Guide

This dictionary provides a representative overview of terminology and concepts relevant to the study and practice of pharmacy. Terms and abbreviations are arranged alphabetically on a letter-by-letter basis.

Cross-references direct the reader from related terms to those with more specific definitions or comparative information; SEE, SEE ALSO, CONTRAST, and COMPARE precede the italicized, cross-referred terms. In addition, some definitions give alternative names, examples, and abbreviations. Abbreviations used within definitions are defined in that portion of the dictionary.

The abbreviation portion of the dictionary presents generally accepted shorthand for terms and phrases in common use within the fields of medicine and pharmacy. Symbols (e.g., &, >, +) are treated as punctuation marks and thus ignored in alphabetizing; solid abbreviations appear first, followed by those with numbers, then those with symbols, and finally those with standard punctuation (e.g., a hyphen or colon).

Much variation exists in the use of capital or lowercase letters in practice, so an attempt was made to standardize this list based on two general principles: all capitals are used for acronyms (made from the first letter of each word of the phrase), and lowercase letters are used for shortened terms. Alternative abbreviations, Latin equivalents, and term clarifications appear in parentheses following the relevant terms and phrases.



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# Definitions



**a-** prefix meaning absence of or without; example: achlorhydria

**abatement** to decrease; example: an abatement of symptoms of a disease

**abbreviated new drug application** (ANDA) established under the Drug Price Competition and Patent Term Restoration Act (1984) allowing the FDA to accept abbreviated new drug applications for generic versions of drugs first approved after 1962; safety and effectiveness data did not have to be submitted if the drug was generically equivalent to brand name drugs already proven to be safe and effective

**abdominal packs** SEE *laparotomy pack*

**abdominohysterotomy** caesarean section

**abduction** a drawing away, as an arm or leg from the middle line of the body

**aberration 1:** deviation from that which is normal **2:** an imperfection on an optical lens resulting in a disturbed image

**abietic acid** organic acid prepared by isomerization of rosin; used in the manufacture of soaps, plastics, and lacquers

**abiogenesis** spontaneous generation of biological cells without known biological explanation; synonym: autogenesis

**abirritant** an agent used to relieve irritation

**ablution** washing

**ABO antigens** innate blood group compounds important to blood typing and transfusions

**abortifacient** agent that induces abortion

**abradant** agent that scrapes or abrades

**abrasion** a scraping of the skin, mucous membranes, or teeth; wearing or rubbing away by friction

**abrasive** substance used to scrape or erode a surface; example: dental pumice

**abscess** pus accumulation in any part of the body

**abscissa** horizontal axis of a plot or graph

**absolute humidity** SEE *humidity, absolute*

**absolute rate theory** SEE *transition state theory*

**absolutes** **1:** values or dimensions that are defined by international agreement (SEE *absolute unit*) **2:** pure substances that have been isolated from mixtures **3:** pure solvents; example: absolute alcohol

**absolute temperature** an expression of fundamental heat intensity;  $^{\circ}\text{T} = ^{\circ}\text{C} + 273.15$ ; synonym: degrees Kelvin

**absolute unit** a measurable dimension that is defined by internationally agreed-upon standards; examples: meter, kilogram, second

**absolute zero** a hypothetical temperature characterized by a complete absence of heat and approximately equivalent to  $-273.15^{\circ}\text{C}$  or  $-459.67^{\circ}\text{F}$

**absorb** **1:** to take in and become part of an existent whole **2:** to suck up or take up (as a sponge absorbs water); to take in food and drugs from the intestinal tract

**absorbance** ability of a layer of a substance to absorb radiation

**absorbent gauze** SEE *gauze*

**absorption** **1:** process of being absorbed **2:** biological process by which drugs and other substances are transported across body membranes (intestines, skin, cells) **3:** physicochemical process by which molecules (liquid or gaseous) are absorbed into another system such as water into a sponge or hydrogen into palladium **4:** physical interception of radiant energy or sound waves

**absorption, active** movement of substances through a living membrane against a concentration gradient; example: an energy requiring process catalyzed by enzymes

**absorption, facilitated** movement of substances through membranes aided by a carrier

**absorption, passive** movement of substances through membranes by simple diffusion

**absorption band** a region in an absorption spectrum of a substance in which the absorptivity reaches a maximum; an inflection point in the spectrum

**absorption cell** vessel used to hold substances for determination of their absorption spectra; example: cuvette used in spectrophotometry

**absorption coefficient** **1:** absorption of one substance or phase into another **2:** a measure of the rate of decrease in the intensity of electromagnetic radiation after its passage through a particular substance **3:** absorptivity of a substance

**absorption ointment base** an ointment base capable of absorbing and holding relatively large amounts of water; example: lanolin

**abstinence** denying oneself a drug or some other gratification (food, drink, sexual intercourse)

**abstract** **1:** short synopsis of a longer article **2:** that which has been separated **3:** profound, fundamental concept without units of measure

**abstraction** **1:** removal or separation of one or more ingredients from a mixture **2:** a mental state characterized by a total isolation from one's environment

**acacia gum** dried gummy exudate of the acacia tree, used as a suspending or emulsifying agent; synonym: gum Arabic

**Academy of Pharmaceutical Research and Sciences** (APRS) a subdivision of the American Pharmacists Association established to promote research in pharmacy

**Academy of Pharmacy Practice and Management** (APPM) a subdivision of the American Pharmacists Association, composed of pharmacists who are providing or managing the provision of pharmaceutical services directly to patients

**Academy of Students of Pharmacy** (ASP) a subdivision of the American Pharmacists Association, composed of pharmacy students

**accelerated stability testing** SEE *stability testing*; *Arrhenius equation*

**acceleration** rate of increase in the velocity of movement of an object or particles, usually expressed in  $\text{cm/sec}^2$

**acceleration of gravity** rate of increase in movement of a substance due to the attractive force of gravity;  $980.665 \text{ cm/sec}^2$

**accelerin** blood-coagulation factor VI; synonym: accelerator globulin

**acceptance sampling** a statistically based quality control procedure of selecting representative parts of a lot of pharmaceutical preparations in order to assure that the whole is correctly prepared

**access** a patient's ability to obtain medical care; ease of access determined by components such as the availability of medical services and their acceptability to the patient, the location of health care facilities, transportation, hours of operation, and affordability of care, which is often a function of insurance coverage

**accessories, health** surgical supplies and convalescent aids; examples: wheelchairs, walkers, ostomy supplies, elastic supports

**accommodation 1:** to adapt **2:** ability of the eye to adjust to viewing objects at different distances; effected chiefly by changes in the convexity of the crystalline lens

**accreditation** process whereby an association or agency grants public recognition to an organization that meets certain established qualifications or standards, as determined through initial and periodic evaluations

**accredited** the fulfillment of minimum standards of an officially recognized group by a college, hospital, or other organization; example: a U.S. college or school of pharmacy must be accredited by the American Council on Pharmaceutical Education

**accrete** process of adding new enrollees to a health plan

**accretion 1:** growth characterized by addition of matter to the periphery of a body **2:** a growing together **3:** deposition of foreign matter on the surface of an object; example: accretion of tartar on teeth

**accrual basis of accounting** an accounting method whereby revenues are recognized in the period when goods or services are sold and expenses are recognized in the period when the related revenue is recorded

**accrued revenues** revenues that have been earned or recognized but not yet received

**accumulated depreciation** an account that shows the sums of depreciation charges on an asset from the time it was acquired

**accumulation** increase in the plasma or tissue concentration of a drug

**accuracy 1:** a measure of the correctness of data as these correspond to the true value **2:** freedom from mistake or error

**acerbic 1:** acidic or sour in taste **2:** acidic in temper or mood

**acetoacetic ester condensation** a special form of Claisen condensation using ethylacetate and a base such as sodium ethoxide

**acetylation** substitution of an organic compound with an acyl group derived from acetic acid

**acetylcholine 1:** acetate ester of choline **2:** neurotransmitter secreted by the endings of the voluntary nervous system and the autonomic ganglia

**achlorhydria** absence of hydrochloric acid secretion in gastric fluid even after the administration of histamine

**achymosis 1:** a lack or deficiency of chyme acicular **2:** shaped like a needle; needlelike

**acid 1:** a type of compound that contributes a proton to a chemical reaction to form a conjugate base **2:** a type of compound that accepts electrons in a chemical reaction **3:** a type of compound that reacts with a base **4:** an electrophile **5:** a substance that has a sour taste

**acid, weak** an organic acid that does not completely dissociate in water

**acid-base balance** relative concentrations of acids and bases as in an organism or a physical system

**acid-base indicator** a dye solution that changes color with changes in pH

**acid-base pair** SEE *conjugate pair*

**acid-fast** a staining property exhibited by certain bacteria that are not decolorized by mineral acids after staining with aniline dyes; example organisms: bacilli of tuberculosis and leprosy

**acidifying agent** substance added to lower the pH of a system under observation

**acidimetry** method of quantitative analysis in which the total amount of acid in a sample is determined by titration with standard base

**acidity constant 1:** ionization constant of a weak acid **2:** pK<sub>a</sub> **3:** sigma constant of the Hammett equation **4:** equilibrium constant for the ionization of a weak acid in which water is included as a reactant and hydronium ion concentration is considered instead of proton concentration

**acid number** SEE *acid value*

**acidophils** microorganisms that grow well in an acid media

**acidosis** an abnormally increased concentration of acid in an organism; either compensated or uncompensated lowering of the pH of the blood below the normal of 7.4 due to an accumulation of acid metabolites

**acid test ratio** current assets less inventories divided by the current liabilities of a business; a strong measure of the firm's ability to meet its short-term obligations

**acid value** number of milligrams of potassium hydroxide required to neutralize the free fatty acids of one gram of substance

**Ackerman tumor** verrucous carcinoma of the larynx

**acne** chronic inflammatory condition of the sebaceous glands mainly involving the face, back, and chest

**acneiform** lesions resembling acne

**acou-** prefix meaning hearing

**acoustic** pertaining to hearing



**acquired immunodeficiency syndrome** (AIDS) a usually fatal disease caused by an infectious viral organism that results in a patient's loss of ability to produce antibodies against diseases

**acridines** group of tricyclic, nitrogen-containing, aromatic heterocycles

**acromegaly** chronic disease characterized by enlarged features, particularly the face and hands; result of hypersecretion of the pituitary growth hormone

**actinomycosis** often fatal, chronic, fungal disease characterized by multiple abscesses that form draining sinuses and lesions on face, neck, lungs, and abdomen

**action potential impulse** a singular electrical event that is recorded by a microelectrode placed within a cardiac cell either in vitro or in vivo

**activated charcoal** carbon black that has been treated with superheated steam to drive off adsorbed gases and to increase its adsorptive powers

**active absorption** SEE *absorption*

**active immunity** resistance to a disease or foreign material acquired in a host after an introduction of antigen (such as a vaccine or toxoid) into the body

**actively at work** a requirement of many insurers' policies stipulating that if a given employee is not actively at work on the day the policy goes into effect, medical coverage will not be provided until that employee returns to work

**active site** the cleft in the surface of an enzyme where a substrate binds

**active transport** SEE *absorption*

**active tubular secretion** process occurring in the kidneys in which acidic molecules are actively transported from the blood into the lumen of the renal tubules; SEE ALSO *secretion*

**activities of daily living** activities performed as part of a person's daily routine of self-care, such as bathing, dressing, toileting, transferring, continence, and eating

**activity** effective concentration or the effective number of discrete particles (molecules or ions) in a system under study; a correction for nonideal behavior in a system in which there are intermolecular or interionic attractive forces

**activity coefficient** correction factor to determine activity of a nonideal solution; SEE *Debye-Huckel theory*

**actual acquisition cost** the pharmacist's net payment for a drug product, after taking into account such items as purchasing allowances, discounts, and rebates

**actual charge** the amount a physician or other provider actually bills a patient for a particular medical service, procedure, or supply in a specific instance

**actual damage** SEE *damage*

**actuarial table** system for determining insurance rates and eligibility created by using probability and statistics

**actuary** person trained in the insurance field who determines policy rates and conducts statistical studies

**actuator button** a fitting attached to an aerosol valve stem that, when depressed or moved, opens the valve and directs the spray to the desired area

**acu-** prefix meaning needle

**acute** abrupt, sudden, intense, and excruciating; having a short course

**acute care** care for a single episode of short-term illness or an exacerbation of a chronic condition

**acute-care drug** medicine intended for short-term treatment of illness; example: antibiotic therapy for a severe infection

**acute hepatitis** SEE *hepatitis, acute*

**acyl group** functional group with the structure RC(O)- or ArC(O)- where R refers to an aliphatic group and Ar refers to an aromatic group such as phenyl; the functional group found in derivatives of the carboxylic acids

**ad-** prefix meaning toward

**Adams-Stokes syndrome** a slowed pulse that occurs with a form of heart block between the S-A and A-V nodes

**adapter** device by which one part of an apparatus may be attached to another part; examples: distilling adapters, bushing adapters

**addict** a person who is dependent upon drugs (including alcohol); one who suffers from addiction

**addiction** strong psychological or physiological dependence on a substance such as alcohol or drugs

**Addison's disease** adrenocortical insufficiency due to an abnormality in the adrenal cortex or in the anterior pituitary gland

**additional drug benefit list** a list of pharmaceutical products approved by a health plan and employer for dispensing in larger quantities than the

standards covered under a benefit package in order to facilitate long-term patient use; also called “drug maintenance list”

**addition reaction** a chemical reaction in which two molecules react to form a third molecule

**additive 1:** cooperative effort in which the total effect is the sum of the effects of each component acting independently (such effects may be pharmacological or physical) **2:** substance added to a preparation to improve its appearance, taste, or nutritional value

**additive port** that part of an intravenous fluid container through which electrolytes, nutrients, or medicines may be added to the contents of the container

**additive property** characteristic of a molecule that is the result of the sum of the properties of its individual atoms or functional groups; examples: mass and molecular weight; CONTRAST *constitutive property*; *colligative property*, respectively

**adduction** clinical term denoting the movement of a limb or eye toward the median plane of the body

**aden-** prefix meaning gland; same as adeno-

**adenine phosphoribosyl-transferase** enzyme responsible for the resynthesis of AMP from adenine and phosphoribosylpyrophosphate

**adeno-** prefix meaning gland; same as aden-

**adenocarcinoma** malignant neoplasm originating in glandular or ducted epithelium

**adenoma** a benign epithelial or glandular tumor that closely resembles the parent tissue upon which it grows

**adenosine diphosphate** (ADP) nucleotide formed when ATP loses one phosphate group; synonym: adenosine-5'-diphosphate

**adenosine monophosphate** (AMP) nucleotide of adenine; monophosphate ester of adenosine; synonym: adenosine-5'-phosphate

**adenosine triphosphate** (ATP) nucleotide and coenzyme involved in energy transfer reactions and phosphorylations (phosphotransferase reactions); synonym: adenosine-5'-triphosphate

**adenosyl cobalamin** form of vitamin B<sub>12</sub> in which an adenosyl group is bonded to the central cobalt; believed to be the major natural form of vitamin B<sub>12</sub>

**adherence** SEE *compliance*

**adhesion 1:** abnormal attachment of one tissue to another **2:** sticking or holding together

**adhesive** *SEE binder*

**adhesive tape** flexible band or strip of material that will stick or adhere to skin and bandages as well as prosthetic devices

**adipo-** prefix meaning fat

**adipose tissue** fatty tissue; tissue that contains fats and fat cells

**adiposis** an accumulation of excess fat in the body; obesity

**adjudication** processing a claim in order to determine proper payment

**adjunct, pharmaceutical** anything added to the drug to make a finished drug product or dosage form; example: lactose as a filler for capsules containing a low dose (very potent) drug

**adjusted community rating** insurance premium based on community rating adjusted for group specific demographics and the group's prior experience; also known as "prospective rating" and "factor rating"

**adjusted expenses per inpatient day** expenses incurred for inpatient care only; derived by dividing total expenses by adjusted inpatient days

**adjusted inpatient days** an aggregate figure reflecting the number of days of inpatient care, plus an estimate of the volume of outpatient services, expressed in units equivalent to an inpatient day in terms of level of effort

**adjuvant** substance added to a drug formulation to improve the manufacturing process, product quality, or pharmacological action; example: methylcellulose to aid in suspending drug particles in a liquid

**administer** to give a dose of medication to a patient; to provide treatment to a patient

**administration 1:** act or process of administering; example: giving a drug to a patient **2:** act or process of performing managerial-related functions; example: managing a pharmacy

**administrative costs** the costs incurred by a carrier such as an insurance company or HMO for services such as claims processing, billing and enrollment, as well as overhead costs, including utilization review, insurance marketing, medical underwriting, agents commissions, premium collection, claims processing, insurer profit, quality assurance activities, medical libraries, and risk management

**administrative services only** insurance arrangement requiring the employer to be at risk for the cost of health care services provided, while a separate company delivers administrative services

**admissions** number of patients, excluding newborns, accepted for inpatient service during a reporting period

**admissions/1,000** the number of hospital admissions per 1,000 health plan members; formula: (number of admissions/member months)  $\times$  1,000 members  $\times$  number of months; also used to express the number of hospital admissions per 1,000 members of any other given population

**admits** the number of admissions to a hospital or inpatient facility during a reporting period (excludes newborns)

**admixture** parenteral preparation to which other substances are added for therapeutic reasons

**adrenaline** neurohormone secreted by the adrenal medulla; a potent endogenous stimulant; catechol amine compound; synonym: epinephrine

**adrenergic 1:** pertaining to the sympathetic neurons or nervous system  
**2:** a nerve or tract mediated at least in part by norepinephrine; synonym: sympathomimetic

**adrenergic agent** chemical compound that exerts its principal pharmacological effect by stimulation of peripheral sites of the sympathetic part of the autonomic nervous system; synonym: sympathomimetic agent

**adrenergic blocking agent 1:** drug that blocks impulses at the sympathetic receptor **2:**  $\alpha$  type—blocks  $\alpha$ -adrenergic receptors **3:**  $\beta_1$  type—affects primarily the adrenergic receptors of the heart **4:**  $\beta_2$  type—affects primarily the adrenergic receptors of the lungs and bronchi

**adrenocortex hormones** steroid secretions of the adrenal cortex that may have either glucocorticoid, mineralocorticoid, or male or female sex hormone activity

**adrenocorticotrophic hormone** peptide hormone secreted by the anterior lobe of the pituitary gland that stimulates the adrenal cortex to secrete adrenocorticosteroids

**Adson syndrome** compression of the brachial plexus leading to sensory disturbance of the upper extremity; also known as “Naffziger syndrome”

**adsorbate** substance that is adsorbed (held by attractive forces) on a surface of an adsorbent

**adsorbent 1:** material that adsorbs other substances onto its surface  
**2:** stationary phase in column chromatography

**adsorption** adhesion of molecules of a liquid, gas, or dissolved substance to the surface of another substance producing a higher molecular concentration at the surface; antonym: desorption

**adsorption, chemical** molecular adherence to a surface by strong chemical bonds; synonym: chemisorption

**adsorption, physical** molecular adherence to a surface through weak van der Waals-type interacting forces

**adulterated** made impure by the addition of a foreign or an inferior substance

**adulteration** adding inferior, impure, inert, or toxic ingredients to a drug or drug preparation for gain, deception, or concealment; contamination or decomposition of a product

**advanced practice nurse** (APN) an umbrella term that describes a registered nurse who has met advanced educational and clinical practice requirements beyond the basic nursing education required of all registered nurses

**adverse drug reaction** detrimental physiological reaction to a drug; a harmful side effect to the drug

**adverse selection** a situation in which a carrier disproportionately enrolls a population that is prone to higher than average utilization of benefits, thereby driving up costs and increasing financial risk

**advertisement** communications about a product/service that are non-personal, paid, firm-specific, and intended to encourage consumers' purchase or use

**advertising discount** SEE *promotional discount*

**aer-** prefix meaning air or gas; same as *aero-*

**aero-** prefix meaning air or gas; same as *aer-*

**aeroallergen** inhaled antigenic material which causes respiratory allergies in conditions such as allergic rhinitis; examples: pollen, animal dander

**aerobic glycolysis** the poorly regulated energy metabolism of tumor cells; involves a high rate of glycolysis and some level of oxidative phosphorylation

**aerobic respiration** the metabolic process in which oxygen is used to generate energy from food molecules

**aerosol 1:** a colloid dispersion of a solid or a liquid in air **2:** product that is packaged under pressure and contains therapeutically active ingredients that are released upon activation of an appropriate valve system; intended for topical application to the skin as well as local application into the nose (nasal aerosols), mouth (lingual aerosols), or lungs (inhalation aerosols)

**aerosol, foam** emulsion containing one or more active ingredients, surfactants, aqueous or nonaqueous liquids, and the propellants; if the propellant is in the internal (discontinuous) phase (i.e., of the oil-in-water type), a stable foam is discharged, and if the propellant is in the external (continuous) phase (i.e., of the water-in-oil type), a spray or a quick-breaking foam is discharged

**aerosol, metered** pressurized dosage form consisting of metered dose valves that allow for the delivery of a uniform quantity of spray upon each activation

**aerosol, powder** product that is packaged under pressure and contains therapeutically active ingredients, in the form of a powder, that are released upon activation of an appropriate valve system

**aerosol, spray** product that utilizes a compressed gas as the propellant to provide the force necessary to expel the product as a wet spray; applicable to solutions of medicinal agents in aqueous solvents

**aerotolerant anaerobe** organisms that depend on fermentation for their energy needs and possess detoxifying enzymes and antioxidant molecules that protect them from toxic oxygen metabolites

**afebrile** absence of fever

**affect** outward manifestation of a person's feelings or mood; often used interchangeably with emotion

**affiliated provider** a health care provider or facility that is subcontracted by a primary provider to obtain additional services for members

**affinity** amount of physical-chemical attraction between a drug and its receptor site; strength of the bond between a drug or endogenous substance and a receptor; reciprocal of the dissociation constant for the drug-drug receptor complex

**affinity chromatography** a technique in which proteins are isolated based on their biological properties, that is, their capacity to bind to a special molecule (the ligand)

**affinity constant** reciprocal of the dissociation constant of a chemical or enzymatic reaction described by the law of mass action or the Michaelis-Menton equation; synonym: association constant

**aftercare** services following hospitalization or rehabilitation

**agar** gelatinous colloid obtained from red alga; used as a thickening or gelling agent and as a culture medium for growing bacteria

**Agency for Health Care Policy and Research** SEE *Agency for Health-care Research and Quality*

**Agency for Healthcare Research and Quality** (AHRQ) federal agency under Health and Human Services with the mission of providing evidence-based information on health care outcomes, quality, cost, use, and access to help people make more informed decisions and to improve the quality of health care services; formerly known as the Agency for Health Care Policy and Research

**agent** person who acts on behalf of another person known as the principal, and whose acts are binding on the principal

**age/sex factor** underwriting measurement that represents the age and sex risk of medical costs of one population relative to another

**ageusia** lack of taste

**agglomeration** process or action of collecting in a mass; synonym: aggregation

**agglutinin** antibody occurring in normal or immune serum that precipitates or clumps antigens on the surface of cell membranes

**agglutininogen** antigen that, when injected into an animal body, will stimulate synthesis of specific agglutinin antibodies

**aggregated radioiodinated albumin** albumin treated with iodine 131 under mild alkaline conditions so that no more than one gram atom of iodine is combined with one mole or 60,000 grams of albumin; used in diagnostic determinations of blood or plasma volumes, cardiac output, and the detection and location of brain tumors

**aggregation** clinging together of particles or globules in a pharmaceutical preparation in order to reduce the potential energy of the system; usually a contributor to instability of a dispersed system type of dosage form; synonym: agglomeration

**agitation dryer** device used to remove moisture from a solid formulation by stirring or frequent movement of particles continually exposing new surfaces; example: rotating cubic-vacuum dryer; synonym: moving-bed dryer; CONTRAST *static-bed dryer*

**aglycone** noncarbohydrate moiety of a glycoside; synonym: genin

**agonist 1:** drug that interacts with a receptor causing a response; CONTRAST *antagonist 2:* a muscle that, by contracting, moves a part by bending a joint and is opposed by an antagonist muscle

**agonist, partial** drug that produces less than a maximal response when compared with full agonists

**agranulocytosis** blood condition in which there is an absence of or diminished number of granulocytes; synonym: granulocytopenia



**air binding** expression describing a vapor cavity interrupting a centrifugal pumping process; synonyms: vapor lock, air lock

**air jet mixer** device for mixing low-viscosity liquids by using high-velocity air streams to produce turbulence

**air lock** SEE *air binding*

**air-suspension coating** batch process of adding a covering layer to units of a solid dosage form or drug particles by suspending them in a gaseous stream within an enclosed chamber and spraying a rapidly drying material onto the surface of the floating particle units

**akathisia** motor restlessness; the inability to sit still

**akinesia** absence of muscle movements

**alactasia** inability to digest lactose due to total lack of lactase, usually congenital

**alanine** neutral amino acid commonly found in proteins;  $\alpha$ -amino-propanoic acid

**alanine aminotransferase** synonym for serum glutamate pyruvic transaminase

**alar crease** creases on the sides of the nostrils; sites commonly affected with seborrheic dermatitis

**albinism** congenital absence of normal pigment (melanin) from skin, hair, and iris

**Albright's syndrome** metabolic bone disease characterized by rapid resorption of bone and fibrous replacement of marrow

**albumin** water-soluble protein found in blood, eggs, and other animal tissues or products; a protein that is soluble in water or dilute salt solution and is coagulated by heat; examples: egg albumin, serum albumin

**albuminuria** albumin in the urine

**alcaptonuria** accumulation and elimination in urine of homogentisic acid; result of a genetic disorder in phenylalanine-tyrosine metabolism

**alcohol 1:** organic compound containing a hydroxyl (-OH) group attached to a carbon atom not double-bonded to another oxygen **2:** organic compound with the general structure ROH **3:** without qualification, alcohol means ethyl alcohol

**alcohol, primary** one in which the hydroxyl group is attached to a carbon atom that is bonded to either hydrogen or only one other carbon atom

**alcohol, secondary** one in which the hydroxyl-bearing carbon is bonded to two other carbon atoms

**alcohol, tertiary** one in which the hydroxyl-bearing carbon atom is bonded to three other carbon atoms

**alcoholate** complex formed between a substance and alcohol; usually a crystalline salt with alcohol molecules in its lattice structure; example: calcium chloride alcoholate

**Alcoholics Anonymous** (AA) an organization to assist an individual in overcoming addiction to or excessive use of alcoholic beverages

**alcoholysis** removal of a group (or cleavage of a ring structure) from a compound by a reaction of that compound with alcohol; COMPARE *hydrolysis*

**aldehyde** carbonyl compound containing a carbon atom double-bonded to an oxygen atom and covalently bonded to at least one hydrogen atom

**aldol cleavage** the reverse of aldol condensation

**aldol condensation** occurs when, under the influence of a dilute base or dilute acid, two molecules of an aldehyde or a ketone combine to form beta-hydroxyaldehyde or beta-hydroxyketone

**aldose** a monosaccharide with an aldehyde functional group

**aldosterone** mineralocorticosteroid hormone (secreted by the adrenal cortex) that regulates electrolytes in body function; hormone of the adrenal cortex that causes the kidney to retain sodium ions and excrete potassium ions

**algin** any of various hydrophilic colloidal substances (carboxyhydroxylated carbon chain) from marine algae, often used as stabilizers, emulsifiers, and thickeners; synonym: alginic acid

**algin ate** salt or ester of alginic acid; SEE *algin*

**algometer** instrument to measure the degree of pain suffered by an individual; synonyms: algoscope, algesimeter, odynometer

**algorithm** prescribed set of well-defined rules or processes for the solution of a problem in a finite number of steps

**algoscope** SEE *algometer*

**alimentary** pertaining to food or the digestive tract

**aliphatic** organic compounds that do not contain aromatic rings (no benzene rings, etc.); examples: ethane, propane, propene, cyclohexane, acetylene

**aliphatic hydrocarbon** a nonaromatic hydrocarbon such as methane or cyclohexane

**alkali** **1:** a base **2:** type of chemical compound that donates hydroxyl groups to a chemical reaction **3:** metallic element from Group I of the periodic table; example: sodium

**alkalinizing agent** substance that raises pH; example: sodium lactate

**alkaloid** **1:** alkali-like or like a base; examples: morphine, strychnine, ephedrine **2:** bitter-tasting nitrogen-containing base obtained from plants **3:** any of several naturally occurring amines **4:** nitrogenous, carbon compound, derived from the vegetable kingdom and capable of neutralizing acids

**alkalosis** abnormally increased concentration of base in an organism; manifested by a blood pH above 7.4

**alkene** compound that contains a carbon-to-carbon double bond within its structure; example: ethylene; synonym: olefin

**alkylating agent** **1:** compound capable of substituting an alkyl group on another compound **2:** group of anticancer drugs; example: nitrogen mustard

**alkylation** reaction in which a hydrocarbon radical or a derivative of a hydrocarbon radical is substituted for a hydrogen atom on an organic molecule

**alkyl group** functional group that contains only single-bonded carbon atoms plus hydrogens; a simple hydrocarbon group formed when one hydrogen from the original hydrocarbon is removed

**alkyne** compound with a carbon-to-carbon triple bond in its structure

**allergen** **1:** substance capable of producing an allergy **2:** purified protein(s) of some food, bacterium, or pollen used to treat or test for allergy

**allergist** a physician who specializes in the diagnosis and treatment of allergies

**allergy** hypersensitivity to an allergen due to a previous exposure

**allied health personnel** specially trained and licensed (when necessary) health workers other than physicians, dentists, pharmacists, optometrists, chiropractors, podiatrists, and nurses; sometimes used synonymously with paramedical personnel, all health workers who perform tasks that must otherwise be performed by a physician, or health workers who do not usually engage in independent practice

**alligation** an arithmetical method often used in pharmacy for solving problems in which solutions or solid preparations of different concentrations are mixed

**alligation alternate** method of alligation in which the amounts of each solution or solid mixture of different concentrations needed to obtain a resultant mixture of desired concentrations are determined

**alligation medial** method of alligation in which the concentrations of a mixture resulting from the combination of various amounts of two or more solutions or mixtures of different known concentrations is determined

**allocation base** a systematic and rational method for providing an equitable distribution of costs from one department to several different departments in a pharmacy or other business

**allogenic transfusion** blood transfused into anyone other than the donor

**allosteric reaction** interactions in which drugs, hormones, or other therapeutic agents attach to a site other than the active site of an enzyme or drug receptor, either increasing or decreasing the effect

**allotrope or allotropic form** existence of an element in more than one molecular form; examples: oxygen and ozone, the allotropic forms of sulfur

**allowable charge** the maximum fee that a third party will reimburse a provider for a given service; may not be the same amount as either a reasonable or customary charge

**allowable costs** charges for services rendered or supplies furnished by a health provider which qualify for an insurance reimbursement

**alloy** a solution of two or more metals or of a metal and a nonmetal prepared by fusion; example: amalgam

**all-payer system** health care system in which all public and private third-party payers of medical bills are subject to the same rules and rates for payment; uniform fees that, in effect, bar health care providers from charging more to persons or firms who are more able to pay in order to make up losses from artificially low payment caps by some payers

**alopecia** baldness or loss of hair

**alpha globin** one of two types of protein subunits in hemoglobin A

**alphameric** SEE *alphanumeric*

**alphanumeric** pertaining to a character set that contains letters, digits, and usually other characters such as punctuation marks; synonym: alphameric

**alpha particle 1:** positively charged particle emitted from nuclei of very heavy radioactive elements **2:** a moving helium nucleus that consists of two protons and two neutrons

**alpha-tocopherol** a lipid-soluble molecule that acts as a radical scavenger; vitamin E

**Alport's syndrome** hereditary nephritis with nerve deafness and occasional platelet defect and cataracts

**alternative care** nontraditional care available in lieu of accepted medical practices

**alternative delivery systems** forms of health care delivery other than traditional fee-for-service and indemnity health care; sometimes applied to managed care organizations

**alternative detailing** a procedure utilized to contact providers in order to discuss treatment alternatives; most often used to direct compliance with a formulary or medical protocol

**alternative medicine** systems of health care that differ from traditional, allopathic medicine

**alum** aluminum or another trivalent metallic sulfate

**aluminum** silvery colored, light ductile metal; abundant in nature in combination with silicates and metallic oxides; compounds of aluminum used as antacids, astringents, and antiperspirants

**aluminum hydroxide gel** white antacid suspension containing the equivalent of 4 percent w/v aluminum oxide in water; used to reduce gastric acidity

**aluminum phosphate gel** white antacid suspension containing 4.2 percent aluminum phosphate in water; used to treat peptic ulcers and other gastric irritations

**aluminum subacetate solution** SEE *Burow's solution*

**alum-precipitated toxoid** deactivated toxin in a water-insoluble complex with alum; used to produce active immunity with a single injection due to its prolonged antigenic response

**alveolar bone** bone sockets from which the teeth grow

**Alzheimer's disease** condition occurring most prevalently in the fifth or sixth decade of life and pathologically characterized by presenile cortical atrophy, loss of nerve cells, senile plaques in gray matter and neurofibrillar degeneration; synonyms: presenile dementia, presenile psychosis, Pick's disease

**amalgam** an alloy of mercury with other metals

**amastia** absence of a breast

**amber glass** glass rendered a dark reddish brown color by the addition of substances such as manganese and iron salts; used to protect drugs from light-catalyzed degradation

**ambivalent** coexistence of contradictory emotions, ideas, or desires

**amblyopia** dimness of vision not due to refractive error, but lack of use of the eye; synonym: lazy eye

**ambulatory** having the ability to walk

**ambulatory care** health care services that do not require hospitalization of a patient, such as those delivered at a physician's office, clinic, medical center, or outpatient facility

**ambulatory care center** part of an institution (hospital) that treats persons who are not admitted as inpatients; synonym: outpatient clinic

**ambulatory patient** noninstitutionalized patient who may or may not be an outpatient; includes patients who are not strictly ambulatory such as wheelchair patients

**ambulatory setting** an institutional health setting in which organized health services are provided on an outpatient basis, such as a surgery center, clinic, or other outpatient facility

**ambulatory surgical facility** a freestanding or hospital-based health care center that performs surgical services not requiring overnight confinement

**ambulatory utilization review** the review of care provided in ambulatory settings

**amebiasis** condition that occurs as the result of an infestation by amoeba (e.g., *Entamoeba histolytica*, *Giardia lamblia*); synonym: amebic dysentery

**amebicide** drug used to kill *Entamoeba histolytica*

**amenorrhea** absence of menses or failure of a woman to have a menstrual cycle

**American Association of Colleges of Pharmacy** (AACP) national organization for the promotion of pharmacy education; founded in 1900, as the Conference of Pharmaceutical Faculties (name changed in 1925)

**American Association of Health Plans** (AAHP) trade association created with the merger of Group Health Association of America and American Managed Care Research Association announced in February 1996 as the trade association serving HMOs, PPOs, and other managed care organizations

**American Association of Preferred Providers Organizations** reorganized as the Association of Managed Healthcare Organizations

**American College of Apothecaries** (ACA) organization of pharmacists who own and operate pharmacies that provide only prescription and closely related health care services; founded in 1942

**American College of Clinical Pharmacy** (ACCP) professional society of clinical pharmacists, founded in 1979, with the goals of encouraging appropriate drug therapy, promoting the practice of clinical pharmacy, and ensuring high standards of clinical pharmacy education

**American Council on Pharmaceutical Education** (ACPE) the national accrediting agency for professional programs of colleges and schools of pharmacy; founded in 1932

**American Dental Association** (ADA) national professional organization of dentists, founded in 1959, with goals of promoting dentistry and improving dental health

**American Foundation for Pharmaceutical Education** (AFPE) organization to support and improve pharmaceutical education by providing funds for graduate fellowships and special grants; founded in 1942

**American Hospital Association** (AHA) organization of hospitals designed to promote high-quality hospital care; conducts an annual survey of membership, listing composite statistical profiles of all registered hospitals

**American Institute of the History of Pharmacy** (AIHP) organization of individuals and businesses that promote the historical aspects of the profession of pharmacy; founded in 1941

**American Medical Association** (AMA) national professional organization of physicians; founded in 1847; establishes physicians' standards of practice and accredits medical schools; active lobbyist organization for physicians

**American Medical Care and Review Association** merged with Group Health Association of America to form the American Association of Health Plans in 1996

**American Nurses Association** (ANA) national professional organization of nurses; founded in 1896

**American Pharmaceutical Association** SEE *American Pharmacists Association*

**American Pharmacists Association** (APhA) national professional organization of pharmacists from all areas of practice; founded in 1852; formerly the American Pharmaceutical Association

**American Public Health Association** (APHA) organization of health professionals, health specialists, and consumers whose goal is to promote and protect individual and community health and the environment; founded in 1872

**American Society of Consultant Pharmacists** (ASCP) professional organization of pharmacists concerned with improving and promoting quality pharmaceutical services to nursing homes and other extended care facilities; founded in 1969

**American Society of Health-System Pharmacists** (ASHP) professional organization of institutional pharmacists; founded 1942; formerly the American Society of Hospital Pharmacists

**American Society of Hospital Pharmacists** SEE *American Society of Health-System Pharmacists*

**American Society of Pharmacognosy** (ASP) professional organization of pharmacognocists and others involved in study and research on the chemistry of natural products; founded in 1923

**amethopterin** a structural analogue of folate used to treat several types of cancer; also referred to as “methotrexate”

**amide** product resulting from the condensation of an acid with ammonia or a primary or a secondary amine; examples: acetamide, sulfonamides, acetaminophen

**amination** substitution of an amino group on a molecule

**amine 1:** an organic compound containing nitrogen that reacts as a base

**2:** an organic compound that is a derivative of ammonia

**amine, primary** an organic compound in which only one hydrogen of ammonia is substituted

**amine, secondary** an organic compound in which two hydrogens of ammonia are substituted

**amine, tertiary** an organic compound in which three hydrogens of ammonia are substituted

**amino acid 1:** any of a number of fundamental units in a peptide or protein **2:** organic compound containing an amino group and an acid group; therefore, possessing amphoteric properties (both acidic and basic)

**amino acid pool** the amino acid molecules that are immediately available in an organism for use in metabolic processes



**amino acid residue** an amino acid that has been incorporated into a polypeptide molecule

**aminocephalosporanic acid** starting material used in the synthesis of semisynthetic cephalosporin antibiotics

**aminoglycosides** **1:** group of antibiotics derived from the genus *Streptomyces* and used primarily to treat infections caused by gram-negative organisms **2:** substance containing one or more amino sugars connected by glycosidic linkages to a nonsugar component (aglycone)

**amino group** basic radical containing nitrogen that is either bound to one or two hydrogens, or to one or two organic groups that are not acyl groups; SEE *amine*

**aminopenicillanic acid** starting material used in the synthesis of semisynthetic penicillins

**aminoquinoline compounds** containing an amino group attached to quinoline; example: primaquine

**ammonia** gaseous compound composed of one nitrogen and three hydrogens; basic in nature; used as a reagent and a reflex stimulant (aromatic spirit of ammonia)

**ammonia intoxication** elevated concentration of ammonia in the body that can cause lethargy, tremors, slurred speech, protein-induced vomiting, and death

**ammonium** positively charged radical containing a tetra-substituted nitrogen; substitutions may be hydrogens or organic radicals or a combination of the two

**amnesia** temporary or permanent loss of memory

**amorphism** condition characterized by a lack of any organized structure of the molecules of a substance; CONTRAST *crystallization*

**amorphous** without form or without an ordered molecular arrangement; CONTRAST *crystalline*

**amortize** to diminish a debt by an orderly plan of payment; examples: to pay off a mortgage or to depreciate a durable business item

**amphi-** **1:** prefix meaning on both sides or double **2:** (chemistry) designating positions or configurations

**amphibolic pathway** a metabolic pathway that functions in both anabolism and catabolism

**amphi-ionic surfactant** SEE *amphoteric surfactant*

**amphipathic molecule** molecule containing both polar and nonpolar domains

**amphiphile** molecule that has affinity for both aqueous and lipid media; synonym: surfactant

**amphiprotic solvent** solvent that is capable of donating or accepting a proton (or a pair of electrons)

**ampho-** prefix meaning both

**ampholyte** ionic substance capable of acting as an acid or a base; synonym: amphoteric electrolyte

**amphoteric** capable of acting as an acid and a base

**amphoteric surfactant** surface active agent that may exist with a positive charge, negative charge, or as a zwitterion depending on the pH of the system; example: peptide

**ampule or ampul** small hermetically sealed glass container, usually used to hold a single dose of a sterile parenteral medication

**amygdalin** white crystalline cyanogenetic glycoside found in bitter almond, wild cherry, and peach trees, among other plants; synonym: laetrile

**amylase** enzyme catalyzing the hydrolysis of starches

**amyl-** prefix meaning starch

**amyloid deposit** an insoluble aggregate of extracellular proteinaceous debris that occurs in the brains of Alzheimer's patients

**amyopectin** a type of plant starch; a branched polymer containing  $\alpha$ -(1,4)- and  $\alpha$ -(1,6)-glycosidic linkages

**amylose** a type of plant starch; an unbranched chain of D-glucose residues linked with  $\alpha$ -(1,4)-glycosidic linkages

**amyotrophic lateral sclerosis** neurological condition involving demyelination of the neurons of the voluntary nerves leading to muscle groups and causing atrophy of the muscles involved; synonym: Lou Gehrig's disease

**an-** prefix meaning without; sometimes "a-" is used with same meaning

**ana-** prefix meaning again, upward, or backward

**anabolic steroid** drug stimulating tissue growth and producing a positive nitrogen balance; example: testosterone

**anabolism** process by which living organisms or tissues turn simple substances into more complex compounds; the biosynthesis part of metabolism; examples: protein synthesis, glycogenesis

**anaerobe** organism that lives in an environment lacking oxygen

**anaerobic** living or occurring in the absence of oxygen

**analeptic** agent that stimulates the central nervous system; used to restore respiration and/or wakefulness

**anal fistula** abnormal opening at or near the anus

**analgesic** agent that relieves pain without loss of consciousness

**analgesics, narcotic** class of drugs used to relieve pain that are capable of causing physical and psychological dependence; examples: morphine, pentazocine

**analgesics, nonnarcotic** class of drugs used to relieve pain and that do not cause physical dependence; examples: aspirin, acetaminophen

**analog** molecule similar in many ways to another molecule

**anal verge** area where anal canal joins perianal skin; puckered skin at the anal orifice

**analysis of variance** a statistical procedure used to compare the means of two or more groups

**analytical balance** SEE *balance*

**analytical chemistry** branch of chemistry that involves qualitative and quantitative determinations

**analytical ultracentrifuge** SEE *ultracentrifuge*

**anaphylaxis** acutely exaggerated allergic reaction characterized by fluid in the lungs, large blisters, and a severe decrease in blood pressure

**anaplasia** reversion of a cell to a more primitive form with loss of differentiation; often associated with malignancies

**anaplerotic reaction** a reaction that replenishes a substrate needed for a biochemical pathway

**anasarca** severe generalized edema; synonym: dropsy

**anastomosis** intercommunication of blood vessels either naturally or by means of surgery

**ancillary** subsidiary, auxiliary, or supplementary

**ancillary charge** **1:** the fee associated with additional service performed prior to and/or secondary to a significant procedure **2:** hospital charges supplementary to a hospital's daily room and board charge, e.g., for drugs, medicines and dressings, lab services, X-ray examinations, and use of the operating room

**ancillary services** hospital services other than room, board, and professional services; may include X-ray, laboratory, or anesthesia

**Andersen's disease** type 4 glycogenosis (a glycogen storage disease)

**andr-** prefix meaning male or masculine; same as andro-

**andro-** prefix meaning male or masculine; same as andr-

**androgen** steroid hormone responsible for secondary male characteristics; example: testosterone

**-ane** suffix indicating paraffin; saturated hydrocarbon

**anemia** state in which the number of red blood cells, amount of hemoglobin, or the volume of packed red blood cells is below normal; any of several diseases involving abnormal hemoglobins; hemoglobinopathy

**anergy** inability to react to specific antigens

**anesthesia** loss of sensation or feeling with or without loss of consciousness

**anesthesiologist** a physician who specializes in the use of general anesthetics before, during, and immediately after major surgery

**anesthetic** drug or chemical agent that produces insensitivity to pain or feeling; primarily classified as local or general in their use and/or effect

**anethol** active constituent of anise oil

**aneurysm** localized thinning and dilation of an artery or a vein, causing a bulge or ballooning effect

**angi-** prefix meaning blood vessel; same as angio-

**angiectasis** abnormal dilation or enlargement of a blood vessel

**angiitis** inflammation of a blood vessel; synonym: vasculitis

**angina** disease marked by spasmodic attacks of intense suffocating pain; SEE *angina pectoris*; *Vincent's angina*

**angina pectoris** paroxysmal chest pain with a feeling of pressure and suffocation caused by decreased oxygen supply to the heart

**angio-** prefix meaning blood vessel; same as angi-

**angioedema** a condition characterized by development of edematous areas of skin, mucous membranes, or viscera; benign and thought to be an allergic reaction, possibly to food; synonyms: angioneurotic edema, Quincke's disease

**angiogenesis** formation of new blood vessels (e.g., in a healing wound)

**angioneurotic edema** SEE *Quincke's disease*; *angioedema*

**angiotensin** family of peptides with vasoconstriction activity

**angiotensin I converting enzyme inhibitor** (ACE) substance that inhibits the enzyme responsible for converting angiotensin I to angiotensin II

**angle of repose** maximum angle between the free surface of a loosely piled conical heap of powder and the horizontal plane; used to study flow properties of powders

**angstrom** (Å) unit of length equal to 10<sup>-8</sup> cm; used in atomic and molecular spectrometry; used in expressing interatomic and intermolecular distances

**anhidrotic** drug that decreases sweating; SEE *antiperspirant*

**anhydride** the product of a condensation reaction between two carboxyl groups or two phosphate groups in which a molecule of water is eliminated

**anion** negatively charged atom or radical; ion or radical that migrates to the anode of an electrical cell; examples: CL and SO<sub>4</sub>

**anionic** class of compounds of which the active part is negatively charged; example: anionic surfactant

**anionic surfactant** surface active agent that has a negative charge on the active portion of the molecule; example: sodium stearate (toilet soap)

**anisotropic** exhibiting different physical properties in different directions; a characteristic of all crystalline forms except cubic

**ankylosis** stiff or fixed joint

**anneal** to heat and cool slowly; usually to render less brittle

**annotation** the functional identification of the genes in a genome

**anode** positively charged electrode of an electrical cell to which anions migrate during electrolysis

**anomaly** significantly different from normal; example: birth defect

**anomer** an isomer of a cyclic sugar that differs from another in the arrangement of groups around an asymmetric carbon

**anorexia** absence of or loss of appetite

**anorexia nervosa** psychophysiologic condition, usually in young women, characterized by severe and prolonged inability or refusal to eat

**anorexic** pertaining to an agent or condition that reduces the appetite; synonym: anorectic

**anorexigenic** denotes an agent or condition that decreases the appetite

**anosmia** absence of the sense of smell

**anoxia** absence of oxygen as to a body tissue

**ant-** prefix meaning against; same as anti-

**antacid** drug capable of neutralizing excess stomach acid

**antagonist 1:** agent that opposes or cancels the action of another agent or compound **2:** drug that interacts with a receptor producing no response yet blocking the effect of another substance **3:** muscle that contracts in opposition to another muscle

**ante-** prefix meaning before; same as antero-

**antero-** prefix meaning before; same as ante-

**anthelmintic** drug given for the eradication of parasitic worms

**anthracosis** accumulation of carbon in the lungs due to breathing smoke or coal dust; synonym: black lung

**anti-** prefix meaning against; same as ant-

**antiadherent** substance that prevents a tablet formulation from sticking to punches or dies during compression; SEE ALSO *lubricant*

**antiadrenergic** drug blocking the effects of epinephrine or norepinephrine at the myoneural junctions of the sympathetic nervous system; synonym: sympatholytic

**antiandrogen** drug blocking effects of male sex hormones

**antiarrhythmic** procedure, instrument, or medicine used to treat irregular heartbeats and restore normal rhythms

**antiasthmatic** SEE *bronchodilator*

**antibacterial** chemical or condition that is bacteriostatic and/or bacteriocidal

**antibiotic** chemical produced by a microorganism or prepared partially or totally by synthetic means that inhibits growth or kills other microorganisms at low concentration

**antibiotic sensitivity test** laboratory test to determine the susceptibility of a microorganism to a specific antibiotic

**antibody 1:** substance produced in response to an antigen **2:** substance produced by an animal to neutralize specific infectious agents or the toxins produced by the infectious agent

**anticholinergic** drug blocking the effects of acetylcholine at the myoneural junction of the parasympathetic nervous system; example: atropine; synonym: parasympatholytic

**anticoagulant 1:** drug that decreases the clotting of blood in the body; examples: warfarin, heparin **2:** substance added to whole blood to prevent clotting; example: ACD solution

**anticoagulant acid citrate and dextrose solution** sterile solution of citric acid, sodium citrate, and dextrose in Water for Injection; used as an anticoagulant to preserve blood for transfusion purposes; synonym: ACD solution

**anticodon** a sequence of three ribonucleotides on a tRNA molecule that is complementary to a codon on the mRNA molecule; codon-anticodon binding that results in the delivery of the correct amino acid to the site of protein synthesis

**anticonvulsant** drug to control or prevent seizures; examples: phenytoin, phenobarbital, valproic acid

**antidepressant** mood-elevating drug

**antidiarrheal** drug used to treat diarrhea

**antidiuretic** agent that blocks urine formation and/or secretion

**antidiuretic hormone** peptide hormone (secreted by the pituitary gland) that acts to decrease urine output by increasing water reabsorption in the kidneys; synonym: pitressin

**antidote** agent that neutralizes or counteracts the activity of a drug or a poison; examples: activated charcoal and tannic acid to adsorb and precipitate poisonous substances

**antiemetic** agent that inhibits vomiting

**antiestrogen** drug blocking the effects of female sex hormones

**antifungal** substance that destroys or retards the growth of fungi

**antigen** foreign protein or polysaccharide capable of inducing the formation of antibodies and activating T lymphocytes in the body

**antihidrotic** SEE *antiperspirant*

**antihistamine 1:** drug acting as an antagonist to histamine **2:** H<sub>1</sub> type—blocks histamine effects in allergy **3:** H<sub>2</sub> type—blocks gastric secretions including hydrochloric acid

**antihyperlipidemic** drug that lowers triglyceride and/or cholesterol levels in the blood; examples: clofibrate and D-thyroxin

**antihypertensive** drug that lowers blood pressure

**anti-inflammatory** drug given primarily to suppress or reverse the inflammatory process (redness, swelling, heat, pain)

**antikickback statute** forbids remuneration of any kind for Medicare and Medicaid referrals

**antilogarithm** number corresponding to a logarithm; example: the antilogarithm of 2 is 100 when the logarithmic base is 10

**antimalarial** drug used in treating malaria; example: quinine

**antimer** optical isomer

**antimetabolite** compound that closely resembles a natural substrate (vitamin, food) and interferes with metabolic reactions involving the natural substrate

**antimony** bluish white, crystalline, metallic element; chemical compounds of which produce a toxicity similar to that of arsenic; synonym: stibium

**antinauseant** drug used to overcome the feeling of nausea and to prevent emesis or vomiting; synonym: antiemetic

**antineoplastic agent** drug used to treat cancer or neoplasms

**antioxidant** agent that retards oxidation of another substance by being preferentially oxidized; substance that prevents the oxidation of other molecules

**antipedicular agent** drug used to kill lice; synonym: pediculicide

**antiperspirant** substance or preparation that diminishes perspiration (sweat) usually on a local skin area; synonyms: anhidrotic, antihidrotic, antisudorific

**antipruritic** drug that prevents or alleviates itching

**antipyretic** drug that reduces fever (elevated body temperature); examples: acetaminophen, aspirin

**antisense RNA** RNA molecule with a sequence complementary to that of an mRNA molecule

**antiseptic** drug that inhibits the growth of microorganisms; usually on a localized area of the body

**antiserum** antibody containing serum from previously immunized animal (including humans)

**antisialagogue** drug that prevents or decreases the flow of saliva; example: atropine

**antisudorific** SEE *antiperspirant*

**antithyroid** drug that reduces thyroid function; example: thiouracil

**antitoxin** substance produced by an animal body (including the human) in response to an injected toxin and capable of neutralizing that toxin; example: tetanus antitoxin

**antitussive** drug that suppresses or prevents cough



**antivenin** serum containing an antitoxin specific for an animal or insect venom; synonym: antivenom

**antivenom** SEE *antivenin*

**antiviral** drug that destroys or retards the spread of viral infection; example: acyclovir

**anuria** condition in which no urine is excreted

**anxiety** uneasy or apprehensive feeling usually from anticipated deleterious events, the origins of which are unknown or unrecognized

**anxiolytic** drug that relieves anxiety

**any willing provider** a requirement that a health insurance plan or a health maintenance organization sign a contract for the delivery of health care services with any provider in the area that would like to provide services to the plan's or HMO's enrollees

**apathy** indifference or lack of feeling

**aperient** very mild laxative

**aperture** opening or hole; usually a part of an instrument

**aphagia** inability to swallow

**aphasia** inability to use or understand words

**apheresis** a blood donation technique that allows for the donation of one or more blood components (e.g., platelets) while returning the others immediately to the donor

**aphonia** loss of voice or the power of speech

**aphrodisiac** drug that stimulates sexual desires and ability to perform sexual intercourse

**aphthae** round, whitish colored patches in the mouth, gastrointestinal tract, and on the lips caused by *Candida albicans*; synonym: thrush

**aphthous stomatitis** circular, intraoral lesions of unknown etiology; synonym: canker sore

**aplastic anemia** anemia caused by a lack of development of the bone marrow or its destruction by chemical agents or physical factors

**apnea** temporary cessation of breathing

**apoenzyme** protein part of an enzyme; one without its prosthetic groups or coenzymes

**apoplexy** sudden loss of consciousness characterized by paralysis; caused by loss of blood supply to or hemorrhage into the brain; synonyms: stroke, cerebrovascular accident (CVA)

**apoprotein** a protein without its prosthetic group

**apoptosis** programmed cell death

**apothecary 1:** one who procures, stores, and compounds dosage forms and dispenses drugs; synonym: pharmacist **2:** pharmacy (drugstore)

**apothecary system** one of several systems of weights and measures used by the apothecary or pharmacist; basic units are the grain (weight) and the minim (volume)

**apothem** SEE *apozema*

**apozema** strong infusion or decoction of vegetable drugs; also known as “apothem,” “apozemata”

**apozemata** SEE *apozema*

**apparent density** SEE *density, apparent*

**appeal** a formal request by a covered person or provider for reconsideration of a decision, such as a utilization review recommendation, a benefit payment, or an administrative action

**appendicitis** inflammation of the vermiform appendix

**Apple, William Shoulden** (1918-1983) executive director of the American Pharmaceutical Association from 1959-1983; an early PhD having specialty expertise in pharmacy administration; pioneer of concepts of professional fees and drug product selection; Remington Honor Medal recipient in 1967

**apprentice** archaic term in pharmacy denoting one who works for an extended period of time under the tutelage of an experienced preceptor (pharmacist)

**approved health care facility or program** facility or program that is licensed under the laws of a state to provide health care and is approved by a health plan to provide the care described in a contract

**a priori** relating to deductive reasoning from self-evident facts

**aqueous humor** natural fluid in the anterior and posterior chambers of the eye

**Arabic gum** SEE *acacia gum*

**arachidonic acid** essential, unsaturated fatty acid that humans use to synthesize regulatory molecules such as prostaglandins

**arachis oil** fixed oil from peanuts; peanut oil

**Archambault, George Frances** (1909-2001) educator and one of the first pharmacy officers of the uniformed corps of the U.S. Public Health

Service; considered the “Father of Consultant Pharmacy”; Remington Honor Award recipient in 1969 and Whitney Award recipient in 1956

**area 1:** extent of a surface **2:** length times width; cgs unit is  $\text{cm}^2$ ; SI unit is  $\text{m}^2$  **3:** part of the body that performs a highly specialized function; example: pectoral region

**Area Health Education Center** program to ensure adequate access to primary health care services in medically underserved communities through building and supporting an appropriately trained primary health care workforce

**area under the curve** pharmacokinetic, integral expression directly proportional to a specific quantity of material undergoing a change; example: area under the curve of blood level versus time is directly proportional to the amount of drug absorbed from a single dose over infinite time

**arginine** basic guanidino-bearing amino acid commonly found in protein; an essential amino acid for young children

**Argyll Robertson pupil** pupil does not respond to light, but reacts to accommodation; seen in syphilis, encephalopathy, and diabetes

**argyria** bluish or grayish purple discoloration of the skin from a deposition of silver into the skin; silver proteinate is responsible for the discoloration

**arithmetic mean** average of a series of numbers in a set

**aromatic 1:** organic compounds containing a closed ring with alternate unsaturated bonds; examples: benzene and naphthalene **2:** possessing a distinctive odor (usually pleasant)

**aromatic hydrocarbon** a molecule that contains a benzene ring or has properties similar to those exhibited by benzene

**aromatic water** SEE *water, aromatic*

**arrest** cessation or stoppage; example: cardiac arrest

**Arrhenius equation** quantitative expression of changes in the degradation rate constant of a drug with changes in the absolute temperature; a useful relationship to predict shelf life (drug product stability at room temperature) using accelerated temperature studies

**arrhythmia** alteration of the normal rhythm of the heart muscles; example: tachycardia (rapid heartbeat)

**arteriogram** X-ray or fluoroscopic picture of an artery or arteries; taken immediately and repeatedly after injection of a radiopaque dye (X-ray contrast medium)

**arteriole** very small branch of an artery

**arteriosclerosis** vascular disorder characterized by degenerative changes in arteries, resulting in thickening and loss of elasticity of the walls; synonym: hardening of the arteries

**arteritis** inflammation of arteries

**arthr-** prefix meaning joint; same as arthro-

**arthralgia** pain in a joint

**arthritis** inflammation of a joint

**arthro-** prefix meaning joint; same as arthr-

**arthropathy** disease in a joint

**Arthus phenomenon** inflammation resulting from antigen-antibody (IgE) combining in tissues with resultant local reaction and damage

**artifact or artefact** change in natural state of a tissue; change in a chemical or biological system caused by the experiment or the experimenter

**asbestosis** fibrosis of the lungs due to inhalation of asbestos particles

**ascariasis** infection of *Ascaris lumbricoides*; roundworm or nematode infestation

**ascaricide** agent used to kill roundworms

**ascites** accumulation of serous fluid in the peritoneal cavity; synonym: abdominal dropsy

**-ase** suffix meaning enzyme

**Asehoff nodules** granuloma specific for rheumatic fever

**aseptic** free from pathogenic microorganisms; synonym: contamination-free

**aseptic technique** procedures designed to prevent contamination of preparations; example: use of a laminar flow hood for parenteral admixtures

**Ashby technique** nonradioisotope technique for determining red cell volume and red cell life span by injecting red cells of a different blood type into the recipient

**-asis** suffix meaning condition of

**Asklepios** primary Greek god of healing; his assisting daughters: Hygeia and Panacea

**aspartame** naturally occurring nonnutritive sweetener; methylester of a dipeptide of aspartic acid and phenylalanine; synonym:  $\alpha$ -aspartylphenylalanine methylester

**aspartate aminotransferase** synonym for serum glutamate oxaloacetic transaminase

**aspartic acid** nonessential amino acid commonly found in proteins; synonyms: 2-aminosuccinic acid, 2-aminobutandioic acid

**aspergillosis** fungal infection caused by *Aspergillus*

**aspermia** lack of or scanty formation of sperm

**asperse** to sprinkle or to scatter

**asphyxia** condition resulting from deprivation of oxygen; synonym: suffocation

**assay** test to determine the presence or absence of a chemical or to determine the quantity of a component

**assets** **1:** economic resources of a firm that have a future benefit or service potential **2:** fixed assets—durable economic resources lasting longer than one year **3:** liquid assets—cash or items that represent ready cash

**assignee** the person to whom the rights to a health insurance policy are assigned by the original policyholder

**assignment of benefits** patient directs insurance payment to a designated person or institution, usually a physician, pharmacist, or hospital

**assisted-living facility** group home for those who need assistance at a lower level than a nursing home facility

**association constant** SEE *affinity constant*

**Association of Managed Healthcare Organizations** national trade association for open model managed care organizations; previously known as American Association of Preferred Providers Organizations

**asthenia** loss of or lack of strength; synonym: debility

**asthma** a condition marked by recurrent attacks of paroxysmal dyspnea, with wheezing due to spasmodic contraction of the bronchi; may be an allergic manifestation or induced by irritant particles or vigorous exercise

**astigmatism** distorted image due to irregularity in the corneal curvature

**astringent** agent that causes local constriction or puckering of soft tissue by precipitating surface proteins

**astro-** prefix meaning star or star-shaped

**asymmetry** **1:** condition in which there is a lack of symmetry; sides are unequal or unbalanced **2:** (chemistry) a condition in which a compound has optical activity; SEE *optical isomers*

**asystolia** lack of or faulty contraction of the heart

**ataractic** tranquilizer

**ataxia** muscular incoordination; inability to walk normally

**atelectasis** collapse of the lung

**atherosclerosis** form of arteriosclerosis in which plaques of cholesterol and other lipids are deposited within artery walls

**athetosis** condition characterized by involuntary movement, usually of the hands; synonyms: dyskinesia, Hammond's disease

**athlete's foot** fungal infection of the foot; synonyms: tinea pedis, ringworm of the foot

**atomize** to reduce a liquid to a fine spray or minute droplets

**atomizer** device to produce a fine spray

**atopic** genetically predisposed to certain conditions with an allergic component, such as asthma or dermatitis

**atresia** absence of or closure of an orifice, usually congenital atrium, chamber, or cavity leading to another structure; usually referring to the atrium of the heart

**at risk** assuming the financial liability for any loss that occurs when premiums paid are less than the cost of services provided; example: health care providers accepting prepayment as full coverage for a predetermined health care benefit

**atrophy** decrease in size or the stoppage of growth of an organ, structure, or tissue

**atropine** solanaceous alkaloid; the racemate of hyoscyamine; acts as a parasympatholytic or anticholinergic agent

**attenuate** to render less virulent or potent

**attitude** feeling, predisposition, or emotion directed toward a person, object, or fact

**attractant** substance that attracts or draws to itself; example: insect attractant

**attrition** **1:** wearing or grinding down by friction **2:** act of weakening or exhausting by constant harassment or abuse **3:** decrease in numbers due to retirement, resignation, withdrawal, or death

**atypical** irregular, abnormal, or unusual

**audit** a systematic inspection of a firm's financial statements and reports to determine compliance to generally accepted accounting principles; involves analyses, tests, and confirmations

**auditing** process of examining and verifying the financial records of a business; SEE *audit*

**aura** any combination of signs and symptoms that precede the onset of a medical condition; example: visual disorders that precede a migraine headache

**aural** pertaining to the ear

**auscultation** to listen to body sounds

**Auspitz's sign** sign characterized by a small pinpoint of bleeding when a patient with psoriasis removes a psoriatic plaque; pathognomonic for psoriasis

**aut-** prefix meaning self; same as auto-

**authorization** the approval of care, such as hospitalization

**autism** the condition of being dominated by self-centered thoughts, not subject to external interactions

**auto-** prefix meaning self; same as aut-

**autoanalyzer** instrument used to perform chemical analyses automatically

**autoclave** device to sterilize instruments or finished pharmaceutical preparations using moist heat and pressure

**autocrine** refers to hormonelike molecules that are active within the tissue or organ in which they are produced

**autogenesis** SEE *abiogenesis*

**autogenous vaccine** vaccine made with cultured and treated bacteria from the patient's lesion

**autoimmune disease** a condition in which an immune response is directed against an animal's own tissues

**autoinoculation** giving oneself a disease; example: spreading warts from one body site to another

**autointoxication** belief popular in the late 1800s and early 1900s that retained feces would be reabsorbed by the body, causing medical problems

**autologous transfusion** patient donates own blood or blood component to be used later in surgery

**autolysis** breakdown of a substance caused by a reaction within itself; destruction of a tissue or organ by substances within that tissue or organ (occurs with no outside influences); synonym: self-digestion

**automaticity** ability of the heart to determine its own rate independent of autonomic influences; synonym: cardiac excitability

**autonomic nervous system** that part of the peripheral nervous system that is not subject to voluntary control; composed of the sympathetic and the parasympathetic nervous systems

**autonomy** a principle of ethics that states an individual's liberty of choice, action, and thought is not to be interfered with

**autoradiograph** image produced by radiation emitted from within an object; example: thyroid scan

**auxins** natural plant growth hormones

**avascular** lacking blood vessels

**average collection period** mean number of days required for the accounts receivable of a business to be collected

**average cost per claim** the average dollar amount of administrative and/or medical services rendered for the unit of measure within each expenditure category; calculated as dollar amount per number of units

**average diameter** mean particle size expression; calculated as the sum of the products of the number of particles of a specific diameter times the respective diameters divided by the total number of particles in the sample; abbreviation: dave

**average gross margin** parameter computed by subtracting average item acquisition cost from average item selling price

**average length of stay** the average number of days in a hospital for each admission

**average manufacturer price** average price paid by wholesalers for products distributed to the retail class of trade

**average wholesale price** published suggested wholesale price of a drug; used as a cost basis for pricing prescriptions

**Avogadro's number** number of molecules per mole of pure substance;  $6.0222 \times 10^{23}$

**avoirdupois** system of weights and measures; the common system used in the United States

**azeotrope** a specific mixture of volatile substances that boils at a constant temperature; vapor composition equal to solution composition, so separation by distillation is not possible

**azotemia** elevation of nonprotein nitrogen waste products in the blood

**azoxycompound** substance containing both nitrogen and oxygen



**B**

**Babinski sign/test/reflex** test for pyramidal tract disturbance where stroking the lateral aspect of the sole of the foot normally produces plantar flexion of the great toe

**Bachman test** intradermal skin test for trichinosis infestation

**bacill** short, rodlike lozenge similar to a troche, except in shape

**bacterial artificial chromosome** (BAC) a derivative of a large *E. coli* plasmid used to clone DNA sequences as long as 300 kb

**bactericide or bacteriocide** drug that kills vegetative bacteria and some spores; synonym: germicide

**bacteriophage** **1:** bacteriolytic virus **2:** temperate bacteriophage—virus that becomes a part of the genome of a bacteria without lysis

**bacteriostat** drug that inhibits growth and multiplication of bacteria but does not necessarily kill them

**bacteriostatic water for injection** (BWFI) sterile water for injection containing an antimicrobial agent; maximum volume of 30 milliliters in each unit to prevent toxicity to the patient by larger amounts of the antimicrobial agent

**bad debt expense** account used to record estimated reductions in income caused by accounts receivable (credit sales) that will not be collected

**baffle** fixed, wide blade in a mixing container designed to cause formation of counter currents or turbulence in a mixing process (a disrupter of vortices)

**baffle pipe mixer** cylindrical container with intermittently spaced baffles for continuous mixing processes

**Baker's cyst** enlargement of the popliteal bursa or hemiation of the synovial membrane of the knee joint often associated with degenerative disease of the knee

**baker's sugar** SEE *confectioner's sugar*

**baking soda** sodium bicarbonate ( $\text{NaHCO}_3$ )

**balance** **1:** instrument to determine weight by utilizing a beam and a counter weight **2:** prescription balance—instrument with sufficient accuracy and precision to be used in compounding prescriptions **3:** class A balance—prescription balance with a sensitivity of 6 mg or less (minimum weighable quantity usually not less than 120 mg) **4:** class B balance—prescription balance with a sensitivity of 30 mg (not to be used for weighing less than 648 mg) **5:** analytical balance—instrument capable of weighing minute quantities (fraction of a mg)

**balance billing 1:** a provider's billing of a covered person for charges above the amount reimbursed by the health plan **2:** the fee amount remaining after patient copayments

**balance sheet** periodic financial statement that summarizes the assets, liabilities, and owner's equity of a business at a specific point in time; synonym: statement of financial position

**ballism** involuntary violent jerking movement of extremities

**ball mill** machine used to reduce particle size by rotating a slurry or a powder in a container with pebbles or solid objects (usually porcelain or steel) that cause attrition as the container rotates; synonyms: pebble mill, rod mill, jar mill

**ball valve** SEE *valve*

**balsam** resin or oleoresin containing aromatic substances; example: balsam of tolu

**Bamberger's disease** saltatory spasm; polyserositis

**bandage** strip of cloth or adhesive used to protect wounds or apply pressure

**bank statement** written record of transactions in a bank account, showing deposits, withdrawals, special charges and account balances; usually prepared monthly

**bar, chewable** solid dosage form usually rectangular in shape that is meant to be chewed

**Bárány's syndrome** unilateral headache in the back of the head with recurrent deafness, vertigo, tinnitus, and abnormal pointing test; corrected by stimulating nystagmus

**Bárány's test** caloric test of semicircular canal

**barbiturate** any of several members of a group of chemical compounds that are derivatives of barbituric acid; used as a central nervous system depressant (sedative, hypnotic, anticonvulsant, and general anesthetic)

**barium cocktail** barium suspension taken orally to provide contrast on X-ray examinations of the gastrointestinal tract; synonym: barium meal; SEE *barium sulfate*

**barium enema** use of barium suspension as an enema to visualize the colon with X-rays; SEE *barium sulfate*

**barium sulfate** white insoluble solid used in suspension form as an X-ray opaque for examining the gastrointestinal tract

**Barlow's disease** infantile scurvy

**baroreceptor** nerve ending in the blood vessel wall sensitive to changes in blood pressure

**Barraquer's disease** progressive lipodystrophy; also known as "Simon's disease"

**Barrett's esophagus** premalignant cellular changes in tissue of esophageal region just above the lower esophageal sphincter caused by long-standing gastroesophageal reflux; chronic peptic ulcer of the lower esophagus; also known as "Barrett's ulcer," Barrett's syndrome"

**barrier layer** stratum corneum of the epidermis; consists of dead dermal cells forming the outer horny layer of the skin

**barriers to access** barriers to health care that can be financial (insufficient monetary resources), geographic (distance to providers), organizational (lack of available providers), and sociological (e.g., discrimination, language, cultural barriers)

**basal** lowest or least

**basal metabolic rate** (BMR) measure of energy required to support essential life-sustaining metabolic activities

**base 1:** compound that reacts with an acid **2:** compound that contributes a hydroxide ion to a chemical reaction **3:** compound that accepts a proton in a chemical reaction to form a conjugate acid **4:** compound that donates electrons in a chemical reaction (Lewis base) **5:** a nucleophile **6:** a molecule that can accept hydrogen ions

**base, ionization constant** SEE *ionization constant*

**base, ointment** vehicle of an ointment that serves to hold the active ingredient(s) for appropriate medical application

**base, weak** an organic base that has a small but measurable capacity to combine with hydrogen ions

**base adsorption** expression of the amount of liquids and solids required to encapsulate a suspension in a soft gelatin capsule (expressed as grams of liquid per one gram of solid)

**base analogue** a molecule that resembles normal DNA nucleotides and can substitute for them during DNA replication, leading to mutations

**base capitation** a stipulated dollar amount to cover the cost of health care per covered person, less mental health/substance abuse services, pharmacy, and administrative charges

**Basedow's disease** thyrotoxicosis

**Basedow's syndrome** myeloneuropathy, not due to vitamin B<sub>12</sub> deficiency

**baseline** the abscissa of an  $x$ - $y$  strip chart recorder

**basic benefits package** a core set of health benefits that everyone in the country should have either through their employer, a government program, or a risk pool

**basophil** type of white blood cell (granulocyte) in which the cytoplasmic granules are stained by a basic dye

**batch** specific quantity of a drug formulation of uniform quality and produced according to a single manufacturing order during the same cycle of manufacture; synonym: lot

**batch dryer** machine used to remove moisture from a specific quantity of pharmaceutical material in one drying operation; CONTRAST *continuous dryer*

**batch mixing** process of uniformly distributing a definite, manageable quantity of pharmaceutical materials

**batch process** a step or a series of steps involved in the preparation of a limited quantity of pharmaceutical material for dosage form production; example: mixing a quantity of powder for capsule filling; CONTRAST *continuous process*

**batch processing** pertaining to the technique of executing a set of computer programs such that each is completed before the next program is started

**batch production record** a complete history of quality control tests and processes of a manufactured lot of a drug product from raw material specifications through the finished product

**bath** lotion or solution intended to be added to water for general application

**B cell** a B lymphocyte; a white blood cell that produces and secretes antibodies that bind to foreign substances thereby initiating their destruction in the humoral immune response

**bead** solid dosage form in the shape of a small ball

**bead, implant, extended release** small sterile solid mass consisting of a highly purified drug intended for implantation in the body that would allow at least a reduction in dosing frequency as compared to the same drug presented as a conventional dosage form

**Beal, George Denton** (1887-1982) a pharmacy educator who spent the latter part of his career as the research director for the Mellon Institute of Industrial Research; served as a member of the *United States Pharmacopeia* Committee of Revision from 1920-1945; was influential in the estab-

lishment of the APhA Drug Standards Laboratory; Remington Medal recipient in 1941

**Beal, James Hartley** (1861-1945) pharmacist attorney and educator; developed the American Pharmaceutical Association's model state pharmacy practice act; served as president of APhA (1904-1905) and the American Association of Colleges of Pharmacy (1907-1908) and as chair of the United States Pharmacopeial Convention board of trustees from 1900-1930; recipient of the first Remington Honor Award in 1919

**Beal Award** established by the United States Pharmacopeial Convention in 2000 to recognize the outstanding contributions of volunteers who have advanced public health through commitment to the USP mission of providing quality standards for health care products and authoritative information on their use; named in honor of James Hartley Beal and George Benton Beal

**Beck's triad** low arterial pressure, high venous pressure, and absent apex beat; cardiac tamponade

**bed day** period of 24 hours during which a hospital bed is available for use by an inpatient

**bed days/1,000** the number of inpatient days per 1,000 health plan members; formula: number of days/member months  $\times$  1,000 members  $\times$  number of months

**bedside manner** appropriate interactions between a health team or an individual member of a health team and a patient or patient's family

**Beeler's base** ointment base consisting of an oil-in-water emulsion

**Beer's law** quantitative expression based on measurement of the extent of absorption of light of a specific wavelength by a substance in a solution; absorbance at a given wavelength proportional to concentration under controlled conditions

**Beevor's sign** upward displacement of umbilicus due to paralysis of lower rectus abdominis

**behavioral health care** assessment and treatment of mental and/or psychoactive substance abuse disorders

**behavior modification** attempts to change patients' habits that bear on health status, such as diet, exercise, smoking, etc., especially through organized health education programs; also called "lifestyle change" or "health promotion"

**Bechterew-Mendel reflex** a test that involves tapping the dorsum of the foot; normally causes extension of the second and fifth toes, whereas flexion indicates a pyramidal lesion; synonym: Mendel-Bechterew reflex

**belief** judgment, conviction, or expectation concerning the truth of some circumstance or the outcome of some event

**belladonna** solanaceous plant; source of atropine, hyoscyamine, scopolamine, and similar alkaloids

**Bell's palsy** functional disorder of facial nerves which may result in paralysis of facial muscles; caused by dysfunction of the seventh cranial nerve

**Bence-Jones protein** abnormal protein found in the urine of patients with multiple myeloma; consists of monoclonal light chains of the gamma globulin molecules

**benchmarking** a process of comparing one's own health care practice or entity to others (usually including the best practice) in order to improve the quality of services provided

**Benedict's solution** copper sulfate solution used to test for glycosuria; copper-containing solution used to test for the presence of reducing sugar (usually glucose) in urine; a screen for the possible presence of diabetes mellitus; SEE *Benedict's test*

**Benedict's test** method for qualitative or quantitative determination of reducing sugar in the urine; SEE *Benedict's solution*

**beneficence** a principle of ethics that states one should "do good" for another

**beneficiary** a person designated by an insuring organization as eligible to receive insurance benefits.

**benefit** service provided under an insurance policy or prepayment plan

**benefit design** a process of determining what level of coverage or type of service should be included within a health plan at specified rates of reimbursement based on factors such as market pressure, cost, clinical effectiveness and medical evidence, legislated mandate, medical necessity, and preventive value

**benefit level** the limit or degree of services a person is entitled to receive based on his/her contract with a health plan or insurer

**benefit maximum** clause in an insurance policy which specifies a dollar limit for total reimbursement during a benefit period

**benefit package** services an insurer, government agency, or health plan offers to a group or individual under the terms of a contract

**benefit payment schedule** list of amounts an insurance plan will pay for covered health care services

**benign** not malignant or not recurring

**benne oil** fixed oil from sesame; synonyms: sesame oil, teel oil

**Bennett's fracture** fracture of the base of the first metacarpal

**bentonite** colloidal hydrated aluminum silicate; used as a suspending agent and an adsorbent

**benzocaine** local anesthetic used to reduce pain and itching from insect stings, minor sunburn, dermatitis, and other minor medical conditions

**benzodiazepines** chemical class of drugs used primarily to treat anxiety, but which also have skeletal muscle-relaxing properties

**benzomorphans** chemical class of drugs used as narcotic analgesics; example: pentazocine

**Berger's disease** glomerulonephritis with mesangial IgA deposition

**Berkefield filter** unglazed porcelain filter formerly used to sterilize by filtration; example: candle filter

**Besnier-Boeck disease** sarcoidosis

**best price** greatest discount given to any purchaser

**beta-blockers** a category of drugs that inhibit the effects caused by stimulation of  $\beta_1$ - and  $\beta_2$ -adrenergic neurons; example: metoprolol

**beta-carotene** a plant pigment molecule that acts as an absorber of light energy and as an antioxidant

**beta globin** one of the two types of protein in hemoglobin A beta particle; SEE *beta ray*; *radioactivity*

**beta-lactamase** one of a group of enzymes (produced by various gram-positive and gram-negative bacteria) that catalyzes the hydrolysis of the beta-lactam ring of penicillins and cephalosporins

**beta-oxidation** the catabolic pathway in which most fatty acids are degraded; acetyl-CoA is formed as the bond between the  $\alpha$  and  $\beta$  carbon atoms is broken

**beta ray** electron (negatron or positron) ejected from the nucleus of an atom during radioactive decay; the result of a change of an intranuclear neutron to a proton (negatron) or a proton to a neutron (positron); synonym: beta particle

**bezoars** concretion in the GI tract, composed of vegetable matter such as seeds or psyllium (phytobezoars), hair (trichobezoars), or other materials

**bi-** 1: prefix meaning two; example: bilateral 2: prefix meaning an acidic salt; examples: sodium bicarbonate, sodium biphosphate

**bilateral** two-sided; pertaining to both sides

**bile acid** 1: acid derivative of a steroid 2: natural constituent of bile that is an acidic metabolite of cholesterol

**biliary excretion** elimination of intact drug molecules or their metabolites in the bile secretions into the gastrointestinal track where reabsorption and/or excretion in the feces may occur

**bilirubin** bile pigment; reddish-brown breakdown product of heme and hemoglobin

**billed claims** the fees or costs for health care services provided to a covered person, submitted by a health care provider

**bill review** third-party review of medical bills for excessive or inappropriate charges; required of payers by some workers' compensation state statutes

**bimetallic thermometer** SEE *thermometer, bimetallic*

**binder** substance added to cause particles to adhere (usually for granulation and subsequent tablet compression); synonym: adhesive

**Bingham bodies** substances that exhibit plastic flow characteristics; SEE *plastic flow*

**Bing's reflex** extension of the great toe following a pricking of the dorsum of the toe or foot with a pin, seen in pyramidal tract lesions

**bio-** prefix meaning life

**bioavailability** rate and extent of absorption of a drug from a dosage form into the inner compartment(s) of the body

**biochemistry** study of the composition of organisms and the chemical reactions occurring within them

**bioenergetics** the study of energy transformations in living organisms

**bioequivalent** SEE *biological equivalent*

**biogenic amine** an amino acid derivative that acts as a neurotransmitter; example: GABA and the catecholamines

**biological equivalent** those chemical equivalents that, when administered in the same amounts, will provide the same biological or physiological availability, as measured by blood levels and urine levels

**biological response** a consequence of the interaction of a drug with a living system, causing changes in physiological processes; synonym: therapeutic response



**biologicals** usually refers to products of animal origin used to prevent, treat, or cure diseases and usually administered by injection; example: typhoid vaccine; synonym: biologics

**biological value** relative value of protein foods based on their abilities to supply essential amino acids

**biologics** SEE *biologicals*

**biomolecule** the molecules that make up living organisms

**biopharmaceutics** study of the relationship between physical, chemical, and biological properties of matter in relation to drugs, drug products, and drug availability and actions

**biopsy** removal of a small amount of tissue for microscopic examination

**bioremediation** the use of biological processes to decontaminate toxic waste sites

**biotransformation** chemical change of drug molecules occurring within and as a part of a life process; synonym: metabolism

**birth control pill** oral dosage form containing drug(s) to prevent pregnancy

**bis-** prefix in chemical nomenclature meaning two identical chemical groups are substituted in a molecule

**bismuth** white crystalline metal with a reddish tint, occurs in compounds that are used as antacids, antidiarrheals, antinauseants, and antiseptics

**bismuth subcarbonate** an odorless, tasteless, white powder that is insoluble in water or alcohol and used as a topical protectant and an intestinal astringent

**bismuth subgallate** insoluble yellowish powder used topically as an astringent

**bismuth subnitrate** insoluble, white powder used as an astringent absorbent and protective; contains 70 to 74 percent bismuth, which varies based on the conditions of preparation

**bismuth subsalicylate** insoluble white powder used as an astringent

**bitter** any bitter-tasting substance used to stimulate salivary and gastric secretions and improve the appetite (seldom used today)

**bitter salt** synonym for magnesium sulfate

**black death** disease caused by *Yersinia (Pasteurella) pestis*; synonym: bubonic plague

**black lung** SEE *anthracosis*

**blank test** procedure used in colorimetry and other types of spectrophotometry in which the instrument is adjusted to compensate for the solvent and reagents

**blastomycosis** fungal infection that may affect skin, lungs, or other parts of the body

**bleach** compound or mixture of compounds capable of removing color from an object usually by an oxidative process

**blend** mix thoroughly

**blephar-** prefix meaning eyelid; same as blepharo-

**blepharedema** edema or swelling of eyelid

**blepharitis** inflammation of eyelid

**blepharo-** prefix meaning eyelid; same as blephar-

**bloating** feeling of distention in the abdominal cavity beyond its normal size; caused by serum, water, or gas accumulation

**block** solid dosage form, usually in the shape of a square or rectangle

**block-and-divide method** procedure for dividing a powdered formulation into equal segments by first forming a rectangularly shaped mass and then dividing it into approximately equal parts; a method that is useful for dispensing unit doses of a powder

**blood** fluid tissue that circulates through the heart, arteries, veins, and capillaries, carrying oxygen and nutrients throughout the body; whole blood contains red blood cells, white blood cells, and platelets suspended in plasma

**blood-brain barrier** specialized capillary membrane existing between circulating blood and the brain to prevent harmful substances from entering the brain; usually allows fat-soluble, but not water-soluble drugs to pass

**blood cells, red** contain iron to transport oxygen throughout the body; manufactured in the bone marrow and removed by the spleen after approximately 120 days; synonym: erythrocytes

**blood cells, white** produced in the bone marrow and responsible for protecting the body from foreign substances such as bacteria and viruses; granulocytes, macrophages, and lymphocytes are types of white blood cells; synonym: leukocytes

**blood pressure 1:** the force per unit area exerted by blood upon the walls of the arteries **2:** systolic blood pressure—blood pressure following the contraction of the heart forcing blood into the aorta and the pulmonary artery **3:** diastolic blood pressure—blood pressure when the heart is relaxed,

representing the constriction of the arteries and arterioles; the force against which the heart must pump

**blood urea** amount of urea in the blood

**blood urea nitrogen** amount of nitrogen in the blood in the form of urea

**bloom 1:** gel strength of gelatin **2:** white powder that forms on cocoa butter suppositories (an undesirable property)

**bluestone** hydrated copper sulfate; synonym: blue vitriol

**blue vitriol** SEE *bluestone*

**Blumberg's sign** rebound tenderness indicating peritoneal inflammation

**board certification** voluntary process for those already licensed to practice pharmacy or medicine; indicates the individual has demonstrated an advanced level of education, experience, knowledge, and skills beyond what is required for licensure in a particular specialty practice area

**board eligible** a physician or pharmacist who is eligible to take the specialty board examination by virtue of having graduated from an approved medical school, completed a specific type and length of training, and practiced for a specified amount of time

**Board of Pharmaceutical Specialities (BPS)** created by the American Pharmaceutical Association in 1976 to formally recognize areas of specialty practice and certifying pharmacists in those areas

**Board of Pharmacy** state agency that examines and issues licenses to pharmacists and permits to drug outlets; also promulgates and enforces laws and regulations pertaining to pharmacy practice; synonyms: Board of Pharmaceutical Examiners or Commission on Pharmacy

**bodying agent** substance added to give bulk to a preparation; synonym: bulking agent

**body mass index (BMI)** calculation of height/weight ratio to determine whether a person is overweight and/or obese

**body-mixing** SEE *precoating*

**body surface area** body area, normally estimated using a nomogram (height–weight–surface area chart); used to calculate dose for a patient; SEE ALSO *dosage rules*

**Bohr effect** decrease in affinity of hemoglobin for oxygen with an increase in the  $p\text{CO}_2$  of the blood

**boil 1:** acute inflammation of the subcutaneous layers of the skin, a gland, or a hair follicle; synonym: furuncle **2:** heat a liquid to bubbling

**boiling chip** pieces of broken porcelain or similar objects used to prevent “bumping” when distilling or refluxing liquids

**bolus 1:** volume of medication given rapidly by intravenous route **2:** a large solid dosage form; usually oval in shape and for administration to a large animal such as a horse or a cow

**bona fide** in good faith or without fraud or deceit; example: a bona fide prescription

**Bond’s theory** quantitative expression for estimation of the energy requirement for particle size reduction, suggesting that it is inversely proportional to the square root of the diameter of the product

**bone marrow depression** a decrease in the quantity of bone marrow present or being produced; may be attributed to a disease state

**borborygmus** rumbling sounds emanating from the stomach or intestinal tract, usually due to gas

**border brush** SEE *microvilli*

**bottle method** SEE *Forbes method*

**botulism** often fatal food poisoning caused by ingestion of improperly canned food containing *Clostridium botulinum*

**Bouchard’s nodes** seen in gout and osteoarthritis in the proximal interphalangeal joints

**bougie 1:** solid, insoluble bodies intended to be inserted into passages (e.g., urethra) for purposes of dilation; may be smeared with medicinal agent **2:** medicated suppositories of gelatin or wax for nasal or urethral use

**Bowl of Hygeia** vessel-serpent symbol of the profession of pharmacy originating in ancient Greece; Hygeia was one of the daughters of Asklepios, the Greek god of medicine

**Bowman’s capsule** part of the nephron leading into the proximal convoluted tubule and enclosing the glomerulus

**brachy-** prefix meaning short

**brady-** prefix meaning slow

**bradycardia** slow heartbeat, usually fewer than 60 beats per minute

**branched-chain amino acid** one of a group of essential amino acids with branched carbon skeletons; examples: leucine, isoleucine, valine

**brand-brand interchange** the dispensing of one name brand prescription product in place of another on the basis of chemical equivalency

**brand name** registered name for a specific product by a manufacturer; synonym: trade name

**brand-name drug** a drug protected by a patent issued to the original innovator or marketer, which prohibits the manufacture of the drug by other companies without consent of the innovator, as long as the patent remains in effect

**brandy** alcoholic liquid distilled from fermented grapes or various other fruits (contains 48 to 53 percent alcohol); synonyms: *spiritus vini* and *spiritus vini vitis*

**break-even point** that condition in a business when revenue equals expenses

**Bright's disease** renal disease characterized by the presence of protein and sometimes blood in the urine; synonym: glomerulonephritis

**Brill's disease** relatively mild form of typhus caused by *Rickettsia prowazekii*, described first by Nathan E. Brill in eastern European immigrants; symptoms appear years following the initial infection; synonyms: sporadic typhus, recrudescent typhus

**British Pharmacopoeia** official drug compendium for the United Kingdom

**British thermal unit** amount of heat that must be absorbed by one pound of water to raise its temperature one degree Fahrenheit at 39.2°F

**broad spectrum antibiotic** category of drugs effective in the treatment of a large number of bacterial infections; examples: tetracycline, ampicillin

**Brockedon, William** (1787-1854) initial inventor of the compressed tableting process

**broker** the go-between for individuals or companies and health insurers; may help locate, negotiate, and finalize health insurance contracts; may also be an agent for a specific insurance company

**brom-** prefix meaning bad smell

**bromhidrosis or bromidrosis** offensive body smell or odor due to bacterial breakdown of components of perspiration

**bromine** red, volatile liquid element with a caustic, toxic, brown vapor

**brominism or bromism** poisoning from prolonged excessive use of bromides

**Brompton's cocktail** general term used for several mixtures of analgesics and stimulants given to patients with chronic pain and/or pain arising from terminal illness

**bronchiectasis** chronic dilation of a bronchus or bronchi as a result of inflammation or obstruction

**bronchiolitis** inflammation of the bronchioles

**bronchitis** acute or chronic inflammation of the bronchi

**bronchodilator** agent that shrinks mucosa of the bronchi, thereby increasing lumen size for better air passage in the lungs; synonym: anti-asthmatic

**bronchopneumonia** inflammation of the bronchioli and air vesicles

**bronchoscope** instrument used to examine the interior of the bronchi; may also be used for surgical treatment of some bronchial diseases

**Bronsted-Lowry theory** concept that an acid is a substance that is capable of donating a proton and a base is a substance that is capable of accepting a proton, thereby resulting in a conjugate acid-base pair

**Brookfield Viscometer** (trademark) instrument to measure viscosity of a liquid, based on traction of a spindle rotating in the liquid

**Brown, William** (1752-1792) native Scotchman who became an American physician and wrote the *Lititz Pharmacopoeia*, a drug compendium used by the American forces during the Revolutionary War

**Brownian movement** random erratic movement of suspended microscopic particles due to kinetic motion of molecules of the dispersion medium; exhibited by particles about four micrometers (microns) in diameter or smaller

**Brown's mixture** mixture of opium and glycyrrhiza; a cough remedy

**brucellosis** infection caused by *Brucella* and characterized by intermittent or continuous fever, headache, chills, weakness, and loss of weight; synonym: undulant fever

**brucine** alkaloid of *Strychnos nux vomica* seed; related to strychnine

**bruit** abnormal swishing sound generally heard over an artery during auscultation

**brush border** outermost layer of the small intestinal epithelium, composed of many microvilli

**bruxism** teeth grinding

**bubonic plague** disease caused by *Yersinia (Pasteurella) pestis* and characterized by greatly enlarged lymph nodes (buboes), high fever, malaise, tachycardia, intense headache, and generalized muscle aches; synonym: black death

**buccal** concerning the cheek; example: buccal administration of a drug absorbed from the cheek pouch

**buccal administration** method of drug administration in which a soluble-solid dosage form is placed in the mouth, between the cheek and gum, for absorption into the blood

**buccal tablet** soluble tablet administered by placement in the mucosal pocket between the cheek and jaw; SEE *tablet, compressed*

**bucco-** prefix meaning cheek

**budget** an estimate of income and expenses over some specified future period of time or a financial plan for meeting a firm's goals and objectives

**Buerger's disease** inflammatory, obstructive disorder that affects the peripheral blood vessels of the lower extremities; synonym: thromboangiitis obliterans

**buffer** system containing chemical constituents that resist small changes in hydrogen ion and hydroxide ion concentrations, designed to keep the pH relatively constant; consists of a weak acid and its salt or a weak base and its salt

**buffer capacity** quantitative expression of the ability of a solution to resist pH changes either in the basic or in the acidic direction; expressed as concentrations of acid or base that can be added before the respective limits of capacity are reached and beyond which the pH is markedly altered

**buffer equation** quantitative expression of the pH of a system (dosage form) as a function of pKa and the log of the ratio of the concentrations of the buffer moieties; synonym: Henderson-Hasselbalch equation

**bulimia** **1:** excessive hunger **2:** psychophysiological condition, usually observed in young women who are obsessed with weight control; manifested by excessive eating followed by self-induced vomiting

**bulk chemical** compound or mixtures of compounds produced and sold in large quantities (100 pounds to tons); CONTRAST *fine chemical*

**bulk compounding** preparing large amounts (liters, kilograms) of a formulation for multiple prescriptions or many patients

**bulk density** SEE *density, bulk*

**bulking agent** substance added to give bulk or body to a preparation; example: lactose added to a potent drug to be dispensed in capsule form; synonym: bodying agent

**bulk laxative** laxative that acts by providing bulk to the contents of the intestinal tract, thereby stimulating lower bowel evacuation

**bulk transport mixing** process of interspersing one or more substances by movement of large quantities of material from one position to another; example: a ribbon mixer for mixing wetted solids

**bullae** large fluid-filled vesicle

**bundle branch block** (BBB or bbb) abnormal conduction in the atrio-ventricular nerve transport system resulting in cardiac arrhythmias

**union** painful enlargement of the joint below the great toe induced by longstanding pressure against the joint from tight shoes

**Burnett's syndrome** milk-alkali syndrome (a chronic kidney disorder)

**burnout** feeling experienced by one who has been in a job or position too long without vacation or relief time thus becoming mentally and physically fatigued and less than enthusiastic in one's role

**Burow's solution** aluminum subacetate solution; used as a topical astringent

**burr cell anemia** form of anemia caused by carcinoma of the stomach or by a bleeding peptic ulcer; characterized by spiny projections on the cells

**bursa** fluid-filled sac that allows smooth motion of muscles or tendons over a bone or joint

**bursitis** inflammation of a bursa

**butterfly valve** SEE *valve*

**butyrophenone** class of drugs that act by blocking the release of dopamines; used as antipsychotics and antiemetics; example: haloperidol

**buying group** organization representing multiple independent buying sources for the purpose of obtaining price concessions from manufacturers and wholesalers through the combined purchasing power of its members and, in turn, redistributing that benefit to its members

**B vitamins** group of water-soluble nutrients required in the diet for growth and development of organisms and for prevention of certain neurological, dermatological, and hematological diseases; examples: thiamine, riboflavin, niacin, cyanocobalamin

**by-product 1:** something produced in addition to the principal product  
**2:** a secondary and oftentimes unintended result



**cacao butter** SEE *cocoa butter*

**cachet** obsolete oral dosage form in which the drug was placed between two thin wafers composed of starch (or flour and water), moistened, and sealed; to be dipped into water to soften before swallowing

**cachexia** severe state of malnutrition and emaciation



**cafeteria plan** an employee benefit plan under which all participants are permitted to choose among two or more benefit options according to their needs and/or ability to pay; also called “flexible benefit plan” or “flex plan”

**cajeputol** synonym for eucalyptol

**cake** layer of solid material collected by a surface filtration process in pharmaceutical manufacturing; usually the desired material in the separation process

**caking** separation and strong agglomeration of suspended particles from a colloidal dispersion or a suspension to the extent that the agglomerate cannot be redispersed easily; an undesirable process causing a physical incompatibility in a dosage form

**calamine** a pink powder composed of zinc oxide and a small amount of ferric oxide; used as an astringent and mild antiseptic

**calcemic** agent that elevates blood levels of calcium

**calcination** heating of a carbonate to drive off carbon dioxide, producing an amorphous oxide powder; examples: conversion of magnesium carbonate to magnesium oxide, conversion of calcium carbonate to calcium oxide

**calcine** process of calcination

**calcined salt** products of calcination; examples: calcium oxide from calcined calcium carbonate, magnesium oxide from calcined magnesium carbonate

**calcitonin** polypeptide hormone secreted by the thyroid gland in response to hypercalcemia; has a therapeutic effect of lowering serum calcium and phosphate, antagonizing the parathyroid hormone and inhibiting bone resorption; synonym: thyrocalcitonin

**calcium** electrolyte in body fluids; a component in the structure of bones and teeth

**calcium channel blockers** refers to a category of drugs that block the fast influx of calcium into cardiac and smooth muscle; agents beneficial in treating angina pectoris; example: verapamil

**calcium oxide** lime, quick lime, burnt lime, or calx

**calculus** **1:** hardened material on the teeth occurring as a result of several days of poor dental hygiene **2:** a stone; examples: gallstone, kidney stone **3:** mathematical treatment of data involving processes with changing rates; example: mathematical computations of drug absorption, distribution, and elimination

**calculus, differential** determination of instantaneous rates in a changing process

**calculus, integral** summation of the finite or infinite instantaneous rates of a changing process

**calibration** establishment of a measurable scale of an instrument; example: setting the wavelength range (window) of a scintillation counter to measure a specific radiation type

**calisaya bark** cinchona, cinchona bark, or Peruvian bark; a source of quinine and quinidine

**call schedule** the schedule for physicians' and other health professionals' availability for after-hours care

**callus** hyperkeratinous lesion occurring as a result of friction and pressure, usually on the palm of the hand or the sole of the foot

**calmodulin** calcium-binding protein with a probable role in muscle contraction

**calomel** mercurous chloride ( $\text{Hg}_2\text{Cl}_2$ ); formerly used as a cathartic

**calorimeter** instrument to measure changes in heat content in a process or a chemical reaction

**calorimetry** method of measuring changes in heat content in a process; examples: Parr bomb and Dewar flask experiments

**calorimetry, differential scanning** automated instrument to measure differences in heat changes in a process over a wide spectrum

**Calvé-Perthes disease** osteochondrosis of the vertebrae

**Calvin cycle** the major metabolic pathway by which  $\text{CO}_2$  is incorporated into organic molecules

**calx** calcium oxide, quick lime, burnt lime, or calx usta; formula:  $\text{CaO}$

**cam** rotating or sliding piece that imparts motion to a roller moving against its edge as in a rotary tablet press or in other processing equipment

**camphor** gum obtained from the camphor tree; used as a mild antiseptic and anesthetic; also made synthetically; synonyms: gum camphor, laurel camphor

**camphorated opium tincture** SEE *paregoric*

**camphor spirit** a 10 percent solution of camphor in alcohol; used as a counterirritant; synonym: spirit of camphor

**cancer** uncontrolled growth or tumor that spreads by invasion and metastasis; uncontrolled cellular multiplication contrary to and at the expense of normal body growth processes; synonym: malignant neoplasm

**candidiasis** fungal infection caused by *Candida albicans*; manifested as thrush, glossitis, or vaginitis

**Cannon's syndrome** increase in adrenaline secretion during emotional stress, resulting in palpitations and sweating

**capacity** an organized system's ability to meet the demands of both scheduled care and after-hours care

**capacity factor** parameter that is an indication of the amount of heat or energy a substance holds; example: enthalpy

**capillarity** spontaneous movement of water or other liquid into small openings or tubes due to surface forces

**capillary 1:** a minute channel in porous material or a lumen of a small tube **2:** glass tube with a very small inner diameter; used in measuring surface tension and melting point **3:** very small blood vessel connected to larger arteries and veins in the body's circulatory system

**capillary fragility** method of measuring intrinsic bleeding-clotting mechanism by using a pressure cuff and observing appearances of petechiae

**capillary viscometer test** device consisting of a constant volume glass bulb with a small orifice through which liquid flows; used to measure relative viscosity

**capitation** a method of payment in which a health plan, such as an HMO, or a specific provider receives a fixed amount for each person eligible to receive services (dollars per member per month), which is made whether or not the covered person becomes an active patient and without regard to the number and mix of services used by that patient

**capitation fund** a fund based on the number of members multiplied by the budgeted or capitated amount each member pays

**capitation rate** stipulated dollar amount established to cover the cost of health care delivered for a person; usually a negotiated per capita rate to be paid prospectively and periodically, usually monthly, to a health care provider, who is responsible for delivering or arranging for the delivery of all health services required by the covered person under the conditions of the provider contract

**Caplan's syndrome** progressive massive necrosis of the lung, seen with rheumatoid arthritis

**capping** separation of a compressed tablet into two or more layers immediately after the compression process; a result of too many fines in the granulation, entrapped air during compression, and/or sticking to the tableting punches or dies

**capsaicin** topical medication used to produce a burning sensation in the skin; primary component of “hot pepper” creams used for postherpetic neuralgia

**capsule** gelatin shell designed to hold a unit dose of a powder, a compacted slug, or an oily liquid; a dosage form made of hard or soft gelatin, and containing a unit dose of a drug formulation

**capsule, coated** solid dosage form in which the drug is enclosed within either a hard or soft soluble container or “shell” made from a suitable form of gelatin; additionally, the capsule is covered in a designated coating

**capsule, coated, extended release** solid dosage form in which the drug is enclosed within either a hard or soft soluble container or “shell” made from a suitable form of gelatin; additionally, the capsule is covered in a designated coating and releases a drug (or drugs) in such a manner to allow at least a reduction in dosing frequency as compared to that drug (or drugs) presented as a conventional dosage form

**capsule, coated pellets** solid dosage form in which the drug is enclosed within either a hard or soft soluble container or “shell” made from a suitable form of gelatin; the drug itself is in the form of granules to which varying amounts of coating have been applied

**capsule, delayed release** solid dosage form in which the drug is enclosed within either a hard or soft soluble container made from a suitable form of gelatin, and which releases a drug (or drugs) at a time other than promptly after administration; example: enteric-coated articles

**capsule, delayed release pellets** solid dosage form in which the drug is enclosed within either a hard or soft soluble container or “shell” made from a suitable form of gelatin; the drug itself is in the form of granules to which enteric coating has been applied, thus delaying release of the drug until its passage into the intestines

**capsule, extended release** solid dosage form in which the drug is enclosed within either a hard or soft soluble container made from a suitable form of gelatin, and which releases a drug (or drugs) in such a manner to allow a reduction in dosing frequency as compared to that drug (or drugs) presented as a conventional dosage form

**capsule, film coated, extended release** solid dosage form in which the drug is enclosed within either a hard or soft soluble container or “shell” made from a suitable form of gelatin; additionally, the capsule is covered in a designated film coating and releases a drug (or drugs) in such a manner to allow at least a reduction in dosing frequency as compared to that drug (or drugs) presented as a conventional dosage form

**capsule, gelatin coated** solid dosage form in which the drug is enclosed within either a hard or soft soluble container made from a suitable form of gelatin; through a banding process, the capsule is coated with additional layers of gelatin so as to form a complete seal

**capsule, liquid filled** solid dosage form in which the drug is enclosed within a soluble, gelatin shell that is plasticized by the addition of a polyol, such as sorbitol or glycerin, and is therefore of a somewhat thicker consistency than that of a hard shell capsule; typically, the active ingredients are dissolved or suspended in a liquid vehicle

**capsule body or capsule cup** larger portion of a hard capsule; the part that contains the powder or other dosage unit

**capsule cap** top portion of a hard capsule that closes the capsule

**capsule filler 1:** machine designed to fill capsules **2:** bulking or bodying agent of capsule contents (diluent); example: cornstarch

**caramel** burned sugar coloring; a concentrated solution obtained by controlled burning of sucrose or glucose; used as a pharmaceutical flavoring and coloring agent

**carbamate** ester of carbamic acid (the semi-amide of carbonic acid)

**carbolic acid** volatile crystal or liquid used as a caustic, disinfectant, and local anesthetic; synonym: phenol

**carbon** nonmetallic element; occurring as diamond, graphite, lamp black, or charcoal

**carbonate** salt or ester of carbonic acid

**carbonation** process of charging a solution with carbon dioxide gas

**carbon dioxide fixation** SEE *carboxylation*

**carbonic acid** weak acid made by combining carbon dioxide and water

**carbonic anhydrase** metabolic enzyme that catalyzes the combining of carbon dioxide and water to form carbonic acid in body processes

**carboxylation** substitution of a carboxyl group (COOH) on a molecule; synonym: carbon dioxide fixation

**carbuncle** a cluster of boils or furuncles involving infection of several hair follicles and surrounding tissues accompanied by inflammation, localized pain, and purulent sores

**carcino-** a prefix pertaining to carcinoma

**carcinogen** agent that produces cancer

**carcinogenesis** the process whereby cells become genetically unstable and eventually cancerous

**carcinoma** malignant tumor or neoplasm arising in epithelial or associated tissue (such as glandular tissue); malignant cells may invade (or metastasize to) other tissue

**carcinoma in situ** tumor of the surface epithelium and/or underlying glandular tissue whose component cells are morphologically identical to those of frank carcinoma

**card-** prefix meaning heart; same as cardio-

**cardamon seed** source of volatile cardamon oil; used as a flavoring

**cardiac** referring to the heart

**cardiac glycoside** glycoside used to slow the rate and increase the contractile force of the heart; examples: digitalis glycoside, strophanthus glycoside, glycoside of squill

**cardio-** prefix referring to the heart; same as card-

**cardiorrhexis** rupture or breaking of the heart

**cardiovascular** pertaining to the heart and blood vessels

**carditis** inflammation of the heart

**card program** prescription plan using a drug benefit identification card that, when presented to a participating pharmacy, entitles those covered to receive the medication for a specified copay

**care coordinator** SEE *gatekeeper*

**caries** cavities

**carminative** substance used to relieve gaseous distention of the stomach; example: peppermint

**carnauba wax** very hard, brittle wax obtained from the leaves of the carnauba palm; used as a polishing agent in the manufacture of tablets and capsules

**carotenoids** a class of hydrocarbons (carotenes) and their oxygenated derivatives (xanthophylls); highly colored (red, orange, and yellow) group of fat-soluble plant pigments having antioxidant effects

**carotid** a primary artery supplying blood to the head

**carriage, nasal** condition in which patient's nasal passages are contaminated with *Staphylococcus aureus*, causing conditions such as recurrent furunculosis

**carrier 1:** specific protein in membranes of cells or organelles used to transport substances across a particular membrane **2:** solid support for heterogeneous catalyst; example: charcoal for palladium **3:** vehicle used to transport a drug to its site of absorption or action **4:** person who is able

to transmit a dormant disease to another person who becomes actively infected **5:** protein that binds to a hapten to form a complete antigen **6:** an entity that may underwrite or administer a range of health benefit programs; may refer to an insurer or a managed health plan

**carrier-free** preparation of a radioisotope to which no carrier has been added

**cartridge** enclosed device designed to perform a specific pharmaceutical process; example: cartridge filter

**cartridge, insulin** small, glass, multidose insulin containers created by several manufacturers to fit into specific insulin injection devices; referred to as “insulin pens”

**carve out** decision to purchase separately a service that is typically a part of an indemnity or HMO plan

**cascara sagrada** bark obtained from *Rhamnus pershiana* and used to prepare extracts for use as laxatives

**case hardening** formation of a more dense, dry outer surface (crust) of a material being dried, thereby reducing the rate of drying of its inner contents

**case management** **1:** process whereby covered persons with specific health care needs are identified and a plan designed to efficiently utilize health care resources is formulated and implemented to achieve the optimum patient outcome in the most cost-effective manner **2:** a utilization management program for patients who have prolonged, expensive, or chronic conditions; helps determine the treatment location (hospital, other institution, or home) and authorizes payment for such care

**case manager** experienced professional who works with patients, providers, and insurers to coordinate all services to provide a plan of medically necessary and appropriate health care

**case mix** the relative frequency and intensity of hospital admissions or services reflecting different needs and uses of hospital resources; can be measured based on patients’ diagnoses or the severity of their illnesses, the utilization of services, and the characteristics of a hospital

**cash basis of accounting** revenues are recognized when cash is received and expenses are recognized when payments are made

**cash discount** price reduction extended to a customer in return for prompt payment of invoices

**cash flow** the difference in the amount of cash received and expended during a given period of time

**Caspari, Charles J.** (1850-1917) practitioner and educator; served as the general secretary of the American Pharmaceutical Association from 1894-1911

**cassia oil** oil of cinnamon; used as a flavoring agent

**castile soap** a whitish, solid cake composed of a mixture of sodium oleate, sodium palmitate, and other fatty acid salts; synonyms: soap, hard soap

**castor oil** fixed oil from the seed of the castor plant, *Ricinus communis*; used as a lubricating-irritant cathartic

**catabolic pathway** a series of biochemical reactions in which large complex molecules are degraded into smaller, simpler products

**catabolism** process by which a living organism breaks down complex compounds into more simple substances

**cataplexy** trancelike state in which there is loss of consciousness

**catalysis** enhancement or reduction of reaction rate by use of an added constituent called a catalyst

**catalyst** substance that facilitates or reduces the rate of a chemical reaction and is not apparently altered by the reaction; substance that alters the rate of a reaction without affecting its equilibrium constant

**cataplasm** viscous preparation intended to be warmed and applied to a body surface for the purpose of allaying pain and/or reducing inflammation; synonym: poultice

**cataplexy** sudden loss of muscular control and altered consciousness of short duration induced by strong emotions (e.g., laughter, anger); considered to be pathognomonic for narcolepsy

**catastrophic health insurance** insurance for severe and prolonged illness that poses a serious financial threat

**catatonia** state of immobility with muscular rigidity, sometimes with excessive excitability (a type of schizophrenia)

**catechol** refers to a compound which the structure consists of two adjacent hydroxyl groups attached to a benzene ring; *o*-hydroxyphenol

**catecholamine** class of orthodihydroxyphenethyl amines having a sympathomimetic action; examples: dopamine, norepinephrine, epinephrine

**categorically needy** under Medicaid, categorically needy cases are aged, blind, or disabled individuals or families and children who meet financial eligibility requirements for Temporary Aid to Needy Families, Supplemental Security Income, or an optional state supplement



**catgut** sheep's intestines processed to be used as absorbable sutures

**catharsis** cleansing or purging; usually of the lower bowel; the effects of taking a laxative

**cathartic** compound used to evacuate the lower bowel; SEE *laxative*

**catheter** flexible tube (made with varying lengths and lumen sizes) used to withdraw or introduce fluids from or into the body, to examine a specific part of the body, or to perform microsurgery in a specific place within the body

**cathode** negatively charged pole of an electrical cell to which cations migrate in electrolysis; a negatively charged electrode

**cathode ray tube** special type of vacuum tube for projecting electron beams; used to display information on a visible screen at the front of the tube; used in television, oscilloscope, and computer screens

**cation** positively charged ion that migrates to the cathode in electrolysis

**cationic surfactant** surface active agent that has a positive charge on the organic radical (the active part of the molecule) ( $R_4N^+$ ); example: benzalkonium chloride

**CAT scan** SEE *tomography*

**caustic** burning or corrosive agent that will destroy living tissue; examples: silver nitrate, potassium hydroxide

**caustic pencil** toughened silver nitrate stick used to cauterize small ulcerations or slow healing sores

**caustic soda** sodium hydroxide

**caustic stick** SEE *caustic pencil*

**Caventou, Joseph B.** (1795-1877) French pharmacist-alkaloid chemist who, with Pelletier, discovered strychnine (1818), brucine (1819), quinine (1828), and other alkaloids

**cavitation** the collapsing of an "air lock" or "air pocket" in a pumping process as it is subjected to an area of high pressure, such as in the chamber of a centrifugal pump; a pump-damaging process

**ceiling** the highest amount of money that an insurance company will pay to cover a patient's care; not included in many HMO plans

**cell fractionation** a technique involving homogenization and centrifugation that allows the study of cell organelles

**cellobiose** a degradation product of cellulose; a disaccharide that contains two molecules of glucose linked by a  $\beta$ -(1,4)-glycosidic bond

**cellular immunity** immune system processes mediated by T cells, a type of lymphocyte

**cellular pathology** concept that diseases were located in the cells that hold life itself; proposed by Rudolph Virchow (1821-1902)

**cellulase** enzyme that splits cellulose into smaller molecular units (from polysaccharides to the fundamental sugar unit)

**cellulose** polysaccharide carbohydrate with  $C_6H_{10}O_5$  as the fundamental unit; the part of cell walls of plants; differs from starch in that it consists of  $\beta$ -glycosidic bonds instead of  $\alpha$ -glycosidic bonds between fundamental units; a polymer produced by plants that is composed of D-glycopyranose residues linked by  $\beta$ -(1,4)-glycosidic bonds

**cement 1:** dental preparation employed primarily as a temporary protective covering for exposed pulp; example: zinc oxide–eugenol mixture  
**2:** hard cake formed due to strong agglomeration of particles in a suspension or a colloidal dispersion; an undesirable dosage form phenomenon; a form of physical incompatibility that may cause ineffective therapy due to inadequate mixing  
**3:** substance that serves to produce solid union between two surfaces

**cementum** soft material covering the root of a tooth

**census** complete count of a population of interest

**Centers for Medicare and Medicaid Services** (CMS) the government agency within the Department of Health and Human Services that directs the Medicare and Medicaid programs (Titles XVIII and XIX of the Social Security Act) and conducts research to support those programs; formerly the Health Care Financing Administration (HCFA)

**centers of excellence** a network of health care facilities selected for specific services based on criteria such as experience outcomes, efficiency, and effectiveness

**centipoise** (0.01 poise) common unit to measure viscosity of liquid pharmaceutical systems; SEE *poise*; *viscosity*; *Newton's law of viscous flow*

**central nervous system** (CNS) part of the nervous system consisting of the brain and the spinal cord

**central tendency effect** the practice of giving all observations “average” ratings; avoiding high or low points on the scale

**centrifugal blower/compressor/pump** apparatus that utilizes a rotating grooved impeller to move liquid or air from an intake near the center outwardly through an outlet at the outer edge of the impeller; a low maintenance cost and a smooth flow of liquid or air are its primary advantages

**centrifugal filter** filtration system that separates particulate solids from liquids by a rotating motion (may be a continuous or a batch process)

**centrifugal force** force that tends to impel objects outward from the center of rotation

**centrifuge** machine that separates substances of different densities using centrifugal force at high revolutions per minute

**cephalin** phospholipid that is either a phosphatidylserine or a phosphatidylethanolamine; synonym: kephalin

**cephalosporinases** group of  $\beta$ -lactamase enzymes (produced by certain bacteria) that catalyze hydrolysis of the  $\beta$ -lactam ring of various cephalosporins

**cephalosporin C** natural antibiotic produced by the fungus *Cephalosporium acremonium*

**cephalosporins 1:** group of bacteriocidal antibiotics that block the final stage of cell wall biosynthesis in bacteria by inhibiting transpeptidase  
**2:** chemically, a type of compound in which a  $\beta$ -lactam ring is fused to a dihydro-1,3-thiazine ring

**cephamycins** group of bacteriocidal antibiotics that block the final stage of cell wall biosynthesis in bacteria by irreversibly acylating transpeptidase

**cephem** the vital nucleus for antibiotic activity of all cephalosporins

**cerate** preparation for external use having a high percentage of wax as a base that will soften but not liquefy at body temperature

**cerate, Galen's** cold cream, rose water ointment

**cerebroside** glycoside composed of a fatty acyl sphingolamide and a sugar (mainly galactose)

**cerebrum** the main and largest segment of the brain; the frontal part divided into two hemispheres

**ceresin** hard, white, odorless, solid wax used as a substitute for beeswax; synonyms: ozokerite, earth wax, mineral wax

**certificate** a document issued to a pharmacist upon successful completion of the predetermined level of performance of a certificate training program or of a pharmacy residency or fellowship

**certificate of authority (COA)** a certificate issued by state government, licensing the operation of a health maintenance organization

**certificate of coverage (COC)** a description of the benefits included in a carrier's plan, required by state laws

**certificate of need (CON)** certificate issued by a government body to an individual or organization proposing to construct or modify a health facility, acquire major new medical equipment, or offer a new or different health service; recognizes that a facility or service will meet the needs of those for whom it is intended

**certificate training program** a structured and systematic postgraduate continuing education experience for pharmacists, generally shorter than degree programs

**certification** voluntary process by which a nongovernmental agency or an association grants recognition to a pharmacist who has met certain predetermined qualifications specified by that organization; usually requires initial assessment and periodic reassessments of the individual's qualifications

**certified dye** color or dye permitted by the FDA to be used for drug and food formulations; specified in the federal Food, Drug, and Cosmetic Act

**certified medical service representative** a professionally trained field employee of a pharmaceutical manufacturer who provides detailed information to health professionals on the company's drug products; must meet standards established by the CMR Institute of Roanoke, Virginia

**certified pharmacy technician** one who has completed the Pharmacy Technician Certification Examination, which covers communication, organizational and interpersonal skills, pharmacy operations, pharmacy law, and calculations

**cerumen** solidified mixture of secretions of sweat and sebaceous glands in the external auditory canal; synonym: earwax

**ceruminokinesis** process by which cerumen migrates from its point of formation (proximal to the tympanic membrane) outward until it is removed by the patient

**cetostearyl alcohol** SEE *cetyl alcohol*

**cetyl alcohol** fatty alcohol containing 16 carbons in a straight chain; synonyms: 1-hexadecanol, palmityl alcohol, cetostearyl alcohol

**cetylpalmitate** ester of cetylalcohol and palmitic acid; a wax found in beeswax and spermaceti

**chain pharmacy** one of a group of pharmacies, usually four or more, under common ownership and operation

**chalk** calcium carbonate;  $\text{CaCO}_3$

**chalk, precipitated** precipitated calcium carbonate prepared by mixing solutions of calcium chloride and sodium carbonate and then collecting, washing, and drying the resultant particles

**chalk, prepared** native form of calcium carbonate freed of most of its impurities by elutriation

**chalone** endogenous group of water-soluble secretions which are tissue-specific and which inhibit mitosis of cells in that tissue; such inhibitions are reversible

**channeling** use of incentives and plan design to encourage members to use network providers

**channel lattice** an ordered molecular structure with openings capable of entrapping smaller molecules

**charcoal** organic matter that has been partially burned to produce carbon; an amorphous form of carbon produced by destructive distillation of animal or vegetable matter; synonyms: lamp black, carbon black

**Charcot-Marie-Tooth disease** peroneal muscular atrophy (of the leg muscles near the fibula)

**Charcot's triad** intention tremor, nystagmus, and scanning speech seen in brain stem involvement in multiple sclerosis

**charge-based payment system** system of paying for a health care service (usually a hospital or other facility) on the basis of what the provider furnishing the service usually charges all patients

**charlatan** one who promotes unproven remedies or claims to have knowledge or skills that are not actually possessed; synonym: quack

**charlatanry** claiming to have knowledge or skills that are not actually possessed; synonym: quackery

**Charles's Law** SEE *gas law, ideal*

**chart or charta** prescription or other medication order notation for powder paper(s); used to dispense powders in unit dose quantities; used to protect balance pans when weighing

**check valve** SEE *valve, check*

**chelate** "claw" type of metallic complex in which a multiligand molecule forms a stable ring with a central metallic ion, rendering the ion inactive

**Chemical Abstracts System of Nomenclature** system of naming chemical compounds; a modification of the IUPAC system of nomenclature; specifically, the parent name is listed first followed by a comma and the names of attached substituents

**chemical adsorption** SEE *adsorption*

**chemical dependency** SEE *substance abuse*

**chemical equivalents** multiple-source drug products which contain essentially identical amounts of the same active ingredients, in the same dosage forms, and which meet existing physical-chemical standards

**chemical name** systematic name from which the exact structure can be derived; contrasted to the generic, trade, or trivial (common) names for a compound; CONTRAST *generic name*; *proprietary name*

**chemiosmotic coupling theory** ATP synthesis is coupled to electron transport by an electrochemical proton gradient across a membrane

**chemisorption** SEE *adsorption*

**chemist 1:** one who is knowledgeable of and works with chemical compounds **2:** British provider of pharmaceutical services; a pharmacist in the United Kingdom

**chemoheterotroph** an organism that uses preformed food molecules as its sole source of energy

**chemolithotroph** an organism that uses specific inorganic reactions to generate energy

**chemonucleolysis** injection of an enzyme into a part of the body to destroy undesirable tissue that would otherwise require invasive surgery; example: injection of chymopapain (a proteolytic enzyme) to perform a laminectomy

**chemosis** swelling of the conjunctiva

**chemotherapy** therapeutic concept developed by Paul Ehrlich (1854-1915) in which a specific chemical or drug is used to treat an infectious disease or cancer; ideally, the chemical should destroy the pathogen or the cancer cells without harming the host

**chewable tablet** SEE *tablet, compressed*

**child-proof closure** an inappropriate way to refer to child-resistant closures

**Children's Health Insurance Program (CHIP)** government program developed to provide health insurance to children not otherwise covered

**child-resistant closure** designed to slow a child's access to medication and allow an adult time to intervene

**chiral molecule** a molecule that has mirror-image forms

**chiropodist** SEE *podiatrist*

**chiropody** SEE *podiatry*

**chiropractic medicine** a system of health care that attributes disease to dysfunction of the nervous system, and attempts to restore normal function by treating the body structures, especially those of the vertebral column

**chi-square test** a statistical procedure used to test the association between two nominal variables

**chitin** an unbranched polymer in which *N*-acetylglucosamine residues are linked by  $\beta$ -(1,4)-glycosidic bonds; the principal structural component of the exoskeletons of arthropods

**chlorophyll** a green pigment molecule that resembles heme and absorbs light energy

**cholelithiasis** concretions in the gall bladder or bile duct

**cholestyramine** an anion exchange resin indicated for use as an antipruritic, an antihyperlipoproteinemic, and a cholesterol-lowering agent

**cholinomimetic** agent that mimics the action of acetylcholine in the body

**chondr-** prefix meaning cartilage; same as chondro-

**chondro-** prefix meaning cartilage; same as chondr-

**Christensen-Krabbe disease** progressive cerebral poliodystrophy

**Christmas disease** hemophilia B; sex-linked recessive hereditary bleeding disorder

**chromatin** the DNA-containing component of the eukaryotic nucleus; the DNA is almost always complexed with histones

**chromatography** method for separation of dissolved substances or gases by use of differential adsorption; examples: liquid, paper, column, and gas chromatography

**chromophore** portion of a compound that absorbs electromagnetic radiation; chromophores absorbing visible light are responsible for color

**chromosome** the physical structure, composed of DNA and some proteins, that contains the genes of an organism

**chronic** persistent or of long duration, as in a diseased state

**chronic care** care for an individual with a long-term illness

**chronic hepatitis** SEE *hepatitis*

**chronotropic** affecting rate; usually in reference to heart rate

**chylomicron** lipoprotein synthesized in the intestinal epithelial cells and composed of triglycerides, fats, cholesterol, phospholipids, and proteins

**cicatix** mark of a healed wound; synonym: scar

**cilia** small, independently moving, hairlike projections attached to cell surfaces; the cilia of the respiratory tract are responsible for mucokinesis

**ciliated cells** cells to which cilia are attached

**cinchona** drug obtained from the bark of a tree indigenous to the Andes Mountains of South America; source of quinine alkaloids; used as an antimalarial, antipyretic, analgesic, and antiarrhythmic; synonyms: Peruvian bark, Calesayo bark

**cinchona alkaloids** organic amines obtained from *Cinchona succirubra* (red cinchona) and its hybrids; examples: quinine, quinidine, cinchonine, cinchonidine

**cinchonidine** alkaloid from cinchona bark related stereochemically to quinine; synonym: 6'-desmethoxyquinine

**cinchonine** alkaloid from cinchona bark, a diastereoisomer of cinchonidine possessing the same stereochemistry as quinidine; synonym: 6'-desmethoxyquinidine

**circadian rhythm** twenty-four-hour cycling of events; synonym: diurnal variation

**circular dichroism** type of instrumentation in which the molar ellipticity of an optically active substance is determined in solution at varying wavelengths

**cistern** lymph spaces in body tissue such as the brain

**cisternography** roentgenography of a cistern; a method of taking pictures of a cistern by injecting X-ray opaque dyes (contrast media) so that it may be visualized; often refers to X-ray visualization of the enlarged subarachnoid spaces of the brain

**cis-trans isomer** type of stereoisomer resulting from differing arrangements of groups on the same or opposite sides of a double-bond; examples: fumaric acid (*trans*-butenedioic acid) and maleic acid (*cis*-butenedioic acid); synonym: geometric isomer

**citrate** a salt or an ester of citric acid

**citric acid** hydroxytricarboxylic acid ( $\text{H}_3\text{C}_6\text{H}_5\text{O}_7$ ); found in citrus fruits, especially lemon and lime juices; used as a pharmaceutical adjuvant and chelating agent

**citric acid cycle** biochemical pathway that begins with the formation of citric acid from oxaloacetic acid and acetyl coenzyme A and which ends with oxaloacetic acid, thus forming a cycle; synonyms: Krebs cycle, tricarboxylic acid cycle, TCA cycle



**civil action** legal action resulting from a dispute between two or more parties or individuals

**Civilian Health and Medical Program of the Uniformed Services (CHAMPUS)** federally sponsored insurance program that pays for hospital and medical services provided to dependents of active military and deceased military personnel, the latter of whom died while on active duty, as well as retired military personnel and their dependents

**Civilian Health and Medical Program of the Veterans Administration (CHAMPVA)** federally sponsored insurance program that pays for hospital and medical services provided to dependents of disabled, retired veterans of the uniformed services

**claim information** submitted by a provider or a covered person to establish that medical services were provided to a covered person, from which processing for payment to the provider or covered person is made

**claims administration** review of health insurance claims submitted for payment, by individual claim or in the aggregate; an identification procedure, screening treatment, or charge pattern for subsequent peer review and adjudication

**claims clearinghouse system** system that allows electronic claims submission through a single source

**claims review** the method by which an enrollee's health care service claims are reviewed before reimbursement is made

**Claisen concentration** reaction in which an ester containing alpha-hydrogens is condensed under anhydrous conditions in the presence of a base such as sodium ethoxide

**clarification** filtration process to remove particulate solid material (usually less than 1 percent) from a liquid of which the filtrate is the desired component

**clarity** condition of being free from particulate matter, as with injections and other solution dosage forms

**Clark's rule** SEE *dosage rules*

**class A balance** SEE *balance*

**class B balance** SEE *balance*

**clathrate** cagelike molecular structure capable of physically trapping smaller molecules

**clean room** a sterile, enclosed environment approved by the appropriate regulatory agency that is designated as a site for preparation of medica-

tions, usually parenteral medications; contains a laminar flow hood as one component

**clearance** complete removal by the kidneys of a compound (drug) from a specific volume of blood per unit of time

**clear emulsion** SEE *emulsion*

**clearinghouse capability** company capable of submitting electronic and/or paper claims to several third-party payers

**client** person who seeks and receives professional services; synonyms: patron, customer

**clinical** pertaining to actual observation and treatment of a patient (usually in a clinic or hospital)

**clinical chemistry** analytical biochemistry applied to the diagnosis of disease or the screening and monitoring of patients

**clinical indicator** a tool or marker used to monitor and evaluate care to ensure desirable outcomes and explain or prevent undesirable outcomes

**clinical outcome** the status of the patient's health, especially after receiving medical care services; outcome assessment dependent upon targeted goals, clinical markers, and the ability to provide objective measurements

**clinical pharmacokinetics** application of pharmacokinetics to the safe and effective therapeutic management of an individual patient

**clinical pharmacy** practice of pharmacy in which patient needs are emphasized; "patient-oriented pharmacy practice"; information and recommendations are provided to the physician/health care team, not directly to the patient

**clinical privileging** process of reviewing a practitioner's credentials for the purpose of granting and delineating the scope of clinical privileges

**clinical trial** tests conducted to test the effectiveness of new medicines, devices, surgeries, or other medical procedures to prove safety and efficacy

**clinical trial, phase I** studies involving a small group of people to test the safety and dosage of the drug

**clinical trial, phase II** studies continuing to test the drug safety and efficacy with larger groups than in phase I

**clinical trial, phase III** large-scale studies to test the effectiveness of the drug as well as potential side effects

**clinical trial, phase IV** studies that usually concentrate on possible new indications or long-term effects of the drug

**clinician** a staff member providing technical medical services, especially a physician, but also a pharmacist or nurse involved in patient care

**closed access** a type of health plan in which covered persons are required to select a primary care physician from the plan's participating providers, and to see the selected primary care physician for care and referrals to other health care providers within the plan; typically found in a staff, group, or network model HMO; also called "closed panel" or "gatekeeper model"

**closed-panel HMO** an HMO model that generally offers the service of a relatively limited number of health care providers (e.g., physicians employed by the HMO); staff- and group-model HMOs usually in this category

**closed system** process under observation that involves exchanges of heat and work (but not matter) with its surroundings; SEE *drug formulary*

**closure** part of container that caps and/or seals; examples: rubber closure for a multidose parenteral, a cap on a bottle

**clyster** an enema, typically administered with a metal syringe; synonym: glyster

**coacervate** aggregation of colloidal particles held together by electrostatic charges

**coagulation** process by which blood clots; clumping together of fine particles into larger particles

**coalescence** combining discrete droplets of a liquid or semisolid into a larger drop or spherical globule that, when carried to an extreme, results in a separation of the pharmaceutical preparation into two or more phases; example: "cracking" or "breaking" of an emulsion

**coarse dispersion** two-phase system in which the particles of the dispersed phase are in the range of 25 to 100 micrometers (microns) in diameter; example: suspension

**coarse filtration** process to remove large particles from a liquid or an air system

**coating** covering a tablet or pill with one or more protective layer(s); examples: sugar-coated tablet, enteric-coated tablet, film-coated tablet, compressed-coated tablet

**coating pan** rounded, rotating vessel used in the process of covering (sugar coating) a batch of tablets

**cobalamines** various forms of vitamin B<sub>12</sub>; example: cyanocobalamin

**cobalt** hard, gray, ductile metal; a trace mineral; the central metallic atom in cyanocobalamin

**cobalt-60** radioisotope of cobalt that emits highly intense beta rays and X-rays; used to treat cancer and in radiation sterilization

**cocaine** local anesthetic for topical use; alkaloid from *Erythroxylon coca*; highly addicting and subject to abuse; a controlled substance with no recognized medical use (in Schedule I)

**cocoa, breakfast** solid similar to cocoa powder but contains more than 22 percent cocoa butter

**cocoa butter** low-melting-point fat from cacao beans; used as a suppository base and emollient; synonym: theobroma oil

**cocoa powder** brown powder with characteristic odor and taste, obtained by roasting cured seeds of *Theobroma cacao*

**codeine** alkaloid from opium; used to suppress the cough reflex and to relieve pain; synonym: 3-methylether of morphine

**code number** initial identification assigned to a new chemical entity before it is given a generic or official name; used for the compound throughout laboratory investigations

**coding systems** information organized around diagnosis, treatment, and/or reimbursement for further analysis; SEE *International Classification of Diseases System*; *Current Procedural Terminology System*; *National Drug Code System*; *Healthcare Common Procedure Coding System*

**codon** sequence of three nucleotides on mRNA that designates a specific amino acid for incorporation into protein

**coefficient of viscosity** synonym: viscosity; SEE *viscosity*; *Newton's law of viscous flow*

**coenzyme** a relatively small, organic, nonprotein molecule that functions as a reactant or a factor that must be present for an enzyme to function in its catalytic role; a "loosely bound" prosthetic group of an enzyme; a coenzyme (nonprotein) and its apoenzyme (protein) combine to form the holoenzyme (complete enzyme)

**coenzyme A** an acyl carrier molecule that consists of a 3'-phosphate derivative of ADP linked to pantothenic acid via a phosphate ester bond; pantothenic acid is linked to  $\beta$ -mercaptoethylamine by an amide bond

**cofactor** any one of several substances such as metallic ions or coenzymes required in an enzymatic reaction

**cognitive impairment** impairment in memory, reasoning, or orientation to person, place, or time; an impairment requiring a person to be supervised to protect himself/herself or others from harm

**cognitive services** pharmacy services that require professional judgment relating to the patients, including counseling and therapy monitoring

**cohesive forces** attractive tendencies for like molecules in a system

**coincidence** an occurrence in radiation measurement that compensates for the time during which the counter tube was insensitive to radiation

**coinsurance** type of cost-sharing requirement whereby the insured pays a fixed percentage of total charges for services

**colander** device for separating liquid from coarse solid particles; synonym: strainer

**colation** process of separating large solid particles from liquids through straining

**cold cream** emulsified ointment base, more commonly used as a cosmetic night cream; synonyms: rose water ointment, Galen's cerate

**cold flow** process whereby a plastic tends to return to its former configuration; after a flow rate is set using polyvinyl chloride IV sets, the amount of fluid delivered may vary over the next several hours as the plastic of the tubing narrows or enlarges due to cold flow

**cold place** denotes that the product should be refrigerated (between 20 and 80°C or 360 and 460°F), but not frozen

**cold temperature** any temperature not exceeding 8°C (46°F); in a refrigerator, between 2 and 8°C (36 and 46°F); in a freezer, between -20 and -10°C (-4 and 14°F)

**colic** severe, acute, and fluctuating abdominal pain

**colic, infant** condition of uncertain etiology occurring in young infants, characterized by intractable, continued crying

**colitis** inflammation of the bowel

**collagen** major body protein that is a chief component of connective tissues (e.g., fascia, dermis, cornea, tendon, and organic matrix of bone)

**collateralize** the designation of securities or assets given as a pledge by a borrower that will be given up if the loan is not repaid

**Colles' fracture** fracture of the lower end of the radius with displacement of the bone

**colligative property** characteristic of a liquid drug system that is dependent upon the number of discrete particles (ions or molecules) therein; example: osmotic pressure in ophthalmic solutions

**collimator** device that confines X-rays to the region under examination

**collodion** volatile, film-forming, liquid preparation intended for external use; a solution of pyroxylin in a mixture of alcohol and ether that once volatilized leaves a thin, impervious membrane

**colloid 1:** literally, “like a glue” **2:** state of matter characterized by large solvated molecules or aggregates of molecules usually considered to range in size from 1 nanometer to 500 nanometers **3:** a dispersion of particles in the size range noted in 2; example: gold colloid for injection

**colloidal dispersion** heterogeneous liquid or gaseous system having particles considered to range from 1 millimicron to 500 millimicrons in size

**colloidal solution** SEE *solution*

**colloid mill** machine consisting of a grooved rotor and a grooved stator, their distance of separation adjustable; used to reduce the particle size of a slurry such as a pharmaceutical suspension

**collunarium** a medicated wash or spray solution for instillation in the nostrils

**collutorium** mouthwash

**collyrium** ophthalmic liquid containing medications intended to be instilled into the eye; formulated with consideration for tonicity, pH, stability, viscosity, and sterility

**colorant** substance added to a formulation to give color and enhance eye appeal

**colorimetry** method of quantitative analysis that depends upon intensity of light transmitted through a colored solution

**colostomy 1:** surgically created opening (stoma) between the colon and the body surface **2:** surgical procedure that produces an opening in the colon

**colp-** prefix that means having to do with the vagina; same as colpo-

**colpo-** prefix that means having to do with the vagina; same as colp-

**column chromatography** type of chromatography in which the stationary (solid) phase is uniformly placed in a glass tube through which the solution whose components are to be separated is transported

**coma** a level of unconsciousness in which a person cannot be awakened

**combined audit** patient/medical care evaluation studies in which physicians, nurses, and/or other health care disciplines jointly choose and utilize the same topic and the same sample of records, as well as utilize the same data retrieval process

**comminution** a process to reduce particle size by physical or mechanical means; synonym: grinding

**commission** the portion of premiums or equivalent premium for self-funded groups paid to an insurance agent, sales representative, or broker as compensation for services provided

**Commission for Certification in Geriatric Pharmacy (CCGH)** created by the American Society of Consultant Pharmacy in 1997 to oversee the certification program in geriatric pharmacy practice

**Common Procedural Coding System** a listing of services, procedures, and supplies offered by physicians, pharmacists, and other providers

**community pharmacy** retail pharmacy, either chain or independent, serving the needs of the public in a defined area or neighborhood

**community rating** a method of determining a premium structure that is influenced not by the expected level of benefit utilization by specific groups, but by expected utilization by the population as a whole

**community rating by class** the practice of community rating impacted by the group's specific demographics; also known as "factored rating"

**compaction** SEE *compression* as it relates to solids

**compartment** separate division or section of the body as in a pharmacokinetic two-compartmental model in which the blood is one compartment and all other body tissues are considered as the central compartment

**compatibility** capable of being mixed in an acceptable physical-chemical and/or therapeutic combination

**compendium** information source that contains essential facts and details of a subject in concise form; example: *United States Pharmacopeia-National Formulary*

**competence** ability to perform one's duties accurately, make correct judgments, and interact appropriately with patients and colleagues, characterized by good problem-solving and decision-making abilities, a strong knowledge base, and an ability to apply knowledge and experience to diverse patient care situations

**competency** ability to perform a particular task or activity; possessing appropriate knowledge and skills

**competitive antagonism** most common type in which the agonist and antagonist each interact in a similar manner with the same receptor site; the substance in highest concentration will successfully win the competition; SEE *inhibition*

**competitive medical plan** (CMP) a status granted by the federal government to an organization meeting specified criteria, enabling that organization to obtain a Medicare risk contract

**competitive products** goods used for the same purpose and marketed in the same area, each affecting sales volume and price of the others

**completed audit** written display of patient/medical care evaluation study data for which variation records have been analyzed and corrective actions formulated for problems identified; not considered complete until follow-up of the problem has been planned and final reports forwarded to pertinent medical and professional staff and to the hospital governing body

**complexation** physical binding of a chemical with another substance resulting in a change in properties; examples: plasma protein binding of drugs, sequestration of metallic ions by clathrates (e.g., EDTA-lead)

**compliance 1:** the degree to which patients follow treatment recommendations **2:** determination through inspection of the extent to which a manufacturer is complying to prescribed regulations; synonyms: adherence, persistence

**complication** an unanticipated change in the patient's clinical status for which special clinical management is required to achieve desired patient outcomes

**complication rate** the percent of records in a patient/medical care evaluation study that indicate that a particular complication developed during treatment

**component** pure chemical substance that is part of a system

**components, number of** the smallest number of constituents in a system whose composition must be known to completely define the system

**composite rate** a group billing rate that is applied to all subscribers within a specified group, regardless of whether they are enrolled for single or family coverage

**compound** to mix or prepare several ingredients for a prescription

**compounding error** total expected potency error in a dosage formulation based on computation of the root-mean-square of the respective errors in each step of preparation; SEE *percentage error of compounding*



**comprehensive benefits plan** a variation of the major medical plan that carries coinsurance requirements, usually 10 to 20 percent of all health expenses and deductibles ranging from \$100 to \$1,000.

**compressed-coated tablet** a tablet covered by pressing the coating material around a previously tableted core; used for coating in the absence of water or other liquids

**compressed tablet** SEE *tablet, compressed*

**compressibility** a measure of the ease of compacting a discrete quantity of material into a nonresilient mass; granules for tableting must exhibit a high degree of compressibility; liquids exhibit low compressibility, whereas gases are highly compressible

**compression** process of rendering a discrete quantity of substance more dense or more compact; examples: solid granules to tablets, gases to liquids; synonym: compaction

**compression coating** SEE *coating; compressed-coated tablet*

**compressor** device or apparatus used to increase gaseous pressure in a closed system; example: refrigeration pump

**compulsion** insistent, repetitive urge to perform an act contrary to one's better judgment

**Concato's disease** polyserositis

**concentration** an expression of the number of parts of one component per total parts of all other components in a system; used in many ways, such as percent by volume, by weight and by weight-in-volume, molarity, normality, milligram percent, molality, and mole fraction

**concentration range** allowable (acceptable) variation in parts of one component per total parts of all other components of a system; example: drug concentration varying from 98 to 102 percent of labeled amount in each dosage unit

**concomitant 1:** at the same time **2:** joined together

**concurrent drug evaluation** an electronic assessment of claims at the point of service to detect potential problems that should be addressed prior to dispensing medicines to patients

**concurrent monitors** procedures for regular surveillance of patient care conducted while the care is being provided

**concurrent review** an assessment that determines medical necessity or appropriateness of services as they are being rendered

**condensation 1:** reaction in which two or more organic molecules are connected to form a larger molecule; synonym: polymerization **2:** a reduc-

tion in size by a coalescing or transition to a more orderly state of matter; examples: gas to liquid, gas to solid, liquid to solid

**condiment** a volatile oil used to flavor a pharmaceutical preparation

**conditionally renewable policy** a policy that can be renewed up to a certain age limit, such as 65

**condition of participation** statutory or regulatory provisions that a provider of services must satisfy in order to participate in a health care program; example: Medicare and Medicaid programs specify minimal services to be offered to patients in order for a provider to qualify

**condom** tubelike device used as a prophylactic against disease transmission and potential conception during sexual intercourse

**conductance** quantitative expression of the flow of an electrical current across a substance; the reciprocal of resistance

**conductance, equivalent** the conductance by a solution of sufficient volume so as to provide 1 gram-equivalent of solute in a suitable container with electrodes separated by 1 cm; used to measure the “degree of dissociation” of a substance in a given solvent

**conduction 1:** transfer of energy from one part of a system to another by a molecular interaction with no significant mass transfer involved **2:** transmission of an electric current through a medium (electrolyte solution, wire, etc.)

**conductor** substance that inherently possesses ability to transmit heat and/or electricity; atomic electrons move freely through such substances

**cone** solid dosage form bounded by a circular base and the surface formed by line segments joining every point of the boundary of the base to a common vertex; usually contains antibiotics and is normally placed below the gingiva after a dental extraction

**cones** cells of retina containing opsins related to rhodopsin; responsible for color vision

**confabulation** fabrication of facts about events not totally recalled from memory

**confection** paste consisting of medicinal agents and flavoring intended to be dissolved in the mouth

**confectioner’s sugar** a mixture of sucrose and corn starch in a fine powder form

**confidentiality** condition of secrecy or privacy about a patient’s medical records, medical history, or medications

**confinement** an uninterrupted stay for a defined period of time (as reflected in a benefit contract) in a hospital, skilled nursing facility, or other approved health care facility or program

**conformation** shape of an organic compound achieved by rotation of atoms around single bonds; example: the shape of proteins produced by twisting and/or folding peptide chains

**conformational disease** diseases caused by protein misfolding and aggregation

**congealing range** temperature interval through which a melted semisolid changes to a solid

**congener** compound of the same origin (synthetic scheme, plant source, etc.) as another

**congenital** existing before or at birth

**congestion** increased or pathological collection of blood or other aqueous fluids in an area of the body; examples: pulmonary edema, dropsy

**congestive heart failure** inability of the heart to maintain adequate circulation to meet the body's needs; characterized by breathlessness and abnormal sodium and water retention resulting in edema, with congestion of the lungs and/or peripheral circulation; synonym: dropsy

**conjugate acid** compound produced by the acceptance of a proton by a "Bronsted base"; SEE ALSO *Bronsted-Lowry theory*

**conjugate base** a compound produced by the ionization of a "Bronsted acid"; a base resulting when a "Bronsted acid" has lost a proton; SEE ALSO *Bronsted-Lowry theory*

**conjugated protein** a protein that functions only when it carries other chemical groups attached by covalent linkages or by weak interactions

**conjugate pair** an acid-base pair; example: ammonium ion and hydroxyl ion in ammonium hydroxide

**conjugate redox pair** an electron donor and its electron acceptor form

**conjugation 1:** chemical structure in which two or more double bonds alternate with a single bond **2:** attachment of a group to a drug, drug metabolite, or other xenobiotic

**conjunctiva** inner lining of the eyelid and outer lining covering the eye

**conjunctival injection** dilation of the conjunctival blood vessels; often occurs in conjunction with allergic rhinitis

**conjunctivitis medicamentosa** inflammation of the conjunctiva caused by overuse of ophthalmic medications (e.g., decongestants such as tetrahydrozoline)

**Conn's syndrome** primary aldosteronism (oversecretion of the hormone)

**conserve** a mixture of fresh medicinal agents and sugar or honey

**consignment** method of purchasing in which the title of the goods remains with the supplier until the goods are sold by the retailer

**Consolidated Omnibus Budget Reconciliation Act (COBRA)** federal law that, among other things, requires employers to offer continued health insurance coverage to certain employees and their beneficiaries whose group health insurance coverage has been terminated

**conspergent** synonym for dusting powder

**constant** parameter or element in a process or mathematical expression that does not change under controlled conditions

**constant infusion** a series of minidoses given at infinitely short dosage intervals; example: controlled pumping of insulin into the body

**constant-rate period of drying** that phase of drying through which temperature does not change; a condition in which the rate of diffusion of moisture from the interior to the surface of a substance is equal to the rate of evaporation of moisture from its surface

**constipation** abnormally infrequent and difficult evacuation of the bowel, characterized by dry, hardened feces

**constitutive property** characteristic of a drug molecule that is the result of the structural arrangement of its atoms; example: optical rotation

**consultant** an outside specialist not on regular institutional staff

**consultant pharmacist** practitioner of pharmacy who provides pharmaceutical expertise and advice to a health care facility of which the pharmacist usually is not a full-time employee

**Consumer Healthcare Products Association (CHPA)** trade association representing manufacturers of nonprescription products, devices, and dietary supplements; formerly known as the Proprietary Association and the Nonprescription Drug Manufacturers Association

**consumer price index (CPI)** formerly cost of living index; a price index constructed monthly from Bureau of Labor statistics of the retail prices of 400 goods and services sold in large cities across the country; weighs products in terms of importance (in terms of total expenditures) and compares prices to those of a selected base year; expresses current expenditures as a percentage of the base

**contact angle** SEE *wetting*

**container** device that holds a drug or article; may or may not be in direct contact with its contents

**container, hermetic** one that is impervious to air or any other gas under ordinary conditions of shipment and storage

**container, light resistant** colored or opaque container to protect its contents from the effects of light

**container, multiple dose** vial that permits needle puncture and withdrawal of successive portions of its contents without changing the strength, quality, or purity of the remaining portion

**container, single dose** single-unit container for articles intended for parenteral administration; example: one ampule and its contents

**container, single unit** one that is designed to hold a quantity of drug intended for administration as a single dose or a single finished device intended for use promptly after the container is opened

**container, tight** one that protects its contents from contamination by extraneous liquids, solids, or vapors, and from loss or damage of the article due to efflorescence, deliquescence, or evaporation under ordinary conditions of shipment and storage; capable of tight reclosure

**container, unit dose** single-unit container for articles intended for administration as a single dose by routes other than parenteral

**container, well closed** one that protects its contents from extraneous solids and from loss of the article under customary conditions of shipment and storage

**container closure** cap that seals the container and is a part of the container

**contamination** condition of having an impurity in a product that should not be present; synonym: adulteration

**content uniformity test** quality assurance evaluation of variability in the chemical composition in each dosage unit of a given batch; performed for tablets, capsules, and powders among other dosage formulations

**continental method** procedure for making an emulsion in which oil and emulsifying agent are placed in a dry porcelain mortar and mixed thoroughly and then water is added all at once and triturated rapidly until emulsification is accomplished; synonym: dry-gum method

**continuation** a situation whereby a covered person who would otherwise lose coverage under a health plan due to certain occurrences such as termi-

nation of employment or divorce is allowed to “continue” his/her coverage under specified conditions.

**continuing education** organized learning experiences and activities in which pharmacists engage after they have completed their entry-level academic education and training; experience designed to promote the continuous development of skills, attitudes, and knowledge needed to maintain proficiency, provide quality service or products, respond to patient needs, and keep abreast of change

**continuity of care** the coordination of diagnoses and treatment among practitioners and health care settings to maximize treatment benefits for the patient

**continuous dryer** machine or apparatus that removes moisture from large quantities of material as it is moved uninterrupted through the drying process; CONTRAST *batch dryer*

**continuous mixing** uninterrupted mixing; characterized by a steady inflow of substances to be combined and a steady outflow of combined materials; CONTRAST *batch mixing*

**continuous process** operational procedure or process, such as granulation, which is conducted without interruption for long periods of time; used in preparing bulk chemicals or materials; CONTRAST *batch process*

**continuous quality improvement** formal process of constantly seeking better ways to achieve stated goals

**continuous variation method** a means of determining stoichiometric ratios of molecules that are complexed using an additive property to measure molecular units involved in a specific type of complex

**continuum of care** range of clinical services provided to an individual or group; may reflect treatment rendered during a single inpatient hospitalization or care for multiple conditions over a lifetime

**contr-** prefix meaning against; same as contra-

**contra-** prefix meaning against; same as contr-

**contraceptive** an agent or a substance used to prevent pregnancy; examples: condoms, birth control medications, intrauterine devices

**contract** binding legal agreement between two or more parties to do or not do a specified act

**contract pharmacy system** pharmaceutical benefit delivery arrangement in which a health plan contracts with community pharmacies (chain or selected independents) to provide medications to members

**contract year** the period of time from the effective date to the expiration date of the contract

**contraindication** a situation in which one drug should not be used because of a patient's condition or use of another drug; examples: a patient with diabetes should not take an oral nasal decongestant and a patient with angle-closure glaucoma should not take a nonprescription antihistamine without consulting a physician

**contribution margin** an accounting term indicating an excess of net sales over variable expenses expressed as a dollar total, a ratio, or on a per unit basis; example: that portion of sales which contributes to meeting fixed costs and profit

**contributory program** a method of payment for group coverage in which part of the premium is paid by the employee and part is paid by the employer or union

**controlled substance** substance or drug under special controls of the Drug Enforcement Administration (DEA) because of its potential for abuse; SEE *scheduled drug*

**contusion 1:** process of subdividing a substance by pounding or bruising it, usually in a heavy metal mortar **2:** bruise injury in which the skin is not broken

**convection** transfer of energy from one part of a fluid system to another by molecular currents; contrasted to movement by outside forces as in the use of a mechanical stirrer

**convenience goods** consumer goods with a low unit value that the customer buys frequently and prefers to purchase with a minimum amount of effort

**conversion** the privilege given to a covered person to change his/her group medical care coverage to a form of individual coverage without evidence of insurability; conditions of change defined in the master group contract; usually made when a covered person leaves the group

**convulsion** an involuntary contraction or a series of contractions and relaxations of the voluntary muscles; usually paroxysmally

**Cook, Ernest Fullerton** (1879-1961) chairman of the *United States Pharmacopeia* Committee of Revision from 1920-1950; was active in international drug standardization; served as editor-in-chief of *Remington's Practice of Pharmacy* (Fourth to Sixth Editions); Remington Honor Medal recipient in 1931

**cool temperature** temperature between 8 and 15°C (46 and 59°F); unless otherwise stated, an article to be stored at a cool temperature may be stored in a refrigerator

**Coombs' Test** method to detect the presence of antibodies bound to the surfaces of erythrocytes using antisera; may be either direct or indirect

**Cooper, Zada Mary** (1875-1961) educator at the University of Iowa; one of the founders of Rho Chi and Kappa Epsilon

**coordinate covalent bond** chemical bond in which both shared electrons are provided by one of the atoms; synonym: dative bond

**coordination number 1:** number of nearest neighbors of a given atom in a crystal **2:** number of ligands attached to a central metal in a complex

**coordination of benefits** provision in a contract that applies when a person is covered under more than one group medical program and requires that payment of benefits be coordinated by all programs to eliminate overinsurance or duplication of benefits

**copay or copayment** a cost-sharing arrangement in which a covered person pays a specified charge for a specified service, such as \$15 for an office visit or a prescription; includes the following structures: (1) two-tier copays with lower copays for multisource (generic) drugs and higher copays for single-source (brand-name) drugs; (2) three-tier copays with lower copays for multisource (generic) drugs, higher copays for preferred single-source (brand-name) drugs, and even higher copays for non-preferred single-source (brand-name) drugs; (3) four-tier copays with lower copays for low-cost multisource (generic) drugs, higher copays for high-cost multisource (generic) drugs, even higher copays for preferred single-source (brand-name) drugs, and the highest copays for non-preferred single-source (brand-name) drugs

**copper** trace element and a cometal for some enzymes

**copperas** synonym for ferrous sulfate

**core, extended release** an ocular system placed in the eye from which the drug diffuses through a membrane at a constant rate over a specified period

**Cori cycle** a metabolic process in which lactate, produced in tissues such as muscle, is transferred to liver where it becomes a substrate in gluconeogenesis

**corn** small, hyperkeratotic lesion on the foot, either between the toes or on the side of the foot, occurring as a result of pressure and friction (e.g., tightly fitting shoes)



**corneal deposits** matter on the transparent anterior part of the eye (the cornea)

**corporation** a legal body created by a state to operate a business with the purpose and rules of an approved charter

**correlation** measure of the nature and degree of relationship between two variables; example: relationship between solubility of a substance and the temperature of the solution

**correlation coefficient** statistical index of the linearity of a plot of two variables; an index of dependency of the two variables; when  $r = 1$  there is perfect linearity and complete dependence and when  $r = 0$  there is complete independence of the two variables

**corticosteroid** steroidal hormone secreted by the adrenal cortex; may be classed as a mineralocorticoid that controls electrolyte balance or a glucocorticoid that controls carbohydrate or fat metabolism

**Cosmas** Arabian Christian; along with his brother Damian, one of the patron Saints of medicine and pharmacy; martyred in A.D. 303 by subjects of the Roman Emperor Diocletian

**cosmetic** agent for preserving or improving appearance

**cosmetic procedures** those procedures that alter physical appearance but do not correct or materially improve a physiological function and are not deemed medically necessary

**cosolvency** use of a combination of liquids to increase the solubility of poorly soluble substances

**cost-based reimbursement** payment by third-party insurers in which the amount is based on the cost to the provider of delivering services

**cost-benefit analysis** in pharmacoeconomics, the evaluation of products or services where costs and consequences are simultaneously measured in terms of dollars

**cost containment** term used to refer to a variety of strategies designed to control costs of health care services

**cost contract** agreement to arrange for the provision of health services to plan members based on reasonable cost or prudent buyer concepts

**cost of goods sold** the dollar value of the beginning inventory plus purchases for the period minus the ending inventory

**cost shifting** the redistribution of payment sources occurring when a provider gives a discount to one payer and then increases the cost to another to make up the difference

**Coste, Jean-Francois** (1741-1819) chief physician of French forces participating in the American Revolution; compiled a drug formulary, the *Compendium Pharmaceuticum*

**cost-effectiveness** the degree to which a service meets a specified goal at an acceptable cost

**cost-effectiveness analysis** in pharmacoeconomics, the evaluation of products or services where costs and consequences are simultaneously measured; effectiveness measured in terms of obtaining a specified objective (e.g., year of life saved) and cost in monetary terms; example: a ratio expressed as the cost per year per life saved

**Costen's syndrome** dental malocclusion with associated neurologic headache

**cost-minimization analysis** in pharmacoeconomics, costs are analyzed and compared where two or more interventions have been demonstrated or assumed to be equivalent in terms of the outcome or consequence

**cost-of-illness evaluation** in pharmacoeconomics, an evaluation of the direct and indirect costs of a particular disease or condition

**cost sharing** provision of a medical insurance plan that requires the insured to pay some specified portion of the costs of medical services; SEE ALSO *coinsurance; copay or copayment; deductible*

**cost to dispense** the total expenses associated with dispensing a prescription; computed by allocating all expenses associated with the operation of the prescription department and dividing by the number of prescriptions dispensed

**cost-utility analysis** in pharmacoeconomics, the evaluation of products or services where costs and consequences are simultaneously measured; consequences measured in terms of quality of life, willingness to pay, or preference for one intervention over another, and costs measured in terms of dollars; example: ratio expressed in terms of cost per quality-adjusted life year saved

**Coulter Counter** (trademark) instrument used to count and estimate the "effective" volume of red and white blood cells and drug particles; used to determine particle diameter based on changes in electrical resistivity as individual particles, suspended in an electrolyte solution, pass through a standardized pore in a glass tube

**counseling** process by which pharmacists provide information regarding prescription products or perform triage for patients in regard to minor medical conditions

**countercurrent distribution** method of extraction and separation using two immiscible solvents in a series of tubes or separatory funnels; the solvent forming the lower layer moves in one direction and the upper layer moves in the opposite direction

**counter detailing** reeducating or influencing prescribers in a closed or controlled HMO plan to influence their prescribing habits to meet formulary compliance

**counterirritant** agent used externally to produce erythema and a sense of warmth to provide relief to an area

**covalent bond** chemical bond resulting from the sharing of a pair of electrons by two atoms, each atom donating one electron from its outer shell (bond energy around 100 kcal per mole)

**coverage** entire range of protection provided under an insurance contract

**covered expenses** medical and related costs that qualify for reimbursement under terms of an insurance contract

**covered lives** refers to the quantity of persons who are enrolled within a particular health plan, or for coverage by a provider network; includes enrollees and their covered dependents

**covered person** an individual who meets eligibility requirements and for whom premium payments are paid for specified benefits of the contractual agreement

**covered services** specific services and supplies for which a covered person will receive reimbursement

**CPT-4 System** SEE *Current Procedural Terminology System*

**cracked emulsion** emulsion in which the protective film has broken and the internal phase has coalesced

**cradle cap** condition usually confined to infants in which the scalp is covered with scales or a crust

**Craigie, Andrew** (1754-1819) appointed Apothecary General of the Continental Army in 1776; established a manufacturing laboratory for large-scale manufacture and distribution of medical supplies

**Craigie Medal** established in 1959 by the Military Surgeons of the United States in recognition of career achievements for the advancement of pharmacy in the federal government

**cranio-** prefix meaning skull

**crash cart** mobile drug container placed on a nursing floor; contains medicines and supplies needed for life-threatening medical emergencies

**crayon** dose form; SEE *pencil*

**cream 1:** viscous liquid or semisolid emulsion of either the oil-in-water or water-in-oil type; most are used topically; most often applied to soft, cosmetically acceptable types of preparations; example: vanishing cream **2:** liquid suspension of a hydrated inorganic hydroxide or oxide; example: cream of bismuth **3:** semisolid dosage form containing one or more drug substances dissolved or dispersed in a suitable base; more recently, restricted to products consisting of oil-in-water emulsions or aqueous microcrystalline dispersions of long-chain fatty acids or alcohols that are water washable and more cosmetically and aesthetically acceptable

**creaming** separation of the internal phase of an emulsion as a concentrated agglomerate of discrete, easily dispersible globules or droplets; depending on the relative density of the phases, creaming may go upward or downward

**creatinine clearance** removal from blood of the nitrogenous compound creatinine; a metabolic end product of creatine and creatine phosphate; a measure of kidney function

**credential** documented evidence of a pharmacist's qualifications; may include diplomas, licenses, certificates, and certifications

**credentialing 1:** process by which an organization or institution obtains, verifies, and assesses a pharmacist's qualifications to provide patient care services; **2:** review process to determine a provider's ability to participate in a health plan

**credit** the right side of an account; entering an amount on the credit side of an account represents a decrease in assets and expenses or an increase in liabilities, owner's equity revenues, and gains

**Creutzfeldt-Jakob disease** spastic pseudosclerosis with spinal degeneration

**Creutzfeldt-Jakob disease, variant** linked to eating contaminated beef products from animals infected with bovine spongiform encephalopathy (BSE), or mad cow disease

**crib death** SEE *sudden infant death syndrome*

**criteria set** a group of similar or related indicators of quality health care

**critical micelle concentration** concentration of an amphiphile above which micelles begin to form; SEE *micelle*

**critical moisture content** that time in a drying process when the rate of drying begins to decrease; that time when the first "dry spots" are formed on the surface of the substance being dried

**critical pressure** pressure required to liquefy a gas at its critical temperature

**critical temperature** that temperature above which a gas cannot be compressed to a liquid irrespective of the pressure applied

**Crohn's disease** regional enteritis (inflammation of the intestine)

**cruciform** a crosslike structure in DNA molecules likely to form when a DNA sequence contains a palindrome

**crude drug** term usually applied to a nonpurified drug obtained from a plant or an animal; synonym: natural drug; example: plant parts (senna leaves)

**crutch 1:** a support, usually fitting under the arm, to assist a disabled person to walk **2:** a substance or a behavioral pattern used to avoid or mitigate unpleasant circumstances; example: use of alcohol to avoid reality

**cryo-** prefix meaning cold

**cryodesiccation** SEE *freeze drying*

**cryolite** ore of a fluorine-containing mineral; formula:  $\text{Na}_3\text{AlF}_6$

**cryotherapy** therapy utilizing cold to reduce the amount of inflammation after an acute injury (e.g., ankle sprain), thereby speeding a return to normal function; uses such modalities as ice packs, precooled gel packs, instant cold packs; a component of RICE (rest, ice, compression, elevation) therapy for acute joint or muscle injury

**crystal** naturally produced angular solid of definite form in which the ultimate units from which it is built up are systematically arranged; usually evenly spaced on a regular space lattice

**crystal growth** deposition of a solute from a solution onto the surface of a smaller crystal (or other minute particle) to form a larger one; an undesirable factor contributing to instability of a pharmaceutical suspension; a desired process for more complete separation and/or quantization of a drug component in a liquid system; SEE *crystallization*

**crystal lattice** repeating units of a specific molecular arrangement with accompanying spaces; exhibited by crystalline drug solids

**crystalline** refers to grainy particles of a substance, the molecules of which are arranged in definite geometrical or morphological patterns; may exhibit distinct cleavage planes; CONTRAST *amorphous*

**crystallization** process in which ions, atoms, or molecules deposit on themselves in a definite solid geometric pattern to form discrete crystals; SEE ALSO *crystal growth*

**crystal violet** synonym for gentian violet or methylosaniline chloride

**cubic mixer** SEE *tumbling mixer*

**culture** propagation of microorganisms or of living tissue cells in special media conducive to their growth

**cumin, sweet** synonym for anise seed; a flavoring agent

**cumulative log-dose response curve** a plot or graph of a physiological activity parameter as a function of the log of the dose of a drug

**cupric salts** salts of copper in the +2 oxidation state; used as antiseptics and clinical reagents

**cuprous salts** salts of copper in the +1 oxidation state

**curie** (c) unit of radioactivity equal to  $3.7 \times 10^{10}$  nuclear transformations per second

**current assets** items that will be transformed into cash, sold, or used during a normal operating cycle (usually one year) of a business; examples: cash, marketable securities, accounts receivable, inventories, prepaid expenses

**current liabilities** obligations that are expected to be paid from current assets of the business or through creation of other current liabilities; usually satisfied within the normal operating cycle of the business (usually one year); examples: accounts payable, notes payable, salaries payable, taxes payable

**Current Procedural Terminology System** (CPT-4) a coding system used to identify physician services such as injections and surgeries; the health care industry's standard for reporting of physician procedures and services using a five-digit code

**current ratio** current assets divided by current liabilities for a business; a measure of a firm's ability to meet its short-term obligations

**Cushing's syndrome** pituitary basophilism (disorder of basophilic blood cells)

**custodial care** medical or nonmedical services that do not seek to cure; provided during periods when the medical condition of the patient is not changing or does not require continued administration by medical personnel

**customary charge** the charge a physician or supplier usually bills his patients for furnishing a particular service or supply

**cutter mill** machine that contains a rotating, slicing impeller and screen enclosed in heavy-duty housing and used to reduce the particle size of fibrous materials

**cyan-** **1:** prefix meaning blue or bluish color **2:** C~N chemical group; same as cyano-

**cyano-** **1:** prefix meaning blue or bluish color **2:** C~N chemical group; same as cyan-

**cyanocobalamin** most commonly used form of vitamin B<sub>12</sub> in which a cyano group is attached to the central cobalt

**cyanogenetic** capable of producing cyanide as hydrogen cyanide

**cyanogenetic glycoside** glycoside that releases hydrogen cyanide on hydrolysis; example: laetrile (amygdalin)

**cyanosis** bluish color; generally refers to an excess of the reduced form of hemoglobin in the blood

**cyclamate** sodium or calcium salt of cyclamic acid; used as an artificial, nonnutritive sweetener that is no longer available in the United States but is in Canada; found to induce cancer in rats

**cyclic adenosine monophosphate** adenosine monophosphate in which the phosphate group bridges between the 3'- and 5'-OH groups

**cyclone mill** SEE *fluid energy mill*

**cycloplegia** loss of eye accommodation due to ciliary muscle paralysis

**cyclotron** electromagnetic machine designed to accelerate charged atomic particles to velocities corresponding to several million electron volts; example: Van der Graff accelerator for electrons

**cylindrical mixer** SEE *tumbling mixer*

**cysteine** sulfhydryl-containing amino acid, commonly found in proteins; synonyms: 3-thio-2-aminopropanoic acid and 3-mercaptoalanine

**cystic fibrosis transmembrane conductance regulator** the plasma membrane glycoprotein that functions as a chloride channel in epithelial cells

**cystine** oxidized form of cysteine in which the sulhydryl groups of two cysteines are joined together as a disulfide bond through the elimination of the hydrogen atoms

**cystitis** inflammation of the bladder; usually caused by *E. coli* infection

**-cyte** suffix meaning cell

**cyto-** prefix meaning cell

**cytochrome** **1:** one of several iron-containing porphyrinoproteins **2:** any one of several respiratory pigments found in the cell **3:** pigment involved in oxidation-reduction reactions in cellular metabolism

**cytochrome P-450** cytochrome of liver microsomes responsible for the nonspecific oxidation of drugs and endogenous steroids

**cytokine** a group of hormonelike polypeptides and proteins; also referred to as growth factors

**cytoplasmic membrane** thin biological membrane enclosing a cell

**cytoskeleton** a set of protein filaments (microtubules, macrofilaments, and intermediate fibers) that maintains a cell's internal structure and allows organelles to move

**cytostatic agent** substance that inhibits cell growth; example: zinc pyrithione in treating dandruff

**cytotoxic** agent that has adverse effects on cells

**DaCosta's syndrome** circulatory neurasthenia



**Dakin's solution, modified** diluted sodium hypochlorite (480 mg per 100 ml) solution, used as a disinfectant, cleaner, and deodorant

**damage** **1:** monetary award granted by court action for injury or loss caused by the actions of another **2:** actual—award equal to the true value of loss or damage; **3:** punitive—award in excess of actual damage incurred which serves as punishment for a wrongful act; synonym: exemplary damage

**Damian** Arabian Christian; along with his brother Cosmas, one of the patron saints of pharmacy and medicine; martyred in A.D. 303 by subjects of the Roman Emperor Diocletian

**Daniel B. Smith Practice Excellence Award** established by the American Pharmacists Association in 1964 for outstanding performance and achievement in the recipient's community and practice setting

**Dargavel, John W.** (1894-1961) state pharmacy board executive of the Minnesota Board from 1923-1934; served as the executive secretary of the National Association of Retail Druggists 1933-1961; proponent of fair trade laws

**Darling's disease** histoplasmosis

**date of service** the date on which health care services were provided to a covered person

**dative bond** SEE *coordinate covalent bond*

**days** the unit of measure of the length of a hospital confinement



**days/1,000** SEE *bed days/1,000*

**day supply maximum** the maximum amount of medication an insured person may receive at one time

**de-** prefix meaning down or away

**dead spots** merchandise space where a typical customer does not see displayed products

**deamination** the removal of an amino group from a molecule

**debility** SEE *asthenia*

**debt-to-equity ratio** total debt divided by total owner's equity for a business; a broad measure of the claims of creditors against the assets of the business

**Debye forces** SEE *induction effect*

**Debye-Huckel theory** basic quantitative estimates of activity and activity coefficients of an ionic species in dilute solution, and of ionic strength; a basis for the measure of effective ionic concentration

**decantation** process of separating a solid from a liquid by allowing the solid to settle and carefully pouring the liquid from the top of the sediment

**decarboxylation** loss of a carboxyl group from a molecule through removal of carbon dioxide, carbonate, or bicarbonate; reaction in which a carboxylic acid loses CO<sub>2</sub>

**deception** act committed in order to make a person believe something that is not true

**decision analysis** a systematic approach to decision making under uncertain conditions; SEE *decision tree*

**decision tree** an analytic tool for decision analysis that displays the temporal and logical sequence of a clinical decision problem

**decoction** solution of the active (soluble) constituents of crude drugs prepared by boiling the drug in water and straining the resulting solution

**decrepitation** phenomenon of crackling or exploding when crystals containing interstitial water are heated

**deductible** specified fixed amount of the cost of his/her medical care that an insured person must pay each plan year before the insurer makes any payment (if plan so requires)

**deduction** scientific process of reasoning by which logical consequences are developed from a priori observations

**deductions** items, the dollar value of which may be subtracted from an individual's or a firm's income prior to computation of tax liability

**defendant** person against whom a legal action is brought

**defensive medicine** the medical practice of performing laboratory tests or other procedures to protect against potential malpractice lawsuits, even though such services may not be necessary to diagnose or treat

**defervescence** abatement of fever

**definite integral** synonym: integration between limits; SEE *integration*

**deflocculation** process of dispersing individual particles of a loosely held agglomerate more uniformly throughout a dispersion medium

**defoliant** agent that removes foliage from plants

**degree Celsius** SEE *temperature*

**degree centigrade** SEE *temperature*

**degree Fahrenheit** SEE *temperature*

**degree Kelvin** SEE *temperature*

**degree of dissociation** extent of ionization of a substance (drug) in aqueous solution; measured by determination of electrical conductance at various dilutions to infinite dilution; the ratio of electrical conductance of a solution to the electrical conductance at infinite dilution

**degree of mixing** a measure of the effectiveness of a mixing process; usually accomplished by random sampling and subsequent analysis of the composition of the mix

**degrees of freedom** **1:** (statistical) the number of independent quantities in a set of numerical quantities **2:** (Gibbs' phase rule) the number of independent variables that must be fixed in order to define or describe a system under study **3:** (Lagrange's dynamics) each free particle in space has three degrees of freedom that are reduced by the number of stable bonds between the particles

**dehydration** reaction process or condition in which there is a loss of water

**dehydrogenase** enzyme that catalyzes the removal of hydrogen from a compound; type of oxidoreductase in which an acceptor for hydrogen, other than oxygen, is involved

**dehydrogenation** reaction in which there is a loss of hydrogen

**dehydrohalogenation** reaction in which there is a loss of hydrogen chloride, hydrogen bromide, or hydrogen iodide

**deionized water** water that has been purified by removing cationic and anionic impurities through the use of ion-exchange resins

**deleterious** harmful; hurtful

**deliquescence** phenomenon whereby a solid absorbs water vapor (moisture) to the extent that it is liquefied as an aqueous solution

**delusion** fixed false belief that cannot be corrected by reason

**demand** the amount of service a population seeks to obtain through the health delivery system

**demand item** one that brings people into the pharmacy or one that people will make a special effort to seek out

**demethylation** reaction in which a methyl group is removed from a molecule

**demulcent** an agent that soothes the part of the body to which it is applied; usually restricted to agents acting on mucous membranes; examples: glycerin and cold cream for skin, nonmedicated lozenges to soothe the throat

**denature** to alter a substance from its natural state; most often used in reference to alterations in protein structure and the rendering of alcohol solutions nondrinkable

**densensitization** a process in which target cells adjust to changes in stimulation by inactivating or decreasing the number of cell surface receptors

**densitometer** instrument used with electrophoretograms and thin-layer chromatograms to determine the amount of substance in the individual fractions (bands) by measurement of the amount of light passing through the separated material

**density** mass per unit volume; cgs unit: gram (g) per  $\text{cm}^3$ ; apparent—usually observed; bulk—includes the volume of all void spaces, as in a powder; relative—comparison (or ratio) of the density of one substance to that of another

**dent-** prefix meaning tooth; same as *denta-*, *denti-*, *dento-*

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**dental floss** intraoral cleaning device consisting of a long thread (e.g., rayon) which is wrapped around both index fingers and directed up and down the interdental spaces

**denti-** prefix meaning tooth; same as *dent-*, *denta-*, *dento-*

**dento-** prefix meaning tooth; same as *dent-*, *denta-*, *denti-*

**dentrifice** substance (such as toothpaste) used with a toothbrush to clean the surface of teeth

**denture** an artificial replacement for one or more teeth; also known as “false teeth” or “prosthetic tooth or teeth”

**deoxy-** prefix meaning lack of an oxygen at a particular site in a molecule when compared with a parent oxygen-containing structure; example: deoxyribase; same as desoxy-

**dependent** an individual who relies on a spouse, parent, or grandparent who is the covered person

**dependent variable** that part of a mathematical expression changed in accordance with a controlled change of another variable; CONTRAST *independent variable*

**depilatory** agent employed to rid the body of excessive or bothersome hair; example: calcium thioglycollate with calcium hydroxide

**depolarization 1:** excitation or stimulation of a nerve or muscle; caused by the influx of sodium ions from outside the membrane that shifts the membrane potential from a negative toward a positive charge **2:** a reduction in the separation of a charge on a substance

**depot 1:** body compartment where a drug accumulates **2:** an injected dosage unit from which a drug is released to the tissues

**depreciation** a reduction in the book value of an asset over time

**depression** mood that is sad and full of despair; often a normal feeling unless severe functional impairment occurs

**depth filter** filter device that allows partial penetration of particles from a slurry to be trapped as the channel diameters become smaller

**DeQuervain's disease** subacute thyroiditis

**derivative** instantaneous rate determined by differential calculus methods; the slope of the tangent at a given point on a curve

**dermat-** prefix meaning skin; same as dermat-, dermo-

**dermatitis** inflammation of the skin, characterized by weeping vesicles and/or dry scaling; induced by internal causes (endogenous dermatitis; atopic dermatitis) or exposure to external irritants or allergens (e.g., poison ivy)

**dermato-** prefix meaning skin; same as dermat-, dermo-

**dermatologist** medical practitioner who specializes in knowledge and treatment of skin diseases

**dermatology** study of the skin (dermis) and its diseases; a branch of medical practice

**dermo-** prefix meaning skin; same as dermat-, dermato-

**desiccant** a drying substance having a high affinity for water; usually packaged and placed in containers of medicaments to maintain a dry at-

mosphere for enhanced stability of the drug product; example: silica gel in a dry dosage form container for moisture protective packaging

**desiccate** to dry using little or no external heat

**desiccation** process of drying a solid substance at a low temperature; example: drying ephedrine by placing sulfuric acid and the ephedrine in a closed container separated from each other (the acid preferentially absorbs the water from the ephedrine)

**designated mental health provider** health care worker who evaluates, diagnoses, refers, and/or provides mental health and substance abuse services, per contract with an insurer

**desorption** separation of adsorbate from adsorbent; synonyms: opposite and reverse adsorption

**desoxy-** prefix meaning lack of an oxygen at a particular site in a molecule when compared to a parent oxygen-containing substance; same as deoxy-

**desquamation** to shed or scale off the surface epithelium

**detail man** SEE *medical service representative*

**detergent** surfactant used as a cleansing agent

**determinate error** deviation from the true value that can be ascertained, eliminated, and/or corrected in data treatment

**detoxification 1:** rendering inactive or removing a toxic substance by one or more methods including enhanced excretion, binding by complexation, or destruction of toxic molecules **2:** medical management for an individual going through withdrawal from substance abuse

**Deutschlander's disease** tumor of metatarsal bone

**dew point** temperature at which a gas is saturated with water vapor and condensation to the liquid state begins

**dextro-** prefix meaning right

**dextrorotatory** optically active compound that rotates the plane of polarized light to the right

**dextrose** a white crystalline powder ( $C_6H_{12}O_6$ ) that occurs in many sweet fruits; synonyms: glucose, grape sugar, starch sugar

**di-** prefix meaning two; example: a dipeptide (compound containing two amino acids joined by an amide bond)

**Di Guglielmo's disease** acute or chronic erythroleukemia

**diabetes** either diabetes insipidus or diabetes mellitus, having the common symptom of increase in urinary volume

**diabetes, type I** usually diagnosed in children and young adults; was previously known as juvenile diabetes; caused by the body not producing insulin

**diabetes, type II** the most common form of diabetes; caused by either the body not producing enough insulin or the cells ignoring the insulin

**diabetes insipidus** disease in which there is a larger than normal volume of urine due to the absence of antidiuretic hormone (normally secreted by the pituitary gland) or due to a defect in reabsorption of water by the tubules of the kidney

**diabetes management** patient care services to provide education and monitoring

**diabetes mellitus** a disease characterized by elevated glucose levels in the blood and the presence of glucose in the urine thus increasing urine volume; associated with a lack of or an inability to use insulin

**diabetic** patient with either diabetes mellitus or diabetes insipidus

**diabetogenic** producing diabetes

**diabetogenic hormones** hormones that tend to elevate blood sugar levels; examples: adrenocorticosteroids, growth hormone

**diagnosis** determination of the nature of a disease in a patient by using the patient's history, physical assessment, observation of the course of the disease, and other pertinent data

**diagnosis-related groups (DRGs)** a system of classification for inpatient hospital services based on principal diagnosis, secondary diagnosis, surgical procedures, age, sex, and presence of complications used as a financing mechanism

**diagnostic center** free-standing or hospital-based facility that specializes in diagnosing illness and injuries

**diagnostics 1:** science of diagnosis **2:** devices, reagents, and methods used in the determination of a disease

**dialysance** instantaneous rate of the net exchange of solute molecules passing through a membrane in dialysis

**dialysis** passage of a solute through a semipermeable membrane; example: kidney dialysis to remove waste products from the blood of patients whose kidneys have failed

**Diamond-Blackfan syndrome** congenital hypoplastic anemia characterized by progressive anemia with sparing of white cells and platelets

**diaphoresis** perspiration or sweat

**diaphoretic** drug that induces sweating

**diaphragm** barrier consisting of a stretched membrane or other material that is placed over a particular container or a body cavity

**diaphragm, vaginal** device, usually dome-shaped, worn during copulation over the cervical mouth for prevention of conception or infection

**diaphragm valve** SEE *valve*

**diaplacental drug transfer** process in which a drug in the amniotic fluid reaches fetal circulation by diffusion

**diarrhea** significant increase in frequency and fluid content of bowel movements

**diarrheagenic** inducing diarrhea (e.g., medications that increase peristalsis)

**diascopy** placing the finger on an area of skin with mild pressure to determine whether it can be blanched through mechanical vasoconstriction; if blanching occurs, nonprescription hydrocortisone may help the condition

**diastereoisomers** isomers containing more than one chiral center that are not mirror images of one another; diastereoisomers differ in their solubilities, boiling points, melting points, and the degree and direction of their rotations of polarized light; examples: ephedrine and pseudoephedrine, quinine and quinidine; synonym: diastereomers

**diastole** maximal expansion or period of maximal expansion of the heart; in particular, the left ventricle

**diastolic** measurement of the amount of pressure on the walls of blood vessels when the heart is at rest; bottom of the two blood pressure numbers

**diatomaceous earth** form of silica consisting of fragments of diatoms; used as a filtering medium; synonyms: kieselguhr, purified infusorial earth, diatomite

**diatomite** SEE *diatomaceous earth*

**dichroism** property shown by some pigments or crystals (double refractive) that exhibit one color in reflected light and another in transmitted light

**die** strongly constructed receptacle unit of a tableting machine that holds the granules as they are being compressed by lower and upper tablet punches

**Diehl, Conrad Lewis** (1840-1917) pharmacist active in practice and education; wrote the annual report "Progress in Pharmacy," published in the *APhA Proceedings* from 1873-1891 and 1894-1915, reports that reviewed

the advances in both Europe and America and covered more than 11,000 pages in total

**dielectric constant** ratio of the electrical capacity of a given substance in a condenser to that occurring within a vacuum; a measure of the inherent polarity potential of a given substance

**differential pressure flow meter** instrument that measures flow rates of a liquid or air using a calibrated scale; reads flow rate based on pressure differences across a restricted flow region

**differential scanning** SEE *calorimetry*

**differentiation rule** any one of several procedures for obtaining the derivative of various types of algebraic equations

**diffraction** spreading of light waves behind a grating, leading to the production of interference patterns and the bending and breaking of the light ray into its component parts (respective wavelengths)

**diffuse double layer** SEE *zeta-potential*

**diffusion** movement of molecules (or minute particles) by internal kinetic motion from a region of higher concentration to a region of lower concentration (that is, across a concentration gradient) in order to reduce the potential energy in a system

**diffusion coefficient** quantitative expression of the amount of substance diffusing per unit time across a unit area, as in Fick's first law of diffusion

**diffusion equilibrium** biopharmaceutical term used to describe the state in which blood concentration of a drug is in a "steady state" with the concentrations of the drug in other body tissues

**diffusion layer** area on or near the surface of a drug particle from which dissolving molecules first escape to become a solution; a saturated layer of drug solution that envelops the surface of the solid drug particles and diffuses into the body of the solution

**digestant** a drug that promotes digestion

**digestion 1:** action or process of breaking down food into simpler chemical compounds **2:** a method of extraction in which the solute and solvent are heated gently for a long time period

***Digitalis purpurea*** species of foxglove plant; source of cardiac glycosides, including digitoxin

**digital rectal examination** test for colorectal carcinoma in which the physician inserts a gloved finger rectally to detect abnormalities

**digital thermometer** thermometer with a digital display



**dihydropteroate synthetase** enzyme that catalyzes the condensation of the pteridine ring with *p*-aminobenzoic acid to yield dihydropteroic acid; an intermediate product in folic acid biosynthesis

**dilatant flow** characteristic exhibited by polyphasic, liquid systems in which viscosity increases as “shearing stress” increases; example: pharmaceutical suspensions for which “rate of shear” (velocity gradient) is plotted against “shearing stress” (force per unit area) using an appropriate viscometer

**diluent** any substance added to dilute or make less concentrated; may be a solid (sucrose, lactose, starch), a liquid (water, alcohol, glycerin), or a semiliquid (liquid glucose)

**diluted acid (official)** refers to 10 percent w/v solutions of all acids except diluted acetic acid which is 6 percent w/v

**diluted alcohol** aqueous alcoholic solution containing 41 to 42 percent w/v or 48.4 to 49.5 percent v/v ethanol at 15.56°C

**dimension 1:** measureable quantity or property of a substance **2:** (of performance) cluster of related work behaviors that can be recognized by other practitioners as having similar purpose

**dimercaprol** antidote for heavy metal poisoning; synonym: British antilewisite

**Dioscorides** first century A.D. Greek pharmacognocist who collected and studied medicinal plants in the Roman Empire; wrote *De Materia Medica libra quinque*

**dipeptidase** enzyme that catalyzes the hydrolysis of a dipeptide into its constituent amino acids

**dipeptide** organic compound in which two amino acids are joined by an amide bond between the carboxyl of one amino acid with the amino group of the other amino acid

**diplo-** prefix meaning twin or two

**dipole-dipole interactions** weak attractive forces between molecules in which the electronegative end of one molecule orients itself toward the electropositive end of another

**dip tube** hollow, cylindrical part of an aerosol container that conveys its contents from the inside to the valve release component of the same container

**direct costs 1:** medical—the amount spent on medical products and services to treat illness, including hospital care, professional services, drugs, and supplies **2:** nonmedical—out-of-pocket expenses for items outside

the medical care sector, including transportation to the site of treatment and lodging; costs that are wholly attributable to a service

**direct dryer** machine to remove liquid by direct transfer of heat to the material to be dried; example: convection heat transfer; antonym: indirect dryer

**direct expense** expense incurred solely for the purpose of performing a specific activity (such as dispensing prescriptions); examples: fees, prescription vials, patient profile forms

**direct-to-consumer advertising** advertising of medications via broadcast or print media directly targeting consumers or potential consumers

**disability** any condition that results in functional limitations which interfere with an individual's ability to perform his/her customary work and/or substantial limitations in one or more major life activities

**disability income insurance** insurance that periodically pays a disabled subscriber to replace income lost during the period of disability

**disability management** strategy to prevent disability from occurring, and to promote a safe and appropriate return to work and achievement of optimal functional capabilities

**disaccharidase** enzyme catalyzing the hydrolysis of a disaccharide molecule into two monosaccharides

**disaccharide** carbohydrate composed of two monosaccharides joined to form a single molecule; example: sucrose

**disallowance** a denial by the payer for portions of the claimed amount

**disc or disk** circular platelike organ or structure

**disc filter** a series of filter pads separated by metal plates (with openings) placed in a cylindrical casing to accomplish pressure filtration

**discharge planning** the evaluation of patients' medical needs in order to arrange for appropriate care after discharge from an inpatient setting

**discharges** patients who leave an overnight health care facility per time period

**disclosure** information released by a managed care organization or health care insurer on (1) policies and practices affecting access to covered care; (2) the scientific and clinical basis for those policies; (3) any relevant criteria used in such decision making; and (4) the decision-making process itself, including how public input is solicited and considered as well as the timing of revisions

**disc mill** cutting machine that consists of circular rotating teeth or convolutions that reduce the particle size of fibrous materials passing between them

**discounted charges** hospital billing charges reduced by some percent for an HMO buying a significant and/or predictable amount of hospital care

**discounted fee-for-service charges** the amount of money a provider charges for its health services less a fixed discount, which is negotiated between the provider and the managed care plan; typical arrangement sought by preferred provider organizations (PPOs) with physicians, hospitals, and other providers that are selected for their networks

**discounting** in pharmacoeconomics, a procedure that adjusts for differences in the timing of costs and benefits

**disease** a disorder with specific cause(s) and recognizable signs and symptoms; any bodily abnormality leading to interruption, cessation, or disorder of proper physical or mental functions, systems, or organs, except those resulting directly from physical injury

**disease classification** a systematic arrangement of related diagnoses into a limited number of clinically homogenous categories, usually to support the analysis of the quality, access, utilization, and cost of health care services.

**disease episode** the entire time period in which a person has a specific disease

**disease management** an effort to improve patient outcomes and lower costs by organizing managed care initiatives around patients with a particular disease or condition

**disease-specific insurance** insurance that provides benefits should the insuree develop a specific illness such as cancer or heart disease; usually purchased as a supplement to conventional insurance policies that may have ceilings or limitations

**disenrollment** the process of terminating individuals or groups from their enrollment with an insurance carrier

**disinfectant** substance typically used on nonliving objects to render them aseptic (without contamination)

**disinfection** use of chemicals lethal to microorganisms; used to reduce the number of microorganisms on a surface or on the hands

**disintegrant** substance added to a tablet granulation during its preparation and after granulation to facilitate the breaking apart of the tablet into granules and the breaking apart of the granules, respectively, when it is

subjected to the fluids of the gastrointestinal tract; synonym: disintegrating agent; examples: microcrystalline cellulose, dried starch

**disintegrating agent** SEE *disintegrant*

**disintegration test** procedure designed to measure the time it takes a tablet to disintegrate or to break into small particles (granules) and pass through mesh wire of a specified screen size

**disintegration tester** apparatus used to determine the time required for tablets to break apart and the small particles to pass through a specified mesh wire screen under standard fluid and temperature conditions; refer to the *United States Pharmacopeia–National Formulary* for detailed testing procedures

**dismemberment** loss of body parts usually stemming from accidental physical injury

**dispensary** a place where drugs and medical devices are dispensed; usually an institutional term

**dispensatory** a treatise on medicinal substances and formulations; example: United States Dispensatory

**dispense** to give a prescription to a patient

**dispense as written** (daw) directive issued by prescriber that the brand name product or specific manufacturer is not to be substituted with another

**dispensing fee** the amount paid to a pharmacy for each prescription, in addition to the negotiated formula for reimbursing ingredient cost; fee added to the cost of the medication; synonym: professional fee

**dispensing tablet** SEE *tablet, compressed*

**dispersed phase** particles or globules distributed throughout a medium or vehicle; example: oil globules constituting the internal phase of an oil-in-water emulsion

**dispersion** system or formulation that consists of one or more phases distributed as discrete particles (or globules) throughout a fluid medium (liquid or gas)

**dispersion, colloidal** SEE *solution, colloidal*

**dispersion, coarse** fluid medium containing particles larger than 0.1 micrometers; examples: emulsion, suspension

**dispersion effect** SEE *London forces*

**dispersion medium** vehicle in which particles or globules are distributed

**dispersion step** process to produce or effect a smooth, wetted, uniform, and easily dispersible quantity of a drug formulation using a colloid mill or other blender with surface active agents and viscosity enhancers

**disposition 1:** distribution of an absorbed drug into various body compartments or sites of action **2:** (legal) manner in which a matter of interest is settled

**disproportionate share payment** an amount added to government payment rates for providers, usually hospitals, that treat large numbers of patients unable to pay their bills

**dissociation constant 1:** equilibrium constant for the ionization of a weak acid or weak base; SEE *ionization constant* **2:** equilibrium constant for the separation of a drug from its drug-receptor complex **3:** equilibrium constant for the separation of a substrate from its enzyme-substrate complex

**dissolution** process by which a solute becomes homogeneous with a solvent; the process of dissolving (a drug must undergo dissolution before absorption can occur)

**dissolution rate** amount of solute dissolving per unit of time in a given solvent under specified conditions

**dissolution test** procedure used to measure the time for the active constituents of a drug product to dissolve; refer to the *United States Pharmacopeia–National Formulary* for detailed procedures

**distal** farther away from a point of reference; contrasted to proximal

**distention** distended or stretched

**distillate** liquid from condensing vapor

**distillation** purification process in which a liquid is heated to a vapor state and subsequently condensed into another container as the liquid state

**distillation, reflux** form of distillation in which the solvent of a reaction first vaporizes and subsequently condenses back into the original container; usually used to enhance a reaction or other process

**distilled water** water that has been purified by being heated to the vapor form and subsequently condensed into another container to form liquid water free of nonvolatile solutes; one means of preparing purified water; SEE *Water for Injection, USP*

**distribution** partitioning of a drug to the many locations or compartments in the body or another heterogeneous system

**distribution, frequency** a plot of the number of times a value (or a narrow range of values) appears in a set of data versus its value (or mean value)

**distribution, normal** a frequency distribution with data equally occurring on both sides of the mean value, forming a symmetrical, bell-shaped curve

**distribution coefficient** the ratio of the solubility (or concentration) of a substance in an organic immiscible solvent to the solubility (or concentration) of the same substance in water when observed in the same system under specified conditions at equilibrium

**distribution method** procedure used to analyze complexes by use of differential solubilities of the noncomplexed and complexed molecules

**distributive justice** a principle of ethics that refers to the equal distribution of the benefits and burdens of society among all of society's members

**disulfide bridge** a covalent bond formed between the sulphydryl groups in two polypeptide chains

**disulfide exchange** an enzyme-catalyzed posttranslational process in which disulfide bonds are formed, resulting in a biologically active protein

**diterpene** hydrocarbon composed of twenty carbon atoms; four isoprene units connected in a "head-to-tail" fashion

**diuresis** excretion of urine

**diuretic** drug that increases the volume of urine thereby decreasing body fluids and electrolytes; used in treatment of congestive heart failure and hypertension

**diurnal** occurring during the day or a period of light; opposite of nocturnal

**dividend** earnings credited to a stockholder as a return on investment; may be cash or additional shares; usually paid on a periodic basis (normally each quarter)

**Dixon plots** five types of plots to determine enzyme kinetics and to distinguish between competitive, noncompetitive, and uncompetitive inhibition of enzyme reactions

**DNA fingerprinting** a laboratory technique used to compare DNA banding patterns from different individuals

**DNA ligase** enzyme capable of attaching the cleaved ends of DNA; useful physiologically in repair processes and useful pharmaceutically in recombinant DNA processes

**DNA microarray** a DNA “chip” used to analyze the expression of thousands of genes simultaneously

**DNA profile** consists of the pattern and number of repeats each in STR sequences; used to identify individuals

**DNA typing** DNA analysis technique used to identify individuals; involves the analysis of several highly variable sequences called markers

**docking protein** protein attached to the membrane of the rough endoplasmic reticulum that helps secrete other proteins out of the cell

**doctor of dental surgery/science** (DDS) professional degree required to become a dentist

**doctor of pharmacy** (PharmD) the entry-level, professional degree of pharmacy

**doctor of philosophy** (PhD) research-oriented degree program usually requiring a minimum of three collegiate years of study beyond the baccalaureate degree and an original research contribution to be reported in a dissertation

**documentation** creating, collecting, organizing, storing, citing, and disseminating documents or the information recorded in documents; a collection of documents or verifying information on a given subject

**dodeca-** prefix meaning twelve times; example: dodecahydrate, meaning 12 water molecules of hydration

**dog button** common name for seed of the *Nux vomica* plant; a source of strychnine

**Domagk, Gerhard** (1895-1964) discovered, in 1935, that Prontosil (trademark), a sulfonamide dye, was an effective systemic antibacterial for treating streptococcal infection (thus initiating the “sulfa drug era”)

**Donald E. Francke Medal** established by the American Society of Health-System Pharmacists in 1973 to honor significant contributions to international hospital pharmacy

**Donnan membrane equilibrium** a steady-state condition observed with two solutions separated by a semipermeable membrane, one of which contains a protein (charged macro molecule) that will not pass through the membrane, and both of which contain ions permeable to the membrane; when the system is allowed to reach equilibrium, an unequal distribution of the diffusible ions exists in the two solutions and there is a measurable osmotic pressure even at equilibrium; a phenomenon observed in capillary beds and other places in the body; also known as “Gibbs-Donnan equation”

**dosage form** pharmaceutical preparation intended for use by or administration to a patient with a minimum of further processing; examples: tablet, capsule, elixir, suspension

**dosage range** maximum and minimum dose to achieve a therapeutic benefit without toxic effects

**dosage regimen** strictly regulated amount of drug and schedule for administration to a patient

**dosage rules** **1:** rules for calculating dosage, especially for children **2:** Clark's rule—weight in pounds times adult dosage divided by the average adult weight (150 lb) equals child dose **3:** Young's rule—age in years divided by age plus 12 times adult dosage equals child dose **4:** body surface area (BSA) rule—BSA in  $\text{m}^2$  (of child) divided by the average adult BSA ( $1.73 \text{ m}^2$ ) multiplied by the adult dosage equals child dose

**dose** volume or quantity of a medicinal agent to be taken at one time (unit dose) or in a given time period; example: daily dose

**dose, geriatric** adjusted dose to be given to an elderly person

**dose, lethal** fatal dose

**dose, loading** initial dosage unit or regimen to establish a rapid therapeutic level

**dose, maintenance** dosage regimen required to continue therapeutic blood levels for the required time period

**dose, pediatric** adjusted dose given to an infant or a child; usually based on age, weight, or body surface area; SEE *dosage rules*

**dose-dependent kinetics** pharmacokinetics of a drug that differs depending on whether the drug is given in a high or a low dose

**dose response curve** **1:** plot of the amount of drug in the body (expressed in a number of ways) as a function of time; used to determine the dose for optimal therapeutic response **2:** (in molecular pharmacology) a plot of the response of a tissue or cell to a drug versus the log of the dose (concentrations) of the drug; synonym: log dose response curve

**dosing interval** time elapsed between the administration of consecutive doses of a drug

**double bond** a binding of two atoms that share two pairs of electrons, one pair of which is a sigma bond and the other a pi bond that exists as an electron cloud around the sigma bond

**double-pipe heat exchanger** heat transfer system utilizing a tube within a tube as the component parts in which heat transfer occurs



**double reciprocal plot** a graph of the reciprocal of the rate of an enzyme-catalyzed reaction versus the reciprocal of the substrate concentration; example: a Lineweaver-Burk plot; SEE *Dixon plots*

**douche** aqueous solution directed against a part of or instilled into a cavity of the body for cleansing and/or antiseptic action

**douche, vaginal** liquid preparation, intended for the irrigative cleansing of the vagina, that is prepared from powders, liquid solutions, or liquid concentrates and contains one or more chemical substances dissolved in a suitable solvent or mutually miscible solvents

**down-regulation** the reduction of cell surface receptors in response to stimulation by specific hormone molecules

**Down's syndrome** condition in which an individual has 47 chromosomes; an extra chromosome (chromosome 21) that produces a mental defect, enlarged tongue, a mongoloid appearance, and dwarfism of the child; synonyms: trisomy 21, mongolism

**draft** SEE *draught*

**dragee** sugar-coated oral solid dose form

**dram** an apothecary unit of weight equal to 60 grains, 3 scruples, 1/8 apothecary ounce, or 3.5437 grams

**draught** liquid mixture intended to be drunk at one time; synonym: draft

**Dressier's syndrome** complications developing several days to weeks following a myocardial infarction; postmyocardial infarction syndrome

**dressing** cover placed over a wound (usually made of absorbent gauze); the application of various materials for protecting a wound

**drops** medications given in small doses, used especially for pediatrics when medicines are to be instilled in eyes, ears, or nose

**dropsy** SEE *anasarca*

**drug** substance (or its dosage form) intended for use in the diagnosis, mitigation, treatment, cure, or prevention of disease

**drug abuse** use of a drug for other than medically accepted therapeutic purposes; examples: deliberate overdose, ingestion to produce euphoria

**drug detailing** presenting information about pharmaceutical products to prescribers to educate them about activity, uses, side effects, proper dosage, administration, etc.

**drug disposition** collective expression to describe release, absorption, distribution, and elimination of a medicinal substance

**Drug Efficacy Study Implementation** (DESI) the program under which the FDA reviewed the effectiveness of drugs approved between 1938 and 1962; established in 1962 following amendment of the Food, Drug and Cosmetic Act to require closer regulation of drugs sold in the United States; part of the Drug Amendments of 1962 (Public Law 87-781) that dictated all new drugs must be shown by adequate studies to be both safe and effective before being marketed; applied retroactively to all drugs approved as safe from 1938 to 1962 (referred to as pre-62 drugs), which were allowed to remain on the market while evidence of their effectiveness was reviewed

**drug elimination** collective expression to describe metabolism and secretion, excretion, and/or exhalation of a drug from the body

**drug formulary** a listing of prescription medications which are preferred for use by a health plan and which will be dispensed through participating pharmacies to covered persons

**druggist 1:** former name for a pharmacist in America; SEE *apothecary*  
**2:** English name for a drug wholesaler

**Drug Information Association** (DIA) organization to facilitate drug information dissemination

**drug interaction** the pharmacological influence of one drug on another; may be beneficial or harmful

**drug lag** time between the introduction of a new medicine in advanced technological countries (e.g., England, Germany, or Canada) and the United States

**drug metabolism** biochemical alteration of a drug; SEE *detoxification*, *biotransformation*; reaction (or a series of reactions) with two phases: phase I = substitution of a polar group on a drug molecule; phase II = substitution of a group or moiety on a polar group of a drug or drug metabolite (from phase I)

**drug metabolism, first-pass** SEE *first-pass effect*

**drug misadventuring** includes overdosage, subtherapeutic dosage, improper drug selection, drug interactions, adverse reactions, patient non-compliance, and untreated conditions

**Drug Price Competition and Patent Term Restoration Act** passed in 1984, with these effects: (1) extended the patent terms for pharmaceutical products meeting certain criteria, and (2) authorized procedures for the approval of generic versions of prescription drugs first approved after 1962; also known as the "Waxman-Hatch Act"

**drug product** drug dosage form suitable for marketing and dispensing to consumers

**drug product selection** act of choosing the source or supply of a drug product in a specified dosage form; usually done by a pharmacist, a physician, or a pharmacy and therapeutics committee of a health care institution

**drug receptor complex** drug action where the drug molecule is weakly bound to a receptor site, such as a specific area on an enzyme or on nucleic acid

**drug receptor specificity** concept that a biochemical receptor will react only with a limited number of chemically similar or analogous compounds

**drug room** place supervised by a physician or a nurse where medicinal agents are stored for distribution in their original containers without a compounding procedure

**drug selection** when the pharmacist is legally authorized to decide whether to dispense brand-name drugs or generic equivalents

**drugstore** community or retail pharmacy; a pharmaceutical service outlet

**drug use evaluation** (DUE) an evaluation of prescribing patterns of prescribers to specifically determine the appropriateness of drug therapy; has three forms: prospective (before or at the time of prescription dispensing), concurrent (during the course of drug therapy), and retrospective (after the therapy has been completed); same as “drug utilization review”

**drug utilization** the prescribing, dispensing, administering, and ingestion or use of pharmaceutical products

**drug utilization review** a quantitative evaluation of medication use, prescribing patterns, or patient drug utilization to determine the appropriateness of drug therapy; applicable to an individual or group of patients

**dry-bulb temperature** in a drying process, the temperature of air measured with a nonmoisture-laden thermometer over an evaporating surface that is at the wet-bulb temperature; one of the readings taken when using a hygrometer

**Dry-Coater tablet press** (trademark) tableting machine designed to receive lower-punch-granular coating materials, a precompressed drug dosage unit (slug), and upper-punch-granular coating materials, sequentially, and then to compress the coat onto the precompressed dosage unit; a dry process used to coat tablets

**dryer** instrument or machine capable of effecting a liquid removal process; examples: spray, vacuum, and freeze dryers; SEE *tray dryer*; *spray dryer*; *vacuum dryer*; *freeze dryer*; *freeze drying*

**dry granulation method** the process whereby tablets are formed by compacting large masses of the mixture and then crushing and sizing these pieces into smaller granules; a method that does not involve moistening or adding a binding agent; SEE *slugging*

**dry-gum method** SEE *continental method*

**dry-heat sterilization** use of an oven to render a heat-resistant substance (or device) devoid of all life forms (140°C for 2 hours or 260°C for 40 minutes is usually sufficient)

**drying** process to remove a liquid (usually water) from the contents of a batch of solid or liquid materials; involves heat and mass transfer processes such as heat absorption into the substance to be dried, diffusion of the liquid molecules to the surface, vaporization (heat of vaporization must be added), and diffusion into the gaseous phase

**drying by expression** process of removing liquids from a wet mass of material by squeezing or compressing the mass; used to prevent waste in extraction and other separation processes in pharmaceutical production

**drying by sublimation** SEE *freeze drying*; *freeze dryer*

**dual choice** a term used to describe a situation in which only two carriers are contracted by a specific group; example: an employer offering its employees one HMO and one PPO or two HMOs and no PPO

**dual diagnosis** coexistence of more than one disorder in an individual patient; commonly refers to a patient who is diagnosed with mental illness in conjunction with substance abuse

**dual eligibles** refers to individuals who are eligible for both Medicare and Medicaid

**Dubin-Johnson syndrome** chronic idiopathic jaundice

**Duchenne's syndrome** anterior spinal paralysis with neuritis

**Duhring's disease** dermatitis herpetiformis

**Dunning, Henry Armitt Brown** (1877-1962) partner in Hynson, Westcott & Dunning; served as the president of both the American Pharmacists Association and its Foundation; was instrumental in the building of the APhA headquarters on Constitution Ave in Washington, DC; Remington Honor Medal recipient in 1926

**duodenum** first division of the small intestine

**duplicate coverage inquiry** request to an insurance company or group medical plan by another insurance company or medical plan to find out whether coverage exists for the purpose of coordination of benefits

**duplication of benefits** overlapping or identical coverage of an insured person under two or more health plans, usually the result of contracts with different service organizations, insurance companies, or prepayment plans

**Dupuytren's disease** plantar fibromatosis (abnormal growth of fibrous tissue on the sole of the foot)

**durable medical equipment** (DME) equipment that can stand repeated use, primarily and customarily used to serve a medical purpose, generally not useful to a person in the absence of illness or injury, and is appropriate for use at home; examples: hospital beds, bed pans, wheelchairs, oxygen equipment

**Durham, Carl** (1892-1974) Congressman pharmacist who co-authored the Durham-Humphrey Amendment establishing two classes of medicines (prescription and nonprescription) and the Durham-Reynolds Bill to establish the Army's Pharmacy Corps

**Durham-Humphrey Amendment** 1951 amendment to the Federal Food, Drug, and Cosmetic Act that first distinguished between legend (prescription) and nonprescription (OTC) drugs

**dynamic dialysis** method for determining protein binding by measuring the disappearance of a drug from one compartment of a dialysis cell; involves passage of a drug through a membrane into a compartment in which the complexation or binding to protein occurs

**dyne** the cgs unit of force (cm/sec<sup>2</sup>)

**dys-** prefix meaning painful, abnormal, bad, or difficult: CONTRAST *eu-*

**dysentery** any of a number of conditions characterized by inflammation of the mucous membrane lining of the colon and attended by cramps, bloody diarrhea, and fever; examples: amoebic dysentery, bacillary dysentery, viral dysentery

**dysesthesia** **1:** impairment of the sense of touch **2:** abnormally painful sensation caused by being touched **3:** pricking sensations as if by needles

**dyskinesia** abnormal voluntary movements, usually resulting in only partial or incomplete movements; type of extrapyramidal sign or symptom; an adverse effect of certain antipsychotics

**dyslexia** a condition resulting from a lesion in the central brain in which there is a loss of the ability to read

**dysmenorrhea** pain during menstruation

**dysphagia** difficulty in swallowing

**dysphonia** difficulty in speaking

**dysphoria** unpleasant mood

**dysplasia** abnormality of the development of size, shape, or organization of adult cells; abnormal tissue development

**dyspnea** difficulty in breathing

**dystonia** acute tonic muscular spasms

**dystrophy** defective development caused by poor nutrition

**E**

**Eales' disease** recurrent retinal and vitreous hemorrhage of unknown etiology

**Early and Periodic Screening, Diagnosis and Treatment**

screening and diagnostic services to determine physical or mental defects in recipients of Medicaid under age 21, as well as health care and other measures to correct or ameliorate any defects and chronic conditions discovered

**earth nut oil** oleaginous liquid consisting of glycerol esters of unsaturated and saturated fatty acids; sometimes used as adjuvant for pharmaceutical preparations; synonyms: peanut oil (one of a number of fixed oils or nonvolatile oils), earth wax; SEE *ceresin*

**earwax** SEE *cerumen*

**Ebers Papyrus** Egyptian parchment paper written about 1500 B.C., containing pharmaceutical and medical knowledge up to that time

**Ebert, Albert Ethelbert** (1840-1906) born in Germany; a graduate of the Philadelphia College of Pharmacy; spent most of his professional life in Chicago where he practiced, taught at the Chicago College of Pharmacy, and served as an editor

**Ebert Prize** established by the American Pharmacists Association in 1873 recognizing the author of the best report of original investigation of a medicinal substance published in the *Journal of Pharmaceutical Sciences* during the preceding year

**Ebstein's disease** congenital heart disorder with tricuspid valve displacement into the right ventricle; also known as "Ebstein's anomaly"

**ecchymosis** hemorrhagic area or bruiselike spot in subcutaneous tissues; frequently observed in hemorrhagic diseases

**ecgonine** alcohol part of the cocaine molecule

**echolalia** verbal repetition of words overheard by a patient, often accompanied by muscle twitching; a symptom of catatonic schizophrenia

**echopraxia** involuntary imitation of the movements of other people; synonyms: echomimia, echomotism

**eclampsia** coma and convulsions in pregnant women; a condition associated with hypertension, edema, and/or proteinuria

**Eclectic Pharmacy and Medicine** sect or school that purports to select the best from all other systems of medicine; sect activity-simulated research in pharmacy and medicine, especially on the use of natural products

**ectopic** occurring outside of its normal place; example: pregnancy occurring in the Fallopian tube

**edema** abnormal collection of large amounts of fluid in intercellular spaces; manifested by swelling and congestion in a part of the body

**edentulous** lacking teeth

**edge filter** self-cleaning filter usually made of metallic plates that are periodically scraped to remove the caked material

**effective date** the date a contract goes into effect

**effective dose** the dosage of medicine that may be expected to produce the desired effect

**effector** a molecule whose binding to a protein alters the protein's activity

**effervescence** bubbling escape of gas through a liquid occurring when an effervescent salt is placed in water

**effervescent mixture** SEE *effervescent salt*

**effervescent salt** mixture of sodium bicarbonate and citric and/or tartaric acid plus the drug; when placed in water the CO<sub>2</sub> released by the reaction bubbles through the liquid thereby carbonating it; synonym: effervescent mixture

**effervescent tablet** tablet made from effervescent granules that releases CO<sub>2</sub> when placed in water; used to mask undesirable taste; SEE *tablet, compressed*

**efficacious** effective; having the ability to produce the desired effect

**efficacy** the ability of a medicine or treatment to produce the desired effect

**efflorescence 1:** process of losing water of crystallization, thereby converting a hydrated crystal to an amorphous powder **2:** rash or redness of the skin

**effluent 1:** flowing out **2:** liquid discharge from a process, such as in liquid chromatography

**effusion** leakage of fluid into a cavity or other part of the body

**ego** in Freudian theory, one of the divisions of the psychic apparatus responsible for mediation between the demands of primitive drives (the id), the internalized prohibitions (the superego), and reality

**Ehlers-Danlos syndrome** hyperelasticity of the skin, easy bruising, and joint extensibility, usually due to faulty collagen synthesis

**Ehrlich's test** method used to determine bilirubin in serum or plasma in which the sample is treated with a solution of a diazonium salt of sulfanilic acid

**eicosanoid** a hormonelike molecule that contains 20 carbons; most derived from arachidonic acid; examples: prostaglandins, thromboxanes, leukotrienes

**Einstein's equation** basic energy-mass relationship in which energy is expressed as mass times the square of the velocity of light;  $E = MC^2$ , where  $E$  equals energy,  $M$  equals mass, and  $C$  equals the velocity of light

**ejaculation** sudden discharge of fluid from a duct; example: release of semen containing spermatozoa during climax by the male

**elastic deformation** reversible strain (deformation); example: stress applied to a system having fluid characteristics that creates a strain or deformation that, when the stress is removed, returns to original shape

**elastin** scleroprotein found in connective tissue that serves to give the tissue its flexibility

**electrical gradient of a cell** refers to the negative charge on the intracellular surface and the positive charge on the outer cellular surface

**electro-** prefix meaning electricity

**electrocardiogram** (ECG, EKG) curve or plot composed of P, Q, R, S, and T waves and representing a summation of electrical events occurring within the heart as recorded by at least three electrodes placed on the skin surface of the body (P wave = atrial contraction, QRS interval = ventricular contraction, T wave = ventricular repolarization)

**electrocautery** process of directing a high-frequency electrical current through tissue



**electroconvulsive therapy** (ECT) electrically induced convulsions; used in treatment of some psychiatric conditions; synonym: electroshock therapy (EST)

**electroencephalogram** (EEG) graphic recording representing the electrical activity in the brain, obtained by placing electrodes on the scalp

**electrolysis** **1:** method of hair removal using electricity **2:** destructive process of separation and electrical discharge of ions in a solution by using an electrical potential across electrodes placed some distance apart in the solution; cations migrate to and are discharged by the cathode (negatively charged electrode) and anions migrate to and are discharged by the anode (positively charged electrode)

**electrolyte** substance that is ionized in an aqueous solution enabling it to conduct electricity; strong—substance that is completely ionized in aqueous solution; weak—substance that is partially ionized in aqueous solution

**electromagnetic radiation** light flashes (photons) characterized by specific wavelengths and frequencies; examples: gamma ray, X-ray, UV ray, visible and infrared light, microwave, and radiowave; SEE *gamma ray; infrared light; microwaves; radiowaves; visible light; X-ray; ultraviolet light*

**electron** basic particle of matter having a rest mass of  $9 \times 1,028$  grams and 1 electrostatic unit (esu) of charge ( $1.6 \times 1,019$  coulombs)

**electron, orbital** one that revolves around the nucleus of an atom and is a part of its atomic structure; SEE ALSO *negatron; positron*

**electronic claim** insurance claim submitted to the carrier by electronic means rather than hardcopy

**electronic medical record** an automated, online medical record that is available to any number of providers, ancillary service departments, pharmacies, and others involved in patient treatment or care

**electron paramagnetic resonance** (epr) method of spectrometry that depends upon vibrational frequencies generated by a radio frequency signal in electrons precessing in a magnetic field; observed in those substances possessing impaired electrons, i.e., a free radical; synonym: electron spin resonance (esr)

**electron spin resonance spectroscopy** a technique that measures the differences in the energy levels of unpaired electrons occurring in a rapidly changing magnetic field

**electron transport system** a series of electron carrier molecules that bind reversibly to electrons at different energy levels

**electrophile** **1:** a substance that accepts electrons in a chemical reaction **2:** an oxidizing agent **3:** Lewis acid **4:** a substance that attacks centers of high electron density in a chemical reaction

**electrophilic substitution** a chemical reaction in which an electropositive atom, molecule, or radical (an electrophile) attacks a molecule

**electrophoresis** method of analysis involving the movement of a charged particle in an electric field; particularly important to protein chemistry and peptide separation

**electrostatic interaction** noncovalent attraction between oppositely charged atoms or groups

**electrostatic unit** (esu) basic unit of charge for an atomic electron and a nuclear proton;  $1 \text{ esu} = 1.6022 \times 10^{19}$  coulombs

**electrovalent bond** a binding of atoms together by electron transfer to assume a more stable configuration; synonym: ionic bond

**electuary** soft preparation consisting of sweetened, soluble semisolids that melts in the mouth

**element** substance that cannot be subdivided or degraded further by ordinary chemical means; an atom that has a unique atomic number

**eligibility date** the defined date a covered person becomes eligible for benefits

**eligible dependent** a dependent of a covered employee who meets the requirements specified in the group contract to qualify for coverage and for whom premium payment is made

**eligible employee/person** one who meets the requirements specified in the contract to qualify for coverage

**eligible expenses** reasonable and customary charges or the agreed-upon health services fee for health services and supplies covered under a health plan

**elimination** **1:** removal of a drug from the body **2:** act of excretion or expulsion from the body; examples: urination, defecation, exhalation, and perspiration **3:** chemical reaction leading to the loss of a radical or group from a molecule

**elixir** clear, pleasantly flavored, sweetened hydroalcoholic liquid containing dissolved medicinal agents; intended for oral use

**elongation** the polypeptide chain growth phase during translation on ribosomes

**elution** **1:** separation of material by washing **2:** removal of substances from a chromatogram by the use of a solvent

**elutriation** process of separating a substance into various particle sizes by suspending them in a liquid (usually water) and allowing the particles to settle; the heavier particles are drawn from the bottom of the suspension and the lighter particles from one or more points above the bottom; synonym: water sifting

**emaciation** condition in which one's body mass is abnormally low; an abnormal loss of flesh; an excessive leanness; a wasted condition of the body resulting from disease or malnutrition

**embolism** sudden blocking of a blood vessel by an occluding substance (may be a clot or foreign material) brought by the blood to the sight of blockage

**embolus** blood-borne clot or other obstructive material that lodges in a small vessel thus blocking blood flow; SEE *embolism*

**embrocation** a fluid liniment

**emergency** a serious medical condition resulting from injury, sickness, or mental illness that arises suddenly and requires immediate care and treatment, generally within 24 hours of onset, to avoid jeopardy to the life or health of a person

**emergency medical technician** (EMT) skilled technician who provides on-the-spot first aid and medical treatment (under a medical doctor's supervised protocol) to persons in a health crisis and away from an acute health care provider

**emerg-i-care center** SEE *free-standing emergency medical service center*

**emesis** vomiting or regurgitation

**emetic** substance that induces vomiting; example: ipecac syrup

**emission 1:** involuntary discharge of semen **2:** release of electromagnetic radiation **3:** discharge of substances into the environment; example: automobile exhaust fumes

**emodin** type of genin from glycosides; occurs in aloe, senna, and cascara and has cathartic action

**emollient** agent that softens and soothes that part of the body to which applied, usually the skin; example: cold cream

**emotion 1:** state of arousal determined by subjective feelings; usually accompanied by physiological changes **2:** state of feeling

**empathy** awareness of another person's feelings, emotions, and behavior

**empirical** based on experience or observations rather than on theory and controlled, basic experimentations

**empirical formula** chemical formula showing the relative amounts of various elements in a compound; example:  $C_6H_{12}O_6$  for the glucose molecule

**empirical therapy** treatment of diseases based on observations only; contrasted to treatment based on theory and controlled experimentation; synonym: symptomatic therapy

**employee assistance program** (EAP) services designed to assist employees, their family members, and employers in finding solutions for workplace and personal problems, including family/marital concerns, legal or financial problems, elder care, child care, substance abuse, emotional/stress issues, and daily living concerns

**employee benefits program** health insurance and other benefits, beyond salaries, offered to employees by their employer

**employee contribution** the amount an employee must contribute toward the premium costs of the benefit contract

**Employee Retirement Income Security Act of 1974** law (Public Law 93-406) that mandates reporting and disclosure requirements for group life and health plans; also exempts many self-insured employers from many state health insurance regulatory requirements

**employer contribution** the amount an employer contributes toward the premium costs of the benefit contract

**empyema** presence of pus in a body cavity

**emulsification** process of preparing an emulsion; examples: dry-gum method, wet-gum method

**emulsifier or emulsifying agent** substance (usually a surfactant and/or film former) that promotes the formation and stabilization of an emulsion

**emulsion** heterogeneous, liquid or semisolid dosage form containing at least two immiscible liquids or semisolids, one of which is dispersed as small globules throughout the other, usually with the aid of a surfactant

**emulsion, clear** heterogeneous system in which the dispersed globule is sufficiently small so that it appears clear under normal vision; a system in which each immiscible liquid has the same visible light refraction (refractive index)

**emulsion, oil-in-water** an emulsion in which the oil is dispersed as fine droplets within the water; heterogeneous system in which oil is the dispersed phase (internal phase) and water is the dispersion medium (external phase); SEE *emulsion*

**emulsion, water-in-oil** heterogeneous system in which water is the internal phase and oil is the external phase

**enantiotropic** refers to a polymorphic compound in which crystalline form transition is reversible

**encapsulation** process of enclosing a substance in a capsule; example: preparation of soft gelatin capsules filled with vitamin A and sealed

**encephalopathy** degenerative disease of the brain; usually metabolic, toxic, or neoplastic

**encopresis** overflow incontinence; involuntary staining of underclothes

**encounter** a face-to-face meeting between a covered person and a health care provider where services are rendered

**encounters per member per year** the number of encounters related to each member on a yearly basis; calculated as total number of encounters per year divided by total number of members per year

**endergonic** refers to a nonspontaneous process in which free energy is absorbed or a process that requires an energy input to make it occur

**endocarditis** inflammation of the endocardium

**endocardium** endothelial lining of the heart

**endocrine** refers to glands that secrete hormones into the blood or lymph; CONTRAST *exocrine*

**endocytosis** the process in which a cell takes up solutes or particles by enclosing them in vesicles pinched off from its plasma membrane

**endodontist** a dentist who specializes in the etiology, prevention, diagnosis, and treatment of conditions that affect the tooth, pulp, root, and periapical tissues

**endogenous** arising from within; biosynthesized by the body

**endophytic** growing inward (e.g., an endophytic wart, such as a plantar wart)

**endoplasmic reticulum** a series of membranous channels and sacs that provides a compartment separate from the cytoplasm for numerous chemical reactions

**endorphin** endogenous morphinelike compound; depending on the compound, may suppress pain or act as a neurohormonal regulator; a neurohormone of a polypeptide nature that is involved in blocking pain

**endothermic** refers to a process in which the system under study absorbs heat from its surroundings; a process in which heat is required

**endotoxins** lipopolysaccharide-protein complexes (normally associated with the cell wall of gram-negative bacteria) that are released upon death of bacteria and are accompanied by disintegration of the cell wall; toxic substances which are formed in the cells of bacteria, freed once the bacterial cell is destroyed, and produce deleterious effects within the host

**-ene** suffix meaning an olefin or alkene (a double-bonded hydrocarbon)

**enediol** the intermediate formed during the isomerization reactions of monosaccharides

**enema** pharmaceutical preparation (usually aqueous) intended to be instilled into the rectum; used to evacuate the lower bowel, to treat the lower bowel locally, to supply medication systemically, or for diagnostic purposes; example: barium enema is an opaque contrast medium used with X-ray of the lower colon

**energy** ability of a body to do work, usually expressed as force times length; cgs unit ( $\text{g}/\text{cm}^2 \text{ per sec}^2$ ) or erg; SI units ( $\text{kg}/\text{m}^2 \text{ per sec}^2$ ) or joule

**enflourage** process of extracting volatile oils from flowers without the use of heat

**Engelmann's disease** progressive diaphyseal dysplasia

**English method** process for making an emulsion in which the emulsifying agent (usually acacia) is dissolved in water and oil is added in divided portions, triturating thoroughly after each addition, until all the oil has been added to form the primary emulsion; synonym: wet-gum method

**enkephalin** either of two pentapeptides, having as their C-terminus either methionine (met-enkephalin) or leucine (leu-enkephalin), each of which acts as an opioid neuropeptide hormone in the brain

**enrollee** an individual enrolled for a health plan contract and is eligible on his/her own behalf (not by virtue of being an eligible dependent) to receive the health services provided under the contract

**enrolling unit** an employer or other entity with which a contract for participation is made

**enrollment 1:** the total number of covered persons in a health plan **2:** the process by which a health plan signs up groups and individuals for membership **3:** the number of enrollees who sign up in any one group

**ent-** prefix meaning inside or within; same as ento-

**enter-** prefix referring to the intestine; same as entero-

**enteral 1:** within the intestinal tract; example: enteral feeding **2:** route of administration broadly defined as between the mouth and rectum; examples: oral, sublingual, rectal; CONTRAST *parenteral*

**enteral nutrition** the feeding of patients by introduction of foods or nutrients into the alimentary canal either in the normal manner or by use of gastric or duodenal tubes

**enteric coating** covering applied to tablets, capsules, or pills to protect them and prevent disintegration or dissolution in gastric fluids; dissolution occurs in the small intestine

**enteritis** inflammation of the small intestine

**entero-** prefix referring to the intestine; same as enter-

**enterobiasis** infestation with pinworms (*Enterobius vermicularis*)

**enterohepatic circulation** sequential secretion of an absorbed drug in the bile, followed by its reabsorption into the blood

**enthalpy** the sum of the internal energy of a body and the product of its volume multiplied by the pressure

**ento-** prefix meaning inside or within; same as ent-

**entrapment 1:** physical occlusion in a filtration process or in the formation of a clathrate **2:** (legal) process of inducing a person to commit an illegal act that the person would not otherwise have committed **3:** process whereby a nerve becomes trapped in tissues, causing discomfort

**entropy** a thermodynamic measure of the disorder of molecules in a system; example: the increase in molecular disorder or entropy as a solid melts, and, conversely, the decrease in disorder or entropy as a liquid condenses to a solid; a measure of the tendency for a process to proceed from a more ordered state to a more chaotic state; also, the energy of a process not available for work

**Environmental Protection Agency (EPA)** branch of the federal government concerned with the protection and improvement of the environment

**environmental science** study of the effects of contamination in air, water, soil, and food, and of changes in their physical nature and biological behavior as these relate to man and other life-forms

**enzymatic** refers to a process that is catalyzed by an enzyme

**enzyme** biocatalyst or specialized protein necessary for a biochemical reaction to proceed at body temperature and atmospheric pressure

**enzyme induction** a process in which a molecule stimulates increased synthesis of a specific enzyme

**enzyme kinetics** the study of the rates of enzyme-catalyzed reactions

**enzyme-linked immunosorbent assay (ELISA)** a technique involving antibodies that is used to detect and measure hormones and other mole-

cules; diagnostic test for AIDS; a means to detect antibodies to the HTLV-3 virus that causes AIDS; a blood or blood product test for the presence of AIDS and the presence of other viral infections

**eosinophilia** condition in which there is a higher than normal number of eosinophils (acidophils) in the blood

**ep-** prefix meaning on, upon, or over; same as epi-

**ephedrine** an alkaloid that possesses sympathomimetic properties; the chief pharmacologically active principal of plants of the genus *Ephedra*; also produced synthetically

**ephelides** freckles

**epi-** prefix meaning on, upon, or over; same as ep-

**epicutaneous** refers to topical administration of a drug

**epidemiology** study of distribution and frequency of diseases in a specific geographical area and their causative factors

**epidermal growth factor** a protein that stimulates epithelial cells to undergo cell division

**epidermis** outermost layer of skin, located above the dermis

**epiglottis** flap of cartilage that seals the entryway to the larynx during swallowing and opens the entryway during breathing

**epiglottitis** inflammation of the epiglottis

**epilepsy** disorder often characterized by convulsive seizures; loss or impairment of consciousness due to transient paroxysmal disturbances in the electrical activity of the brain

**epimer** a molecule that differs from the configuration of another by one asymmetric carbon

**epimerization** the reversible interconversion of epimers

**epinephrine** catecholamine secreted by the adrenal medulla and by nerve fibers of the sympathetic nervous system; responsible for both increasing blood pressure, heart rate, cardiac output, and glycogenolysis and also for the physical manifestations of fear and anxiety; synonym: adrenaline

**episode of care** treatment rendered in a defined time frame for a specified disease

**epistaxis** nosebleed; hemorrhage from the nose

**epithelium** thin layer of cells that covers the internal and external surfaces of the body



**epithem** moist, soft poultice usually containing blistering or astringent agents and applied to the chest or abdomen

**epoxide** an ether in which the oxygen is incorporated into a three-membered ring

**Epsom salts** hydrated magnesium sulfate; used as a laxative (when ingested) and as a hypertonic soaking solution to reduce swelling in a part of the body (e.g., ankle, hand)

**Epstein-Barr virus** a herpesvirus found in lymphoma and mononucleosis

**Epstein's disease** diphtheroid; an infection suggesting diphtheria

**Epstein's syndrome** nephrotic syndrome; edema, proteinuria, hypoalbuminemia, and hyperlipidemia

**equilateral** having equal sides

**equilibrium** condition of a process in which the sums of all opposing forces are equal

**equilibrium constant** unchanging value (at constant temperature and pressure) equal to the product of the concentrations of the reaction products (raised to powers corresponding to their coefficients in the balanced equation) divided by the product of the concentrations of the reactants (raised to powers corresponding to their coefficients in the balanced equation)

**equilibrium dialysis** method used to determine the extent of protein binding of a drug; determined by placing the protein-bound drug solution in a dialysis bag, immersing the bag in a solvent (water), and measuring the drug in the solution at equilibrium

**equilibrium moisture content** the moisture content of an amorphous and/or gelatinous substance (one that holds water intimately associated with its molecular structure) at the point in a drying process when the solid exerts a vapor pressure equal to the vapor pressure of the atmosphere surrounding it; highly dependent on relative humidity of the drying air

**equilibrium time** time at which the drug concentration at the deposition site becomes equal to the drug concentration in the blood

**equivalent weight** **1:** weight of acid or base that will produce or react with 1.008 g of hydrogen ion **2:** weight of an oxidizing or reducing agent that will produce or accept one electron in a chemical reaction

**Erb-Charcot disease** spastic diplegia (paralysis of corresponding parts on both sides of the body)

**Erb-Goldflam disease** myasthenia gravis

**Erb's palsy** progressive bulbar paralysis involving the muscles of the upper arm

**erg** cgs unit of energy expressed as physical work

**ergocalciferol** irradiated ergosterol or vitamin D<sub>2</sub>

**ergonovine** water-soluble alkaloid of ergot (*Claviceps purpurea*); maleate salt used as an oxytocic

**ergosterol** steroid obtained from ergot that, upon irradiation, forms vitamin D<sub>2</sub>; 24-methyl-7-dehydrocholesterol

**ergot** fungus (*Claviceps purpurea*) that grows on the rye plant and is a source of a number of alkaloids such as ergonovine and ergotamine

**ergotamine** alkaloid obtained from ergot (*Claviceps purpurea*); the tartrate salt of ergotamine is used as a vasoconstrictor in treating vascular headaches such as migraines

**error** difference between the observed value and the true value in a set of data

**eructation** belching of air

**erythema** redness of the skin

**erythrocyte** mature red blood cell; SEE *blood cells*, *red*

**erythroleukemia** form of leukemia involving the cells that give rise to the erythrocytes that produce large numbers of abnormal, immature red blood cells

**erythropoiesis** normal production and release of erythrocytes

**erythropoietin** hormone secreted by the kidney that serves to stimulate conversion of stem cells into normal erythrocytes

**eschar** necrotic, dead tissue (e.g., caused by a burn)

**escharotic** agent that causes destruction of tissues at the site of application and leaves a scar; SEE *caustic*

**-esis** suffix meaning condition of

**essence** SEE *essential oil*

**essential amino acids** amino acids that cannot be synthesized by humans and must be in their diet; including methionine, isoleucine, leucine, lysine, valine, arginine (essential for children only), tryptophan, threonine, phenylalanine (may be partially replaced by tyrosine), and histidine (children mainly)

**essential fatty acid** linoleic or linolenic acid that must be supplied in the diet because it cannot be synthesized by the body

**essential hypertension** blood pressure above normal for which no cause is known

**essential oil** volatile oil obtained from a plant or an animal

**ester** compound formed in a reaction between an acid and an alcohol that, on hydrolysis, yields the alcohol and either the free acid or its salt

**esterification** reaction between an acid (or an activated derivative of an acid) and an alcohol to form an ester; formation of an ester

**ester value** milligrams of potassium hydroxide required to saponify the esters in one gram of fat, oil, or wax; numerical difference between the saponification value of a fat, oil, or wax and its acid value

**estimated acquisition cost** an estimate of the price generally and currently paid by providers for a drug; commonly used in Medicaid programs to set the reimbursement amount for brand-name drugs and often calculated as a percentage off of average wholesale price

**estrogen** any one of three steroids (estrone, estradiol, and estratriol) secreted by the ovaries and the adrenal cortex; stimulates secondary female characteristics and participates with progesterin in control of the menstrual cycle

**estrogen, synthetic** (nonsteroidal) simple phenolic compound that has estrogenic activity; example: diethylstilbestrol (DES)

**ethanol** ethyl alcohol; synonyms: grain alcohol, *spiritus vini rectificatus*

**ethereal** **1:** relating to or resembling a chemical ether **2:** escaping easily **3:** intangible **4:** volatile

**ethical drug** dosage form (drug product) advertised and promoted to the medical professions; most require a prescription before dispensing

**ethics** **1:** accepted standards for the practice of a profession **2:** morals dealing with what is good and bad; set of moral values or principles on which actions are based

**etiology** study of the causes of diseases/or disorders

**eu-** prefix meaning well, normal, or good; CONTRAST *dys-*

**euchromatin** a less condensed form of chromatin that has varying levels of transcriptional activity

**eukaryotes** organisms, the cells of which are nucleated; SEE *prokaryotes*

**euphoria** **1:** an extreme state of perceived well-being **2:** absence of bodily pain or disorders

**eutectic mixture** physical combination of two or more solids that softens or liquifies, due to a depression of the melting point below that of each component taken separately

**eutectic point** lowest temperature (at constant pressure) at which a frozen (solid) mixture begins to melt; temperature and pressure at which solid and liquid states of a mixture of substances exist in equilibrium

**euthyroid** normal thyroid function

**evaluation** making judgments about the value or worth of a process or thing; does not include considerations of the intrinsic worth of individuals

**evaporation** process of conversion of a substance from the solid or liquid state to the vapor (gaseous) state; the rate of evaporation is related to the inherent vapor pressure of a substance and its temperature and pressure; may be a desired or an undesirable pharmaceutical process

**evaporative humidifier** device that humidifies air by circulation around a capillary filter that is immersed in a reservoir of water

**evidence of coverage** SEE *certificate of coverage*

**evidence of insurability** proof presented through written statements and/or a medical examination that an individual is eligible for a certain type of insurance coverage

**Ewing's sarcoma** a malignant tumor of the bone marrow seen in children

**ex-** prefix meaning without, outside, or completely

**exacerbation** worsening of a disorder or aggravation of symptoms

**excipient** nontherapeutic substance added to a drug dosage form in order to achieve a suitable size or consistency

**excision repair** a DNA repair mechanism that removes damaged nucleotides, then replaces them with normal ones

**excitation** contraction coupling; process by which depolarizations of the muscle fibers initiate its contraction

**exclusion chromatography** process of chromatography that includes the separation of components of a sample of molecules by size; SEE *gel filtration chromatography*

**exclusions** specific conditions or circumstances listed in the contract or employee benefit plan for which the policy or plan will not provide benefit payments

**exclusive provider organization** (EPO) agreement whereby a purchaser, usually an insurer, contracts with a specific vendor (e.g., a particular pharmacy) to be the sole outlet for services provided to the purchaser's clients

**excoriation** abrasion of the skin; examples: scraping trauma, chemical burn

**excretion 1:** movement of a drug or its metabolic products out of the body  
**2:** process for body elimination of waste products mostly by means of the skin, lungs, kidneys, and intestines

**excretion ratio** corrected renal clearance divided by the creatinine clearance

**exergonic** spontaneous process from which free energy is released

**exfoliant** topical medication that removes the upper cells from the epidermis; example: benzoyl peroxide (used for acne)

**exocrine** refers to glands that secrete fluids into a body cavity (e.g., bile from the liver to the duodenum)

**exocytosis** the process in which an intracellular vesicle fuses with the plasma membrane, thereby releasing the vesicle's contents into extracellular space

**exogenous** developed or derived from outside the body; arising from external causes

**exogenous ochronosis** abnormal discoloration of the skin, caused by overadministration of skin hyperpigmenting agents such as hydroquinone

**exon** the region in a split or interrupted gene that codes for RNA and ends up in the final product; example: mRNA

**exonuclease** enzyme that cleaves DNA chains at their ends

**exophytic** growing outward; example: an exophytic wart

**exothermic** refers to a process in which a system under study gives up heat to its surroundings

**exotoxin** highly toxic protein produced by a microorganism and secreted into the surrounding medium

**expected claims** projected claim level of a covered person or group for a defined contract period

**expectorant** substance which aids or promotes the removal of mucus from the respiratory tract; example: guaifenesin

**expenditure limits** a limit set on the total amount to be spent on various health services

**expenditures** the amount paid out by the payer (health plan, managed care organization, insurer, government agency) for the covered medical expenses of eligible participants

**expense** outflow of cash or other assets attributable to the costs of operating a business

**experience rating** rate setting based on previous claims experience and projected required revenues for a future policy year

**experimental, investigational, or unproven procedures** medical, surgical, psychiatric, substance abuse, or other health care services, supplies, treatments, procedures, drug therapies, or devices that are not proven to be effective in treating the condition, illness, or diagnosis for which their use is proposed

**expiration date** month and year after which a drug product is expected to be subpotent (or degraded) under designated storage conditions; most commercial products have expiration dates at two to five years after production; synonym: expiry

**expiry** SEE *expiration date*

**explanation of benefits** the statement sent to covered persons by their health plan listing services provided, amount billed, and payment made

**expression** juices pressed from herbs, roots, or fruits

**exsiccate** to dry using highly intense heat

**exsiccation** process of depriving a substance of its moisture by the application of strong heat

**extein** peptide segments that are spliced together to form a mature protein during protein splicing

**extemporaneous** prepared at the time in response to current need; example: prescription order compounded in the pharmacy

**extended care facility** a nursing home or nursing center licensed to operate in accordance with all applicable state and local laws to provide 24-hour nursing care; may offer skilled, intermediate, or custodial care, or any combination of these levels of care

**extension of benefits** a provision of many insurers' policies that allows medical coverage to continue past the termination date of the policy for employees not actively at work and for dependents hospitalized on that date

**external energy** that amount of energy in a system manifested as work; example: pressure times volume

**externality** situation in which a person or a group receives benefits or incurs costs from the actions taken by another person or group

**external phase** in an emulsion, the liquid throughout which another liquid is distributed; synonyms: continuous phase, dispersion medium; SEE *emulsion*; CONTRAST *internal phase*

**extract 1:** concentrated preparation from animal or vegetable drugs obtained by removal of the active constituents with a suitable solvent or solvent mixture, evaporation of all or nearly all the solvent, and adjustment of the residual mass or powder to prescribed standards **2:** to remove or draw out (as the active principle of a plant) by physical or chemical means

**extract, pilular** plastic mass obtained by extracting the active constituents from plants and animals and adjusting the mass to the consistency of a pill

**extract, powdered** dry powder obtained by extracting animal or vegetable drugs, removing the solvent, and adjusting the strength of the extract by the addition of suitable inert diluents

**extraction** process for removing soluble components (drug materials) from a multicomponent mass by use of a solvent or a mixture of solvents alternately mixed with and separated from the material mass

**extraction, liquid-liquid** process whereby one immiscible liquid is thoroughly dispersed with another for purpose of removing a component which is (or altered to be) more soluble in the extracting solvent; example: morphine in ether may be extracted by using water acidified with hydrochloric acid, morphine hydrochloride being more soluble in the aqueous phase

**extraction, liquid-solid** process whereby a liquid is used to remove soluble components from a solid (usually in the coarsely ground state); example: removal of atropine alkaloid from ground belladonna leaves using water and alcohol as solvents

**extramural 1:** outside the wall of an organ **2:** arising from outside an institution; example: extramural funding of a research grant

**extraneous** foreign material; impurities; not related to the organism; outside the confines of an experiment

**extrapyramidal** portion of the central nervous system consisting of nerve fibers outside the pyramidal tracts; responsible for coordinating and integrating certain types of body movements; includes the corpus striatum, subthalamic nucleus, substantia nigra, and red nucleus with their interconnections

**extrapyramidal adverse effects** side effects of dopamine-blocking medicines; mimic the signs of nervous diseases such as palsy

**extravascular** refers to areas outside a blood vessel

**extremophile** an organism capable of surviving and living under extreme conditions of temperature, pH, pressure, or ionic concentration

**extremozyme** an enzyme that functions under extreme conditions of temperature, pressure, pH, or ionic concentration

**extrinsic 1:** descriptive term meaning having an origin from the outside  
**2:** not part of or related to

**extrinsic reward** monetary and other compensations that satisfy physiological or security level needs

**exudate 1:** material high in protein (and having a specific gravity greater than 1.020) such as fluid, cells, or other material that have escaped the blood vessels and deposited in surrounding tissue; usually as a result of inflammation; CONTRAST *transudate* **2:** material squeezed or oozed from its source; example: resin from a pine tree



**facilitated absorption** SEE *absorption*; *facilitated diffusion*

**facilitated diffusion** movement of molecules across a membrane barrier in which a carrier protein is required; movement from a region of higher concentration to a region of lower concentration, the driving force being the concentration gradient; no other energy input required beyond that necessary for normal cellular function; SEE *absorption*

**facultative anaerobes** organisms that possess the mechanisms needed for detoxifying oxygen metabolites; can generate energy by using oxygen as an electron acceptor

**falling object viscometer** device used to measure the viscosity of liquids utilizing a spherical ball that passes through a controlled sample of the liquid; example: Hoppler viscometer

**false-negative** error in a testing procedure indicating the absence of a component or a condition that is actually present

**false-positive** error in a testing procedure indicating the presence of a component or condition that is actually absent

**family dependent** a person enrolled for coverage under a health plan contract who is the enrollee's spouse, or unmarried dependent child

**family planning services** use of medically approved means that enable individuals to determine the number and spacing of their children

**fan** device or apparatus to effect transfer of air, vapors, or gases from one place or position to another, usually for a cooling effect



**Fanconi's syndrome** renal tubular dysfunction

**Farber's disease** disseminated lipogranulomatosis giving nodular plaques in the skin

**fat** a triglyceride; esterified lipid derivative of glycerol with three fatty acid molecules attached

**fatty acid** one of a homologous series of aliphatic acids with a long hydrocarbon chain consisting of 10 to 24 carbons attached to a carboxyl group; examples: oleic acid, stearic acid, palmitic acid; general formula:  $\text{RCOOH}$

**fatty acid binding protein** an intracellular water-soluble protein whose sole function is to bind and transport hydrophobic fatty acids

**fatty alcohol** alcohol that corresponds to a fatty acid; example: cetyl alcohol; long hydrocarbon chain ( $\text{C}_{10}$  to  $\text{C}_{24}$ ) containing a hydroxyl group

**feathering** graphical method for the separation of exponents; also called "residual method"

**febrile** having a fever; pertaining to a fever

**Federal Employee Health Benefits Plan** the program that provides health benefits to federal employees

**Federal Insurance Contributions Act** law authorizing the tax withheld for Social Security

**Federal Register** publication of the federal government (published every working day) that includes proposed rules, regulations, amendments, and notices from all federal agencies

**feed** input material undergoing a pharmaceutical process or a series of processes; example: a slurry from which the solid particulate phase is to be separated from the dispersion medium as effected in the spray-drying process

**feed frame** part of a tablet machine that distributes the granular material to the dies just prior to compression

**feed shoe** part of a tablet machine that delivers the granular material to be tableted to the feed frame

**fee-for-service reimbursement** the traditional health care payment system under which physicians and other providers receive a payment that does not exceed their billed charge for each unit of service provided

**fee schedule** a listing of codes and related services with preestablished payment amounts that could be percentages of billed charges, flat rates, or maximum allowable amounts

**fellowship** an individualized postgraduate program that prepares the participant to become an independent researcher; unaccredited programs that usually last one to two years

**felony** crime that is usually punishable by imprisonment in a state or federal prison; a crime that is more serious than a misdemeanor

**Felty's syndrome** rheumatoid arthritis with splenomegaly and leukopenia

**fermentation** the anaerobic metabolism or degradation of sugars; an energy-yielding process in which organic molecules serve as both electron donors and acceptors

**ferric** refers to a compound of iron in its +3 oxidation state

**ferrokinetics** rate of turnover or change of iron in the body

**ferrous** refers to a compound of iron in its +2 oxidation state

**ferrous sulfate** sulfate salt of iron in the +2 oxidation state; used as a hematinic

**ferruginous** containing or related to iron

**fever** above normal body temperature (98.6°F or 37°C)

**fever, factitious** apparent fever that the patient causes by manipulation of the thermometer

**fibrillation** spontaneous rapid or irregular pulsations of fibrils (as in heart muscles); example: ventricular fibrillation

**fibrous** thready characteristic of materials such as dried plant parts that must be cut to reduce particle size

**Fick's law** quantitative expression of the rate of diffusion as a function of the difference in concentration of drug on each side of a biological membrane; used to describe passive diffusion

**fidelity** a principle of ethics which requires that health care professionals act in such a way as to demonstrate loyalty to their patients

**Filatov's disease** infectious mononucleosis

**filler** diluent or any inert substance added to a drug formulation to increase bulk or size; examples: lactose or calcium carbonate added to increase the size of a tablet or capsule

**film** thin layer or coating

**film, extended release** drug delivery system in the form of a film that releases the drug over an extended period in such a way as to maintain constant drug levels in the blood or target tissue

**film, soluble** thin layer or coating that is susceptible to being dissolved when in contact with a liquid

**film coating** process of applying a thin layer of material onto the surface of a tablet or other solid dosage form to protect the tablet, improve appearances, and/or mask bad taste

**film coefficient** value that approximates the entire thermal resistance to convection heat transfer from a solid to a fluid where a temperature differential exists between the two substances

**film testing** examining a film-coated product for blisters, wrinkles, sweating, "orange peel," "flaking bloom," or spotting and a determination of its strength, attrition (friability), and disintegration properties

**filter** device or part of a device that contains small pores, openings, or channels designed to allow a liquid or vapor to flow through and to trap solid particles by physical or chemical means

**filter aid** substance added to a liquid to be clarified to improve filter efficiency in removing undissolved particles; examples: talc, kieselguhr

**filter cartridge** cylindrical-shaped filter medium used to separate particles above one micron in size

**filter cloth** woven surface-type filter medium consisting of natural or synthetic fiber or metal

**filter medium** porous part of a filtration system that collects particulate matter from a batch of liquid or vapor being purified, clarified, or otherwise separated

**filter needle** sharp, pointed straining device that will eliminate broken glass and other particles of certain size from medications that are drawn into a syringe from a glass ampule

**filter paper** porous paper used for filtration and chromatography

**filtrate** liquid that has been subjected to a filtration process

**filtration** process of separating solid particles from a liquid or vapor with the simultaneous clarification of the liquid or vapor by passing the liquid or vapor through a filter medium

**filtration sterilization** physical removal of microorganisms and spores from a preparation by passing it through a filter medium; used to render pharmaceutical preparations void of life-forms if its contents are heat-labile

**fine 1:** a grade of particles, 40 percent of which will pass through a 100 mesh sieve **2:** particles in a tablet granulation that are under the size limi-

tation of the granulation and are included in certain proportions with the other granules for the purpose of facilitating flow

**fine chemical** substance sold and used in smaller quantities (grams, ounces, and pounds); most drugs considered to be “fine” chemicals; CONTRAST *bulk chemical*

**fineline class** items with essentially the same end use that can be reasonably substituted by the consumer for one another

**finished product control** quality assurance tests conducted on a drug product that is otherwise ready for distribution to consumers

**first-dollar coverage** health policies that pay all medical expenses up to a predetermined limit, without a deductible charge

**first in–first out (FIFO)** a method of inventory valuation and determination of cost of goods sold; under the FIFO method, the cost of goods sold consists of the cost of the oldest goods in stock, and the ending inventory reflects the costs of the latest goods purchased

**first-order kinetics, first-order reaction, or first-order process** quantitative expression in which the rate of change is directly proportional to the concentration of one component of the reaction (or process) raised to the first power

**first-pass effect** metabolism of a drug in the liver before it reaches general body circulation; contrast to metabolism of a drug after it has reached general body circulation

**fiscal intermediary** agent that has contracted with providers to process claims for reimbursement under health care coverage

**Fischelis, Robert Phillip** (1891-1981) served as the executive of the American Pharmacists Association from 1945-1949; long career as an educator, editor, and state board executive; served with the War Production Board division of chemicals, drugs, and health supplies during World War II; Remington Honor Medal recipient in 1943 and Whitney Award recipient in 1966

**Fisher’s syndrome** ophthalmoplegia, ataxia, and loss of tendon reflexes

**fission** splitting of large atomic nuclei resulting in the formation of two smaller nuclei (usually of unequal size) and accompanied by the release of large amounts of energy and excess neutrons

**fissure** groove, fold, or deep furrow in an organ

**fistula** abnormal opening or passage between two areas, organs, or to the surface of the body

**fit 1:** a seizure **2:** appropriate size and shape for an individual prosthetic device

**fixed assets** tangible property that cannot be expected to be sold or used within the normal operating cycle of the business (usually one year); examples: buildings, land, equipment; synonyms: long-lived assets, non-current assets

**fixed costs** expenses of operating a business that do not fluctuate with changes in sales volume; examples: rent, utilities, property taxes, depreciation; synonym: fixed expenses

**fixed fee** an established fee schedule for services allowed by third-party programs in lieu of cost-of-doing business markups

**fixed oil** nonvolatile oleaginous liquid containing a mixture of glyceryl esters of high molecular weight fatty acids ( $C_{10}$  to  $C_{18}$ ); examples: corn oil, soybean oil

**flammable** capable of burning or catching on fire; synonym: inflammable

**flash dryer** machine that instantaneously removes moisture from an atomized fluid in the presence of high velocity superheated air in a manner similar to a spray-drying process

**flashing** sudden splattering that occurs when the patient heats menthol/methyl salicylate-based ointments in a microwave or boiling water; burns to the patient may result

**flash point** temperature at which a vapor ignites

**flatulence** excessive gas in the stomach and intestinal track

**flavoprotein** oxidizing enzyme resulting from a combination of FAD or FMN with proteins; yellow oxidizing enzyme that is bound to a riboflavin derivative as a prosthetic group

**flavorant** substance added to give a pleasant taste; synonym: flavoring agent

**flexible benefit plan** employees are presented annually with a number of options, allowing them to tailor benefits to their specific needs.

**flip-flop model** a case in which the half-life of the input function is longer than the half-life of the disposition function

**flocculation** phenomenon whereby suspended particles in a liquid system are held together by weak electrostatic forces resulting in agglomerates floating in the system

**flocculation, controlled** mechanism of adjusting the zeta potential of suspended particles to achieve an acceptable balance of attractive and re-

pulsive forces between particles to formulate a more stable suspension or colloidal system

**floor stock drugs** medicines commonly dispensed by the pharmacy to nursing wards or units to be administered to patients as prescribed

**flow** permanent deformation and mass movement when stress is applied to a system; example: liquid flowing under the force of gravity through an opening in its container

**flowers of sulfur** synonym for sublimed sulfur

**flow meter** instrument to measure the rate of transfer of a substance in a mass transfer process as in a pumping system; most common types: differential pressure, positive displacement

**fluid** term to describe a body or system that flows under infinitesimal stress or force

**fluid-bed dryer or fluidized-bed dryer** machine designed to remove moisture from a small quantity (kilograms) of particulate pharmaceutical materials by partially suspending them in an upward flow of heated air, all particles being in continuous motion during the process; synonym: air dryer

**fluid dram (fluid drachm or fluidram)** unit of liquid measure in the apothecary system; equal to 60 minims, 3.7 ml, and 1/8 of a fluid ounce

**fluid energy mill** device used to reduce particle size by rotating particles at high speeds in a bed of air against the sides of a chamber and against other particles; particles reduced in size by attrition and mostly spherical

**fluidextract** highly concentrated alcoholic solution of active principles of a botanical; concentrated liquid preparation of a vegetable drug, containing alcohol as a solvent or preservative, or both, and made such that each milliliter represents the active constituents of one gram of crude drug; SEE *fluid glycerate*

**fluid glycerate** highly concentrated solution of active principles of a botanical; differs from fluidextract by its lack of alcohol as a solvent; SEE *fluidextract*

**fluidity 1:** a measure of the tendency of a liquid to flow **2:** the reciprocal of viscosity

**fluid mosaic model** the currently accepted model of cell membranes in which the membrane is a lipid bilayer with integral proteins buried in the lipid and peripheral proteins more loosely attached to the membrane surface

**fluid retention** a failure to eliminate fluids from the body, usually due to renal, cardiac, and/or metabolic disorders; SEE *dropsy*

**fluid ounce** unit of common measure equal to 8 fluid drams or 480 minims; 16 fluid ounces equals 1 pint

**fluorescence** a property of a substance that emits visible light in response to exposure to radiation from another source; the emitted light is of longer wavelength than the exciting radiation

**fluorine** salts (fluorides) that are toxic even in small amounts; used in dilute solution to prevent tooth decay

**flushing** **1:** sudden redness of the skin **2:** irrigation of a body cavity or an organ

**flutter** an arrhythmia in which there are rapid contractions; usually used to describe a heart rate of 200 to 320 beats per minute

**foam** a pharmaceutical dosage form consisting of a significantly larger gaseous phase dispersed in a liquid phase

**foam, contraceptive** a foam formulated with a spermicide that acts as a sperm barrier during and after sexual intercourse

**foam, quick-breaking** dosage form that is designed to rapidly deposit a layer of medicated liquid on a very sensitized area

**Foiling's disease** SEE *phenylketonuria*

**Foix-Alajouanine syndrome** subacute necrotizing myelopathy, often associated with thrombophlebitis or vascular malformation of the spinal cord

**folate reductase** enzyme that catalyzes the reduction of folic acid to tetrahydrofolic acid

**Foley catheter** urinary catheter with a separate lumen that allows health personnel to inflate a balloon after insertion with sterile water to prevent the patient from removing it

**folliculitis** inflammation of a follicle

**fomentation** a poultice made of herbs with liquids or lotions in cloth and applied hot

**fomite** inanimate object that transmits infections or infestations; example: a surface contaminated with viral particles, bacteria, fungi, or pubic lice

**Food and Drug Administration (FDA)** federal agency with the responsibility of protecting the public against distribution and sale of unsafe foods, drugs, cosmetics, and devices; also responsible for the safety and efficacy of drugs, drug products, and medical devices

**foramen** naturally occurring passage or opening between two cavities of an organ or through bone

**Forbes' disease** type 3 glycogenesis; a glycogen storage disease

**Forbes' method** one of several procedures for preparing an emulsion; ingredients of the emulsion are placed in a dry bottle and shaken vigorously; synonym: bottle method

**force** (f) force equals mass times acceleration; an expression of the rate of change in movement of a mass of substance per unit time; cgs unit:  $f = \text{g/cm per sec}^2$ ; basic unit: a dyne; SI unit: kg/m per  $\text{sec}^2$

**forced convection** mechanically driven heat transfer process; example: the use of a fan to distribute heat throughout a system, as in a tray-drying process

**force of adhesion** an expression of attractive tendencies of two different substances

**forgery** illegal act of falsifying documents, such as prescriptions; imitation for purposes of deception

**formulary 1:** book of formulas; example: *National Formulary*, one of three official drug compendia in the United States and one that provides standards and specifications for drugs and drug products **2:** compilation of medicines (drug products) considered appropriate to stock and use in an institution or in a given geographical region based on clinical and economic considerations; examples: hospital formularies or third-party prescription plans that designate drug products which may be prescribed or purchased

**formulary, closed** rigidly controlled drug compilation with minimal exceptions

**formulary, negative** list of all drugs that are excluded from use

**formulary, open** lack of limitations on drug products that may be used and purchased by a third party

**formulary, positive** list of all drugs that may be prescribed

**four-corner penetration** a type of pharmacy layout that promotes patron traffic to all four corners of the store

**Fourier's Law** a quantitative expression of heat transfer by conduction; the instantaneous rate of heat transfer is a function of the thermal conductivity of a substance, its cross-sectional area perpendicular to the direction of flow, and the temperature differential for a specific distance in the path

**foveation** formation of pits on the skin surface



**franchise** an agreement under which a firm (the franchisee) may operate using the principles, trademarks, or merchandise of another firm (the franchisor)

**Francke, Donald Eugene** (1910-1978) director of hospital pharmacy at the University of Michigan hospitals; involved in international pharmacy; one of the founders of the American Society of Health-System Pharmacists and longtime editor of its journal; early supporter of the concept of clinical pharmacy; Remington Honor Medal recipient in 1970 and Whitney Award recipient in 1953

**Francke, Gloria Niemeyer** (1922- ) joined APhA as first assistant director in the Division of Hospital Pharmacy; career in professional journalism and literature; fostered outreach initiatives to international pharmacists; Remington Honor Medal recipient in 1987 and Whitney Award recipient in 1955

**fraud** intentional deception or dishonesty

**free drug** refers to a drug which is not protein bound in the blood and which is available for distribution to other body compartments

**freedom of choice** legislation requiring managed care organizations to allow members to choose providers whether or not they are connected with the plans

**free energy** the energy in a system available to do useful work

**free fatty acid** fatty acid in a system (the body or body fluids) that is not esterified

**free floor stock system** drugs or drug products placed on each nursing floor for use and for which there is no specific patient charge

**free on board** price of an item or merchandise that includes freight and transportation charges to some specified destination

**freestanding emergency medical service center** a health care facility that is physically, organizationally, and financially separate from a hospital and whose primary purpose is the provision of immediate, short-term medical care for minor but urgent medical conditions; also called "emergency-center" or "urgency-center"

**freestanding outpatient surgical center** a health care facility, physically separate from a hospital, that provides prescheduled, outpatient surgical services; also called "surgicenter"

**freeze-dried** refers to a product that has been lyophilized; SEE *freeze dryer*; *freeze drying*

**freeze dryer** vacuum-chamber device that removes moisture from relatively small quantities of frozen pharmaceutical materials; designed to optimize vacuum levels in the chamber and to lower temperature of the sample(s) to maximize the moisture removal process with the least amount of energy expenditure; the freeze-dried substance is a very porous lyophilic cake which must be sealed to prevent moisture uptake; synonym: lyophilizer

**freeze drying** process of removing moisture from frozen materials; synonyms: lyophilization, cryodesiccation; SEE *freeze dryer*

**freezing point** temperature at which liquid and solid states of a substance exist at equilibrium under conditions of constant pressure and volume; temperature at which a liquid begins to change to a solid

**freezing point lowering** phenomenon whereby a solute dissolved in a solvent will reduce its freezing temperature; example: the lower freezing temperature of an aqueous sodium chloride solution compared to that for the pure water

**French scale** 1 fr = 1/3 mm; measurement for catheters (e.g., 16 French)

**French chalk** SEE *talc*

**friability** an index of the condition of being easily chipped and crumbled or pulverized; SEE *friability tester*

**friability tester** rotating, single-partitioned, cylindrical unit designed to impact tablets contained therein as they are rotated for a specified time and at a specified rate; tablet friability is measured by a determination of "chipping" weight loss

**Friedreich's disease** paramyoclonus multiplex

**fritted glass filter** filter medium or filtration support component made by a controlled fusing of glass beads (fritted) to form minute openings in the device; available in coarse, medium, or fine range; synonym: sintered glass filter

**Fröhlich's syndrome** adiposogenital dystrophy; pituitary tumor with obesity and sexual infantilism affecting mostly males

**Froude number** quantitative expression to describe the relationship between inertial and gravitational forces involved in a mixing process

**fugacious** lasting a short time

**fugacity** expression or function replacing pressure to correct for nonideal gaseous behavior; one measure of escaping tendency

**fugue** dissociation phenomenon characterized by amnesia and the performance of purposeful physical acts away from the customary environment

**fumigant** agent used to produce a gas or vapor, especially to destroy pests or to disinfect a confined area

**functional antagonism** physiological interaction between two agonists that act at separate receptors but cause opposite responses; synonym: physiological antagonism

**functional genomics** the scientific discipline devoted to elucidating how biomolecules work together within functioning organisms

**functional group** a group of atoms that undergoes characteristic reactions when attached to a carbon atom in an organic molecule or a biomolecule

**fundamental dimensions** basic units of measure from which all others are derived; namely, mass (M), length (L), and time (T); cgs units: gram, centimeter, and second; SI units: kilogram, meter, and second

**funding level** the amount of revenue necessary to finance a medical care program; under an insured program, usually premium rate; under a self-funded program, usually assessed per expected claim costs, plus stop loss premium, plus all related fees

**funding method** the means by which an employer pays for the employee health benefit plan; several funding methods shift risk from the employer to a carrier, or an employer may self-fund the employee health benefit plan; most common methods: prospective and/or retrospective premium payments, refunding products, self-funding, and shared-risk arrangements

**fundus** base or bottom of an organ

**fungicide** agent that kills fungi; example: undecylenic acid used to treat athlete's foot

**fungistat** agent that inhibits the growth of fungi

**furuncle** *SEE boil*

**fusel oil** mixture of amyl, butyl, and propyl alcohols with traces of other complex organic substances; by-product of ethanol fermentation process; undesirable toxic components that should be removed during the refining process

**fusion** **1:** melting of a solid or semisolid **2:** collision of two small nuclei resulting in the formation of a larger nucleus and accompanied by a large amount of energy release; example: principle used in the hydrogen bomb and manifested in the energy of the sun

**fusion method** (for preparing ointments and suppositories) the combining of solid or semisolid substances by melting each, mixing, and cooling the mixture with constant stirring until congealed or solidified

**fusion point** SEE *melting point*

**futile cycle** a set of opposing reactions that can be arranged in a cycle, but usually do not occur simultaneously; functioning of such reactions in both directions is avoided by metabolic control mechanisms to prevent energy waste



**GABA shunt** biochemical pathway around the tricarboxylic acid cycle involved in both the synthesis and destruction of GABA (gamma-aminobutyric acid)

**galact-** prefix meaning milk; prefix referring to galactose; same as galacto-

**galacto-** prefix meaning milk; prefix referring to galactose; same as galact-

**galactose** an aldohexose derived from lactose and isomeric with glucose; empirical formula:  $C_6H_{12}O_6$

**Galen** (ca. A.D. 131-201) Roman physician-pharmacist who utilized the “humoral pathology” theory in a systematized practice and is known for his compounded preparations, which are referred to as “galenicals,” even in modern times

**galenical** a medicine prepared according to the formula of Galen; currently, used to denote standard preparations containing organic ingredients from natural products as contrasted with pure chemical substances; example: rose water ointment (Galen’s cerate)

**gallon** unit of volume equal to 8 pints, 4 quarts, or 3.785336 liters

**gallotannic acid** SEE *tannic acid*

**gamma globulin** a globulin fraction of the blood appearing electrophoretically in the gamma position that contains a high concentration of antibodies against infectious diseases

**gamma-aminobutyric acid** (GABA) amino acid neurotransmitter having a depressant effect on the brain; compound formed by the decarboxylation of glutamic acid

**gamma ray** a photon or a radiation quanta emitted spontaneously by a radioactive nucleus when subnuclear particles shift to a lower energy level

**Gamstorp’s disease** periodic paralysis, usually with hyperkalemia

**garbling** removal of foreign matter or unwanted parts of the plant from crude vegetable drugs before grinding

**Gardner's syndrome** variant of congenital polyposis of the colon

**gargarism** SEE *gargle*

**gargle** aqueous or hydroalcoholic solution used to treat the pharynx and nasopharynx by forcing air bubbles from the lungs through the liquid while it is held in the back of the throat

**gas** any elastic aeriform fluid in which the molecules are separated from one another and have free passage

**gas constant** universal thermodynamic constant derived from pressure, volume, and temperature relationships of one mole of an "ideal" gas

**gas law, ideal** quantitative expression of pressure, volume, and temperature relationships for any gas in which there is no measureable interaction between its molecules; synonyms: Boyle's, Charles's, and Gay-Lussac's laws

**Gasser's syndrome** acute transient aplasia of erythropoietic tissue in young children; also acute hemolytic uremic (HUR) syndrome in children

**gas sterilization** chemical sterilization process that utilizes ethylene oxide vapor under low heat and pressurized conditions to kill microorganisms; commonly used to sterilize heat-sensitive and moisture-sensitive materials

**gastr-** prefix meaning stomach; same as gastro-

**gastric emptying rate** average time required for the stomach to empty its contents into the intestines; normally, once every two to four hours

**gastric inhibitory polypeptide** (GIP) gastrointestinal hormone produced by the cells in the jejunum and lower duodenum in response to glucose and fat entering these areas; acts to decrease gastric secretion and also stimulates insulin secretion

**gastrin** hormone produced by cells in the pyloric antral region of the stomach in response to ingestion of food; induces secretion of pepsin and hydrochloric acid and increases gastric motility

**gastritis** inflammation of the stomach lining

**gastro-** prefix meaning stomach; same as gastr-

**gastrocolic reflex** wave of peristalsis following a meal; allows a patient to defecate more easily shortly after eating breakfast

**gastroenterologist** a physician who specializes in diseases of the stomach, intestine, and related structures

**gastroesophageal reflux disease** condition in which stomach contents reflux upward into the esophagus, usually caused by a faulty lower esophageal sphincter

**gatekeeper** a primary health care practitioner (1) who provides primary care services to an enrollee, (2) who is generally responsible for coordinating the enrollee's health care, and (3) with whom, other than in an emergency, a patient must consult to obtain a referral to a specialist provider in order to obtain the highest level of benefits under a health plan

**gate valve** SEE *valve*

**gauge** measurement used for needles in which higher numbers denote smaller lumens (e.g., a 26-gauge needle is smaller than an 18-gauge one)

**gaultheria oil** synonym for oil of wintergreen

**gauze** purified cotton woven in the form of plain cloth

**gauze, absorbent** gauze that is treated to render it an absorbent for aqueous fluids

**gauze, petrolatum** absorbent gauze saturated with petrolatum; used as a protectant and waterproof cover for wounds or for a pack into a body cavity to stop bleeding

**gauze mops** gauze sponges; SEE *laparotomy pack*

**Geiger-Müller counter** (GM counter) instrument to detect beta particles; consists of a cylinder containing a gas, a cathode, and an anode; ions passing into the cylinder cause a flow of current and each beta particle causes a pulse of current that is amplified and recorded

**gel 1:** semisolid system consisting of a suspension of small hydrated inorganic particles; example: aluminum hydroxide gel (also called a magma)

**2:** semisolid system consisting of hydrated (or solvated) organic macromolecules uniformly distributed throughout a liquid; example: tragacanth gel (tragacanth mucilage)

**gel, dentifrice** combination of a dentifrice (formulation intended to clean and/or polish the teeth, and which may contain certain additional agents) and a gel used with a toothbrush for the purpose of cleaning and polishing the teeth

**gel, jelly** class of gels; semisolid systems that consist of suspensions made up of either small inorganic particles or large organic molecules interpenetrated by a liquid in which the structural coherent matrix contains a high portion of liquid, usually water

**gelatin 1:** glutinous material obtained from animal tissue by irreversible hydrolytic extraction **2:** type A—obtained from an acid-treated precursor;

exhibits an isoelectric point at a pH close to 9 **3:** type B—obtained from an alkali-treated precursor; exhibits an isoelectric point at a pH close to 4.7

**gelatinous** **1:** having or exhibiting similar characteristics as gelatin **2:** polymeric material with large quantities of water (or other solvent) entrapped between and intimately associated with the molecules of the substance; a dispersed system in which both phases are continuous; example: methylcellulose mucilage

**gel filtration chromatography** type of chromatography used to separate proteins or other polymers; process is based on the ability of proteins to permeate the theoretical pores of a gel; a technique used to separate proteins according to their molecular weights and to determine their approximate molecular weights by comparing migrations with known standards

**Gélineau's syndrome** narcolepsy

**gem-** prefix indicating a substitution on adjacent carbon atoms in a molecule; example: ethylene bromide (a gem-dihalide)

**gene** a DNA sequence that codes for a polypeptide, rRNA, or tRNA

**gene expression** the mechanisms by which living organisms regulate the flow of genetic information

**general anesthetic** drug or chemical agent that produces an insensitivity to pain over the entire body

**general enrollment period** (GEP) specified amount of time when the opportunity to participate in an insurance plan is offered; outside of these dates one may not enroll as a participant unless specific conditions such as a physical examination are satisfied

**generally regarded as safe** (GRAS) term used by the FDA for substances (drugs and foods) generally regarded as safe for their intended use

**general recombination** recombination involving exchange of a pair of homologous DNA sequences; can occur at any location on a chromosome

**generator** **1:** an apparatus for the formation of vapor or gas from a liquid or solid by heat or chemical action **2:** radioactive columns from which radionuclides are provided

**generic drug** a chemically equivalent copy of a brand-name drug whose patent has expired

**generic equivalent** SEE *pharmaceutical equivalent*

**generic name** specific designation term assigned to each new drug by the United States Adopted Name Council (USANC); usually a shorter and simpler name than the chemical name for a drug and more descriptive than its trade name; commonly used to refer to the drug in scientific and profes-

sional literature; synonyms: established name, official name; CONTRAST *chemical name; proprietary name*

**Generic Pharmaceutical Industry Association (GPIA)** represents the manufacturers and distributors of generic drugs; provides lawmakers, government agencies, regulators, prescribers, and pharmacists with information regarding the safety, effectiveness, and therapeutic equivalence of generic medicines

**generic substitution** act of dispensing a different brand or drug product for the one prescribed; dispensing of a drug that has the same potency and is the same chemical entity in the same dosage form, but is distributed by a different company

**genetic code** the set of nucleotide base triplets (codons) that code for the amino acids in protein as well as start and stop signals

**genetics** the scientific investigation of inheritance

**genin** nonsugar portion of a glycoside; synonym: aglycone

**genito-** prefix referring to the organs of reproduction

**genome** total genetic composition of a cell or organism involving both expressed and unexpressed characteristics

**genomics** the large-scale analyses of entire genomes

**geometric diameter** (dgeo) particle size expression calculated by taking the *n*th root of the product of diameters (*d*) represented in the sample

**geometric dilution** method of mixing solids whereby a small portion of one substance is added to an equal portion of another substance and mixed; repeated serially until the total amount has been mixed

**geometric isomers** SEE *cis-trans isomer*

**George Urdang Medal** established by the American Institute of the History of Pharmacy in 1953 to recognize original and scholarly publications on the historical aspects of pharmacy anywhere in the world

**Gerhardt's disease** erythromelalgia

**Gerhardt's syndrome** bilateral abductor paralysis of the larynx

**geriatric** refers to the elderly, or medical treatment of the elderly

**germicide** SEE *bactericide*

**gero-** prefix meaning elderly or old age; same as geronto-

**geronto-** prefix meaning elderly or old age; same as gero-



**Gibbs adsorption equation** quantitative expression of the excess amount of solute (moles/liter) at an interface (surface) over that in the body of the system; used to study surfactant effects in pharmaceutical systems

**Gibbs free energy equation** thermodynamic, quantitative expression of isothermally available energy as contrasted to isothermally unavailable energy; free energy changes symbolized by  $\Delta F$ ; SEE *Helmholtz free energy equation*; *Gibbs-Helmholtz equation*

**Gibbs-Helmholtz equation** thermodynamic quantitative expression combining free energy and external energy computations in order to measure the change of energy in a system undergoing a change at constant temperature and pressure

**Gibbs phase rule** quantitative expression for the number of degrees of freedom ( $F$ ) or variables that must be controlled (or determined) in a system in order to completely define it;  $F$  equals the number of components ( $C$ ) less the number of phases ( $P$ ) in a system plus 2, or  $F = C - P + 2$

**Gierke's disease** type I glycogenosis; a glycogen storage disorder

**gingivitis** inflammation of the gingiva (gums) caused by poor hygiene; may lead to periodontitis if not reversed

**Giusti-Hayton equation** equation for calculating the dosage of drugs in patients with decreased renal function

**gland** organ consisting of specialized tissue-cells capable of secreting substances (hormones) into the blood (endocrine), into a body cavity, or on the surface of the body (exocrine)

**glassine paper** thin, dense, transparent or semitransparent paper that is highly resistant to the passage of air and to a lesser degree water; used in weighing and preparing powder paper dosage units

**Glauber's salt** sodium sulfate decahydrate; used as a purgative to produce a watery evacuation of the bowel

**glidant** material that reduces interparticle friction and promotes the flow of granules during compression of tablets

**glister** SEE *clyster*

**globe valve** SEE *valve*

**globin** protein portion of hemoglobin

**globular protein** a protein that adopts a rounded or globular shape

**globule** made of pure sucrose, lactose, or other polysaccharides; formed into small globular masses of various sizes, and medicated by placing them in a vial and adding the liquid drug attenuation in a proportion not

less than 1 percent (w/v); after shaking, the medicated globules are dried at temperatures not to exceed 40°C; synonyms: pellets, pilules

**globules** SEE *orbicules*

**globulin** type of protein that is round in structure, soluble in dilute salt solutions, insoluble in pure water, and coagulable by heat

**glomerular filtration** process by which the glomerulus of the kidney conveys blood to the nephron and filters that blood with reabsorption of filtrate (water) into the peritubular capillaries and with blood waste products removed in the concentrated urine

**glomerulonephritis** SEE *Bright's disease*

**glomerulus** cluster of like structures, such as capillaries, usually describing those present in the kidney

**glonoin** nitroglycerin; glyceryl trinitrate

**Gloria Niemeyer Francke Leadership Mentor Award** established by the American Pharmacists Association in 1995 to recognize an individual who has promoted and encouraged pharmacists to attain leadership positions in pharmacy through example as a role model and mentor

**gloss-** prefix meaning the tongue; same as glosso-

**glossitis** inflammation (and usually infection) on the surface of the tongue

**glosso-** prefix meaning the tongue; same as gloss-

**glucagon** peptide hormone containing 29 amino acid residues; a hormone secreted into the blood by the alpha cells of the islets of Langerhans (pancreas) that serves as a major hormone in the regulation of carbohydrate metabolism; the hormone that raises blood glucose concentration

**gluco-** prefix meaning glucose, but sometimes used to mean carbohydrate

**glucocorticoid** type of adrenal corticosteroid that controls carbohydrate and fat metabolism

**glucogenic amino acid** a molecule whose carbon skeleton is a substrate in gluconeogenesis

**gluconeogenesis** production of glucose or glycogen from noncarbohydrates

**glucose** an aldohexose; synonym: dextrose; SEE ALSO *liquid glucose*

**glucose tolerance factor** a value specific for each patient based on the glucose tolerance test; indicative of the patient's ability to metabolize glucose

**glucosuria** the presence of glucose in urine; a symptom of diabetes mellitus

**glucuronidation** substitution of a glucuronic acid moiety on a molecule; a metabolic detoxification process

**glucuronide** derivative of glucuronic acid

**glutamate or glutamic acid** acidic amino acid derived from  $\alpha$ -L-ketoglutaric acid and commonly found in proteins; amino acid neurotransmitter in the brain; 2-aminopentandioic acid

**glycerin** clear, colorless, sweet-tasting, hygroscopic, syrupy liquid; synonyms: 1,2,3-propanetriol, glycerol

**glycerite** dosage form consisting of a solution of a substance in glycerin; example: tannic acid glycerite

**glycerogelatin** dosage form consisting of a soft medicated mass that melts near body temperature and has a base consisting of gelatin, glycerin, and water; used for topical drug therapy or as a suppository base

**glycerol** SEE *glycerin*

**glycerol phosphate shuttle** a metabolic process that uses glycerol-3-phosphate to transfer electrons from NADH in the cytosol to mitochondrial FAD

**glycine** aminoacetic acid; an amino acid commonly found in proteins

**glyco-** prefix meaning sugar or carbohydrate; SEE ALSO *gluco-*

**glycocalyx** a carbohydrate-containing structure on the external surface of cells

**glycogen** primary carbohydrate used for storage of body energy; white tasteless polysaccharide; synonym: animal starch

**glycogenesis** process of conversion of glucose to glycogen for storage in the liver

**glycogenolysis** process whereby glycogen in the liver is cleaved to yield glucose

**glycol** aliphatic compound containing two hydroxyl groups on adjacent carbon atoms; examples: ethylene glycol, propylene glycol

**glycolipid** a glycosphingolipid; a molecule in which a monosaccharide, disaccharide, or oligosaccharide is attached to a ceramide through an *o*-glycosidic linkage

**glycolysis** metabolic breaking down of sugars into simpler compounds, such as lactate, pyruvate, carbon dioxide, and water

**glycolysis, aerobic** pathways in the metabolism of sugars in which oxygen is required

**glycolysis, anaerobic** metabolism of sugars in processes not requiring oxygen

**glycoprotein** a conjugated protein in which carbohydrate molecules are the prosthetic group

**glycosaminoglycan** a long, unbranched, heteropolysaccharide chain composed of disaccharide repeating units

**glycoside** organic compound (usually obtained from natural sources) which, on hydrolysis, produces a carbohydrate (sugar) and a noncarbohydrate (genin or aglycone); most glycosides are physiologically active; example: digitoxin

**glycosuria** presence of glucose in the urine

**GM counter** SEE *Geiger-Muller counter*

**goal** a specific outcome toward which behavior is directed

**goblet cell** cells in the respiratory tract that produce mucus

**goiter** enlargement of the thyroid gland (usually due to an iodine deficiency in the diet)

**Goldflam disease** myasthenia gravis (a chronic, progressive muscular weakness)

**Golgi apparatus (complex)** a series of curved membranous sacs involved in packaging and distributing cell products to internal and external compartments

**Good Manufacturing Practices (GMP)** regulations of the U.S. Food and Drug Administration setting standards for manufacturing equipment and production processes

**Goodpasture syndrome** acute glomerulonephritis with hemoptysis intrapulmonary hemorrhage and anemia

**gout** disease resulting from an abnormality in the metabolism and excretion of purines in which uric acid levels of the blood are elevated and urates and uric acid are deposited in the joints

**G protein** a protein that binds GTP, which activates the protein to perform a function; the hydrolysis of GTP to form GDP inactivates the G protein

**grace period** a set number of days past the due date of a premium payment during which medical coverage may not canceled and the premium payment may be made

**graduate pharmacist** graduate in pharmacy; a two-year degree in pharmacy; last entering class was in 1931

**graft** slip of skin or other tissue for implantation

**grain** unit of weight common to the apothecary and the avoirdupois systems and equal to 64.8 mg; about one-fifteenth of a gram

**gram equivalent weight** quantity of a substance in grams equal to its molecular weight divided by the number of charges on the ionized molecule; in the case of oxidation-reduction, the gram molecular weight divided by the number of electrons gained or lost by the respective molecule in a specific chemical reaction

**grand rounds** a form of teaching usually done at a patient's bedside with the teacher presenting to a group of students or young practitioners

**granulation** process of preparing finely divided to moderate-sized particles of varying shapes (mostly spheroid) to produce a degree of structure for easy flow and compressibility, as in a granulation for tablet making

**granulation tissue** temporary, highly vascularized tissue that is mostly composed of fibroblasts and used as a temporary tissue during wound healing

**granule** particle resembling a small grain or having the characteristic of being grainy

**granule, delayed release** small medicinal particle or grain to which an enteric or other coating has been applied, thus delaying release of the drug until its passage into the intestines

**granule, effervescenta** small particle or grain containing a medicinal agent in a dry mixture usually composed of sodium bicarbonate, citric acid, and tartaric acid that, when in contact with water, has the capability to release gas, resulting in effervescence

**granule, for solution** small medicinal particle or grain made available in its more stable dry form, to be reconstituted with solvent just before dispensing; prepared to contain not only the medicinal agent, but the colorants, flavorants, and any other desired pharmaceutical ingredient

**granule, for suspension** small medicinal particle or grain made available in its more stable dry form, to be reconstituted with solvent just before dispensing to form a suspension; prepared to contain not only the medicinal agent, but the colorants, flavorants, and any other desired pharmaceutical ingredient

**granule, for suspension, extended release** small medicinal particle or grain made available in its more stable dry form, to be reconstituted with

solvent just before dispensing to form a suspension; achieves slow release of the drug over an extended period of time and maintains constant drug levels in the blood or target tissue

**granules** small sugar particles with liquid medicinals applied and then dried; frequently used in homeopathy to deliver very small doses

**granulocyte** white blood cell that has granules in its cytoplasm; examples: neutrophil, basophil, eosinophil; synonym: myelocyte

**granulocytopenia** SEE *agranulocytosis*

**granuloma** mass of tissue derived from lymphoid cells and occurring with the chronic inflammation associated with infectious diseases such as tuberculosis or syphilis

**grape sugar** SEE *dextrose*

**graph** plot of values for an independent variable ( $x$ ) against corresponding values of a dependent variable ( $y$ ) in order to illustrate the relationship between them; example: blood concentration of a drug as a function of time

**graph, linear** plot that is a straight line or exhibits a constant slope over an experimental range

**graph, log-log** one in which the values of both variables are plotted as the logarithm of the actual numbers; a graphical means to attempt to find a linear expression of the relationship between variables

**graph, semilog** a plot in which the logarithms of the actual values of one variable are plotted against the actual values of the other variable; a graphical means to find a linear expression of the relationship between two variables

**Grave's disease** toxic goiter; hyperthyroidism

**gravimetric analysis** quantitative determination of the amount of a substance present in a sample calculated by isolating a derivative compound and weighing it using an analytical balance

**gravimetry** measurement of weight

**gravity bag filter** use of a woven filter medium in the form of a bag and the force of gravity to separate the desired component; example: separation of magnesia magma

**gravity filter** filtration setup that depends on gravitational forces only to accomplish the process; example: Nutzche gravity filter

**green soap** potassium soap made by the saponification of various vegetable oils without removing the glycerin; synonym: soft soap

**green vitriol** ferrous sulfate; copperas

**grinding** reduction of a substance to a powder by friction and pressure;  
SEE *comminution*

**grossing** series of steps in tablet sugar-coating that produces a smooth, uniformly colored coat onto a previously applied subcoat

**gross margin** excess of sales over the costs of goods sold for a business; gross margin equals sales less cost of goods sold; synonym: gross profit

**gross profit** SEE *gross margin*

**group** a collection of individuals treated as a single entity; usually, an employer purchasing medical coverage on behalf of its full-time employees

**group contract** the application and addenda, signed by both the health plan and the enrolling unit, that constitutes the agreement regarding the benefits, exclusions, and other conditions between the health plan and the enrolling unit; also, the agreement with persons who obtain coverage for themselves and their children, whether under a group or individual program

**Group Health Association of America** merged with American Managed Care Research Association to form the American Association of Health Plans

**group insurance** any insurance policy or health services contract by which groups of employees (and often their dependents) are covered under a single policy or contract, issued by their employer or other group entity

**group model HMO** a health care model involving contracts with physicians organized as a partnership, professional corporation, or other association

**group practice prepayment plan** an organized group of medical care providers that offers selected medical and health services to members on a prepaid, fixed premium basis

**group purchasing organization** a shared service combining the purchasing power of individual hospitals to obtain lower prices for equipment, supplies, and services

**growth factor** an extracellular polypeptide that stimulates cells to grow and/or undergo cell division

**growth hormone** (GH) endocrinal peptide substance produced by the anterior pituitary gland that serves to enhance protein conversion into more complex compounds and thus into living matter

**GTPase activating protein** a protein molecule that hydrolyses GTP bound to a GTP binding protein

**guaranteed renewability** the assurance that an insurance company will continue to offer a policy to an individual or group that has made premium payments on a timely basis; prohibits an insurance company from dropping coverage due to specific circumstances, including high medical claims or illness

**guild** early trade or professional association in Italy, France, Germany, and England

**Guillain-Barré syndrome** acute idiopathic polyneuritis (simultaneous inflammation of a large number of the spinal nerves)

**Gull's disease** myxedema; hypothyroidism

**gum** substance exuded or extracted from certain plants that is sticky when moist or warmed but hardens when dried or cooled; COMPARE *mucilage*

**gum, chewing** sweetened and flavored insoluble plastic material of various shapes that, when chewed, releases a drug substance into the oral cavity

**gum resin, natural** mixture of gum and resin, usually obtained as exudations from plants

**gum Arabic** SEE *acacia gum*; *camphor*

**guncotton** soluble pyroxylin; a nitrate ester of cellulose

**gutta percha** milky sap of trees that is purified and dried; used as a substitute for collodion

**gyn-** prefix referring to the female sex; same as *gyne-*, *gyneco-*, *gyno-*

**gyne-** prefix referring to the female sex; same as *gyn-*, *gyneco-*, *gyno-*

**gyneco-** prefix referring to the female sex; same as *gyn-*, *gyne-*, *gyno-*

**gynecologist** a physician who specializes in diseases of the female genital tract

**gynecology** branch of medicine specializing in diseases of the female reproductive tract

**gynecomastia** overdevelopment of the male mammary glands

**gyno-** prefix referring to the female sex; same as *gyn-*, *gyne-*, *gyneco-*

**gypsum** calcium sulfate dihydrate

**gyrus** rounded elevations of the brain





**H. A. B. Dunning Award** established by the American Pharmacists Association in 1982 recognizing a pharmaceutical manufacturer for exemplary contributions to the practice of pharmacy

**half-life** the time elapsed when one-half of an active substance remains, the other half having been degraded, processed, or removed from the system under study

**half-life, biological** time required for one-half of a drug to be metabolized or eliminated from the body

**halide** a chemical compound formed between a halogen and other atoms; examples: sodium chloride, potassium iodide, calcium bromide

**hallucination** sensory perception in the absence of external stimulus; synonym: delusion

**hallucinogen** agent that produces hallucinations when taken into the body

**hallux** the large toe

**halo effect** bias that occurs when performance in one dimension affects ratings of performance in another dimension

**halogen** any of several elements belonging to group VII of the periodic table; included in the halogens are fluorine, chlorine, bromine, iodine, and the artificially formed element astatine; each of the natural halogens were discovered by pharmacists

**halogenation** reaction in which a halogen is either added to carbon-carbon double bonds or substituted for a hydrogen on a hydrocarbon

**Hamman-Rich syndrome** idiopathic diffuse interstitial pulmonary fibrosis

**hammer mill** apparatus that contains rotating flat metal impellers and a screen enclosed in a heavy duty housing; used to reduce particle size of friable materials by impaction and attrition

**Hammett equation** used for predictions for reactions such as the strength of acids and the influence of substituents

**Hammond's disease** congenital athetosis

**Hansen's disease** leprosy (a chronic granulomatous infection of the skin)

**haptén or haptène** partial antigen; substance that must attach to a protein to form an antigen

**hardness tester** instrument designed to measure the pressure (kilograms per cm<sup>2</sup>) required to break a tablet and determine its hardness

**hard paraffin** purified mixture of solid hydrocarbons obtained from petroleum; synonym: paraffin wax

**hard soap** SEE *castile soap*

**hard water** natural water containing high concentrations of di- and tri-valent metals such as calcium, magnesium, and iron

**Harley's disease** paroxysmal hemoglobinuria

**Harrison Narcotic Act of 1914** established controls on the prescribing and dispensing of opiates and their derivatives

**Hartmann's solution** synonym for lactated Ringer's solution

**hartshorn spirit** strong ammonia solution

**Harvey A. K. Whitney Award** established in 1950 by the Michigan Society of Hospital Pharmacists and transferred to the American Society of Hospital Pharmacists in 1963; honors outstanding contributions to hospital (health system) pharmacy and is health system pharmacy's highest honor

**Hashimoto's disease** lymphadenoid goiter; thyroiditis

**HCPC System** SEE *Healthcare Common Procedure Coding System*

**headache crystals** synonym for menthol

**health belief model** used to understand the likelihood of an individual to take action or change behavior by focusing on perceived susceptibility and severity of a disease

**health benefits package** the services and products (coverage) a health plan offers a group or individual

**Healthcare Common Procedure Coding System** a Medicare coding system for identifying a wide variety of services, including indictable drugs used in physicians' offices

**Health Care Financing Administration** (HCFA) the federal agency responsible for administering Medicare and overseeing states' administration of Medicaid; name changed to the Centers for Medicare and Medicaid Services (CMS) in 2001

**health care prepayment plan** a cost contract that prepays a health plan a flat amount per month to provide Medicare-eligible Part B medical services to enrolled members.

**health coverage** insurance that provides payment of benefits for covered sickness or injury and may include short- and long-term disability, dental, medical, vision, and sometimes accidental death coverage

**Healthcare Distribution Management Association** organization of drug and drug-related wholesalers that exists for the purpose of improving the distribution of products from manufacturers to pharmacies; founded in 1876 (formerly National Wholesale Druggists Association)

**health education** instruction provided to patients to promote and prompt better utilization of health care

**health insurance** financial protection against the medical care costs arising from sickness, disease, or accidental bodily injury; usually covers all or part of the medical costs of treatment; may be obtained on either an individual or a group basis

**Health Insurance Portability and Accountability Act** passed in 1996; addressed (1) guarantees for health insurance access, portability, and renewal; (2) preventing health care fraud and abuse; (3) medical savings accounts and coverage for the self-employed; (4) enforcing group health plan provisions; and (5) revenue offset provisions; with provisions in Section 2 to protect the privacy and security of health-related information

**health IRAs** (individual retirement accounts) proposed tax-deferred plans to encourage saving for future medical expenses

**health maintenance organization** (HMO) organized medical care delivery system often characterized by periodic fixed prepayments rather than fee for service charges; often places at least some of the providers at risk for medical expenses and uses primary care physicians as gatekeepers

**Health Plan Employer Data and Information Set** (HEDIS) (trademark) a core set of performance measures used to assist employers and other health purchasers in understanding the value of health care purchases and evaluating health plan performance

**health service agreement** (HSA) the detailed procedure and benefit description given to each enrolled employer

**health status** level of physical, social, and psychological well-being of an individual or group

**Healthy People 2010** a national strategy for improving the health of the U.S. population; provides a framework to reduce preventable death and injury

**heart 1:** hollow muscular organ divided into chambers; main purpose is to pump blood to body cells against the peripheral resistance of the body  
**2:** the essence of one's being or the central issue in a matter under discussion

**heart attack** onset of symptoms and effects caused by blockage of a coronary artery or a branch of the artery; pain may be located behind the

breastbone or referred to the shoulder, neck, or an arm (more specifically the left arm); synonym: myocardial infarction

**heartburn** a sensation of burning in the esophagus caused by reflux of acid secretions from the stomach; synonym: gastroesophageal reflux; frequent—heartburn occurring two or more days per week (not episodic or food-related)

**heart muscle** cardiac muscle fibers forming a continuous network or syncytium, composed of three layers: epicardium (outer), myocardium (middle), and endocardium (inside)

**heat** form of energy which is transferable from one substance to another and which is measured by an intensity factor (temperature) and a capacity factor (calories per gram per degree of temperature change); heat transfer a necessary consideration in all pharmaceutical processes

**heating bath** container for holding a liquid heat transfer agent such as water, oil, or glycol; the heat source and the liquid bath that transfers heat to another substance in a reasonably controlled system; examples: water bath, oil bath

**heating pad** device used to deliver local heat to the patient; heat generated by passing electricity through wires embedded in insulation

**heat-shock protein** a protein synthesized in response to stress (e.g., high temperature)

**heat therapy** therapy utilizing continuous low-level heat for an extended period of time

**Hebert, Louis** (ca. 1580-1627) French pharmacist who provided for health needs of two early French colonies, one at Port Royal and the other at Quebec City, Canada; first known pharmacist in North America

**Heisenberg uncertainty principle** rule stating that it is not possible to determine both position and energy of a moving object; significant only for atomic particles such as orbital electrons

**helicase** ATP-requiring enzymes that catalyze the unwinding of duplex DNA

**Helmholtz free energy equation** thermodynamic quantitative expression of isothermally available internal energy; synonym: work function; contrasted to isothermally unavailable internal energy; SEE ALSO *Gibbs free energy equation*

**helminthiasis** disease caused by an infestation of the host with worms

**hem-** prefix meaning blood; same as hema-, hemat-, hemato-, hemo-

**hema-** prefix meaning blood; same as hem-, hemat-, hemato-, hemo-

**hemat-** prefix meaning blood; same as hem-, hema-, hemat-, hemo-

**hematemesis** vomiting of blood

**hemato-** prefix meaning blood; same as hem-, hema-, hemat-, hemo-

**hematocrit** percentage of erythrocytes in a specified volume of whole blood

**hematuria** the presence of blood in the urine

**heme** an iron compound that, when combined with globin, is responsible for oxygen-carrying properties of the blood

**hemiacetal** one of the family of organic molecules with the general formula  $RR'C(OR')(OH)$ , formed by the reaction of one molecule of alcohol with an aldehyde

**hemicellulase** enzyme that splits gums (polysaccharides) into smaller units

**hemiketal** one of a family of organic molecules with the general formula  $RR'C(OR')(OH)$ , formed by the reaction of one molecule of alcohol with a ketone

**hemiplegia** paralysis of one side of the body

**hemiterpene** isoprene; half of terpene; a hydrocarbon composed of five carbon atoms and two double bonds; 2-methylbutadiene

**hemo-** prefix meaning blood; same as hem-, hema-, hemat-, hemato-

**hemoblastoma** tumor that contains cells similar to those found in bone marrow

**hemochromatosis** an iron-storage disorder that results in an excessive accumulation of iron in the body resulting in a bronze skin pigmentation, hepatic cirrhosis, and diabetes mellitus

**hemoglobin** oxygen-carrying pigment of red blood cells

**hemoglobin A<sub>1</sub>** normal adult hemoglobin that comprises 95 percent of the hemoglobin in the normal human being; composed of  $\alpha_2\beta_2$  (two alpha globins combined with two beta globins)

**hemoglobin A<sub>1c</sub>** glycosylated hemoglobin used to estimate blood glucose levels in diabetics

**hemoglobin A<sub>2</sub>** normal adult hemoglobin that comprises 5 percent of the hemoglobin in the normal human being; composed of  $\alpha_2\delta_2$  (two alpha globins combined with two delta globins)

**hemoglobin F** fetal hemoglobin; the predominant hemoglobin of the fetus that normally disappears before birth; in certain anemias, may persist

after birth; composed of  $\alpha_2\gamma_2$  (two alpha globins combined with two gamma globins)

**hemoglobinopathies** diseases involving a change in the globin structure of hemoglobin; either the alpha or the beta globin may be involved; examples: sickle cell anemia, Mediterranean anemias

**hemoglobin S** type of hemoglobin found in sickle cell anemia in which valine replaces the glutamic acid residue normally found in the "6" position of the  $\beta$ -globin chains of hemoglobin A<sub>1</sub>

**hemolysis** destruction of red blood cells

**hemolytic** refers to a disease in which there is a destruction of red blood cells

**hemolytic anemia** anemia caused by the early destruction of red blood cells and the inability of the bone marrow to compensate for the red blood cell shortened life span

**hemophilia** genetic disorder resulting in the deficiency of clotting factor VIII and characterized by spontaneous or excessive bleeding

**hemoprotein** a conjugated protein in which heme, an iron-containing organic group, is the prosthetic group

**hemoptysis** expulsion of blood-stained sputum; may be a sequelae of gastroesophageal reflux

**hemorrhage** bleeding, usually considered to be uncontrolled

**hemorrhoids** enlarged veins in the hemorrhoidal plexus

**Henderson-Hasselbalch equation** quantitative expression of the relationships between pH,  $pK_a$ ,  $pK_b$ , and the log of the ratio of the concentration of ionized to unionized species in a system; for weak bases and their salts the pH equals the  $pK_b$  plus the log of the ratio of the concentration of unionized base to the concentration of ionized (salt); for weak acids and their salts pH equals the  $pK_a$  plus the log of the ratio of the the concentration of ionized salt to the concentration of the unionized acid; useful for pH-buffer computations; synonym: buffer equation; SEE ALSO *buffer*

**Henry, O.** (1862-1910) pseudonym for William S. Porter; began his career as a pharmacist and later became a renowned short story author

**HEPA filter** highly efficient, particulate air (HEPA) filter that has at least 99.97 percent efficiency in removing particles of 0.3  $\mu$ m and larger

**heparin** mucopolysaccharide that prevents blood clotting

**hepat-** prefix meaning liver; same as hepato-

**hepatitis** inflammation of the liver

**hepatitis, acute** form of hepatitis producing overt symptoms of the condition that are readily observed; causes acute yellow atrophy of liver, a form of hepatic necrosis

**hepatitis, chronic** form of hepatitis that has a more prolonged course

**hepatitis, infectious** form of hepatitis caused by a virus; may be contracted when using drinking glasses or touching other objects that have been contaminated by persons infected with the disease; causative organism: hepatitis type A virus

**hepatitis, serum** a form of liver inflammation caused by injection of nonsterile substances into the blood or the use of nonsterile needles for injection; causative organism: hepatitis type B virus

**hepato-** prefix meaning liver; same as hepat-

**hepatomegaly** enlargement of the liver

**herb** leafy plant without a woody stem

**herbal** general title for any book on herbs; relating to herbs

**herbalist** one who specializes in selling herbs

**herbarium** **1:** collection of dried herbs **2:** place that houses a collection of herbs

**herbicide** chemical used to kill or control weeds

**hermetically sealed** subjected to a heat-sealing process; examples: sealed glass or plastic containers, gelatin capsules

**hermetic container** SEE *container, hermetic*

**Herzberg's theory** theory of motivation which holds that all motivating factors can be divided into two groups (satisfiers and dissatisfiers); satisfiers are those aspects of the job which positively motivate an employee and dissatisfiers are those aspects which produce dissatisfaction if they are not fulfilled

**heterogeneous nuclear RNA** a primary transcript of DNA; precursor of an mRNA

**heterotroph** an organism that attains energy by degrading preformed food molecules obtained by consuming other organisms

**hidrosis** term to describe excessive wetness or perspiration

**high-density lipoprotein** a type of lipoprotein with a high protein content that is believed to scavenge excess cholesterol from cell membranes and transport it to the liver

**high-energy compound** compound that upon hydrolysis releases at least seven kilocalories of energy per mole of the compound; SEE *high-energy phosphates*

**high-energy phosphates** phosphate compounds that upon hydrolysis release at least seven kilocalories of energy per mole of compound; examples: phosphate and mixed-phosphate anhydrides; SEE *high-energy compound*

**high-energy solids or liquids** substances whose molecules are held together by valent, covalent, coordinate covalent, hydrogen, and/or dipolar attractive bonds or forces; (pharmaceutically) ionic or dipolar nonionic, inorganic or organic, hydrophilic substances

**high iso-elixir** synonym for high isoalcoholic elixir

**Higuchi, Takeru** (1918-1987) a chemist by training, a pharmacy educator, and scientist; founder of the APhA Academy of Pharmaceutical Sciences; Remington Honor Medal recipient in 1983

**Hill-Burton Act** federal program that provides grants to states to construct new hospitals; initiated in 1946 and has since become a part of national health planning legislation (Public Law 93-641)

**Hippocrates** (ca. 460-370 B.C.) Greek physician known for his healing knowledge involving the "humors of the body"; writings attributed to him are in the *Hippocratic Corpus*; attributed to him as well is a medical oath, the Hippocratic Oath; the "Father of Medicine"

**Hirschsprung's disease** dilation of the colon causing obstruction at the rectum with resultant constipation and growth retardation

**hirsutism** an abnormal increase in body hair; the growth of hair in an abnormal place on the body, as in females who grow a beard, for example

**histamine** an endogenous amine resulting from the decarboxylation of histidine; hormone released in response to an antigen-antibody reaction

**histidine** a basic amino acid commonly found in proteins; precursor to histamine; 3-(3-imidazolyl)2-aminopropanoic acid; one of ten essential amino acids

**histoplasmosis** disease caused by the fungus *Histoplasma capsulatum*; may infect lungs, skin, mucous membranes, bones, skin, and eyes

**Hodgkin's disease** anemia lymphatica; also a term for lymphoma

**hog gum** SEE *tragacanth gum*

**holoenzyme** the complete enzyme; a combination of the apoenzyme and the coenzyme

**holoprotein** an apoprotein combined with its prosthetic group



**home health care** level of health services for the ill patient in the place of residence in lieu of more expensive care in a hospital; examples: total parenteral nutrition instead of kidney dialysis

**homeopathy** sect of medical practice proposed by the German physician Samuel C. Hahnemann (1755-1843), indicating that medications which produce symptoms in the body that mimic those of the disease are good for treating the disease, when used in minute doses and very finely divided

**homeostasis** tendency toward physiological stability; a condition of a dynamic equilibrium of the environment of the body

**homogenize** to reduce a substance to small particles of relatively uniform size and distribute them evenly, usually in a liquid; example: to break up the fat globules of milk into very fine particles by forcing it through minute openings

**homologous polypeptide** a protein molecule whose amino acid sequences and functions are similar to those of another protein

**honeys** obsolete dosage form that used honey as a base or vehicle for medications

**Hoppe-Goldflam syndrome** myasthenia gravis

**hopper** the container on a tablet machine that holds the material to be tableted

**horizontal strip** placement technique in which the products are placed in ascending size order from left to right; the leading brand is placed at eye level; a merchandising expression

**hormone** chemical secreted by a ductless gland that has a physiological effect on other parts of the body; a product of the endocrine system of the body that produces physiological effects on the body; many used as drugs to correct an abnormal or a deficiency condition; examples: adrenal cortex hormones, insulin, sex hormones

**hormone response element** a specific DNA sequence that binds hormone-receptor complexes; the binding of a hormone-receptor complex either enhances or diminishes the transcription of a specific gene

**hospice** program of supportive care for terminally ill persons and their families; care designed to make the patient comfortable and prepare the patient and family for the impending death

**hospital** institution for the medical and surgical treatment of the sick and injured

**hospital affiliation** a contractual relationship between a health plan and one or more hospitals whereby the hospital provides the inpatient benefits offered by the health plan

**hospital alliance** a group of voluntary hospitals that have joined together to reduce costs by sharing common services and developing group purchasing programs

**Hubert H. Humphrey Award** established by the American Pharmacists Association in 1978 to recognize major contributions in government or legislative service at the local, state, or national level

**Huchard's disease** essential hypertension

**Hugo H. Schaefer Award** established by the American Pharmacists Association in 1964 to recognize outstanding voluntary contributions to society, the profession of pharmacy, and the APhA

**human risk management** proactive service designed to reduce the demand for treatment by identifying, assessing, and managing individuals' medical or behavioral health risks before treatment becomes imperative

**humectant** substance that promotes the retention of moisture; used in pharmaceuticals to prevent drying

**humidifier, impeller** device for providing humidity to the home by immersing a rotating impeller in a reservoir of water which breaks water into small droplets

**humidifier, ultrasonic** device for providing humidity to the home through the use of an ultrasonic transducer that breaks water into a fine mist

**humidity** relative amount of water vapor present in a gas such as air; humidity control a vital consideration in pharmaceutical production and drug stability control

**humidity, absolute** weight of water vapor per unit weight of dry air

**humidity, relative** 100 times the ratio of the quantity of water vapor present in a gas to the saturation humidity amount at a given temperature; a condition of 50 percent relative humidity means a gas (such as earth's atmosphere) has one-half the water vapor it will hold at that temperature; quantitatively, relative humidity is the ratio of the partial pressure of water vapor in air to the vapor pressure of liquid water at the same temperature

**humidity, saturation** a condition in which air or another gas holds the maximum amount of water vapor; a condition in which the vapor pressure of water in a gas is equal to the vapor pressure of liquid water in the system

**humoral immune response** immunity that results from the presence of antibodies in blood and tissue fluid; also referred to as antibody-mediated immunity

**humoral pathology** medical practice theory attributed to Hippocrates indicating that the body consisted of four fluids (humors) that must be in balance to have good health; Galen systematized this theory as factual and made it the basis of medical practice for over a millennium

**humors** body liquids that were a part of the Hippocratic concept that the body consisted of four such liquids (blood, phlegm, yellow and black bile) called “humors”

**Humphrey, Hubert Horatio** (1911-1978) worked in his father’s drug-store and became a pharmacist himself; was attracted early to politics and became the mayor of Minneapolis and later a U.S. Senator; was Vice President of the United States during Lyndon Johnson’s presidency and unsuccessfully ran for president in 1968; co-author of the Durham-Humphrey Amendment

**hybridization 1:** phenomenon in which lower energy orbital electrons are slightly elevated to higher levels and correspondingly higher energy electrons assume a slightly lower level thereby forming a new energy level for all electrons involved in the shifts; an explanation of the tetravalency of carbon **2:** in genetics, the offspring of parents that are of different varieties or species **3:** a new DNA resulting from the insertion of a foreign segment (from another species) of DNA into the genome of an organism by recombinant DNA methods

**hybridized orbital** an electron orbital resulting from the mixing of individual atomic orbitals; important for the formation of molecular orbitals; examples:  $sp^3$  hybridization—important to the chemistry of carbon and nitrogen;  $d^2 sp^3$  hybridization—important in covalent metal complexes;  $sp^2$  hybridization—important in ethylene;  $sp$  hybridization—important in acetylene

**hybrid model HMO** an HMO that combines attributes of more than one of the four principal HMO models and hence is not classifiable in any one of the four categories

**hydr-** prefix meaning water or hydrogen; same as hydro-

**hydration** a type of addition reaction in which water is added to a carbon-carbon double bond

**hydro-** prefix meaning water or hydrogen; same as hydr-

**hydroalcoholic** liquid composed of water and alcohol; may be combined in any proportion

**hydrocarbon** a molecule that contains only carbon and hydrogen

**hydrocortisone** nonprescription corticosteroid that is useful for minor medical conditions such as dermatitis, genital itching, hemorrhoids, insect stings, etc.

**hydrodynamic theory** theory presenting a possible mechanism through which teeth become hypersensitive

**hydrogen** gaseous element having an atomic weight of 1.008 and an atomic number equal to one; used in hydrogenation reactions; very flammable and highly explosive gas

**hydrogenation** reaction in which a reactant is reduced by the catalytic addition of molecular hydrogen to easily reducible groups such as across the carbon-carbon double bonds, the carbon-oxygen double bonds of ketones, and the carbon-nitrogen double bonds of imines

**hydrogenolysis** removal of a group from a compound by a reaction with hydrogen in the presence of a catalyst; a type of catalytic hydrogenation; example: debenzylation

**hydrolase** enzyme that catalyzes the removal of a group by use of water; examples: protease, esterase, carbohydase

**hydrolysate** product of hydrolysis; example: protein hydrolysate

**hydrolysis** a chemical reaction that involves the reaction of a molecule with water; the process by which molecules are broken into their constituents by adding water

**hydrometer** a graduated floating cylinder used to indicate the specific gravity of liquids by sinking in a liquid to a depth corresponding to the specific gravity of the liquid

**hydrophilic** having an affinity for water

**hydrophil-lipophil balance** (HLB) relative expression of the degree of affinity a surfactant molecule has for oil and water; sometimes expressed as a weighted percentage of hydrophilic atoms in the molecule

**hydrophobic** lacking an affinity for water

**hydrophobic bonding** type of bonding in an enzyme-substrate or in a drug-drug receptor complex formation in which the water structure of the enzyme protein (the receptor) becomes less structured and shifts to other positions on the protein (or receptor) molecule; this entropy shift is the driving force for a perturbation (shape change) in the molecule

**hydrotrophy** increase in water solubility of various substances due to the presence of large amounts of additives

**hydroxycobalamin** form of vitamin B<sub>12</sub> in which a hydroxy group is bound to the central cobalt

**hydroxylase** form of oxygenase that catalyzes the substitution of a hydroxyl group on a molecule

**Hygeia** Greek goddess of health, daughter of Asklepios; symbolized by the bowl and serpent; modern symbol of pharmacy

**hygrometer** device used to measure relative humidity by utilization of materials that change in dimensions or intensity with different humidity conditions; electric—uses changes in electrical resistance as humidity changes; mechanical—uses a substance that expands or shrinks with humidity change

**hygroscopic** able to take up moisture readily and retain it; example: glycerin's ability to absorb moisture from the atmosphere

**hyoscine** alkaloid obtained from *Atropa belladonna*; synonym: scopolamine

**hyoscyamine** alkaloid obtained from plants in the family Solanaceae that acts pharmacologically as a parasympatholytic or an anticholinergic; a levo-rotatory isomer of atropine

**hyper-** prefix meaning above, beyond, or excessive

**hyperalimentation** usually refers to parenteral hyperalimentation (IVH) in which a concentrated solution of nutrients is introduced into a large vein such as the vena cava by means of a subclavian catheter; central IVH differs from central TPN by the presence of a fat emulsion in the formulation used for TPN

**hyperammonemia** a potentially fatal elevation of the concentration of ammonium ions in the blood

**hyperbilirubinemia** elevated bilirubin in the blood

**hypercalcemia** elevated concentration of calcium or calcium-containing compounds in the blood; the normal level of calcium is 5 mEq/L serum or 10 mg/100 mL

**hyperglycemia** blood glucose levels that are higher than normal

**hyperkalemia** a condition in which the potassium level in the blood is abnormally high

**hypermelanosis** excessive pigmentation of the skin

**hyperosmolar** possessing an osmotic pressure greater than that of normal blood plasma

**hyperosmolar hyperglycemic nonketosis** severe dehydration in non-insulin dependent diabetics; caused by persistent high blood glucose levels

**hyperoxaluria** an excess of oxalate in the urine

**hyperplasia** excessive size of a tissue due to an increase in the number of cells

**hyperpnea** abnormal increase in the depth and rate of respiration

**hyperpyremia** elevation of body temperature over normal

**hypersensitivity pneumonitis** inflammatory condition of the airways; an infrequent consequence of using a poorly cleaned home humidifier

**hypertension** blood pressure that is elevated above the values considered normal (70-80 diastolic and 115-125 systolic)

**hypertonic solution** pertaining to an increased tonicity (internal pressure) or tension above that observed in normal body fluids; solution containing a greater number of dissolved particles per unit volume than in body fluids; CONTRAST *hypotonic solution*

**hypertrichosis** excessive growth of hair; example: a female using 5 percent minoxidil may experience hypertrichosis on the face or other areas

**hypertrophy** enlargement of a tissue due to an increase in the size of the cells

**hyperuricemia** higher than normal levels of uric acid and urates in the blood

**hypno-** prefix meaning sleep

**hypnosis** mental phenomenon manifested by a person's ability to respond to suggestions, provided that these do not seriously conflict with a person's beliefs

**hypnotic** a drug that produces sleep by depressing the CNS

**hypo-** prefix meaning below or less than normal

**hypoalbuminemia** lower than normal blood levels of albumin

**hypochlorite** salt of hypochlorous acid

**hypochlorous acid** compound of chlorine formed by the reaction of chlorine with water; a compound in which the chlorine has an oxidation number of +1

**hypochromic effect** the decrease in the absorption of UV light (260 nm) that occurs when purine and pyrimidine bases are incorporated into base pairs in polynucleotide sequences

**hypodermic tablets** SEE *tablet, compressed*

**hypogeusia** reduced taste sensation

**hypoglycemia** a condition in which the glucose level in the blood is abnormally low

**hypoglycemic agent** agent that acts to lower blood glucose level; used in adult-onset diabetes

**hypokalemia** abnormally low serum potassium

**hypomania** excited psychopathologic state between euphoria and mania

**hyposalivation** saliva production below the norm, resulting in xerostomia (dry mouth)

**hypotension** abnormally low blood pressure

**hypotensive agent** drug that lowers blood pressure

**hypothermia** state of a lower than normal body temperature; results in a decrease in metabolism of the body that decreases the need for oxygen; usually defined as body temperature below 95°F (35°C); a dangerous, potentially fatal condition in the elderly and the severely debilitated

**hypotonic solution** one that has a lower osmotic pressure than another solution (usually body fluid); CONTRAST *hypertonic solution*

**hypovolemia** abnormal decrease in the volume of blood in the body

**hypoxanthine** 6-oxypurine or 6-oxopurine; an intermediate in the metabolic degradation of purines to uric acid

**hypoxanthine/guanine phosphoribosyl transferase** enzyme responsible for the resynthesis of guanylic acid from guanine and phosphoribosyl pyrophosphate or inosinic acid from hypoxanthine and phosphoribosyl pyrophosphate; its absence a cause of some forms of gout and Lesch-Nyhan syndrome

**hypoxia** deficiency of oxygen

**hysteresis loop** the enclosed area in a thixotropic flow curve; the greater the area, the greater the degree of thixotropic breakdown; a consideration in suspension stability

**-iasis** suffix meaning condition of



**iatrochemistry 1:** medical science that conceived of the body as a chemical system that must be in balance for good health; initiated by Paracelsus and expanded by Helmont and Sylvius

**2:** medicinal chemistry **3:** pharmaceutical chemistry

**iatrogenic** refers to a disorder caused by a physician's treatment

**iatrogenic illness** malady or adverse condition that results from the treatment given by a physician

**iatrophysical** concept of the body as a machine functioning according to mechanical theory

**ICD-9 System** SEE *International Classification of Diseases System*; SEE ALSO *International Classification of Diseases, Ninth Edition*

**ichthammol** nonprescription chemical of unknown safety and efficacy once used to help resolve furuncles by brining them "to a point"

**id** in Freudian theory, the part of the personality encompassing instinctual desires; SEE ALSO *ego*; *superego*

**ideal solution** SEE *solution*

**idio-** prefix meaning separate or distinct from

**idiopathic** refers to an abnormal state of unknown cause

**idiosyncrasy** an abnormal response or habit that is peculiar to an individual

**ileus** an obstruction of the bowel due to either motility dysfunction or mechanical blockage

**imide** chemical compound that contains a nitrogen atom bonded between two carbon atoms, each of which is double-bonded to oxygen atoms

**immiscible** term to describe two or more liquids that form different layers when placed in the same system; liquids that do not mix easily

**immunity** ability of the body to resist invasion by foreign organisms or materials and/or to overcome infection

**immunity, active** type of immunity the body develops by forming its own antibodies against a specific disease

**immunity, passive** type of immunity in which the antibodies are made in one individual and then transferred to another person to be immunized

**immunoglobulin A** (IgA) a secretory antibody having an alpha type of heavy globulin and kappa or lambda light chains

**immunoglobulin D** (IgD) a type of antibody with delta heavy chains and kappa or lambda light chains

**immunoglobulin E** (IgE) a type of antibody involved in allergies that contains epsilon heavy chains and kappa or lambda light chains



**immunoglobulin G (IgG)** the most common type of antibody against infectious diseases; contains gamma heavy chains and kappa or lambda light chains

**immunoglobulin M (IgM)** a macroglobulin type of antibody against infectious diseases that contains mu-type heavy chains and kappa or lambda light chains

**immunosuppressive agent** a substance that suppresses or interferes with the normal immune response

**impaction 1:** deposition of particles as a result of their lack of momentum in the respiratory tract **2:** a basic mechanism for particle size reduction

**impaction, fecal** hardened stool caused by failure to ingest sufficient water and/or fiber; stool eventually becomes desiccated and difficult to evacuate

**impairment** any loss or abnormality of psychological, physiological, or anatomical structure or function

**impalpable** incapable of being felt by touch; example: finely powdered talc cannot be felt when rubbed between the fingers

**impeller** mass transfer device that is part of mixing or transporting equipment; examples: propeller, blade, baffle, paddle

**impeller humidifier** device for increasing humidity in the house or workplace; functions by means of a rapidly rotating hollow spindle immersed in a reservoir of water; water is thrown with force against a screen, breaking it into fine particles that enter room air

**impetiginization** self-infection of the skin caused by compulsive scratching at the skin with unclean fingernails

**impetigo** mixed staphylococcal/streptococcal infection of the skin; requires prescription antibiotics for resolution

**implant** small, sterile, solid masses for placement in the body to provide a continuous release of medicine over time

**implant dentistry** dental practice involving the replacement of one or more teeth in their natural receptacle (gum and jawbone cavity)

**impotence** inability of the male to successfully complete sexual intercourse

**impulse sales** unplanned purchases; purchase decisions made by customers while in the pharmacy in reaction to display items

**in situ 1:** in the normal place; restricted to an original site without affecting surrounding tissue **2:** chemical term meaning at the time and place of a reaction

**in vitro** in glass or outside the living body and in an artificial environment

**in vivo** in the living body of an animal or plant

**inborn error of metabolism** genetic disease in which there is an absence of a specific enzyme

**incidence** (epidemiology) measure of the number of new cases of illness or other forms of morbidity over a particular period of time for a given population

**incident report** written summary of an action taken that was harmful or that did not fulfill a doctor's orders

**inclusion compound** physical entrapment of molecules of one substance within lattice structures of larger molecules; a type of complexation; synonym: occlusion compound

**income statement** periodic financial statement that is a summary of revenues (sales), expenses, and net income of a business for a given period of time; synonym: profit and loss statement

**incompatible** **1:** antagonistic **2:** unsuitable for use together because of undesirable physical, chemical, or physiological effects **3:** incapable of blending into a stable mixture; example: immiscibility of oil and water

**incontinence** inability to control one's urination or defecation

**incontinent** unable to contain or retain; example: urinary incontinence

**incurred but not reported** costs associated with a medical service that has been provided, but for which a claim has not yet been received by the carrier

**incurred claims** actual carrier liability for a specified period, including all claims with dates of service within a specified period

**incurred claims loss ratio** the result of incurred claims divided by premiums

**indefinite integral** SEE *integration*

**indemnity** an insurance program in which the insured person is reimbursed for covered expenses after services are rendered

**independent medical evaluation** (IME) an examination carried out by an impartial health care provider, generally board certified, for the purpose of resolving a dispute related to the nature and extent of an illness or injury

**independent practice association** SEE *individual practice association*

**independent practice organization/network** a group of independent medical providers that contracts services to managed care plans

**independent professional review** peer review of medical services by a health team member not directly involved in the services provided to Medicare or Medicaid patients in long-term care facilities

**independent variable** the part of a mathematical expression that is changed arbitrarily to elicit a response in another variable; CONTRAST *dependent variable*

**indeterminate errors** random errors that cannot be readily ascertained due to their fluctuation around the true value; errors that lend themselves to statistical methods in that they follow probability laws

**Indian Health Service** a division of the U.S. Public Health Service; responsible for enhancing and providing health care for native Americans

**indigenous** native, or not exotic; native to a particular place

**indirect costs** in pharmacoeconomics, earnings lost because of death or temporary/permanent disability occurring because of illness (as derived from the human capital valuation approach)

**indirect dryer** drying instrument in which heat is transferred through a separating wall; vapor removal without actual contact with the heat source

**indirect expenses** expenses (variable or fixed) shared or consumed jointly by both prescription and nonprescription departments; examples: utilities, salaries, advertising

**individual practice association** a health care model that contracts with physicians and other community health care providers to provide services in return for a negotiated fee

**induced dipole–induced dipole interactions** SEE *London forces*

**inducible gene** a gene expressed only under certain conditions

**induction 1:** enzymatic process by which an inherent part of an enzyme may increase the activity of that enzyme by increasing its biosynthesis  
**2:** scientific reasoning process in which new concepts are derived by intuition and analogy

**induction effect** weak attractive forces between molecules involving a dipolar compound that induces polarization in another molecule as it is brought into close proximity to the dipolar compound

**inductive effects** electronic repulsions or attractions caused by bound atoms and groups within molecules; example: chloroacetic acid is stronger than acetic acid and both lactic acid and alanine are stronger than propionic acid due to electron withdrawing effects by groups substituted adjacent to the carboxyl group

**induration** being hard or sclerosed; usually in reference to a spot or small area

**-ine** **1:** suffix meaning an acetylene or triple-bonded hydrocarbon **2:** ending for alkaloids and the amine compounds

**inebriate** to intoxicate; to make drunk

**inebriation** state of being intoxicated or drunk

**infarct** area of necrosis due to ischemia resulting from a blockage of circulation to that area

**infarction** formation of an infarct, which is a circumscribed necrosis of tissue due to a deprivation of its blood supply

**infectious hepatitis** SEE *hepatitis, infectious*

**inflammable** capable of burning or catching on fire; synonym: flammable

**inflammation** a generally protective response by body tissues to damage or presence of a foreign material; characterized by pain, redness, a rise in the temperature of the affected part or parts, and swelling; generally initiates the repair process by diluting and opposing the effects of the injury

**informed consent** rule that patients must be fully informed about the benefits and risks of participating in a clinical trial, taking a medication, or electing to have a medical procedure; a disclosure that is followed by patients' autonomous consent

**infra-** prefix meaning below or under

**infrared dryer** instrument or apparatus using radiant heat (in the red light spectrum) for the purpose of removing moisture or dampness

**infrared heating** heat transferred by thermal waves (thermal radiation) of the infrared spectrum

**infrared light** electromagnetic radiation emanating from molecular vibrations; wavelengths are in the range of  $10^{-6}$  to  $10^{-3}$  meters (longer than visible light); electromagnetic radiation in the frequency range just below the visible spectrum

**infrared spectrophotometer** an instrument used to measure the absorbance of varying frequencies of infrared light as it passes through a sample being analyzed

**infrared spectrophotometry** SEE *spectrophotometry*

**infrared spectrum** plot of the absorbance (or percent transmittance) of a compound at different wave lengths in the infrared region

**infusion 1:** an aqueous solution of the active ingredients of vegetable drugs prepared by soaking the drug in hot water and straining (the same procedure used in making hot tea) **2:** process of administering a liquid into the vascular system of the body by allowing it to enter at a rate determined by the force of gravity

**inhalant** special class of drugs that, by virtue of their high vapor pressure, can be carried by an air current into the nasal passage where they exert their effect; generally administered from a container known as an inhaler

**inhalation** a drug or a solution of a drug administered by the nasal or oral respiratory route for local or systemic effect; act of breathing in

**inhibition** the slowing of an enzyme reaction by the interference of a compound known as the inhibitor

**inhibition, competitive** type of inhibition in which the inhibitor competes with the substrate for the active site of the enzyme; inhibition that can be reversed by increasing the concentration of the substrate

**inhibition, noncompetitive** type of inhibition in which the inhibitor interacts with the enzyme at a site that is different from the active site, or in a manner that is different from that of the substrate; inhibition that cannot be reversed by increasing the concentration of the substrate

**inhibitor** substance that slows the rate of an enzyme reaction; a drug that slows an enzyme reaction

**inhibitor, competitive** substance that slows an enzyme reaction through an interaction with the enzyme that is competitive with substrate binding

**inhibitor, noncompetitive** substance that slows an enzyme reaction through an interaction with the enzyme in a different site from the active site or by binding in a different manner from that of the substrate

**initial dose** first dose of a multiple dose regimen of treatment; also called "priming dose" or "loading dose"

**initial eligibility period** period of time specified in a contract during which eligible persons may enroll themselves and dependents under the health plan, usually without providing evidence of good health

**initial enrollment period** beginning dates when one may choose to participate in a group insurance plan

**initiation** the beginning phase of translation

**injection 1:** sterile solution, suspension, or emulsion suitable for parenteral administration **2:** the act of placing a liquid into a part of the body; example: parenteral administration of a solution into the blood through

venous puncture; categorized into five distinct classes, as defined by the *USP*

**injection, emulsion** a two-phase system in which one liquid is dispersed throughout another liquid in the form of small droplets; consists of a sterile, pyrogen-free preparation intended to be administered parenterally

**injection, powder, for solution** sterile preparation intended for reconstitution to form a solution for parenteral use

**injection, powder, for suspension** sterile preparation intended for reconstitution to form a suspension for parenteral use

**injection, powder, for suspension, extended release** sterile, freeze-dried preparation intended for reconstitution to form a suspension for parenteral use; formulated in a manner to allow at least a reduction in dosing frequency as compared to that drug presented as a conventional dosage form (e.g., as a solution)

**injection, powder, lyophilized, for liposomal suspension** sterile, freeze-dried preparation intended for reconstitution for parenteral use; formulated in a manner that would allow liposomes (a lipid bilayer vesicle usually composed of phospholipids that is used to encapsulate an active drug substance, either within a lipid bilayer or in an aqueous space) to be formed upon reconstitution

**injection, powder, lyophilized, for solution** dosage form intended for the solution prepared by lyophilization (freeze-drying), a process that involves the removal of water from products in the frozen state at extremely low pressures; intended for subsequent addition of liquid to create a solution that conforms in all respects to the requirements for injections

**injection, powder, lyophilized, for suspension** liquid preparation intended for parenteral use that contains solids suspended in a suitable fluid medium and conforms in all respects to the requirements for sterile suspensions; prepared by lyophilization (freeze-drying), a process that involves the removal of water from products in the frozen state at extremely low pressures

**injection, powder, lyophilized, for suspension, extended release** sterile, freeze-dried preparation intended for reconstitution for parenteral use; formulated in a manner to allow at least a reduction in dosing frequency as compared to that drug presented as a conventional dosage form (e.g., as a solution)

**injection, solution** liquid preparation containing one or more drug substances dissolved in a suitable solvent or mixture of mutually miscible solvents that is suitable for injection

**injection, solution, concentrate** sterile preparation for parenteral use that, upon the addition of suitable solvents, yields a solution conforming in all respects to the requirements for injections

**injection, suspension** liquid preparation, suitable for injection, that consists of solid particles dispersed throughout a liquid phase in which the particles are not soluble; can also consist of an oil phase dispersed throughout an aqueous phase, or vice versa

**injection, suspension, extended release** sterile preparation intended for parenteral use; formulated in a manner to allow at least a reduction in dosing frequency as compared to that drug presented as a conventional dosage form (e.g., as a solution or a prompt drug-releasing, conventional solid dosage form)

**injection, suspension, liposomal** liquid preparation, suitable for injection, that consists of an oil phase dispersed throughout an aqueous phase in such a manner that liposomes (a lipid bilayer vesicle usually composed of phospholipids that is used to encapsulate an active drug substance, either within a lipid bilayer or in an aqueous space) are formed

**injection, suspension, sonicated** liquid preparation, suitable for injection, that consists of solid particles dispersed throughout a liquid phase in which the particles are not soluble; in addition, the product is sonicated while a gas is bubbled through the suspension, resulting in the formation of microspheres by the solid particles

**injury** physiological damage other than sickness, including all related conditions and recurrent symptoms

**inner membrane** the innermost membrane of mitochondria

**innocuous** harmless

**inoculation** **1:** administration of an attenuated or killed pathogen to elicit an immune response by the body **2:** introduction of infectious materials into a culture medium to grow a disease-causing organism for purpose of study or further processing

**ionophore** a substance that transports cations across membranes

**inorganic** refers to nonliving materials

**inosine** **1:** compound (glycoside) that contains a sugar (ribose) and hypoxanthine **2:** compound formed by removing phosphate from inosinic acid

**inotropic** to influence the force of muscular contraction

**inpatient** person who is admitted to a hospital for medical treatment or observation and receives services under the direction of a physician

**inscription** the main part of the prescription containing the names and quantities of the prescribed drugs; synonym: body of the prescription; SEE ALSO *prescription*

**insert** vaginal suppository compressed as an oval tablet; used for local vaginal infections or other vaginal disorders

**insert, extended release** specially formulated and shaped solid preparation (e.g., ring, tablet, or stick) intended to be placed in the vagina by special inserters, where the medication is released, generally for localized effects; designed to allow a reduction in dosing frequency

**insoluble soap** a calcium, zinc, or magnesium salt of a fatty acid; CONTRAST *soluble soap*

**insomnia** sleeplessness, insomnia, or wakefulness

**inspection** a visual examination to detect errors, contamination, or inappropriate procedures

**inspissated juice** a semiliquid prepared by expressing fresh plant tissue to remove and then concentrate the juice

**institutional ad** advertisement that focuses on only the name and prestige of a company, industry, or profession

**insufflate** fine powder packaged so that it can be blown into a cavity of the body

**insufflation** the blowing of a powder into a body cavity

**insufflator** device used to blow a powder, vapor, or gas into a body cavity

**insulation** a substance that exhibits a low level of conductivity of heat and/or electricity

**insulin** a peptide hormone (contains 51 amino acids and has a minimum molecular weight of 6,000) that is secreted into the blood by the beta cells of islets of Langerhans of the pancreas and acts to lower blood sugar levels through a variety of mechanisms; a peptide hormone product obtained from porcine pancreas or from *Escherichia coli* by recombinant DNA techniques and administered to diabetics to lower blood sugar level

**insulin-like growth factor** a protein in humans that mediates the growth-promoting actions of growth hormone; has insulin-like properties (i.e., promotes glucose transport and fat synthesis)

**insulinopenic** a type of diabetes mellitus in which there is a deficit of insulin levels in the blood; subclasses are juvenile-onset diabetes and brittle-adult diabetes



**insulinoplethoric** a form of diabetes mellitus in which the blood levels of insulin are either normal or elevated; synonyms: adult-onset diabetes, mild maturity-onset diabetes

**integrated behavioral health** benefit plan that combines independent managed care services as a seamless delivery system for behavioral health concerns

**integrated delivery system** a joint effort of physicians and hospitals for a variety of purposes

**integrated pharmacologic response** a measure of the total pharmacologic response expressed as a product of duration and intensity of drug action over a period of time

**integrated provider organization** a corporate umbrella for the management of a diversified health care delivery system

**integration** mathematical operation (calculus) for determination of the summation of the effects of a series of infinitesimal changes or changes between arbitrary limits; examples: the total amount of drug absorbed from time zero to infinity or between time zero and some specified time, the latter, a definite integral, and the former, an indefinite integral

**integration rules** several respective procedures for integrating specific types of algebraic equations

**integrity test** scientifically developed questionnaire that provides an employer with an indication of a job applicant's attitude toward theft and other crimes

**integumentary** relating to the skin; a covering; synonyms: cutaneous, dermal

**intein** excised peptide segment generated during protein splicing

**intensity of segregation** a "degree of mixing" expression based on variation in composition of various portions of the mixture

**intensive care** hospital services prescribed by a physician for individuals with serious medical conditions and delivered under the guidance of a registered nurse

**intention tremor** tremor that is intensified when a voluntary movement is attempted

**inter-** prefix meaning between

**intercept 1:** usually the y-intercept; that value of the dependent variable (y) when the independent variable (x) equals zero **2:** the intersection of one plot with another plot or one of the axes, or a case in which one of the variables of an equation equals zero

**interfacial tension** used to express liquid-liquid boundary tension; CONTRAST *surface tension*

**interferon** one of a group of glycoproteins produced and released by cells in response to an invasion of cells by viruses; noninfected cells exposed to interferon become immune to infection by viruses

**intermediary letter** statement from the Bureau of Insurance to the fiscal administrators (intermediaries) of Medicare regarding policy for the program

**intermediate care facility** a facility offering a level of care that is less than the degree of care and treatment provided by a hospital or skilled nursing facility (SNF) but greater than that given by an assisted-living facility

**internal energy** that amount of energy in a system not manifested as “work”

**internal medicine** medical speciality involving the diagnosis and non-surgical treatment of disorders of internal organs

**internal phase** the dispersed phase of an emulsion’s internal pressure; attractive forces between molecules of gases, liquids, and solids

**International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)** a listing of diagnoses and identifying codes used for reporting diagnoses of health plan enrollees; SEE ALSO *International Classification of Diseases System*

**International Classification of Diseases System** a diagnosis and procedure coding system for hospital care; SEE ALSO *International Classification of Diseases, Ninth Edition*

**International System of Units (SI)** accepted international system of basic units of measure; also known as “Le Système International d’Unités”

**interproximal** space between teeth that cannot normally be cleaned by a toothbrush and requires dental flossing

**interstitial** related to or situated within the space that is within an organ, cell, or crystal

**interstitial fluid** the fluid containing dissolved salts and protein found in the tissues between the cells; synonym: extracellular fluid

**interstitial water** water held mechanically in the crevice or lattice of a crystal; CONTRAST *water of crystallization*

**intertriginous skin** body areas where opposing skin surfaces remain in contact with each other for long periods of time, preventing evaporation of

sweat and causing an increased incidence of fungal infection (e.g., athlete's foot between the toes, tinea cruris in the groin)

**intra-** prefix meaning within

**intra-arterial** into an artery; example: injection of a drug into an artery

**intra-arterial injection** administration of a medication by injection directly into an artery using a needle and syringe

**intra-articular** administration of a drug by injection into a joint

**intracardiac** administration of a drug by injection into the heart

**intracisternal** within the caudal region between the cerebellum and the medulla oblongata

**intracisternal injection** administration of a drug by injection into one of the cisternae of the brain or the enlarged subarachnoid space between the undersurface of the cerebellum and the posterior surface of the medulla oblongata

**intracutaneous injection** SEE *intradermal injection*

**intradermal** between the layers of skin

**intradermal injection** route of administration involving injection between the epidermal layers of the skin

**intramuscular** into a skeletal muscle

**intramuscular injection** process of administering a medication by injection into a muscle using a needle and syringe

**intraocular** into the eye

**intraosseous** into a bone

**intraperitoneal** administration of a medication by injection into the peritoneal cavity using a needle and syringe

**intraspinal administration** injection of substances into the spinal column

**intrasynovial** into the joint fluid

**intrathecal** into the cerebral spinal column by way of the subarachnoid space at the base of the spine

**intrathecal injection** process of administering a medication by injecting it through the theca of the spinal cord into the subarachnoid space using a needle and syringe

**intrauterine device** device inserted and left in the uterus to prevent conception

**intravenous** into a vein

**intravenous additives** therapeutic agents that are added to large-volume intravenous solutions of nutrients or electrolytes for purposes of administering both at the same injection site

**intravenous admixture** a combination of two parenteral preparations for intravenous administration at the same time using the same device or setup; prepared just before administration to patient

**intravenous piggyback** small-volume intravenous infusion (usually 25-100 mL), usually administered through a y-site on the primary infusion set

**intravenous push** to inject a medication directly from a syringe into a vein

**intrinsic** occurring within

**intrinsic activity** amount or degree of response initiated as a result of a drug-receptor interaction; ability of a drug to initiate a response as a result of a receptor interaction

**intrinsic factor** substance found in both animal and human intestine that increases absorption of vitamin B<sub>12</sub>

**intro-** a prefix meaning in or into

**intron** the DNA sequence interrupting the protein coding sequence of a gene

**inunction** SEE *ointment*

**inventory 1:** items that a business has available for sale **2:** a determination of the number and value of items in a business available for sale

**inventory turnover rate** the ratio of cost of goods sold to average inventory; an index of efficiency of purchasing and inventory control

**invert sugar** an equimolar mixture of glucose and fructose such as that obtained by the hydrolysis of sucrose

**investigational drug** a compound that is still being researched by the manufacturer and has not been approved by the FDA for use in the general treatment of patients

**invoice dating** the time during which payment will enable the business to receive a discount; the time when payment of the invoice is due and thereafter any discounts will be nullified

**iodide** a salt of iodine

**iodimetry** a procedure used in quantitative chemical analysis in which a standard solution of iodine is used as a titrant in the determination of reducing agents such as thiosulfate and arsenite

**iodine** dark grayish, volatile, solid element that produces violent, pungent vapors upon heating; one of two solid halogens; compounds used in treating iodine deficiency, and the pure form as a local antiseptic

**iodine value** number of grams of iodine that reacts with 100 grams of fat or other unsaturated organic material

**iodometry** procedure used in quantitative chemical analysis of oxidizing agents in which iodine is released from an iodide (such as potassium iodide) by the oxidizing agent, then titrated with a standard sodium thiosulfate solution to a starch test solution end point

**iodotherapy** use of iodine and iodides as remedies

**ion** a charged atom or a group of atoms (chemical radical)

**ion-dipole interaction** attractive forces between an ionic species and a polar solvent in which oppositely charged parts of each become intimately associated; example: dissolving sodium chloride in water

**ion exchange chromatography** a type of chromatography utilizing anionic and/or cationic exchange resins to remove dissolved ions and/or to separate or purify a particular chemical entity

**ion exchange, diffusion controlled** a drug delivery system using ionic resins to effect sustained drug release from its dosage form; example: biphentamine resin in capsule form

**ionic activity** concentration of an ion corrected for interactions between ions in the system; synonym: effective ion concentration; SEE *Debye-Huckel theory*

**ionic bond** electrostatic holding together of two or more atoms to form a molecule; bond resulting from an attraction of a positive ion for a negative ion

**ionic strength** SEE *Debye-Huckel theory*

**ion-induced dipole interactions** attractive forces between homopolar molecules and ions brought about by an ionic species inducing polarization in an otherwise nonpolar molecule; example: the solubilization of iodine in a concentrated solution of potassium iodide

**ionization chamber** enclosure on which a fixed potential is applied between its electrodes; used to calibrate a radioactive source

**ionization constant** equilibrium constant for the dissociation of a weak electrolyte; examples: ionization constants for a weak base ( $K_b$ ) and a weak acid ( $K_a$ ); SEE *dissociation constant*

**ionization potential** energy required to remove an electron from an atomic orbital to the point where the atomic nucleus has no influence on its movement or position in space

**ion trapping** process by which a drug is trapped within a compartment of the body as a result of its high degree of ionization

**ipecac** the dried rhizomes and roots of *Cephaelis ipecacuanha* that contain the emetic alkaloids emetine and cephaeline, used to induce vomiting

**iron** a grayish silver, malleable, metallic element

**iron deficiency anemia** lower than normal red blood cell count due to a lack of iron in the diet or excessive loss of blood

**irradiated ergosterol** vitamin D<sub>2</sub> or ergocalciferol

**irrational numbers** numbers that cannot be expressed as integers or as a quotient of two integers

**irreversibility** (of a dispersion) lack of the ability to easily restore a dispersed system after the dispersion medium has been removed from the dispersed particles, due to the need for extensive processing and considerable energy input

**irrigant** sterile solution intended to bathe or flush open wounds or body cavities; used topically, never parenterally

**irrigating solution** a sterile solution, usually aqueous, used to wash sensitive or wounded body tissues

**irrigation fluid** solution (usually prepared under aseptic conditions) used to wash a body cavity or wound

**ischemia** lack of blood supply to an area of body tissue, due to a narrowing or obstruction of a blood vessel; example: coronary artery occlusion

**-ism** suffix meaning condition of or state

**iso-** prefix meaning equal or alike

**isobaric** having the same barometric pressure

**isobars** nuclides having the same mass but different atomic numbers

**isoelectric** denotes compounds that are similar physically, as well as having the same electrical charge

**isoelectric point** the pH of an amphoteric molecule at which there are equal positive and negative charges on amino acids, proteins, phospholipids, or other molecules that possess both acidic and basic groups and the pH of an amino acid solution in which zwitterions exist; usually a pH at which an ampholyte has lowered aqueous solubility

**isoenzyme** an enzyme catalyzing the same biochemical reaction as another enzyme, but has a different electrophoretic mobility; synonym: isozyme

**isoionic point** condition in a system in which the pH is adjusted to yield (1) an equal number of cations and anions on the side chains of the amino acid protein residues and (2) an equal number of adsorbed cations and anions

**isoleucine** branched chain amino acid commonly found in proteins; one of the ten essential amino acids; positional isomer of leucine;  $\alpha$ -L-amino-3-methylpentanoic acid

**isomerase** an enzyme that catalyzes the change of one isomer into another; examples: *cis-trans* isomerase, epimerase, D- or L-amino acid racemase and mutase

**isomerization** the reversible interconversion of isomers

**isomers** distinctly different compounds that possess the same empirical formula, but different chemical and physical properties; examples: positional (structural) isomers, stereoisomers, *cis-trans* (geometric) isomers, optical (mirror image) isomers, diastereoisomers; SEE *cis-trans isomer*; *diastereoisomers*; *optical isomers*; *positional isomers*; *stereoisomers*

**isometric** **1:** describes a process occurring at constant pressure **2:** pharmacological measurement using muscle tissue that is maintained at a constant length

**isonicotinic acid** an isomer of nicotinic acid in which the carboxyl group is substituted on the pyridine ring at a position opposite the ring nitrogen

**isoprene** hydrocarbon containing five carbon atoms and two double bonds, four of the carbon atoms within a linear chain and the fifth carbon branched off the second carbon of the chain; synonym: 2-methylbutadiene; a molecular component of vitamins D, E, and K

**isoquinoline** heterocyclic, aromatic, naphthalene-like compound possessing a nitrogen in the 2-position

**isostere** a molecule that has the same size, shape, and polarity of another molecule; biological—a compound having similar physiological properties to another compound; physical—a compound having similar physical properties to another compound

**isosteric group** a group or radical on a molecule that has the same size, shape, and polarity as another group

**isosterism** condition in which two or more molecules possess similar size, shape, and electronic distribution; biological—having similar bio-

logical properties; synonym: bioisosterism; physical—having similar physical properties; example: benzene and thiophene

**isothermal** refers to a process occurring at constant temperature

**isotonic** refers to a solution that has the same number of dissolved particles as another solution; having the same tone or the same internal pressure; refers to a solution that has the same number of dissolved particles as body fluids (blood, tears, nasal secretions)

**isotonicity** condition of a solution having the same tone (internal pressure) as body fluids

**isotopes** two atoms having the same atomic number but different atomic weights

**isotropic** exhibiting similar physical properties in all directions; examples: cubic crystals, amorphous compounds

**isozyme** one of two or more forms of the same enzyme activity with different amino acid sequences

**-itis** suffix meaning inflammation

**J** **Jakob-Creutzfeldt disease** progressive encephalopathy believed caused by a slow virus; synonym: Creutzfeldt-Jakob disease

**Jarisch-Herxheimer reaction** characteristic response that frequently occurs in a patient being treated for syphilis with penicillin G; commonly involves exacerbation of existing syphilitic lesions, headache, chills, fever, malaise, sore throat, and tachycardia

**jaundice** an accumulation of bilirubin in the blood with deposition in the skin that imparts a yellow or golden hue; prehepatic—caused by hemolysis; synonym: hemolytic jaundice; hepatic—occurring with liver damage; synonym: hepatitis; posthepatic—occurring as a result of a blocking of the bile ducts; example: gallstones

**Jelliffe method** a method for determining creatinine clearance

**jelly 1:** class of gels in which the matrix contains a high proportion of water or other liquid **2:** thick semisolid gelatinous mass intended to be taken orally; used externally or in body orifices

**jelly, mineral** petroleum jelly petrolatum

**Jesuit's bark** cinchona bark; source of quinine



**jet ejector** pump that utilizes a high-velocity stream of fluid to effect mass transfer of a liquid

**jet lag** condition resulting from crossing time zones rapidly, resulting in time-phase shift

**J. Leon Lascoff Memorial Award** established in 1944 by the American College of Apothecaries honoring an individual who has made significant contributions to professional pharmacy

**John W. Dargavel Medal** established by the NARD Foundation to honor sustained contributions on behalf of independent pharmacy

**Joint Commission on Accreditation of Health Care Organizations (JCAHO)** a private, not-for-profit organization that evaluates and accredits hospitals and other health care organizations providing home, mental health, ambulatory, and long-term care services

**journal 1:** record of business transactions in order as they occur **2:** periodical publication that contains papers reporting the results of scientific investigations and/or professional innovations and news

**jurisprudence** system of law

**justify 1:** to adjust the printing positions of characters on a page so that the lines have the desired length and both the left- and right-hand margins are regular **2:** by extension, to shift the contents of a register so that the most or the least significant digit is at some specified position in the register



**Kahler's disease** multiple myeloma

**kaliuresis** increased excretion of potassium

**kaolin** fine, usually white clay used as an adsorbent and filler; synonym: native hydrated aluminum silicate

**karaya gum** SEE *sterculia gum*

**Kasabach-Merritt syndrome** hemangioma-thrombocytopenia syndrome

**Kathabar system** system of air cleaning in aseptic areas that involves washing the air with an antiseptic solution to remove dirt and microorganisms and to control humidity

**Kawasaki's syndrome** febrile illness of unknown etiology occurring mainly in children under five years

**Kefauver-Harris Amendment** 1962 amendment to the Federal Food, Drug, and Cosmetic Act that required drug manufacturers to prove effective-

tiveness (in addition to safety) of their products and to properly advertise prescription drugs

**Kelly, Evander Francis** (1879-1944) educator at the University of Maryland College of Pharmacy 1903-1926; APhA treasurer from 1918 to 1926 when he was elected the secretary and served until his death; Remington Honor Medal recipient 1933

**Keobnerization or Koebner phenomenon** phenomenon in which a medical condition occurs anew at the point of injury; example: appearance of new psoriasis lesions or warts in damaged skin

**kerato-** prefix meaning cornea, or horny tissue

**keratolytic** agent that loosens keratin and facilitates desquamation; example: salicylic acid in collodion or patch dosage forms

**keratoses, solar** epidermal lesions in which the upper layer of skin has hypertrophied due to chronic sun exposure

**keratosis** growth of horny tissue; example: callous

**ketal** the family of organic compounds with the general formula  $RR'C(OR')_2$ ; formed from reaction of a hemiketal with an alcohol

**ketoacidosis** acidosis caused by an excessive accumulation of ketone bodies

**ketogenesis** excess acetyl-CoA molecules are converted to acetoacetate,  $\beta$ -hydroxybutyrate, and acetone, known as the ketone bodies

**ketogenic amino acid** a molecule whose carbon skeleton is a substrate for synthesizing fatty acids and ketone bodies

**ketone** carbonyl compound containing a carbon atom double bonded to an oxygen atom and bonded to two other carbon atoms

**ketone body** acetone, acetoacetate, or  $\beta$ -hydroxybutyrate; produced in the liver from acetyl-CoA

**ketosis** accumulation of ketone bodies in blood and tissues

**kettle** large-volume container with an immersion or a jacketed heating source used to heat and/or mix large quantities of liquid or semisolid formulations

**Kick's theory** quantitative expression for estimating the energy requirement for particle size reduction, which is directly related to the initial and ending diameters of particles being reduced in size

**kieselguhr** SEE *diatomaceous earth*

**kilo-** prefix meaning 1,000-fold or 1,000 times a specified basic unit of measure; example: 1 kilogram equals 1,000 grams

**Kimmelstiel-Wilson disease** glomerulosclerosis (scarring within the kidney glomeruli)

**kinase** enzyme catalyzing the formation of a phosphate ester; synonyms: phosphotransferase, phosphorylase

**kinetic energy** energy due to motion; example: molecular vibration causing diffusion and vapor pressure

**kinetics** the study of reaction rates

**kinin** endogenous peptide that acts on plasma proteins, blood vessels, smooth muscles, and nerve endings, causing dilation of the blood vessels and inflammation of the surrounding tissue

**kit** packaged collection of related material

**Klein-Levin syndrome** periodic attacks of sleep and hunger with amnesia for periods of the attacks; related to narcolepsy

**Köhler's disease** aseptic necrosis of the navicular bone

**Krebs bicycle** a biochemical pathway in which the aspartate required in the urea cycle is generated from oxaloacetate, an intermediate in the citric acid cycle

**Krebs urea cycle** the cyclic pathway that converts waste ammonia molecules along with CO<sub>2</sub> and aspartate into urea; named for its discoverer, Hans Krebs

**Kremers, Edward** (1865-1941) educator at the University of Wisconsin from 1890 to 1935; credited with the institution of the first four-credit course of study of pharmacy in the United States and the first PhD in pharmacy; an American pharmacy historian; co-author (with George Urdang) of *Kremers and Urdang's History of Pharmacy*; Remington Honor Medal recipient in 1930.

**Kremers Award** established by the American Institute of the History of Pharmacy in 1961 for original and scholarly publication on the history of pharmacy written by an American

**kwashiorkor** deficiency of protein that causes stunted growth, retardation, edema, and changes in the liver, hair, and skin; CONTRAST *marasmus*



**L- or l-** prefix designating stereochemical configuration (Fisher Convention) in which the last asymmetric carbon from the most oxidized (placed at the top of the molecular structure) has the group that is used to designate configuration on the lefthand side of the structure

**label 1:** usually a piece of paper inscribed with certain information and affixed to a container **2:** written or printed matter accompanying a drug product

**label, auxiliary or strip** brief warning or special instruction affixed to a prescription container to ensure appropriate use

**label contraindication** an absolute prohibition to the use of the drug; example: oral contraceptives should not be used in patients with a history of thromboembolytic disorders

**label precaution** a less-restrictive alert to health professionals; example: with any potent drug, periodic assessment of renal, hepatic, and hematopoietic function should be performed

**label warning** information used to alert health professionals to certain dangers or restrictions in the use of certain drugs; example: the use of estrogens has been reported to increase the risk of endometrial cancer

**labeling** written, printed, or graphic material that accompanies an article (drug product) while it is being shipped or held for resale; examples: package insert, information affixed to a container or a dosage unit

**labile** unstable; example: heat labile (unstable in the presence of heat)

**lacerate** to tear, rend, or cut

**laceration** wound

**lachrymal** pertaining to tears or tear-producing glands

**lacrimation** tear secretion or the discharge of tears

**lactam** cyclic amide found in many antibiotics; SEE *beta-lactamase*

**lactase persistence** term used for individuals who maintain lactase production as adults, and are thus able to ingest dairy products such as milk and cheese

**lactate** a salt or ester of lactic acid; example: sodium lactate, which has the formula  $\text{CH}_3\text{H}(\text{OH})\text{COONa}$

**lactated Ringer's injection** sterile solution of Ringer's injection and sodium lactate

**lactation** secretion of milk; breast-feeding

**lactic acid** a product of the fermentation of milk

**lactobionate** a salt or an ester that is derived from lactobionic acid

**lactone** cyclic ester; example: angelica lactone in digitalis glycosides

**lactose** disaccharide sugar ( $\text{C}_{12}\text{H}_{22}\text{O}_{11}$ ) present in milk that, on hydrolysis, yields glucose and galactose; used as a diluent; synonym: milk sugar

**lactose intolerance** condition in which the patient cannot ingest lactose without experiencing troubling gastrointestinal symptoms (e.g., diarrhea, bloating); may be primary (due to the natural loss of lactase with aging) or secondary (due to any disease or medication that temporarily or permanently destroys the lactase-producing microvilli of the small intestine)

**lag** phenomenon occurring in a plot of the time-dependent rise in a measurable parameter such as in a drug plasma concentration curve not passing through the origin; synonym: yield value

**lag time** time after administration of a drug until its action(s) is (are) manifested; SEE ALSO *latent period*; *onset time*

**lamel or lamella** minute glycerol-gelatin discs medicated for use in the eyes

**laminar flow** **1:** streamlined movement of a liquid or air (gas) **2:** the act of moving in a straight path as approximated in a laminar (air) flow hood **3:** liquid movement exhibiting a low Reynolds number; CONTRAST *turbulent flow*

**laminar flow hood** an enclosure with an open front and streamlined airflow that enters through an absolute filter, providing an environment in which one may perform aseptic techniques in an airflow of  $90 \pm 20$  feet per minute

**laminar mixing** process of maximizing contact between different substances using straightline or streamline motion; used for combining highly viscous materials such as ointments and creams

**laminated coating** application of a series of layers of coating to control drug availability and/or site of dissolution in the gastrointestinal tract

**lamination** separation of a tablet into two or more distinct layers; an undesirable occurrence in the tableting process

**lamp black** SEE *charcoal*

**Langmuir isotherm** one of several characteristic plots of the amount of gas adsorbed on a given quantity of material in a unimolecular layer versus pressure (at constant temperature); useful in enzymology and molecular pharmacology

**lanolin** purified fatlike substance obtained from the wool of sheep; used in hydrophilic ointment bases

**laparotomy pack** nonabrasive material used to prevent abdominal or other organs from escaping to the area of surgery; synonyms: abdominal pack, tape pack, pack, walling mop, stitching pad, quilted pad, gauze mop

**Larsen-Johansson disease** osteochondrosis involving the apex of the patella

**Lascoff, J. Leon** (1867-1943) born in Lithuania; apprenticed in New York City and spent his career in retail practice; an early proponent of a professional pharmacy; one of the founders of the American College of Apothecaries; Remington Honor Award recipient in 1937

**laser** a source of intensely focused light used in numerous surgical applications

**last in—first out** accounting technique for assigning a cost to the ending inventory and goods sold, where the most recently purchased goods are assumed to be sold first and the ending inventory is the oldest goods purchased

**latent heat of vaporization** amount of heat absorbed by one gram of substance as it is changed from the liquid state to the vapor state without a change in temperature

**latent period 1:** time elapsed between the administration of a drug and the onset of its therapeutic effect **2:** period of time between administration of a stimulus to a nerve and the onset of a spike potential

**lateral gene transfer** the transfer of genes or gene fragments between unrelated organisms

**laughing gas** nitrous oxide gas

**laurel camphor** SEE *camphor*

**law of chemical equilibrium** after a reversible chemical reaction has reached equilibrium, the product of the concentrations of the reaction products divided by the product of the concentrations of the reactants equals a constant

**law of diminishing marginal utility** states that the value of any additional goods declines as one consumes more of it

**law of mass action** the rate of a chemical reaction is proportional to the product of the molar concentrations of the reactants raised to powers equal to their coefficients in the stoichiometric equation

**laxative** agent that promotes defecation; synonyms: aperient, mild cathartic

**lay referral system** group of nonprofessional people (usually friends, neighbors, or family) that are used by one for advice concerning health needs

**lazy eye** SEE *amblyopia*

**leaching** release or movement of components of a solid into a liquid in contact with the solid; example: plasticizers from a plastic container into its liquid contents; synonym: lixiviation

**leaker** an incompletely sealed ampule, capsule, or other dosage form that should be sealed (e.g., aerosol, vial); a reject dosage form

**leaving group** the group displaced during a nucleophilic substitution reaction

**Le Chatelier's principle** law which states that when a system is at equilibrium and stress is brought to bear on the system, the equilibrium will shift so as to diminish the stress

**lecithin** phospholipid obtained from egg yolks and soybeans (among other natural sources) and composed of glycerol esterified to two fatty acids and a phosphate that is also esterified to choline

**lectin** a carbohydrate-binding protein

**legend drug** medicinal agent that may not be dispensed without a prescription from a recognized medical practitioner; one that bears the label "Rx only"; synonyms: prescription drug, restricted drug, ethical drug

**Legg-Calve-Perthes disease** epiphyseal aseptic necrosis of the upper end of the femur

**Legionnaire's disease** *Legionella pneumophila* infection

**length** a measure of distance; examples: cgs unit—centimeter (cm) and SI unit—meter (m)

**length of stay** the period of time an inpatient remains in a health care institution, usually measured in days

**lesion 1:** injury or wound **2:** an infected patch as in a skin disease

**lethal** deadly; capable of causing death

**lethargy** sluggishness, dullness, or slowness

**leucine**  $\alpha$ -amino acid commonly found in proteins; one of ten essential amino acids; 2-amino-5-methylpentanoic acid

**leukocyte** white blood cell

**leukoderma** complete depigmentation of an area treated with an epidermal depigmenting agent (e.g., hydroquinone)

**leukopenia** a low white blood cell count (below 500/mm<sup>3</sup>)

**leukoplakia** intraoral lesion, often precarcinogenic, resulting from use of oral tobacco products such as snuff or chewing tobacco

**leukotriene** a linear derivative of arachidonic acid whose synthesis is initiated by a peroxidation reaction

**levigation** process of grinding (reducing particle size) a solid in the presence of a small amount of liquid in which the drug is not soluble

**levorotatory** property of an optically active compound that rotates polarized light to the left

**Lewis acid 1:** an oxidizing agent **2:** a substance that accepts electrons in a chemical reaction

**Lewis base 1:** a reducing agent **2:** a substance that gives up electrons in a chemical reaction

**Lewis electronic theory** acid-base concept that defines an acid as a substance capable of accepting a pair of electrons and a base as a substance capable of donating a pair of electrons

**Li** chemical symbol for lithium

**liability 1:** an object, event, or occurrence for which an individual is responsible according to the law **2:** a debt that one incurs or owes

**libel** written statement of one person that defames the character or reputation of another

**lice** small parasites (singular: louse) that can infest the skin; characterized by intense itching; wingless blood-sucking insect parasitic on warm-blooded animals

**license** a credential issued by a governmental body which indicates that the holder is in compliance with minimum mandatory requirements necessary to practice a particular profession

**lie detector** SEE *polygraph*

**lifetime maximum benefit** a limitation on financial coverage for health care for an individual stated by an insurer

**ligand** a group that is complexed (bonded) to the central metallic ion in a sequestered or chelated compound

**ligase** enzyme catalyzing the joining of two compounds in which an energy source (e.g., ATP) is required; synonym: synthetase

**lightheadedness** feeling of dizziness and faintness; may be experienced when one abruptly changes positions

**light-resistant container** SEE *container, light resistant*

**light velocity** SEE *velocity*

**Lilly, Eli** (1838-1898) American pharmacist who founded Eli Lilly and Company, a leading U.S.-based pharmaceutical manufacturer



**lime, burned** calcium oxide; caustic or unslaked lime

**limit** mathematical expression of the maximum or minimum value of a differential (or derivative) when one variable is a function of another

**limited liability** the concept whereby a business investor is financially liable only to the extent of his investment in an enterprise

**limited partner** a person meeting appropriate criteria in a partnership and who incurs only limited liability in place of the usual unlimited liability of a partner

**limit of resolution** the minimum distance between two separate points that allows for their discrimination

**limulus test** in vitro test for pyrogens in parenteral preparations; the test is positive with the gelling of a pyrogenic material in the presence of the lysate of the amebocytes of the horseshoe crab, *Limulus polyphemus*

**linear regression analysis** statistical determination of the degree of linearity in the relationship between two or more variables; example: blood level as a function of time

**line of credit** a loan arrangement with a bank whereby the borrower is allowed to periodically borrow up to a predetermined maximum amount

**liner, dental** material applied to the inside of the dental cavity, for protection or insulation of the surface

**Lineweaver-Burk plot** straight-line plot obtained when the reciprocal of the velocity of an enzyme reaction is plotted against the reciprocal of the substrate concentration; the straight line obtained from the reciprocal of the Michaelis-Menton equation; synonym: doubled reciprocal plot

**liniment** liquid preparation (usually containing an oil) for external use and to be applied with rubbing; examples: liniment of green soap, Yager's Liniment

**Linwood F. Tice Friend of the Academy of Students of Pharmacy Award** established by the American Pharmacists Association in 1988 to honor an individual whose long-term services and contributions have benefited students of pharmacy

**lipid** naturally occurring fatty substance of animal or plant origin; insoluble in water and soluble in organic solvents (e.g., benzene, chloroform, and ether); examples: fat, sphingomylin, spermaceti, vegetable oils, beeswax, carnuba wax

**lipid bilayer** a biomolecular lipid layer that constitutes the structural framework of the cell membranes

**lipo-** prefix meaning fat

**lipogenesis** the biosynthesis of body fat (triacylglycerol)

**lipoid** lipidlike; fatlike

**lipolysis** the hydrolysis of fat molecules

**lipophilic** affinity for lipids (oils and fats)

**lipophilizing moiety** chemical group that imparts lipid-soluble characteristics to the molecule

**lipophobic** lack of affinity for lipids (oils and fats)

**lipoprotein** a conjugated protein in which lipid molecules are the prosthetic groups; a protein-lipid complex that transports water-insoluble lipids in blood

**lipoprotein, very low density** a type of lipoprotein with a very high relative concentration of lipids; transports lipids to tissues

**liposomal drug delivery system** dosage form in which the medicament is encased in one or more layers of phospholipids (liposomes) and is designed to be released in the body at or near its site of action; a form of targeted drug delivery system

**liposome** layer of phospholipids within tissue; cellular organelle that contains lipid

**lipstick** waxy solid, usually colored cosmetic, in stick form for the lips; may be used as a vehicle for topical medicines

**liquid** state of substance that is an intermediate one entered into as matter goes from solid to gas; also an intermediate substance in that it has neither the orderliness of a crystal nor the randomness of a gas

**liquidation** process of settling the affairs of a corporation that is going out of business by selling its assets, paying its debts, and dividing the remainder among the owners

**liquid glucose** a syrupy liquid consisting primarily of glucose and used as a pill excipient; SEE ALSO *glucose*

**liquid-in-glass thermometer** SEE *thermometer, liquid-in-glass*

**liquid scintillation counter** instrument to measure weak beta radiation using a phosphorescing solution, a photoabsorption cell, an electrical amplification system, and a counter to detect and record each energy pulse

**liquid scintillator** instrument designed to measure weak beta particle emissions from a radioactive nuclide such as  $C_{14}$ ; utilizes a solution containing the isotope to be measured, a phosphor (chemical that produces minute light flashes in response to a radiating particle), and a photomultiplier, detector-counter system

**liquor** aqueous solution of a nonvolatile substance

**liter-atmosphere** (L atm) volume times pressure-energy unit equal to 24.22 calories

**lithotripsy** procedure utilizing sound waves to disintegrate kidney stones (an alternative to surgical removal)

**lithotripter** device used to break up kidney stones in situ using projected sound waves; SEE ALSO *lithotripsy*

**Little's disease** spastic paraplegia

**liver of sulfur** SEE *sulfurated potash*

**lixiviation** process for removal of soluble substances from insoluble substances by washing and filtration; SEE ALSO *leaching*

**Lloyd, John Uri** (1849-1936) prolific researcher and author, especially in the area of plant chemistry; founder of the Lloyd Library and Museum in Cincinnati, Ohio; Remington Honor Medal recipient in 1920

**loading dose** administration of a drug in a larger initial dose than usual to speed entrance into the blood; synonym: bolus dose

**lobe pump** SEE *rotary pump*

**local anesthetic** drug or chemical agent that produces an insensitivity to pain only in the area of administration

**locus of control** a factor in behavioral change models that refers to whether an individual feels that attainment of a particular outcome is within or outside of his/her control

**logarithm** numerical expression of a number as an exponent of a standard base number

**logarithm, common** number expressed as an exponent of the number 10 ( $\log_{10}$ )

**logarithm, natural** number expressed as an exponent of the number  $e$  ( $e = 2.71828$ , a nonrepetitive number sequence); natural mathematical result of integrating the expression  $dx/x$

**lollipop** lozenge on a stick small disc of medicated sugar intended to be dissolved in the mouth

**London forces** weak attractive forces between molecules occurring as one molecule induces momentary polarization in another; a type of van der Waal's force; synonyms: induced dipole-induced dipole interactions and dispersion effects; example: attractive forces between molecules of hexane liquid

**long-term care** assistance and care for persons with chronic disabilities who require help with the activities of daily living or who suffer from cognitive impairment

**long-term care insurance** insurance coverage designed to help pay some or all of any necessary long-term care costs

**long-term liability** obligation due longer than one year from the date of classification

**loss on drying** (LOD) quantitative expression of the decrease in weight of a given quantity of material that has been dried

**loss ratio** the result of paid claims and incurred claims plus expenses divided by the paid premiums. SEE ALSO *incurred claims loss ratio; net loss ratio, paid claims loss ratio; medical loss ratio*

**lot** batch or portion of a batch having a specified quality and a specific identifying "lot number"

**lotion** liquid preparation, suspension, or thixotropic emulsion, for external use, usually applied with little or no rubbing

**lotion, emulsion** small globules of a liquid dispersed throughout another liquid with which it is immiscible, and stabilized by means of an emulsifying agent; example: hand lotion

**lotion, suspension** liquid containing finely divided insoluble solids suspended in a liquid medium, usually with the aid of a dispersing or suspending agent; example: calamine lotion

**Lou Gehrig's disease** SEE *amyotrophic lateral sclerosis*

**louse** SEE *lice*

**Lovi's beads** glass beads of varying densities used to determine the specific gravity of liquids

**low-energy solid or liquid** **1:** substance whose molecules are held together by weak attractive forces of the van der Waal type **2:** (pharmacy) nonionic, organic, hydrophobic, or nonpolar substance

**lower esophageal sphincter** sphincter located at the lower end of the esophagus that normally prevents stomach contents from refluxing back into the esophagus; when not functioning properly can cause gastroesophageal reflux

**lozenge** solid preparation containing one or more medicaments, usually in a flavored, sweetened base, intended to dissolve or disintegrate slowly in the mouth; synonyms: troche, pastille

**lubricant 1:** slippery, fine powder mixed with tablet granules to facilitate uniform flow of drug granules into a tablet die and to prevent sticking during compression; example: magnesium stearate **2:** tragacanth jelly; used as a surgical lubricant

**Lugol's solution** aqueous solution of iodine used (in diluted form) to supply iodine internally; synonym: strong iodine solution

**luminescence** property of emitting light without heat or external excitation

**lunar caustic** silver nitrate

**luteinizing hormone** protein secreted by the pituitary gland that stimulates the corpus luteum to produce progesterone

**luteinizing hormone-releasing hormone** protein secreted by the hypothalamus that stimulates the pituitary to secrete luteinizing hormone

**lyase** enzyme catalyzing the removal of a group from a molecule by nonhydrolytic means

**Lyman, Rufus** (1876-1975) founder of the *American Journal of Pharmaceutical Education*; one of the founders of the Rho Chi Honor Society, founder of pharmacy schools at the University of Nebraska and the University of Arizona

**Lyme disease** inflammatory disorder caused by *Borrelia burgdorferi* and transmitted by the tick

**lymphocyte** a type of white blood cells

**lyophilic** having a strong affinity between a dispersed phase and the liquid in which it is dispersed

**lyophilization** drying by sublimation; a process of drying a substance under vacuum and in the frozen state; freeze-drying

**lyophobic** a lack of affinity between a dispersed phase and the liquid in which it is dispersed

**lysine** basic amino acid commonly found in proteins

**lysis** destruction of cells

**lysogeny** the integration of a viral genome into a host genome

**lysosome** a saclike organelle capable of degrading most biomolecules

**lytic cycle** a viral life cycle in which a virus destroys its host cell


**M**

**macerate** to extract the constituents from a crude drug by soaking or steeping it in a suitable solvent

**macro-** prefix meaning large

**macrocytic anemia** condition in which there is a reduced number of red blood cells accompanied by the presence of red blood cells that are larger than normal; usually seen in folate and vitamin B<sub>12</sub> deficiencies

**macrolides** class of antibiotics with large lactones that exert a bacteriostatic effect on gram-positive and gram-negative bacteria by inhibiting protein synthesis; example: erythromycin

**macromolecular** pertaining to large molecules or polymers; examples: proteins and nucleic acids

**macromolecule** SEE *polymer*

**macrophage** large phagocyte that ingests dead tissues and cells

**macroscopic** large in scope; can be seen with the unaided eye

**macula** small spot or colored area

**magma** suspension of a finely divided insoluble, inorganic drug, the particles of which are hydrated; example: milk of magnesia

**magnesium** salts used as antacids or laxatives; cometal for ATPase; chemical symbol: Mg

**magnetic quantum number** (Mq) integer describing the magnetic field generated by the momentum of an electron in the atom; for an electron, quantum number where  $n = 2$ , the magnetic quantum number =  $-1$ ,  $0$ , or  $+1$ ; SEE *quantum number*

**mail-order pharmacy** a type of pharmacy where prescription medications can be delivered through the postal service to the patient

**maintained markup** difference between net sales and the total cost of merchandise sold; gross margin minus cash discounts

**maintenance dose** periodic dose following the "loading dose" given to keep drug plasma concentrations within a therapeutic range

**maintenance drug** drug prescribed to treat long-term (chronic) disorders

**Maisch, John M.** (1831-1893) prominent teacher and first permanent secretary of the American Pharmacists Association

**maize oil** synonym for corn oil

**major diagnostic category** principal diagnosis or reason for treating a patient; in cases of complicated medical problems, there may be a primary or principal diagnosis and other secondary or preliminary diagnoses; rela-

tive to third-party reimbursement, insurers will usually pay providers for services rendered on the basis of the major diagnostic category

**major tranquilizer** antipsychotic agent

**malabsorption syndrome** a condition in which essential nutrients are poorly absorbed

**malaise** general sensation of discomfort, often seen with influenza and, to a lesser extent, the common cold

**malignancy** denotes a cancerous condition

**malignant** tendency to become worse until death results; usually refers to a cancerous condition

**Mallory-Weiss syndrome** hematemesis due to a tear in the esophagus following forceful vomiting

**malonate** salt or ester of malonic acid; example: diethylmalonate

**malonic acid** three-carbon dicarboxylic acid; propanedioic acid; methane dicarboxylic acid

**malonic ester synthesis** alkylation of malonic ester (diethylmalonate) by using alkylhalides and metallic sodium in ethyl alcohol; used to prepare barbiturates, phenylbutazone, and many other drugs

**malpractice** failure to exercise an acceptable level of professional service

**malt** preparation containing amylolytic enzymes obtained from the partially germinated grain of various varieties of barley

**maltose** a degradation product of starch hydrolysis; a disaccharide composed of two glucose molecules linked by an  $\alpha$ -(1,4)-glycosidic bond

**managed behavioral care** mental health or chemical dependency treatment that is screened and monitored for meeting utilization criteria, treatment effectiveness, and/or quality

**managed care 1:** a system of health care delivery that influences utilization and cost of services and measures performance **2:** a systemized approach that seeks to ensure the provision of the right health care at the right time, place, and cost

**managed care organization** (MCO) broad term that encompasses various types of health plans, including health maintenance organizations, preferred provider organizations, point-of-service plans, and provider-sponsored organizations

**managed health care plan** a health care organization that provides managed care (SEE *managed care*) with the following attributes: integration of

financing and management with the delivery of health care services to an enrolled population; employment or contracting with an organized provider network which delivers services and which either shares financial risk or has some incentive to deliver quality, cost-effective services; use of an information system capable of monitoring and evaluating patterns of covered persons' use of medical services and the cost of those services

**management by objectives** leadership and control technique in which subordinates are encouraged by supervisors to set their own objectives and the means whereby achievement of those objectives can be measured

**management information system** management performed with the aid of automated data processing and a substantially relevant data bank

**management service organization** organization providing practice management, administrative, and support services to individual physicians or group practices

**mandated benefits** those benefits that health plans are required by state or federal law to provide to policy holders and eligible dependents

**manganese** trace mineral element; a brittle, grayish white metal resembling iron; a cometal for various enzymes

**Mannich reaction** synthetic organic reaction used to prepare intermediates for the synthesis of local anesthetics and narcotic analgesics, among other drug moities; compound with an active alpha-hydrogen (ketone, ketolized phenol) that is reacted with formaldehyde and a primary or secondary amine

**mannitol** six-carbon polyol that does not ferment; the principal constituent of manna; sugar alcohol from mannose

**manual rates** rates developed based upon the health plan's average claims data and adjusted for group specific demographic, industry factor, or benefit variations

**marasmus** retardation of growth and atrophy of muscle due to malnutrition; usually does not affect thought process; CONTRAST *kwashiorkor*

**marc** residue that remains after extraction of a crude drug (animal, vegetable, or mineral) with a solvent

**Marie-Strümpell disease** ankylosing spondylitis (arthritis of the spine)

**markdown** a reduction in price of merchandise by a retailer; used to stimulate sales and reduce inventory

**marketable securities** stocks, bonds, and other investments expected to be converted to cash or otherwise used in current regular operations during the next year; reported at market value



**market pricing** prices that are set to meet marketplace conditions, usually a competitive situation in which consumers seek out the lowest price

**Maslow's theory** hypothesis of motivation, developed by Abraham Maslow, which holds that basic human needs exist in a hierarchy of importance and that lower level needs must be satisfied before higher level needs become important; synonym: Maslow's hierarchy of needs theory

**mass** expression of an absolute quantity of a substance

**mass number** the sum of nucleons in an atomic nucleus; for practical purposes, the same as the atomic weight for the atom

**mass spectrometry** destructive method of analyzing a molecular structure; molecules are subjected to high energy electrons (or protons), breaking them into charged fragments whose spectra are analyzed by their differences in mass

**mast-** prefix meaning breast; same as masto-

**master file** collection of information that either is relatively permanent or is treated as an authority in a particular job

**master group contract** a legal document between the enrolling unit and the carrier, setting forth in detail the rights and obligations of the enrolling unit, covered person, and carrier, as well as terms and conditions of the coverage provided by the contract

**mastication** chewing

**masto-** prefix meaning breast; same as mast-

**materia medica** historical term for the branch of medical study that deals with drugs and their sources, uses, and preparations; modern term: pharmacology

**material control** quality assurance tests of components that are to become a part of a dosage form; synonym: raw material control

**matrix 1:** a groundwork from which something is cast **2:** an insoluble polymer used to entrap a drug in a solid dosage form so that its release can be controlled **3:** (mathematics) a rectangular array of terms or symbols arranged in rows and columns; combination of two vectors (or arrays) in computer science

**matrix, extracellular** a gelatinous material, containing proteins and carbohydrates, that binds cells and tissue together

**maximum allowable cost (MAC)** federal cost containment program that limits reimbursement for multisource (generically available) prescription drugs under Medicare, Medicaid, and Public Health Service programs to

the lowest cost at which the drug is generally available; some private plans also contain MAC provisions

**maximum allowable cost list** multisource prescription medications that will be covered at a generic product cost level established by the plan

**maximum allowable fee schedule** a health care payment system that reimburses up to a specified dollar amount for services rendered

**maximum out-of-pocket costs** the limit on total member copayments, deductibles, and coinsurance under a benefit contract

**maximum permissible body burden** the greatest amount of radioactive material that may, on average, be contained within the body before exceeding the maximum permissible radiation dose to the critical organ

**McArdle's disease** type 5 glycogenosis; accumulation of glycogen in muscle

**me-too drug** drug product that represents only minor chemical modifications of existing drugs and offers little or no improvement in therapeutic benefit

**mean** a measure of central tendency of a group of numbers computed by summing a group of numbers and dividing the sum by the total quantity of numbers; average; number obtained by dividing the total of a set of values by the number of values in the set

**mean deviation** average of the absolute values of the respective errors in a set of data; value obtained by adding the absolute values of the respective differences between the observed data points and the mean and dividing this sum by the number of observations or data points

**mean surface diameter** that diameter of a group of particles calculated from the square root of the ratio of the sum of the product of the number of particles and the square of their diameters divided by the sum of the particles; best reflects surface area effects

**mean volume diameter** that diameter of a group of particles calculated from the square root of the ratio of the sum of the product of the number of particles and the cube of their diameter divided by the sum of the particles; best reflects volume effects

**mean volume surface diameter** that diameter of a group of particles calculated from the ratio of the sum of the products of the number of particles and the cube of their diameters divided by the sum of the products of the number of particles and the square of the diameter of the particles; best reflects combined effects of volume and surface phenomena

**median** number that lies at the midpoint of a distribution of numbers and hence divides the distribution into two equal halves; a measure of central tendency; that value in a set of values in which the number of values above the number is equal to the number of values below the number (the median itself is not counted)

**median effective dose** term in molecular pharmacology that refers to the dose of a drug that produces 50 percent of the desired effective dose possible

**Medicaid** a federal program administered and operated individually by participating state and territorial governments that provides medical benefits to eligible low-income persons needing health care; established under Title XIX of the Social Security Act

**Medicaid Management Information System** a complex computerized database management system that permits monitoring utilization and cost of services in the Medicaid program; can be used by Medicaid agencies to perform retrospective reviews of drug utilization, physician services, and institutional care as well as the costs of these services

**Medicaid Prudent Pharmaceutical Purchasing Act** states that Medicaid must receive the best discounted price of any institutional purchaser of pharmaceuticals, enacted as part of OBRA '90

**medical expense trend** the rate at which medical costs are increasing or decreasing, influenced by a number of factors, such as utilization, new technology, and billed charges

**medical loss ratio** the cost ratio of health benefits used compared to revenue received; calculated as follows: total medical expenses divided by premium revenue

**medically needy** under Medicaid, aged, blind, or disabled individuals or families and children who are not otherwise eligible for Medicaid, and whose income resources are above the limits for eligibility as categorically needy but within limits set under the Medicaid state plan

**medical necessity** the evaluation of health care services to determine if they are medically appropriate and required to meet basic health needs; consistent with the diagnosis or condition and rendered in a cost-effective manner; and consistent with national medical guidelines regarding type, frequency, and duration of treatment

**medical service representative** field employee of a drug company who "details" or informs physicians and other health professionals of the company's products; synonyms: detail person, manufacturer's representative

**Medicare** federally administered health insurance program that covers the costs of hospitalization, medical care, and some related services for people age 65 and over and for certain disabled individuals without regard to income; Part A—inpatient costs with Medicare paying for pharmaceuticals provided in hospitals, but not for those provided in outpatient settings; Part B—outpatient costs for Medicare patients; Part C (Medicare + Choice)—managed care (e.g., HMO) option that Medicare patients may choose in lieu of Parts A and B (traditional Medicare)

**Medicare beneficiary** person designated by the Social Security Administration as entitled to receive Medicare benefits

**Medicare supplemental policy** a policy guaranteeing that a health plan will pay a policyholder's coinsurance, deductible, and copayments and will provide additional health plan or non-Medicare coverage for services up to a predefined benefit limit; also called "Medigap" or "Medicare wrap"

**medication cart** movable container that holds (in a systematic way) individual doses of medications from which nurses (or medication technicians) administer drugs to patients

**medication history** summary of prescription and nonprescription medicines, as well as any illicit medicines and dietary supplements that a patient has taken or is currently taking and the patient's drug idiosyncrasies; usually obtained at the time of one's admission to a hospital or at the first visit to a doctor's office

**medication profile** record of the medications a patient is taking, the regimen or frequency, and any drug allergies or drug-related diseases that a patient may have; used for effective pharmacy practice; is incomplete if it does not also list patient's use of nonprescription products, herbal preparations, physician samples, etc.; also called "prescription record" or "medication history"

**medication therapy management** services provided under Medicare Part D (2003) that include patient education and counseling about appropriate medication use; programs designed to increase patient compliance with medication therapy and to detect adverse events due to over- or underutilization of medication

**medicinal chemistry** area involving study of the chemistry of drugs; involved with the design, synthesis, physical properties, chemical properties, and structure-activity relationships of drugs; synonym: pharmaceutical chemistry

**medigap** SEE *Medicare supplemental policy*

**medium filter** microporous, surface filter medium made by fusing synthetic microbeads to produce minute openings of specified size; cellulose esters, nylon, and polyvinyl materials are used to make such filters; filter material to collect particles in the range of 5-25 microns in diameter

**mega-** **1:** prefix meaning large, larger than usual, or larger than normal  
**2:** prefix meaning one million times a basic unit of measure; same as megal-

**megacolon** expansion of the distal colon caused by retention of feces with chronic constipation

**megacolon, toxic** medical emergency in which megacolon has persisted so long that colonic rupture occurs, with spillage of feces into the peritoneal cavity

**megalo-** **1:** prefix meaning large, larger than usual, or larger than normal  
**2:** prefix meaning one million times a basic unit of measure; same as mega-

**-megaly** suffix meaning large or larger than normal; example: hepato-megaly

**meiosis** method of cell division that occurs in the formation of sex cells whereby, over two successive cell divisions, each daughter cell receives half the number of chromosomes and half the amount of DNA of the parent cell and the two haploid cells develop into gametes—either sperm or ova

**melancholia** severe form of depression

**melanin** pigment commonly found in the skin, hair, eye, mucous membrane, and nervous system

**melasma** condition causing pigmentation of the skin; synonym: chloasma

**melen** blood in the stools

**melting point** temperature at which a solid substance begins to change to the liquid state; temperature at which a solid substance exists in equilibrium with its liquid state; CONTRAST *melting range*

**melting point lowering constant** factor by which 1 mole of a substance will lower the melting point of 1,000 g of another substance; example: 1 mole of a nonelectrolyte (186 g of glucose) decreases the melting point of 1,000 g of water 1.86°C

**melting range** temperature interval through which a fat or other organic compound begins to melt and the temperature at which it is completely melted; CONTRAST *melting point*

**member assistance program** a human risk management program that focuses on lowering behavioral and medical health costs by proactively reducing demand on the treatment system

**members** participants in a health plan who make up the plan's enrollment; also used to describe individuals specified within subscriber contracts who may or may not receive health care services according to the terms of the subscriber policy

**members per year** the number of members enrolled in the health plan on a yearly basis; calculated as member months divided by 12.

**membrane filtration** microseparation process using synthetic plastic sheets with minute openings to allow the filtrate to pass while collecting particles larger than the openings

**membrane potential** potential difference across the membrane of living cells; usually measured in millivolts

**menarche** first menstrual flow

**Ménière's disease** endolymphatic hydrops (excessive accumulation of fluid in the inner ear)

**meniscus** curved upper surface of a liquid in a container (concave when the liquid wets the walls of the container and convex when the liquid does not wet the container wall)

**menstruum** solvent used to extract the active constituents from animal, vegetable, or mineral drugs

**mental confusion** when one's mind becomes disoriented with regards to time, place, or person; may also include disordered consciousness

**mercurous chloride** an insoluble mercury compound once used as a laxative and as a component in the reference electrode of a pH meter; synonym: calomel

**mercury** silvery metallic liquid element; compounds are used as diuretics and antiseptics and the liquid metal was once used in thermometers

**mesh number** an expression of the number of openings per linear inch in a sieve made with wires of a specified diameter

**messenger RNA** (mRNA) an RNA species produced by transcription that specifies the amino acid sequence for a polypeptide

**metabolism** total chemical and physical processes occurring within an organism or cell in which materials are assimilated and processed to produce intermediates, building material, energy, and waste products

**metabolite** natural compound (substrate, vitamin, or food material) that reacts in or is formed by a biochemical reaction

**metalloporphyrin protein** cyclic structure composed of pyrrole rings and a central metal combined with a protein; example: hemoglobin

**metalloprotein** a conjugated protein containing one or more metal ions

**metaplasia** transformation of one type of adult tissue into another; example: replacement of normal respiratory epithelium composed of columnar cells by stratified squamous epithelium

**metastable** slight margin of stability of a substance that changes into another substance as conditions change; existing temporarily at a higher energy state than in the most stable form; example: technetium 99m

**metastasis** transmission of cells or bacteria from one tissue to another, usually involving some distance

**metastatic neoplasm** *SEE cancer*

**metered value** aerosol release mechanism that delivers a measured amount of product (one dose)

**methionine** sulfur-containing amino acid commonly found in proteins; methyl donor in 1-carbon transfer reactions; one of the ten essential amino acids

**methylation** a type of alkylation reaction in which a methyl group is substituted on an atom of a molecule

**methylcobalamin** form of vitamin B<sub>12</sub> in which a methyl group is bound to the central cobalt atom

**methyl salicylate** volatile oil consisting of an ester formed in a reaction of salicylic acid and methyl alcohol; widely used in liniments; synonym: oil of wintergreen

**metrology** science of weights and measures

**Meyer's disease** adenoid disease due to chronic inflammation of the pharyngeal tonsil

**micellar solution** *SEE solution*

**micelle** agglomeration of amphiphilic (surfactant) molecules in a dispersion medium (solvent) having a diameter on the order of 50 angstroms (5 nanometers)

**Michaelis constant** special type of steady-state constant in Michaelis-Menton enzyme kinetics (saturation kinetics) reflecting the formation and breakdown of the enzyme-substrate complex in an enzyme catalyzed reaction

**Michaelis-Menton equation** mathematical relationship between the velocity of an enzyme and its substrate concentrations in which the overall

velocity of the reaction ( $V$ ) equals the product of the maximum velocity ( $V_{max}$ ) and the substrate concentration ( $S$ ) divided by the sum of the Michaelis constant and the substrate concentration

**micro-** **1:** prefix meaning small **2:** prefix meaning one-millionth of a basic unit of measure; example:  $1\ \mu\text{g} = 10^{-6}\ \text{g}$

**microcrystalline cellulose** purified, partially depolymerized cellulose prepared by treating alpha cellulose with mineral acids; used as a tablet disintegrant

**microcytic anemia** condition in which there is a reduced number of red blood cells accompanied by the presence of smaller than normal red blood cells; usually seen in iron deficiency anemia

**microemulsion** clear dispersion of oil in water or water in oil in which the dispersed phase has dispersed particles with diameters of  $100\ \text{\AA}$  to  $600\ \text{\AA}$

**microencapsulation** process by which solids or liquids are encased in a thin shell as minute particles (globules)

**microfilament** a component of the cytoskeleton composed of the protein actin

**microgram** ( $\mu\text{g}$ ) one-millionth of a gram

**microliter** ( $\mu\text{L}$ ) one-millionth of a liter

**micrometer** ( $\mu\text{m}$ ) **1:** instrument used to measure small sizes **2:** a micron or  $10^{-6}\ \text{m}$

**micrometrics** the study of particle size

**micron** older term for micrometer

**micronization** reduction of particles to micrometer diameter sizes

**micronize** to pulverize a substance into very small particles that are only a few micrometers in size

**micronized powders** drug particles that are five micrometers or less in diameter

**micronizer** SEE *fluid energy mill*

**microphage** small phagocyte that ingests bacteria and protozoa

**microscope** instrument consisting of lenses enabling minute objects (or their reflections) to be seen; examples: optical microscope, electron microscope

**microscopy** **1:** examination of objects through the field of a microscope **2:** method of determining particle size distribution by using a microscope **3:** an investigation using a microscope; examples: optical microscopy, electron microscopy



**microsomal enzymes** biochemical catalysts that are responsible for the biotransformation of drugs in the body; located in small vesicles on the endoplasmic reticulum

**microvilli** minute fingerlike projections found in the intestine; serve to increase the surface area of the intestines enabling the absorption of greater amounts of food or drug; synonym: border brush

**microwaves** electromagnetic radiation emanating from electron spin transitions

**miliaria** inflammatory skin disease observed in the summer or in the tropics that consists of vesicles and papules accompanied by a prickly, tingling sensation; synonym: prickly heat

**milk acid** synonym for lactose

**milk-alkali syndrome** excessive absorption of calcium caused by alkalosis and resulting in hypercalcemia; occasionally seen with overuse of antacids such as sodium bicarbonate or calcium carbonate

**milli-** prefix meaning one-thousandth

**milliequivalent** (mEq or meq) one-thousandth of one gram equivalent weight of a substance

**milligram percent** one milligram of solute per 100 milliliters of solution

**milling** process of reducing particle size of a solid by grinding

**milling energy** energy input requirement for solid particle size reduction; SEE *Kick's theory*; *Rittinger's theory*; *Bond's theory*; *work index for particle size reduction*

**mineral acid** an inorganic acid; examples: sulfuric acid, phosphoric acid, hydrochloric acid

**mineralocorticoid** type of adrenal corticosteroid that controls electrolyte balance by regulating sodium and water retention and potassium excretion; effects on electrolyte balance are caused by adrenocorticoids

**mineral soap** synonym for bentonite

**mineral wax** SEE *ceresin*

**minibag** small flexible plastic container that holds 25-100 mL of an intravenous infusion

**minim** (m or min) a unit of fluid measure in the apothecary system; approximately one-sixteenth of a milliliter

**minimum effective concentration** concentration of a drug in body fluids (such as the blood) below which an adequate therapeutic response is not obtained

**minimum inhibitory concentration** blood-level concentration of an antibacterial drug (such as an antibiotic or a sulfa) below which there is no bacteriostatic or bacteriocidal effect

**minimum lethal dose** the minimum dose of a substance required to produce death of an organism

**minor tranquilizer** antianxiety agent

**miosis** constriction of the pupil of the eye

**miotic** drug used to produce a contraction of the pupil of the eye

**mirror image isomers** SEE *optical isomers*

**misbranding** improper and/or illegal labeling of a drug or drug product as a consequence of incomplete, misleading, and/or inaccurate wording

**miscible** term to describe two or more liquids that combine into a single phase in all proportions

**misdemeanor** criminal offense that is less serious than a felony and is usually punishable by a fine and/or local incarceration

**misrepresentation** the act of representing falsely, making an untrue statement, or conveying an untrue idea

**mithridate** a legendary antidote against poisons

**mithridatism** acquisition of immunity from the effects of a specific poison by ingesting small amounts at first, followed by increasing amounts over a period of time

**mitigate** to lessen; to make less severe as in the symptoms of a disease

**mitochondria** small, rod-shaped organelles in a cell that serve as the major site of metabolism for energy production

**mitogen** a substance that stimulates cell division

**mitosis** process of cell division in which each cell forms two daughter cells that normally contain identical chromosomes

**mixed anhydride** an acid anhydride with two different R groups

**mixed terpenoid** a biomolecule that is composed of nonterpene components attached to isoprenoid groups

**mixing** process of combining pharmaceutical materials such that each is distributed in and among the other in the most uniform manner

**mixing mechanisms of solids** fundamental interactions between particles of drug materials as they are mixed; examples: convective shear, diffusive motion

**mixture 1:** aqueous liquid containing insoluble solids in suspension and intended for internal use; example: chalk mixture **2:** any combination of substances in varying proportions and in such a manner that they may be separated by nonchemical methods; not a compound or molecule

**mobile phase** the moving phase in chromatographic methods

**modified community rating** a separate rating of medical service usage in a given geographic area (community) using age-sex data, etc.

**modified fee-for-service** a system in which providers are paid on a fee-for-service basis, with certain fee maximums for each procedure

**modulator** a molecule whose binding to an allosteric site of an enzyme alters the enzyme's activity

**Mohr scale of hardness** relative index of the hardness characteristic of mineral materials

**Mohr-Westphal balance** balance used to determine the specific gravity of liquids

**moiety** term usually used in biochemistry to designate a group or a radical on a compound

**moist heat 1:** use of heat at a given temperature and the added equivalent of the heat of vaporization of a liquid (usually water) in a process such as sterilization **2:** optional method for use of a heating pad whereby the patient inserts a wet sponge into the cover between the heating pad and the skin

**moisture content** quantitative expression of the weight of water in a wet sample of material; percent moisture content is equal to the product of the difference of the wet and dry weights of a sample times 100 divided by the weight of the dry sample

**molality** concentration expression based on the number of moles of solute dissolved in 1,000 grams of solvent

**molar ellipticity** degree to which circular polarized light is converted into an ellipse by its passage through a one molar solution of an optically active substance

**molar heat of vaporization** the amount of heat absorbed by one mole of substance as it is changed from the liquid into the vapor state at constant temperature

**molarity** concentration expression based on the number of moles (gram molecular weights) of solute in one liter of solution

**molar volume** volume occupied by one mole of substance

**molded tablets** SEE *tablet, compressed*

**mole** one gram molecular weight of substance; that is, the weight of a substance in grams equal to its molecular weight

**molecular biology** the science devoted to elucidating the structure and function of genomes

**molecular chaperone** a molecule that assists in protein folding; most are heat shock proteins

**molecular diffusion** mixing process brought about by the kinetic motion of molecules of two or more substances in the same system

**molecular disease** a disease caused by a mutated gene

**molecular orbital** resultant orbital arising from the overlapping of atomic orbitals of two atoms to form a covalent bond

**molecular orbital theory** explanation (using wave mechanical theory) of binding forces between atoms resulting from the overlapping of filled molecular orbitals as opposed to simple binding forces between atoms

**molecular sieve** polymeric layered molecules or groups of molecules with definite pore sizes; used to separate particles or ions by molecular size

**molecular weight** sum of the atomic weights of atoms that compose a molecule

**mole fraction** ratio of the moles of one constituent of a solution or mixture to the total moles of all constituents in the solution or mixture

**mole percent** concentration expression based on the number of moles of one constituent in 100 moles of all substances included in the solution or mixture

**Monge's disease** mountain sickness

**mono** mononucleosis or "kissing fever"

**mono-** prefix meaning single, one, or alone

**monogram** inscription or trademark placed on units of a dosage form such as tablet or capsule; usually designating the company that produced the product as well as a code number or mark for a specific drug dosage unit

**monograph** written account concerning a single subject or thing; special treatise on a single subject; example: *USP* monograph about a specific drug

**monophase system** homogeneous mixture, each component of which is in the same state of matter; examples: a gas, a liquid, a solid

**monosaccharide** cyclic polyhydroxy derivative of an aldehyde or ketone that cannot be broken down further by acid hydrolysis

**monosodium glutamate** (MSG) sodium salt of the amino acid, glutamic acid; white or nearly white powder that is very soluble and possesses a meatlike taste; used to flavor meat; may be toxic to children and may be the cause of Chinese restaurant syndrome in adults; synonyms: sodium glutamate

**monotropic** denotes a polymorphic compound in which crystalline form transitions occur only in one direction from a less stable to a more stable state

**monounsaturated** fatty acid with a single double bond

**mood** emotional state; disposition

**morbid** affected with a disease; diseased

**morbidity 1:** term used by epidemiologists that is the ratio of sick persons to well persons in a defined area **2:** the actual state of being diseased

**morbidity rate** an actuarial determination of the incidence and severity of sicknesses and accidents in a well-defined class or classes of people

**mordant** agent used to make dyeing more permanent; agent used to fix a dye or colorant

**Morgagni's disease** SEE *Stokes-Adams syndrome*

**Morgan, John** (1735-1789) pharmacist and physician; earliest American advocate of splitting the roles of the pharmacist and physician

**morphinan** parent structure for morphine and its analgesic analogs; example: levorphanol

**morphine** chief alkaloid of opium (*Papaver somniferum*); present to the extent of 9 percent of the alkaloids of opium; one of the principal drugs used for pain relief

**morphology** science dealing with the structures and forms of organisms

**Morse equation** quantitative expression to estimate osmotic pressure based on molarity of a solution

**mortality rate** ratio of total number of deaths to the total population in a given time

**mortar** heavy concave vessel usually made of glass or porcelain and used with a pestle for grinding and/or mixing; glass—used mostly for mixing; porcelain—glazed on the outside, but rough and unglazed on the inside; used for grinding and mixing

**motivation** process of stimulating workers to contribute to the growth and success of the organization

**mottled 1:** nonuniform colors in a dosage form that may or may not be desired; example: a mixture of different colored granules upon compression will yield a mottled tablet **2:** abnormal stains on teeth, particularly as a result of tetracycline ingestion during tooth formation and due to the excessive use of fluorides

**mouthwash** an aqueous solution that is most often used for its deodorizing, refreshing, and/or antiseptic effect

**moving-bed dryer** SEE *agitation dryer*

**moxa** small cones of combustible material that glow but do not have an open flame when ignited; used to cauterize; also used in unproven pseudo-medical practice referred to as moxibustion

**mucilage** viscous adhesive preparation made by dissolving or suspending exudates from certain trees and shrubs in water; example: tragacanth mucilage; may also be formed from hydrated synthetic polymers, example: methylcellulose mucilage

**mucokinesis** process by which cilia located on ciliated cells in the respiratory tract continually move mucus, trapped particles, and infective organisms to the upper respiratory passages

**mucus** slick, viscid secretion of the mucus membranes

**Muldoon, Hugh Cornelius** (1898-1956) educator; established the College of Pharmacy at Duquesne in 1925 and served as its dean until 1955; member of the *USP* Committee of Revision for 20 years; also served on the revision committee of the *National Formulary*; Remington Honor Medal recipient in 1953

**muller mill** apparatus used to reduce particle size of solids by rolling a heavy, wide, "wheel-shaped" device over particles to be reduced in size

**multicompartmental model** pharmacokinetic model which assumes that the body consists of more than one compartment; example: a two-compartment model consisting of central and peripheral areas

**multidose vial** SEE *container*

**multilayer tablet** SEE *tablet, compressed*

**multilayer tablet press** tableting machine designed to sequentially feed and compress up to three different layers of granular drug materials in one discretely layered solid dosage unit

**multiphase system** SEE *polyphase system*

**multiple labeling** radiolabeling a compound on two or more positions within the same molecule

**multiple linear regression** statistical computation of the linear relationship between one dependent variable and two or more independent (predictor) variables

**multiple option plan** a health care plan design that offers employees the option of electing to enroll under one of several types of coverages usually including an HMO, a PPO, or a major indemnity plan

**Multistate Pharmacy Jurisprudence Examination** computer-adaptive assessment that tailors each examination to address the pharmacy law and regulations of the state in which the candidate is seeking licensure

**Munchausen syndrome** psychiatric condition that causes the patient to pretend to have a medical problem or to self-inflict harm to gain attention from family or health care providers

**Munchausen syndrome by proxy** form of child abuse where the mother invents symptoms in her child, causing the child painful and unnecessary physical examinations and treatments

**murein** a complex polymer that contains two sugar derivations: *N*-acetylglucosamine and *N*-acetylmuramic acid and several amino acids; also referred to as peptidoglycan

**muscle** body tissue that has the properties of irritability, conductivity, and elasticity and can both contract and relax, thereby effecting the movement of the body or its parts

**mutagen** agent capable of producing genetic mutations in cells or in the body

**mutarotation** a spontaneous process in which the alpha and beta forms of monosaccharides are readily interconverted

**mutation** permanent change or modification in the genetic composition of an individual; SEE ALSO *point mutation*; *transversion mutation*

**mute** inability to speak

**my-** prefix meaning muscle; same as myo-

**myalgia** muscular pain

**myasthenia gravis** chronic progressive disease characterized by chronic fatigue and muscular weakness

**myc-** prefix meaning fungus; same as mycet-, myco-

**mycet-** prefix meaning fungus; same as myc-, myco-

**myco-** prefix meaning fungus; same as myc-, mycet-

**mydriasis** dilation of the pupil of the eye

**mydriatic** drug that produces mydriasis

**myel-** prefix meaning spinal cord or bone marrow; same as myelo-

**myelin** lipid sheath surrounding nerves

**myelo-** prefix meaning spinal chord or bone marrow; same as myel-

**myelocyte** SEE *granulocyte*

**myo-** prefix meaning muscle; same as my-

**myocardium** heart muscle

**myoclonus** abrupt contractions of part of a muscle or muscle group

**myoclonus multiplex** ill-defined disorder marked by rapid and widespread muscle contractions

**myoglobin** muscle hemoglobin

**myoneural** term describing structures associated with nerve and muscle; synonym: neuromuscular

**myoneural junction** connection between a nerve and muscle where cholinergic neurotransmission takes place; synonym: motor end plate

**myopathy** disorder in a muscle

**myosin** protein that combines with actin to form actomyosin, which is responsible for contraction of muscle tissue myrcia oil; synonym for bay oil

# N

**name, generic** SEE *generic name*

**name, proprietary** SEE *proprietary name*

**narcissism** self-love or self-admiration

**narcolepsy** sleep disorder; characterized by irresistible attacks of daytime sleep

**narcotic 1:** a drug or chemical agent obtained from opium, or a synthetic analog of those substances **2:** drug that produces an insensitivity to pain, a stuporlike state, and physical and psychological dependence **3:** any substance included in the Harrison Narcotic Act of 1914

**nasal** pertaining to the nose

**nascent 1:** just born, incipient, or beginning **2:** set free from a compound **3:** usually more chemically reactive than ordinary forms of an element; example: nascent oxygen

**naso-** prefix meaning the nose or pertaining to the nose



**nasolabial fold** area of the lip located just below the nostrils

**natal** pertaining to birth

**National Academy of Science/National Research Council** an agency of the federal government responsible for advising the Food and Drug Administration concerning the safety and efficacy of drugs

**National Association of Boards of Pharmacy** organization composed of members of Boards of Pharmacy from each of the United States, the District of Columbia, and Puerto Rico, having the objectives of facilitating license reciprocity, developing uniform licensing examinations, and providing a forum for discussing the legal regulation of the profession; founded in 1904

**National Association of Chain Drug Stores** organization representing the business interests of chain drug retailers; founded in 1933

**National Association of Retail Druggists** SEE *National Community Pharmacists Association*

**National Catholic Pharmacists Guild of the United States** organization of Catholic pharmacists and students with the purpose of promoting and supporting the principles of the Catholic church, especially as they relate to the professional and ethical aspects of pharmacy practice; founded in 1962

**National Committee for Quality Assurance** (NCQA) an independent, nonprofit HMO accrediting organization composed of independent health care quality experts, employers, labor union officials, and consumer representatives; its accreditation standards focus on (1) quality improvement, (2) credentialing, (3) members' rights and responsibilities, (4) utilization management, (5) preventive health services, and (6) medical records; NCQA uses HEDIS to measure HMO quality

**National Community Pharmacists Association** organization of independent pharmacy owners with the purpose of protecting the interests of the retail pharmacy owners; founded as the National Association of Retail Druggists in 1898

**National Council on Drugs** independent organization composed of representatives from public and professional medical associations; serves as an advisory group to government and private sectors on matters of policy and action in drug-related areas; founded in 1976

**National Council on Patient Information and Education** a national organization dedicated to improving communication between health care professionals and patients

**National Drug Code (NDC)** a number used for identification of drugs; similar to the Universal Product Code (UPC)

**National Drug Code System** a coding system used by insurers to pay outpatient pharmaceutical claims

**National Formulary** compilation of drugs, drug dosage forms, and their standards; originally published by the American Pharmaceutical Association in 1888; currently published by the U.S. Pharmacopeial Convention, Inc.

**National Institute for Standards in Pharmacist Credentialing** formed by the American Pharmacist Association, the National Association of Boards of Pharmacy, the National Association of Chain Drug Stores, and the National Community Pharmacists Association to promote the value of disease-specific examinations as the consistent and objective means of documenting the ability of pharmacists to provide disease state management services

**National Pharmaceutical Association** professional organization composed of state and local associations of minority pharmacists; founded in 1947

**National Pharmaceutical Council** organization of companies engaged primarily in the manufacture of prescription pharmaceutical products; exists to promote optimal professional standards and to ensure quality prescription products; founded in 1953

**National Wholesale Druggists Association** SEE *Health Distributors Manufacturers Association*

**natriuresis** abnormal increase in the excretion of sodium

**natural immunity** immunity that a person or an animal possesses at birth; synonym: inherent immunity

**nausea** unpleasant feeling in the upper GI tract and in the mind; usually precedes vomiting

**NDC System** SEE *National Drug Code System*

**nebulizer** device used to convert a liquid to a mist or fine spray; SEE *atomizer*

**necro-** prefix meaning death, dead tissue, or dead cells

**necrolysis** separation or exfoliation of necrotic tissue

**necrosis** death of individual cells or tissues

**negative feedback** a mechanism in which a biochemical pathway is regulated by binding a product molecule to a key enzyme in the pathway

**negative formulary** SEE *formulary*

**negatron** a negatively charged electron; the same as a beta particle of radiation; CONTRAST *positron*; SEE ALSO *electron*, *orbital*

**negligence** failure to exercise the level or quality of care that a reasonable and prudent individual would have used in a similar situation; SEE *malpractice*

**nematode** classification for roundworms; examples: pinworm, hookworm

**neonate** newborn up to four weeks of age

**neoplasm** abnormal, uncontrolled growth of cells and tissue not in coordination with other cells of the body

**neoplasm, benign** abnormal growth of cells and tissue in a local circumscribed area that neither invades surrounding tissue nor metastasizes to other parts of the body

**neoplasm, malignant** abnormal growth of cells that invades surrounding tissues and metastasizes to other parts of the body; synonym: cancer

**neovascularization** stage of wound repair in which capillaries send fresh buds into the healing wound

**nephelometer** instrument used to determine the degree of turbidity (or conversely the degree of clarity) of a liquid by measuring the “Tyndal effect” (light scattering)

**nephro-** prefix meaning kidney; same as *nephro-*

**nephritis** inflammation of the kidney

**nephro-** prefix meaning kidney; same as *nephro-*

**nephrogenic diabetes insipidus** an autosomal recessive disease in which the kidneys of affected individuals cannot produce concentrated urine

**nephrosclerosis** hardening of the kidney or a part of the kidney

**neroli oil** a source of the terpenic alcohol nerol; synonym: oil of orange flowers

**net income** excess of revenues over expenses of operation for a business in a specified time period; synonym: net profit

**net loss ratio** the result of total claims liability and all expenses divided by premiums; the carrier’s loss ratio after accounting for all expenses

**net profit** gross margin minus expenses (not including income tax), for a given period of time; synonym: net income

**network model HMO** an HMO that contracts with more than one physician group, and may contract with single- and multispecialty groups; physicians may share in utilization savings, but do not necessarily provide care exclusively for HMO members

**net worth** owner's interest in a business; equal to the assets minus the liabilities of the firm; synonym: owner's equity

**neur-** prefix pertaining to a nerve or the nervous system; same as neuro-

**neuralgia** pain that follows the course of a nerve; classified according to the nerve affected

**neural mismatch theory** theory that a mismatch in input from the proprioceptive, vestibular, and visual systems causes motion sickness

**neurasthenia** nervous exhaustion; functional neurosis marked by intense nervous irritability and weakness

**neuritis** inflammation of a nerve

**neuro-** prefix pertaining to a nerve or the nervous system; same as neur-

**neurohormone** compound secreted by a gland into the blood that produces neural stimulation in another part of the body

**neuroleptic** category of drugs that exhibit antipsychotic actions, have the potential to induce extrapyramidal movements, and are generally non-hypnotics

**neurologist** a physician who has specialized knowledge of the nervous system and treats neurological disorders

**neuromuscular blocking agent** drug used to relax skeletal muscle during surgery; examples: curare, decamethonium, succinylcholine

**neuromuscular blocking agent, polarizing** drug that blocks depolarization at the myoneural junction

**neuromuscular blocking agent, depolarizing** drug that blocks repolarization at the myoneural junction

**neuromuscular junction** connection between a nerve and a muscle where cholinergic neurotransmission takes place; synonyms: motor end plate, myoneural junction

**neurotransmitter** compound released by nerve endings in response to a nerve impulse that carries the stimulus across a synapse

**neutral fat** triacylglycerol molecules

**neutral protamine Hagedorn insulin** intermediate-acting formulation of insulin consisting of an insulin-protamine zinc complex at neutral pH; synonym: isophane insulin

**neutron** basic particle of matter; a nucleon, having zero charge and a mass of  $1.67 \times 10^{-24}$  g; a by-product of nuclear fissions; a particle obtained from an atomic pile and used to prepare radioisotopes

**neutropenic** having an abnormally low number of neutrophils in the blood

**new drug** (according to the Federal Food, Drug, and Cosmetic Act) any product that is a new chemical entity in whole or part; includes existing approved drugs that have been prepared for a new indication, a new dose, or a new route of administration

**New Drug Application** (NDA) lengthy documentation (filed with the FDA and required for all new drugs) that fully describes a drug, its manufacture, and the results of all preclinical and clinical tests; approval of a new drug application permits a company to market the drug

**Newcomb, Edwin Leigh** (1882-1950) leader in the establishment of the American Foundation for Pharmaceutical Education; pharmacy educator, editor, and executive of the National Council of Wholesale Associations; Remington Honor Medal recipient in 1950

**Newtonian flow** liquid flow characteristic of gases, true solutions, and noncolloidal liquids that exhibits a constant slope when "rate of shear" is plotted against "shearing stress" on a linear graph

**Newton's law of viscous flow** basic cgs quantitative expression for flow of a moving liquid layer ( $1 \text{ cm}^2$ ) past a stationary liquid layer ( $1 \text{ cm}^2$ ) separated by  $1 \text{ cm}$ ; measured in a unit called a poise, which is equal to  $1 \text{ dyne times } 1 \text{ sec times } 1 \text{ cm}^2$

**nicotinamide** amide of nicotinic acid and a form of the antipellagric factor niacin (nicotinic acid), an essential part of the coenzymes NAD and NADP

**nicotinamide adenine dinucleotide** (NAD) coenzyme composed of a nucleotide derivative of nicotinic acid and a nucleotide of adenine joined by a pyrophosphate linkage; coenzyme for certain oxidoreductases or dehydrogenases; synonym: diphosphopyridine nucleotide

**nicotinamide adenine dinucleotide phosphate** (NADP) coenzyme that is the 2'-phosphate ester of nicotinamide adenine dinucleotide; synonym: triphosphopyridine nucleotide

**nicotinic acid** B-complex vitamin; antipellagral factor; pellegral preventive factor; essential part of the coenzymes NAD and NADP; SEE *nicotinamide*

**night cream** SEE *cold cream*

**nightshade** poisonous, solanaceous plant containing several alkaloids, the main one being atropine; synonym: deadly nightshade; SEE *belladonna*

**nit** egg laid by lice

**niter** potassium nitrate; synonym: salt peter

**nitrocellulose** synonym: guncotton; SEE *pyroxylin*

**nitrogen mustard** chemotherapeutic alkylating agent used in treating cancer; compound consisting of an amino nitrogen substituted with two  $\beta$ -chloroethyl groups that are the so-called "alkylating arms"

**nitroglycerin or nitroglycerol** trinitrated glycerin; used as a coronary vasodilator in treating angina pectoris; synonyms: glyceryl trinitrate, glonoine

**nocturia** above normal urination at night

**nocturnal** occurring during the night or a period of darkness; opposite of diurnal

**nocuous** harmful; poisonous; CONTRAST *innocuous*

**nominal labeling** (denoted by "*N*") isotopically labeled compound on which the labeled position is uncertain

**nomogram** graphic representation consisting of several lines marked off to a scale, arranged in such a way that by using a straight edge to connect known values on two lines an unknown value can be read at the point of intersection with a third line; used to determine drug doses for specific persons

**non-** prefix denoting lack of, absence of, or negation of

**noncontributory** a situation in which the plan sponsor pays the entire cost of premium for coverage

**nonelectrolyte** substance that is not ionized in an aqueous solution; a substance that will not conduct electricity

**nonenteral route** mode of drug administration that does not directly involve the gastrointestinal tract

**nonessential amino acid** an amino acid that can be synthesized by the body

**nonessential fatty acid** a fatty acid that can be synthesized by the body

**nonionic** refers to a compound that neither ionizes nor is composed of ions

**nonionic surfactant** surface active agent that does not ionize in solution; exhibits fewer chemical incompatibilities than other surfactants; example: polysorbate 80

**nonjudgmental tasks** those tasks which do not require professional judgment; example: a pharmacy technician preparing a prescription product in the pharmacy

**nonmaleficence** a principle of ethics which states that one should avoid harming others

**non-Newtonian flow** liquid flow characteristic that does not exhibit a constant slope when “rate of shear” is plotted against “shearing stress” on a linear plot; examples: plastic, pseudoplastic, dilatant, and thixotropic flows

**nonparenteral glass** soda lime glass; not to be used for packaging parenteral products

**nonparticipating provider** a provider that has not contracted with the carrier or health plan to be a participating provider of health care

**nonparticipating provider indemnity benefits** health care coverage for services rendered by providers who are not under contract with the health plan; benefits are covered on an indemnity basis, typically carrying high copayment requirements and deductibles

**nonpolar molecule** a molecule that does not contain a dipole

**nonprescription medicines** medicines legally available to the general public without the necessity of a prescription; synonyms: proprietary medicine/drug, over-the-counter drug

**norm** established standard of acceptable behavior in a group; frequency distribution of experimental observations that when plotted exhibits a Gaussian (or bell-shaped) curve

**normality** concentration expression based on the number of gram equivalent weights of solute per liter of solution; also expressed as the number of milliequivalents (milligram equivalent weights) of solute in one milliliter of solution

**normo-** prefix meaning normal; examples: normotensive, normocytic

**North American Pharmacist Licensure Examination** computer-adaptive, competency-based examination that assesses the candidate’s ability to apply knowledge gained in pharmacy school to real-life practice situations

**nosocomial infection** infections acquired during hospitalization

**nosology** science of the classification of disorders or diseases

**Notice of Claimed Investigational Exemption for a New Drug** lengthy document required for testing any new drug in human subjects; contains descriptions of its composition, all preclinical studies, and the protocol by which the drug will be tested in humans

**NP glass** SEE *nonparenteral glass*

**nuclear envelope** the double membrane that separates the nucleus from the cytoplasm

**nuclear magnetic resonance** method of spectrometry dependent upon vibrational frequencies generated by a radio frequency signal in the nuclear protons of  $^1\text{H}$ ,  $^{13}\text{C}$ ,  $^{19}\text{F}$ , among others, that are precessing in a magnetic field; synonym: proton magnetic resonance

**nuclear pore** a channel through the nuclear envelope that allows molecules to pass between the cytoplasm and the nucleus

**nucleases** enzymes that catalyze the hydrolysis of nucleic acids into nucleotides and other products; examples: RNAase, DNAase

**nucleation** process of nucleus formation on which further growth occurs; example: crystalline nucleation on which a larger crystal is grown

**nucleic acid 1:** polymer composed of ribotide or deoxyribotide units linked together through phosphates **2:** a polynucleotide; examples: DNA, RNA

**nucleohistone** DNA complexed with histone proteins

**nucleoid** in prokaryotes, an irregularly shaped region that contains a long circular DNA molecule

**nucleolus** a structure found in the nucleus when the nucleus is stained with certain dyes; plays a major role in the synthesis of ribosomal RNA

**nucleon** basic particle of an atomic nucleus; examples: neutron and proton

**nucleophile 1:** in organic chemistry, an attracting reagent that has an affinity for electron-sparse or positively charged centers in a molecule **2:** a Lewis base **3:** an electron-rich atom or molecule

**nucleophilic substitution** chemical reaction in which a nucleophile attacks a molecule, resulting in a new compound; a reaction in which a nucleophile substitutes for an atom or molecular group

**nucleoplasm** the material within the nucleus that consists of proteins called lamins that form a network of chromatin fibers

**nucleoside** compound composed of a nitrogenous base and a sugar nucleotidase; enzyme that catalyzes the hydrolysis of a nucleotide into a nucleoside and phosphoric acid



**nucleotide** compound composed of a purine, pyrimidine, or other nitrogenous base attached to ribose and esterified with phosphate

**nucleus 1:** the core, kernel, or central mass **2:** the complex central mass in a cell responsible for cellular growth, reproduction, and genetics **3:** the central core containing the protons and neutrons of the atom **4:** a group of nerve cells within the nervous system from which the nerve fibers originate **5:** a central part of a crystal around which other parts of the crystal form **6:** a central part of the structure of an organic chemical molecule; example: an aromatic nucleus

**nuclide** any atom characterized by a specific number of protons and a specific number of neutrons; examples: carbon-12, carbon-14

**nurse** one who cares for patients according to accepted practice standards and specific directions of a physician

**nursing home** long-term care institution that provides minimum care nursing and other health services to the chronically ill and infirm

**nutrition** sum total of the processes involved in the ingestion and utilization of food substances; imperative to growth, repair, and maintenance of body functions

**Nutzche filter** porcelain filtration device that has a built-in porous support plate as a filter medium and a false bottom; designed to use vacuum to hasten the filtration process; used for chemicals that are incompatible with metal

**nystagmus** rapid, jerky, uncontrolled movements (oscillations) of the eye; can be seen on vertical (vertical nystagmus) and horizontal (horizontal nystagmus) meridians



**O<sub>2</sub> 1:** prescription (or other medication order) notation meaning both eyes **2:** chemical symbol for molecular oxygen

**obese** excessively overweight; having a BMI greater than 30 percent above normal body weight

**objective data** data that can be measured; examples: temperature, blood pressure

**objectives** desired outcomes toward which plans are directed; typically broad and general in scope

**obligate aerobe** an organism that is highly dependent on oxygen for energy production

**obligate anaerobe** an organism that grows only in the absence of oxygen

**obsession** persistent, unwanted idea that cannot be easily eliminated

**obstetrician** a physician who specializes in treating women during pregnancy and parturition

**obstruction** blocking of a structure (usually a biological passageway) that prevents it from functioning normally

**obtund** blunt or dull

**occlusion** obstruction or closure as in a blood vessel or a pipeline

**occlusion compound** synonym: clathrate; SEE *inclusion compound*

**occlusive** refers to a substance or an agent that cuts off or prevents contact with a surface; to shut in or out

**occult** hidden from view, concealed; example: occult blood

**occult blood** blood in such minute quantities that it can be recognized only by microscopic or chemical means; hidden blood

**octahydronaphthacene** parent structure for the tetracyclines

**octal 1:** a numbering system based on the numbers 0 through 7 **2:** a number system with a base of eight

**oculentum** eye ointment or salve

**oculo-** prefix meaning eye

**odynophagia** pain upon swallowing

**office visit** provision of health care services in an office setting, usually that of a physician

**official drug** useful medicine with recognized standards as specified in the *United States Pharmacopeia–National Formulary*

**Oguchi's disease** hereditary night blindness

**OH-** chemical symbol for the hydroxyl ion

**ohm** unit of electrical resistance or impedance; ohm equals voltage divided by amperes (strength of an electrical current)

**-oid** suffix meaning similar to or like

**oil** an unctuous, combustible substance that is liquid, or easily liquefiable when warmed, and is soluble in ether but insoluble in water; depending on origin, classified as animal, mineral, or vegetable oil

**oil, fixed** oil that cannot be distilled without decomposition

**oil, infused** generally made from drugs containing alkaloids

**oil, sugar** triturate containing 2 cc of volatile oil and 100 grams of powdered sugar

**oil, volatile** oil that can be distilled without decomposition

**oil-in-water emulsion** SEE *emulsion, oil-in-water*

**ointment** medicated semisolid preparation for external application to the skin or mucous membranes; generally has a greasy base

**ointment, ophthalmic** specially formulated sterile ointment for application to the eye; usually dispensed in a small applicator tube

**-ol** suffix meaning alcohol

**oleaginous** oily, greasy, or fatty

**oleate** compound of metal or an alkaloid with oleic acid

**olefin** compound that contains a double bond between two carbon atoms; synonym: alkene

**oleoresin** extract of a plant containing a resin dissolved in an oil; example: turpentine

**oleotherapy** an injection or an application of an oil as a form of treatment

**oleovitamin** preparation of fat-soluble vitamins (A, D, E, and K) in fish liver oil or an edible vegetable oil

**olig-** prefix meaning few, very little, or scant; same as oligo-

**oligo-** prefix meaning few, very little, or scant; same as olig-

**oligomer** a multisubunit protein in which some or all subunits are identical

**oligonucleotide** a short nucleic acid segment that contains fewer than 50 nucleotides

**oligosaccharide** sugar polymer, one structured unit of which, on hydrolysis, produces three or more units of monosaccharides

**oliguria** condition in which there is a small amount of urine being produced

**-oma** suffix meaning tumor

**Omnibus Budget Reconciliation Act of 1990** (OBRA '90) law drafted by the Senate Committee on Aging that requires manufacturers to pay rebates to federal and state governments for projects used by Medicaid recipients; also contains patient counseling and drug utilization review provisions for Medicaid programs; spurred many states to pass regulations requiring pharmacists to counsel *all* patients on the use of their prescriptions

**oncogene** a mutated version of a proto-oncogene that promotes abnormal cell proliferation

**oncologist** a physician who specializes in the study and treatment of tumors; a cancer specialist

**one-compartmental model** SEE *single-compartmental model*

**onset time** time interval from the administration of a drug until it begins to exert its pharmacological effect(s); the time required to obtain an effective blood level of a drug

**opaquant extender** substance added to a tablet-film coating process to provide a coating that prevents light exposure to the previously prepared dosage unit or drug particle; substance used to render a clear plastic film opaque

**opaqueing agent** substance added to capsules, capsule vials, or other containers to render them opaque; example: titanium oxide

**open access** a self-referral arrangement allowing members to see participating providers for specialty care without a referral from another doctor

**open enrollment period** period during which subscribers in a health benefit program have an opportunity to reenroll or select an alternate health plan being offered to them, usually without evidence of insurability or waiting periods

**open formulary** SEE *formulary, open*

**open-panel HMO** organization that contracts with private office physicians and other health care providers to ensure care of their members

**open reading frame** (ORF) a series of triplet base sequences in mRNA that do not contain a stop codon

**open system** refers to a process under observation that involves exchanges of heat, work, and matter with its surroundings; CONTRAST *closed system*

**operon** a set of linked genes that are regulated as a unit

**ophthalmic 1:** pertaining to the eye **2:** pharmaceutical preparation to be instilled into the eye

**ophthalmic solution** SEE *solution, ophthalmic*

**ophthalmoplegia** paralysis of the motor nerves of the eye

**opiate** type of drug obtained from *Papaver somniferum* that has narcotic analgesic effects

**opioid** analgesic substances derived from opium or endogenous peptides with similar pharmacological effects

**opium** dried, gummy latex obtained from excised, unripened capsules of the poppy, *Papaver somniferum album*

**Oppenheim-Ziehan disease** dystonia musculorum deformans

**opportunity cost** in pharmacoeconomics, the amount that an input could earn in its best alternative use, or the alternative that must be foregone when something is produced

**opsin** retinal protein that makes up one of the visual pigments

**optical isomers** type of stereoisomer that contains at least one chiral center, with one molecule being a reflection of the other; examples: D(+)-glyceraldehyde and L(–)-glyceraldehyde; synonyms: mirror image isomers, enantiomorphs and antimers

**optical pyrometer** SEE *pyrometer*

**optical rotation** degree and direction of the shifting of polarized light as it passes through a substance; can be clockwise (dextrorotatory) or counterclockwise (levorotatory)

**optical rotatory dispersion** results of a measurement of the angle of rotation of polarized light at different wavelengths as it passes through a substance or a solution

**optometry** health care field involving the assessment of visual capability and correction of visual defects with the use of lenses or other optical aids without (or with limited) use of drugs

**oral 1:** associated with the mouth **2:** route of drug administration in which the drug is placed in the mouth and swallowed

**oral administration** process of administering a medication by having the patient swallow it

**oral release, osmotic** mechanism for controlling release of a drug from its dosage form based on the principle of osmosis

**orbicules** globules of sugar, medicated by dropping a volatile oil on their surface

**orbital 1:** subshell or probability cloud describing the most likely position of an orbital electron within an atom **2:** s-type—electron orbital for which the quantum numbers  $l$  and  $m_l = 0$  **3:** p-type—electron orbital for which the quantum number  $l = 1$  and the quantum number  $m_l = 1, 0, \text{ or } -1$  **4:** d-type—electron orbital for which the quantum number  $l = 2$  and the quantum number  $m_l = 2, 1, 0, -1, \text{ or } -2$  **5:** f-type—electron orbital for which the quantum number  $l = 3$  and the quantum number  $m_l = 3, 2, 1, 0, -1, -2, \text{ or } -3$

**order of a reaction/process** discrete rate of occurrence; the exponential number to which concentrations of reactants or products must be raised to quantitatively describe a reaction (or process) rate; most described by ei-

ther a zero-, first-, second-, or third-order rate; examples: chemical and physical degradation rates of drug molecules and absorption, distribution, and elimination rates of drugs in and from the body

**organelle** a membrane-enclosed structure within a eukaryotic cell

**organic** refers to living substances or materials derived from a living source; refers to carbon compounds

**organification** conversion of serum iodide to organic iodine by thyroid cells; an essential process occurring before iodine can be added to tyrosine to form monoiodothyronine, diiodothyronine, triiodothyronine, and ultimately tetraiodothyronine

**organization costs** costs incurred to legally establish a corporation; an intangible asset

**organoclay** organic clay compounds; example: bentoquatam (used as a barrier to poison ivy when applied to the skin prior to plant contact)

**organoleptic** affecting one or more special sense organs

**orientation effect** SEE *dipole-dipole interactions*

**oro-** prefix meaning the mouth

**orphan drug** refers to drug entities that are used to treat certain rare disease states and consequently have limited sales

**ortho- 1:** prefix meaning normal or straight **2:** prefix in inorganic chemical nomenclature meaning the completely hydrated or hydroxylated form of an acid; example: orthophosphoric acid ( $\text{H}_3\text{PO}_4$ ) **3:** prefix in organic chemistry meaning the location of two substituents on adjacent carbon atoms of a benzene ring; example: *o*-aminobenzoic acid

**orthodontist** a dentist who specializes in the prevention and correction of abnormally positioned or aligned teeth

**orthopedic surgeon** a physician who specializes in surgical prevention and correction of deformities or injuries to the skeletal structure of the body

**orthopnea** difficult breathing, especially in the supine position; usually associated with cardiac asthma

**orthostatic** refers to an event caused by position change or standing erect

**Ortner's syndrome** left vocal cord paralysis associated with enlarged left atrium in mitral stenosis

**-ose** suffix meaning sugar

**-osis** suffix meaning condition of or disease involving

**Osler's disease** erythremia (increase in size of bone marrow and blood volume)

**Osler-Vaquez disease** erythemia; polycythemia rubra vera

**osmolarity** the molar concentration of osmotically active (discrete) particles in a solution

**osmolyte** an osmotically active substance synthesized by cells to restore osmotic balance

**osmosis** the passage of a liquid through a semipermeable membrane from a cell of lower concentration of solute to a cell of higher concentration of solute; a natural phenomenon that equalizes the vapor (internal) pressure on each side of a semipermeable membrane

**osmotic** refers to the process of osmosis; the flow of fluids across a semipermeable membrane

**osmotic coefficient** correction factor for calculating the osmotic effect of a nonideal solution

**osmotic diuresis** a process in which solute in the urinary filtrate causes excessive loss of water and electrolytes

**osmotic pressure** force per unit area exerted on a membrane by dissolved particles that will not diffuse; an important property to be adjusted to that of normal body fluids in parenterals and ophthalmics; one of several colligative properties; pressure required to prevent the flow of water from one side of a semipermeable membrane to the other side; represents the difference in vapor pressure above each of two solutions separated by a semipermeable membrane

**osseous** bone or bonelike

**osteo-** prefix meaning bone or bones

**osteochondrosis** degeneration followed by reossification of one or more ossification centers in children

**osteoporosis** disease characterized by an increase in porosity of the bone, frequently associated with a loss of calcium ions; abnormal reabsorption of bone structure

**ostia** small opening into each of the respiratory sinus cavities

**ostomy** surgical resectioning of the intestine or the ureter to an external opening in the abdominal wall; examples: ileostomy, colostomy, urostomy

**Ostwald-Cannon-Fenske viscometer** capillary device used to measure viscosity by comparing the flow rate of one liquid with the flow rate of another of known viscosity at a given temperature and pressure

**ot-** prefix meaning ear; same as oto-

**otic** pertaining to the ear

**otitis** inflammation of the ear

**oto-** prefix meaning ear; same as ot-

**otologist** a physician who specializes in diseases of the ear; a specialist who is knowledgeable in the anatomy, physiology, and pathology of the ear

**ounce, apothecary** (℥) a unit of weight equal to 8 drams or 480 grains

**ounce, avoirdupois** (oz or oz av) a unit of weight equal to 28.3495 grams or 437.5 grains

**ounce, fluid** (fl ℥) an apothecary unit of volume equal to 29.57 mL, 8 fluid drams; or 480 minims; a fluid ounce of water weighs 455 grains

**outcome measures** assessments including such parameters as the patient's perception of restoration of function, quality of life, and functional status, as well as objective measures of mortality, morbidity, and health status that gauge the effect or results of treatment for a particular disease or condition

**outcomes** results achieved through a given health care service, including pharmaceutical care, medication, or medical procedure; economic—relating to costs and productivity; humanistic—including patient satisfaction and health status

**outcomes management** systematically improving health care results by modifying practices in response to data gleaned through outcomes measurement, then remeasuring and remodeling in a formal program of continuous quality improvement

**outcomes research** studies aimed at measuring the effect of a given product, procedure, or medical technology on health or costs

**outer membrane** the porous external membrane of mitochondria

**outlier** an observation in a distribution that is outside a certain range, often defined as two or three standard deviations from the mean or exceeding a specific percentile

**out-of-area coverage** health plan benefit for treatment obtained by a covered person outside the network service area

**out-of-pocket costs/expenses** the portion of payments for health services required to be paid by the enrollee, including copayments, coinsurance, and deductibles

**out-of-pocket limit** the total payments toward eligible expenses that a covered person funds for himself/herself and/or dependents—i.e., deduct-



ibles, copays, and coinsurance—as defined per the contract; once reached, 100 percent coverage for health services received during the rest of that calendar year; some out-of-pocket costs (e.g., mental health, penalties for nonrecertification, etc.) not eligible

**outpatient** person who is not admitted to a hospital but receives health care services at a hospital or a dispensary associated with the hospital

**over-the-counter medicines** SEE *nonprescription medicines*

**owner's equity** that part of a business possessed by the owner including cash, stock, and/or physical items such as a building or land; (accounting) the excess of total assets over total liabilities

**oxa- $\beta$ -lactam** nucleus of the bactericidal antibiotic moxalactam

**oxazolidinediones** class of drugs with anticonvulsant activity; used to treat petit mal epilepsy; ineffective for the treatment of grand mal epilepsy; example: trimethadione

**oxidase** enzyme that catalyzes a direct reaction of a substrate with oxygen

**oxidation** loss of electrons from a substance in a chemical reaction; older definitions include the combination of a substance with oxygen and the loss of hydrogen from a substance

**oxidation number** discrete number describing an oxidation state; example: iron may have oxidation numbers of 0, 2, and 3, corresponding to  $\text{Fe}^0$ ,  $\text{Fe}^{++}$ , and  $\text{Fe}^{+++}$

**oxidation-reduction** chemical change resulting in an increase in the electronegativity of a molecule (reduction) accompanied by a reduction in electronegativity (oxidation) of another molecule in a system under observation; chemical reaction in which there is an electron donor (reducing agent) and an electron acceptor (oxidizing agent)

**oxidation state** level of the positivity or negativity of an element computed by summing the negative atoms and positive atoms in a molecule; the difference of the two sums is the oxidation state; the oxidation state of a free element is zero

**oxidative demethylation** metabolic reaction in which a methyl group is removed from a molecule in the form of formaldehyde

**oxidative phosphorylation** formation of ATP from ADP and phosphate by using the energy of biological oxidation

**oxidative stress** excessive production of reactive oxygen species

**oxidize** the removal of electrons

**oxidized molecule** a molecule from which one or more electrons have been removed

**oxidizing agent** substance that accepts electrons from another substance while undergoing a chemical reaction; the oxidizing agent is reduced in the reaction; a compound that is preferentially reduced over another which is being protected from reduction in the system; CONTRAST *antioxidant*

**oxidoreductase** type of enzyme that catalyzes oxidation-reduction reactions; examples: dehydrogenase, oxidase, oxygenase

**oxime** chemical compound having the fundamental structure,  $R-CH=N-O-H$  or  $R_2C=N-O-H$ ; chemical compound formed by reaction between a ketone or an aldehyde and hydroxyl amine; synonym: isonitroso compound

**oxyanion** a negatively charged oxygen atom

**oxygenase** enzyme that catalyzes a reaction in which oxygen is incorporated into the substrate molecule; SEE *hydroxylase*

**ozokerite** hard, white, odorless wax resembling spermaceti when purified; occurs naturally in the mountains of Asia Minor; synonyms: earth wax, ceresin

**ozone** allotropic form of oxygen, the molecule of which is composed of three atoms of oxygen ( $O_3$ ) rather than two ( $O_2$ )

**ozonide** compound formed upon oxidation of an olefin (alkene) with ozone; ozonides breakdown with water to form aldehydes or ketones

**P** **package insert** nonpromotional professional labeling information that accompanies a drug product and contains information necessary for safe and effective use

**packaging, compliance** SEE *unit of use*

**packing** material, usually covered by or impregnated with a drug, that is inserted into a body cavity or between the tooth enamel and the gingival margin

**pack** SEE *laparotomy pack*

**paddle** large surface area blade that rotates slowly to effect large volume mixing of liquids

**Paget's disease** osteitis deformans (generalized skeletal disorder with thickening and softening of bone)

**paid claims** amounts paid to providers to satisfy the contractual liability of the carrier or plan sponsor

**paid claims loss ratio** the result of paid claims divided by premiums

**paint** liniment applied with a brush

**paints, collodion** solutions of pyroxylin in ether-alcohol that leave a hard film upon drying

**paints, drying liniment** medicated mucilages of gums or albumin that leave a thick film upon drying

**paints, glycogelatin** medicated globules of gelatin with glycerin that are melted at the time of use and applied with a brush

**palatable** agreeable to the palate; having a pleasant taste

**palindrome** a sequence that provides the same information whether it is read forward or backward; DNA palindromes contain inverted repeat sequences

**pallor** unnatural paleness

**palmitate** refers to a salt or an ester of palmitic acid

**palmityl alcohol** SEE *cetyl alcohol*

**palpate** to examine by touching

**palpitation** rapid, violent, or throbbing pulsation of the heart; usually perceived by the patient as an abnormally rapid fluttering of the heart; an awareness of heartbeat by the patient

**palsy** paralysis; loss of sensation or ability to move or control movement; examples: Bell's palsy, "shaking palsy" (Parkinson's disease)

**p-aminobenzoic acid** growth factor for some species of bacteria; part of the structure of folic acid and some local anesthetics; antagonist in sulfonamide therapy; synonym: 4-aminobenzoic acid

**pan-** prefix meaning all

**panacea** "cure-all" or a remedy for all diseases

**papain** proteolytic enzyme obtained from papaya fruit; used both to treat a hematoma and as a meat tenderizer

**papers** small, folded sheets of paper, each containing a single dose of a powder

**papilledema** edema (swelling) of the optic papilla

**para-** 1: prefix meaning beside or parallel with 2: (in organic chemistry) two groups substituted at opposite points on the benzene ring

**para-aminobenzoic acid** essential nutrient for many microorganisms; required for the bacterial biosynthesis of folic acid

**Paracelsus** (1493-1541) Swiss physician who introduced the concept of the human body as a "chemical laboratory" and challenged classical con-

cepts of medicine and drug therapy; also known as “Theophrastus Bombastus von Hohenheim”

**parallax** apparent movement or displacement of an object resulting when an observer views it from different positions or moves the head or eyes

**paralysis** partial or total loss of function in a body part due to neural or muscular dysfunction

**paramedic** individual trained and certified to perform certain emergency procedures by following a treatment protocol under the supervision of health professionals

**parametabolite** compound that closely resembles a natural substrate (e.g., hormone, vitamin) and can substitute for the natural compound in fulfilling any requirements of an organism for the natural compound

**parameter 1:** set of physical properties whose values determine the characteristics or behavior of a substance or process **2:** descriptive numerical measure that is computed from all elements within a given population

**paramyoclonus** SEE *myoclonus multiplex*

**paraprofessional** one who carries out a specific task or tasks assigned by or in conjunction with a health professional

**parasympatholytic** drugs that block the effect of acetylcholine at the muscarinic receptor; synonym: antimuscarinics

**parasympathomimetic** drug that mimics or copies the effects of the parasympathetic nervous system; action may be directly at the muscarinic receptor or indirectly

**parasympathomimetic, direct acting** agonist drug acting directly on the muscarinic receptors of acetylcholine; example: pilocarpine

**parasympathomimetic, indirect acting** drug that inhibits acetylcholine esterase, thus allowing acetylcholine to build up in body and producing an effect; examples: physostigmine, prostigmine, disopropylfluorophosphate

**parathyroid** one of four small glands responsible for secreting parathyroid hormone; imbedded in the thyroid gland

**paravitamin** compound that closely resembles a vitamin and may be utilized by an organism as a substitute for the vitamin

**paregoric** preparation containing opium extract, alcohol, camphor, and other volatile substances; synonym: camphorated opium tincture; used as an antidiarrheal and analgesic

**parenteral** dosage form usually administered under one or more layers of skin; literally, a dosage form not administered through the alimentary canal; example: normal saline injection

**parenteral administration** process of administering a medication by a route other than the alimentary canal; introduction of medication into the body using a needle and syringe; examples: intravenous, subcutaneous, and intramuscular injections

**paresis** partial paralysis

**paresthesia** burning, prickling, or other abnormal sensation

**parkinsonism** group of neurological disorders characterized by hypokinesia, tremor, and rigidity; neurological disorder involving fine movement and resulting from a lack of the neurotransmitter dopamine in the pathway from the substantia nigra to the globus pallidus (basal ganglia in the brain)

**Parkinson's disease** shaking/trembling palsy

**paroxysm** sudden attack or intensification of the symptoms of a disease

**Parrish, Edward** (1822-1872) pharmacist and early educator at the Philadelphia College of Pharmacy; one of the founders of APhA

**Parson's sick role model** a model of the social and psychological dynamics of the patient-doctor relationship; describes the patient's responsibilities as seeking competent help and doing all that is necessary to get well, so that, in return, the patient is not held responsible for becoming ill and is temporarily exempt from performing normal social role responsibilities

**partial agonist** SEE *agonist*

**partial differentiation** mathematical computation of an infinitesimally small rate of change of one dependent variable in an expression with respect to simultaneous changes of several other independent variables considered individually; other independent variables in the equation are held constant as the effect of each is computed

**participating provider** provider who has contractually accepted the terms and conditions as set forth by the health plan to deliver medical services to covered persons

**particle diameter** micrometric expression of particle size of drug materials; quantitatively expressed in many different ways to more accurately reflect its effect with respect to a specific pharmaceutical use; example: volume-surface diameter (dy)

**particle size** SEE *particle diameter*

**particulate matter** minute, separate, and distinct particles in a liquid; an undesirable characteristic of a solution dosage form, such as an injection

**partition coefficient** physical property of a compound that reflects its distribution between two immiscible solvents; the ratio of the concentration of the compound dissolved in one solvent phase to that dissolved in the other solvent phase

**partnership** form of business arrangement in which two or more persons agree to share in the enterprise

**parvules** very small sugarcoated pills usually containing potent medicines in small doses

**passive absorption** SEE *absorption*

**passive diffusion** movement of drug molecules from a region of higher concentration to a region of lower concentration through a membrane that does not participate in the process; quantitatively expressed by Fick's first law of diffusion

**passive immunity** development of resistance to a disease as a result of the introduction of antibodies already formed; immunity that occurs naturally (passage from mother to fetus) or by injection of an antitoxin

**paste 1:** (pharmaceutical) stiff-drying ointmentlike preparation for external application; example: zinc oxide paste **2:** single-phase gel for external application; example: hydrated pectin gel

**paste, dentifrice** paste formulation intended to clean and/or polish the teeth; may contain certain additional agents

**Pasteur, Louis** (1822-1897) French chemist and crystallographer who found microorganisms to be the cause of many diseases; known also for developing the process of "pasteurization" to kill pathogenic microorganisms in milk and for developing several vaccines; laid the foundation for stereochemistry by being the first to separate (resolve) mirror image isomers; disproved the theory of spontaneous generation of living organisms

**Pasteur effect** the observation that glucose consumption is greater under anaerobic conditions than when  $O_2$  is present

**pastille** medicated disk used for treating the mucosa of the mouth and throat; synonyms: lozenge, troche

**pastille, fumigating** small, cone-shaped compounds of balsam and other spices with a combustible substance as a base; used as a fumigator or disinfectant

**patch** drug delivery system that contains an adhesive backing and that permits its ingredients to diffuse from some portion of it (e.g., the backing

itself, a reservoir, the adhesive, or some other component) into the body from the external site where it is applied

**patch, extended release** drug delivery system in the form of a patch that releases the drug to allow a reduction in dosing frequency compared to that drug presented as a conventional dosage form (e.g., a solution or a prompt drug-releasing, conventional, solid dosage form)

**patch, extended release, electrically controlled** drug delivery system in the form of a patch which is controlled by an electric current that releases the drug to allow a reduction in dosing frequency compared to that drug presented as a conventional dosage form (e.g., a solution or a prompt drug-releasing, conventional, solid dosage form)

**patent** legal document extended to the inventor of a product or process that grants the inventor exclusive rights to produce, use, or sell a product for a specified period of time

**patent medicine** medicines widely sold during the late 1800s and early 1900s that purported to cure a wide range of diseases; ingredients were often secret, unsafe, and ineffective; incorrect synonym for nonprescription medicines

**path** abbreviation for pathology

**-path** suffix meaning disease or abnormal condition; same as -pathy

**patho-** prefix meaning disease

**pathogen** disease-producing agent or organism

**pathogenesis** development or the events involved in the production of a disease

**pathognomonic** characteristic to a specific disease and no other, allowing one to diagnose the disease; example: Auspitz's sign for psoriasis

**pathologist** a physician who is a specialist in diagnosing the morbid changes in tissues removed during operations and postmortem examinations; a specialist in diseases and disease processes; one who studies diseases

**-pathy** suffix meaning disease or abnormal condition; same as -path

**patient** person or animal needing medical advice or treatment

**Patient Care Services** SEE *pharmaceutical care; cognitive services*

**patient-day** period of service given to a patient between the census-taking hours on two successive days

**patient information leaflets** literature distributed to patients by the pharmacist or the physician that pertain to appropriate drug use and precautions to be heeded by the patient

**Patient Information Release Form** a legal document signed by the patient giving permission to the indicated party to release his/her health information; may be used to allow the pharmacist to obtain a patient's medical records from the physician or hospital in order to provide pharmaceutical care

**patient package insert** a printed sheet included to provide a person information concerning a drug or a drug product

**patient rounds** physician or health care team visits to the patients' hospital bedsides to assess treatment progress

**patient satisfaction** a critical element toward understanding what issues cause patients to select a particular health care system, and what issues are most likely to influence changing their current care affiliation, with either the physician, the hospital, or the health plan; required as an essential component of various accreditation reviews and a growing set of employer standards

**Pauli's exclusion principle** dictates that no two electrons in an atom may have an identical set of quantum numbers; restricts those electrons occupying the same orbital to those of opposite (antiparallel) spins

**payer** a public or private organization that pays for or underwrites coverage for health care expenses

**pCO<sub>2</sub>** partial pressure of carbon dioxide usually measured in mm of mercury and used to express CO<sub>2</sub> concentration in the air or in a solution (as in the blood)

**peak blood level** maximum concentration of a drug in the blood following administration of a single dose; useful parameter in establishing clinical dosing intervals

**peanut oil** *SEE earth nut oil*

**pearlescent** having a luster resembling a pearl

**pearls** soft, rounded, gelatin capsules that usually contain oleaginous liquids

**pebble mill** *SEE ball mill*

**pedia-** prefix meaning child

**pediatrician** a physician who specializes in caring for children

**pediculosis** infestation with lice



***Pediculus humanus var. capitis*** head louse

***Pediculus humanus var. corporis*** body louse

**pedodontist** a dentist who specializes in treating the teeth and mouth conditions of children

**peer review** the evaluation of quality of total health care provided, carried out by medical staff with equivalent training

**peer review organization (PRO)** selected panel of health professionals responsible for reviewing diagnosis and treatment (including drug therapy and orders for laboratory tests) of Medicare and Medicaid patients

**pellet, coated, extended release** solid dosage form in which the drug itself is in the form of granules to which varying amounts of coating have been applied, and which releases a drug (or drugs) in such a manner to allow a reduction in dosing frequency as compared to that drug (or drugs) presented as a conventional dosage form

**pellet, implantable** small, sterile, solid mass consisting of a highly purified drug (with or without excipients) made by the formation of granules, or by compression and molding; intended for implantation in the body (usually subcutaneously) for the purpose of providing continuous release of the drug over long periods of time

**Pelletier, Pierre Joseph** (1788-1842) French pharmacist and chemist who, with Caventou, discovered strychnine, brucine, quinine, and other alkaloids

**pencil** medicinal agents mixed with a stiff mucilage and formed into stick before drying, used mostly as caustics or astringents

**pencil, salve** medicinal agents mixed with waxes or oils and molded into a stick shape

**penetrometer** device used to determine the viscosity of semisolids by measuring the depth to which a solid cone of specific dimensions penetrates when dropped a fixed distance; device used to measure the consistency or stiffness in an ointment or a suppository

**penicillamine**  $\alpha$ -amino acid obtained upon degradation of penicillin; used in medicine as a chelating agent for the treatment of poisoning due to excess copper (as in Wilson's disease); chemical names: 2-amino-3-methyl-3-mercaptoputyric acid, 3-mercaptopalvaline

**penicillinase** enzyme catalyst for the hydrolysis of the  $\beta$ -lactam ring of various penicillins, forming penicilloic acids that are devoid of antibacterial activity; when produced by certain bacteria (e.g., *Staphylococcus aureus*) leads to penicillin resistance; synonym:  $\beta$ -lactamase

**penicillins** group of bactericidal antibiotics that block the final stage of cell wall biosynthesis in bacteria by inhibiting transpeptidase

***Penicillium notatum*** mold from which penicillin G was originally isolated

**penicilloic acid** product resulting from acid, base, or  $\beta$ -lactamase-catalyzed hydrolysis of the  $\beta$ -lactam ring in penicillin

**pentose phosphate pathway** a biochemical pathway that produces NADPH, ribose, and several other sugars

**pep pills** central nervous system stimulants, such as amphetamines

**pepsin** enzyme secreted in the gastric juice; responsible for hydrolysis of proteins; protease secreted by the chief cells of the stomach mucosa

**peptic ulcer** an inflamed lesion or opening occurring in the lower end of the esophagus, in the stomach, or in the duodenum; usually caused by an oversecretion of pepsin and other gastric juices

**peptide** polymer that, on hydrolysis, produces amino acids; polymer composed of amino acids held together by peptide bonds; a breakdown product or a building component of a protein

**peptide bond** chemical linkage of amino acids in which the carboxyl group of one amino acid forms an amide with the amino group of a second amino acid, which in turn may form an amide bond with another amino acid, thus forming chains or polymers of amino acids; SEE *peptide*

**peptidyl transferase 1:** enzyme that catalyzes the formation of a peptide bond in peptide and protein biosynthesis **2:**  $\gamma$ -peptidyl transferase enzyme in the glutathione metabolic pathway in which a  $\gamma$ -glutamyl group is transferred from one amino acid residue of a  $\gamma$ -glutamyl peptide to any amino acid except proline to form a new  $\gamma$ -glutamyl dipeptide; may be important in amino acid transport and in the diagnosis of obstructive jaundice

**percentage** part of a whole; expressed in hundredths

**percentage error of compounding** an estimate of the total error incurred when compounding a dosage form; computed as the square root of the sum of the squared errors in each step of the compounding process; SEE *compounding error*

**percentage markup** the difference between selling price and cost of an item multiplied by 100 divided by the selling price

**percent by volume** concentration expression referring to mL of solute per 100 mL of solution

**percent by weight** concentration expression referring to grams of solute per 100 g of solution

**percent weight-in-volume** concentration expression referring to grams of solute per 100 mL of solution

**per contract per month** the dollar amount related to each effective contract holder, subscriber, or member for each month

**per diem charge** amount charged per day for treatment and/or other services

**per member per month** the unit of measure (revenue, cost, or utilization) related to each effective member for each month the membership was effective; calculated as number of units divided by member-months

**per member per year** the same as per member per month but based on a year; SEE *per member per month*

**percolate 1:** process involving slow passage of a solvent through a permeable drug (powdered vegetable drug) to extract the active constituents  
**2:** liquid which is collected after it passes through the powdered drug and which contains the extracted constituents

**percutaneous absorption** movement of a medication (or other substances) from the surface of the skin into layers below the surface and into the blood

**perforation** the act or process of making a hole through a substance or a body part; example: an ulcer that is advanced to the point that an unnatural opening has resulted (perforated ulcer)

**performance evaluation** necessary management function that provides an organization feedback regarding the effectiveness of its employees

**performance measures** a system that aids providers or insurers in making decisions about health care or in enhancing health status and the quality of patient outcomes; a health care network performance matrix, as outlined by the JCAHO, to include clinical performance; health status; satisfaction of patients, practitioners, and purchasers; process effectiveness; and the communication and education of patients, providers, and the public

**performance test** a measure of mechanical or manipulative ability in which the test closely resembles a real-world task for the job being evaluated; may be an actual sample of the work being evaluated

**perfusion model** a pharmacokinetic replica based on blood flow to various organs and the rate at which a drug comes to equilibrium between the organs

**peri-** prefix meaning around

**pericranial** around the head area

**perineal** referring to the perineum

**perineum** tissue that marks externally the approximate boundary of the outlet of the pelvis

**periodicity 1:** the fundamental concept (in financial accounting) that involves reporting activities occurring in relatively short periods of time  
**2:** property of a process or system in which certain observed properties are repeated after regular intervals of time

**periodic table** systematized arrangement of the basic elements according to atomic weight and generally accepted electronic configuration

**periodontal ligament** weblike net of living collagen fibers that support teeth in their sockets; they extend from the alveolar bone to the tooth roots

**periodontist** a dentist who specializes in treating diseases of the periodontium (gums), the tissues investing and supporting the teeth

**periodontitis** damage to the periodontium that supports the tooth as a result of poor hygiene; tooth mobility and tooth loss result if the problem is not reversed

**periorbital** around the orbit of the eye

**peripheral neuropathy** disease or functional disorder of the peripheral nervous system

**peristalsis** progressive wave of contraction seen in biological tubes such as the intestines and the esophagus

**peristaltic pump** a type of intravenous fluid pump that moves fluids through flexible tubes by means of a series of rollers sequentially passing over the tubes, imitating intestinal peristaltic movement

**peritoneal** having reference to the peritoneum

**peritoneal dialysis** passing of fluids through the peritoneal cavity for the purpose of diffusing solute molecules from the body through the peritoneum into the fluid; used to rid the body of toxic substances

**peritoneum** the membrane lining of the abdominal and pelvic walls

**perlite** filter aid made of aluminum silicate

**permeable** capable of being penetrated; example: cell membranes allow the passage of molecules

**pernicious anemia** an illness caused by a deficiency of vitamin B<sub>12</sub>; symptoms include low red blood cell counts, weakness, and neurological disturbances

**peroxisome** an organelle that contains oxidative enzymes

**perpetual inventory system** continuously updated record of the quantity of goods available for sale

**persistence** the length of time that a patient is adherent (compliant) with therapy recommendations

**pertussis** whooping cough

**pessary** an object inserted into the vagina to mechanically support the uterus; synonym: vaginal suppository

**pestle** oblong-shaped device usually made of glass or porcelain used to grind or mix pharmaceutical preparations in a mortar

**petechia** small darkened spot due to blood effusion into tissue (plural form: petechiae)

**petrolatum gauze** SEE *gauze*

**petroleum benzin** low-boiling distilled fraction of petroleum primarily consisting of pentanes and hexanes; synonym: petroleum ether

**petroxolin** liquid preparation for external application; usually bases: liquid petrolatum, oleic acid, ammonia, oil of lavender, alcohol

**petty cash** a monetary fund used to pay for small incidental expenditures

**phage 1:** particulate, transmissible, ultramicroscopic substance that dissolves or exerts a lytic effect on bacteria; a virus that infects bacteria  
**2:** a cell type that engulfs and digests bacteria and debris; example: macrophage

**-phage 1:** suffix referring to a virus that infects bacteria **2:** suffix meaning a cell type that can engulf other cells or cellular debris

**phago-** prefix meaning to ingest by way of engulfing an object

**phagocyte** cell capable of ingesting and destroying particulate substances such as bacteria, protozoa, cells, and cellular debris

**phagocytosis** ingestion and digestion of bacteria and other particles by phagocytes

**phantasticant** substance capable of inducing fantasy states; synonym: hallucinogen

**phantom 1:** image or impression not evoked by actual stimuli **2:** device consisting of a mass of material that is approximately equal in radiation absorbing and scattering properties to human tissue; used to simulate the in vivo effects of ionizing radiation

**phantom pain** pain felt in limb that has been amputated

**pharmaceutical alternative** drug product that contains the same therapeutic moiety and potency and is administered by the same route but differs in the kind of salt, ester, or dosage form

**pharmaceutical care** patient-centered, outcome-oriented pharmacy practice that requires the pharmacist work in concert with the patient and the patient's other health care providers to promote health, to prevent disease, and to assess, monitor, initiate, and modify medication use to ensure that drug therapy regimens are safe and effective

**pharmaceutical chemist** an early pharmacy degree that usually required three years of study; last offered in the early 1930s

**pharmaceutical elegance** expression of the acceptability of physical appearance and palatability of a drug dosage form; expression used to indicate that a dosage form is pleasing to the normal senses of a patient

**pharmaceutical equivalent** drug product that contains the same active ingredient(s) and is identical in dosage form and potency to another drug product, but may not be equal in pharmacological or therapeutic response due to dosage-form effects; synonym: generic equivalent

**Pharmaceutical Manufacturers Association** SEE *Pharmaceutical Research and Manufacturers of America*

**Pharmaceutical Research and Manufacturers of America** nonprofit, scientific, professional and trade organization representing the major manufacturers of prescription drugs, medical devices, and diagnostic products; formerly Pharmaceutical Manufacturers Association; founded in 1958

**pharmaceutical solution** SEE *solution*

**pharmaceutical substitution** act of dispensing a pharmaceutical alternative for the drug product prescribed; examples: the salt form of codeine sulfate for that of codeine phosphate, tetracycline hydrochloride for tetracycline phosphate complex, the ester form of propoxyphene napsylate for propoxyphene hydrochloride, erythromycin ethyl succinate for erythromycin estolate, the dosage form of ampicillin suspension for ampicillin capsules

**pharmaceutics** that branch of pharmacy involving the study of the chemical, physical, and biological factors that influence formulation, manufacture, stability, and efficacy of dosage forms

**pharmacist** a health professional who is educated and licensed to dispense medications, provide drug information, and supervise pharmacy technicians

**Pharmacist Care Claim Form** form for documentation and billing of pharmaceutical care services provided; developed by the National Community Pharmacists Association; typically submitted to an insurance company along with the completed HCFA 1500 form

**pharmaco-** prefix meaning drug

**pharmacodynamics** the study of absorption, distribution, metabolism, and excretion of a drug; its mechanism of action; and its biochemical and physiological effects

**pharmacogenetics** **1:** the study of hereditary variations in organisms that are revealed solely by the effects of drugs **2:** variations in the response of an individual to medications due solely to hereditary characteristics

**pharmacognosy** the study of naturally occurring drugs from plants or animals as well as their sources, nature, and uses

**pharmacokinetics** the study of the quantitative relationships of the rates of drug absorption, distribution, and elimination processes; data used to establish dosage amount and frequency for desired therapeutic response

**pharmacologic effect** therapeutic value of, or a result which relates to, a physiologic response to the drug

**pharmacologic end point** reference point used in recording a physiological response to a drug; example: measurement of beats per minute to determine the effects of a drug used in treating tachycardia

**pharmacology** study of the action and/or mechanism of action of drugs on living tissue

**pharmacopoeia** book containing a list of medicinal substances and their standards; selected and established by recognized authorities; examples: *United States Pharmacopeia (USP)* and *British Pharmacopoeia (BP)*

**Pharmacopoeia International** official drug compendium for many countries

**pharmacotherapy** use of a drug(s) for treatment or prevention of a disease

**pharmacy** **1:** art and science of preparing, compounding, stabilizing, preserving, and dispensing medications and the provision of information **2:** place where medicines are stored, compounded, and dispensed; synonyms: apothecary, drugstore

**Pharmacy and Therapeutics Committee** group in a hospital or other institutional setting consisting of physicians and pharmacists who make recommendations on all matters relating to drugs used and establish other drug therapy-related policies

**pharmacy benefit manager** an organization that specializes in managing the utilization and costs of prescription medications by health plan members

**pharmacy-coordinated unit-dose dispensing and drug administration** institutionalized (hospital) system in which pharmacy technicians administer medications instead of registered nurses

**pharmacy design** layout/arrangement of pharmacy; needs to consider how best to support delivery of pharmaceutical care; must include area designated for patient interviews and counseling

**pharmacy doctor** self-proclaimed title by the membership of some pharmacy associations, without academic or regulatory status

**pharmacy extern** person engaged in experiential training under the supervision of a registered pharmacist as part of the structured curriculum of a college of pharmacy

**pharmacy intern** person gaining experiential training outside of the structured education provided by a college of pharmacy by working under the supervision of a registered pharmacist for a specified number of hours as required for licensure by a board of pharmacy

**Pharmacy Practice Activity Classification** taxonomy of pharmacist activities, covering the domains of dispensing drugs and devices, preventing and resolving drug therapy problems, promoting health and preventing disease, and managing health systems

**pharmacy preceptor** exemplary practicing pharmacist who is accompanied, observed, and assisted by a student as one facet of the student's education in pharmacy; one who performs as a role model and a supervisor for pharmacy students in an experiential setting

**pharmacy services administrative organization** a group of pharmacies which have agreed to pool their efforts to compete in the marketplace and which agree upon minimum standards of practice

**pharmacy technician** an individual who, under the supervision of a licensed pharmacist, assists in pharmacy activities not requiring the professional judgment of a pharmacist

**pharmakon** Greek word meaning drug; the root word for many pharmacy-related terms

**pharynx** passageway for air moving from the nasal cavity to the larynx, and for food moving from the mouth to the esophagus; an alternating, discriminatory body valve assembly that directs air and food to their proper locations



**phase 1:** specific state of matter (solid, liquid, or vapor) which is homogeneous with respect to its composition and which is a part of a system undergoing treatment or study **2:** a particular appearance in a regular cycle of changes; a point on a wave or uniform circular motion; a step in a process of change or a stage of development

**phase diagram** plot of temperature and concentrations (usually expressed as percent by weight) of a mixture of two or three substances in order to determine phase composition at equilibrium under various conditions; a diagram giving the conditions of equilibrium between various forms (phases) of a substance

**phase I drug metabolism** stage of drug metabolism that involves functionalization reactions, including oxidative, reductive, and hydrolytic biotransformations; includes reactions that introduce polar functional groups into a drug molecule, usually as a first step to facilitate its elimination from the body

**phase II drug metabolism** stage of drug metabolism that involves the conjugation of the drug molecule to a small, polar, and ionizable compound (such as glucuronic acid) to form water-soluble conjugated products that are more easily excreted

**phenol** chemical compound in which the basic structure consists of a hydroxyl group bound to an  $sp^2$  carbon of a benzene ring; a very potent protein precipitant and sclerosing agent; synonym: carbolic acid

**phenylalanine** aromatic amino acid commonly found in proteins; 2-amino-3-phenylpropanoic acid; an essential amino acid

**phenylketonuria** congenital deficiency of phenylalanine-4-monooxygenase that may result in severe mental retardation

**phenyl salicylate** low melting point phenolic ester of salicylic acid; used as an analgesic and antipyretic and formerly used as an enteric coating for capsules; synonym: salol

**pheochromocytoma** tumor of the adrenal medulla, the primary symptoms of which are a result of increased secretion of epinephrine and norepinephrine

**-philia** suffix meaning an abnormal attraction to something

**phleb-** prefix meaning vein; same as phlebo-

**phlebo-** prefix meaning vein; same as phleb-

**phlebotomy** drawing of blood from a vein

**phonophobia** literally, fear of noise; often applied to medical conditions that cause avoidance of noise, such as migraine headaches

**pH optimum** the pH at which an enzyme catalyzes a reaction at maximum efficiency

**phosphofructokinase** enzyme that catalyzes the conversion of fructose-6-phosphate to fructose-1,6-diphosphate in the Emden-Meyerhoff glycolytic pathway

**phosphoglyceride** a type of lipid molecule found predominately in membrane composed of glycerol linked to two fatty acids, phosphate, and a polar group

**phospholipid** compound consisting of an amide or ester of a fatty acid and an ester of phosphoric acid with either glycerol, sphingol (sphingosine), choline, or ethanolamine

**phosphoprotein** a conjugated protein in which phosphate is the prosthetic group

**phosphor** SEE *liquid scintillation counter*; *liquid scintillator*; *phosphorescence*

**phosphorescence** the ability of a substance to give off visible light after being exposed to electromagnetic radiation

**photolabile** capable of being destroyed by radiant energy; example: phenothiazines that decompose when exposed to light

**photolysis** degradation process in a molecule (drug) that is the result of its absorption of light (photons)

**photon** a quantum of light; energy corpuscles of electromagnetic radiation

**photophobia** literally, fear of light; often applied to medical conditions that cause avoidance of light, such as migraine headaches

**photosensitive** a response or a potential response elicited by radiant energy exposure; example: erythema observed in a patient who is taking tetracycline and exposed to sunlight

**photostable** refers to a compound that is not degraded when exposed to radiant energy; colors not fading upon exposure to light rays

**pH scale** a measure of hydrogen ion concentration; pH is the negative log of the hydrogen ion concentration in moles per liter

***Phthirus pubis*** pubic louse; a sexually transmitted disease

**physical adsorption** SEE *adsorption*

**physical assessment** assessment of the patient's health using physical cues; example: visual review of skin conditions, blood pressure, measurements, etc.; if by a pharmacist looking for drug therapy problems, then dif-

ferent from the physical exam performed by a physician in diagnosing disease

**physical inventory** an actual counting and listing of all merchandise on hand; typically includes the name, quantity, cost, and/or retail price of all items

**physician** doctor of medicine and/or doctor of osteopathy who is duly licensed and qualified under the law of jurisdiction in which treatment is received

**physician assistant** individual trained to perform certain primary care tasks according to a protocol who works under the supervision of a licensed physician; synonym: physician extender

**physician associates** practice incorporated by two or more physicians

**physician contingency reserve** "at-risk" portion of a claim deducted and withheld by the health plan before payment is made to a participating physician as an incentive for appropriate utilization and quality of care

**physician-hospital organization** a legal entity formed to obtain payer contracts; owned by one or more hospitals and physician groups

**Physician's Current Procedural Terminology** SEE *Current Procedural Terminology System*

**physicochemical property** a property of a compound which is a measurable characteristic and by which the compound may interact with other systems

**physiological antagonism** antagonism between two agonists that stimulate action at separate receptors, but cause opposite responses; synonym: functional antagonism

**physostigmine** alkaloid obtained from *Physostigma venosum* that acts as an indirect cholinergic agent by competitively inhibiting choline esterase

**pi bond** molecular bond resulting from the parallel overlap of 2p-orbitals; a pi bond and a sigma bond produce a double bond; the pi bond consists of two lobes (electron density areas) on each side of the sigma bond; with conjugated double bonds or in aromatic systems, the pi bonds become delocalized and the pi electrons are free to migrate between the different atoms of the conjugated or aromatic system; SEE ALSO *double bond*

**picking** adhesion of a part of a tablet to the face or surface of the punch; an undesirable event in the tablet compression process

**Pick's disease** multiple polyserositis (with ascites, hepatomegaly, peritonitis, and pleural effusion); also cerebral atrophy of frontal and temporal lobes resulting in senile dementia

**Pick's syndrome** lobar atrophy of the brain; SEE ALSO *Pick's disease*

**pill** small, rounded, solid body for internal use; consists of a medicinal agent(s) plus other material to make a firm, cohesive mass

**pills, concentric** consist of successive layers of medicinal matter each having a different action and separated by a coating; used to deliver medicines in the stomach and intestine or to keep ingredients from reacting

**pills, enteric-coated** coated with a substance that will not dissolve in the stomach but is intended to dissolve in the small intestine

**pilocarpine** alkaloid obtained from *Pilocarpus microphyllus* or other species; used to produce miosis; a direct-acting parasympathomimetic that exerts its effects by directly stimulating the muscarinic receptor

**pilosebaceous unit** an anatomical feature of the skin, consisting of a hair follicle and a sebaceous gland; location where acne lesions form

**pilot plant** an intermediary production laboratory designed to test manufacturing procedures that are being scaled up from small to large batches

**pinocytosis** engulfing or surrounding of a small amount of an extracellular liquid by a cell membrane and the subsequent formation of a vesicle; the liquid becomes available to the cell when the vesicle is lysed

**pint** unit of volume equal to 16 fluid ounces, 1/2 quart, 1/8 gallon, or 473.167 mL

**pK** the negative log (base 10) of the ionization constant of a weak electrolyte; examples:  $pK_a$ ,  $pK_b$

**$pK_a$**  the negative log (base 10) of the dissociation constant of a weak acid in aqueous solution

**$pK_b$**  the negative log (base 10) of the dissociation constant of a weak base in aqueous solution

**place of service** the location where health services are rendered; examples: office, home, hospital

**placebo** tablet, capsule, or other dosage form devoid of any active ingredient; sometimes prescribed for a psychological effect or used as a control in drug efficacy testing

**plaintiff** person who initiates a legal action; synonym: complainant

**Planck's constant** a discrete radiation energy unit (absorbed or emitted) representing "one quantum," abbreviated by  $h$ , where  $h$  equals energy ( $F$ ) divided by the radiation frequency ( $\nu$ );  $h = 6.624 \times 10^{-27}$  erg/sec

**plan-o-gram** blueprint of department locations, sizes and sections, and products; a detailed plan for the use of the available selling space in a retail store

**plaque 1:** elevated, palpable skin lesion characteristic of certain diseases, such as psoriasis **2:** soft, gel-like mass that begins to grow on the surfaces of the teeth within a few hours of eating

**plasma** the liquid portion of blood containing all dissolved substances, including all clotting factors, but excluding the formed elements (blood cells)

**plasma membrane** the membrane that surrounds a cell, separating it from its external environment

**plasmas** nonfatty, unctuous preparations, used in place of cerates and ointments for local application

**plasma water concentration** concentration of a drug or metabolite in the plasma ultrafiltrate; synonym: free drug concentration

**plasmid** small structural units of genetic material containing circular, double-stranded DNA that transmit genetic information from one bacterial cell to another; example: R-factors in bacteria

**plaster** substance intended for external application, made to adhere to the skin and attach to a dressing; intended to afford protection and support, to furnish an occlusion and macerating action, and/or to bring medication into close contact with the skin

**plaster mull** thin cloth covered on one side with rubber or gutta-percha upon which a medicine is painted or spread; the impervious backing facilitates absorption

**plastic flow** characteristic of certain liquids that resist flow with initially low shearing stress and exhibit Newtonian flow (linear flow) when sufficient shearing stress (yield value) has been applied; exhibited by emulsions, creams, and magmas

**plasticity** capacity for being molded or altered in shape; ability to retain a shape resulting from pressure deformation

**plasticizer** component of a film-former to give the film more flexibility; films containing a plasticizer do not break or crack easily; examples: castor oil, glycerin, propylene glycol

**plastic surgeon** a physician who specializes in performing surgery for the restoration, repair, or reconstruction of body structures

**plate and frame filter** pressure filtration device consisting of a series of metal plates (having large openings) between which the filter pads (filter medium) are placed tightly

**platelet-derived growth factor** a protein secreted by blood platelets during clotting; stimulates mitosis during wound healing

**platelethpheresis** SEE *apheresis*

**platelets** produced in the bone marrow, essential in the clotting process

**play-or-pay** in any health care reform scheme, a system that would require employers to provide health insurance benefits or pay a tax that government would use to provide coverage

**plug 1:** a small part of the rubber closure of a vial (or fluid bag) that has been cut or broken and has fallen into the vial (or fluid bag) as a needle was introduced into the rubber closure; an undesirable event for a quality closure of a multidose parenteral **2:** a device to stop flow

**Plummer's disease** hyperthyroidism with a nodular goiter

**pneumato-** prefix meaning respiration or air; same as pneumo-

**pneumo-** prefix meaning respiration or air; same as pneumato-

**pod-** prefix meaning foot; same as podo-

**podiatrist** licensed health practitioner engaged in diagnosis, treatment, and prevention of foot problems; synonym: chiropodist

**podiatry** health care area involving diagnosis, treatment, and prevention of foot problems; synonym: chiropody

**podo-** prefix meaning foot; same as pod-

**-poiesis** suffix meaning formation

**point mutation** genetically inherited change of a single amino acid residue in a protein or polypeptide; may involve mutation of only one purine or pyrimidine base in a DNA strand; SEE ALSO *transversion mutation*; *mutation*

**point-of-service plan** a health plan allowing the covered person to choose to receive a service from a participating or nonparticipating provider, with different benefit levels associated with the use of participating providers.

**poise** basic cgs unit of viscosity; SEE *Newton's law of viscous flow*; *viscosity*

**poison ivy 1:** plant belonging to the toxicodendron group; damaged leaves or stems exude urushiol, an oily resin to which many people are violently allergic; cross-sensitizes with poison oak and poison sumac

**2:** widely used to refer to the allergic reaction arising from contact with urushiols

**polarimeter** an instrument used to determine the direction and degree of rotation of plane-polarized light as it passes through a solution containing an optically active compound

**polarization 1:** separation of positive and negative charges in a molecule

**2:** filtration of light to produce beams or rays the waves of that vibrate in a single plane and are within a narrow wavelength

**polar molecule** a chemical compound containing groups that form dipoles; compound with a partial positive atom and a partial negative atom; formal charges not necessarily present

**policy and procedure manual** a book that describes the manner in which a particular pharmacy is to be operated; a guideline of operational procedures for a specific organization or establishment

**polishing pan** rounded, canvas lined, rotating vessel used to effect an attractive shiny surface on a batch of coated tablets

**political action committee (PAC)** nonprofit organization or group that raises funds to support election campaigns of legislators and other officials who have supported or intend to support issues and views compatible with the group

**politzer plugs** plugs of greased cotton for insert into ear after surgery

**poly** clinical abbreviation for polymorphonucleocyte; synonyms: seg, neutrophil, granulocyte

**polycythemia** an increase in the red-cell count per unit volume of blood in the presence of an increased total blood volume

**polydipsia** excessive thirst

**polygraph 1:** instrument used to detect lying by a subject while recording the physiological changes assumed to occur when the subject provides false answers to carefully selected questions; synonym: lie detector **2:** instrument used in pharmacology to measure simultaneous physiological changes in several parameters (heart rate, respiration, electrocardiogram)

**polymer** large molecule composed of repeating subunits chemically bonded together; examples: protein, polypeptide, polysaccharide, polystyrene, polyvinylchloride, polyacrylamide, polyethylene glycol, nylon

**polymerase chain reaction** a laboratory technique used to synthesize large quantities of specific nucleotide sequences from small amounts of DNA using a heat-stable DNA

**polymer drug delivery system** dosage form designed for targeted or sustained release using a polymeric carrier matrix

**polymorph 1:** synonym for segmented neutrophil **2:** a different crystalline form of the same substance

**polymorphic** capable of existing in more than one crystalline form; exhibiting different physical properties even though the chemical composition is the same

**polymorphism** existing in many forms; examples: alpha, beta, and gamma crystalline forms of cocoa butter

**polymyxins** group of bactericidal antibiotics that exert a surfactant effect on the cytoplasmic membrane of bacteria

**polynucleotide 1:** nucleic acid **2:** polymer consisting of nucleotides

**polyol** compound having several hydroxy groups; synonyms: polyhydroxyalcohol, polyhydric alcohol

**polypeptide** a polymer, one unit of which, on hydrolysis, yields a large number of units of amino acids

**polypharmacy** irrational mixtures or combinations of several drugs in one dose; synonym: “shotgun” therapy

**polyphase system** quantity of materials, the contents of which exist in two or more states of matter; synonym: multiphase system

**polyribosome** cluster of ribosomes connected to one another by a strand of mRNA (messenger RNA)

**polysaccharide** a polymer, one unit of which, on hydrolysis, yields a large number of monosaccharide units; examples: starch, glycogen, cellulose

**polyserositis** inflammation of serous membranes with serous effusion

**polysome** an mRNA with several ribosomes bound to it

**polyunsaturated** refers to a fatty acid with two or more double bonds, usually separated by methylene groups

**polyuria** excessive urination; a symptom of diabetes insipidus and diabetes mellitus

**pomade** perfumed, stiff ointment; used especially to treat the hair or the scalp

**Pompe’s disease** type 2 glycogenosis; accumulation of glycogen in the heart, muscle, liver, and nervous system

**pooling** the process of combining risk for all groups or a number of groups



**population** statistical term meaning a set representing all objects of interest that have at least one characteristic in common

**porcine** obtained from or relating to a pig; example: porcine insulin

**pore** a minute opening in a membrane tissue or other substance permitting passage of large molecules and small particulate colloids; a small opening in a filtration membrane

**pore penetration** a process by which an infant absorbs large polymeric molecules and fatty globules from the intestinal tract, the wall of which has the ability to convolute and form a minute opening to effect absorption

**porous** full of pores or minute openings; permeable to liquids or air

**porphyria** one of a number of diseases involving the excretion of porphyrins in the urine

**porphyrin** a ring structure composed of four pyrrole rings connected by single carbon atoms (methine groups); parent structure for heme in the hemoglobin molecule, the cytochromes and vitamin B<sub>12</sub>

**portability** an individual changing jobs would be guaranteed coverage with the new employer without a waiting period or having to meet additional deductible requirements.

**positional isomers** compounds that have the same empirical formula, despite having a group, radical, or atom substituted on a different part of their molecular structure; examples: 1-chloropropane and 2-chloropropane, both having the empirical formula, C<sub>3</sub>H<sub>7</sub>Cl; synonym: structural isomers

**positive-displacement flow meter** instrument that measures the flow rate of fluid by a direct determination of volume of movement in a specific unit of time

**positive-displacement pump/fan/blower/compressor** apparatus that functions by entrapping a volume of air or liquid from an inlet post and releasing it through an outlet post for the purpose of mass transfer; SEE *reciprocating pump*; *rotary pump*; *lobe pump*

**positive formulary** SEE *formulary*

**positron** positively charged electron; CONTRAST *negatron*; SEE ALSO *electron*, *orbital*

**posology** the science of dosage or a system of dosage

**post-** prefix meaning after

**postabsorptive** the phase in the feeding-fasting cycle in which nutrient levels in blood are low; CONTRAST *postprandial*

**postictal** the time after a seizure, stroke, or apoplexy

**postpartum** with reference to the mother, a period of time after childbirth

**postprandial** the phase in the feeding-fasting cycle immediately after a meal when blood nutrient levels are relatively high; CONTRAST *post-absorptive*

**posttranslational modification** a set of reactions that alter the structure of newly synthesized polypeptides

**posttranslational translocation** the transfer of previously synthesized polypeptide across the RER membrane

**potable** suitable for drinking

**potash, sulfured** SEE *sulfured potash*

**potassium** monovalent alkali metallic element; electrolyte in the body; important for proper functioning of nerves; the chief intracellular cation

**potency 1:** strength of a drug as expressed by dosage amount and biological effect **2:** ability of the male to perform sexual intercourse

**potentiate** an effect in which two drugs are administered and their combined effect is more than additive, being synergistic or greater than the sum of the individual drug effects

**potentiometer** device to measure electromotive force; synonym: voltmeter

**Pott's disease** tuberculous spondylitis (inflammation of the vertebra)

**Pott's fracture** fracture of the lower end of the fibula with outward displacement of the foot

**poultice** soft, moist mass of meal, herbs, seed, etc., usually applied hot in cloth that consists of gruel-like consistency

**pound, apothecary/troy** (lb or lb t) unit of weight equal to 12  $\bar{3}$

**pound, avoirdupois** (lb) unit of weight equal to 16 oz

**powder** a uniform mixture of dry, finely divided drugs and/or chemicals intended for either internal or external use or to make solutions

**powder, dentifrice** powder formulation intended to clean and/or polish the teeth

**powder, for solution** an intimate mixture of dry, finely divided drugs and/or chemicals that, upon the addition of suitable vehicles, yields a solution

**powder, for suspension** an intimate mixture of dry, finely divided drugs and/or chemicals that, upon the addition of suitable vehicles, yields a sus-

pension (a liquid preparation containing the solid particles dispersed in the liquid vehicle)

**powder, metered** powder dosage form situated inside a container that has a mechanism to deliver a specified quantity

**power** the rate at which energy is supplied

**Power, Frederick B.** (1853-1927) organizer and first dean of the school of pharmacy at the University of Wisconsin; became head of the Wellcome Laboratories in England and then the head of the phytochemistry division of the U.S. Department of Agriculture

**power number** expression of the relationship between the force to drive a mixing impeller and the inertia of the drug material to be mixed

**power of attorney** a written instrument that authorizes a person to act on behalf of a second party in specified matters; example: a power of attorney given to an employee pharmacist to sign controlled substance order forms

**practice guidelines** systematically developed statements on medical practice that assist a practitioner and a patient in making decisions about appropriate health care for specific medical conditions

**pre-** prefix meaning before

**preadmission certification** review of the need for inpatient hospital care, done prior to the actual admission

**preceptor** role model professional; contemporary pharmacy practice teacher-mentor in the "real" world of practice

**precertification review** SEE *utilization review*

**precipitated chalk** SEE *chalk*

**precipitation** process of removing from solution one or more constituents in the form of a finely divided solid; the dissolved solid is made insoluble by either physical or chemical means

**precision 1:** refers to agreement among repeated measurements **2:** quality or state of being exact

**preclinical test** test of a new drug or device on animal subjects; conducted to gather evidence justifying a clinical trial

**precoating** preparing a slurry of the filter aid and circulating it through the system to coat the filter medium prior to a filtration process; synonym: body mixing

**precursor** substance that precedes another; usually an inactive drug that is changed into an active drug or a metabolite that is changed into a physi-

ologically active compound; examples: DOPA as a precursor for dopamine, beta-carotene as a precursor for vitamin A

**preeclampsia** a toxemia associated with pregnancy and characterized by increasing hypertension, headaches, albuminuria, and edema of the lower extremities; may lead to true eclampsia if left untreated

**preexisting condition** any medical condition that has been diagnosed or treated within a specified period preceding the covered person's effective date of coverage under the master group contract

**preferred provider organization (PPO)** a program in which contracts are established with providers of medical care; providers under such contracts referred to as preferred providers; usually provides significantly better benefits (lower copayments) for services received from preferred providers, thus encouraging covered persons to use these providers; covered persons generally allowed benefits for nonparticipating providers' services, usually on an indemnity basis, with significantly higher copayments

**preferred providers** physicians, hospitals, and other health care providers who contract to provide health services to persons covered by a particular health plan; SEE ALSO *preferred provider organization*

**premium** the amount paid to a carrier for providing coverage under a contract

**prepack** container of a drug dosage form prepared in advance for the individual consumer by the hospital, pharmacy, or other pharmacy care provider for dispensing as ordered or required

**prepaid expense** the situation in which a business pays a bill before it is due; example: prepaid insurance premiums

**prepaid group practice plans** organized medical groups of full-time physicians in appropriate specialties, as well as other professional and paraprofessional personnel who, for regular compensation, undertake to provide comprehensive care to an enrolled population for premium payments that are made in advance by the consumer and/or their employers

**prepaid health plan** an agreement by an insurer to provide certain health and medical services to its enrollees for a fixed prepaid premium; very similar to an HMO

**preparative ultracentrifuge** SEE *ultracentrifuge*

**prepared chalk** SEE *chalk*

**preproprotein** an inactive precursor protein with removable signal peptide

**presbycusis** gradual loss of hearing that occurs with aging, more often in males

**Prescott, Albert Benjamin** (1832-1905) University of Michigan professor, physician, and pharmacy dean who advocated formal collegiate studies by pharmacy students before they participate in an apprenticeship—a revolutionary concept that led to changes in the nature of pharmacy education; formed the School of Pharmacy at the University of Michigan; was a leading proponent of laboratory work as an integral part of pharmacy education; considered the Father of Phi Delta Chi

**prescription** medication order for a patient and written (or orally communicated) to a pharmacist by a physician, dentist, podiatrist, or other properly licensed medical practitioner; composed of the superscription, inscription, subscription, and *signatura*; SEE ALSO *superscription*; *inscription*; *subscription*; *signatura*, *signa*, or *sig*

**prescription balance** SEE *balance*

**prescription labor expense** an expense determined by multiplying each prescription department employee's wage times his/her labor ratio (fraction of time worked in the prescription department) then totaling these products for all employees

**prescription medication** a drug which has been approved by the FDA and which can, under federal and state law, be dispensed only pursuant to a prescription order from a duly licensed prescriber, usually a physician

**presenile dementia** SEE *Alzheimer's disease*

**presenile psychosis** SEE *Alzheimer's disease*

**preservative** agent added to protect a preparation (dosage form) against decay or spoilage; usually to prevent spoilage by microorganisms; examples: methylparaben, propylparaben

**pressure filter** device designed to force solid-liquid or solid-air dispersions through one or more filters with forces significantly greater than gravity; pressure filters usually contain a pump or compressor, a series of support plates, and filter pads through which the liquid or air must pass to be clarified or purified

**prevalence** a measure of the total number of cases of illness or other forms of morbidity present in a given population at a particular point in time; usually measured as the total number of cases per 1,000 persons

**preventive care** comprehensive care emphasizing priorities for prevention, early detection, and early treatment of conditions, generally including routine physical examinations, immunizations, and well-person care

**preventive drug** a medication prescribed for a short- or a long-term prophylactic purpose; synonym: prophylactic drug

**primary alcohol** SEE *alcohol*

**primary amine** SEE *amine*

**primary care** provision of medical services directed toward the initial treatment of a patient, including the care of simple or common disorders and preliminary treatment and/or the assessment of more serious disorders that require a specialist

**primary care case management** managed care arrangements where primary care providers receive a per capita management fee to coordinate a patient's care in addition to reimbursement for the medical services they provide

**primary care network** a group of primary care physicians who have joined together to share the risk of providing care to their patients who are covered by a given health plan

**primary care physician** a physician devoted primarily to internal medicine, family/general practice, pediatrics, and obstetrics and gynecology

**primary coverage** under coordination of benefit rules, the coverage plan that considers and pays its eligible expenses without consideration of any other coverage

**primary structure** the amino acid sequence of a polypeptide

**primase** an RNA polymerase that synthesizes short RNA segments, called primers, that are required in DNA synthesis

**primer** a short RNA segment required to initiate DNA synthesis

**prime vendor** drug wholesaler through whom a pharmacy centralizes its purchases, thereby reducing time spent on purchase orders, invoices, and purchasing procedures in general

**priming dose** SEE *initial dose*

**principal diagnosis** condition determined after study to be mainly responsible for a patient's seeking access to health care services from a provider

**principal investigator** individual responsible for leading a research project or supported by a grant

**principal quantum number** primary shell in which an atomic orbital electron is expected to be revolving around the nucleus; SEE *quantum number*

**prion** proteinaceous infectious particle; believed to be a causative agent of several acquired neurodegenerative diseases (e.g., mad cow disease and Creutzfeld-Jacob disease)

**prior authorization** process of obtaining prior approval as to the appropriateness of a service or medication; does not guarantee coverage

**privileging** process by which a health care organization authorizes an individual to perform a specific scope of patient care services within that organization

**pro-** 1: prefix meaning before 2: prefix denoting an advocacy of a particular position on an issue

**pro forma income statement** projected income statement applicable to the next period

**problem-oriented patient record** record of patient information organized by drug therapy problem

**proct-** prefix meaning rectum; same as procto-

**Procter, William, Jr.** (1817-1874) one of the founders of the American Pharmacists Association; considered the Father of American Pharmacy; practiced as a retail pharmacist and taught at the Philadelphia College of Pharmacy; a staunch supporter of pharmaceutical standards; instrumental in the development of *United States Pharmacopeia* and authored the first pharmacy textbook in the United States

**proctitis** inflammation of the rectum and/or the anus

**procto-** prefix meaning rectum; same as proct-

**proctologist** physician who specializes in diseases and disorders of the colon, rectum, and anus

**prodrome** a symptom that signals the onset of a medical condition; example: tingling and/or paresthesia of the lip that heralds the onset of herpes simplex lesions

**prodrug** biologically inactive compound that is converted to an active form in the body by normal metabolic processes

**product liability** legal obligations of a manufacturer or a distributor for damages caused through the use of their product

**proenzyme** an inactive precursor of an enzyme

**professional associates** a practice incorporated by two or more professionals

**Professional Pharmacy Service Codes** developed by NCPDP to define pharmacy-specific cognitive services; may be used in billing insurers for pharmaceutical care services

**professional review organization** a physician-sponsored organization charged with reviewing the services provided to patients to determine medical necessity; provided in the appropriate setting in accordance with professional criteria, norms, and standards

**Professional Standards Review Organization** expert panel established by the U.S. government to monitor health care services paid for through Medicaid, Medicare, and Maternal and Child Health programs to ensure that services provided are medically necessary and economically appropriate

**profit target** usual income objective for the next period of operation

**progesterin** a type of female sex hormone that maintains pregnancy and functions with estrogen to maintain the menstrual cycle; the naturally occurring progesterin is progesterone

**prognosis** a prediction on the outcome of a disorder; the expected outcome of an illness

**Project Impact: Hyperlipidemia** APhA demonstration project with 26 pharmacies that proved pharmacist management improved patients' compliance and lipid levels

**prokaryotes** monocellular organisms that do not contain a nucleus; example: bacteria; SEE *eukaryotes*

**prokaryotic cell** a living cell that lacks a nucleus

**prolapse** dropping or falling of a body part (e.g., rectal prolapse)

**proline** neutral amino acid commonly found in protein, especially in connective tissue protein (collagen); chemical name, pyrrolidine-2-carboxylic acid

**prolonged action** refers to a dosage form that delivers an initial dose for a rapid therapeutic response, followed by a sufficient dose (or a series of doses) to maintain an effective concentration of the drug for an extended period of time (usually 8 to 12 hours for orally administered medication); contrasts with a single-dose entity that is effective for a shorter time

**promoter** the sequence of nucleotides immediately before a gene that is recognized by RNA polymerase and signals the starting point and direction of transcription

**promotional discount** a price reduction extended to a pharmacy as an allowance for advertising and promoting a given product; example: a manu-



facturer giving a pharmacy a discount if the pharmacy agrees to place the product on a special display or include it in the store's advertisement; synonym: advertising discount

**prone 1:** lying face down; as in a prone position **2:** tendency to perform an act or behave in a certain way

**proof gallon** a wine gallon of proof spirit (50 percent alcohol)

**proof spirit** aqueous solution of alcohol containing 50 percent (v/v) absolute alcohol; aqueous solution that is 100 proof alcohol

**propellant** compressed or liquefied gas that provides the energy to expel the contents from an aerosol package through the valve-cap assembly

**propeller** a part of a mixing apparatus designed for a specific material flow pattern; a form of impeller

**prophylactic** refers to prevention or an agent used to prevent the contracting of a disease or condition; examples: a condom to prevent conception, a vaccine to provide immunity against a disease

**prophylaxis** the prevention of disease or an unwanted condition

**Proprietary Association** See *Consumer Healthcare Products Association*

**proprietary drug** drug product advertised and sold to the public without requiring a prescription; synonym: over-the-counter (OTC) drug; CONTRAST *legend drug*

**proprietary hospital** a hospital that is operated on a for-profit basis; may be a privately owned or publicly held corporation; synonym: for-profit hospital

**proprietary medicine** a medicine that is protected against free competition as to name, product composition, or process of manufacture by patent, trademark, and/or copyright

**proprietary name** drug or drug product title that is a registered name legally established by a particular company (manufacturer or distributor) that may not be used by any other manufacturer; synonyms: brand name, trade name; CONTRAST *chemical name; generic name*

**proprioceptive system** sensory nerve terminals that provide neural input concerning the movement and position of the body, based on input from muscles, tendons, and other internal tissues

**Prospective Payment Assessment Commission** federal commission established under the Social Security Act amendments of 1983 to advise and assist Congress and the Department of Health and Human Services in maintaining and updating the Medicare prospective payment system

**prospective payment system** a standardized payment system that was implemented in 1983 by Medicare to help manage inpatient hospitalization expenditures; payments based on the diagnosis of the patient rather than on the specific products and services consumed in the treatment of the patient

**prospective reimbursement** method of paying for services in which the amount of payment is established prior to the period in which the services will be used

**prostaglandins** class of fatty acids derived from arachidonic acid by cyclization to form a five-membered ring near the middle of the fatty acid chain; a class of hormones that possesses a variety of physiological effects, including vasodilation and smooth muscle contraction; examples:  $\text{PGF}_1$ ,  $\text{PGE}_1$ , and  $\text{PGA}_2$

**prosthetic group** the nonprotein portion of a conjugated protein that is essential to the biological activity of the protein; often a complex organic molecule

**protein** a polypeptide that contains at least 100 amino acid residues; a polypeptide that has a molecular weight of at least 10,000 daltons (atomic mass units)

**protein binding** the physical attachment of a drug to plasma protein; a drug-plasma protein complex; a process that renders a drug unavailable for distribution from blood to other body tissues

**protein binding, saturation point** drug concentration required to occupy the binding sites on plasma protein and beyond which the free (unbound) drug is present in a greater proportion

**protein hydrolysate** solution containing a mixture of amino acids formed by acid hydrolysis of a protein

**protein splicing** a posttranslational mechanism in which an intervening peptide sequence is precisely excised from a nascent polypeptide

**protein turnover** the continuous degradation and resynthesis of proteins in an organism

**proteinuria** appearance of protein in the urine

**proteoglycan** a large molecule containing large numbers of glycosaminoglycan chains linked to a core protein molecule

**proteolytic enzyme** biochemical catalyst that accelerates the hydrolysis of proteins; examples: papain, pepsin, trypsin, thrombin, chymotrypsin

**proteome** the complete set of proteins produced within a cell

**proteomics** the analysis of proteomes

**proteosome** a multienzyme complex that degrades proteins linked to ubiquitin

**protogenic solvent** a dissolving medium capable of donating protons; an acid medium that is used as a solvent

**protolysis** an acid-base reaction involving proton transfer and the formation of a new acid and a new base; a protolytic reaction

**protomer** a subunit of allosteric enzymes

**proton** a fundamental particle of matter (a nucleon) having a positive charge of  $1.6 \times 10^{-19}$  coulombs and a mass of about  $1.67 \times 10^{-24}$  grams; approximately equal to 1 atomic mass unit (amu)

**proton magnetic resonance** (PMR or pmr) SEE *nuclear magnetic resonance*

**protooncogene** a normal gene that promotes carcinogenesis if mutated

**protophilic solvent** dissolving liquid capable of accepting a proton; a basic medium used as a solvent

**protozoacide** agent used to kill protozoa and treat their infections; example: amebicide

**provider** a physician, hospital, group practice, nurse, nursing home, pharmacy, or any individual or group of individuals that provides a health care service

**Provider Reimbursement Review Board** panel that determines the levels of payment to providers (pharmacies, hospitals, and physicians) for services rendered under a third-party contract

**proximal** nearer; closer; opposite of distal

**pruritus** synonym for itching

**pseud-** prefix meaning false; same as pseudo-

**pseudo-** prefix meaning false; same as pseudo-

**pseudodistribution equilibrium** a state of drug distribution indicating kinetic homogeneity; an equilibrium during which the plasma concentration can be described by a mono-exponential equation

**pseudo-first order** rate of a reaction or a process which, for all practical purposes, can be expressed as a function of the concentration of one major component raised to the first power, even though the accurately described process is of a higher order (a function of the concentrations of several reacting species)

**pseudomembranous colitis** inflammation of the colon caused by a toxin produced by *Clostridium difficile*

**pseudoplastic flow** characteristic flow of a hydrophilic colloidal solution in which a linear plot of “rate of shear” versus “shearing stress” exhibits a concave shaped curve; example: methylcellulose mucilage exhibits pseudoplastic flow

**psychiatric** pertaining to psychiatry

**psychiatrist** a physician who specializes in the study, treatment, and prevention of mental disorders

**psychiatry** branch of medicine concerned with treating diseases of the mind

**psychic 1:** reference to the mind **2:** a person who claims to possess the ability to read minds or foresee coming events

**psychologist** one who has studied and is trained in the methods of psychological analysis, therapy, and research

**psychology** science and study of the functions of the mind

**psychosis** a major mental disorder of organic or emotional origin in which a person's ability to think, respond emotionally, interpret reality, and behave appropriately is impaired to the point that the individual cannot fulfill the demands of life

**psychrometry** the measurement of vapor concentration and the carrying capacity of a drying gas such as air or nitrogen; similar to humidity; an expression of water vapor content in air

**pull-seal** the closing of an ampule by heating its neck in a flame (glass blower's torch) as the ampule is rotated and its upper tip is pulled away

**pulmo-** prefix meaning lung; same as pulmono-

**pulmonary edema** a diffuse extravascular accumulation of fluid in the pulmonary tissues and air spaces due to changes in hydrostatic forces in the capillaries or their increased permeability; marked by intense dyspnea

**pulmono-** prefix meaning lung; same as pulmo-

**pulse** perceptible expansion of an artery due to the rhythmic contractions of the heart

**pumice** very finely divided lightweight glass used for smoothing or polishing surfaces

**punch** metallic piston that is part of a tableting machine; upper and lower punches are used to compress a granular drug mass; punches may be flat, convex, or concave and they may contain monogrammed surfaces for “scoring” and imprinting trademarks on tablets

**puncta** small openings at the inner corner of the eyelid that allow tears to drain from the eye

**purgative** agent that causes evacuation of the bowel; classified according to the severity of action; cholagogue—stimulates contractions, watery discharges, and flow of bile resulting in green stools; drastic—produces violent action of the bowels with excessive cramping and griping; saline—produces copious, watery discharges; simple—produces a free discharge from the bowels with some griping (pains)

**purification** process of freeing, as nearly as possible, a preparation or substance of unwanted components

**purified animal charcoal** refined charcoal from animal sources used as an adsorbent and decolorizer; synonyms: abasier, purified bone black, spodium

**purified bone black** SEE *purified animal charcoal*

**purified infusorial earth** SEE *diatomaceous earth*

**purine** heterocyclic organic compound in which a pyrimidine ring is fused along its {4,5-d} face to an imidazole ring; the parent structure for adenine and guanine; commonly found as a part of the structures of RNAs, DNAs, coenzymes, nucleotides, and of adenine, guanine, xanthine, hypoxanthine, uric acid, and caffeine

**purity** state of being pure; absence of dirt, dust, or other pollutants (especially harmful substances)

**purity rubric** term introduced into the *USP VIII* to limit the quantity of innocuous substances in chemicals by stating in terms of percentage the amount of pure substance that must be present; example: potassium iodide (KI), when dried to constant weight at 100°C, must contain not less than 99 percent KI; a term seldom used today

**purpura** disorders that cause the skin to appear purple or brownish red due to hemorrhage into the tissue

**purpurea glycoside** cardiac glycoside from the leaves of *Digitalis purpurea*; example: digitoxin

**Purtscher's retinopathy** sudden transient blindness following severe trauma or prolonged exposure with exhaustion and shock

**purulent** containing pus

**pus** protein-rich fluid composed of leukocytes and microorganisms; an exudate of an infection or abscess

**pustule** a collection of pus just under the skin

**pycnometer** standardized volumetric container used for measuring and comparing densities and specific gravities of liquids or solids

**pyel-** prefix referring to the renal pelvis; same as pyelo-

**pyelo-** prefix referring to the renal pelvis; same as pyel-

**pyelogram** X-ray picture of the renal pelvis and ureter

**pyo-** prefix meaning pus

**pyrazole** five-membered ring with two nitrogens adjacent to each other; synonym: 1,2-diazole

**pyrexia** an elevation of body temperature that is caused by a change or disturbance of the heat-regulating mechanism of the body; synonym: fever

**pyridine** heterocyclic, six-membered, aromatic ring compound containing one nitrogen atom

**pyrimidine** heterocyclic, aromatic, organic compound composed of a six-membered ring containing two nitrogen atoms separated by one carbon atom; synonym: 1,3-diazine

**pyrogen** any substance that produces fever; usually organic substances (arising from the growth of microorganisms) that produce fever when injected into the body

**pyrogen test** determination of the presence of fever-producers (organic fragments, usually of killed microorganisms) in a sterilized product; consult the *USP-NF* for testing methods

**pyrometer** an instrument to determine very high temperatures by means of radiant energy measurements; optical—determines temperature by measuring radiation intensity at a given wavelength; radiation—can determine a wide range of temperatures using a larger spectrum of radiation wavelengths

**pyroxylin** cellulose treated with nitric and sulfuric acid to convert it into various nitro compounds; pyroxylin, when dissolved in a mixture of alcohol and ether, yields collodion; the addition of castor oil to collodion produces flexible collodion; synonyms: nitrocellulose, guncotton

**pyrrole** five-membered ring system that is completely unsaturated and contains one nitrogen atom



**quack** one who falsely represents himself as a qualified medical practitioner; synonym: charlatan

**quackery** promotion of medical products, devices, or practices that are not known to be effective and/or safe

**qualitative analysis** branch of chemistry that involves processes and procedures for substance identification; does not determine the amount of substance present in a system under study; CONTRAST *quantitative analysis*

**quality-adjusted life year** a measure used in cost-utility analysis; consequences (e.g., life years saved) measured in terms of quality of life, willingness to pay, or preference for one intervention to another

**quality assurance** methods used to ascertain whether or not a product has been prepared according to required or specified standards; SEE *quality control*

**quality control** **1:** series of tests conducted on components of a drug product, beginning with raw materials, and then on each respective process step; followed by tests on the finished product to ensure purity, potency, uniformity, stability, safety, elegance, and efficacy before a drug product is placed on the market; finally, periodic postmarketing tests for continued assurance **2:** tests conducted to ensure the validity of clinical laboratory analyses

**quality improvement** a continuous process that identifies problems in health care delivery, tests solutions to those problems, and constantly monitors the solutions for improvement

**quality of life** in pharmacoeconomics, a measurable health care outcome that assesses an individual's functional status, physiologic status, well-being, and life satisfaction

**quality reassurance** a formal set of activities to review and affect the quality of services provided; includes quality assessment and corrective actions to remedy any deficiencies identified in the quality of direct patient, administrative, and support services

**quanta** discrete units of energy; SEE *quantum theory*

**quantitative analysis** branch of chemistry involving processes by which the amount of a substance is determined; SEE *gravimetric analysis*; *volumetric analysis*; CONTRAST *qualitative analysis*

**quantitative structure-activity relationship** a method of drug design in which physical properties such as partition coefficients and quantum calculations, among others, are used to determine the relationship between chemical structure and pharmacological activity of a series of compounds;

enables one to predict the activity of an unknown or new drug in the series; examples: Free-Wilson, Hantsch, and quantum calculations

**quantity discount** price reduction extended to a buyer for purchasing a certain quantity, usually a large amount, at one time or for purchasing a specified amount over a definite period of time

**quantum number** any one of four integers used to describe the movement of an electron in an atom: (1) azimuthal—denotes its angular momentum around the atomic nucleus; (2) magnetic field—represents the magnetic field generated by the electron's movement around the nucleus; (3) principal—indicates its primary shell or orbit around the nucleus; (4) spin—denotes its direction of spin on its axis

**quantum theory** belief that energy absorption or emission into or from an atom, respectively, occurs in discrete units or quanta

**quart** unit of volume equal to  $\frac{1}{4}$  gallon, 2 pints, 32 fluid ounces, or 946.24 milliliters

**quaternary** refers to four substitutions on one atom; general example: quaternary ammonium compounds that have four organic radicals substituted for each of the four hydrogens on the ammonium ion; example: benzalkonium chloride

**quaternary ammonium salt** organic compound in which the four hydrogen molecules of the ammonium ion are substituted with four organic radicals (may be the same or different) to form the positively charged ion which is associated with a negatively charged ion; example: benzalkonium chloride

**quaternary structure** association of two or more folded polypeptides to form a functional protein

**quid** plug of chewing tobacco or snuff that is placed in the buccal pouch

**Quincke's disease** angioneurotic edema; SEE *angioedema*

**quinidine** diastereo isomer of quinine; alkaloid from cinchona; used as a cardiac depressant and antiarrhythmic

**quinine** major alkaloid from cinchona bark, present to the extent of 5 percent in cinchona; used as an antimalarial and a bitter tonic

**quinoline** heterocyclic, aromatic, naphthalene-like compound possessing a nitrogen in the 1-position

**quintessence 1:** the highly concentrated extract of any substance **2:** tincture, extract, or essence containing the most essential components of plant material



**R**

**racemic mixture** equal mixture of both mirror image pairs of optical isomers; SEE *racemization*

**racemization** transformation of one-half of the molecules of an optically active compound into molecules that are mirror image configurations of each other (the resultant optical rotation becomes zero)

**rad** basic radiation dosage unit; the absorption of 100 ergs of ionizing radiation energy per gram of substance (tissue)

**radiant heat dryer** instrument or apparatus that utilizes infrared light rays for the purpose of producing heat to remove moisture

**radiation 1:** particles and light rays (photons) emitted from atomic nuclei and/or their orbital electrons as a result of internal reductions in energy levels of nucleons or electrons; most common forms of emission in order of particle size: alpha particles (the same as helium nuclei), neutrons, protons, beta particles (the same as electrons or negatrons or positrons, rarely emitted positively charged electrons), X-rays (emanating as a consequence of orbital electron energy level reductions), and gamma rays (emanating as a consequence of intranuclear neutron and proton energy level reductions) **2:** heat or light emanating from hot objects that is transferred as electromagnetic waves traveling in straight lines at the speed of light; examples: infrared heat lamps, heat from the sun

**radiation, background** radioactivity that can be detected in the absence of the source being studied; consists of cosmic radiation and that from ill-defined sources on earth

**radiation pyrometer** SEE *pyrometer*

**radiation sterilization** to render an object devoid of all life forms by using high exposure levels of ionizing radiation (usually gamma rays and beta particles); used primarily to sterilize drug devices

**radical 1:** extreme **2:** a chemical group (group of atoms) that is a part of a molecule; synonym: moiety **3:** free radicals—a group of atoms separated from a molecule and bearing a single electron; combine with other free radicals by the pairing of their single electrons to form covalent bonds

**radioactive** denotes an atomic nucleus which does not exist in its most stable state and which emits photons, electrons, neutrons, protons, and/or alpha particles in order to assume a more stable configuration

**radioactive concentration** activity per unit quantity of any material in which a radionuclide is present; example: microcuries per gram

**radioactive contamination** pollution of materials or areas with radioactive substances

**radioactive tracer** radioactive isotope used as a label in a vehicle or on a molecule; used to determine the course of a chemical reaction, a biological process, or the fate of a molecule in the body

**radioactivity** property of metastable atoms that spontaneously emit particles and/or photons in order to assume a more stable state; examples: X-rays emitted as a result of changes in energy levels of orbital electrons,  $\gamma$ -rays emitted as a result of changes in energy levels of nucleons

**radioassay** a quantitative procedure utilizing a radiolabeled substance as the basis for its determination

**radiographic tracer** an isotope of the element being traced; used in medicine for diagnostic purposes

**radioisotope** form of an element that is unstable and emits rays of energy or subatomic particles; SEE *isotopes*

**radiolabel** tagging a substance with a radioactive tracer

**radiologist** a physician who specializes in diagnosing and treating diseases by the use of radiant energy

**radionuclide purity** the proportion of the total activity that is in the form of the stated radionuclide

**radiopaque dye** dyes used in radiology to enhance the X-ray pictures of selected internal anatomic structures

**radiopharmaceutical** drug formulation containing a radioactive isotope used for the diagnosis, mitigation, or treatment of disease

**radiowaves** electromagnetic radiation emanating from nuclear spin transitions; wavelengths in the range of  $10^3$  meter

**rancid** having a rank or offensive smell or taste; example: a vegetable oil that has undergone oxidative degradation

**range** a measure of variability; computed as the difference between the highest and lowest numbers in a group of related numbers

**Raoult's law** a quantitative expression of the partial vapor pressure of an "ideal" solution containing volatile solutes (usually liquid pairs); expressed as the mole fraction multiplied by the vapor pressure of the pure volatile substance

**Rasmussen's syndrome** a type of progressive encephalopathy seen in juveniles

**rate** the amount of money per enrollment classification paid to a carrier for medical coverage

**rate-limiting step** one of a series of processes that occurs at a slower rate than all others involved, thereby controlling the rate of occurrence of all other processes; example: the dissolution rate of a slowly dissolving drug that limits absorption, distribution, and elimination processes

**rate meter** instrument that measures the instantaneous rate of a process; examples: radioactivity exposure, electrical current flow, airflow, water flow

**rate of shear** an expression of the infinitesimal change in velocity per unit distance of one liquid layer moving past another; directly proportional to revolutions per minute of a spinning-disk viscometer; SEE *Newton's law of viscous flow*; *viscosity*

**rating process** process of evaluating a group or individual to determine a premium relative to the type of risk it presents

**ratio analysis** in financial analysis, a method of using income statement and balance sheet data to detect trends and problems in the business

**rational drug therapy** prescribing the right drug for the right patient, at the right time, in the right amounts, and with due consideration of relative costs

**rational numbers** integers (whole numbers) and common fractions; CONTRAST *irrational numbers*

**rational therapy** medical therapy used in treating diseases based on reasoning and general principles and not on observations alone

**raw material specifications** series of tests (and corresponding confidence values) conducted on starting materials that are to be used for dosage form production; synonym: material controls

**Raynaud's disease** idiopathic, paroxysmal, bilateral cyanosis of the digits

**reaction kinetics** a study of the rate of chemical change and the manner by which the rate of change is influenced by various factors such as the concentrations of reagents and solvents, the temperature and pressure, and the presence of other chemical agents

**reactive hyperemia** reddening of the skin that occurs after pressure is applied to the area for a time and then removed; thought to be partially responsible for rhinitis medicamentosa

**reactive oxygen species** a reactive derivative of molecular oxygen, including superoxide radical, hydrogen peroxide, the hydroxyl radical, and singlet oxygen

**reading frame** a set of contiguous triplet codons in an mRNA molecule

**reagent** chemical substance with a known reaction; used frequently in clinical testing

**real solution** SEE *solution, real*

**real time** pertaining to the actual time during which a physical process transpires

**reasonable and customary** (R&C) a term used to refer to the commonly charged or prevailing fees for health services within a geographic area; a fee that falls within the parameters of the average or commonly charged fee for a particular service within a specific community

**rebate** a monetary amount that is returned to a payer from a prescription drug manufacturer based upon utilization by a covered person or purchases by a provider

**receptor** molecular structure within or on the surface of a cell, and with which a drug or drug metabolite may bind to produce a particular pharmacological response

**recidivism** the frequency of the same patient returning to the hospital for the same presenting problems; refers to the inpatient hospitalization

**recipe** formula and method of mixing to prepare a dosage form containing several ingredients

**recipient** an individual who has been determined eligible for and has used medical services covered under Medicaid

**reciprocating pump/compressor** apparatus that effects mass transfer of liquids or gases using a piston or plunger and an intake-output valve mechanism; simplex type—one piston; duplex, triplex, or multiplex types—two, three, or more pistons, respectively, in parallel or in stages to decrease pulsation and/or to increase mass transfer rates

**reciprocity** recognition by one institution, state, or country of the validity of licenses or permits issued by another

**recombinant DNA** genetic material that has been cleared enzymatically at specific sites and recombined after insertion of a segment of DNA, usually from another species; used pharmaceutically to produce insulin, growth hormone, interferon, and vaccines

**recombination** a process in which DNA molecules are broken and re-joined in new combinations

**recombinational repair** a repair mechanism that can eliminate certain types of damaged DNA sequences that are not eliminated before replication; the undamaged parental strands recombine into the gap left after the damaged sequence is removed

**reconstitution** process of adding a solvent or suspending liquid (usually purified water) to a previously prepared spray-dried or freeze-dried drug formulation intended to be used in a short period of time (usually within two weeks) after the addition (generally refrigerated following reconstitution); example: reconstitution of an antibiotic suspension

**recrudescent** return of symptoms after remission

**recrudescent typhus** SEE *Brill's disease*

**recumbent** supine; lying flat on one's back

**red blood cell** SEE *erythrocyte*

**redox dye** chemical compound that changes color when oxidized or reduced; example: methylene blue

**redox potential** voltage that measures the tendency of a compound to donate or receive electrons; the sum of the voltages of two half cell reactions

**reduced molecule** a molecule that has gained one or more electrons

**reducing agent** substance that donates electrons to another substance in a chemical reaction; the reducing agent itself is oxidized in the chemical reaction

**reducing sugar** a sugar that can be oxidized by weak oxidizing agents

**reduction** the gain of electrons by a substance in a chemical reaction; older definitions include the combination of a substance with hydrogen and the loss of oxygen by a substance; SEE *oxidation-reduction*

**red veterinary petrolatum** partially bleached petrolatum, sometimes used as a sunscreen

**reengineer** modifying the pharmacy layout design and workflow to support delivery of pharmaceutical care

**reference standard** nationally or internationally recognized unit of measure (or a pure sample of a substance) against which all other units of measure (or analyses) are judged; the United States Pharmacopeial Convention being the major supplier of reference standards for official drugs

**referral** recommendation by a health care provider and/or health plan for a covered person to receive care from a different health care provider or facility

**referral provider** a provider that renders a service to a patient who has been sent to him/her by a participating provider in the health plan

**reflex stimulant** an agent that acts to induce a compensatory physiological change within an organ or tissue that generally opposed the action; examples: cardiovascular compensatory changes produced in response to

the administration of sympathomimetics or parasympathomimetics, the use of aromatic spirit of ammonia to awaken a person who has fainted

**reflux** intermittent reversal of flow

**refluxate** material refluxed upward into the esophagus with gastroesophageal reflux; consists of partially digested food, acids, and enzymes

**reflux distillation** SEE *distillation*

**reflux esophagitis** esophageal damage induced by gastroesophageal reflux

**refractive index** degree to which polarized light rays are bent as they pass through a substance under study; measured using a refractometer

**refractometer** an instrument used to measure the purity of solvents (or the concentration of solutions) by determining the refractive indices of samples and comparing them with the indices of standards; examples: Abbe refractometer, Pulfrich refractometer, the immersion or “dipping” refractometer

**refractory** resistance to stimulation, treatment, or specific drug therapy

**registered** adjective describing a pharmacist who has met state requirements for licensure and whose name has been entered on a state registry of practitioners who are licensed to practice in that jurisdiction

**regression coefficient** slope of a linear regression equation line; line that characterizes a set of data points which indicates the relationship between two variables; example: a plot of the amount of drug absorbed versus time

**regulation** rule developed from authorizing legislation that is written by an administrative agency; example: state board of pharmacy regulation

**regulatory agency** any federal or state agency charged with enforcement of laws and regulations

**regulatory enzyme** an enzyme that catalyzes a committed step in a biochemical pathway

**regurgitation** SEE *vomiting*

**reimbursement** payment received for services; often received from insurer

**reinsurance** insurance purchased by an HMO, insurance company, or self-funded employer from another insurance company to protect itself against all or part of the losses that may be incurred in the process of honoring the claims of its participating providers, policy holders, or employees and covered dependents

**relative biological equivalent** (as in an exposure to radioactivity) a conversion factor to calculate the roentgen equivalent in man (REM) for a given tissue

**relative density** SEE *density*

**relative error** statistical value obtained by dividing the true value for a set of determinations into the mean error; the relative error multiplied by 100 produces the percentage error

**relative humidity** SEE *humidity, relative*

**relative value scale** **1:** a method of determining the value of a particular service by considering the time and complexity of providing such service **2:** set of parameters that are without dimension; examples: specific gravity, specific conductance

**relative viscosity** ratio of the viscosity of one liquid to the viscosity of another liquid used as a standard; determined by the capillary method under the same volume, temperature, pressure conditions

**releasing factor** a protein involved in the termination phase of translation

**reliability** the extent to which an evaluation is consistent in measure; synonyms: dependability, consistency, stability

**Remington, Joseph Price** (1847-1918) considered a master teacher; first published *Practice of Pharmacy* in 1885; served in various roles with the United States Pharmacopeial Convention from 1877 until his death; the highest honor of organized pharmacy, the Remington Honor Medal, established following his death

**Remington Honor Medal** established in 1918 to recognize distinguished service on behalf of American pharmacy during the preceding years; highest honor of the American Pharmacists Association

**REM sleep** rapid eye movement sleep probably associated with dream states; may be interrupted through the use of certain drugs

**renal** pertaining to the kidney

**renal clearance** **1:** removal by the kidney of a solute (or other substance) from a specific volume of blood per unit of time **2:** the ratio of the product of urine concentration of the solute and the rate of urine flow to the plasma concentration of the solute

**renal failure** a lack of ability of the kidney to perform its essential function; may be acute or chronic

**renal insufficiency** inability of the kidneys to function properly in removing waste products from the blood

**renal plasma flow** rate of movement of blood through the glomerular capillaries of the kidney

**renewal** continuance of coverage under a policy beyond its original term by the acceptance of a premium for a new policy term

**renin** enzyme produced by the kidney that catalyzes the conversion of angiotensinogen to angiotensin

**repeat action** a dosage form (usually a tablet) that provides a quick release of part of the active ingredient and then releases the rest at a slower rate

**replication** the process in which an exact copy of parental DNA is synthesized using the polynucleotide strands of the parental DNA as templates

**replication fork** the Y-shaped region of a DNA molecule that is undergoing replication; results from separation of two DNA strands

**replicon** a unit of the genome that contains an origin for initiating replication

**repulsive force** inherent tendency for the same or different discrete particles of a substance(s) to be repelled from one another when brought together in a system; strong forces exhibited when positively charged nuclei are in close proximity, and weak forces observed between similarly charged particles in the same system or when a “low energy” substance is in contact with a “high energy” substance; can be used to stabilize dispersed pharmaceutical systems

**reserves** funds for incurred but unreported health services or other financial liabilities

**residency** postgraduate training in pharmacy, may be general or specific (e.g., pediatric residency, oncology residency) and in hospital, clinic, or community pharmacy-based practice settings

**resident care facility** health care facility providing hygienic and nonhazardous food and lodging for its residents

**residual urine** urine remaining in the bladder after voiding

**resin** naturally occurring brittle, amorphous, solid substance (as an exudate from a plant) that is soluble in alcohol and volatile oils and insoluble in water; example: pine rosin

**resistance** quantitative expression of the impeded flow of an electrical current through a conductor (expressed in ohms); specific—resistance across 1 cm<sup>3</sup> of a conductor



**resistance heating** use of electricity as a primary heat source; production of heat by passing an electrical current through an impeded circuit

**resistance thermometer** SEE *thermometer, resistance*

**resolution** **1:** separation of mirror image isomers or enantiomorphs  
**2:** formal statement (usually in writing) of one or more perceived need(s) or action(s) to be addressed by an individual or a group

**resonance** alternate shifting of electrons in a molecule between two or more possible configurations; a resonance hybrid is the result

**resonance energy** stability of a resonating molecule over and above that which would be in a molecule with conventional bonding

**Resource-Based Relative Value Scale (RBRVS)** Medicare fee schedule for health care providers based on the amount of time and resources expended in treating patients, with adjustments for overhead costs and geographical differences

**respiration** a biochemical process whereby fuel molecules are oxidized and their electrons are used to generate ATP

**respiratory burst** an oxygen-consuming process in scavenger cells such as macrophages in which reactive oxygen species are generated and used to kill foreign or damaged cells

**respiratory control** the control of aerobic respiration by ADP concentration

**respondeat superior** legal doctrine which holds that a superior (employer) may be liable for actions of a subordinate (employee) which are within the subordinate's job-related responsibilities

**retention** that portion of the cost of a medical benefit program that is kept by the insurance company or health plans to cover internal costs or to return a profit; can also be referred to as "administrative costs"

**reticular arousal system** center in the brain stem involved with impulses leading to the higher centers of the cerebral cortex

**reticuloendothelial system** group of organs that contain a network of endothelial cells and macrophages in sinusoids and are used to filter and phagocytize particulate matter in the blood and lymph; composed of the liver, spleen, lymph nodes, and bone marrow

**retina** innermost portion of the eye that receives images formed by the lens; part of eye primarily responsible for vision

**retrospective rate derivation** an addendum to insurance coverage that provides for risk sharing, with the employer being responsible for all or part of that risk

**retrospective review** determination of medical necessity and/or appropriate billing practice for services already rendered

**retrovirus** one of a group of viruses with RNA genomes that carry the enzyme reverse transcriptase and form a DNA copy of their genome during their reproductive cycle

**return on investment (ROI)** ratio of net profit to the owners' equity of a business; used as a broad measure of the firm's performance and indicates how effectively the resources of the firm have been employed

**revenue** inflow of cash or other assets attributable to the sale of goods or services by a business or from interest, rents, and dividends

**reversibility of a dispersion** the ability to separate a dispersion medium from the dispersed particles in a dispersed system and to subsequently combine them with relative ease (without significant energy input) to form the same dispersion; contrasted with an irreversibility of a dispersion

**reversible reaction** a reaction that is capable of proceeding in either direction

**review of systems** methodology used in a patient interview to systematically review the status of each organ system

**Reye's syndrome** abnormal condition characterized by acute encephalopathy and fatty infiltration of the liver, and possible infiltration of the pancreas, heart, kidney, spleen, and/or lymph nodes; usually seen in children under 18 years of age after they have had an acute viral infection and were given a salicylate

**Reynolds number** dimensionless ratio that is an index of the degree of turbulence in liquid flow; conversely, an index of the degree of streamlined or laminar flow; value obtained by the product of a geometric length factor (usually the diameter of the pipe), the velocity of the fluid, and its density divided by the fluid viscosity

**-rhea** suffix meaning to run or flow; example: diarrhea

**rheology** study (or science) of flow properties of liquids and semisolids (e.g., syrups and ointments); such properties usually measured in viscosity units, which are a function of stress and strain (deformation) on the system

**rheometer** SEE *viscometer*

**rheopexy** viscosity-related term that describes a liquid exhibiting reversible shear thickening; example: liquid assuming its original consistency when shearing stress is discontinued; hastened thixotropic thickening by a gentle motion of the sol

**rheostat** electrical component of a circuit acting to vary the resistance in the circuit

**rhesus factor** blood factor that causes erythroblastosis fetalis, a hemolytic condition in the newborn

**rheumatologist** a physician who specializes in the pathology, diagnosis, and treatment of rheumatic disorders (collagen diseases)

**rhin-** prefix meaning nose; same as rhino-

**rhinitis** inflammation of the mucous membranes of the nose

**rhinitis medicamentosa** nasal inflammation caused by overuse of topical nasal decongestants such as oxymetazoline

**rhino-** prefix meaning nose; same as rhin-

**rhinorrhea** “runny” nose, usually due to either the common cold or allergic rhinitis

**rhodopsin** photochemical substance, of a purplish red color, contained in the retina

**ribbon blender** mixing device used to uniformly distribute wetted, particulate, solid materials for subsequent granulation or other treatment; mixing device consisting of a U-shaped vessel with two or more metallic flat sigmoid blades mounted so that each rotates in opposite directions to effect mixing

**riboflavin** vitamin involved with oxidative processes associated with flavoproteins; the functional component of the coenzymes FAD and FMN; synonym: vitamin B<sub>2</sub>

**ribosomal RNA** the RNA present in ribosomes; ribosomes contain several types of single-stranded ribosomal RNA that contribute to ribosome structures and are also directly involved in protein synthesis

**ribosome** a protein-RNA complex where protein is synthesized

**ribozyme** self-splicing RNA found in several organisms

**Rice, Charles** (1841-1901) a German immigrant; became the chief apothecary of the Bellevue Hospital in New York; supervised the revision process of the *United States Pharmacopeia* for over 20 years; in 1900, recommended a shift in the *USP* from being a recipe book to one of more official standards

**right bundle branch block** observed in an EKG as a “slurred” S wave

**Ringer’s injection** sterile solution of sodium chloride, potassium chloride, and calcium chloride in water for injection; used as an electrolyte replenisher; synonym: isotonic solution of three chlorides for injection

**rinse** liquid used to cleanse by flushing

**risk analysis** the process of evaluating expected medical care costs for a prospective group and determining what product, benefit level, and price to offer in order to best meet the needs of the group and the carrier

**Rittinger's theory** quantitative expression for estimation of the energy requirement for particle size reduction, suggesting that it is directly proportional to an increase in surface area and inversely proportional to the product diameter

**RNA editing** the alteration of the base sequence in a newly synthesized mRNA molecule; bases may be chemically modified, deleted, or added

**Roche friabilator** a device used to measure chipping tendencies of tablets by rotating them in a half-partitioned cylinder that causes the tablets to fall on each turn of the cylinder

**Rochelle salt** potassium sodium tartrate; synonym: seignette salt

**rod mill** SEE *ball mill*

**rods** cells of the retina that contain rhodopsin and are responsible for vision in dim light

**roentgen** unit of radiation exposure equivalent to the absorption of  $10^{-4}$  cal per kilogram

**roentgen equivalent man** (rem) amount of radiation that has the same physiological effectiveness as one rad of X-rays

**roentgenography** imaging produced by passing X-rays through the internal structures of the body onto sensitized film

**Rokitansky's disease** postnecrotic cirrhosis of the liver

**role** pattern of behavior expected of an individual or group in a particular situation; synonyms: social role, professional role

**roller mill** apparatus consisting of three or more closely spaced cylinders, each rotating alternately clockwise and counterclockwise and between which particles or masses are passed for purposes of reducing particle size and/or blending

**room temperature** usual temperature in a working or storage area

**rose water ointment** SEE *cold cream*

**rotary drum filter** a continuous vacuum filtration system, the contents of which are agitated and separated at various levels on a circulating housing

**rotary pump** apparatus that uses a chamber with a rotating impeller, lobe, or gear to trap and move discrete quantities of liquid from an inlet to an outlet; synonyms: gear pump, lobe pump

**rotary tableting machine** SEE *tableting machine*

**rotational viscometer** spinning-disk instrument used to measure the viscosity of liquids

**rough ER** a type of endoplasmic reticulum involved in protein synthesis

**route of administration** method or avenue by which a medication is introduced onto or into the body

**route of excretion** pathway by which a substance is removed from the body; examples: urinary track, biliary duct, respiratory tract, skin

**-rrhage** suffix meaning excessive flow; same as -rrhagia

**-rrhagia** suffix meaning excessive flow; same as -rrhage

**-rrhea** suffix meaning discharge

**rubber closure** specially designed resilient sealing stopper for multiple- or continuous-dose sterile drug preparations; must exert enough pressure on the inner side of the container to maintain the seal and include a needle puncture area that reseals, successively, after each puncture

**rubefacient** substance applied to the skin that elicits a feeling of warmth and reddens the skin

**rust disease** tuberculous spondylitis of the cervical region

**Ruth, Robert J.** (1891-1931) pharmacist and teacher; first proposed the idea of a national Pharmacy Week to promote the professional activities of pharmacists to consumers

**S** **sacculi** prefolded wafer papers used for individual doses of powders

**S-adenosyl-methionine** coenzyme derived from ATP and methionine; coenzyme involved in methyl transfer reactions; synonym: active methyl

**safety closure** SEE *child-resistant closure*

**Saint Vitus's dance** acute disturbance of the central nervous system characterized by involuntary muscular movements of the face and extremities

**sales promotion** specific activities (e.g., point-of-purchase displays, booklets, and leaflets) that can improve the effectiveness of selling and promotional activities by coordinating and supplementing both effects

**salol** synonym for phenyl salicylate

**sal polychrestum** synonym for potassium sulfate

**salt** product of a reaction between an acid and a base (other than water); strong electrolyte (other than an acid or a base) that is composed of a cation and an anion; crystalline compound that is composed of at least one cation and an anion other than a hydroxyl ion; substance completely ionized, even in the crystalline (solid) form

**salt bridge** an electrostatic interaction in proteins between ionic groups of opposite charge

**salt-polishing** process of cleaning and polishing gelatin capsules by rotating them in a container with granular sodium chloride

**salvage pathways** metabolic pathways in purine and pyrimidine metabolism in which nucleotides may be reformed from the purine or pyrimidine base and phosphoribosylpyrophosphate

**salvation sphere** a shell of water molecules that clusters around positive and negative ions

**salve** stiff ointment or cerate applied to wounds or sores

**salve mull** ointments with high fusing points containing medicinal agents that spread on gauze similar to plaster mulls

**salvia** synonym for sage leaves; used as a flavoring or condiment

**sample 1:** a subset of observations or measurements selected from a population of interest; a statistical part of the whole **2:** free product provided by manufacturers for use as trial therapy

**sampling 1:** the selection of representative units of a drug product or of a component for a drug product, to test for and ensure a reasonable replication of the quality of the entire lot **2:** process of selecting a sample; SEE *sample*

**sanction** a reprimand, for any number of reasons, of a participating provider

**Sanders' disease/syndrome** epidemic keratoconjunctivitis

**sandwich compound** complex group of molecules existing in layers; one molecule superimposed on another and held together by moderately strong binding forces; a type of complex

**sanitary pipe fittings** stainless steel or glass pipes, pipe joints, cut-off valves, and pumps designed for easy disassembling and cleaning

**saponification 1:** process of making soap using fats and alkali **2:** alkaline hydrolysis of an ester; example: hydrolysis of glyceryl tristearate with sodium hydroxide yielding sodium stearate (the soap) and glycerin (the by-product)

**saponification value** number of milligrams of potassium hydroxide required to neutralize the free acids and saponify the esters contained in one gram of a fat, an oil, or a wax

**saponin** a group of amorphous colloidal glycosides that form soapy aqueous solutions

**sapotoxin** a poisonous saponin

**sarcoidosis** chronic, progressive, generalized granulomatous disease of unknown etiology

**satellite DNA** DNA sequences arranged next to each other; form a satellite band when genomic DNA is digested and centrifuges

**satellite pharmacy** a small remote pharmacy service unit that is dependent upon the main pharmacy for stock items and other administrative services; a pharmacy unit on a hospital ward to serve patients in that ward

**saturated molecule** a molecule that contains no carbon-carbon double or triple bonds

**saturation humidity** SEE *humidity, saturation*

**saturation temperature** **1:** temperature at which a vapor will begin to condense to a liquid **2:** temperature at which a liquid and its vapor exist in equilibrium **3:** the “dew point”

**Saunders’ disease** acute gastritis in infants due to excessive carbohydrates in the diet

**scabicide** a drug that kills mites; primarily used against the mite that causes the “seven-year itch” (scabies)

**scalar** refers to quantities that have magnitudes, but not directions; examples: speed, mass, volume; CONTRAST *vector quantities*

**scale anchor** a point along a scale that defines a level of performance; may be numerical, descriptive, or behavioral in form

**scale of segregation** a “degree of mixing” expression based on either diameter or volume of particle(s) being mixed

**scaling up** **1:** extrapolation of a pharmacokinetic or pharmacologic model from animals to humans based on their respective physiologic parameters **2:** the conversion of batch drug manufacturing processes from small laboratory quantities to pilot and then to large-batch production; scale-ups do not usually occur in direct relationships

**scanning speech** slow speech, with frequent stops between words or syllables

**Schaefer, Hugo H.** (1891-1967) educator; served as the dean of the Brooklyn College of Pharmacy from 1937 until his death; APhA treasurer 1941-1967; Remington Honor Medal recipient in 1951

**scheduled drug** substance classified by the Drug Enforcement Administration (DEA) as having a high potential for abuse by the public; synonyms: controlled drug, controlled substance

**Schedule I drug** a drug with no accepted medical use and one that has the highest potential for abuse; examples: heroin, LSD

**Schedule II drug** a drug with accepted medical uses but also has a strong potential for abuse; repeated use may lead to severe physical or psychological dependence; examples: morphine, meperidine, methadone

**Schedule III drug** a drug with accepted medical uses and a potential for abuse that is less than those substances in Schedules I and II; use may lead to moderate or low psychological dependence or high physical dependence; examples: ketamine, thiopental

**Schedule IV drug** a drug with accepted medical use and a lower potential for abuse than those in Schedule III; use may lead to limited physical or psychological dependence; examples: chloral hydrate, meprobamate

**Schedule V drug** a drug with accepted medical use and a lower potential for abuse than those in Schedule IV; use may lead to limited physical or psychological dependence; includes both legend and OTC drugs; drugs that may be sold without prescription (in some states only) but with a record of sales (formerly known as "Exempt Narcotic Drug"); examples: cough syrups containing no more than one grain of codeine per fluid ounce

**Scheele, Carl Wilhelm** (1742-1786) Swedish pharmacist-chemist credited with the discovery of chlorine, citric acid, manganese, and barium; codiscoverer (with J. Priestley) of oxygen; first isolated uric acid from urine

**schistosomiasis** disease resulting from an infestation of man by flukes; *Schistosoma hematobium*, *Schistosoma mansoni*, and *Schistosoma japonicum* the predominant disease-causing organisms

**sciatica** pain in the lower back or hip that radiates down the thigh to the lower leg

**scientific method** generally considered to be an accepted series of steps or procedures designed to solve a problem or enhance understanding of a natural phenomenon; included are the steps of observation, theory (or hypothesis), experimentation, analysis and evaluation, repeated testing and



conclusions, and development of laws; other competent researchers should be able to repeat such experiments and observations

**scintillation counter** an instrument used to measure weak beta radiation that interacts with substances called phosphors and fluors to produce a flash of light that is amplified and recorded

**sclero-** prefix meaning hard

**scleroprotein** fibrous protein; insoluble protein; example: keratin (a protein of skin and hair)

**sclerosis** hardening of tissue, especially due to excessive growth of fibrous tissue

**scope of practice** boundaries within which a health professional may practice, usually established by the state board

**scopine** alcohol part of the scopolamine molecule

**scopolamine** alkaloid found in plants of the Solanaceous family that acts similarly to atropine, but is also used with morphine for analgesia and anesthesia

**scored tablet** compressed tablet that contains grooves for ease of breaking into halves or quarters (if double scored)

**scraped surface heat exchanger** a tube-in-a-tube heat transfer device that also contains a rotating shaft with scraping blades in the inner tube; used to continuously prepare and cool emulsions, gels, and creams

**screening** tests for risk of a disease or condition; patients identified as at risk in the screening process further evaluated for a definitive diagnosis

**screw pump** apparatus that uses one or more rotating augers to transfer liquids, semisolids, or solids through pipes or tubes from one container to another

**scruple 1:** apothecary unit of weight equal to 20 grains, or one-third of a dram **2:** moral or ethical principle

**scurvy** disease usually caused by low amounts of ascorbic acid in the diet; noted by debility and edema and frequently by hemorrhage and ulceration of the gums

**SDS polyacrylamide gel electrophoresis** a method for separating proteins or determining their molecular weights that employs the negatively charged detergent sodium dodecyl sulfate (SDS)

**seal coating** the first step of a sugar-coating process for tablets; an initial covering layer that prevents moisture effects on the tablet during subsequent sugar-coating steps

**seasonal discount** price reduction extended to a customer for ordering or accepting delivery during a period of low activity (an off-season); example: a lower price for an antibiotic during the summer months rather than during the winter months, a time when the demand for antibiotics is expected to be greater

**secondary alcohol** SEE *alcohol*

**secondary amine** SEE *amine*

**secondary care** services provided by medical specialists, such as cardiologists, urologists, and dermatologists, who generally do not have primary contact with patients

**secondary coverage** a plan that has the responsibility for payment of any eligible charges not covered by the primary coverage

**secondary metabolite** a molecule derived from a primary metabolite; many serve protective functions

**secondary prevention** efforts to prevent further worsening of a disease; example: cholesterol management following CABG surgery

**secondary structure** folding of a polypeptide chain into local patterns such as  $\alpha$ -helix and  $\beta$ -pleated sheet; maintained by hydrogen bonds between the amide hydrogen and the carbonyl oxygen of the peptide bond

**second genetic code** the precision with which amino acids are attached to their cognate tRNAs; catalyzed by the aminoacyl-tRNA synthetases; a principal reason for the accuracy of polypeptide synthesis

**second law of thermodynamics** SEE *thermodynamics*

**second messenger** a molecule that mediates the action of some hormones

**second opinion** an opinion obtained from an additional health care professional prior to the performance of a medical service or a surgical procedure

**secretin** hormone produced by cells in the jejunum and lower duodenum in response to a lowering of the pH of chyme in these areas; secretin initiates a secretion of bicarbonate

**secretion** the glandular production of a solution containing hormones, enzymes, electrolytes, lipids, and other substances; fluids may be secreted into a body cavity or outside the body (exocrine secretion) or they may be secreted into the blood as a hormone that affects the body's physiology (endocrine secretion); process of passing substances from cells that line the tubules of a nephron into the tubular filtrate to eventually form urine

**Section 1115 waivers** part of the Social Security Act that grants the Secretary of Health and Human Services broad authority to waive certain

laws relating to Medicaid for the purpose of conducting pilot, experimental, or demonstration projects

**Section 1915(b) waivers** (freedom-of-choice waivers) prior to the passage of the Balanced Budget Act (BBA) of 1997, allowed states to require Medicaid recipients to enroll in HMOs or other managed care plans in an effort to control costs; under the BBA, states can enroll recipients into managed care without applying for these waivers

**secured loan** one in which the lender's risk is reduced by the borrower pledging something of value as security that the loan will be repaid; synonym: collateral

**sedative** drug or chemical agent that produces relaxation and/or decreased anxiety, but not necessarily sleep; a central nervous system depressant

**sedimentation** the aggregation (usually downward) of particles in a suspension due to their size, shape, and density in relation to the density and viscosity of the suspending medium

**sedimentation rate** erythrocyte sedimentation rate; a test that indicates an inflammatory disease

**self-care** treating one's own ailments with medicines and/or other health care items, usually without medical advice; a range of behaviors undertaken by individuals to promote or restore health

**self-funding, self-insurance** a health care program in which employers fund benefit plans from their own resources without purchasing insurance

**semiconservative replication** DNA synthesis in which each polynucleotide strand serves as a template for the synthesis of a new strand

**semipermeable membrane** thin film that has theoretical pores or openings so small that only certain substances can pass through; usually passage of a substance depends on its particle size; used for dialysis

**sense strand** the DNA strand that RNA polymerase copies to produce mRNA, rRNA, or tRNA

**sensible heat** heat that can be detected by the senses and produces a temperature change

**sensitivity 1:** (for a prescription balance) the minimum weight required to move its index pointer one scale value; a quantity used in the determination of minimum weighable quantities within a specific error limit **2:** the lowest concentration that is detectable by an instrument

**sensitivity requirement** (SR) maximum permissible change in load that causes a specified change; usually one subdivision on the index plate, in

the position of the indicating element; must not exceed 6 mg for a class A prescription balance

**sepsis 1:** presence of organisms or their toxins in the blood **2:** contamination

**sequential multiple analysis** (SMA) method of clinical chemistry in which two or more separate tests are performed sequentially on the same blood or urine sample in a given time period; an Arabic number following the letters SMA designates the number of simultaneous tests performed during a given time period (usually one minute); examples: SMA 12, SMA 16

**sequester 1:** separation or isolation **2:** a form of complexation in which a molecule is prevented from exerting its usual properties sequestration: complexation of a metallic ion

**sequestration** complexation of a metallic ion

**serendipity** discovery of something unexpected and valuable when looking for something else; example: Sir Alexander Fleming's discovery of the antibacterial effects of penicillin while growing a bacteria culture

**serous** having reference to or resembling serum; producing or containing serum

**serum 1:** liquid portion of blood containing all dissolved substances, but excluding clotting factors and formed elements (blood cells) **2:** a vaccine **3:** the liquid portion of the blood that separates from a clot by synthesis

**serum hepatitis** SEE *hepatitis, serum*

**service area** the geographic area serviced by the health plan as approved by state regulatory agencies and/or as detailed in the certification of authority

**sesame oil** a fixed oil obtained from sesame seed; used in pharmaceuticals; synonyms: benne oil, teel oil

**sesquiterpene** hydrocarbon composed of three isoprene units connected in a "head to tail" fashion

**severe combined immunodeficiency disease** genetic defect in which the body lacks the ability to develop an immune system

**sexually transmitted disease** infection or ill condition which is contracted almost exclusively by physical sexual interactions; examples: syphilis, AIDS, genital warts, pubic lice, herpes simplex type 2

**shampoo** liquid soap or detergent used to clean the hair and scalp and often used as a vehicle for dermatologic agents

**shampoo, suspension** liquid soap or detergent containing one or more solid, insoluble substances dispersed in a liquid vehicle that is used to clean the hair and scalp; often used as a vehicle for dermatologic agents

**shearing stress** force per unit area applied to one liquid layer flowing past another; SEE *Newton's law of viscous flow*

**shear thickening** viscosity-related term which indicates that a liquid becomes more viscous as "shearing stress" is applied

**shear thinning** viscosity-related term indicating that a liquid becomes less viscous as "shearing stress" is applied

**shelf life** time limit placed on a drug product's original potency and acceptable overall quality; determined by individual chemical and physical properties of the medicinal agents, pharmaceutical adjuncts, and packaging

**shell** an orbit of an electron or its probable path around the nucleus; designated by K, L, M, N, etc., or 1, 2, 3, 4, etc., where the K or 1 shell is the closest to the nucleus with a principal quantum number of 1 and others in order are progressively farther away from the nucleus

**shell freezing** process of freezing a liquid mass as it is spinning or rotating in such a manner that a layer of solidified material can be formed against the sides of a partially filled drug container; a process that is usually preliminary to the freeze-drying process

**shock 1:** sudden disturbance of mental equilibrium **2:** acute peripheral circulatory failure due to derangement of circulatory control or loss of circulating fluid; marked by hypotension, coldness of the skin, usually tachycardia, and often anxiety

**short tandem repeat** short sequence of DNA, normally a length of two to five base pairs

**shotgun cloning** a cloning technique in which genomic libraries are created by the random digestion of a genome

**shrinkage** (management) any process other than normal sales that has the effect of reducing the amount or value of inventories

**sial-** prefix meaning saliva or the salivary glands; same as sialo-

**sialo-** prefix meaning saliva or the salivary glands; same as sial-

**sialogogue** agent that increases the flow of saliva

**sialolith** small stone occluding a salivary duct

**sialometry** measurement of salivary flow to determine extent of dry mouth

**sickle-cell anemia** congenital disease found predominantly in blacks in which the deoxygenated red blood cells assume a sickle or crescent shape and function in an abnormal and detrimental manner

**sieve** container with a wire (or nylon) mesh bottom, having a specific number of openings per linear inch; used to size drug particles; a series of sieves can be used to ascertain a size-weight distribution of particles in a given batch of material

**sieve shaker** apparatus designed to accommodate a series of stacked sieves, each with specific size openings and decreasing in size from top to bottom, and that can be vibrated to effect separation of particles by size

**signal peptide** a short sequence, typically near the amino terminal of a polypeptide, that determines its destination

**signal recognition particle** a large complex consisting of proteins on a small RNA molecule that mediates the binding of the ribosome to the RER during protein synthesis

**signatura, signa, or sig** directions to be placed on a prescription label to indicate to the patient how to take or use the medication; SEE ALSO *prescription*

**signature theory** concept that “divine providence” provided plant materials with similar physical characteristics to that of body parts and that these could be used to treat ailments in such body parts; examples: English walnut kernels for brain treatment, ginseng root as a panacea (espoused by Paracelsus)

**significant figures** numbers that establish magnitude (or quantity) and accuracy by virtue of their location in the numerical expression, with the last significant figure being an approximation; example: 3.00 means accurate to the one-hundredth part and may vary from 2.995 to 3.005

**Simmonds’ disease** hypopituitarism

**Simon’s disease** progressive lipodystrophy; also known as “Barraquer’s disease”

**simple diffusion** a process in which each type of solute, propelled by random molecular motion, moves down a concentration gradient

**single-compartmental model** for pharmacokinetic purposes, the body is perceived as one compartment throughout which a drug is uniformly distributed; the pharmacokinetics of a specific drug may or may not fit this model; also known as “one-compartmental model”; CONTRAST *two-compartmental model*, *multicompartmental model*

**single-dose container** SEE *container*; *single dose*

**single-payer system** a health care financing arrangement in which money, usually from a variety of taxes, is funneled to a single entity (usually the government) that then is responsible for the financing and administration of the health system; can be regional, statewide, or nationwide

**single-punch tableting machine** SEE *tableting machine*

**single-source drug** a drug available from only one supplier, generally one that is under patent protection

**single-unit container** SEE *container, single unit*

**sintered glass filter** SEE *fritted glass filter*

**S-isomer** method of Cahn, Prelog, and Ingold for designating configuration of optical isomers in which the atom or group of lowest priority (according to atomic number) is placed beneath the molecule and the order of priorities of the remaining groups or atoms is counterclockwise

**site-directed mutagenesis** technique that introduces specific sequence changes into cloned genes

**site of action** cell receptors where a biological response is initiated

**site-specific recombination** recombination of nonhomologous genetic material with a chromosome at a specific site

**sitz bath** sitting in a lukewarm bath for a time; thought to be helpful in providing palliative treatment for hemorrhoids

**sizing of granules** separation of granules according to their "effective diameter" using a series of screens of increasing mesh number from top to bottom; sized granules recombined in optimum ratios to facilitate further processing, as in tableting

**Sjogren's syndrome** group of symptoms associated with rheumatoid arthritis (oral dryness, ophthalmic dryness, vaginal dryness); often seen in menopausal women

**skeletal muscle** body tissue consisting of elongated cells grouped into bundles that contract when stimulated; alternate contraction and relaxation of muscles produces motion of the body part; synonym: striated muscle; CONTRAST *smooth muscle*

**skilled nursing facility** a facility, either freestanding or part of a hospital, that accepts patients in need of rehabilitation and medical care that is of a lesser intensity than that received in a hospital

**slaked lime** synonym for calcium oxide

**slander** statement of one person that defames the character or reputation of another

**sleep efficiency** the amount of time in bed one actually spends sleeping

**sleep latency** the amount of time elapsed between going to bed and falling asleep

**slicing** cutting fleshy or tuberous parts of plants preparatory to drying

**sliding markup** a pricing policy in which the percentage or dollar value of markup is decreased as the cost of the product is increased

**sling psychrometer** device to measure relative humidity using a wet-bulb thermometer and dry-bulb thermometer with an appropriately calibrated chart to convert the temperature differential to relative humidity

**slope** the rate of change in the relationship of two variables

**slug** large rough tablet made by compressing finely divided particles of a drug formulation under high pressure; milled and sized to produce a “dry” granulation for subsequent compression into tablets

**slugging** one step in a process of preparing a dry granulation for tablet compression in which the drug materials are compressed into large rough tablets or slugs and then ground into appropriately sized granules

**slugging machine** heavy-duty tablet press designed to compress finely divided drug formulations in large, rough, compacted units called “slugs”

**slurry 1:** a highly concentrated, solid-liquid dispersion; usually a batch of pharmaceutical material to be further processed **2:** dosage form in which activated charcoal is prepared for administration after poisoning

**small-group pooling** combining all or segments of small group businesses into a pool or pools; expected claims, and therefore premium rates, determined by pool and not on a group-specific basis; SEE ALSO *pooling*

**small nuclear ribonuclear particle** a complex of proteins and small nuclear RNA molecules that promotes RNA processing

**small nuclear RNA** a small RNA molecule involved in removing introns from mRNA, rRNA, and tRNA

**Smith, Daniel B.** (1792-1883) a founder of the Philadelphia College of Pharmacy; one of the founders of the American Pharmacists Association in 1852; also served as its first president

**Smoluchowski equation** quantitative expression of the flocculation rate of a suspension consisting of discretely dispersed particles

**smooth ER** a type of endoplasmic reticulum involved in lipid synthesis and biotransformation

**smooth muscle** a type of muscular tissue arranged in sheets or layers as in the alimentary canal; also found as isolated cells in connective tissue;



muscles are controlled by the autonomic nervous system; synonyms: nonstriated and involuntary muscles; CONTRAST *skeletal muscle*

**soap 1:** a metallic salt of a fatty acid; example: Castile soap **2:** an anionic surface active agent used to cleanse or wash; SEE ALSO *surfactant 3:* any compound of one or more fatty acids, or their equivalents, with an alkali; a detergent that is much employed in liniments, enemas, and making pills; also a mild aperient, antacid, antiseptic

**SOAP note** format used in documenting patient care; records subjective, objective, assessment, and plan; used by pharmacists in documenting pharmaceutical care interventions with patients

**social cognitive theory** a theory developed by Bandura that attempts to predict behavior based on an individual's expectation or belief that a particular behavior will result in a particular outcome and that the individual has the ability to accomplish this behavior

**socialized medicine** a health care system that is owned by the government

**sodium** alkali, metallic, monovalent element; the ion is an important electrolyte in blood plasma and other extracellular fluids; normal blood levels are about 140 mEq/L; the chief extracellular cation

**sodium chloride equivalent** that weight of sodium chloride that produces a colligative property effect (boiling point elevation, melting point depression, osmotic pressure changes), represented by one gram of a specific drug

**sol 1:** a colloidal dispersion **2:** the inner layer of respiratory mucus

**-sol** suffix referring to a colloidal dispersion; example: aerosol

**solanaceous** related to the nightshade family of plants; examples: belladonna, stramonium, jimsonweed, tomato, and potato plants

**solanine** poisonous alkaloid obtained from potato sprouts, tomatoes, or other members of the Solanaceae (nightshade) family

**sole proprietorship** a business entity in which there is a single owner

**solidification point** that temperature (and pressure) at which a liquid turns to a solid; synonym: freezing point

**solubility** the maximum amount of solute that may be dissolved in a given amount of a solvent under a specified set of conditions; the concentration of a solute in a solvent at its saturation point

**solubility method** a means of analyzing complexes by solubility determinations; used in situations where the solubility of one substance in an aqueous medium is increased or decreased by complex formation

**solubilization** a method used to increase the solubility of a poorly soluble solute by the addition of a third substance such as a soap or another surfactant; example: use of polysorbate 60 to bring more peppermint oil into an aqueous solution

**soluble soap** sodium or potassium salt of fatty acids; SEE *soap*

**solute** the substance that is dissolved by a solvent

**solution** liquid preparation that contains one or more chemical substances dissolved, i.e., molecularly dispersed, in a suitable solvent or mixture of mutually miscible solvents

**solution, colloidal** a dispersion of minute particles or large polymeric molecules (0.5 to 1.0 nm) in a liquid medium

**solution, concentrate** liquid preparation (i.e., a substance that flows readily in its natural state) that contains a drug dissolved in a suitable solvent or mixture of mutually miscible solvents; the drug has been strengthened by the evaporation of its nonactive parts

**solution, for slush** solution for the preparation of an iced saline slush, which is administered by irrigation and used to induce regional hypothermia (in conditions such as certain open heart and kidney surgical procedures) by its direct application

**solution, gel forming, extended release** solution that forms a gel when it comes in contact with ocular fluid, and which allows at least a reduction in dosing frequency

**solution, ideal** one in which there are no interacting forces between solute molecules; a very dilute solution may approach ideality

**solution, micellar** a "clear emulsion" or a liquid system containing micelles (surfactant molecules surrounding minute immiscible droplets)

**solution, ophthalmic** a sterile solution, essentially free of foreign particles, suitably compounded and packaged for instillation in the eye

**solution, real** one in which there are interacting forces between molecules of solute; a more concentrated solution

**solution, true** single-phase (homogeneous) dispersion consisting of atoms, small molecules, or ions (less than 1 nm) as the largest discrete particles

**solution tablet** SEE *tablet, compressed*

**solvate** a compound formed by a reaction between the solvent and the solute

**solvation** process for formation of a solvate

**solvent** a liquid capable of dissolving other material(s); the substance in which a solute is dissolved

**solvolysis** a reaction between the solvent and the solute resulting in the cleavage of a chemical bond in the solute molecule; a ring structure may be opened or a molecule may be split into two or more smaller compounds; if the solvent is water, known as hydrolysis

**somat-** prefix meaning the body

**somatomedin** a polypeptide that mediates the growth-promoting action of growth hormone

**somatostatin** a peptide hormone that inhibits the growth hormone, glucagon, and insulin secretion

**somnolence** sleepiness; drowsiness

**soporific** a drug or other agent that produces sleep; synonym: narcotic

**sorb** to take up and hold by either absorption or adsorption

**Sorensen pH scale** the entire pH spectrum from ultimate acidity through neutrality and to ultimate basicity; a pH scale from 0 to 14 where pH equals the negative log (base 10) of the hydrogen ion concentration in a system

**sorptometer** instrument used to measure surface area of a particulate sample based on the extent of gas absorbed on the surface in a monomolecular layer and at the temperature of liquid nitrogen

**Southern blotting** a technique in which radioactively labeled DNA or RNA profiles are used to locate a complementary sequence in a DNA digest

**Spalding, Lyman** (1775-1821) American physician known as the Father of the *United States Pharmacopeia*

**span of control** in a given situation, a limit to the number of persons who can be effectively supervised; the limit of supervision depends on the technology involved, the training and knowledge of subordinates, and the clarity of the tasks to be performed

**spatial configuration** refers to the three-dimensional arrangement of groups around an asymmetric carbon atom, double bond, or ring (the former involves optical isomerism; the latter two involve geometric isomerism)

**spatula** flat thin blade used for mixing or spreading soft substances (such as ointments and creams) or powders

**spatulation** a prescription-compounding process of mixing powders on a pill tile or other flat surface by the movement of a spatula through the powder and a turning of the powder; a low-pressure mixing process

**species** coarsely powdered or bruised drugs intended for the use in the preparation of infusions or decoctions

**specific activity 1:** the quantity of radioactivity per unit mass of an element or a compound containing the nuclide; example: 100 millicuries per gram **2:** method of expressing enzyme concentration as units of enzyme per milligram of protein

**specific conductance** the reciprocal of specific resistance; SEE *conductance*

**specific gravity** the weight of one body or substance compared to the weight of an equal volume of another body or substance selected as a standard, both bodies being at the same temperature; the most common standard is water (the specific gravity of water is set equal to one)

**specific labeling** implies that the radionuclide is known to be in the position(s) specified by the numbering and naming of the labeled atom in the compound

**specific resistance** SEE *resistance*

**specific rotation** observed optical rotation of a compound corrected for concentration, temperature, wavelength of light, and specific solvent

**specific surface** surface area per unit weight of substance; example: square meters per gram

**spectrometry** SEE *spectrophotometry*

**spectrophotometry** a method of analysis in which electromagnetic radiation is passed through a sample and the absorption of the radiation (due to its interactions with the sample) is measured; determinations conducted either at a fixed wavelength or at varying wavelengths over a specified region; synonym: spectrometry

**spectrophotometry, colorimetric** SEE *colorimetry*

**spectrophotometry, EPR** SEE *electron paramagnetic resonance*

**spectrophotometry, infrared** spectrophotometric measurements made in the infrared region of the electromagnetic spectrum

**spectrophotometry, NMR** SEE *nuclear magnetic resonance*

**spectrophotometry, ultraviolet** spectrophotometric measurements made in the ultraviolet region

**spend-down** under Medicaid, refers to a method by which an individual establishes Medicaid eligibility by reducing gross income through incurring medical expenses until net income (after medical expenses) meets Medicaid financial requirements

**spermaceti** hard, waxy substance obtained from the head of the sperm whale, *Physeter macrocephalus*; a source of almost pure cetyl palmitate

**spherical diameter equivalent** a quantitative expression used to estimate the diameter of an irregularly shaped particle of a given volume; the effective diameter of an irregularly shaped particle; used in pharmaceutical micrometric determinations

**sphingolipid** type of lipid derived from the amino alcohol, sphingol (sphingosine)

**sphingomyelin** a type of phospholipid that contains sphingosine; the 1-hydroxyl group of ceramide (a fatty acid derivative of sphingosine) is esterified to the phosphate group of phosphorylcholine or phosphorylethanolamine

**spike** that part of an intravenous fluid container that is connected to an administration set and through which the fluid goes to the patient

**spirit** an alcoholic or hydroalcoholic solution of a volatile substance; examples: camphor spirit, aromatic ammonia spirit

**spirit of camphor** SEE *camphor spirit*

**splenomegaly** abnormal enlargement of the spleen

**sponge** absorbent pad of folded gauze or cotton

**spongiopiline** thin cloth with sponge on one side and rubber on the other, intended for the absorption and topical application of hot liquids

**spontaneous changes** physical or chemical processes that occur with a release of energy

**sporadic typhus** SEE *Brill's disease*

**spore** inactive, resting, and resistant state of a bacterium

**spray** an aqueous or oleaginous solution of medicaments dispensed as coarse or finely divided droplets; may be administered topically or through the nasal-pharyngeal route; liquid minutely divided as by a jet of air or steam

**spray, congealing** the process of feeding a quantity of a melted semisolid pharmaceutical through an atomizer and exposing the droplets to a stream of cold air, resulting in instantaneous solidification as micron-sized spheres; similar to spray drying except that cold air is used instead of hot air

**spray, metered** nonpressurized dosage form consisting of valves that allow the dispensing of a specified quantity of spray upon each activation

**spray, suspension** liquid preparation containing solid particles dispersed in a liquid vehicle and in the form of coarse droplets or finely divided solids to be applied locally, usually to the nasal-pharyngeal tract, or topically to the skin

**spray dryer** machine that removes moisture from atomized particles almost instantaneously, using a controlled “solution feed” through a high rpm wheel (atomizer) and an upward flow of heated air; particles are dried as they fall through the heated air (fluidized bed) in an enclosed chamber and are collected in a container at the bottom of the chamber; moisture-laden vapor is vented up and out of the chamber

**spreading** an expression of the ability of a liquid to cover a surface; SEE *wetting*; *adsorption*

**sprue** a disease that is the result of malabsorption; marked by sore mouth, indigestion, diarrhea (frothy), and weight loss; synonym: thrush

**stab 1:** an immature form of polymorphonuclear leukocytes **2:** to pierce with a pointed object

**stability** an expression of the extent to which the physical and/or chemical nature of dosage forms and/or drug molecules remain the same; the opposite of instability or rapid degradation

**stability testing 1:** procedures used to determine the time through which a drug or drug product will remain active and acceptable for use under normal handling and storage conditions **2:** accelerated—subjection of drugs and/or dosage forms to exaggerated conditions of temperature, light, and humidity; example: temperature studies conducted at 37°C, 50°C, 60°C, or freezing, refrigerator, and room temperatures

**staff model HMO** a health care model that employs physicians to provide health care to its members; all premium and other revenues accrue to the HMO, which compensates physicians by salary and incentive programs

**staff of Asclepius** the rod and serpent symbol of medicine originating in ancient Babylonian and Grecian cultures

**stage filtration** separation-clarification process that utilizes a series of filter media to remove a wide range of particle sizes, with the larger particles removed first

**stakeholders** organizations or individuals who are impacted by a specific individual or service; in pharmaceutical care, the patients/recipients, em-

ployers, insurers, various health care professionals who refer or receive referrals, and others who have a stake in the success of the service

**standard benefit package** a set of specific health care benefits that would be offered by delivery systems

**standard class rate** (SCR) a base revenue requirement on a per member or per employee basis, multiplied by group demographic information to calculate monthly premium rates

**standard deviation** statistical parameter for a set of data calculated by taking the square root of the mean of the squared errors for large samples; for smaller samples, by taking the square root of the sum of the squared errors divided by the number of determinations, less one, in order to correct for bias; a measure of dispersion in a sample or population

**staphylococcal** relating to the *Staphylococcus* bacteria

**staple product** product for which there is a strong demand and is therefore subject to market and administered pricing

**starch sugar** SEE *dextrose*

**stare decisis** the legal doctrine of following decisions or principles rendered by previous court actions as long as such decisions do not contradict current principles of law

**stasis** slowing, stoppage, or decrease in the flow of fluid, usually blood, to an area of the body

**statement of financial position** SEE *balance sheet*

**state of hydration** refers to whether or not a drug is in the anhydrous amorphous state or the hydrated crystalline state; expressed as the number of water molecules that are a part of the salt crystal

**static-bed dryer** device used to remove moisture from a batch of pharmaceutical material by a process in which there is no movement of the particles being dried; example: a tray dryer; CONTRAST *agitation dryer*

**stationary phase** separable type of matter that does not move in a process; example: the adsorbent in column chromatography

**statistic** descriptive numerical measure that is computed from all elements within a given sample

**statute** a law that is enacted by a legislative body

**staxis** hemorrhage

**steady state** that point or time interval when a process such as drug absorption is fully initiated and ongoing; a concept used to simplify kinetic data analysis; a dynamic state of equilibrium; a state in a process when the

rate of formation and the rate of breakdown of a substance are equal; in pharmacokinetics, the maintenance of a constant blood level of a drug by keeping absorption rate equal to the overall elimination rate

**steam distillation** a means of purification of a volatile, immiscible organic compound at low temperatures using steam vapors to avoid decomposition of the compound; the volatilization and immediate condensation of a compound using steam vapors; compound volatilized from the distilling flask, and compound and steam collected in the receiver

**stearate** salt or ester derived from stearic acid and an alkali hydroxide or from stearic acid and an alcohol

**steatorrhea** very fatty feces, usually due to the malabsorption of fat

**Steele-Richardson-Olszewski disease** progressive supranuclear paralysis

**Stefan-Boltzman law** a quantitative expression of the emissive power of a “black body” (a perfect energy radiator); energy per unit time per unit area of a radiating surface of a “black body” proportional to its absolute temperature raised to the fourth power

**Stein-Leventhal syndrome** hirsutism, amenorrhea, and enlarged polycystic ovary

**stenosis** narrowing or partial closure of a valve or duct; example: pyloric stenosis

**step-care** a procedure that requires the use of less expensive interventions in patient treatment before going on to more expensive therapies

**stercolith** a fecal mass that can tear the intestinal wall; example: activated charcoal given for poisoning in excessive doses

**sterculia gum** dried gummy exudation from several species of sterculia plants (*Sterculia urens*); synonym: gum karaya

**stereoisomers** molecules that differ only by the spatial arrangement of their atoms or groups; examples: *cis-trans* (geometric) isomers and optical (mirror image) isomers

**sterile 1:** free from any living microorganisms or their spores **2:** absence of fertility; unable to bear young in the case of the female and inability to sire an offspring in the case of the male

**sterile product** pharmaceutical preparation (dosage form) prepared so that its sealed contents are devoid of any life-forms; examples: parenterals, irrigating preparations, ophthalmics

**Sterile Water for Injection, USP** water that has been sterilized and is packaged in a single-dose container no greater than one liter in size, and



which does not contain an antimicrobial agent; used to prepare parenteral medications

**sterility test** procedures to determine if a preparation contains living organisms or their spores; consult the *USP-NF* for descriptions of official testing methods

**sterilization** **1:** process for rendering a closed system (such as a parenteral dosage form) void of any life forms such as bacteria, molds, and fungi or their spores **2:** process for making a living organism incapable of reproducing **3:** process by which surfaces of instruments, work, or operating areas are rendered free of microorganisms

**Stern's layer** SEE *zeta-potential*

**steroid** cyclic organic compound that contains a cyclopentanoperhydrophenanthrene nucleus and is a part of the structure of adrenal corticoid hormones, sex hormones, cardiac glycosides, and cholesterol

**sterol** an alcohol derivative of a steroid; example: cholesterol

**sterol carrier protein** a cytoplasmic protein carrier for certain intermediates during cholesterol biosynthesis

**Stevens-Johnson syndrome** a severe form of erythema multiforme in which the lesions may involve oral and anogenital mucosa, the eyes, and viscera; characterized by headache, malaise, fever, arthralgia, and conjunctivitis

**stick** dosage form prepared in a relatively long, slender, and often cylindrical form

**sticking** the adhesion of a tablet or a tablet granulation to the wall of the die or the surface of the punches of a tablet press; an undesirable event in tablet compression

**Still's disease** juvenile-type rheumatoid arthritis

**stimulant** a drug that produces a temporary increase in the functional activity of an organ

**stock-to-sales ratio** ratio calculated by dividing beginning inventory by the amount of sales during a specified time period

**Stokes-Adams syndrome** slow or absent pulse, vertigo, syncope, and convulsions, usually as the result of heart block

**stoma** an opening, an orifice, or a mouth

**stomatitis** inflammation of the mouth

**-stomy** suffix referring to the artificial formation of an opening into an organ; example: colostomy

**stool** waste material of defecation; synonym: feces

**stool softener** a medicinal agent used to facilitate evacuation of the lower bowel by increasing its liquid contents through a surfactant action

**stop-loss insurance** insurance coverage taken out by a health plan or self-funded employer to provide protection from losses resulting from claims greater than a specific dollar amount per covered person per year

**strain gauge** device used to measure forces involved in a compression process; example: a tableting strain gauge

**straining** the passing of a liquid through a woven filter medium or cotton plug to remove large particulate matter; synonym: coarse filtration

**strength** refers to quantity or amount of active ingredient in a preparation or the degree or extent of an intrinsic property of a substance

**streptococcal** relating to or caused by streptococci

**stretch marks (striae)** visual bands or lines that form on the abdominal skin; caused by physical expansion of the abdominal skin; common in pregnant women in the latter stages of pregnancy

**stria** streak or line

**striated muscle** SEE *skeletal muscle*

**strictness effect** the practice of giving consistently low ratings

**stridor** high-pitched, noisy respiration

**strip packaging machine** prepackaging device that places unit doses of a drug inside a series of flexible containers

**stroke** paroxysm or attack usually associated with a cerebral vascular accident caused by either a thrombus or a hemorrhage

**structural formula** a chemical formula that shows the arrangement of the various atoms in a molecule and the nature of the bonds connecting them

**structural gene** a gene that codes for the synthesis of a polypeptide or a polynucleotide with a nonregulatory function (e.g., mRNA, rRNA, or tRNA)

**structural isomers** SEE *positional isomers*

**structure-activity relationships** relationships between chemical structures of molecules and their pharmacological and/or biological activities

**strychnine** major alkaloid of *Strychnos nux-vomica*, which is extremely toxic to the central nervous system (CNS) and acts as a powerful CNS stimulant; the classic poisoning symptoms produced by strychnine are an arched back and sardonic grin

**styptic 1:** refers to the constricting of a blood vessel or the stopping of a hemorrhage by an astringent action **2:** an agent that stops hemorrhage

**styptic pencil** solid pencil made of fused potassium alum and potassium nitrate; used to stop bleeding from minor cuts

**sub-** prefix meaning below, under, or less than

**subchapter "S" corporation** legal form of organization for small businesses that affords the firm the liability protection of a corporation and the tax structure of a sole proprietorship

**subcoating** application of a series of layers of hydrophilic colloid to round the sharper edges of tablets in preparation for grossing (a subsequent series of coating steps)

**subcutaneous** the alveolar region beneath the skin

**subcutaneous injection** the process of administering a medication into the area beneath the surface of the skin (the subcutaneous layer)

**subjective data** data that cannot be measured or quantified; example: patient's description of pain symptoms

**sublimation** process in which a solid is converted to a vapor directly from the solid phase without passing through the liquid phase and is subsequently recovered as the solid by condensing the vapor directly on to a cold surface; used primarily as a means of purification; example: sublimed sulfur

**sublingual** under the tongue

**sublingual administration** method of drug administration in which a solid dosage form (usually a soluble tablet) is placed under the tongue where the drug is absorbed into the capillaries of the oral mucosa

**sublingual tablet** SEE *tablet, compressed*

**subrogation** a procedure under which an insurance company can recover from third parties all or some proportionate part of benefits paid to an insured

**subsalt** a salt in which oxygen or hydroxide is present; example: bismuth subcarbonate

**subscriber** the person responsible for payment of premiums or whose employment is the basis for eligibility for membership in an HMO or other health plan

**subscriber contract** a written agreement describing the individual's health care policy; also called "subscriber certificate" or "member certificate"

**subscription** prescription directions to the pharmacist, such as to make an ointment or to fill capsules; SEE ALSO *prescription*

**subsieve sizer** an instrument used to determine the particle size of a particulate solid based on a measure of the ability of a gas to move through the particle bed as compared to a known or standard particle bed

**substance abuse** inappropriate and deleterious use of any chemical agent or device to produce some desired mental effect; examples: glue sniffing, any form of drug or alcohol misuse

**substitution 1:** replacement of a drug by its generic equivalent **2:** dispensing another drug in place of the one prescribed

**substrate** the reactant in a chemical reaction that binds to an enzyme active site and is converted to a product

**subunit** a polypeptide component of an oligomeric protein

**successive differentiation** calculation of the first, second, etc., derivative of an algebraic expression, the second derivative being a means of determining maxima and minima values on a curve; the second derivative of space (distance) versus time is acceleration

**sucrose** a sweet disaccharide that occurs naturally in most plants; the sugar obtained from sugar cane and sugar beets; hydrolysis forms equal quantities of glucose and fructose; SEE *invert sugar*

**sudden infant death syndrome** (SIDS) unexplained death of a baby, usually occurring in the first few months of life; synonym: crib death

**sudorific** an agent that causes sweating

**sugar** the basic unit of carbohydrates; a class of biomolecule containing hydroxyl groups and an aldehyde group or ketone group

**sugarcoated tablet** a tablet covered with dried and polished layers of sucrose

**sugarcoating** the process of applying a series of syrupy coats to a compressed tablet for enhancing appearance and masking an unpleasant taste

**sugar starch** synonym for powdered dextrose or glucose

**sulcus 1:** groove, usually referring to the depressions on the surface of the brain, separated by gyri **2:** crevice between the gum and tooth

**sulfanemia** anemia that results from use of sulfonamides

**sulfonamide 1:** a condensation product of a sulfonic acid with a primary or a secondary amine **2:** a group of bacteriostatic agents that inhibit the biosynthesis of folic acid in microorganisms; examples: an amide of sulfanilic acid (sulfanilamide), derivatives of the amide of *p*-aminosul-

fonic acid (sulfisoxazole), also nitrogen atoms of urea (used as hypoglycemic agents)

**sulfurated potash** yellowish-brown lumps containing a mixture of potassium thiosulfate and potassium polysulfides (chiefly trisulfide); synonym: liver of sulfur

**summary plan description** a description of the entire benefits package available to an employee as required to be given to persons covered by self-funded plans

**sun protection factor** (SPF) a rating scale for any of several substances that block the harmful ultraviolet rays of the sun and are useful in preventing sunburn

**sunscreen** product that protects exposed areas of the body from the harmful radiation of the sun

**superalimentation** to feed excessively; sometimes used to treat patients having a wasting disease

**superego** in Freudian theory, part of the personality that represents the conscience; SEE ALSO *ego*; *id*

**superheated steam** water vapor that is at a higher temperature than that required to saturate with steam a given volume at the same pressure

**superinfection** infection that can occur during antibiotic therapy as the result of an overgrowth of a microorganism resistant to the antibiotic

**supersaturate** to cause a solution to contain more of a solute than it would normally hold at a given temperature; to form a metastable solution

**superscription** Rx, the symbol for a prescription and generally understood to be a contraction of the Latin verb *recipe*, meaning "take thou"; SEE ALSO *prescription*

**supine** lying on the back

**supplemental services** optional services that a health plan may provide in addition to its basic health services

**suppository** a solid body (dosage form) that is prepared in various weights and shapes and is suitable for insertion into a body cavity (usually the rectum or vagina) where it melts, dissolves, or disintegrates to produce a desired medicinal effect

**suppository, extended release** drug delivery system in the form of a suppository that allows at least a reduction in dosing frequency

**suppuration** formation of pus

**supra-** prefix meaning above or over

**surface active agent** SEE *surfactant*

**surface energy** SEE *surface tension*

**surface filtration** pharmaceutical process of separating a usable solid material called a “cake” from a liquified dispersion medium by use of a flat filter and a support system

**surface free energy** SEE *surface tension*

**surface tension** a natural result of unequal attractive forces between molecules near the interface of a substance; used to express air-substance interfacial tension; force per unit length required to break a surface; energy required to expand a surface one area unit; synonym: surface energy

**surface-shape factor** quantitative expression relating the total surface area(s) of a given quantity of a drug powder to the sum of the products of the frequency (or number) of particles times their projected diameters squared; the more irregular the shape the larger the value of this factor; a measure of irregularity of shape

**surfactant** surface active agent; substance that reduces surface and interfacial tension in small concentrations; examples: emulsifiers, defloculants, suspending oils, dispersants, soaps, detergents

**surgeon** a physician who specializes in surgical treatment of illnesses or malfunctions

**surgi-center** SEE *freestanding outpatient surgical center*

**suspension** a preparation of finely divided undissolved drugs dispersed in a liquid medium; used to provide insoluble drugs in a liquid dosage form

**suspension, extended release** liquid preparation consisting of solid particles dispersed throughout a liquid phase in which the particles are not soluble; formulated in a manner to allow at least a reduction in dosing frequency as compared to that drug presented as a conventional dosage form (e.g., a solution or a prompt drug-releasing, conventional solid dosage form)

**sustained action** a dosage form designed so that the initial dose of a drug is absorbed rapidly followed by the maintenance of an effective plasma concentration through a continual release of the drug over a period of time

**sustained release** dosage form (usually a tablet or capsule) in which release of the drug is extended over a period of time; contrasted with a tablet that releases the entire dose at one time

**suture 1:** act of stitching a wound together **2:** material used to stitch a wound together; strand or fiber used to hold wound edges in apposition

during healing **3:** joint that is held very closely together, as in the bones of the skull

**swab** wad of absorbent material usually wound around one end of a small stick and used for applying medication or for removing material from an area

**Swain, Robert L.** (1887-1963) editor of *Drug Topics* from 1939-1960; trained as an attorney; served on the Maryland Board of Pharmacy and was the founding chair of the National Conference of Law Enforcement Officials; APhA president from 1933-1934; Remington Honor Medal recipient in 1940

**sweating** the secretion of fluids from the sweat glands; synonym: perspiring

**sweet oil** synonym for olive oil

**symbiosis** the living together or close association of two dissimilar organisms

**syrup** oral solution containing high concentrations of sucrose or other sugars; also, any other liquid dosage form prepared in a sweet and viscid vehicle, including oral suspensions

**system 1:** an assembly of methods, procedures, or techniques united by regulated interaction to form an organized whole **2:** an organized collection of people, machines, and methods required to accomplish a set of specific functions

**systematic chemical name** a name for a compound recognized by the International Union of Pure and Applied Chemistry, Chemical Abstracts Service, or other reference works and derived by using the nomenclature rules of the IUPAC

**systematic, totally integrated, individualized, person-centered health care** a term referring to total health care provided based on needs of individual consumers; under STIPCH 2.0, all health care (including preventative care) coordinated with every provider having access to complete electronic records that would list not only medical data but sociologic information

**systemic** affecting the whole body

**SI** Le Système International d'Unités; SEE *International System of Units*

**systole** period of contraction, usually refers to contraction of the ventricles of the heart

**systolic** measurement of the maximum blood pressure in the arteries; top of the two blood pressure numbers



**T<sub>4</sub>** SEE *thyroxine*

**tablespoonful** household measurement equivalent to about 15 ml or 4 fluid drams

**tablet** solid dosage form containing medicinal substances with or without suitable diluents

**tablet, buccal** small tablet designed to be placed in the buccal pouch where the drug is absorbed directly through the oral mucosa

**tablet, chewable** solid dosage form containing medicinal substances with or without suitable diluents that is intended to be chewed, producing a pleasant-tasting residue in the oral cavity that is easily swallowed and does not leave a bitter or unpleasant aftertaste

**tablet, coated** solid dosage form that contains medicinal substances with or without suitable diluents and is covered with a designated coating

**tablet, compressed** solid body prepared in various shapes and sizes made by compressing one or more drugs in combination with diluents, excipients, binders, lubricants, and other additives; few tablets consist only of a drug

**tablet, delayed release** solid dosage form that releases a drug (or drugs) at a time other than promptly after administration; example: enteric-coated articles

**tablet, delayed-release particles** solid dosage form containing a conglomerate of medicinal particles that have been covered with a coating which releases a drug (or drugs) at a time other than promptly after administration; example: enteric-coated articles

**tablet, effervescent** solid dosage form containing, in addition to active ingredients, mixtures of acids (e.g., citric acid, tartaric acid) and sodium bicarbonate, which release carbon dioxide when dissolved in water; intended to be dissolved or dispersed in water before administration

**tablet, enteric coated** a tablet that has a special coating which will not dissolve in the stomach but will dissolve in the intestines; used for drugs that are degraded by gastric juices, for those irritating to the stomach, or for those where absorption in the intestines is critical to drug action

**tablet, extended release** solid dosage form containing a drug that allows at least a reduction in dosing frequency as compared to a drug presented in conventional dosage form

**tablet, film coated** solid dosage form that contains medicinal substances with or without suitable diluents and is coated with a thin layer of a water-



insoluble or water-soluble polymer, utilized to improve appearance, mask unpleasant taste, and/or protect the tablet

**tablet, film coated, extended release** solid dosage form that contains medicinal substances with or without suitable diluents and is coated with a thin layer of a water-insoluble or water-soluble polymer; formulated in such manner as to make the contained medicament available over an extended period of time following ingestion

**tablet, hypodermic** very small tablet made of a drug and usually recrystallized lactose under aseptic conditions; used to make a solution that is injected under the skin

**tablet, multilayer** solid dosage form containing medicinal substances that have been compressed to form a multiple-layered tablet or a tablet-within-a-tablet

**tablet, multilayer, extended release** solid dosage form containing medicinal substances that have been compressed to form a multiple-layered tablet or a tablet-within-a-tablet (the inner tablet being the core and the outer portion being the shell), which is then covered in a designated coating; formulated in such manner as to allow at least a reduction in dosing frequency as compared to a drug presented as a conventional dosage form

**tablet, orally disintegrating** solid dosage form containing medicinal substances that disintegrates rapidly, usually within a matter of seconds, when placed upon the tongue

**tablet, sintered** may be dissolved in mouth or swallowed whole

**tablet, soluble** solid dosage form that contains medicinal substances with or without suitable diluents and possesses the ability to dissolve in fluids

**tablet, solution** tablet designed to be added to a given amount of water to produce a solution of fixed concentration; also called "dispensing tablet"

**tablet, sublingual** small tablet designed to be placed beneath the tongue where the drug is rapidly absorbed directly through the oral mucosa

**tablet, sugarcoated** solid dosage form that contains medicinal substances with or without suitable diluents and is coated with a colored or an uncolored water-soluble sugar

**tablet, vaginal** usually a pear-shaped or ovoid tablet made by compression and intended to dissolve in the vaginal cavity for a medicinal effect

**tablet coating 1:** film or layer of substance that covers the compressed tablet **2:** process of covering a compressed tablet; SEE ALSO *coating; sugarcoated tablet; sugarcoating; enteric coating; film coating; compressed-coated tablet*

**tableting machine** mechanical apparatus designed to receive granular drug materials and compress discrete amounts into solid doses at a very rapid rate; single punch—one that utilizes only one feeding hopper, one die, and one set of punches (upper and lower); rotary—one that has multiple punches and dies in a circular arrangement for compressing tablets at a fast rate

**tablet triturate** small, usually cylindrical tablet made by molding or forcing dampened powder under low pressure into a series of plate cavities; also called “molded tablet”

**tachy-** prefix meaning an increased rate; example: tachycardia

**tachycardia** unusually rapid heartbeat; typically over 100 beats per minute

**tachypnea** a state of rapid respiration

**take-home medication** medicine dispensed by a hospital pharmacy for an inpatient to take home when discharged by the physician; usually a one- or two-day supply

**Takeru Higuchi Research Prize** established by the American Pharmacists Association in 1981 to honor an international pharmaceutical scientist for sustained accomplishments

**talc** native, hydrous, magnesium silicate; used in dusting powders and as a filter medium; synonyms: talcum, French chalk

**tamper-evident packaging** a drug container sealed and/or wrapped in such a manner that it would be readily noticeable by a potential buyer if it had been previously opened; usually double or triple sealed

**tamper-resistant packaging** a drug container having an indicator or barrier to entry that, if breached or missing, can reasonably be expected to provide visible evidence to consumers that tampering has occurred; to prevent the substitution of the tamper-resistant feature after tampering, the indicator or barrier to entry is required to be distinctive by design or must employ an identifying characteristic

**tampon** plug made of cotton, sponge, or oakum variously used in surgery to plug the nose, vagina, etc., for the control of hemorrhage or the absorption of secretions

**tamponade** pathological compression of an organ; example: cardiac tamponade

**tangible assets** assets that have physical form and qualities; more generally, those items on which a definite value can be placed

**tannic acid** substance obtained from the bark and fruit of various trees and shrubs; usually obtained from Turkish or Chinese nutgalls that are produced on the twigs of certain oak trees; used as an astringent and protein precipitant; synonym: tannin

**tannin** SEE *tannic acid*

**tape** narrow woven fabric, or a narrow extruded synthetic (such as plastic), usually with an adhesive on one or both sides; SEE ALSO *adhesive tape*

**tapeworm** parasitic intestinal worm possessing a head and a neck followed by a chain of segments in a ribbon often many feet long; synonyms: cestodes, *Taenia solium*, *Taenia saginata*

**tar camphor** old colloquial name for naphthalene (mothballs)

**tardive** a late-appearing disorder; example: tardive dyskinesia (a delayed adverse response caused by certain antipsychotics)

**target cell** a cell that responds to the binding of a hormone or growth factor

**target drug delivery system** dosage form designed to deliver a drug more accurately into a specific body area or organ where it elicits its therapeutic response; example: red blood cell loading

**targeting** process that directs newly synthesized proteins to their correct destinations

**target market** technique of identifying specific customer audience for a service or product; used to determine to whom to market a service/product

**target marketing** process of segmenting the market into its logical submarkets that differ in their requirements, buying habits, or other critical characteristics

**tartar** hardened, rocklike concretions that appear on the teeth if the patient's hygiene is poor and plaque is not removed at least once daily

**tartar emetic** antimony potassium tartrate; used in veterinary medicine as an antischistosomal, expectorant, and ruminatoric; also used as a mordant in textile and leather industries; has been used to denature alcohol

**tautomer** an isomer that differs from another in the location of a hydrogen atom and a double bond; example: keto-enol tautomers

**tautomerism** presence of a molecule in two chemical forms existing in equilibrium and normally not separable

**tax credit** a legitimate reduction in the income tax liability of an individual or a firm

**Tax Equity and Fiscal Responsibility Act of 1982** the federal law that created the current risk and cost contract provisions under which health plans contract with CMS (formerly HCFA) and which defined the primary and secondary coverage responsibilities of the Medicare program

**T cell** a T lymphocyte; white blood cell that bears antibody-like molecules on its surface; binds to and destroys foreign cells in cellular immunity

**teaching hospital** hospital owned by or affiliated with a university that provides an environment for education of health personnel

**teaspoonful** (tsp or fl  $\frac{1}{2}$ ) household measure equivalent to about 5 ml (household approximate) or 1 fluid dram (accurate)

**technetium 99m generator** device that consists of an alumina column on which molybdenum 99 (a radioactive element) is adsorbed; molybdenum decays to technetium 99m, which is eluted and used to prepare radio-labeled diagnostic preparations

**teel oil** SEE *sesame oil*

**telemedicine** the ability to use centralized medical expertise to provide care to patients in rural areas, and for centralized physicians to speak and share images with rural doctors through two-way visual and audio networks

**teleradiography** process of taking X-rays of a body part with the source of X-rays placed six to seven feet away from the patient

**telomere** structures at the ends of chromosomes that buffer the loss of critical coding sequences after a round of DNA replication

**temperature** heat intensity in a given system (or area) expressed in degrees centigrade (Celsius) or degrees Kelvin (absolute), or degrees Fahrenheit and measured by using one of several kinds of thermometers; a property that is independent of the quantity of material in the system

**temperature control** process of maintaining a reasonably constant environmental temperature by use of heating or cooling elements and thermostatic control devices

**temperature control, proportional** thermostatic system that supplies heating or cooling to maintain a constant temperature control point with a minimal deviation range; a more infinitesimal differential in temperature is possible with a proportional control system than that obtained with a two-position control

**temperature control, two-position** thermostatic device that can be set for a narrow range of temperature control with an “on” and an “off” point to switches controlling the heating elements

**Temporary Assistance to Needy Families (TANF)** federal-state welfare program authorized by the 1996 Welfare Reform Act that replaces Aid to Families with Dependent Children

**tendinitis or tendonitis** inflammation of the tendon; note: the preferred spelling, rather than tendonitis

**tenosynovitis** inflammation of a tendon sheath

**teratogen** an agent that causes congenital defects (an abnormal development of an embryo); usually refers to a chemical, but may be a virus, radiation, or other causes

**terminal** an individual’s clinical condition with a disease state for which the prognosis is death; example: terminal cancer

**terminal sterilization** sterilization of the finished, sealed product to render it devoid of any life forms

**termination** phase in translation in which newly synthesized polypeptides are released from the ribosome

**termination date** the date that a group contract expires; the date that a subscriber and/or covered person ceases to be eligible

**terpene** a ten-carbon naturally occurring hydrocarbon consisting of two isoprene units connected in “head-to-tail” fashion; terpene derivatives are used in perfumes and flavors

**tertiary alcohol** SEE *alcohol*

**tertiary amine** SEE *amine*

**tertiary care** the highest level of medical care characterized by the availability of specialists and sophisticated diagnostic and treatment facilities; typically given at a university-based hospital

**tertiary structure** the globular, three-dimensional structure of a polypeptide that results from folding the regions of secondary structure; folding results from interactions of the side chains or R groups of the amino acid residues

**tetanus** disease caused by *Clostridium tetani* in which affected voluntary muscles are contracted in a painful tonic condition

**tetany** syndrome characterized by intermittent tonic spasms of muscle groups

**tetra-** prefix meaning four

**tetracyclines** a group of broad-spectrum antibiotics that exert their anti-infective action on bacteria by inhibiting protein biosynthesis; composed of four fused rings that bear various phenolic and alcoholic hydroxyl, amide, amine, and alkyl substituents

**tetraiodothyronine** SEE *thyroxine*

**thalidomide** sedative marketed in the early 1960s that caused profound deformities in babies when taken by pregnant women; largely responsible for the Kefauver-Harris Amendment to the Food, Drug, and Cosmetic Act

**theobroma oil** SEE *cocoa butter*

**theory of planned behavior** an extension of the theory of reasoned action that addresses an individual's degree of control over a behavior; SEE *theory of reasoned action*

**theory of reasoned action** hypothesizes that two factors lead to an individual's behavioral intentions: (1) the attitude toward performing the behavior and (2) the subjective norm associated with the behavior; behavioral intentions are predictive of behavioral actions

**theory X** management philosophy which holds that employees inherently dislike work, are not ambitious, have little desire for responsibility, and prefer to be directed

**theory Y** management philosophy which holds that work efforts are natural behavior if conditions are favorable, that people will learn to accept and even seek responsibility under proper conditions, and that a person's commitment to goals depends upon the rewards associated with his/her achievement

**therapeutic 1:** pertaining to the medicinal or healing properties of a drug or treatment regimen **2:** an agent or drug used to treat a disease

**therapeutic alternate** a drug product containing a different therapeutic moiety from the product prescribed, but which is of the same pharmacological class and/or therapeutic class and can be expected to have similar effects when administered to patients in therapeutically equivalent doses

**therapeutic duplication** patient inappropriately receiving two medications with similar actions; may occur when medications are prescribed by different physicians

**therapeutic effect** refers to the manner in which a drug acts in the body to influence the process of healing or to treat a disease

**therapeutic equivalent** a chemical equivalent that, when administered at the same dosage, will provide the same therapeutic effect, as measured by the control of a sign, symptom, or disease

**therapeutic goal** specific outcome hoped to be achieved from a therapy

**therapeutic index** refers to the quantitative comparison of a therapeutic effect and an untoward effect of a drug in the body; the ratio of the maximum tolerated dose of a drug to its minimum curative dose

**therapeutic relationship** the relationship between a health professional and patient that develops when they form a covenant/promise to work together to ensure that the patient achieves positive outcomes from the drug therapy

**therapeutic response** SEE *biological response*

**therapeutics** the study of the application of remedies to the treatment of a disease; synonym: therapy

**therapeutic substitution** the practice of dispensing a therapeutic alternative for the one prescribed; usually requires the prescriber's authorization before the substitution may occur in an outpatient setting

**therapeutic systems** active drug in a delivery module consisting of a drug reservoir, a rate controller, and an energy source to bring about release of drug molecules

**theriaca** **1:** antidote against poisons **2:** a cure-all

**therm-** prefix meaning heat; same as thermo-

**thermal analysis** measurement of physical effects produced by controlled heat changes; examples: differential scanning calorimeter (DSC), differential thermal analysis (DTA), thermogravimetric analysis, thermochemical analysis

**thermal death time** time required to kill all spores of a given microorganism under a given set of conditions in a sterilization process

**thermo-** prefix meaning heat; same as therm-

**thermocouple** device that converts heat energy into electrical energy; device used to measure temperature by heat-produced changes in electromotive force (emf) through two dissimilar metals welded together; SEE *thermometer*

**thermodynamics** the science of quantitative relationships between heat and other forms of energy (chemical, electrical, mechanical, radiant) associated with a system under observation and/or experimentation; the study of energy and its interconversion; based upon three laws: (first law) energy can be converted from one form to another, but it cannot be created or destroyed; (second law) the energy of a system will spontaneously move in a direction to accomplish a lower "free energy" state; example: heat moves from a hot body to an adjacent cold body until their temperatures

are equal; (third law) the entropy (a measure of molecular disorder) is zero in a substance at absolute zero ( $0^{\circ}$  Kelvin)

**thermolabile** unstable when heated

**thermolabile solution** a solution that cannot be thermally sterilized

**thermoluminescent dosimeter** an instrument that will emit light if it is heated after having been exposed to radiation

**thermometer** a device for measuring temperature

**thermometer, basal** device for determining when a female is ovulating

**thermometer, bimetallic** temperature-measuring device that consists of two dissimilar sheet metals attached to each other, each of which exhibits differential expansion when heat is added, which is then transferred to points on a graduated dial

**thermometer, liquid-in-glass** device used to measure temperature based on liquid expansion through a capillary in an enclosed calibrated glass bulb

**thermometer, otic (tympanic)** thermometer that is inserted into the ear, detecting the patient's temperature by reading the patient's tympanic membrane

**thermometer, pressure spring** pressure-sensitive temperature-measuring device used in constant volume systems; consists of a connecting bulb, capillary, and a coiled spring containing a bimetallic compound that causes the spring to expand or contract with temperature change; may be used for containers that are remote from the graduated pointer

**thermometer, resistance** an electrical device used to measure temperature based on changes in metallic resistance to the flow of an electrical current with changes in temperature

**thermotherapy** use of heat to help treat pain, applied to several body parts (e.g., back, sore muscles, abdomen) through the use of any one of several modalities (e.g., therapeutic heat wrap, heating pads, hot water bottles)

**thiazide** refers to a class of sulfonamide diuretics whose actions occur at the early distal convoluting tubules of the kidney

**thin-layer chromatography** (TLC) chromatographic method relying on the separation of substances in solution by their differential migrations over an adsorbent that is spread in a thin layer onto glass, plastic, or similar backing

**third law of thermodynamics** SEE *thermodynamics*



**third-party administrator** an independent entity that administers group benefits, claims, and administration for a self-insured company/group

**third-party payer** an organization that pays for or underwrites coverage for health care expenses or another entity, usually an employer

**third-party payment** reimbursement for health services to a patient paid by an insurance company, governmental agency, or an employer; payment other than directly by the patient

**thixotropic flow** characteristic flow of certain liquids that form a structured gel when undisturbed and exhibit pseudoplastic flow as "shearing stress" is increased and Newtonian (linear) flow as "shearing stress" is decreased; SEE *thixotropy*

**thixotropy** the property of a liquid to change into a gel on standing and for the gel to transform into a liquid again on shaking; example: bentonite magma

**thoracic surgeon** a physician who specializes in performing surgery on the chest

**three-compartmental model** concept of the body in which a central compartment communicates with two noninterconnected peripheral compartments (shallow and deep); the distribution of a drug into the shallow compartment is at a faster rate than that into the deep compartment

**threonine**  $\alpha$ -amino acid commonly found in proteins; one of ten essential amino acids

**thrombo-** prefix pertaining to a thrombus or blood clot

**thromboangiitis obliterans** SEE *Buerger's disease*

**thrombocytopenia** an abnormal decrease in the number of blood platelets (thrombocytes); synonym: thrombopenia

**thrombocytopenia purpura** any form of purpura in which the platelet count is decreased, occurring as a primary disease or as a consequence of a primary hematologic disorder

**thrombosis** the formation of a solid mass (blood clot) in the heart or a blood vessel; such formation may cause a blockade of the vessels and thus produce tissue damage

**thromboxanes** fatty acid congeners of the prostaglandins that are involved in the aggregation of platelets; aspirin, indomethacin, and related drugs interfere with the formation of both thromboxanes and prostaglandins, thus causing bleeding tendencies

**thrombus** a blood clot formed within the heart or in a blood vessel; synonym: internal clot

**thrush** candidiasis of the mouth, as evidenced by white plaques or spots in the mouth; synonym: sprue

**thyro-** prefix meaning thyroid gland

**thyrocalcitonin** SEE *calcitonin*

**thyrotropin-releasing hormone** biochemical secretion from the hypothalamus into the blood that causes the pituitary gland to secrete thyroid-stimulating hormone

**thyroxine or thyroxin** hormone produced by the thyroid gland that affects the overall metabolic rate of the body; synonyms: tetraiodothyronine, T<sub>4</sub>

**Tice, Linwood Franklin** (1909-1996) proponent of student involvement in the workings of the American Pharmacists Association; Remington Honor Medal recipient in 1971

**tight container** SEE *container, tight*

**time dependence** expression indicating that there is an optimum time (or time period) during which a process should take place

**tincture** an alcoholic or hydroalcoholic solution prepared from vegetable materials or chemical substances; may be prepared by one of several extraction methods or by a dissolution method

**tinnitus** a ringing or a roaring in the ears

**tip seal** the closure of an ampule accomplished by melting a bead of glass at the neck of the ampule

**tissue localization** selective uptake of drugs in a particular body tissue

**titration** procedure for determining the quantity of substance present by comparing the volume of a standard solution that reacts with the substance

**tolerance 1:** ability to withstand higher and higher doses of a medication without suffering ill effects; the decreasing therapeutic effect of a set dose of medication **2:** allowable deviation from a standard

**tomography** a diagnostic imaging technique in which the shadows of structures behind and before the area under examination are not shown; examples: CAT scan, PET scan

**tonicity** colligative property involving the osmotic pressure of body fluids; SEE *isotonicity; hypertonic solution; hypotonic solution*

**tool for evaluation of documentation** tool to evaluate completeness of a pharmacist's documentation and the quality of pharmaceutical care provided

**tophus** urate deposit found in the joints of patients who have gout

**topical** local, pertaining to a definite area; usually refers to the surface of the skin

**topical administration** the process of applying a medication to a localized surface of the body

**tort** a wrongful civil act committed by one party against another (except in the provisions of a contract)

**tortuous** twisting, winding, or convoluting

**total enteral nutrition** a non sequitur, in that virtually every patient receives total enteral nutrition through eating orally

**total parenteral nutrition** the provision of all the required foods to the body by slowly administering protein hydrolysates and other nutrients through an intra-arterial catheter to the vena cava; differs from hyperalimentation by the presence of a lipid emulsion in the fluid

**total pharmacologic activity** total area under a pharmacologic response versus time curve

**total quality management** (TQM) a continuous quality improvement management system directed from the top, but empowering employees and focusing on systemic, not individual, employee problems; SEE *continuous quality improvement*

**total system clearance** refers to the overall elimination of a drug or a drug metabolite from the body; the sum of all the separate clearances; synonym: whole body clearance

**toxemia** poisonous bacterial products formed at a local site and absorbed and distributed by the blood throughout the body, thus producing generalized symptoms; the presence of toxic substances in the blood

**toxic** pertaining to or caused by poison

**toxico-** prefix meaning poison

**toxicology** science or study of adverse effects of chemicals on living organisms

**toxin** poisonous substance; poisonous bacterial product that acts as an antigen and causes the body to develop specific antibodies to combat their presence; toxin injections generally used for diagnostic purposes to determine the susceptibility of the patient to the disease caused by the toxin-containing organism; example: tuberculin

**toxin-antitoxin** a mixture of toxin and antitoxin in nearly equal portions; example: diphtheria toxin-antitoxin; SEE *toxin*; *antitoxin*

**toxoid** a toxin that has been treated by heat or chemical processes to destroy its harmful properties without destroying its ability to stimulate antibody production; example: tetanus toxoid

**trace mineral** a naturally occurring inorganic ion or compound that may be essential (in very small quantities) for metabolic processes; often provided as a supplement in a multiple vitamin formula

**tracer** radioactive or stable isotope, the movement or progress of which can be followed with a detector

**trade area** defined geographic area from which customers are drawn

**trade discount** price reduction extended to a retailer for performing certain retailing or marketing functions connected with the sale of the product; example: a wholesaler sells to a pharmacy a product below the normal price as compensation for the pharmacy's activities in selling the product; synonym: functional discount

**trademark** name, symbol, design, work, or device used to distinguish one's product from others; protected by law and may only be used by or with the permission of the owner

**trade name 1:** name by which an article, process, or service is designated in trade **2:** name given by a manufacturer to designate a proprietary article, sometimes having the status of a trademark or a copyrighted and patented proprietary name; synonym: brand name

**traffic flow** pathway of least resistance in moving through the pharmacy; typical pathway followed by customers

**tragacanth gum** vegetable gum used as a suspending agent in some pharmaceutical preparations

**tranquilizer** a drug capable of calming an animal or a person without sedation and drowsiness; SEE *major tranquilizer*; *minor tranquilizer*

**trans- 1:** prefix meaning across or through **2:** (italicized) designation of a geometric isomer in which similar substituents are placed across double bonds or ring systems from one another

**transacetylation** chemical reaction in which an acetyl radical is transferred from one molecule to another

**transactions** number of individual activities of a business, usually measured in dollars

**transamination** a reaction in which an amino group is transferred from one molecule to another

**transcription** process in which the genetic information in DNA is used to specify the order of bases in the synthesis of mRNA that is complementary but not identical to that of DNA

**transcription factor** proteins that regulate or initiate RNA synthesis by binding to specific DNA sequences called response elements

**transcript localization** the binding of mRNAs to certain cellular structures within cytoplasm so that protein gradients can be created within a cell

**transdermal delivery system** dosage form, usually a patch, designed to deliver a medication through the skin

**transduction** the transfer of genes between bacteria by bacteriophages

**transfection** a mechanism by which a bacteriophage inadvertently transfers bacterial chromosome or plasmid sequences to a new host cell

**transferase** enzyme that catalyzes the transfer of a group from one molecule to another; one of six classes of enzymes recognized by the Enzyme Commission of the International Union of Biochemistry (IUB); examples: aminotransferase, acetyltransferase

**transference number** that fraction of total current carried by the cation or the anion in electrolysis

**transfer RNA** a small RNA that binds to an amino acid and delivers it to the ribosome for incorporation into a polypeptide chain during translation

**transferrin** serum  $\beta$ -globulin that binds and serves to transport iron

**transformation** occurs when naked DNA fragments enter a bacterial cell and are introduced into the bacterial genome

**transfusion** clinical procedure in which blood from one individual is transferred to another individual

**transgenic animal** an animal that results when recombinant DNA sequences are microinjected into a fertilized ovum

**transition mutation** a mutation that involves the substitution of a different purine base for the purine present at the site of the mutation or the substitution of a different pyrimidine for the normal pyrimidine

**transition state theory** concept of a chemical reaction based on specific intermediate molecular reactants and product components and their probability of engaging in a reaction; process rate theory; concept in which short-lived reaction intermediates are formed during the course of a reaction; synonym: absolute rate theory

**transit time** length of time that a drug stays in a part of the GI tract; example: stomach emptying time

**translation** process whereby the nucleotide sequence in mRNA directs the order of insertion of each amino acid during protein biosynthesis

**translocation** movement of the ribosome along the mRNA during translation

**transmittance** extent to which incident light will pass through a solution containing a specific substance; SEE *Beer's law*

**transpeptidase** enzyme that catalyzes the cross-linking of linear peptidoglycan polymers of the cell wall in bacteria; enzyme that catalyzes the cleaving of a peptide bond to one amino acid and reforms it with another amino acid

**transport, facilitated** the process by which a solute molecule or ion is transported across a membrane by a carrier, but not against a concentration gradient

**transport mechanism, specialized** active transport; process by which a solute molecule or ion is moved across a membrane against a concentration gradient (from a solution of lower concentration to one of higher concentration)

**transport number** SEE *transference number*

**transposition** the movement of a piece of DNA from one site in a genome to another

**transtheoretical model of change** theory developed by Prochaska to explain why attempts to change behavior failed or succeeded; theorizes that patients progress through five stages related to changes in behavior: (1) precontemplation, (2) contemplation, (3) preparation, (4) action, and (5) maintenance

**transudate** fluid that has passed through a membrane; has a low protein and cell content; usually associated with noninflammatory edema

**transversion mutation** type of point mutation in which a pyrimidine is substituted for a purine or vice versa; SEE ALSO *point mutation, mutation*

**trapezoidal rule** method for estimating integrals (areas under absorption curves) by adding the respective areas of discrete trapezoids; used for estimating many other pharmacokinetic integrals to determine quantity and/or extent of occurrence of a process

**trauma** injury that is physical and/or psychological in nature

**tray dryer** heated chamber designed to remove moisture from particulate pharmaceutical materials (such as granules for subsequent tableting) and accommodating multiple trays on which material to be dried is thinly

spread for the moisture removal process; also may be used with circulating air fans or with reduced pressure; synonym: truck dryer

**treatment facility** a residential or nonresidential facility or program licensed, certified, or otherwise authorized to provide treatment of substance abuse or mental illness pursuant to the law or jurisdiction in which treatment is received

**trench mouth** SEE *Vincent's angina*

**trending** a calculation used to predict future utilization of a group based upon past utilization

**tri-** prefix meaning three; example: triglyceride (three fatty acids esterified on the glycerin molecule)

**triacylglycerol** an ester formed between glycerol and three fatty acids

**triage** procedure of sorting or screening patients by their degree of illness or injury and then assigning them a priority for treatment and/or a place or level of treatment

**triage, pharmaceutical** pharmacist triage for patients who enter the retail pharmacy requesting self-care assistance; the pharmacist may choose to recommend against any treatment or device, to recommend a nonprescription product or device, or to refer the patient to another professional (e.g., physician, dentist, podiatrist)

**trichotillomania** psychiatric condition that causes the patient to pull compulsively at the hair; may continue until the entire head is denuded of hair

**tricyclic antidepressant** any of a group of drugs of which the basic chemical structure consists of three fused rings and which potentiate the action of catecholamines; used to treat depression; examples: amitriptyline, imipramine

**triphosphopyridine nucleotide** SEE *nicotinamide adenine dinucleotide phosphate*

**triple bond** binding together of two atoms that share three electron pairs, one pair a sigma bond and the other two pi bonds

**triple point** temperature at which solid, liquid, and vapor phases of a substance exist in equilibrium; a point on many phase diagrams

**tritiated** refers to a chemical compound labeled with radioactive hydrogen (tritium,  $^3\text{H}$ )

**trituration 1:** process of reducing the particle size of a substance to a fine powder by grinding it in a mortar with a pestle **2:** process of mixing powders by grinding them in a mortar with a pestle **3:** a dilution of a potent

solid substance to a specific concentration by mixing it thoroughly with a suitable diluent

**triturator** apparatus in which substances can be rubbed or reduced in size by continuous grinding

**troche** solid body, usually sweetened and flavored, designed to dissolve slowly in the mouth and allow the resulting viscous solution to medicate the mouth and throat; synonym: lozenge

**tropanol** aminoalcohol portion of atropine and hyoscyamine, synonym: tropine

**tropine** synonym for tropanol

**tropocollagen** subunit composed of three polypeptide chains; a component of collagen fibrils in connective tissue

**truck dryer** SEE *tray dryer*

**truss** device for exerting pressure over the site of a hernia, thus holding in place a part that would otherwise extrude abnormally

**trust fund** an organization established to control, invest, and otherwise administer moneys, securities, or other property for the benefit of others; operated under the guidance of a trust agreement by trustees whose fiduciary responsibility requires a prudent, successful administration of the fund's purpose

**trypanosomicide** drug that kills or destroys trypanosomes (parasitic protozoa found in human blood and causing sleeping sickness)

**tryptamine** decarboxylation product of tryptophan

**tryptophan** aromatic amino acid commonly found in protein; 3-(3-indolyl)-2-amino propanoic acid; an essential amino acid

**t-test** a statistical procedure used to compare the means of two groups

**tumbling mixer** device or machine to mix dry powders (sometimes used to mix slurries) using a specially shaped rotating container; usual types are cylindrical (mounted on a rotating shaft at an angle); cubical (mounted on a rotating shaft connected at opposite corners); twin shell (a double cylinder joined in a V shape with a rotating shaft connected to the middle of each side)

**tumor necrosis factor** a protein that suppresses cell division; toxic to tumor cells

**tumor promoter** a molecule that provides cells a growth advantage over nearby cells

**turbid** cloudy



**turbine** a mass-transfer mixing device that uses a blade of varying pitch to effect mixing of very viscous materials; a form of impeller

**turbulent flow** **1:** movement of a liquid or gaseous system with extensive mixing due to formation of eddies or vortexes **2:** act of moving in a zigzag or highly shearing manner **3:** fluid movement exhibiting a high Reynolds number

**turbulent mixing** process of combining different substances using multi-directional motion to augment or accomplish the desired result; a non-laminar movement of materials being processed (mixed)

**turgor** feeling or appearance of inflammation or congestion

**turista** a form of diarrhea that occurs suddenly; synonym: traveler's diarrhea

**turnaround time** (TAT) the measure of a process cycle from the date a transaction is received to the date completed; for claims processing, the number of calendar days from the date a claim is received to the date paid

**turnover** **1:** the number of times an item is bought and then sold in a specified period of time **2:** term in enzymology for the conversion of substrate into product on the enzyme surface

**turnover number** term representing the moles of substrate converted to product per mole of enzyme per minute; number of molecules of substrate converted per active enzyme site per minute

**turnover rate** ratio of cost of goods sold to average inventory

**twin shell blender** SEE *tumbling mixer*

**twin shell mixer** also called "twin shell blender"; SEE *tumbling mixer*

**two-compartmental model** pharmacokinetic model that views the body as two compartments; input and output from the central compartment with mixing occurring between the two compartments; CONTRAST *multicompartmental model*; *single-compartmental model*

**Tyndall effect** the scattering of light rays as they pass through a colloidal solution; a result of the reflection of light rays by solid particles

**tyramine** decarboxylation product of tyrosine that is produced in cheddar cheese and certain other foods and causes a food-drug interaction with monoamine oxidase inhibitors;  $\beta$ -(*p*-hydroxyphenyl)ethylamine

**tyrosine** *p*-hydroxyphenylalanine; an aromatic, phenolic amino acid commonly found in proteins; not an essential amino acid, but can be used to replace part of the phenylalanine requirement of the body



**ubiquitination** the covalent attachment of ubiquitin to proteins; prepares proteins for degradation

**ubiquitin** a protein that is covalently attached by enzymes to proteins destined to be degraded

**ubiquitous** existing or found everywhere

**UDP-glucuronidyl transferase** enzyme located primarily in the liver; catalyzes reactions that couple various functional groups in bile pigments, drugs, or xenobiotics with glucuronic acid

**ulceration** the act or process of making an ulcer; presence of an ulcer on a body tissue

**ulcerative colitis** chronic ulceration in the colon causing inflammation; characterized by cramping abdominal pain, rectal bleeding, and discharges of blood, pus, and mucous with scanty fecal matter

**ultracentrifuge** instrument that operates at extremely high speeds (60,000 rpm or more), producing gravitational forces high enough to cause the sedimentation of large molecules such as proteins, polysaccharides, and nucleic acids; may be used either to separate proteins (preparative ultracentrifuge) or to determine molecular weights of proteins (analytical ultracentrifuge)

**ultrafast disposition** a biologic half-life that is less than one hour

**ultraviolet** that region of the electromagnetic spectrum that is above the frequency of violet and below that of X-rays and  $\gamma$ -rays; that region of the electromagnetic spectrum ranging in wavelength from 1 to 400 nanometers

**ultraviolet light** electromagnetic radiation emanating from valence electron orbitals as electrons fall to lower energy levels; used to aid aseptic technique or to identify and quantify UV-absorbing compounds of clinical (medicinal) importance

**ultraviolet spectrophotometry** SEE *spectrophotometry*

**unbound drug** a drug that is not attached (complexed) to a protein in the body; a drug in the blood and available for rapid distribution to other body tissues

**unbundling** practice of providing separate prices and administrative support for services such as prescription drug benefit management, mental health/substance abuse services, and utilization review

**uncoupling agent** compound that interferes with the mechanism by which the energy of biological oxidation is used to effect the formation of high-energy phosphates such as ATP; does not inhibit biological oxidation

**unction 1:** an ointment **2:** the application of an ointment

**unctuous** fatty, oily; smooth and greasy in feel and appearance

**undulant fever** SEE *brucellosis*

**unguent** term for perfumed salves or ointments

**Uniform Commercial Code** (UCC) consistent set of laws adopted by states to simplify and clarify laws relative to commercial transactions

**uniform cost accounting** set of accounting methods used by several firms to permit comparisons of financial performance

**unilateral** on one side only

**unit dose** system in which each individual dose is prepared (prepackaged) beforehand; provides for a more adequate control of drug dispensing

**unit dose container** SEE *container, unit dose*

**unit dose system** medication distribution system in which drugs are prepared and prepackaged in single doses prior to dispensing to the patient or nursing unit

**unit of use** prepackaged units that provide medication needed for a course of therapy or a specified period of time; example: compliance packaging

**United States Adopted Names Council** group that provides a new medicinal compound with a nonproprietary or generic name

**United States Food and Drug Administration** (FDA) agency of the federal government that administers provisions of the Food, Drug, and Cosmetic Act addressing the manufacture and packaging of drug, food, medical devices, and cosmetic products; responsibilities include drug safety, effectiveness, and quality control

**United States Pharmacopeia** (USP) the primary, legally recognized, national, drug-standard compendium for this country; established in 1820 as a joint venture between medicine and pharmacy; revised every five years with interim supplements; since 1985 published in a single volume with the *National Formulary*, known as the *USP-NF*

**United States Pharmacopeial Convention** an organization of representatives from pharmacy, medicine, government, and certain agencies and organizations that has an interest in drug manufacture and use; responsible for the publication of the *United States Pharmacopeia* and related professional and scientific literature; SEE *United States Pharmacopeia*

**United States Pharmacopeial Dispensing Information** publication of the United States Pharmacopeial Convention that provides patients and

practitioners with information about uses, precautions, side effects, doses, and patient information guidelines for selected drugs; known as the *USP DI*

**units, basic** SEE *fundamental dimensions*

**universal coverage** the guaranteed provision of at least basic health care services to every citizen

**universal gas constant** SEE *gas constant*

**unlimited liability** a condition whereby a business, investor, or principal may be required to satisfy outstanding debts or judgments from personal assets

**unpalatable** possessing a disagreeable taste

**unsaturated 1:** condition in which a solvent does not contain the maximum amount of a solute that can be held in solution at a specific temperature and pressure **2:** organic compound that contains double or triple bonds as a part of its molecular structure

**unsaturated fat** triglyceride that contains large numbers of double bonds in the esterified fatty acids

**unsaturated surface drying period** time of a drying process between the appearance of the first surface “dry spots” and the completely dried surface (first decreasing drying rate period); further drying controlled by the diffusion rate of moisture from the solid (second decreasing drying rate period)

**upcoding** using a higher-level procedure code than the level of service actually provided

**uptake** absorption of some substance by a tissue, organ, or organism

**ur-** prefix meaning urine; same as uro-, urono-

**URAC accreditation** verification that a utilization review organization meets national utilization review standards for prospective and concurrent review services

**Urdang, George** (1882-1960) co-author of *Kremers and Urdang's History of Pharmacy*; the first director of the American Institute of the History of Pharmacy from 1941-1957

**urea** diamide of carbonic acid; a waste product of protein metabolism

**urea cycle** a cyclic pathway in which waste ammonia molecules, CO<sub>2</sub>, and aspartate molecules are converted to urea

**uremia** toxic condition in which excessive amounts of urea and other catabolic products of proteins accumulate in the blood; usually indicates abnormal kidney function

**uremic dose** the dose of a drug to be administered to a uremic patient; dose of a drug to be administered to a patient who has abnormal kidney function

**urgi-center** *SEE freestanding emergency medical service center*

**-uria** suffix meaning urine

**uricosuric** agent used to promote excretion of uric acid in the urine; used to treat gout

**uridine diphosphate** nucleotide of uracil, ribose, and phosphate anhydride; ester of uridine with pyrophosphoric acid

**uridine monophosphate** nucleotide of uracil, ribose, and phosphate; ester of uridine with phosphoric acid

**uro-** prefix meaning urine; same as ur-, urono-

**urologist** a physician who specializes in the study and treatment of diseases of the urinary tract in both sexes and the genital tract in males

**uronic acid** the product formed when the terminal  $\text{CH}_2\text{OH}$  group of a monosaccharide is oxidized

**urono-** prefix meaning urine; same as ur-, uro-

**urticaria** a vascular reaction of the skin characterized by transient eruption of slightly elevated patches that are more red or more pale than the surrounding area; associated with severe itching; synonyms: hives, nettle rash

**USP Pyrogen Test** official biological test in which the presence of pyrogens is determined by measuring the fever response in rabbits following administration of an injectable preparation

**USP unit** (USP u) a quantitative expression of potency used in the *United States Pharmacopeia* to denote the activity of drugs and other preparations; each specific kind of unit is defined in the *USP*

**usual and customary charge** method of reimbursement under which the pharmacy is paid the amount normally charged for a given prescription or service

**usual, customary, and reasonable** a phrase used to refer to the commonly charged or prevailing fees for health services within a geographic area; a fee is considered to be reasonable if it falls within the parameters of the average or commonly charged fee for the particular service within that specific community (e.g., eightieth percentile)

**utilization** the extent to which the members of a covered group use a program or obtain a particular service, or category of procedures, over a given period of time; usually expressed as the number of services used per year or per 100 or 1,000 persons eligible for the service

**utilization management** a process of integrating review and case management of services in a cooperative effort with other parties, including patients, employers, providers, and payers

**utilization review** a formal assessment of the medical necessity, efficiency, and/or appropriateness of health care services and treatment plans on a prospective, concurrent, or retrospective basis

**UV-A light** ultraviolet light possessing a wavelength of 320 to 400 nm

**UV-B light** ultraviolet light possessing a wavelength of 290 to 320 nm

**UV-C light** ultraviolet light possessing a wavelength of 200 to 290 nm; SEE ALSO *UV lamps*

**UV lamps** lamps used for aseptic techniques that emit radiation at a wavelength of 253.7 nm

**UV light** SEE *ultraviolet light*

**UV spectrophotometry** SEE *spectrophotometry*



**vaccination** the administration of a vaccine

**vaccine** preparation of killed, attenuated, or fully virulent microorganisms administered to produce or increase immunity (a prophylactic for a particular disease)

**vacuum dryer** machine used to remove moisture from a batch of pharmaceutical material using a chamber placed under negative (below atmospheric) pressure to hasten vaporization; may be either a moving-bed or a static-bed type

**vacuum pump** machine used to remove air or vapor from a closed system, resulting in significantly negative (less than atmospheric) pressure; generally a pump of the reciprocating type that is used to remove air or other vapor from a closed system

**valence 1:** usually the number of electrons in the outer orbit of an atom; an index of the bonding capability of an atom or group of atoms with another atom or group of atoms; combining power of an element or a radical  
**2:** a designation to indicate the number of diseases or conditions prevented by a vaccine or prevented and treated by an antivenin or an antitoxin  
**3:** combining power of an antibody for an antigen

**valence bond theory** concept that the power of atoms to bind together to form molecules is based primarily on the number of orbital electrons in their outer shells

**valence electrons** electrons in the outer (or valence) shell of an atom

**validity** extent to which a performance evaluation does the job for which it was designed; relates to the content of the evaluation, its job-relatedness, and the ability of an evaluation to correlate highly with another evaluation method that is designed to measure the same performance characteristic

**valine**  $\alpha$ -amino acid, commonly found in proteins; one of ten essential amino acids; 2-amino-3-methylbutyric acid

**valve** flow control device designed to enlarge, decrease, or close an opening in a mass transfer system; examples: gate valve, butterfly valve, plug cock, ball valve, globe valve, needle valve, diaphragm valve (each containing the shaped adjustable part to control flow, respectively)

**valve, check** flow control device designed to permit flow in only one direction

**van der Waal's bond** bond resulting from electrostatic attractions induced between two neutral atoms that are brought close enough together to produce distortions within their electron clouds; a very weak bond (bond energy of approximately 0.5 kcal/mole)

**van der Waal's equation for "real" gases** a quantitative expression of pressure, volume, and temperature relationships of gases that do not exhibit "ideal" behavior; correction parameters are included for attractive forces (internal pressures) between molecules and the inherent volume of gas molecules (incompressibility factor)

**van der Waal's forces** weak attractive forces acting on neutral atoms and molecules that arise from electric polarization, either inherent or induced, in each of the particles by the presence of other particles; SEE *van der Waal's bond*; *induced dipole-induced dipole interactions*

**vanillylmandelic acid** urinary test for pheochromocytoma that is based on the metabolic conversion of catechol amines to vanillylmandelic acid

**vanishing cream** an oil-in-water emulsion formulation for external use; application leaves an almost imperceptible film; a nongreasy cream; SEE *ALSO cream*

**van't Hoff equation** thermodynamic quantitative expression of the effect of temperature on an equilibrium constant; an analogous expression is used to calculate the effect of temperature on the solubility of a substance

**van't Hoff factor** an expression of the deviation of a “real” solution from “ideal” behavior; a function of the degree of dissociation and the number of ionic species in a molecule; a correction factor to determine the “effective concentration” of a substance in solution; synonym: i-factor

**vaporizer** an appliance used in a sick room to fill it with volatile substances (medicated or unmedicated); frequently used to increase room moisture content and relieve respiratory congestions as the patient breathes

**vaporizer, steam** a device used to increase the level of humidity in the house or workplace, thereby increasing the rate and efficiency of mucokinosis; can include medications in a medication cup located on the top of the vaporizer

**vapor lock** SEE *air binding*

**vapor pressure** force per unit area manifested in all directions in the open space above a liquid (or a volatile solid) in a closed container as a result of the kinetic motion of molecules escaping from the surface of the liquid (or volatile solid); also called “equilibrium vapor pressure,” indicating a constant pressure exerted by the vapor of a liquid (or volatile solid) in constant volume, temperature, and pressure conditions

**Vaquez' disease** erythremia; polycythemia rubra vera

**variable 1:** a part of a mathematical expression that can change; SEE *dependent variable*; **independent variable 2:** in an experiment, a parameter that must be controlled (kept constant) to study and/or define a system

**variable cost** cost of operating a business that fluctuates with changes in sales volume, salaries and wages, cost of goods sold, and income taxes; synonym: variable expense

**variable dispensing fee** reimbursement method used by third parties in which the fee paid for each prescription dispensed is set for each participating pharmacy depending on that pharmacy's overhead costs

**variable expense** SEE *variable cost*

**variance** computed measure of the degree of dispersion (or variability) among a group of numbers

**vascular** pertaining to blood vessels; indicates abundant blood supply

**vascular surgeon** a physician who specializes in performing surgery on blood vessels

**vaso-** prefix pertaining to a vessel or duct

**vasoconstrictor** drug that acts to reduce the diameter of the lumen of blood vessels



**vasodilator** compound that acts to increase the diameter of the lumen of blood vessels

**vasopressor** drug or hormone compound causing an increase in blood pressure by producing a constriction of blood vessels

**vector 1:** a carrier of an infective agent; example: mosquitoes can carry and transmit vector-borne diseases such as malaria **2:** quantities having magnitude and direction as opposed to scalar quantities; examples: velocity, force **3:** a cloning vehicle into which a segment of foreign DNA can be spliced so it can be introduced and expressed in host cells

**vegetative cell** bacterial cell capable of multiplication, as opposed to a spore, which cannot multiply

**vehicle** carrier or inert medium used as a solvent (or diluent) in which a medicinally active agent is formulated and/or administered

**velocity 1:** the rate of movement of a unit of matter expressed as cm/sec **2:** derivative (differential) of distance traveled with respect to time

**velocity of light** (in a vacuum) equals  $2.99792 \times 10^{10}$  cm/sec

**ven-** prefix pertaining to vein; same as vene-, veni-, veno-; synonyms: phleb-, phlebo-

**vendor 1:** an individual or organization providing health or medical services; a term usually applied to a provider participating in third-party medical programs **2:** a source of goods or services to be purchased

**vene-** prefix pertaining to vein; same as ven-, veni-, veno-; synonyms: phleb-, phlebo-

**venereal disease** any of several diseases acquired through sexual contact; examples: syphilis, gonorrhea, herpes simplex type 2 infections; SEE *sexually transmitted disease*

**veni-** prefix pertaining to vein, same as ven-, vene-, veno-

**venipuncture** puncture of a vein, usually by a needle to obtain blood

**veno-** prefix pertaining to vein, same as ven-, vene-, veni-

**vented needle** needle that permits air to pass to the inside of the injectable fluid container as the liquid is passing through the needle to the injection site

**ventri-** prefix meaning the front of the body; prefix referring to the abdominal part of an animal as opposed to the dorsal part or the back; same as ventro-

**ventricle 1:** a cavity in the brain **2:** one of the lower chambers of the heart

**ventro-** prefix meaning the front of the body; prefix referring to the abdominal part of an animal as opposed to the dorsal part or the back; same as ventri-

**veracity** a principle of ethics which states that practitioners should always be honest in their dealings with patients

**Verified Internet Pharmacy Practice Site Program** voluntary program implemented by the National Association of Boards of Pharmacy to certify that participating online pharmacies meet specified rigorous criteria for providing pharmacy services

**vermicide** agent that will kill intestinal worms

**vermifuge** medicine that expels worms or intestinal parasites

**vermilion border** colored part of the lips; often the target of herpes simplex labialis

**verruca** wart; a benign tumor caused by a virus

**verruca vulgaris** common warts

**vertical strip** product placement technique in which the largest sizes are placed at eye level with smaller sizes grouped in descending order beneath them

**vertigo** feeling that either a patient's surroundings are moving or that the patient is moving; erroneously used as a synonym for dizziness

**vesicant** agent that produces blisters (less severe in its action than an escharotic)

**vial** glass container closed with a rubber stopper and an aluminum band; removal of contents requires a needle; may be multidose (with a preservative included) or single dose (lacking a preservative); most often used for parenteral products

**Vincent's angina** painful pseudomembranous ulceration of the gums, oral mucous membranes, pharynx, and tonsils; synonyms: gingivitis, trench mouth

**Vincent's disease** necrotizing ulcerative gingivitis (inflammation of the gums)

**vinegar acid** synonym for glacial acetic acid

**vinegars** solutions of drugs in dilute acetic acid

**virucide** an agent that kills viruses

**virulence** pathogenicity of a microorganism; the ability of a microorganism to invade tissues and produce symptoms of disease or death

**virus** pathological agent smaller than bacteria and composed mainly of a nucleic acid enclosed in a protein envelope; a minute parasitic organism dependent upon cells for its metabolic and reproductive needs; micro-organism that is not visible using an ordinary light microscope and is not filterable through bacterial filters

**viscid** sticky, glutinous

**viscometer** instrument or device to measure the viscosity of liquid substances; examples: Brookfield and Ostwald-Cannon-Fenske viscometers; synonym: rheometer

**viscosity** a measure of resistance of a fluid to flow; the reciprocal of fluidity; the basic cgs unit of viscosity is the poise; synonym: coefficient of viscosity; SEE *Newton's law of viscous flow* for basic quantitative units of flow

**visible light** electromagnetic radiation emanating from atomic electron shifts to lower energy levels; wavelengths of electromagnetic radiation that are in the range of  $10^{-7}$  to  $10^{-6}$  meters

**visual inventory control** any intuitive method of inventory control lacking a formal organization

**vitamin 1:** any of several so-called growth factors **2:** an essential part of coenzymes, the absence of which causes growth retardation and an a vitaminosis syndrome; cannot be synthesized by the body or are not synthesized in sufficient quantities to fulfill bodily needs (must be in the diet); examples: A, D, E, K, B<sub>1</sub>, B<sub>2</sub>, B<sub>12</sub>, C

**vitamin B<sub>12</sub>** a complex cobalt-containing molecule that is required for the N<sup>5</sup>-methyl THF-dependent conversion of homocysteine to methionine

**vitriol** a crystalline sulfate; glassy hydrated salt of a metal with sulfuric acid; examples: copper sulfate pentahydrate (blue vitriol) and oil of vitriol (sulfuric acid)

**volatile** having a high escaping tendency; capable of evaporating or vaporizing rapidly; describes a substance that readily vaporizes at relatively low temperatures

**volatile memory** information that is erased from a computer when the power is turned off

**volatilization** the passing of a substance from its liquid or solid form into its vapor form

**volume** the extent of a measureable space; basic cgs unit is cm<sup>3</sup>; SI unit is m<sup>3</sup> or in<sup>3</sup>; common units of volume include the fluid dram, fluid ounce, pint, quart, gallon, milliliter, and liter

**volume of distribution, apparent** biopharmaceutical term expressing the perceived volume ( $V_d$ ) of the body in which a specific amount of unchanged drug ( $Ab$ ) is distributed based on the concentration ( $C_b$ ) of the drug in the blood;  $V_d = Ab/C_b$ ; a characteristic value for a specific drug; an abstract volume that is calculated from the ratio of the amount of drug in the body to its concentration in plasma once partitioning has been stabilized (at steady-state conditions)

**volumetric analysis** determination of the amount of substance present by using the volume of a standard solution that will exactly react with the substance; requires the use of equipment such as pipets, burets, and volumetric flasks that deliver or contain quantitatively accurate volumes of liquids

**vomiting** involuntary or voluntary emptying of the contents of the stomach through the mouth; synonyms: emesis, regurgitation

**von Gierke's disease** type 1 glycogenosis; glycogen accumulation in liver and kidney

**vortex** cone-shaped formation in a circulating fluidized system that has been subjected to a stirring or mixing process; an impediment to rapid and efficient mixing

**Vroom's expectancy theory** concept that a person's motivation to perform is determined by his/her expectation that the performance will lead to a desired outcome, such as a promotion or a substantial raise



**wafer** a thin slice of material containing a medicinal agent

**waiver** a rider or clause in a health insurance contract excluding an insurer's liability for some sort of preexisting illness or injury; also refers to a plan amendment, such as a CMS (formerly HCFA) waiver or plan modification

**Walden inversion** chemical reaction in which a nucleophile is substituted on the side opposite the group being replaced, thus inverting the stereo configuration

**Warburg respirometer** manometric apparatus used to measure oxygen uptake and carbon dioxide release by tissues, tissue homogenates, or isolated enzyme systems

**warm temperature** any temperature between 30°C and 40°C (86°F and 104°F); a consideration in drug product storage and stability testing

**warranty** statement or guarantee of the quality and performance of a product or a service and of the seller's responsibility for the quality of the product or service, ranging from any specified period of time to a lifetime

**water, aromatic** clear, saturated (unless otherwise stated), aqueous solution of a volatile oil or other volatile or aromatic substance

**waterbrash phenomenon** sudden hypersalivation; signals that an episode of gastroesophageal reflux or vomiting is imminent

**Water for Injection, USP** pyrogen-free water which has been purified by reverse osmosis or distillation and which contains no more than 1 mg of total solids per 100 ml

**water-in-oil emulsion** SEE *emulsion, water-in-oil*

**water number** the number of grams of water that can be physically incorporated into 100 g of fat, ointment base, or other material

**water of crystallization** water that is in chemical combination with a salt; water that is a part of the crystalline lattice of a compound

**water of hydration** amount of water necessary for certain substances to crystallize; loss of such water in a drying process exhibits stepwise "equilibrium moisture content" curves depending on the number of water molecules held per molecule of chemical; total loss of water of hydration yields an amorphous powder; SEE *water of crystallization*

**waters** clear, saturated (unless otherwise stated), aqueous solution of a volatile oil or other volatile or aromatic substance

**water sifting** SEE *elutriation*

**water softener** a compound or a mixture of compounds used to remove divalent and trivalent metallic ions from water

**wax** thick plastic substance used by bees to build hives or any substance with similar properties

**wax, paraffin** inert, saturated, semisolid, high-molecular-weight hydrocarbon used in ointments and creams; synonyms: mineral wax, ceresin, earthwax, ozokerite, hard paraffin

**Wedgwood mortar** fine, hard, porcelain-like mortar named for Josiah Wedgwood, a British potter; SEE *mortar*

**weight** the practical expression of the mass of a substance based on the pull of earth's gravity; its cgs unit is the gram (g); weight equals mass times acceleration of gravity

**well-closed container** SEE *container, well closed*

**well counter** scintillation counter with a reentrant hole near the detector; the radioactive sample is placed in that hole when its activity is being measured

**wellness** a program that encourages physician visits before a condition develops, as well as behavior modifications that reduce the risk for developing a preventable illness

**Werner theory of valence** refers to covalent bonds formed between two elements in which one element donates both electrons to the shared pair; such bonds are termed dative or coordinate covalent bonds

**Westphal balance** SEE *Mohr-Westphal balance*

**wet-bulb temperature** equilibrium temperature of an evaporating surface measured by using a moisture-laden thermometer; air temperature measured with non-moisture-laden thermometer under these conditions is the dry-bulb temperature; humidity computed from the wet-bulb and dry-bulb temperature differential

**wet granulation** a process of preparing granules in which the tablet materials are wetted and forced through a screen while wet, thereby producing granules that are subsequently dried and sized before compression into tablets

**wet-gum method** SEE *English method*

**wetting** phenomenon of a liquid substance (such as water) covering or spreading on the available surface of a solid substance

**wetting agent** substance that causes a liquid to spread more easily on a solid surface, thus allowing the liquid to be more readily adsorbed or absorbed by the solid; substance that reduces surface tension, thus allowing the liquid (usually water) to wet the solid more easily; SEE *surfactant*

**wetting angle** SEE *wetting*

**wheal** slightly raised reddened or pale area on the skin, usually accompanied by itching, due to an allergy

**Wheatstone bridge** **1:** an instrument used to measure electrical conductance and resistance that forms a part of several kinds of instruments, such as pH meters and spectrophotometers **2:** a diamond-shaped electrical circuit composed of four resistors, each placed on a leg of the diamond; once the resistances are balanced, no current is measured through the middle of the circuit

**white blood cell** leukocyte; includes lymphocytes, neutrophils, eosinophils, and basophils (the latter three cell types are also known as granulocytes)

**white lotion** a white drying lotion prepared from sulfurated potash and zinc sulfate and used in the treatment of acne

**Whitfield's ointment** a semisolid dosage form consisting of benzoic acid and salicylic acid dissolved in an ointment base (PEG); used as a fungistat and keratolytic agent

**Whitney, Harvey A.K.** (1894-1957) first chairman of the American Society of Health-System Pharmacists and a pioneer in hospital services such as formulary, manufacturing, and the establishment of a specialty literature

**whole body clearance** *SEE total system clearance*

**Wiley, Harvey Washington** pioneer in the detection of adulteration in foods and drugs; the moving force behind the Pure Food and Drug Act of 1906

**wine gallon** *SEE proof gallon*

**wines** preparations containing medicines dissolved in wine or fortified wine

**wintergreen oil** synonym for methyl salicylate

**withhold** *SEE physician contingency reserve*

**wobble hypothesis** a hypothesis that explains why cells often have fewer tRNAs than expected; freedom in the pairing of the third base of the codon to the first base of the anticodon allows some tRNAs to pair with several codons

**wood alcohol** methyl alcohol; methanol

**work** the mechanical equivalent of energy; energy required to move material from one point to another; the unit for work in the cgs system is the erg

**workflow** flow of work through the pharmacy; must allow both drug-dispensing process and pharmaceutical care service to occur efficiently and effectively; includes assignment of appropriate nonjudgmental tasks to pharmacy technicians

**work index for particle size reduction 1:** a direct measurement of energy required to reduce particles from a diameter of  $D_1$  to a diameter of  $D_2$   
**2:** the number of kilowatt hours required to reduce a finite mass of material from infinite size to a size such that 80 percent of the material will pass through a 100 micron screen

**working capital** the excess of total current assets over total current liabilities; capital being used to purchase materials, pay wages, etc.

**wraparound coverage or plan** insurance to cover copays or deductibles not covered by a basic insurance plan

**Wurster process** a process named for its inventor, Dale Wurster; SEE *air-suspension coating*



**xanthene** heterocyclic organic compound in which two benzene rings are fused to a central pyran ring; the pyran oxygen bridges the two benzene rings; a parent structure of medicinal agents such as smooth muscle spasmolytics

**xanthine** purine occurring in plants and animals; a metabolite of adenine and guanine and the parent structure of the xanthine alkaloids such as caffeine, theophylline, and theobromine

**xenobiotic** drug or other substance not normally found in the body; a foreign substance to the body

**xer-** prefix meaning dry; same as xero-

**xero-** prefix meaning dry; same as xer-

**xerogenic** producing dryness; examples: xerogenic medications, xerogenic environmental conditions

**xerophthalmia** condition resulting from a deficiency of vitamin A and characterized by a dry, thickened condition of the conjunctiva

**xerosis** dry skin

**xerostomia** dry mouth

**X-ray** electromagnetic radiation emitted from an atom when an orbital electron changes to a lower energy level; wavelengths are longer than gamma rays and shorter than ultraviolet light and in the range of  $10^{-8}$  meter



**years-of-profit figure** a multiplier factor used with a pharmacy's earnings figure to calculate a purchase price

**yeast artificial chromosome** a cloning vector that can accommodate up to 100 kb; contains eukaryotic sequences that function as centromeres, telomeres, and a replication origin

**yerba santa** synonym for eriodictyon

**Young's rule** method of calculating dosages for children over two years of age; SEE *dosage rules*





**Z-DNA** a form of DNA that is twisted into a left-handed spiral; named for its zigzag conformation, which is slimmer than B-DNA

**zero order reaction/process** quantitative expression in which the rate of change is directly proportional to concentration raised to the zero power; one that occurs at a constant rate, and one that is independent of the concentrations of the reactants

**zetameter** an instrument used to measure the zeta-potential of charged particle surfaces

**zeta-potential** the effective overall charge on the surface of a particle; a function of the Stern layer (those solvent molecules and counter ionic charges bound to the particle surface) and the “diffuse-double layer” of accompanying solvent molecules and ionic charges in the vicinity of the particle surface (the mobile layer)

**zinc** grayish white, malleable metal; zinc salts are astringent and antiseptic; zinc ion is a trace mineral and a cometal for several enzymes, including chymotrypsin; zinc metal is useful as a reducing agent in organic chemistry

**zinc-eugenol cement** a dental paste composed primarily of zinc salts, eugenol, and rosin and that serves as a temporary tooth filling

**Zollinger-Ellison syndrome** peptic ulceration with gastric hypersecretion

**zoonosis** disease transmitted from animals to humans

**zoopharmacy** synonym for veterinary pharmacy

**zwitterion** molecular ionic species of an ampholyte that exists at a definite pH and as a structure containing equal positive and negative charges, the overall charge being neutral

**zymogen** the inactive form of a proteolytic enzyme

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# Abbreviations

<b>A<sub>2</sub></b>	aortic second sound
<b>A<sub>2</sub>&gt;P<sub>2</sub></b>	aortic second sound greater than pulmonic second sound
<b>AA</b>	amino acid; auto accident; Alcoholics Anonymous
<b>AAA</b>	abdominal aortic aneurysmectomy/aneurysm
<b>AACP</b>	American Association of Colleges of Pharmacy
<b>AAFP</b>	American Academy of Family Physicians
<b>AAHP</b>	American Association of Health Plans
<b>AAL</b>	anterior axillary line
<b>AAN</b>	analgesic-associated nephropathy
<b>AAP</b>	American Academy of Pediatrics
<b>AAPA</b>	American Academy of Physician Assistants
<b>AAPC</b>	antibiotic-acquired pseudomembranous colitis
<b>AARP</b>	American Association of Retired Persons
<b>AAS</b>	atlanto axis subluxation
<b>AAV</b>	adeno-associated virus
<b>AAVV</b>	accumulated alveolar ventilatory volume
<b>Ab</b>	antibody; abortion
<b>A&amp;B</b>	apnea and bradycardia
<b>ABC</b>	absolute band counts; applesauce, banana, cereal (diet); artificial beta cells
<b>abd</b>	abdomen or abdominal
<b>ABDCT</b>	atrial bolus dynamic computer tomography
<b>ABE</b>	acute bacterial endocarditis
<b>ABG</b>	arterial blood gases
<b>ABI</b>	atherothrombotic brain infarction
<b>ABL</b>	allograft bound lymphocytes
<b>ABMT</b>	autologous bone marrow transplantation
<b>abn</b>	abnormal
<b>ABR</b>	absolute bed rest; auditory brain (evoked) responses
<b>ABS</b>	at bedside; admitting blood sugar
<b>ABT</b>	aminopyrine breath test
<b>ABW</b>	actual body weight
<b>abx</b>	antibiotics

<b>AC</b>	before meals; acromio-clavicular; air conduction; abdominal circumference; anchored catheter; antecubital; acetate
<b>ACA</b>	against clinical advice; anterior cerebral artery; acrodermatitis chronicum atrophicans; acute or chronic alcoholism; American College of Apothecaries
<b>ACB</b>	antibody-coated bacteria
<b>ACBE</b>	air contrast barium enema
<b>ACC</b>	adenoid cystic carcinomas; ambulatory care center
<b>ACCP</b>	American College of Clinical Pharmacy
<b>ACD</b>	allergic contact dermatitis; anterior chest diameter; anemia of chronic disease; absolute cardiac dullness; acid citrate dextrose
<b>ACE</b>	angiotensin-converting enzyme
<b>ACEI</b>	angiotensin-converting enzyme inhibitor
<b>ACh</b>	acetylcholine
<b>ACH</b>	adrenocortical hormone
<b>ACH<sub>E</sub></b>	acetylcholine esterase
<b>ACH<sub>E</sub>I</b>	acetylcholine esterase inhibitor
<b>ACL</b>	anterior cruciate ligament
<b>ACLS</b>	advanced cardiac life support
<b>ACPE</b>	American Council on Pharmaceutical Education
<b>AC-PH</b>	acid phosphate
<b>ACPP-PF</b>	acid phosphatase prostatic fluid
<b>ACR</b>	adjusted community rating
<b>ACS</b>	American Cancer Society; American College of Surgeons; American Chemical Society
<b>ACT</b>	activated clotting time; automated coagulation time; allergen challenge test
<b>ACTH</b>	adrenocorticotrophic hormone
<b>ACV</b>	atria/carotid/ventricular
<b>AD</b>	Alzheimer's disease; right ear
<b>A&amp;D</b>	admission and discharge
<b>ADA</b>	American Diabetes Association; American Dental Association
<b>ADCC</b>	antibody-dependent cell-mediated cytotoxicity
<b>ADD</b>	attention deficit disorder
<b>ADEM</b>	acute disseminating encephalomyelitis
<b>ADH</b>	antidiuretic hormone; alcohol dehydrogenase
<b>ADHD</b>	attention deficit hyperactivity disorder
<b>ADL</b>	activities of daily living

<b>ad lib (adlib)</b>	at liberty ( <i>ad libitum</i> ); as desired
<b>adm</b>	admission
<b>ADME</b>	absorption, distribution, metabolism, excretion
<b>adol</b>	adolescent
<b>ADP</b>	adenosine diphosphate
<b>ADR</b>	adverse drug reaction; acute dystonic reaction
<b>ADS</b>	anonymous donor's sperm; anatomical dead space; alternate delivery systems
<b>ADT</b>	anticipate discharge tomorrow
<b>ADX</b>	adrenalectomy
<b>AE</b>	above elbow (amputation); adverse event; air entry
<b>AEC</b>	at earliest convenience
<b>AED</b>	automated external defibrillator
<b>AEG</b>	air encephalogram
<b>AER</b>	acoustic evoked response; auditory evoked response
<b>Aer. M</b>	aerosol mask
<b>AES</b>	antiembolic stocking
<b>AF</b>	atrial fibrillation; acid-fast; amniotic fluid; anterior fontanel
<b>AFB</b>	acid-fast bacilli; aorto-femoral bypass
<b>a fib</b>	atrial fibrillation (A fib; At fib)
<b>A fib</b>	atrial fibrillation (a fib; At Fib)
<b>AFO</b>	ankle-foot orthosis
<b>AFP</b>	alpha-fetoprotein
<b>AFPE</b>	American Foundation for Pharmaceutical Education
<b>AFV</b>	amniotic fluid volume
<b>AFVSS</b>	afebrile, vital signs stable (AVSS)
<b>Ag</b>	silver
<b>AG</b>	antigravity; anion gap; antigen
<b>A/G</b>	albumin-to-globulin ratio
<b>AgNO<sub>3</sub></b>	silver nitrate
<b>AGA</b>	appropriate for gestational age
<b>AGD</b>	agar gel diffusion
<b>AGE</b>	angle of greatest extension
<b>AGF</b>	angle of greatest flexion
<b>AGG</b>	agammaglobulinemia
<b>aggl</b>	agglutination
<b>AGL</b>	acute granulocytic leukemia
<b>AGN</b>	acute glomerulonephritis
<b>AGNB</b>	aerobic gram-negative bacilli
<b>AGPT</b>	agar-gel precipitation test
<b>AGS</b>	adrenogenital syndrome

<b>AH</b>	airway hyperresponsiveness; antihyaluronidase
<b>AHA</b>	autoimmune hemolytic anemia; American Heart Association; American Hospital Association
<b>AHC</b>	acute hemorrhagic conjunctivitis; acute hemorrhagic cystitis
<b>AHD</b>	arteriosclerotic heart disease; autoimmune hemolytic disease
<b>AHEC</b>	Area Health Education Center
<b>AHF</b>	antihemophilic factor
<b>AHFS</b>	American Hospital Formulary Service
<b>AHG</b>	antihemophilic globulin
<b>AHM</b>	ambulatory Holter monitoring
<b>AHRQ</b>	Agency for Health Care Research and Quality
<b>AI</b>	allergy index; aortic insufficiency; artificial insemination; artificial intelligence
<b>AI-Ab</b>	anti-insulin antibody
<b>AICA</b>	anterior inferior communicating artery; anterior inferior cerebellar artery
<b>AICD</b>	automatic implantable cardioverter/defibrillator
<b>AID</b>	artificial insemination donor; automatic implantable defibrillator
<b>AIDS</b>	acquired immunodeficiency syndrome
<b>AIF</b>	aortic-iliac-femoral
<b>AIH</b>	artificial insemination with husband's sperm
<b>AIHA</b>	autoimmune hemolytic anemia
<b>AIHP</b>	American Institute of the History of Pharmacy
<b>AIMS</b>	abnormal involuntary movement scale; arthritis impact measure scale
<b>AIN</b>	acute interstitial nephritis
<b>AION</b>	anterior ischemic optic neuropathy
<b>AIP</b>	acute intermittent porphyria
<b>AIR</b>	accelerated idioventricular rhythm
<b>AJ</b>	ankle jerk
<b>AK</b>	above knee
<b>AKA</b>	also known as; above knee amputation; alcoholic ketoacidosis
<b>ALA</b>	aminolevulinic acid; alpha linolenic acid
<b>ALAT</b>	alanine transaminase (alanine aminotransferase; SGPT)
<b>alb</b>	albumin
<b>ALC</b>	acute lethal catatonia; alcohol
<b>ALD</b>	alcoholic liver disease; aldolase; adrenoleukodystrophy

<b>aldost</b>	aldosterone
<b>ALFT</b>	abnormal liver function tests
<b>ALG</b>	antilymphocytic globulin
<b>alk</b>	alkaline
<b>alk-p</b>	alkaline phosphatase
<b>ALL</b>	acute lymphocytic leukemia
<b>ALMI</b>	anterolateral myocardial infarction
<b>ALOS</b>	average length of stay
<b>ALP</b>	alkaline phosphatase
<b>ALS</b>	amyotrophic lateral sclerosis; acute lateral sclerosis
<b>ALT</b>	alanine aminotransferase (SGPT)
<b>AM</b>	adult male; amalgam; morning ( <i>ante meridiem</i> ); myopic astigmatism (AsM)
<b>AMA</b>	against medical advice; antimitochondrial antibody; American Medical Association
<b>AMAP</b>	as much as possible
<b>A-MAT</b>	amorphous material
<b>amb</b>	ambulate; ambulatory
<b>AMC</b>	arm muscle circumference
<b>AMCS</b>	automated medical coding system
<b>AMD</b>	age-related macular degeneration
<b>AMegL</b>	acute megakaryoblastic leukemia
<b>AMG</b>	acoustic myography
<b>AMHO</b>	Association of Managed Healthcare Organizations
<b>AMI</b>	acute myocardial infarction
<b>AML</b>	acute myelogenous leukemia; acute myelocytic leukemia
<b>AMMOL</b>	acute myelomonoblastic leukemia
<b>amnio</b>	amniocentesis
<b>AMOL</b>	acute monoblastic leukemia
<b>amp</b>	amputation; ampule
<b>AMP</b>	adenosine monophosphate
<b>AMR</b>	alternating motor rates
<b>AMS</b>	acute mountain sickness; altered mental state; amylase
<b>AMSIT</b>	appearance; mood; sensorium; intelligence; thought process (portion of the mental status examination)
<b>amt</b>	amount
<b>AMV</b>	assisted mechanical ventilation
<b>amy</b>	amylase
<b>ANA</b>	antinuclear antibody; American Neurological Association; American Nurses Association

<b>ANAD</b>	anorexia nervosa and associated disorders
<b>ANC</b>	absolute neutrophil count
<b>ANDA</b>	Abbreviated New Drug Application
<b>anes</b>	anesthesia
<b>ANF</b>	antinuclear factor; atrial natriuretic factor
<b>ang</b>	angiogram
<b>ang II</b>	angiotensin II
<b>ANLL</b>	acute nonlymphoblastic leukemia
<b>ANOVA</b>	analysis of variance
<b>ANP</b>	atrial natriuretic peptide
<b>ANS</b>	autonomic nervous system; answer
<b>ant</b>	anterior
<b>AO</b>	atypical odontalgia
<b>A&amp;O</b>	alert and oriented
<b>A&amp;O × 3</b>	awake and oriented to person, place, and time
<b>A&amp;O × 4</b>	awake and oriented to person, place, time, and date
<b>AoA</b>	Agency on Aging
<b>AOA</b>	American Optometric Association; American Osteopathic Association
<b>AOAP</b>	as often as possible
<b>AOB</b>	alcohol on breath
<b>AOC</b>	area of concern
<b>AODM</b>	adult-onset diabetes mellitus
<b>ao-il</b>	aorta-iliac
<b>AOM</b>	acute otitis media
<b>AOP</b>	aortic pressure
<b>AOSD</b>	adult-onset Still's disease
<b>AP</b>	anterior-posterior; antepartum; apical pulse; abdominalperitoneal; appendicitis
<b>A&amp;P</b>	anterior and posterior; auscultation and percussion; assessment and plans
<b>APB</b>	atrial premature beat; abductor pollicis brevis
<b>APC</b>	arterial premature contraction
<b>APCD</b>	adult polycystic disease
<b>APD</b>	automated peritoneal dialysis; atrial premature depolarization
<b>APE</b>	acute psychotic episode
<b>APhA</b>	American Pharmacists (formerly Pharmaceutical) Association
<b>APHA</b>	American Public Health Association
<b>APKD</b>	adult onset polycystic kidney disease

<b>APL</b>	acute promyelocytic leukemia; abductor pollicis longus; anterior pituitary lobe; accelerated painless labor
<b>APN</b>	advanced practice nurse
<b>APPM</b>	Academy of Pharmacy Practice and Management of the American Pharmacists Association
<b>approx</b>	approximate
<b>appt</b>	appointment
<b>APR</b>	abdominoperineal resection
<b>APRS</b>	Academy of Pharmaceutical Research and Sciences of the American Pharmacists Association
<b>aPTT</b>	activated partial thromboplastin time
<b>aq</b>	water ( <i>aqua</i> )
<b>aq dest</b>	distilled water ( <i>aqua destillata</i> )
<b>AR</b>	airway resistance; allergic rhinitis; aortic regurgitation
<b>A-R</b>	apical-radial (pulse)
<b>ARB</b>	angiotensin receptor blocker
<b>ARC</b>	abnormal retinal correspondence; AIDS-related complex; American Red Cross
<b>ARD</b>	acute respiratory disease
<b>ARDS</b>	adult respiratory distress syndrome; acute respiratory distress syndrome
<b>ARF</b>	acute renal failure; acute rheumatic fever; acute respiratory failure
<b>ARLD</b>	alcohol-related liver disease
<b>ARM</b>	artificial rupture of membranes
<b>ARMD</b>	age-related macular degeneration
<b>AROM</b>	active range of motion; artificial rupture of membranes
<b>ARS</b>	antirabies serum
<b>ART</b>	arterial; automated reagin test (for syphilis)
<b>ARV</b>	AIDS-related virus
<b>AS</b>	aortic stenosis; arteriosclerosis; anal sphincter; left ear; ankylosing spondylitis
<b>ASA I</b>	healthy patient with localized pathological process (American Society of Anesthesiologists classification system)
<b>ASA II</b>	patient with mild to moderate systemic disease (American Society of Anesthesiologists classification system)



<b>ASA III</b>	patient with severe systemic disease limiting activity but not incapacitating (American Society of Anesthesiologists classification system)
<b>ASA IV</b>	patient with incapacitating systemic disease (American Society of Anesthesiologists classification system)
<b>ASA V</b>	moribund patient not expected to live (American Society of Anesthesiologists classification system)
<b>ASAP</b>	as soon as possible
<b>ASAT</b>	aspartate transaminase (aspartate aminotransferase) (SGOT)
<b>ASB</b>	anesthesia standby; asymptomatic bacteriuria
<b>ASC</b>	altered state of consciousness; ambulatory surgery center
<b>ASCP</b>	American Society of Consultant Pharmacists; American Society of Clinical Pathologists; American Society of Clinical Pharmacology
<b>ASCVD</b>	arteriosclerotic cardiovascular disease
<b>ASD</b>	atrial septal defect
<b>ASE</b>	acute stress erosion
<b>ASH</b>	asymmetric septal hypertrophy
<b>ASHD</b>	atherosclerotic heart disease
<b>ASHP</b>	American Society of Health-System Pharmacists (formerly American Society of Hospital Pharmacists)
<b>ASIS</b>	anterior superior iliac spine
<b>ASK</b>	antistreptokinase
<b>ASL</b>	antistreptolysin (titer); airway surface liquid; American sign language
<b>AsM</b>	myopic astigmatism (AM)
<b>ASO</b>	administrative services organization; administrative services only; arteriosclerosis obliterans; automatic stop order
<b>ASOT</b>	antistreptolysin-O titer
<b>ASP</b>	Academy of Students of Pharmacy of the American Pharmacists Association; American Society of Pharmacognosy; acute suppurative parotitis
<b>ASPL</b>	American Society of Pharmacy Law
<b>ASS</b>	anterior superior supine
<b>ast</b>	astigmatism
<b>AST</b>	aspartate transaminase (SGOT); aspartic acid transaminase; accelerated stability testing
<b>ASVD</b>	arteriosclerotic vessel disease

<b>AT</b>	applanation tonometry; atraumatic; antithrombin
<b>ATD</b>	autoimmune thyroid disease; antithyroid drug
<b>At Fib</b>	atrial fibrillation (a fib; A fib)
<b>ATG</b>	antithymocyte globulin
<b>ATgA</b>	antithyroglobulin antibodies
<b>ATHR</b>	angina threshold heart rate
<b>ATL</b>	Achilles tendon lengthening; atypical lymphocytes; adult T cell leukemia
<b>ATLS</b>	advanced trauma life support
<b>ATN</b>	acute tubular necrosis
<b>ATNC</b>	atraumatic normocephalic
<b>ATNR</b>	asymmetrical tonic neck reflex
<b>ATP</b>	adenosine triphosphate
<b>ATPase</b>	adenosine triphosphatase
<b>ATPS</b>	ambient temperature and pressure, saturated
<b>ATR</b>	Achilles tendon reflex; atrial
<b>ATT</b>	arginine tolerance test
<b>AU</b>	both ears; gold
<b>AUC</b>	area under the curve
<b>AU HAA</b>	Australia antigen (hepatitis-associated antigen)
<b>Aur Fib</b>	auricular fibrillation
<b>Av</b>	avoirdupois system of weights and measures
<b>AV</b>	arteriovenous; atrioventricular; auditory-visual
<b>AVA</b>	arteriovenous anastomosis
<b>AVD</b>	apparent volume of distribution
<b>AVF</b>	arteriovenous fistula
<b>AVH</b>	acute viral hepatitis
<b>AVM</b>	atrioventous malformation
<b>AVN</b>	atrioventricular node; arteriovenous nicking; avascular necrosis
<b>avoir</b>	avoirdupois
<b>AVR</b>	aortic valve replacement
<b>AVS</b>	atrioventous shunt
<b>AVSS</b>	afebrile, vital signs stable (AFVSS)
<b>AVT</b>	atypical ventricular tachycardia
<b>A&amp;W</b>	alive and well
<b>A waves</b>	atrial contraction waves
<b>AWOL</b>	absent without leave
<b>AWP</b>	average wholesale price
<b>ax</b>	axillary
<b>A-Z test</b>	Aschiem-Zondek test (diagnostic test for pregnancy)

<b>b</b>	twice ( <i>bis</i> )
<b>B</b>	bacillus; bloody; both; buccal
<b>B<sub>1</sub></b>	thiamine HCl
<b>B<sub>2</sub></b>	riboflavin
<b>B<sub>6</sub></b>	pyridoxine HCl
<b>B<sub>9</sub></b>	folic acid
<b>B<sub>12</sub></b>	cyanocobalamin
<b>Ba</b>	barium
<b>BA</b>	backache; bile acid; blood alcohol; Bourns assist
<b>BAC</b>	blood alcohol content; bacterial artificial chromosome
<b>BACOP</b>	bleomycin, adriamycin, cyclophosphamide, oncovin (vincristine), prednisone
<b>BAD</b>	bipolar affective disorder
<b>BaE</b>	barium enema
<b>BAE</b>	bronchial artery embolization
<b>BAEP</b>	brain stem auditory evoked potential
<b>BAL</b>	blood alcohol level; bronchoalveolar lavage
<b>BAN</b>	British approved name
<b>BAO</b>	basal acid output
<b>BAP</b>	blood agar plate
<b>baso</b>	basophil
<b>BAVP</b>	balloon aortic valvuloplasty
<b>BB</b>	bed bath; bowel or bladder; breakthrough bleeding; blood bank; blow bottle
<b>BBA</b>	born before arrival
<b>BBB</b>	bundle branch block; blood-brain barrier
<b>BBBB</b>	bilateral bundle branch block
<b>BBD</b>	benign breast disease
<b>BBM</b>	banked breast milk
<b>BBS</b>	bilateral breath sounds
<b>BBT</b>	basal body temperature
<b>BBVM</b>	brush border vesicle membrane
<b>BC</b>	birth control; blood culture
<b>BCA</b>	balloon catheter angioplasty; basal cell atypia; brachiocephalic artery
<b>BCAA</b>	branched-chain amino acids
<b>BCC</b>	basal cell carcinoma
<b>BCD</b>	basal cell dysplasia
<b>BCE</b>	basal cell epithelioma
<b>B cell</b>	large lymphocyte
<b>BCG</b>	bacille bilié de Calmette-Guérin (vaccine)

<b>BCL</b>	basic cycle length
<b>BCP</b>	birth control pills
<b>BCS</b>	battered child syndrome; Budd-Chiari syndrome
<b>BD</b>	birth defect; brain dead; bronchial drainage
<b>BDAE</b>	Boston Diagnostic Aphasia Examination
<b>BDI-SF</b>	Beck's Depression Index—Short Form
<b>BDR</b>	background diabetic retinopathy
<b>BE</b>	barium enema; below elbow; bacterial endocarditis; base excess
<b>BEAM</b>	brain electrical activity mapping
<b>BEC</b>	bacterial endocarditis
<b>BEE</b>	basal energy expenditure
<b>BEP</b>	brainstem evoked potentials
<b>BF</b>	black female
<b>BFP</b>	biologic false positive
<b>BFT</b>	bentonite flocculation test
<b>BG</b>	blood glucose
<b>BGC</b>	basal ganglion calcification
<b>BGM</b>	blood glucose monitoring
<b>BHI</b>	biosynthetic human insulin
<b>BHN</b>	bridging hepatic necrosis
<b>BHR</b>	bronchial hyperresponsiveness
<b>BHS</b>	beta-hemolytic streptococci
<b>BI</b>	bladder irritation; bowel impaction; bioelectric impedance
<b>BIB</b>	brought in by
<b>bid</b>	twice daily ( <i>bis in die</i> )
<b>BIH</b>	bilateral inguinal hernia; benign intracranial hypertension
<b>bilat</b>	bilateral
<b>bilat SLC</b>	bilateral short leg cast
<b>bilat SXO</b>	bilateral salpingo-oophorectomy
<b>bili</b>	bilirubin
<b>bili-C</b>	conjugated bilirubin
<b>BIMA</b>	bilateral internal mammary arteries
<b>BIW</b>	twice a week
<b>BJ</b>	bone and joint
<b>BJE</b>	bone and joint examination
<b>BJM</b>	bone, joint, and muscle
<b>BJ protein</b>	Bence-Jones protein
<b>BK</b>	below knee
<b>BKA</b>	below knee amputation

<b>bkft</b>	breakfast
<b>bkg</b>	background
<b>BLE</b>	both lower extremities
<b>BLESS</b>	bath, laxative, enema, shampoo, and shower
<b>BLOBS</b>	bladder obstruction
<b>BLS</b>	basic life support
<b>BL unit</b>	Bessey-Lowry unit
<b>BM</b>	basal metabolism; black male; bone marrow; bowel movement; breast milk
<b>BMA</b>	bone marrow aspirate
<b>BMC</b>	bone marrow cells
<b>BMI</b>	body mass index
<b>BMJ</b>	bone, muscle, joint; <i>British Medical Journal</i>
<b>BMR</b>	basal metabolic rate
<b>BMT</b>	bone marrow transplant; bilateral myringotomy tubes
<b>BMTU</b>	bone marrow transplant unit
<b>BNDD</b>	Bureau of Narcotics and Dangerous Drugs
<b>BNO</b>	bladder neck obstruction
<b>BNR</b>	bladder neck retraction
<b>BO</b>	body odor; bowel obstruction; behavioral objective
<b>BOA</b>	born on arrival; born out of asepsis
<b>BOM</b>	bilateral otitis media
<b>BOO</b>	bladder outlet obstruction
<b>BOT</b>	base of tongue
<b>BP</b>	bathroom privileges; blood pressure; boiling point; <i>British Pharmacopoeia</i>
<b>BPC</b>	<i>British Pharmaceutical Codex</i>
<b>BPD</b>	borderline personality disorder; bronchopulmonary dysplasia
<b>BPF</b>	bronchopleural fistula
<b>BPG</b>	bypass graft
<b>BPH</b>	benign prostatic hypertrophy/hyperplasia
<b>BPM</b>	breaths per minute; beats per minute
<b>BPV</b>	benign paroxysmal positional vertigo
<b>BRPS</b>	Brief Psychiatric Rating Scale
<b>BPS</b>	Board of Pharmaceutical Specialities
<b>BPSD</b>	bronchopulmonary segmental drainage
<b>BPV</b>	benign paroxysmal vertigo
<b>BR</b>	bathroom; bed rest
<b>BRAO</b>	branch retinal artery occlusion
<b>BRATT</b>	bananas, rice, applesauce, tea, and toast (diet)
<b>BRJ</b>	brachial radialis jerk

<b>BRM</b>	biological response modifiers
<b>BRP</b>	bathroom privileges
<b>BRR</b>	blood-retinal barrier
<b>BS</b>	blood sugar; bowel sounds; breath sounds; bedside; before sleep
<b>B&amp;S</b>	Bartholin and Skene (glands)
<b>BSA</b>	body surface area
<b>BSB</b>	body surface burned
<b>BSC</b>	bedside commode
<b>BSE</b>	breast self-examination; bovine spongiform encephalopathy
<b>BSER</b>	brainstem evoked responses
<b>BSGA</b>	beta streptococcus group A
<b>BSOM</b>	bilateral serous otitis media
<b>BSPM</b>	body surface potential mapping
<b>BSS</b>	balanced salt solution; black silk sutures; bismuth subsalicylate
<b>BSU</b>	Bartholin, Skene's, urethral (glands) (BUS)
<b>BT</b>	bladder tumor; brain tumor; breast tumor; blood transfusion; bedtime; bituberous
<b>BTB</b>	breakthrough bleeding
<b>BTFS</b>	breast tumor frozen section
<b>BTL</b>	bilateral tubal ligation
<b>BTPS</b>	body temperature pressure saturated
<b>BTR</b>	bladder tumor recheck
<b>BTU</b>	British thermal unit
<b>BU</b>	Bodansky unit
<b>BUE</b>	both upper extremities
<b>BUN</b>	blood urea nitrogen
<b>BUR</b>	backup rate (ventilator)
<b>BUS</b>	Bartholin, urethral, and Skene's (glands) (BSU)
<b>BVL</b>	bilateral vas ligation
<b>BW</b>	birth weight; body weight; body water
<b>BWCS</b>	bagged white cell study
<b>BWFI</b>	bacteriostatic water for injection
<b>BWS</b>	battered woman syndrome
<b>Bx</b>	biopsy
<b>c</b>	food ( <i>cibus</i> ) or meals ( <i>cibos</i> )
<b>C</b>	carbohydrate; Celsius; hundred; cyanosis; clubbing
<b>C<sub>1</sub></b>	first cervical vertebra
<b>C1 to C9</b>	precursor molecules of the complement system

<b>Ca</b>	calcium
<b>CA</b>	cardiac arrest; carcinoma; carotid artery; chronological age; coronary artery
<b>CAA</b>	crystalline amino acids
<b>CAB</b>	coronary artery bypass
<b>CABG</b>	coronary artery bypass graft
<b>CaBI</b>	calcium bone index
<b>CABS</b>	coronary artery bypass surgery
<b>CACI</b>	computer-assisted continuous infusion
<b>CAD</b>	coronary artery disease
<b>CAE</b>	cellulose acetate electrophoresis
<b>CAH</b>	chronic active hepatitis; chronic aggressive hepatitis; congenital adrenal hyperplasia
<b>CAL</b>	calories; callus; chronic airflow limitation
<b>CALD</b>	chronic active liver disease
<b>CALGB</b>	Cancer and Leukemia Group B
<b>CALLA</b>	common acute lymphoblastic leukemia antigen
<b>CAM</b>	complementary and alternative medicine
<b>cAMP</b>	cyclic adenosine monophosphate
<b>CAN</b>	contrast associated nephropathy; cord around neck
<b>CAO</b>	chronic airway obstruction
<b>CAP</b>	community-acquired pneumonia
<b>Ca/P</b>	calcium-to-phosphorus ratio
<b>CAPD</b>	chronic/continuous ambulatory peritoneal dialysis
<b>caps</b>	capsule ( <i>capsula</i> )
<b>CAR</b>	cardiac ambulation routine
<b>carb</b>	carbohydrate (C; CHO; COH)
<b>CAS</b>	carotid artery stenosis
<b>CAT</b>	computed axial tomography; children's apperception test; cataract
<b>cath</b>	catheter; catheterization
<b>CAVB</b>	complete atrioventricular block
<b>CAVC</b>	common atrioventricular canal
<b>CAVH</b>	continuous arteriovenous hemofiltration
<b>CB</b>	code blue; chronic bronchitis; cesarean birth; chair and bed
<b>C&amp;B</b>	crown and bridge
<b>CBA</b>	chronic bronchitis and asthma; cost-benefit analysis
<b>CBC</b>	complete blood count
<b>CBD</b>	common bile duct; closed bladder drainage
<b>CBF</b>	cerebral blood flow; ciliary beat frequency
<b>CBFV</b>	cerebral blood flow velocity

<b>CBG</b>	capillary blood glucose; corticosteroid-binding globulin
<b>CBI</b>	continuous bladder irrigation
<b>CBN</b>	chronic benign neutropenia
<b>CBR</b>	complete bed rest; chronic bed rest; carotid bodies resected
<b>CBS</b>	chronic brain syndrome
<b>CC</b>	chief complaint; cubic centimeter; critical condition; creatinine clearance; cerebral concussion; clean catch (urine); cord compression
<b>CCA</b>	common carotid artery
<b>CCAP</b>	capsule cartilage articular preservation
<b>CCB</b>	calcium channel blocker
<b>CC&amp;C</b>	colony count and culture
<b>CCE</b>	clubbing, cyanosis, and edema
<b>CCF</b>	compound comminuted fracture; crystal-induced chemostatic factor
<b>CCG</b>	Children's Cancer Group
<b>CCGP</b>	Commission for Certification in Geriatric Pharmacy
<b>CCHD</b>	cyanotic congenital heart disease
<b>CCI</b>	chronic coronary insufficiency
<b>CCK</b>	cholecystokinin
<b>CCK-PZ</b>	cholecystokinin-pancreozymin
<b>CCL</b>	cardiac catheterization lab
<b>CCMSU</b>	clean catch midstream urine
<b>CCNS</b>	cell cycle nonspecific
<b>C-collar</b>	cervical collar
<b>CCPD</b>	continuous cycling/cyclical peritoneal dialysis
<b>CCR</b>	continuous complete remission
<b>CCRU</b>	critical care recovery unit
<b>CCS</b>	cell cycle specific; Cooperative Care Suite
<b>CCT</b>	closed cerebral trauma
<b>CCU</b>	coronary care unit
<b>CCX</b>	complications
<b>CD</b>	cesarean delivery; chronic dialysis; continuous drainage; Crohn's disease
<b>C&amp;D</b>	cystoscopy and dilatation
<b>C/D</b>	cup to disc ratio
<b>CD4</b>	antigenic marker on helper T cells
<b>CD8</b>	antigenic marker on suppressor T cells
<b>CDA</b>	congenital dyserythropoietic anemia
<b>CDAI</b>	Crohn's Disease Activity Index



<b>CDB</b>	cough, deep breathe
<b>C&amp;DB</b>	cough and deep breath
<b>CDC</b>	Centers for Disease Control
<b>CDE</b>	Certified Diabetic Educator; common duct exploration
<b>CDH</b>	congenital dysplasia of the hip; chronic daily headache
<b>CDLE</b>	chronic discoid lupus erythematosus
<b>CDS</b>	chronic dieting syndrome
<b>CDU</b>	chemical dependency unit
<b>CE</b>	cardiac enlargement; contrast echocardiology; central episiotomy; continuing education
<b>CEA</b>	carcinoembryonic antigen; carotid endarterectomy; cost-effectiveness analysis
<b>CECT</b>	contrast enhancement computed tomography
<b>CEI</b>	continuous extravascular infusion
<b>CEP</b>	cardiac enzyme panel; congenital erythropoietic porphyria; countercurrent electrophoresis
<b>ceph</b>	cephalic
<b>ceph floc</b>	cephalic flocculation
<b>CE&amp;R</b>	central episiotomy and repair
<b>CERA</b>	cortical evoked response audiometry
<b>cerv</b>	cervical
<b>CES</b>	cognitive environmental stimulation
<b>CEU</b>	continuing education units
<b>CF</b>	cystic fibrosis; complement fixation; cardiac failure; cancer-free; count fingers; contractile force
<b>CFA</b>	common femoral artery; complete Freund's adjuvant
<b>CFIDS</b>	chronic fatigue and immune dysfunction syndrome
<b>CFM</b>	close-fitting mask
<b>CFP</b>	cystic fibrosis protein
<b>CFR</b>	<i>Code of Federal Regulations</i> (United States)
<b>CFS</b>	cancer family syndrome; chronic fatigue syndrome
<b>CFT</b>	complement fixation test
<b>CF test</b>	complement fixation test
<b>CFU</b>	colony-forming units
<b>CG</b>	cholecystogram
<b>CGB</b>	chronic gastrointestinal bleeding
<b>CGD</b>	chronic granulomatous disease
<b>CGI</b>	Clinical Global Impression (scale)
<b>CGL</b>	chronic granulocytic leukemia
<b>CGMP</b>	Current Good Manufacturing Practices
<b>CGN</b>	chronic glomerulonephritis
<b>cgs</b>	centimeter-gram-second system of measurements

<b>CGTT</b>	cortisol glucose tolerance test
<b>CH</b>	child; chronic; chest; crown-heel; convalescent hospital; cluster headache
<b>CHAI</b>	continuous hepatic artery infusion
<b>CHAMPUS</b>	Civilian Health and Medical Program of the Uniformed Services
<b>CHAMPVA</b>	Civilian Health and Medical Program of the Veterans Administration
<b>CHB</b>	complete heart block
<b>CHC</b>	comprehensive health center
<b>CHD</b>	congenital heart disease; childhood diseases; coronary heart disease
<b>CHE</b>	chronic hepatic encephalopathy
<b>CHF</b>	congestive heart failure
<b>CHFV</b>	combined high frequency of ventilation
<b>CHI</b>	closed head injury
<b>CHIP</b>	Children's Health Insurance Program
<b>CHO</b>	carbohydrate (C; carb; COH)
<b>chol</b>	cholesterol
<b>c hold</b>	withhold
<b>CHOP</b>	cyclophosphamide, hydroxydaunomycin, oncovin (vincristine), and prednisone
<b>CHPA</b>	Consumer Healthcare Products Association
<b>CHPB</b>	Canadian Health Protection Branch (FDA equivalent)
<b>chr</b>	chronic
<b>CHT</b>	closed head trauma
<b>CHU</b>	closed head unit
<b>Ci</b>	Curie(s)
<b>CI</b>	cardiac index; cesium implant; complete iridectomy; confidence interval
<b>CIA</b>	chronic idiopathic anhidrosis
<b>CIAED</b>	collagen-induced autoimmune ear disease
<b>CIB</b>	cytomegalic inclusion bodies; crying-induced bronchospasm
<b>CIBD</b>	chronic inflammatory bowel disease
<b>CIC</b>	circulating immune complexes; coronary intensive care
<b>CICE</b>	combined intracapsular cataract extraction
<b>CICU</b>	cardiac intensive care unit
<b>CID</b>	cytomegalic inclusion disease
<b>CIDS</b>	continuous insulin delivery system; cellular immunodeficiency syndrome

<b>CIE</b>	counterimmunoelectrophoresis; crossed immunoelectrophoresis
<b>CIN</b>	chronic interstitial nephritis
<b>CINE</b>	chemotherapy-induced nausea and emesis
<b>circ</b>	circumcision; circumference; circulation
<b>CIS</b>	carcinoma in situ
<b>CIU</b>	chronic idiopathic urticaria
<b>CJD</b>	Creutzfeldt-Jakob disease
<b>CK</b>	check; creatinine kinase
<b>CK-MB</b>	creatine kinase isoenzyme with muscle and brain subunits (MB-CK)
<b>cl</b>	cloudy
<b>Cl</b>	chloride
<b>CLA</b>	community living arrangements
<b>clav</b>	clavicle
<b>CLBBB</b>	complete left bundle branch block
<b>CLD</b>	chronic lung disease
<b>CLEAR</b>	National Clearing House on Licensure Enforcement and Regulation
<b>CLF</b>	cholesterol-lecithin flocculation
<b>CLH</b>	chronic lobular hepatitis
<b>CLIA</b>	clinical laboratory improvement amendment
<b>CLL</b>	chronic lymphocytic leukemia
<b>CLLE</b>	columnar-lined lower esophagus
<b>cl liq</b>	clear liquid
<b>CLO</b>	cod liver oil; close
<b>CL&amp;P</b>	cleft lip and palate
<b>CL-VOID</b>	clean voided specimen
<b>CM</b>	Caucasian male; costal margin; continuous murmur; contrast media; centimeter; cochlear microphonics; culture media; common migraine
<b>CMA</b>	certified medical assistant; cost-minimization analysis
<b>CMBBT</b>	cervical mucous basal body temperature
<b>CMC</b>	critical micelle concentration; carboxymethyl cellulose; chronic mucocutaneous candidosis
<b>CME</b>	continuing medical education; cystoid macular edema
<b>CMF</b>	cyclophosphamide, methotrexate, and fluorouracil
<b>CMG</b>	cystometrogram
<b>CMHC</b>	Community Mental Health Center
<b>CMHN</b>	Community Mental Health Nurse
<b>CMi</b>	cell-mediated immunity; Cornell Medical Index
<b>CMJ</b>	carpometacarpal joint

<b>CMK</b>	congenital multicystic kidney
<b>CML</b>	cell-mediated lympholysis; chronic myelogenous leukemia
<b>CMM</b>	cutaneous malignant melanoma
<b>CMRNG</b>	chromosomally resistant <i>Neisseria gonorrhoeae</i>
<b>CMRO<sub>2</sub></b>	cerebral metabolic rate for oxygen
<b>CMS</b>	Centers for Medicare and Medicaid Services (formerly HCFA); circulation motion sensation
<b>CMSUA</b>	clean midstream urinalysis
<b>CMT</b>	chiropractic manipulative treatment
<b>CMV</b>	cytomegalovirus; cool mist vaporizer; controlled mechanical ventilation
<b>CN</b>	cranial nerve
<b>CNA</b>	chart not available
<b>CNH</b>	central neurogenic hyperpnea
<b>CNP</b>	continuous negative pressure
<b>CNS</b>	central nervous system; clinical nurse specialist
<b>Co</b>	cobalt
<b>CO</b>	cardiac output; carbon monoxide
<b>C/O</b>	complains of; complaints; under care of
<b>CO<sub>2</sub></b>	carbon dioxide
<b>CoA</b>	coarctation of the aorta; coenzyme A
<b>COA</b>	certificate of authority
<b>COAD</b>	chronic obstructive airway disease; chronic obstructive arterial disease
<b>COAG</b>	chronic open angle glaucoma; coagulation
<b>COBRA</b>	Consolidated Omnibus Reconciliation Act
<b>COC</b>	combination oral contraceptive; certificate of coverage
<b>COD</b>	cause of death
<b>COEPS</b>	cortically originating extrapyramidal symptoms
<b>COG</b>	cognitive function tests; Central Oncology Group
<b>COH</b>	carbohydrate (C; carb; CHO)
<b>CoHb</b>	carboxyhemoglobin
<b>COI</b>	cost-of-illness analysis
<b>COLD</b>	chronic obstructive lung disease
<b>COLD A</b>	cold agglutinin titer
<b>collyr</b>	eyewash (collyrium)
<b>col/ml</b>	colonies per milliliter
<b>comp</b>	complications; compound
<b>CON</b>	certificate of need
<b>conc</b>	concentrated

<b>cong</b>	congenital
<b>COP</b>	cyclophosphamide, oncovin (vincristine), and prednisone
<b>COPD</b>	chronic obstructive pulmonary disease
<b>COPE</b>	chronic obstructive pulmonary emphysema
<b>cor</b>	coronary
<b>CORF</b>	comprehensive outpatient rehabilitation facility
<b>COSTEP</b>	Commissioned Officer Study Training and Externship Program
<b>COT</b>	content of thought
<b>COU</b>	cardiac observation unit
<b>CP</b>	cerebral palsy; cleft palate; creatine phosphokinase; chest pain; chronic pain; chondromalacia patella
<b>C&amp;P</b>	cystoscopy and pyelography
<b>CPA</b>	costophrenic angle; cardiopulmonary arrest; cerebellar pontile angle
<b>CPAF</b>	chlorpropamide-alcohol flush
<b>CPAP</b>	continuous positive airway pressure
<b>CPB</b>	cardiopulmonary bypass
<b>CPBA</b>	competitive protein-binding assay
<b>CPC</b>	clinico-pathological conference; cerebral palsy clinic
<b>CPCR</b>	cardiopulmonary-cerebral resuscitation
<b>CPD</b>	cephalopelvic disproportion; chronic peritoneal dialysis
<b>CPDD</b>	calcium pyrophosphate deposition disease
<b>CPE</b>	chronic pulmonary emphysema; cardiogenic pulmonary edema
<b>CPGN</b>	chronic progressive glomerulonephritis
<b>CPH</b>	chronic persistent hepatitis
<b>CPhT</b>	Certified Pharmacy Technician
<b>CPI</b>	Consumer Price Index
<b>CPK</b>	creatine phosphokinase
<b>CPKD</b>	childhood polycystic kidney disease
<b>CPM</b>	central pontine myelinolysis; continuous passive motion; continue present management; counts per minute
<b>CPmax</b>	peak serum concentration
<b>CPmin</b>	trough serum concentration
<b>CPN</b>	chronic pyelonephritis
<b>CPP</b>	cerebral perfusion pressure
<b>CPPB</b>	continuous positive pressure breathing
<b>CPPV</b>	continuous positive pressure ventilation

<b>CPR</b>	cardiopulmonary resuscitation
<b>CPS</b>	complex partial seizures
<b>CPSC</b>	Consumer Product Safety Commission
<b>CPT</b>	chest physiotherapy
<b>CPT Codes</b>	Current Procedural Terminology Codes
<b>CPTH</b>	chronic posttraumatic headache
<b>CQI</b>	continuous quality improvement
<b>Cr</b>	creatinine
<b>CR</b>	cardiorespiratory; controlled release; cardiac rehabilitation; colon resection; closed reduction; complete remission
<b>CRA</b>	central retinal artery; clinical research associate
<b>CRBBB</b>	complete right bundle branch block
<b>CRC</b>	colorectal cancer; child-resistant closure
<b>CrCl</b>	creatinine clearance
<b>CRD</b>	chronic renal disease
<b>CREST</b>	calcinosis, Raynaud's phenomenon, esophageal hypomotility, scleroderma, and telangiectasia
<b>CRF</b>	chronic renal failure; corticotropin-releasing factor
<b>CRI</b>	chronic renal insufficiency
<b>cric</b>	cricoidotomy
<b>crit</b>	hematocrit
<b>CRO</b>	clinical research organization
<b>CRP</b>	C-reactive protein
<b>CRPF</b>	chloroquine-resistant <i>Plasmodium falciparum</i>
<b>CRST</b>	calcification, Raynaud's phenomenon, scleroderma, and telangiectasia
<b>CRT</b>	central reaction time; cadaver renal transplant
<b>CRTZ</b>	chemoreceptor trigger zone
<b>CRUMBS</b>	continuous remove, unobtrusive monitoring of biobehavioral systems
<b>CRVO</b>	central retinal vein occlusion
<b>CS</b>	coronary sclerosis; central supply; clinical stage; conjunctiva-sclera; consciousness; cat scratch; cycloserine
<b>C&amp;S</b>	culture and sensitivity
<b>CSBF</b>	coronary sinus blood flow
<b>CSC</b>	cornea, sclera, conjunctiva
<b>CS&amp;CC</b>	culture, sensitivity, and colony count
<b>CSD</b>	cat scratch disease; celiac sprue disease
<b>CSE</b>	cross section echocardiography
<b>C sect</b>	cesarean section

<b>CSF</b>	cerebrospinal fluid; colony-stimulating factor
<b>CSH</b>	carotid sinus hypersensitivity
<b>CSICU</b>	cardiac surgery intensive care unit
<b>CSII</b>	continuous subcutaneous insulin infusion
<b>CSLU</b>	chronic stasis leg ulcer
<b>CSM</b>	circulation, sensation, movement; cerebrospinal meningitis
<b>CSOM</b>	chronic serous otitis media
<b>CSP</b>	cellulose sodium phosphate
<b>C spine</b>	cervical spine
<b>CSR</b>	Cheyne-Stokes respiration; central supply room
<b>CST</b>	convulsive shock therapy; contraction stress test; cosyntropin stimulation test; certified surgical technologist
<b>CSU</b>	cardiac surveillance unit; cardiovascular surgery unit
<b>CT</b>	computed tomography; circulation time; coagulation time; clotting time; corneal thickness; cervical traction; Coomb's test; cardiothoracic; coated tablet
<b>CTA</b>	clear to auscultation
<b>CTB</b>	ceased to breathe
<b>CTD</b>	chest tube drainage; cumulative trauma disorder
<b>CT&amp;DB</b>	cough, turn, and deep breathe
<b>CTF</b>	Colorado tick fever
<b>CTL</b>	cytotoxic T lymphocytes
<b>CT/MPR</b>	computed tomography with multiplanar reconstructions
<b>cTNM</b>	clinical-diagnostic staging of cancer (tumor, node, metastasis)
<b>CTP</b>	comprehensive treatment plan
<b>CTS</b>	carpal tunnel syndrome
<b>CTSP</b>	called to see patient
<b>CTW</b>	central terminal of Wilson
<b>CTXN</b>	contraction
<b>CTZ</b>	chemoreceptor trigger zone
<b>CU</b>	cause unknown
<b>CUC</b>	chronic ulcerative colitis
<b>CUD</b>	cause undetermined
<b>CUG</b>	cystourethrogram
<b>CUS</b>	chronic undifferentiated schizophrenia
<b>CV</b>	cardiovascular; cell volume; curriculum vita (vitae)
<b>CVA</b>	cerebrovascular accident; costovertebral angle
<b>CVAT</b>	costovertebral angle tenderness

<b>CVC</b>	central venous catheter
<b>CVD</b>	collagen vascular disease
<b>CVI</b>	cerebrovascular insufficiency; continuous venous infusion
<b>CVID</b>	common variable immune deficiency
<b>CVO</b>	central vein occlusion; conjugate diameter of pelvic inlet
<b>CVP</b>	central venous pressure
<b>CVRI</b>	coronary vascular resistance index
<b>CVS</b>	clean voided specimen; cardiovascular system; chorionic villus sampling
<b>CVUG</b>	cysto-void urethrogram
<b>CW</b>	crutch walking
<b>C/W</b>	consistent with
<b>CWMS</b>	color, warmth, movement, sensation
<b>CWP</b>	coal worker's pneumoconiosis
<b>Cx</b>	cervix; culture; cancel
<b>CXR</b>	chest X-ray
<b>cysto</b>	cystoscopy; cystogram
<b>d</b>	day ( <i>dies</i> ); right ( <i>dexter</i> )
<b>D</b>	diarrhea; divorced; distal; dead; diopter; cholecalciferol, vitamin D
<b>D<sub>1</sub></b>	first dorsal vertebra
<b>D<sub>2</sub></b>	second dorsal vertebra
<b>D5LR</b>	dextrose (5 percent) in lactated Ringer's solution
<b>D5NS</b>	5 percent dextrose in normal saline
<b>D5W</b>	5 percent dextrose in water
<b>DA</b>	direct admission
<b>DAD</b>	drug administration device
<b>DAF</b>	decay-accelerating factor
<b>DAH</b>	disordered action of the heart
<b>DAI</b>	diffuse axonal injury
<b>DAL</b>	drug analysis laboratory
<b>DANA</b>	drug-induced antinuclear antibodies
<b>DAPT</b>	draw-a-person test
<b>DAT</b>	direct agglutination test; diet as tolerated; dementia of the Alzheimer type
<b>DAVE</b>	average diameter
<b>DAW</b>	dispense as written
<b>DAWN</b>	Drug Abuse Warning Network
<b>db</b>	decibel (dB)



<b>DB</b>	date of birth
<b>DBil</b>	direct bilirubin
<b>DBP</b>	diastolic blood pressure
<b>DBS</b>	diminished breath sounds
<b>DC</b>	discontinue; discharge; decrease; diagonal conjugate; Doctor of Chiropractic
<b>D&amp;C</b>	dilation and curettage
<b>D/C</b>	discontinue; discharge
<b>DCH</b>	delayed cutaneous hypersensitivity
<b>DCI</b>	duplicate coverage inquiry
<b>DCO</b>	diffusing capacity of carbon monoxide
<b>DCR</b>	delayed cutaneous reaction
<b>DCSA</b>	double contrast shoulder arthrography
<b>DCT</b>	direct (antiglobulin) Coombs test; deep chest therapy
<b>DCTM</b>	delay computer tomographic myelography
<b>DD</b>	differential diagnosis; down drain; dependent drainage; dry dressing; Duchenne's dystrophy
<b>D&amp;D</b>	diarrhea and dehydration
<b>DDD</b>	degenerative disc disease; dense deposit (renal) disease
<b>DDS</b>	dialysis disequilibrium syndrome; Doctor of Dental Surgery
<b>DDx</b>	differential diagnosis
<b>D&amp;E</b>	dilation and evacuation
<b>DEA</b>	Drug Enforcement Administration
<b>decub</b>	decubitus
<b>DEF</b>	decayed, extracted, or filled
<b>degen</b>	degenerative
<b>DEHP</b>	diethyl hexyl phthalate
<b>del</b>	delivery, delivered
<b>DEP ST SEG</b>	depressed ST segment
<b>DER</b>	disulfiram-ethanol reaction
<b>derm</b>	dermatology
<b>DES</b>	disequilibrium syndrome; diffuse esophageal spasm
<b>DESI</b>	Drug Efficacy Study Implementation
<b>DEV</b>	duck embryo vaccine; deviation
<b>DEVR</b>	dominant exudative vitreoretinopathy
<b>dex</b>	right
<b>DEXA</b>	dual energy X-ray absorpiometry
<b>DF</b>	decayed and filled
<b>DFD</b>	defined formula diets
<b>DFE</b>	distal femoral epiphysis

<b>DFMC</b>	daily fetal movement count
<b>DFR</b>	diabetic floor routine
<b>DFU</b>	dead fetus in uterus
<b>dgeo</b>	geometric diameter
<b>DGI</b>	disseminated gonococcal infection
<b>DGM</b>	ductal glandular mastectomy
<b>DH</b>	developmental history; diaphragmatic hernia; delayed hypersensitivity
<b>DHF</b>	dengue hemorrhagic fever
<b>DHHS</b>	Department of Health and Human Services
<b>DHL</b>	diffuse histiocytic lymphoma
<b>DHS</b>	duration of hospital stay
<b>DI</b>	diabetes insipidus (DIP); detrusor instability; drug information; drug interaction
<b>DIA</b>	Drug Information Association
<b>diag</b>	diagnosis
<b>DIC</b>	Drug Information Center; disseminated intravascular coagulation
<b>diff</b>	differential blood count
<b>DIJOA</b>	dominantly inherited juvenile optic atrophy
<b>dil</b>	dilute
<b>DIL</b>	drug-induced lupus erythematosus
<b>DILD</b>	diffuse infiltrative lung disease
<b>dim</b>	diminish
<b>DIP</b>	diabetes insipidus (DI); distal interphalangeal; desquamative interstitial pneumonia; drip infusion pyelogram
<b>dis</b>	dislocation
<b>disch</b>	discharge
<b>DISH</b>	diffuse idiopathic skeletal hyperostosis
<b>dist</b>	distilled
<b>DIV</b>	double inlet ventricle
<b>DIVA</b>	digital intravenous angiography
<b>DJD</b>	degenerative joint disease
<b>DKA</b>	diabetic ketoacidosis
<b>dl</b>	deciliter (dL; DL)
<b>DL</b>	danger list; direct laryngoscopy; diagnostic laparoscopy
<b>DLE</b>	discoid lupus erythematosus
<b>DLIS</b>	digitalis-like immunoreactive substance
<b>DLMP</b>	date of last menstrual period
<b>DLNMP</b>	date of last normal menstrual period

<b>DM</b>	diabetes mellitus; diastolic murmur; dermatomyositis; disease management
<b>DMARD</b>	disease-modifying antirheumatic drug
<b>DMD</b>	Duchenne's muscular dystrophy
<b>DME</b>	durable medical equipment
<b>DMF</b>	decayed, missing, or filled
<b>DMFT</b>	decayed, missing, and filled teeth
<b>DMOOC</b>	diabetes mellitus out of control
<b>DMSO</b>	dimethyl sulfoxide
<b>DMT</b>	dimethyltryptamine
<b>DMX</b>	diathermy, massage, and exercise
<b>DN</b>	down
<b>DNA</b>	deoxyribonucleic acid
<b>DNI</b>	do not intubate
<b>DNKA</b>	did not keep appointment
<b>DNP</b>	do not publish
<b>DNR</b>	do not resuscitate/report/refill
<b>DNS</b>	do not show; deviated nasal septum; dysplastic nevus syndrome
<b>DO</b>	right eye; Doctor of Osteopathy
<b>DOA</b>	dead on arrival; date of admission
<b>DOA-DRA</b>	dead on arrival, despite resuscitative attempts
<b>DOB</b>	date of birth
<b>DOC</b>	drug of choice; died of other causes
<b>DOE</b>	dyspnea on exertion
<b>DOI</b>	date of injury
<b>DORV</b>	double outlet right ventricle
<b>DORx</b>	date of treatment
<b>DOT</b>	Doppler ophthalmic test; died on table
<b>DP</b>	dorsalis pedis (pulse); diastolic pressure
<b>DPC</b>	discharge planning coordinator; delayed primary closure
<b>DPDL</b>	diffuse poorly differentiated lymphocytic lymphoma
<b>DPM</b>	disintegrations per minute; Doctor of Podiatric Medicine
<b>DPN</b>	diabetic peripheral neuropathy; diphosphopyridine nucleotide
<b>DPT</b>	diphtheria, pertussis, and tetanus (vaccine)
<b>DPU</b>	delayed pressure urticaria
<b>DR</b>	delivery room; diabetic retinopathy; doctor
<b>DR&amp;C</b>	deep respiration and coughing
<b>DRE</b>	digital rectal exam

<b>DREZ</b>	dorsal root entry zone
<b>DRG</b>	diagnosis-related group
<b>DRP</b>	drug-related problem
<b>DRR</b>	drug regimen review
<b>DRSG</b>	dressing (dsg)
<b>DS</b>	discharge summary; Down's syndrome; double strength; disoriented; dextrose stick
<b>DSA</b>	digital subtraction angiography
<b>DSAP</b>	disseminated superficial actinic porokeratosis
<b>DSC</b>	differential scanning calorimetry
<b>DSD</b>	dry sterile dressing; discharge summary dictated
<b>dsg</b>	dressing (DRSG)
<b>DSHEA</b>	Dietary Supplement Health and Education Act of 1994
<b>DSI</b>	deep shock insulin
<b>DSIAR</b>	double-stapled ileanal reservoir
<b>DSM</b>	disease state management
<b>DSM-IV</b>	<i>Diagnostic and Statistical Manual of Mental Disorders</i> , Fourth Edition
<b>DSS</b>	dengue shock syndrome
<b>DST</b>	dexamethasone suppression test; donor-specific transfusion
<b>DT</b>	diphtheria-tetanus; diptheria-toxoid
<b>DTA</b>	differential thermal analysis
<b>DTCA</b>	direct-to-consumer advertising
<b>dttd</b>	give of such doses ( <i>dentur tales doses</i> )
<b>DTH</b>	delayed-type hypersensitivity
<b>DTP</b>	drug therapy problem
<b>DTR</b>	deep tendon reflexes
<b>DTs</b>	delirium tremens
<b>DTS</b>	donor transfusion, specific
<b>DTT</b>	diphtheria tetanus toxoid
<b>DTV</b>	due to void
<b>DTX</b>	detoxification
<b>DU</b>	duodenal ulcer; duroxide uptake; diabetic urine; diagnosis undetermined
<b>DUB</b>	dysfunctional uterine bleeding
<b>DUE</b>	drug use evaluation
<b>DUI</b>	driving under the influence
<b>DUR</b>	drug utilization review
<b>DVD</b>	dissociated vertical deviation
<b>DVIU</b>	direct vision internal urethrotomy

<b>DVR</b>	double valve replacement
<b>DVT</b>	deep vein thrombosis
<b>DW</b>	distilled water; deionized water
<b>DWDL</b>	diffuse, well-differentiated lymphocytic lymphoma
<b>Dx</b>	diagnosis
<b>Dz</b>	disease; dozen
<b>E</b>	edema, enzyme
<b>E<sup>1</sup></b>	elimination reaction, monomolecular
<b>E<sup>2</sup></b>	elimination reaction, bimolecular
<b>EAC</b>	estimated acquisition cost; external auditory canal
<b>EAHF</b>	eczema, allergy, hay fever
<b>EAM</b>	external auditory meatus
<b>EAR</b>	early asthmatic response
<b>EAST</b>	external rotation, abduction stress test
<b>EAT</b>	ectopic atrial tachycardia
<b>EB</b>	epidermolysis bullosa
<b>EBL</b>	estimated blood loss
<b>EBV</b>	Epstein-Barr virus
<b>EC</b>	enteric coated; eyes closed; extracellular; Enzyme Commission (number)
<b>ECBD</b>	exploration of common bile duct
<b>ECC</b>	emergency cardiac care
<b>ECCE</b>	extracapsular cataract extraction
<b>ECD</b>	endocardial cushion defect
<b>CEMG</b>	evoked compound electromyography
<b>ECF</b>	extracellular fluid; extended care facility; eosinophilic chemotactic factor
<b>ECG</b>	electrocardiogram (EKG)
<b>echo</b>	echocardiogram (ECHO)
<b>ECHO</b>	etoposide, cyclophosphamide, adriamycin (hydroxydaunomycin), and oncovin (vincristine)
<b>ECL</b>	extent of cerebral lesion; extracapillary lesions
<b>ECM</b>	erythema chronicum migrans
<b>ECMO</b>	extracorporeal membrane oxygenation
<b>ECN</b>	extended care nursery
<b>EC No.</b>	Enzyme Commission number
<b>ECR</b>	emergency chemical restraint
<b>ECRL</b>	extensor carpi radialis longus
<b>ECT</b>	electroconvulsive therapy; enhanced computer tomography; emission computed tomography
<b>ECU</b>	extensor carpi ulnaris

<b>ECW</b>	extracellular water
<b>ED</b>	emergency department; epidural
<b>ED<sub>50</sub></b>	median effective dose
<b>EDC</b>	estimated date of confinement; estimated date of conception; end diastolic counts
<b>EDD</b>	expected date of delivery
<b>EDF</b>	extension, derotation, flexion
<b>EDM</b>	early diastolic murmur
<b>EDS</b>	Ehlers-Danlos syndrome
<b>EDTA</b>	ethylenediaminetetraacetic acid; edetic acid (ethylenediamine tetracetic acid)
<b>EDV</b>	end-diastolic volume
<b>EE</b>	equine encephalitis; end to end
<b>EEE</b>	Eastern equine encephalomyelitis; edema, erythema, and exudate
<b>EEG</b>	electroencephalogram
<b>EENT</b>	eyes, ears, nose, throat
<b>EES</b>	erythromycin ethylsuccinate
<b>EF</b>	extended-field (radiotherapy); endurance factor; ejection fraction
<b>EFAD</b>	essential fatty acid deficiency
<b>EFE</b>	endocardial fibroelastosis
<b>EFM</b>	external fetal monitoring
<b>EFW</b>	estimated fetal weight
<b>EGA</b>	estimated gestational age
<b>EGBUS</b>	external genitalia, Bartholin, urethral, Skene's (glands)
<b>EGD</b>	esophagogastroduodenoscopy
<b>EGF</b>	epidermal growth factor
<b>EGTA</b>	esophageal gastric tube airway
<b>EH</b>	essential hypertension; enlarged heart; extramedullary hematopoiesis
<b>EHB</b>	elevate head of bed
<b>EHF</b>	epidemic hemorrhagic fever
<b>E&amp;I</b>	endocrine and infertility
<b>EIA</b>	exercise-induced asthma; enzyme immunoassay
<b>EIAB</b>	extracranial-intracranial arterial bypass
<b>EIB</b>	exercise-induced bronchospasm
<b>EID</b>	electronic infusion device
<b>EIF</b>	eukaryotic initiation factor
<b>EIS</b>	endoscopic injection sclerotherapy
<b>EJ</b>	external jugular; elbow jerk

<b>EKC</b>	epidemic keratoconjunctivitis
<b>EKG</b>	electrocardiogram (ECG)
<b>E-L</b>	external lids
<b>ELF</b>	elective low forceps
<b>ELH</b>	endolymphatic hydrops
<b>ELISA</b>	enzyme-linked immunosorbent assay
<b>elix</b>	elixir
<b>ELOP</b>	estimated length of program
<b>ELP</b>	electrophoresis
<b>EM</b>	electron microscope; ejection murmur; erythema multiforme
<b>EMB</b>	endomyocardial biopsy
<b>EMC</b>	encephalomyocarditis; equilibrium moisture content
<b>EMD</b>	electromechanical dissociation
<b>EMF</b>	erythrocyte maturation factor; electromotive force
<b>EMG</b>	electromyography; essential monoclonal gammopathy
<b>EMIC</b>	emergency maternity and infant care
<b>E-MICR</b>	electron microscopy
<b>EMIT</b>	enzyme multiplied immunoassay technique
<b>emp</b>	as directed; in the manner prescribed ( <i>ex modo praescripto</i> )
<b>EMR</b>	emergency mechanical restraint; empty, measure, and record; educable mentally retarded; electronic medical record
<b>EMS</b>	emergency medical services/systems
<b>EMT</b>	emergency medical technician
<b>EMV</b>	eye, motor, verbal
<b>EMW</b>	electromagnetic waves
<b>EN</b>	enteral nutrition
<b>ENA</b>	extractable nuclear antigen
<b>endo</b>	endotracheal
<b>ENG</b>	electronystagmography
<b>ENL</b>	erythema nodosum leprosum
<b>ENP</b>	extractable nucleoprotein
<b>ENT</b>	ears, nose, throat
<b>EO</b>	eyes open
<b>EOA</b>	examination, opinion, and advice; esophageal obturator airway
<b>EOG</b>	electro-oculogram
<b>EOM</b>	extraocular movement; extraocular muscles
<b>EOMI</b>	extraocular muscles intact

<b>EORA</b>	elderly onset rheumatoid arthritis
<b>eos</b>	eosinophil
<b>EP</b>	endogenous pyrogen; electrophysiologic
<b>EPA</b>	Environmental Protection Agency
<b>EPB</b>	extensor pollicis brevis
<b>epis</b>	episiotomy
<b>epith</b>	epithelial
<b>EPL</b>	extensor pollicis longus
<b>EPM</b>	electronic pacemaker
<b>EPO</b>	exclusive provider organization
<b>EPP</b>	erythropoietic protoporphyria
<b>EPR</b>	electrophrenic respiration; emergency physical restraint; electron paramagnetic resonance
<b>EPS</b>	electrophysiologic study; extrapyramidal syndrome/symptoms
<b>EPT</b>	early pregnancy test
<b>EPTS</b>	existed prior to service
<b>ER</b>	emergency room; estrogen receptor; external rotation
<b>ERA</b>	evoked response audiometry; estrogen receptor assay
<b>ERCP</b>	endoscopic retrograde cholangiopancreatography
<b>ERFC</b>	erythrocyte rosette-forming cells
<b>ERG</b>	electroretinogram
<b>ERL</b>	effective refractory length
<b>ERP</b>	estrogen receptor protein; endoscopic retrograde pancreatography
<b>ERPF</b>	effective renal plasma flow
<b>ERPs</b>	event-related potentials (of the brain)
<b>ERT</b>	estrogen replacement therapy
<b>ERV</b>	expiratory reserve volume
<b>ESAP</b>	evoked sensory (nerve) action potentiation
<b>ESM</b>	ejection systolic murmur
<b>ESP</b>	end systolic pressure
<b>ESR</b>	erythrocyte sedimentation rate; electron spin resonance
<b>ESRD</b>	end-stage renal disease
<b>EST</b>	electroshock therapy
<b>ESU</b>	electrostatic units
<b>ESWL</b>	extracorporeal shock wave lithotripsy
<b>ET</b>	endotracheal; esotropia; eustachian tube; ejection time; exercise treadmill
<b>ETF</b>	eustachian tubal function
<b>ETO</b>	estimated time of ovulation
<b>EtOH</b>	ethyl alcohol; ethanol



<b>ETS</b>	environmental tobacco smoke
<b>ETT</b>	endotracheal tube; exercise tolerance test
<b>EU</b>	excretory urography
<b>EUA</b>	examine under anesthesia
<b>EUS</b>	endoscopic ultrasonography
<b>evac</b>	evacuation
<b>eval</b>	evaluate
<b>EWB</b>	estrogen withdrawal bleeding
<b>EWSCls</b>	extended-wear soft contact lenses
<b>exam</b>	examination
<b>exp</b>	exploration; experienced
<b>exp lap</b>	exploratory laparotomy
<b>ext</b>	extract ( <i>extractum</i> ); external
<b>ext rot</b>	external rotation
<b>EX U</b>	excretory urogram
<b>F</b>	Fahrenheit; female; flow; facial; firm; Faraday
<b>F1</b>	offspring from first generation
<b>F2</b>	offspring from second generation
<b>FA</b>	femoral artery
<b>FAAP</b>	family assessment adjustment pass
<b>FAC</b>	fractional area concentration
<b>FACH</b>	forceps to after-coming head
<b>FACS</b>	Fellow of the American College of Surgeons
<b>FAD</b>	Family Assessment Device; flavin adenine dinucleotide
<b>FAHRB</b>	Federation of Associations of Health Regulatory Boards
<b>FAI</b>	functional assessment inventory
<b>fall</b>	fallopian
<b>fam</b>	family
<b>FANA</b>	fluorescent antinuclear antibody
<b>FAP</b>	fibrillating action potential; familial amyloid polyneuropathy; familial adenomatous polyposis
<b>FAPhA</b>	Fellow of the American Pharmacists Association
<b>FAS</b>	fetal alcohol syndrome
<b>FASHP</b>	Fellow of the American Society of Health-System Pharmacists; Federal Association of Schools of Health Professionals
<b>FAST</b>	functional assessment staging test (of Alzheimer's disease); fluoro-allegro sorbent test; fetal acoustical stimulation test

<b>FAT</b>	fluorescent antibody test
<b>FB</b>	foreign body; finger breadth
<b>FBG</b>	fasting blood glucose
<b>FBM</b>	fetal breathing movements
<b>FBN</b>	fibronectin
<b>FBP</b>	fetal biophysical profile
<b>FBS</b>	fasting blood sugar; fetal bovine serum
<b>FBU</b>	fingers below umbilicus
<b>FBW</b>	fasting blood work
<b>FC</b>	Foley catheter; finger counting; fever, chills
<b>F&amp;C</b>	foam and condom; flare and cells
<b>F cath</b>	Foley catheter
<b>FCC</b>	follicular center cells; familial colonic cancer; fracture compound comminuted
<b>FCDB</b>	fibrocystic disease of the breast
<b>FCH</b>	familial combined hyperlipidemia
<b>FCMC</b>	family-centered maternity care
<b>FCMD</b>	Fukuyama's congenital muscular dystrophy
<b>FCMN</b>	family-centered maternity nursing
<b>FCR</b>	flexor carpi radialis
<b>FCRB</b>	flexor carpi radialis brevis
<b>FCSNVD</b>	fever, chills, sweating, nausea, vomiting, diarrhea
<b>FCU</b>	flexor carpi ulnaris
<b>FD</b>	focal distance; familial dysautonomia
<b>F&amp;D</b>	fixed and dilated
<b>FDA</b>	fronto-dextra anterior; Food and Drug Administration
<b>FDC</b>	Food, Drug, and Cosmetic (Act)
<b>FDIU</b>	fetal death in utero
<b>FDLE</b>	Federal Drug Law Examination
<b>FDP</b>	fibrin-degradation products; flexor digitorum profundus
<b>FDS</b>	flexor digitorum superficialis; for duration of stay
<b>Fe</b>	iron
<b>FEC</b>	forced expiratory capacity
<b>FEF</b>	forced expiratory flow
<b>FEHBP</b>	Federal Employees Health Benefit Program
<b>FEL</b>	familial erythrophagocytic lymphohistiocytosis
<b>fem</b>	femoral
<b>fem-pop</b>	femoral popliteal (bypass)
<b>FEN</b>	fluid, electrolytes, nutrition
<b>FE<sub>na</sub></b>	fractional extraction of sodium

<b>FEP</b>	Federal Employee Plan; free erythrocyse protoporphyrin
<b>FeSO<sub>4</sub></b>	ferrous sulfate
<b>FEV</b>	forced expiratory volume
<b>FEV<sub>1</sub></b>	forced expiratory volume in one second
<b>FF</b>	filtration fraction; fundus firm; flat feet; fat free; force fluids
<b>FFA</b>	free fatty acid
<b>F factor</b>	fertility/sex factor
<b>FFP</b>	fresh frozen plasma
<b>FFS</b>	fee for service
<b>FFT</b>	fast-Fourier transforms
<b>FGF</b>	fibroblast growth factor
<b>FH</b>	family history
<b>FHF</b>	fulminant hepatic failure
<b>FHH</b>	familial hypocalciuric hypercalcemia
<b>FHI</b>	Fuchs heterochromic iridocyclitis
<b>FHR</b>	fetal heart rate
<b>FHS</b>	fetal heart sounds; fetal hydantoin syndrome
<b>FHT</b>	fetal heart tone
<b>FICA</b>	Federal Insurance Contributions Act
<b>FiCO<sub>2</sub></b>	fraction of inspired carbon dioxide
<b>FIFO</b>	first in, first out
<b>FIM</b>	functional independent measure
<b>FiO<sub>2</sub></b>	fraction of inspired oxygen
<b>FIP</b>	Federation Internationale Pharmaceutique (International Pharmaceutical Federation)
<b>floc</b>	flocculation
<b>FLS</b>	flashing lights and/or scotoma
<b>FM</b>	fetal movements; face mask
<b>F&amp;M</b>	firm and midline (uterus)
<b>FMC</b>	fetal movement count
<b>FMD</b>	foot and mouth disease
<b>FME</b>	full-mouth extraction
<b>FMF</b>	forced midexpiratory flow; familial Mediterranean fever
<b>FMG</b>	foreign medical graduate; fine mesh gauze
<b>FMH</b>	family medical history; fibromuscular hyperplasia
<b>FMN</b>	flavin mononucleotide
<b>FMP</b>	fasting metabolic panel
<b>FMS</b>	fibromyalgia syndrome
<b>FMX</b>	full-mouth X-ray

<b>FN</b>	false negative; finger-to-nose (FTN)
<b>FNAB</b>	fine-needle aspiration biopsy
<b>FNAC</b>	fine-needle aspiration cytology
<b>FNH</b>	focal nodular hyperplasia; febrile nonhemolytic reaction
<b>FNR</b>	false negative rate
<b>FNS</b>	functional neuromuscular stimulation
<b>FOB</b>	foot of bed; fiberoptic bronchoscope; father of baby
<b>FOBT</b>	fecal occult blood test
<b>FOC</b>	father of child
<b>FOD</b>	free of disease
<b>FOI</b>	flight of ideas; freedom of information
<b>FOOB</b>	fell out of bed
<b>FP</b>	family planning; family practice; frozen plasma; flat plate; false positive; flavoprotein
<b>FPAL</b>	full-term, premature, abortion, living
<b>FPB</b>	flexor pollicis brevis
<b>FPD</b>	feto-pelvic disproportion; fixed partial denture
<b>FPG</b>	fasting plasma glucose
<b>FPGEE</b>	Foreign Pharmacy Graduate Equivalency Examination
<b>FPIA</b>	fluorescence-polarization immunoassay
<b>FPL</b>	flexor pollicis longus
<b>FPNA</b>	first-pass nuclear angiocardiology
<b>FR</b>	flow rate
<b>F&amp;R</b>	flow and rhythm (pulse)
<b>FRC</b>	functional residual capacity
<b>FRJM</b>	full range of joint motion
<b>FROM</b>	full range of movement
<b>FS</b>	frozen section; flexible sigmoidoscopy
<b>FSB</b>	fetal scalp blood
<b>FSBM</b>	full-strength breast milk
<b>FSE</b>	fetal scalp electrode
<b>FSG</b>	focal segmental glomerulosclerosis
<b>FGS</b>	focal and segmental glomerulosclerosis
<b>FSH</b>	follicle-stimulating hormone; facioscapulohumeral
<b>FSHMD</b>	facioscapulohumeral muscular dystrophy
<b>FSHRF</b>	follicle-stimulating hormone releasing factor
<b>FSP</b>	fibrin split products
<b>FT</b>	full term
<b>FTA</b>	fluorescent titer antibody; fluorescent treponemal antibody

<b>FTC</b>	Federal Trade Commission
<b>FTD</b>	failure to descend
<b>FTI</b>	free thyroxine index
<b>FTLFC</b>	full-term living female child
<b>FTLMC</b>	full-term living male child
<b>FTN</b>	finger-to-nose (FN); full-term nursery
<b>FTND</b>	full-term normal delivery
<b>FTP</b>	failure to progress
<b>FTR</b>	for the record
<b>FTSG</b>	full-thickness skin graft
<b>FTT</b>	failure to thrive
<b>F&amp;U</b>	flanks and upper quadrants
<b>F/U</b>	follow-up; fundus at umbilicus
<b>FUN</b>	follow-up note
<b>FUO</b>	fever of undetermined origin
<b>FUR</b>	functional uterine bleeding
<b>FVC</b>	forced vital capacity
<b>FVH</b>	focal vascular headache
<b>FVL</b>	flow volume loop
<b>FWB</b>	full weight bearing
<b>FWS</b>	fetal warfarin syndrome
<b>FWW</b>	front wheel walker
<b>Fx</b>	fracture (Fxr); fractional urine; function (Fxn)
<b>Fx-dis</b>	fracture-dislocation
<b>Fxn</b>	function (Fx)
<b>Fxr</b>	fracture (Fx)
<b>FY</b>	fiscal year
<b>g</b>	gram (gm)
<b>G</b>	gauge; gallop
<b>G 1-4</b>	grades 1-4
<b>G6PD</b>	glucose-6-phosphate dehydrogenase
<b>GA</b>	gastric analysis; general appearance; general anesthesia; gestational age
<b>GABA</b>	gamma-aminobutyric acid
<b>GABHS</b>	group A beta hemolytic streptococci
<b>GAD</b>	generalized anxiety disorder
<b>GAF</b>	Global Assessment of Functioning (Scale)
<b>GAO</b>	General Accounting Office
<b>GAS</b>	general adaptation syndrome
<b>GAT</b>	group adjustment therapy
<b>GB</b>	gallbladder

<b>GBM</b>	glomerular basement membrane
<b>GBP</b>	gastric bypass
<b>GBS</b>	gallbladder series; Guillain-Barr syndrome; group B streptococci
<b>GC</b>	gonococci (gonorrhea); gas chromatography
<b>G+C</b>	gram-positive cocci
<b>G-C</b>	gram-negative cocci
<b>GCA</b>	giant cell arteritis
<b>GCDFP</b>	gross cystic disease fluid protein
<b>GCIIS</b>	glucose control insulin infusion system
<b>GCS</b>	Glasgow coma scale
<b>GCT</b>	giant cell tumor
<b>GD</b>	Graves disease
<b>G&amp;D</b>	growth and development
<b>GDF</b>	gel diffusion precipitin
<b>GDM</b>	gestational diabetes mellitus
<b>GDP</b>	guanosine 5'-diphosphate
<b>GE</b>	gastroenteritis
<b>GEP</b>	general enrollment period; gastroenteropancreatic
<b>GER</b>	gastroesophageal reflux
<b>GERD</b>	gastroesophageal reflux disease (GRD)
<b>GETA</b>	general endotracheal anesthesia
<b>GF</b>	grandfather; gluten-free; gastric fistula
<b>GFR</b>	glomerular filtration rate
<b>GFW</b>	gram formula weight
<b>GGE</b>	generalized glandular enlargement
<b>GH</b>	growth hormone
<b>GHD</b>	growth hormone deficiency
<b>GHQ</b>	general health questionnaire
<b>GI</b>	gastrointestinal; granuloma inguinale
<b>GIB</b>	gastric ileal bypass
<b>GIC</b>	general immunocompetence
<b>GIFT</b>	gamete intrafallopian treatment
<b>GIP</b>	giant cell interstitial pneumonia; gastric inhibiting peptide; gastric inhibitory polypeptide
<b>GIS</b>	gastrointestinal series
<b>GIT</b>	gastrointestinal tract
<b>GJ</b>	gastrojejunostomy
<b>GL</b>	greatest length
<b>GLA</b>	gingivolingual axial
<b>GLNH</b>	giant lymph node hyperplasia
<b>GLP</b>	good laboratory practice(s)

<b>GM</b>	grandmother
<b>GMC</b>	general medicine clinic
<b>GMP</b>	good manufacturing practice(s)
<b>GMT</b>	geometric mean (antibody) titer
<b>GN</b>	glomerulonephritis; gram-negative
<b>GnRH</b>	gonadotropin-releasing hormone
<b>GOT</b>	glutamate oxaloacetate transaminase
<b>GP</b>	general practitioner; gutta percha
<b>G/P</b>	gravida/para
<b>GPC</b>	gram-positive cocci; giant papillary conjunctivitis
<b>GPIA</b>	Generic Pharmaceutical Industry Association
<b>GPN</b>	graduate practical nurse
<b>GPO</b>	group purchasing organization
<b>GPPP</b>	group practice prepayment plan
<b>GPT</b>	glutamate pyruvate transaminase
<b>gr</b>	grain
<b>G+R</b>	gram-positive rods
<b>G-R</b>	gram-negative rods
<b>GRAS</b>	generally regarded as safe
<b>grav</b>	gravid (pregnant)
<b>GRD</b>	gastroesophageal reflux disease (GERD)
<b>GRN</b>	granules
<b>GSD</b>	glycogen storage disease
<b>GSE</b>	grip strong and equal; gluten-sensitive enteropathy
<b>GSI</b>	genuine stress incontinence
<b>GSP</b>	general survey panel
<b>GSPN</b>	greater superficial petrosal neurectomy
<b>GSR</b>	galvanic skin resistance
<b>GSW</b>	gunshot wound
<b>gt</b>	drop ( <i>gutta</i> )
<b>GT</b>	gastrotomy tube; gait training
<b>GTF</b>	glucose tolerance factor
<b>GTN</b>	gestational trophoblastic neoplasms
<b>GTP</b>	glutamyl transpeptidase; guanosine 5'-triphosphate
<b>gtt</b>	drops ( <i>guttae</i> )
<b>GTT</b>	glucose tolerance test
<b>GU</b>	genitourinary
<b>GUS</b>	genitourinary sphincter; genitourinary system
<b>GVF</b>	good visual fields
<b>GVHD</b>	graft-versus-host disease
<b>GWA</b>	gunshot wound of the abdomen
<b>GWT</b>	gunshot wound of the throat

<b>GXT</b>	graded exercise testing
<b>GYN</b>	gynecology
<b>H</b>	hypodermic; hour; heroin; hydrogen; husband
<b>H<sub>1</sub></b>	histamine receptor subtype 1
<b>H<sub>2</sub></b>	histamine receptor subtype 2
<b>H<sub>2</sub>O</b>	water
<b>HA</b>	headache; hyperalimentation; hypothalamic amenorrhea; hearing aid; hemolytic anemia; hospital admission; hepatitis, type A; hemagglutination assay
<b>HAA</b>	hepatitis-associated antigen
<b>HAE</b>	hereditary angioedema; hepatic artery embolization; hearing aid evaluation
<b>HAI</b>	hepatic arterial infusion
<b>HAL</b>	hyperalimentation
<b>HAN</b>	heroin-associated nephropathy
<b>HANE</b>	heredity angioneurotic edema
<b>HAPS</b>	hepatic arterial perfusion scintigraphy
<b>HAQ</b>	Health Assessment Questionnaire
<b>HAS</b>	hyperalimentation solution
<b>HASHD</b>	hypertensive arteriosclerotic heart disease
<b>HAT</b>	head, arms, and trunk
<b>HAV</b>	hepatitis A virus; hallux abducto valgus
<b>Hb</b>	hemoglobin
<b>HB</b>	hemoglobin; heart block; hepatitis, type B; hold breakfast; heartburn
<b>HBA</b>	hepatitis B antigen
<b>HBBW</b>	hold breakfast, blood work
<b>HBD</b>	has been drinking
<b>HBF</b>	hepatic blood flow
<b>HBM</b>	home blood glucose monitoring
<b>HBI</b>	hemibody irradiation
<b>HBO</b>	hyperbaric oxygen
<b>HBP</b>	high blood pressure
<b>HBS</b>	Health Behavior Scale
<b>HBsAg</b>	hepatitis B surface antigen
<b>HBV</b>	hepatitis B virus; hepatitis B vaccine
<b>HC</b>	home care; head circumference; heel cord; house call; Hickman catheter
<b>HCA</b>	health care aide
<b>HCC</b>	hepatocellular carcinoma
<b>HCFA</b>	Health Care Financing Administration (now CMS)



<b>HCG</b>	human chorionic gonadotropin
<b>HCL</b>	hair cell leukemia
<b>HCLs</b>	hard contact lenses
<b>HCM</b>	health care maintenance; hypertrophic cardiomyopathy
<b>HCO<sub>3</sub></b>	bicarbonate
<b>HCP</b>	hereditary coprophemia
<b>HCT</b>	hematocrit; histamine challenge test
<b>HCV</b>	hepatitis C virus
<b>HCVD</b>	hypertensive cardiovascular disease
<b>HD</b>	Hodgkin's disease; Huntington's disease; hearing distance; hemodialysis; hip disarticulation; high dose
<b>HDC</b>	high-dose chemotherapy
<b>HDCV</b>	human diploid cell vaccine
<b>HDL</b>	high-density lipoprotein
<b>HDLW</b>	hearing distance for watch ticking in left ear
<b>HDMA</b>	Health Distributors Manufacturers Association (formerly NWDA)
<b>HDN</b>	hemolytic disease of the newborn
<b>HPDAA</b>	heparin-dependent, platelet-associated antibody
<b>HDRS</b>	Hamilton Depression Rate Scale
<b>HDRW</b>	hearing distance for watch ticking in right ear
<b>HDV</b>	hepatitis D virus
<b>H&amp;E</b>	hemorrhage and exudate; hematoxylin and eosin
<b>HEDIS</b>	Health Plan Employer Data and Information Set
<b>HEENT</b>	head, eyes, ears, nose, throat
<b>HEK</b>	human embryonic kidney
<b>HEL</b>	human embryonic lung
<b>hemi</b>	hemiplegia
<b>HEMPAS</b>	hereditary erythrocytic multinuclearity with positive acidified serum test
<b>HEP</b>	histamine equivalent prick; hepatic; heparin
<b>HEPLOCK</b>	heparin lock
<b>HES</b>	hypereosinophilic syndrome
<b>HEV</b>	hepatitis E virus
<b>HF</b>	heart failure
<b>HFD</b>	high forceps delivery
<b>HFHL</b>	high-frequency hearing loss
<b>Hgb</b>	hemoglobin
<b>HGH</b>	human growth hormone
<b>HGPRT</b>	hypoxanthine-guanine phosphoribosyltransferase
<b>HH</b>	hiatal hernia; home health
<b>H&amp;H</b>	hematocrit and hemoglobin

<b>HHa</b>	home health agency
<b>HHC</b>	home health care
<b>HHd</b>	hypertensive heart disease
<b>HHFM</b>	high-humidity face mask
<b>HHH</b>	high, hot, and a "hell of a lot" (order for an uncomfortable enema)
<b>HHN</b>	handheld nebulizer
<b>HHNK</b>	hyperglycemic hyperosmolar nonketotic (coma)
<b>HHS</b>	Health and Human Services (Department)
<b>HHT</b>	hereditary hemorrhagic telangiectasis
<b>HHV-6</b>	human herpes virus 6
<b>HI</b>	hemagglutination inhibition; head injury
<b>HIA</b>	hemagglutination inhibition antibody
<b>HIB</b>	health insurance benefits; hospital insurance benefits
<b>HIB<sub>v</sub></b>	haemophilus influenzae type B vaccine
<b>HICN</b>	health insurance claim number
<b>HID</b>	headache, insomnia, depression
<b>HIE</b>	hypoxic-ischemic encephalopathy
<b>HIF</b>	higher integrative functions
<b>HIL</b>	hypoxic-ischemic lesion
<b>HIM</b>	health insurance manual
<b>HIPAA</b>	Health Insurance Portability and Accountability Act of 1996
<b>HIR</b>	health insurance regulations; head injury routine
<b>HIS</b>	Health Intention Scale
<b>histo</b>	histoplasmin skin test; histoplasmosis
<b>HIT</b>	heparin-induced thrombocytopenia; histamine inhalation test
<b>HIV</b>	human immunodeficiency virus
<b>HIVD</b>	herniated intervertebral disk
<b>HJR</b>	hepato-jugular reflex
<b>H-K</b>	hand to knee; heel to knee
<b>HKAFO</b>	hip-knee-ankle-foot orthosis
<b>HKO</b>	hip-knee orthosis
<b>HL</b>	heparin lock; harelip; hairline; hearing level; Hickman line
<b>HLA</b>	human leukocyte antigen
<b>HLB</b>	hydrophil-lipophil-balance
<b>HLd</b>	herniated lumbar disc
<b>HLHS</b>	hypoplastic left heart syndrome
<b>HLV</b>	hypoplastic left ventricle
<b>HM</b>	hand motion

<b>HMD</b>	hyaline membrane disease
<b>HMG</b>	human menopausal gonadotropin
<b>HMI</b>	healed myocardial infarction
<b>HMO</b>	health maintenance organization
<b>HMP</b>	hexose monophosphate; hot moist packs
<b>HMR</b>	histiocytic medullary reticulosis
<b>HMX</b>	heat massage exercise
<b>HN</b>	high nitrogen
<b>H&amp;N</b>	head and neck
<b>HNP</b>	herniated nucleus pulposus
<b>hnRNA</b>	heterogeneous nuclear ribonucleic acid
<b>HNV</b>	has not voided
<b>H/O</b>	history of
<b>HOB</b>	head of bed
<b>HOB UPSOB</b>	head of bed up for shortness of breath
<b>HOC</b>	Health Officer Certificate
<b>HOCM</b>	hypertrophic obstructive cardiomyopathy
<b>HOH</b>	hard of hearing
<b>HP</b>	hemiplegia; hemipelvectomy; hot packs
<b>H&amp;P</b>	history and physical
<b>HPA</b>	human papilloma virus (HPV); hypothalamic-pituitary-adrenal (axis)
<b>HPF</b>	high-power field
<b>HPFH</b>	hereditary persistence of fetal hemoglobin
<b>HPG</b>	human pituitary gonadotropin
<b>HPI</b>	history of present illness
<b>HPL</b>	human placental lactogen
<b>HPLC</b>	high-pressure (performance) liquid chromatography
<b>HPM</b>	hemiplegic migraine
<b>HPN</b>	home parenteral nutrition
<b>HPO</b>	hypertrophic pulmonary osteoarthropathy; hydrophilic ointment
<b>HPT</b>	hyperparathyroidism
<b>HPV</b>	human papilloma virus (HPA)
<b>H&amp;P</b>	history and physical
<b>HPZ</b>	high-pressure zone
<b>HR</b>	heart rate; hour; hallux rigidus; hospital record; Harrington rod
<b>HRA</b>	histamine-releasing activity
<b>HRIG</b>	human rabies immune globulin
<b>HLA</b>	human retrovirus-like agent
<b>HRPC</b>	Heat Responsive Pain Council

<b>HRS</b>	hepatorenal syndrome
<b>HRT</b>	hormone replacement therapy
<b>hs</b>	bedtime ( <i>hora somni</i> )
<b>HS</b>	hereditary spherocytosis; heel spur; heel stick
<b>H-S</b>	heel to shin
<b>HSA</b>	human serum albumin; hypersomnia-sleep apnea; Health Systems Agency; health supports and appliances
<b>HSBG</b>	heelstick bloodgas
<b>HSG</b>	hysterosalpingogram
<b>HSM</b>	hepato-splenomegaly; holosystolic murmur
<b>HSP</b>	Henoch-Schonlein purpura
<b>HSR</b>	heated serum reagent
<b>HSSE</b>	high soap suds enema
<b>HSV</b>	herpes simplex virus
<b>HT</b>	hypertension; Hubbard tank; height; heart; hammertoe
<b>ht aer</b>	heated aerosol
<b>HTC</b>	hypertensive crisis
<b>HTF</b>	house tube feeding
<b>HTL</b>	human thymic leukemia
<b>HTLV</b>	human T-cell leukemia virus
<b>HTLV III</b>	human T-cell lymphotropic virus type III
<b>HTN</b>	hypertension
<b>HTP</b>	House-Tree-Person test
<b>HTR</b>	hemolytic transfusion reaction
<b>HTVD</b>	hypertensive vascular disease
<b>hum</b>	humidifier (HUM)
<b>HUS</b>	hemolytic uremic syndrome
<b>HV</b>	hallux valgus; has voided
<b>H&amp;V</b>	hemigastrectomy and vagotomy
<b>HWB</b>	hot water bottle
<b>Hx</b>	history; hospitalization
<b>HXM</b>	hexamethylmelamine
<b>HZ</b>	herpes zoster
<b>HZO</b>	herpes zoster ophthalmicus
<b>I</b>	independent; impression; incisal; one
<b>IA</b>	intra-amniotic
<b>IAA</b>	interrupted aortic arch
<b>IABC</b>	intra-aortic balloon counterpulsation
<b>IABP</b>	intra-aortic balloon pump
<b>IAC</b>	internal auditory canal

<b>IAC-CPR</b>	interposed abdominal compressions–cardio-pulmonary resuscitation
<b>IACP</b>	intra-aortic counterpulsation
<b>IADH</b>	inappropriate antidiuretic hormone
<b>IA DSA</b>	intra-arterial digital subtraction arteriography
<b>IAHA</b>	immune adherence hemagglutination
<b>IAI</b>	intra-abdominal infection
<b>IAM</b>	internal auditory meatus
<b>IAN</b>	intern admission note
<b>IAP</b>	intermittent acute porphyria
<b>IASD</b>	interatrial septal defect
<b>IAT</b>	indirect antiglobulin test
<b>IB</b>	isolation bed
<b>IBC</b>	iron-binding capacity
<b>IBD</b>	inflammatory bowel disease
<b>IBI</b>	intermittent bladder irrigation
<b>ibid</b>	at the same place
<b>IBNR</b>	incurred but not reported
<b>IBS</b>	irritable bowel syndrome
<b>IBW</b>	ideal body weight
<b>IC</b>	irritable colon; intercostal; intracranial; individual counseling; inspiratory capacity
<b>ICA</b>	internal carotid artery; islet cell antibodies
<b>ICBT</b>	intercostobronchial trunk
<b>ICC</b>	Interstate Commerce Commission
<b>ICCE</b>	intracapsular cataract extraction
<b>ICCU</b>	intermediate coronary care unit
<b>ICD</b>	isocitrate dehydrogenase; instantaneous cardiac death
<b>ICD-9-CM</b>	<i>International Classification of Diseases</i> , Ninth Revision, <i>Clinical Modification</i>
<b>ICF</b>	intracellular fluid; intermediate care facility
<b>ICF/MR</b>	intermediate care facility for the mentally retarded
<b>ICG</b>	indocyanine green
<b>ICH</b>	intracranial hemorrhage
<b>ICM</b>	intracostal margin
<b>ICN</b>	intensive care nursery
<b>ICP</b>	intracranial pressure
<b>ICPP</b>	intubated continuous positive pressure
<b>ICS</b>	intercostal space
<b>ICSH</b>	interstitial cell-stimulating hormone
<b>ICT</b>	intensive conventional therapy; inflammation of connective tissue

<b>ICU</b>	intensive care unit
<b>ICVH</b>	ischemic cerebrovascular headache
<b>ICW</b>	intercellular water
<b>ID</b>	intradermal; initial dose, infectious disease; identification; identify
<b>I&amp;D</b>	incision and drainage
<b>IDDM</b>	insulin-dependent diabetes mellitus
<b>IDDS</b>	implantable drug delivery system
<b>IDE</b>	Investigational Device Exemption
<b>IDFC</b>	immature dead female child
<b>IDM</b>	infant of a diabetic mother
<b>IDMC</b>	immature dead male child
<b>IDV</b>	intermittent demand ventilation
<b>IEC</b>	inpatient exercise center
<b>IEF</b>	isoelectric focusing
<b>IEM</b>	immune electron microscopy
<b>IEP</b>	individualized education program; immunoelectrophoresis; initial enrollment period
<b>IF</b>	intrinsic factor; immunofluorescence
<b>IFA</b>	indirect fluorescent antibody test
<b>IFE</b>	immunofixation electrophoresis
<b>IFN</b>	interferon
<b>IG</b>	Inspector General
<b>IgA</b>	immunoglobulin A
<b>IgD</b>	immunoglobulin D
<b>IgE</b>	immunoglobulin E
<b>IGF</b>	insulin-like growth factor
<b>IgG</b>	immunoglobulin G; immune gammaglobulin
<b>IGIV</b>	immune globulin intravenous
<b>IgM</b>	immunoglobulin M
<b>IGR</b>	intrauterine growth retardation
<b>IGT</b>	impaired glucose tolerance
<b>IH</b>	infectious hepatitis; inguinal hernia; indirect hemagglutination (IHA)
<b>IHA</b>	immune hemagglutination assay; indirect hemagglutination (IH)
<b>IHC</b>	immobilization hypercalcemia
<b>IHD</b>	ischemic heart disease; intrahepatic duct
<b>IHH</b>	idiopathic hypogonadotropic hypogonadism
<b>IHs</b>	iris hamartomas
<b>IHS</b>	Indian Health Service; Idiopathic Headache Score

<b>IHSS</b>	idiopathic hypertrophic subaortic stenosis; idiopathic hypertrophic supra-aortic stenosis
<b>IHT</b>	insulin hypoglycemia test
<b>IICP</b>	increased intracranial pressure
<b>IICU</b>	infant intensive care unit
<b>IIT</b>	intensive insulin therapy
<b>IJ</b>	internal jugular; ileojejunal
<b>IL</b>	intermediary letter; independent living
<b>ILD</b>	ischemic leg disease
<b>ILFC</b>	immature living female child
<b>ILM</b>	internal limiting membrane
<b>ILMC</b>	immature living male child
<b>ILMI</b>	inferolateral myocardial infarct
<b>IM</b>	intramuscular; infectious mononucleosis; information memorandum; intermetatarsal; internal medicine
<b>IMA</b>	inferior mesenteric artery; internal mammary artery
<b>IMAG</b>	internal mammary artery graft
<b>IMB</b>	intermenstrual bleeding
<b>IMF</b>	intermaxillary fixation
<b>IMG</b>	internal medicine group (practice)
<b>IMH</b>	indirect microhemagglutination (test)
<b>IMI</b>	inferior myocardial infarction
<b>IMIG</b>	intramuscular immunoglobulin
<b>IMN</b>	internal mammary (lymph) node
<b>imp</b>	impacted
<b>INB</b>	intermittent nebulized beta-agonists
<b>inc</b>	incomplete; incontinent
<b>INC</b>	inside-the-needle catheter
<b>IND</b>	investigational new drug
<b>INDA</b>	Investigational New Drug Application
<b>INDM</b>	infant of nondiabetic mother
<b>inf</b>	inferior; infusion; infant; infected
<b>ing</b>	inguinal
<b>inj</b>	injection; injury
<b>INN</b>	international nonproprietary name
<b>ins</b>	insurance
<b>inst</b>	instrumental (delivery)
<b>int</b>	internal
<b>int-rot</b>	internal rotation
<b>inver</b>	inversion
<b>IO</b>	intraocular pressure; inferior oblique; initial opening
<b>I&amp;O</b>	intake and output

<b>IOC</b>	intraoperative cholangiogram
<b>IOD</b>	interorbital distance
<b>IOF</b>	intraocular fluid
<b>IOFB</b>	intraocular foreign body
<b>IOH</b>	idiopathic orthostatic hypotension
<b>IOL</b>	intraocular lens
<b>ION</b>	ischemic optic neuropathy
<b>IOP</b>	intraocular pressure
<b>IORT</b>	intraoperative radiation therapy
<b>IOS</b>	intraoperative sonography
<b>IOV</b>	initial office visit
<b>IP</b>	intraperitoneal; inpatient
<b>IPA</b>	invasive pulmonary aspergillosis; individual practice association
<b>IPCD</b>	infantile polycystic disease
<b>IPD</b>	immediate pigment darkening; intermittent peritoneal dialysis
<b>IPFD</b>	intrapartum fetal distress
<b>IPG</b>	impedance plethysmography
<b>IPJ</b>	interphalangeal joint
<b>IPK</b>	intractable plantar keratosis
<b>IPMI</b>	inferoposterior myocardial infarct
<b>IPN</b>	infantile periarteritis nodosa; intern progress note; independent practice network
<b>IPP</b>	inflatable penile prosthesis
<b>IPPA</b>	inspection, palpation, percussion, and auscultation
<b>IPPB</b>	intermittent positive pressure breathing
<b>IPPV</b>	intermittent positive pressure ventilation
<b>IPR</b>	independent professional review
<b>IPV</b>	inactivated polio vaccine
<b>IQ</b>	intelligence quotient
<b>IR</b>	internal rotation; infrared
<b>IRBBB</b>	incomplete right bundle branch block
<b>IRMA</b>	intraretinal microvascular abnormalities
<b>IRR</b>	intrarenal reflux
<b>IRV</b>	inspiratory reserve volume
<b>IS</b>	intercostal space; incentive spirometer; induced sputum
<b>ISB</b>	incentive spirometry breathing
<b>ISC</b>	irreversible sickle cells
<b>ISG</b>	immune serum globulin
<b>ISH</b>	isolated systolic hypertension



<b>ISMA</b>	infantile spinal muscular atrophy
<b>ISO</b>	internal standardization organization
<b>ISS</b>	Injury Severity Score
<b>IST</b>	insulin sensitivity test; insulin shock therapy
<b>ISW</b>	interstitial water
<b>IT</b>	intrathecal; inhalation therapy
<b>ITE</b>	insufficient therapeutic effect
<b>ITP</b>	idiopathic thrombocytopenic purpura; interim treatment plan
<b>ITVAD</b>	indwelling transcutaneous vascular access device
<b>IU</b>	international unit
<b>IUB</b>	International Union of Biochemistry
<b>IUCD</b>	intrauterine contraceptive device
<b>IUD</b>	intrauterine device; intrauterine death
<b>IUFD</b>	intrauterine fetal death
<b>IUGR</b>	intrauterine growth retardation
<b>IUP</b>	intrauterine pregnancy
<b>IUPAC</b>	International Union of Pure and Applied Chemistry
<b>IUPD</b>	intrauterine pregnancy delivered
<b>IV</b>	intravenous
<b>IVC</b>	intravenous cholangiogram; inferior vena cava; intraventricular catheter
<b>IVD</b>	intervertebral disk; intravenous drip
<b>IVDA</b>	intravenous drug abuse
<b>IVF</b>	in vitro fertilization; intravenous fluid
<b>IVFE</b>	intravenous fat emulsion
<b>IVF-ET</b>	in vitro fertilization, embryo transfer
<b>IVGTT</b>	intravenous glucose tolerance test
<b>IVH</b>	intravenous hyperalimentation; intraventricular hemorrhage
<b>IVIG</b>	intravenous immunoglobulin
<b>IVLBW</b>	infant of very low birth weight
<b>IVP</b>	intravenous pyelogram; intravenous push
<b>IVPB</b>	intravenous piggyback
<b>IVR</b>	idioventricular rhythm
<b>IVS</b>	intraventricular septum
<b>IVSD</b>	interventricular septal defect
<b>IVSP</b>	intravenous syringe pump
<b>IVT</b>	intravenous transfusion
<b>IVU</b>	intravenous urography
<b>IWL</b>	insensible water loss
<b>IWMI</b>	inferior wall myocardial infarct

<b>J</b>	joint
<b>JAMA</b>	<i>Journal of the American Medical Association</i>
<b>JAMG</b>	juvenile autoimmune myasthenia gravis
<b>JC</b>	junior clinician
<b>JCAHO</b>	Joint Commission on Accreditation of Healthcare Organizations
<b>JDMS</b>	juvenile dermatomyositis
<b>JE</b>	Japanese encephalitis
<b>JF</b>	joint fluid
<b>JI</b>	jejunoileal
<b>JIB</b>	jejunoileal bypass
<b>JJ</b>	jaw jerk
<b>JODM</b>	juvenile onset diabetes mellitus
<b>JP</b>	Jobst pump; Jackson-Pratt (drain)
<b>JRA</b>	juvenile rheumatoid arthritis
<b>jt</b>	joint
<b>juv</b>	juvenile
<b>JVD</b>	jugular venous distention
<b>JVP</b>	jugular venous pulse; jugular venous pressure
<b>JVPT</b>	jugular venous pulse tracing
<b>K</b>	
<b>K</b>	potassium
<b>K24H</b>	potassium, urine 24 hour
<b>KA</b>	ketoacidosis
<b>KAFO</b>	knee-ankle-foot orthosis
<b>KAO</b>	knee-ankle orthosis
<b>KAS</b>	Katz Adjustment Scale
<b>KCal</b>	kilocalorie
<b>KCl</b>	potassium chloride
<b>KCS</b>	keratoconjunctivitis sicca
<b>KD</b>	Kawasaki's disease; knee disarticulation
<b>KDA</b>	known drug allergies
<b>KDDM</b>	kidney disease of diabetes mellitus
<b>KF</b>	kidney function
<b>KFD</b>	Kyasanur Forrest disease
<b>kg</b>	kilogram (kilo)
<b>KI</b>	karyopyknotic index; potassium iodide
<b>KID</b>	keratitis, ichthyosis, deafness
<b>kilo</b>	kilogram (kg)
<b>KISS</b>	saturated solution of potassium iodide
<b>KJ</b>	knee jerk
<b>KK</b>	knee kick

<b>KLH</b>	keyhole limpet hemocyanin (antibody)
<b>KNO</b>	keep needle open
<b>KO</b>	keep open
<b>KP</b>	keratoprecipitate
<b>KS</b>	ketosteroids; Kaposi's sarcoma
<b>KTU</b>	kidney transplant unit
<b>KUB</b>	kidney, ureter, bladder
<b>KVO</b>	keep vein open
<b>KW</b>	Keith Wagner (fundoscopic finding); Kimmelstiel-Wilson
<b>K-wire</b>	Kirschner wire
<b>L</b>	left; liter; lumbar; lingual; lymphocyte; fifty
<b>L<sub>2</sub></b>	second lumbar vertebra
<b>LA</b>	left atrium; local anesthesia; long acting; left arm; Latin American
<b>L&amp;A</b>	light and accommodation
<b>lab</b>	laboratory
<b>LAC</b>	laceration; long arm cast
<b>LAD</b>	left anterior descending; left axis deviation
<b>LAD-MIN</b>	left axis deviation minimal
<b>LAE</b>	left atrial enlargement
<b>LAF</b>	lymphocyte-activating factor; laminar air flow; Latin American female
<b>LAG</b>	lymphangiogram; lymphangiosium
<b>LAH</b>	left atrial hypertrophy
<b>LAL</b>	left axillary line; limulus ameocyte lysate
<b>LAN</b>	lymphadenopathy
<b>LAO</b>	left anterior oblique
<b>LAP</b>	laparotomy; laparoscopy; left arterial pressure; leukocyte alkaline phosphatase; leucine amino peptidase
<b>LAPMS</b>	long arm posterior molded splint
<b>LAR</b>	late asthmatic response
<b>L-ASP</b>	L-asparaginase
<b>LAT</b>	left anterior thigh; lateral
<b>L atm</b>	liter-atmosphere
<b>LATS</b>	long-acting thyroid stimulator
<b>LAV</b>	lymphadenopathy-associated virus
<b>LAVH</b>	laparoscopic-assisted vaginal hysterectomy
<b>lb</b>	pound
<b>LB</b>	low back; left buttock; large bowel; left breast

<b>LBB</b>	left breast biopsy
<b>LBBB</b>	left bundle branch block
<b>LBCD</b>	left border of cardiac dullness
<b>LBD</b>	left border dullness
<b>LBF</b>	<i>Lactobacillus bulgaricus</i> factor
<b>LBM</b>	lean body mass; loose bowel movement
<b>LBO</b>	large bowel obstruction
<b>LBP</b>	low back pain; low blood pressure
<b>LBT</b>	lupus band test
<b>LBV</b>	left brachial vein
<b>LBW</b>	low birth weight; lean body weight
<b>LC</b>	living children; low calorie
<b>LCA</b>	left coronary artery; Leber's congenital amaurosis
<b>LCAT</b>	lecithin cholesterol acyltransferase
<b>LCCA</b>	leukocytoclastic angitis; left common carotid artery
<b>LCCS</b>	low cervical cesarean section
<b>LCD</b>	liquor carbonis detergens (coal tar solution); localized collagen dystrophy
<b>LCGU</b>	local cerebral glucose utilization
<b>LCLC</b>	large cell lung carcinoma
<b>LCM</b>	left costal margin; lymphocytic choriomeningitis
<b>LCR</b>	late cutaneous reaction
<b>LCS</b>	low constant suction; low continuous suction
<b>LCT</b>	long-chain triglyceride; low cervical transverse; lymphocytotoxicity
<b>LCV</b>	low cervical vertical
<b>LCX</b>	left circumflex coronary artery
<b>LD</b>	lethal dose; loading dose; liver disease; labor and delivery
<b>LDA</b>	left dorsoanterior (position)
<b>LDB</b>	Legionnaires' disease bacterium
<b>LDH</b>	lactate dehydrogenase
<b>LDL</b>	low-density lipoprotein
<b>LDP</b>	left dorsoposterior position
<b>LDV</b>	laser Doppler velocimetry
<b>LE</b>	lupus erythematosus; lower extremities; left eye
<b>LED</b>	lupus erythematosus disseminatus
<b>LEEP</b>	loop electrocautery excision procedure
<b>LEHPZ</b>	lower esophageal high-pressure zone
<b>L-ERX</b>	leukoerythroblastic reaction
<b>LES</b>	lower esophageal sphincter; local excitatory state
<b>LESP</b>	lower esophageal sphincter pressure

<b>LET</b>	linear energy transfer
<b>LF</b>	low forceps; left foot
<b>LFA</b>	left fronto-anterior; low friction arthroplasty
<b>LFC</b>	living female child
<b>LFD</b>	low-fat diet; low-forceps delivery; lactose-free diet
<b>LFP</b>	left frontoposterior
<b>LFS</b>	liver function studies
<b>LFT</b>	liver function test; left frontotransverse; latex flocculation test
<b>LG</b>	lymph glands; large; left gluteus
<b>LGA</b>	large for gestational age
<b>LGL</b>	Lown-Ganong-Levine (syndrome)
<b>LGV</b>	lymphogranuloma venereum
<b>LH</b>	luteinizing hormone; left hyperphoria; left hand
<b>LHL</b>	left hemisphere lesions
<b>LHP</b>	left hemiparesis
<b>LHR</b>	leukocyte histamine release
<b>LHRH</b>	luteinizing hormone-releasing hormone
<b>LHT</b>	left hypertropia
<b>LI</b>	lactose intolerance
<b>LIB</b>	left in bottle
<b>LIC</b>	left iliac crest; left internal carotid
<b>LICA</b>	left internal carotid artery
<b>LIF</b>	left iliac fossa; liver inhibitory factor
<b>lig</b>	ligament
<b>LIH</b>	left inguinal hernia
<b>LIMA</b>	left internal mammary artery (graft)
<b>LIP</b>	lymphocytic interstitial pneumonia
<b>liq</b>	liquid
<b>LIQ</b>	lower inner quadrant
<b>LIS</b>	low intermittent suction
<b>LISS</b>	low ionic strength saline
<b>LK</b>	left kidney
<b>LKS</b>	liver/kidney/spleen
<b>LL</b>	large lymphocyte; lumbar length; lymphoblastic lymphoma; left leg; lower lip
<b>LLB</b>	long leg brace
<b>LLC</b>	long leg case
<b>LLE</b>	left lower extremity
<b>LLETZ</b>	large loop excision of transformation zone (of cervix)
<b>LL-GXT</b>	low-level graded exercise test
<b>LLL</b>	left lower lobe; left lower lid

<b>LLO</b>	Legionella-like organism
<b>LLPDD</b>	late luteal phase dysphoric disorder
<b>LLQ</b>	left lower quadrant
<b>LLS</b>	lazy leukocyte syndrome
<b>LLSB</b>	left lower sternal border
<b>LLT</b>	left lateral thigh
<b>LMA</b>	left mento-anterior; liver membrane autoantibody
<b>LMB</b>	Laurence-Moon-Biedl (syndrome)
<b>LMC</b>	living male child
<b>LMCA</b>	left main coronary artery
<b>LMD</b>	low molecular weight dextran (LMWD)
<b>LMEE</b>	left middle ear exploration
<b>L/min</b>	liters per minute
<b>LML</b>	left medial lateral/lobe
<b>MMM</b>	lentigo maligna melanoma
<b>LMP</b>	last menstrual period; left mentoposterior
<b>LMT</b>	left mentotransverse
<b>LMWD</b>	low molecular weight dextran (LMD)
<b>LN</b>	lymph nodes
<b>LND</b>	lymph node dissection
<b>LNMP</b>	last normal menstrual period
<b>LO</b>	lateral oblique
<b>LOA</b>	left occiput anterior; leave of absence
<b>LOC</b>	loss of consciousness; level of consciousness; level of care; laxative of choice; local
<b>LOD</b>	line of duty; loss on drying
<b>LOM</b>	limitation of motion; left otitis media
<b>LOP</b>	left occiput posterior; leave on pass
<b>LOQ</b>	lower outer quadrant
<b>LORS</b>	Level of Rehabilitation Scale
<b>LOS</b>	length of stay
<b>LOT</b>	left occiput transverse
<b>LOV</b>	loss of vision
<b>loz</b>	lozenge
<b>LP</b>	lumbar puncture; light perception
<b>LPC</b>	laser photocoagulation
<b>LPD</b>	luteal phase defect
<b>LPF</b>	low power field
<b>LPH</b>	left posterior hemiblock
<b>LPN</b>	licensed practical nurse
<b>LPO</b>	left posterior oblique; light perception only
<b>lpp</b>	lipoprotein

<b>LR</b>	light reflex; labor room; left-right
<b>L&gt;R</b>	left greater than right
<b>L-R</b>	left to right
<b>LRD</b>	living renal donor
<b>LRND</b>	left radical neck dissection
<b>LRQ</b>	lower right quadrant
<b>L/S</b>	lecithin-sphingomyelin ratio
<b>L-S</b>	lumbo-sacral
<b>LSA</b>	left sacrum anterior; lipid-bound sialic acid; lymphosarcoma
<b>LSB</b>	left sternal border
<b>LS BPS</b>	laparoscopic bilateral partial salpingectomy
<b>LSE</b>	local side effects
<b>LSF</b>	low saturated fat
<b>LSKM</b>	liver-spleen-kidney-megaly
<b>LSM</b>	late systolic murmur
<b>LSO</b>	left salpingo-oophorectomy
<b>LSP</b>	left sacrum posterior; liver-specific (membrane)
<b>LSS</b>	liver-spleen scan
<b>LST</b>	left sacrum transverse
<b>LSTL</b>	laparoscopic tubal ligation
<b>LT</b>	light; left; left thigh; lumbar traction; Levin tube; leukotrienes
<b>LTB</b>	laparoscopic tubal banding; laryngotracheobronchitis
<b>LTC</b>	long-term care; left to count; lean tissue compartment
<b>LTCF</b>	long-term care facility
<b>LTCS</b>	low transverse cesarean section
<b>LTGA</b>	left transposition of great artery
<b>LTl</b>	laparoscopic tubal ligation
<b>LTT</b>	lymphocyte transformation test
<b>L&amp;U</b>	lower and upper
<b>LUE</b>	left upper extremity
<b>LUL</b>	left upper lobe
<b>LUQ</b>	left upper quadrant
<b>LUSB</b>	left upper sternal border
<b>LV</b>	left ventricle
<b>LVA</b>	left ventricular aneurysm
<b>LVAD</b>	left ventricular assist device
<b>LVE</b>	left ventricular enlargement
<b>LVEDP</b>	left ventricular end diastolic pressure
<b>LVEDV</b>	left ventricular end diastolic volume
<b>LVEF</b>	left ventricular ejection fraction

<b>LVF</b>	left ventricular failure
<b>LVFP</b>	left ventricular filling pressure
<b>LVH</b>	left ventricular hypertrophy
<b>LVL</b>	left vastus lateralis
<b>LVMM</b>	left ventricular muscle mass
<b>LVP</b>	left ventricular pressure; large volume parenteral
<b>LVPW</b>	left ventricular posterior wall
<b>LVSWI</b>	left ventricular stroke work index
<b>LVV</b>	left ventricular volume
<b>L&amp;W</b>	living and well
<b> LWCT</b>	Lee-White clotting time
<b>LYG</b>	lymphomatoid granulomatosis
<b>lymphs</b>	lymphocytes
<b>lytes</b>	electrolytes
<b>m</b>	meter
<b>M</b>	murmur; medial; myopia; monocytes; male; molar; thousand; minum; mix
<b>m<sup>2</sup></b>	square meters (body surface)
<b>M<sub>1</sub></b>	first mitral sound
<b>MA</b>	mental age; medical assistance; milliamps; menstrual age
<b>M/A</b>	mood and/or affect
<b>MAA</b>	Medical Assistance for the Aged; macroaggregates of albumin
<b>MAb</b>	monoclonal antibody
<b>MABP</b>	mean arterial blood pressure
<b>MAC</b>	maximum allowable concentration; midarm circumference; minimum alveolar concentration; mycobacterium avium complex, maximum allowable cost
<b>MAE</b>	moves all extremities
<b>MAEEW</b>	moves all extremities equally well
<b>MAFAs</b>	movement-associated fetal (heart rate) accelerations
<b>MAHA</b>	microangiopathic hemolytic anemia
<b>MAI</b>	mycobacterium avium-intracellular
<b>MAL</b>	midaxillary line
<b>MALT</b>	mucosa-associated lymphoid tissue
<b>MAMC</b>	mid-arm muscle circumference
<b>mammo</b>	mammography
<b>mand</b>	mandibular
<b>MAOI</b>	monoamine oxidase inhibitor (MOI)



<b>MAP</b>	mean arterial pressure
<b>MAPC</b>	maximum allowable prevailing charge
<b>MAS</b>	meconium aspiration syndrome; mobile arm support
<b>MAT</b>	multifocal atrial tachycardia
<b>max</b>	maximal; maxillary; maximum
<b>MBC</b>	maximum breathing capacity; minimal bactericidal concentration
<b>MB-CK</b>	creatinine kinase isoenzyme with muscle and brain subunits (CK-MB)
<b>MBD</b>	minimal brain damage; minimal brain dysfunction
<b>MBI</b>	methylene blue installation
<b>MBM</b>	mother's breast milk
<b>MC</b>	mixed cellularity; metatarso-cuneiform; moisture content; methyl cellulose
<b>MCA</b>	middle cerebral aneurysm; middle cerebral artery; motorcycle accident
<b>MCCU</b>	midstream clean-catch urine
<b>MCD</b>	minimal change disease
<b>mcg</b>	microgram
<b>MCGN</b>	minimal change glomerular nephritis
<b>MCH</b>	mean corpuscular hemoglobin; muscle contraction headache
<b>MCHC</b>	mean corpuscular hemoglobin concentration
<b>MCHS</b>	Maternal and Child Health Services
<b>MCL</b>	midclavicular line; midcostal line
<b>MCLNS</b>	mucocutaneous lymph node syndrome
<b>MCO</b>	managed care organization
<b>MCP</b>	metacarpophalangeal (joint)
<b>MCS</b>	microculture and sensitivity
<b>MCSA</b>	minimal cross-sectional area
<b>MCT</b>	medium chain triglyceride; mean circulation time
<b>MCTD</b>	mixed connective tissue disease
<b>MCV</b>	mean corpuscular volume
<b>MD</b>	medical doctor; mental deficiency; muscular dystrophy; manic depression
<b>MDA</b>	manual dilation of the anus; micrometastases detection assay
<b>MDC</b>	medial dorsal cutaneous (nerve); major diagnostic category
<b>MDD</b>	manic-depressive disorder; major depressive disorder
<b>MDF</b>	myocardial depressant factor
<b>MDI</b>	metered dose inhaler

<b>MDM</b>	mid-diastolic murmur; minor determinant mix
<b>MDR</b>	minimum daily requirement
<b>MDS</b>	maternal deprivation syndrome; minimum data set
<b>MDTP</b>	multidisciplinary treatment plan
<b>ME</b>	macula edema; medical examiner; middle ear
<b>MEA-1</b>	multiple endocrine adenomutosis type 1
<b>mec</b>	meconium
<b>MEC</b>	minimum effective concentration
<b>med</b>	medial; medical; medication; medicine; medium
<b>MED</b>	median erythrocyte diameter; minimum erythema dose
<b>MEDAC</b>	multiple endocrine deficiency autoimmune candidiasis
<b>MEE</b>	middle ear effusion
<b>MEF</b>	maximum expired flow (rate)
<b>MEFV</b>	maximum expiratory flow volume
<b>MEN (II)</b>	multiple endocrine neoplasia (type II)
<b>MEOS</b>	microsomal ethanol oxidizing system
<b>mEq</b>	milliequivalent
<b>M/E</b>	myeloid-to-erythroid ratio
<b>meta</b>	metamyelocytes
<b>METS</b>	metabolic equivalents (multiples of resting oxygen uptake); metastases
<b>MF</b>	myocardial fibrosis; mycosis fungoides
<b>M&amp;F</b>	mother and father; male and female
<b>MFA</b>	mid-forceps delivery
<b>MFAT</b>	multifocal atrial tachycardia
<b>MFEM</b>	maximal forced expiratory maneuver
<b>MFH</b>	malignant fibrous histiocytoma
<b>MFR</b>	mid-forceps rotation
<b>mg</b>	milligram
<b>MG</b>	myasthenia gravis
<b>MGF</b>	maternal grandfather
<b>MGM</b>	maternal grandmother
<b>MGN</b>	membranous glomerulonephritis
<b>MgO</b>	magnesium oxide
<b>MgSO<sub>4</sub></b>	magnesium sulfate
<b>MGUS</b>	monoclonal gammopathies of undetermined significance
<b>M-GXT</b>	multistage graded exercise test
<b>MH</b>	marital history; menstrual history; mental health; malignant hyperthermia
<b>MHA</b>	microangiopathic hemolytic anemia

<b>MHB</b>	maximum hospital benefit
<b>MHC</b>	major histocompatibility complex; mental health center
<b>MH/MR</b>	mental health and mental retardation
<b>MI</b>	myocardial infarction; mitral insufficiency; mental institution
<b>MIA</b>	medically indigent adult
<b>MIC</b>	minimum inhibitory concentration; maternal and infant care
<b>MICN</b>	mobile intensive care nurse
<b>MICU</b>	medical intensive care unit
<b>MID</b>	multi-infarct dementia
<b>MIF</b>	migration inhibitory factor
<b>MIH</b>	migraine with interparoxysmal headache
<b>min</b>	minimum; minute; minor
<b>MIO</b>	minimum identifiable odor
<b>MIRP</b>	myocardial infarction rehabilitation program
<b>MKAB</b>	may keep at bedside
<b>mL</b>	milliliter
<b>ML</b>	midline; middle lobe
<b>MLC</b>	mixed lymphocyte culture; minimal lethal concentration
<b>MLD</b>	metachromatic leukodystrophy; minimal lethal dose
<b>MLF</b>	median longitudinal fasciculus
<b>MLNS</b>	mucocutaneous lymph node syndrome
<b>MLR</b>	mixed lymphocyte reaction; medical loss ratio
<b>mm</b>	millimeter
<b>mM</b>	millimole (mmol)
<b>MM</b>	mucous membrane; multiple myeloma
<b>M&amp;M</b>	morbidity and mortality
<b>MMA</b>	monocyte monolayer assay
<b>MMECT</b>	multiple monitor electroconvulsive therapy
<b>MMEFR</b>	maximal mid-expiratory flow rate
<b>MMF</b>	mean maximum flow
<b>mmHg</b>	millimeters of mercury
<b>MMIS</b>	Medicaid Management Information System
<b>MMK</b>	Marshall-Marchetti-Krantz (cystourethropexy)
<b>MMOA</b>	maxillary mandibular odontectomy alveolectomy
<b>mmol</b>	millimole (mM)
<b>MMPI</b>	Minnesota Multiphasic Personality Inventory
<b>MMR</b>	measles, mumps, rubella; midline malignant reticulosis

<b>MMS</b>	Mini-Mental State (examination)
<b>MMT</b>	manual muscle test
<b>Mn</b>	manganese
<b>MN</b>	midnight
<b>M&amp;N</b>	morning and night
<b>MNC</b>	mononuclear leukocytes
<b>MNG</b>	multinodular goiter
<b>MNR</b>	marrow neutrophil reserve
<b>MN SSEPs</b>	median nerve somatosensory evoked potentials
<b>MNTB</b>	medial nucleus of the trapezoid body
<b>MO</b>	month; medial oblique; mineral oil
<b>MOA</b>	mechanism of action
<b>mod</b>	moderate
<b>MOD</b>	medical officer of the day
<b>MODY</b>	maturity onset diabetes of youth
<b>MOF</b>	multiple organ failure
<b>MOI</b>	monoamine oxidase inhibitor (MAOI)
<b>MOM</b>	milk of magnesia
<b>mono</b>	monocyte; infectious mononucleosis
<b>mOsm</b>	milliosmole
<b>MP</b>	metacarpal phalangeal (joint)
<b>MPBB</b>	maximum permissible body burden
<b>MPGN</b>	membranoproliferative glomerulonephritis
<b>MPJ</b>	metacarpophalangeal joint
<b>MPJE</b>	Multistate Pharmacy Jurisprudence Examination
<b>MPL</b>	maximum permissible level
<b>MPPPA</b>	Medical Prudent Pharmaceutical Purchasing Act
<b>MPR</b>	multifetal pregnancy reduction
<b>MPS</b>	mucopolysaccharidosis
<b>MQ</b>	memory quotient
<b>MR</b>	mental retardation; may repeat; magnetic resonance; mitral regurgitation
<b>MR × 1</b>	may repeat times one
<b>MRA</b>	medical record administrator; magnetic resonance angiography
<b>MRD</b>	Medical Records Department
<b>MRG</b>	murmurs, rubs, and gallops
<b>MRI</b>	magnetic resonance imaging
<b>mRNA</b>	messenger ribonucleic acid
<b>MRS</b>	magnetic resonance spectroscopy
<b>MRSA</b>	methicillin-resistant <i>Staphylococcus aureus</i>

<b>MS</b>	multiple sclerosis; mitral stenosis; mental status; musculoskeletal; minimal support
<b>M&amp;S</b>	microculture and sensitivity
<b>MSAF</b>	meconium-stained amniotic fluid
<b>MSAFP</b>	maternal serum alpha fetoprotein
<b>MSE</b>	Mental Status Examination
<b>MSK</b>	medullary sponge kidney
<b>MSL</b>	midsternal line; medical science liaison
<b>MSR</b>	muscle stretch reflexes
<b>MSS</b>	minor surgery suite; muscular subaortic stenosis; Marital Satisfaction Scale
<b>MST</b>	mean survival time
<b>MSTA</b>	mumps skin test antigen
<b>MSU</b>	midstream urine
<b>MSUD</b>	maple syrup urine disease
<b>MSW</b>	multiple stab wounds
<b>MT</b>	music therapy; medical technologist
<b>MTAL</b>	medullary thick ascending limb
<b>MTC</b>	minimum toxic concentration
<b>MTD</b>	Monro Tidal drainage
<b>MTI</b>	malignant teratoma interminate
<b>MTM</b>	modified Thayer-Martin (medium)
<b>MTP</b>	metatarsal phalangeal
<b>MTU</b>	malignant teratoma undifferentiated
<b>MU</b>	million units
<b>MUDPIES</b>	methanol, uremia, diabetes, paraldehyde, iron, ethanol or ethylene glycol, salicylates (possible causes of metabolic acidosis)
<b>MUGA</b>	multiple gated acquisition
<b>MULEPAK</b>	methanol, uremia, lactic acidosis, ethylene glycol, paraldehyde, aspirin, diabetic ketoacidosis (possible causes of metabolic acidosis)
<b>MVA</b>	motor vehicle accident; malignant ventricular arrhythmias
<b>MVB</b>	mixed venous blood
<b>MVC</b>	maximal voluntary contraction
<b>MVO<sub>2</sub></b>	myocardial oxygen consumption
<b>MVP</b>	mitral valve prolapse
<b>MVR</b>	mitral valve replacement; mitral valve regurgitation
<b>MVS</b>	mitral valve stenosis
<b>MVV</b>	maximum voluntary ventilation; mixed vespid venom
<b>MWS</b>	Mickey-Wilson syndrome

<b>My</b>	myopia
<b>myelo</b>	myelocyte
<b>N</b>	normal; negative
<b>NA</b>	nursing assistant; nurse anesthetist; not applicable
<b>NAA</b>	neutron activation analysis
<b>NABP</b>	National Association of Boards of Pharmacy
<b>NABPF</b>	National Association of Boards of Pharmacy Foundation
<b>NABS</b>	normoactive bowel sounds
<b>NACDS</b>	National Association of Chain Drug Stores
<b>NaCl</b>	sodium chloride
<b>NAD</b>	no acute distress; no apparent distress; no appreciable disease; normal axis deviation; nothing abnormal detected; nicotinamide adenine dinucleotide
<b>NADH</b>	nicotinamide adenine dinucleotide (reduced form)
<b>NADP</b>	nicotinamide adenine dinucleotide phosphate
<b>NADPH</b>	nicotinamide adenine dinucleotide phosphate (reduced form)
<b>NaF</b>	sodium fluoride
<b>NAG</b>	narrow angle glaucoma
<b>NaHCO<sub>3</sub></b>	sodium bicarbonate
<b>NANB</b>	non-A, non-B (hepatitis)
<b>NANC</b>	nonadrenergic, noncholinergic
<b>NAPLEX</b>	North American Pharmacist Licensure Examination
<b>NARD</b>	National Association of Retail Druggists (now NCPA)
<b>NAS</b>	no added salt; neonatal abstinence syndrome
<b>NAS/NRC</b>	National Academy of Science/National Research Council
<b>NAT</b>	no action taken
<b>NB</b>	newborn; note well ( <i>nota bene</i> ); needle biopsy
<b>NBM</b>	normal bowel movement
<b>NBN</b>	newborn nursery
<b>NBS</b>	normal bowel sound; no bacteria seen; National Bureau of Standards
<b>NBT</b>	nitroblue tetrazolium (reduction test)
<b>NBTE</b>	nonbacterial thrombotic endocarditis
<b>NC</b>	neurologic check; no complaints; not completed; nasal cannula
<b>NCA</b>	neurocirculatory asthenia
<b>NC/AT</b>	normal cephalic atraumatic

<b>NCB</b>	no code blue
<b>NCD</b>	normal childhood diseases; not considered disabling
<b>NCF</b>	neutrophilic chemotactic factor
<b>NCI</b>	National Cancer Institute
<b>NCJ</b>	needle catheter jejunostomy
<b>NCL</b>	neuronal ceroid lipofuscinosis
<b>NCM</b>	nailfold capillary microscopy
<b>NCNC</b>	normochromic, normocytic
<b>NCPA</b>	National Community Pharmacists Association (formerly NARD)
<b>NCPDP</b>	National Council for Prescription Drug Programs
<b>NCPIE</b>	National Council on Patient Information and Education
<b>NCPR</b>	no cardiopulmonary resuscitation
<b>NCQA</b>	National Committee for Quality Assurance
<b>NCS</b>	no concentrated sweets; nerve conduction studies
<b>NCSPAE</b>	National Council of State Pharmaceutical Association Executives
<b>NCTC</b>	national collection of type cultures
<b>NCV</b>	nerve conduction velocity
<b>ND</b>	normal delivery; normal development; not done; not diagnosed; nasal deformity
<b>NDA</b>	New Drug Application
<b>NDAC</b>	Nonprescription Drugs Advisory Committee
<b>NDC</b>	National Drug Code
<b>NDD</b>	no dialysis days
<b>NDMA</b>	Nonprescription Drug Manufacturers Association
<b>NDT</b>	neurodevelopmental treatment
<b>NDV</b>	Newcastle disease virus
<b>NE</b>	norepinephrine; not elevated; not examined
<b>NEC</b>	necrotizing enterocolitis
<b>NED</b>	no evidence of disease
<b>neg</b>	negative
<b>NEMD</b>	nonspecific esophageal motility disorder
<b>NERD</b>	nonerosive reflux disease
<b>NET</b>	naso-endotracheal tube
<b>neuro</b>	neurology; neurological
<b>neut</b>	neutrophil
<b>NF</b>	not found; neurofibromatosis; <i>National Formulary</i>
<b>NFL</b>	nerve fiber layer
<b>NFTD</b>	normal full-term delivery
<b>NFTT</b>	nonorganic failure to thrive

<b>NFW</b>	nursed fairly well
<b>NG</b>	nasogastric; nanogram
<b>NGF</b>	nerve growth factor
<b>NGR</b>	nasogastric replacement
<b>NGT</b>	nasogastric tube
<b>NGU</b>	nongonococcal urethritis
<b>NH</b>	nursing home
<b>NHBA</b>	National Heartburn Alliance
<b>NHD</b>	normal hair distribution
<b>NHL</b>	non-Hodgkin's lymphoma; nodular histiocytic lymphoma
<b>NHP</b>	nursing home placement
<b>NICC</b>	neonatal intensive care center
<b>NICU</b>	neurosurgical intensive care unit; neonatal intensive care unit
<b>NIDD</b>	non-insulin-dependent diabetes
<b>NIDDM</b>	non-insulin-dependent diabetes mellitus
<b>NIF</b>	negative inspiratory force
<b>NIH</b>	National Institutes of Health
<b>NIMH</b>	National Institute of Mental Health
<b>NINVS</b>	noninvasive neurovascular studies
<b>NIOSH</b>	National Institute for Occupational Safety and Health
<b>NISPC</b>	National Institute for Standards in Pharmacist Credentialing
<b>NJ</b>	nasojejunal
<b>NK</b>	natural killer (cells)
<b>NKA</b>	no known allergies
<b>NKDA</b>	no known drug allergies
<b>NKHS</b>	nonketotic hyperosmolar syndrome
<b>NKMA</b>	no known medication allergies
<b>NL</b>	normal; normal limits
<b>NLD</b>	necrobiosis lipoidica diabetorum; nasolacrimal duct
<b>NLF</b>	nasolabial fold
<b>NLP</b>	nodular liquefying panniculitis; no light perception
<b>NLT</b>	not later than; not less than
<b>NM</b>	nodular melanoma
<b>NMD</b>	normal muscle development
<b>NMI</b>	no middle initial
<b>NMR</b>	nuclear magnetic resonance
<b>NMS</b>	neuroleptic malignant syndrome
<b>NMT</b>	no more than
<b>NN</b>	neonatal; nursing notes



<b>NND</b>	neonatal death
<b>NNE</b>	neonatal necrotizing enterocolitis
<b>NNO</b>	no new orders
<b>NNU</b>	net nitrogen utilization
<b>no</b>	number ( <i>numero</i> )
<b>noc</b>	night
<b>noct</b>	at night ( <i>nocte</i> )
<b>NOD</b>	notify of death
<b>NOMI</b>	nonocclusive mesenteric infarction
<b>NOOB</b>	not out of bed
<b>NOS</b>	not otherwise specified
<b>NOSIE</b>	Nurse Observation Scale for Inpatient Evaluation
<b>NP</b>	neuropsychiatric; nasopharyngeal; newly presented; no pain; not pregnant; not present; nursed poorly; nasal prongs; nurse practitioner
<b>NPA</b>	near point of accommodation
<b>NPC</b>	near point convergences; nodal premature contractions; nonpatient contact; National Pharmaceutical Council
<b>NPDL</b>	nodular poorly differentiated lymphocytic
<b>NPDR</b>	nonproliferative diabetic retinopathy
<b>NPH</b>	normal pressure hydrocephalus; no previous history; neutral protamine Hagedorn (insulin)
<b>NPhA</b>	National Pharmaceutical Association
<b>NPO</b>	nothing by mouth ( <i>per os</i> )
<b>NPR</b>	noncardiogenic pulmonary reaction
<b>NPT</b>	normal pressure and temperature; nocturnal penile tumescence
<b>NR</b>	nonreactive
<b>NRBS</b>	nonrebreathing system
<b>NRC</b>	normal retinal correspondence
<b>NREM</b>	nonrapid eye movement
<b>NREMS</b>	nonrapid eye movement sleep
<b>NRT</b>	neuromuscular reeducation techniques
<b>NS</b>	nephrotic syndrome; nuclear sclerosis; not seen; not significant; nylon suture; normal saline solution; nasal spray
<b>NSA</b>	normal serum albumin; no significant abnormality
<b>NSAID</b>	nonsteroidal anti-inflammatory drug
<b>NSC</b>	no significant change; not service connected
<b>NSCLC</b>	non-small-cell lung cancer
<b>NSD</b>	normal spontaneous delivery; nominal standard dose

<b>NSDA</b>	non-steroid-dependent asthmatic
<b>NSE</b>	neuron-specific enolase
<b>NSF</b>	National Science Foundation
<b>NSFTD</b>	normal spontaneous full-term delivery
<b>NSG</b>	nursing
<b>NSILA</b>	nonsuppressible insulin-like activity
<b>NSN</b>	nephrotoxic serum nephritis
<b>NSPVT</b>	nonsustained polymorphic ventricular tachycardia
<b>NSR</b>	normal sinus rhythm; not seen regularly; nonspecific reaction; nasoseptal repair
<b>NSS</b>	normal saline solution (0.9 percent sodium chloride)
<b>NSSTT</b>	nonspecific ST and T (waves)
<b>NST</b>	nutritional support team; nonstress test; not sooner than
<b>NSU</b>	nonspecific urethritis
<b>NSV</b>	nonspecific vaginitis
<b>NSVD</b>	normal spontaneous vaginal delivery
<b>NT</b>	not tested; nasotracheal; not tender
<b>N&amp;T</b>	nose and throat
<b>NTC</b>	neurotrauma center
<b>NTD</b>	neural tube defects
<b>NTE</b>	not to exceed
<b>NTF</b>	normal throat flora
<b>NTG</b>	nontreatment group
<b>NTMB</b>	nontuberculous mycobacteria
<b>NTMI</b>	nontransmural myocardial infarction
<b>NTP</b>	normal temperature and pressure
<b>NTS</b>	nasotracheal suction; nucleus tractus solitarii
<b>NTT</b>	nasotracheal tube
<b>NUD</b>	nonulcer dyspepsia
<b>nullip</b>	nullipara
<b>NV</b>	neurovascular; nausea and vomiting
<b>N&amp;V</b>	nausea and vomiting
<b>NVD</b>	nausea, vomiting, and diarrhea; neck vein distention; no venereal disease; neurovesicle dysfunction; nonvalvular disease; neovascularization of the disc
<b>NVE</b>	neovascularization elsewhere
<b>NVG</b>	neovascular glaucoma
<b>NVS</b>	neurological vital signs
<b>NWB</b>	non-weight bearing
<b>NWDA</b>	National Wholesale Druggists Association (formerly HDMA)

<b>NYD</b>	not yet diagnosed
<b>O</b>	objective (finding); eye ( <i>oculus</i> ); oral; open
<b>O<sub>2</sub></b>	oxygen
<b>O × 3</b>	oriented to time, place, and person
<b>OA</b>	oral alimentation; occiput anterior; osteoarthritis
<b>O&amp;A</b>	observation and assessment
<b>OAA</b>	Old Age Assistance
<b>OAF</b>	osteoclast activating factor
<b>OASDI</b>	Old Age, Survivors, and Disability Insurance
<b>OASI</b>	Old Age and Survivors Insurance
<b>AW</b>	once a week
<b>OB</b>	obstetrics; occult blood
<b>OB-GYN</b>	obstetrics and gynecology
<b>OBRA '90</b>	Omnibus Budget Reconciliation Act of 1990
<b>OBS</b>	organic brain syndrome
<b>OC</b>	oral contraceptive; obstetrical conjugate; oral care; on call; office call
<b>OCA</b>	oculocutaneous albinism
<b>OSCC</b>	open chest cardiac compression
<b>OSCM</b>	open chest cardiac massage
<b>OSD</b>	obsessive-compulsive disorder
<b>OCG</b>	oral cholecystogram
<b>OS</b>	ova, cysts, parasites
<b>OT</b>	oxytocin challenge test; optical coherence tomography; ornithine carbamyl transferase
<b>OSU</b>	observation care unit
<b>od</b>	right eye ( <i>oculus dexter</i> )
<b>OS</b>	overdose; optical density; on duty; Doctor of Optometry
<b>OSR</b>	oxygen enhancement ratios
<b>OSF</b>	occipital-frontal circumference
<b>OG</b>	orogastric (feeding)
<b>OGTT</b>	oral glucose tolerance test
<b>OH</b>	occupational history; open heart; outpatient hospital
<b>OSD</b>	organic heart disease
<b>OSG</b>	oral hypoglycemic
<b>OSH</b>	oxygen under hyperbaric pressure
<b>OSRR</b>	open heart recovery room
<b>OSH</b>	open heart surgery
<b>OI</b>	osteogenesis imperfecta
<b>OIF</b>	oil-immersion field

<b>OIG</b>	Office of Inspector General
<b>OJ</b>	orange juice
<b>OKAN</b>	optokinetic after nystagmus
<b>OKN</b>	optokinetic nystagmus
<b>ol</b>	left eye ( <i>oculus laevis</i> )
<b>OLA</b>	occiput left anterior
<b>OM</b>	otitis media
<b>OME</b>	Office of the Medical Examiner; otitis media with effusion
<b>OMI</b>	old myocardial infarct
<b>OMR</b>	operative mortality rate
<b>OMSC</b>	otitis media secretory/suppurative chronic
<b>ON</b>	overnight
<b>ONC</b>	over-the-needle catheter
<b>OOB</b>	out of bed
<b>OOBBRP</b>	out of bed with bathroom privileges
<b>OOC</b>	out of control
<b>OOP</b>	out on pass; out of pelvis
<b>OOR</b>	out of room
<b>OOS</b>	out of stock
<b>OOT</b>	out of town
<b>OP</b>	outpatient; operation; occiput posterior; open
<b>O&amp;P</b>	ova and parasites
<b>OPB</b>	outpatient basis
<b>OPC</b>	outpatient clinic
<b>OPCA</b>	olivopontocerebellar atrophy
<b>OPD</b>	outpatient department
<b>OPG</b>	ocular plethysmography
<b>OPM</b>	occult primary malignancy
<b>OPPG</b>	oculopneumoplethysmography
<b>OPS</b>	operations
<b>OPT</b>	outpatient physical therapy
<b>OPV</b>	oral polio vaccine
<b>OR</b>	operating room; oil retention
<b>ORIF</b>	open reduction internal fixation
<b>ORL</b>	otorhinolaryngology
<b>os</b>	left eye ( <i>oculus sinister</i> )
<b>OS</b>	opening snap
<b>O/S</b>	out-of-stock
<b>OSA</b>	obstructive sleep apnea
<b>OSD</b>	overside drainage
<b>OSHA</b>	Occupational Safety and Health Administration

<b>OSM S</b>	osmolarity serum
<b>OSM U</b>	osmolarity urine
<b>OSN</b>	off-service note
<b>oss</b>	osseous
<b>OT</b>	old tuberculin; occupational therapy; occupational therapist
<b>OTC</b>	over-the-counter
<b>OTD</b>	out the door
<b>oto</b>	otology
<b>OTR</b>	Occupational Therapist, Registered
<b>OTS</b>	orotracheal suction
<b>OTT</b>	orotracheal tube
<b>ou</b>	both eyes ( <i>oculus uterque</i> )
<b>OV</b>	office visit; ovum; ovary
<b>OW</b>	out of wedlock
<b>oz</b>	ounce
<b>p</b>	plan; protein; pint; pulse; peripheral; para-
<b>P<sub>2</sub></b>	pulmonic second sound
<b>PA</b>	pernicious anemia; physician assistant; professional association; proprietary association; professional associates; physician associates; posterior-anterior; pulmonary artery; presents again; psychiatric aide
<b>P&amp;A</b>	percussion and auscultation
<b>PAB</b>	premature atrial beat
<b>PABA</b>	<i>p</i> -aminobenzoic acid
<b>PAC</b>	premature atrial contraction
<b>PACO</b>	pivot ambulating crutchless orthosis
<b>PaCO<sub>2</sub></b>	arterial carbon dioxide tension
<b>PACU</b>	postanesthesia care unit
<b>PADP</b>	pulmonary artery diastolic pressure
<b>PAF</b>	paroxysmal atrial fibrillation; platelet activating factors
<b>PAGE</b>	polyacrylamide gel electrophoresis
<b>PAH</b>	para-aminohippurate
<b>PAIVS</b>	pulmonary atresia with intact ventricle septum
<b>PA line</b>	pulmonary artery line
<b>PALN</b>	para-aortic lymph node
<b>PAN</b>	periodic alternating nystagmus; polyarteritis nodosa
<b>PAO<sub>2</sub></b>	arterial oxygen tension
<b>POAG</b>	primary open-angle glaucoma
<b>PAOP</b>	pulmonary artery occlusion pressure

<b>PAP</b>	pulmonary artery pressure; prostatic acid phosphatase
<b>PA/PS</b>	pulmonary atresia/pulmonary stenosis
<b>Pap smear</b>	Papanicolaou smear
<b>PAR</b>	postanesthetic recovery; platelet aggregate ratio
<b>para</b>	paraplegic
<b>PARA</b>	number of pregnancies producing viable offspring
<b>PARU</b>	postanesthetic recovery unit
<b>PAS</b>	periodic acid-Schiff (reagent); peripheral anterior synechia; pulmonary artery stenosis
<b>Pas Ex</b>	passive exercise
<b>PAT</b>	paroxysmal atrial tachycardia; preadmission testing; percent acceleration time
<b>path</b>	pathology
<b>PAWP</b>	pulmonary artery wedge pressure
<b>Pb</b>	lead
<b>PB</b>	powder board; paraffin bath
<b>PBA</b>	percutaneous bladder aspiration
<b>PBC</b>	point of basal convergence; primary biliary cirrhosis
<b>PBD</b>	percutaneous biliary drainage
<b>PBI</b>	protein-bound iodine
<b>PBL</b>	peripheral blood lymphocyte
<b>PBM</b>	pharmacy benefits manager
<b>PBMC</b>	peripheral blood mononuclear cell (PBMNC)
<b>PBMNC</b>	peripheral blood mononuclear cell (PBMNC)
<b>PBO</b>	placebo
<b>PBP</b>	provider-based physician
<b>pc</b>	after meals ( <i>post cibos</i> ); after food ( <i>post cibus</i> )
<b>PC</b>	packed cells; professional corporation; platelet concentrate; pharmaceutical care
<b>PCA</b>	patient care assistant/aide; patient-controlled analgesia; posterior cerebral artery; procoagulation activity; passive cutaneous anaphylaxis
<b>PCCF</b>	Patient Care Claim Form
<b>PCCM</b>	primary care case management
<b>PCCU</b>	postcoronary care unit
<b>PCG</b>	phonocardiogram
<b>PCH</b>	paroxysmal cold hemoglobinuria
<b>PCI</b>	prophylactic cranial irradiation; percutaneous coronary intervention
<b>PCIOL</b>	posterior chamber intraocular lens
<b>PCL</b>	posterior chamber lens; posterior cruciate ligament
<b>PCM</b>	protein-calorie malnutrition

<b>PCO</b>	polycystic ovary
<b>PCO<sub>2</sub></b>	carbon dioxide pressure/tension
<b>P~CO<sub>2</sub></b>	partial pressure of carbon dioxide
<b>PCOD</b>	polycystic ovarian disease
<b>PCP</b>	<i>Pneumonocystis carinii</i> pneumonia; pulmonary capillary pressure; phenacyclidine; primary care physician
<b>PCR</b>	protein catabolic/caloric rate; polymerase chain reaction
<b>PCT</b>	porphyria cutanea
<b>PCTA</b>	percutaneous transluminal angioplasty
<b>PCU</b>	progressive care unit
<b>PCV</b>	packed cell volume
<b>PCWP</b>	pulmonary capillary wedge pressure
<b>PD</b>	peritoneal dialysis; postural drainage; Parkinson's disease; percutaneous drain
<b>P/D</b>	packs per day (cigarettes) (PPD)
<b>PDA</b>	patent ductus arteriosus
<b>PDE</b>	paroxysmal dyspnea on exertion; pulsed Doppler echocardiography
<b>PDFC</b>	premature dead female child
<b>PDGF</b>	platelet-derived growth factor
<b>PDGXT</b>	predischarge graded exercise test
<b>PDL</b>	poorly differentiated lymphocyte
<b>PDMC</b>	premature dead male child
<b>PDR</b>	proliferative diabetic retinopathy; <i>Physician's Desk Reference</i>
<b>PDS</b>	pain dysfunction syndrome
<b>PDT</b>	photodynamic therapy
<b>PDU</b>	pulsed Doppler ultrasonography
<b>PE</b>	physical examination; physical exercise; pulmonary embolism; pleural effusion
<b>PEcho</b>	prostatic echogram
<b>peds</b>	pediatrics
<b>PEEP</b>	positive end expiratory pressure
<b>PEFR</b>	peak expiratory flow rate
<b>PEG</b>	pneumoencephalogram; percutaneous endoscopic gastrostomy; polyethylene glycol
<b>PEN</b>	parenteral and enteral nutrition
<b>PENS</b>	percutaneous epidural nerve stimulator
<b>PEP</b>	protein electrophoresis; preejction period
<b>perf</b>	perforation

<b>PERL</b>	pupils equal, reactive to light
<b>PERRLA</b>	pupils, equal, round, reactive to light and accommodation
<b>PES</b>	preexcitation syndrome
<b>PET</b>	positron-emission tomography; preeclamptic toxemia; pressure-equalizing tubes
<b>PF</b>	power factor
<b>PFC</b>	persistent fetal circulation
<b>PFR</b>	peak flow rate; parotid flow rate
<b>PFT</b>	pulmonary function test
<b>PFU</b>	plaque-forming unit
<b>pg</b>	picogram
<b>PG</b>	pregnant
<b>PGA</b>	pteroylglutamic acid
<b>PGF</b>	parenteral grandfather
<b>PGH</b>	pituitary growth hormone
<b>PGL</b>	persistent generalized lymphadenopathy
<b>PGM</b>	paternal grandmother
<b>PgR</b>	progesterone receptor
<b>PGU</b>	postgonococcal urethritis
<b>pH</b>	negative log of hydrogen ion concentration
<b>PH</b>	past history; poor health; public health
<b>pHA</b>	arterial blood hydrogen tension
<b>PHA</b>	phytohemagglutinin; passive hemagglutination
<b>Pharm</b>	pharmacy
<b>PharmD</b>	doctor of pharmacy
<b>PhC</b>	pharmaceutical chemist
<b>PHC</b>	primary hepatocellular carcinoma
<b>PhD</b>	doctor of philosophy
<b>PhG</b>	graduate in pharmacy
<b>PHH</b>	posthemorrhagic hydrocephalus
<b>PhI</b>	<i>Pharmacopoeia Internationalis</i>
<b>PHN</b>	public health nurse; postherpetic neuralgia
<b>PHP</b>	prepaid health plan
<b>PHPT</b>	primary hyperparathyroidism
<b>PHPV</b>	persistent hyperplastic primary vitreous
<b>PhRMA</b>	Pharmaceutical Research and Manufacturers of America (formerly PMA)
<b>PHS</b>	Public Health Service (United States) (USPHS)
<b>phx</b>	pharynx
<b>PI</b>	present illness; pulmonary infarction; peripheral iridectomy; package insert; principal investigator



<b>PICA</b>	posterior inferior communicating artery; posterior inferior cerebellar artery
<b>PICU</b>	pediatric intensive care unit
<b>PID</b>	pelvic inflammatory disease; prolapsed intervertebral disc
<b>PIE</b>	pulmonary infiltration with eosinophilia; pulmonary interstitial emphysema
<b>PIFR</b>	peak inspiratory flow rate
<b>PIH</b>	pregnancy-induced hypertension
<b>PIP</b>	proximal interphalangeal joint; postinspiratory pressure
<b>PISA</b>	phase invariant signature algorithm
<b>PITR</b>	plasma iron turnover rate
<b>PIV</b>	peripheral intravenous
<b>PIVD</b>	protruded intervertebral disc
<b>PJB</b>	premature junctional beat
<b>PJC</b>	premature junctional contraction
<b>PJS</b>	Peutz-Jeghers syndrome
<b>PK</b>	penetrating keratoplasty
<b>PKD</b>	polycystic kidney disease
<b>PKU</b>	phenylketonuria
<b>PL</b>	plantar; place; perception of light
<b>PLAP</b>	placental alkaline phosphatase
<b>PLFC</b>	premature living female child
<b>PLH</b>	paroxysmal localized hyperhidrosis
<b>PLL</b>	prolymphocytic leukemia
<b>PLMC</b>	premature living male child
<b>PLN</b>	pelvic lymph node; popliteal lymph node
<b>PLS</b>	primary lateral sclerosis
<b>PLTs</b>	platelets
<b>PM</b>	postmortem; evening ( <i>post meridiem</i> ); pretibial myxedema
<b>PMA</b>	Prinzmetal's angina; premenstrual asthma; Pharmaceutical Manufacturers Association (now PhRMA)
<b>PMB</b>	postmenopausal bleeding; polymorphonuclear basophils
<b>PMC</b>	pseudomembranous colitis
<b>PMD</b>	private medical doctor
<b>PME</b>	postmenopausal estrogen
<b>PMF</b>	progressive massive fibrosis
<b>PMH</b>	past medical history

<b>PMI</b>	point of maximal impulse; patient medication instructions
<b>PML</b>	progressive multifocal leukoencephalopathy
<b>PMN</b>	polymorphonuclear neutrophil
<b>PMP</b>	pain management program; previous menstrual period
<b>PMPM</b>	per member per month
<b>PMPY</b>	per member per year
<b>PMR</b>	polymyalgia rheumatica; polymorphic reticulosis; proton magnetic resonance
<b>PM&amp;R</b>	physical medicine and rehabilitation
<b>PMS</b>	premenstrual syndrome
<b>PMT</b>	premenstrual tension
<b>PMTS</b>	premenstrual tension syndrome
<b>PMV</b>	prolapse of mitral valve
<b>PMW</b>	pacemaker wires
<b>PN</b>	parenteral nutrition; progress note; percussion note
<b>PNAS</b>	prudent no added salt
<b>PNB</b>	premature nodal beat
<b>PNC</b>	premature nodal contraction; peripheral nerve conduction
<b>PND</b>	paroxysmal nocturnal dyspnea; postnasal drip
<b>PNF</b>	proprioceptive neuromuscular fasciculation (reaction)
<b>PNH</b>	paroxysmal nocturnal hemoglobinuria
<b>PNI</b>	prognostic nutrition index; peripheral nerve injury
<b>PNMG</b>	persistent neonatal myasthenia gravis
<b>PNP</b>	Pediatric Nurse Practitioner; progressive nuclear palsy
<b>PNS</b>	peripheral nervous system; partial nonprogressing stroke
<b>PNT</b>	percutaneous nephrostomy tube
<b>PNU</b>	protein nitrogen units
<b>PNV</b>	prenatal vitamins
<b>PNX</b>	pneumothorax
<b>po</b>	by mouth ( <i>per os</i> )
<b>PO</b>	phone order
<b>PO<sub>2</sub></b>	partial pressure of oxygen
<b>POA</b>	pancreatic oncofetal antigen
<b>POAG</b>	primary open-angle glaucoma
<b>POC</b>	product of conception; postoperative care
<b>POD 1</b>	postoperative day one

<b>POEMS</b>	polyneuropathy, organomegaly, endocrinopathy, monoclonal (M)-protein, skin changes (with plasma cell dyscrasia)
<b>poik</b>	poikilocytosis
<b>POL</b>	premature onset of labor
<b>poly</b>	polymorphonucleocytes
<b>POMR</b>	problem-oriented medical record
<b>poplit</b>	popliteal
<b>POPR</b>	problem-oriented patient record
<b>PORT</b>	postoperative respiratory therapy
<b>POS</b>	parosteal osteosarcoma; point of service
<b>POSM</b>	patient-operated selector mechanism
<b>POST</b>	postmortem examination (autopsy)
<b>post-op</b>	after surgery (postoperative)
<b>PP</b>	postpartum; postprandial; paradoxical pulse; pinprick; patient profile; protoporphyria; proximal phalanx
<b>PPA</b>	prudent purchaser agreement
<b>PPAC</b>	pharmacy practice activity classification
<b>ppb</b>	parts per billion
<b>PPBG</b>	postprandial blood glucose
<b>PPBS</b>	postprandial blood sugar
<b>PPC</b>	progressive patient care
<b>PPD</b>	packs per day (P/D); postpartum day; posterior polymorphous dystrophy; purified protein derivative
<b>P&amp;PD</b>	percussion and postural drainage
<b>PPD-B</b>	purified protein derivative—Battey
<b>PPD-S</b>	purified protein derivative—standard
<b>PPF</b>	plasma protein fraction
<b>PPG</b>	photoplethysmography
<b>PPH</b>	postpartum hemorrhage
<b>PPHN</b>	persistent pulmonary hypertension of the newborn
<b>PPI</b>	patient package insert; protein pump inhibitor
<b>PPL</b>	pars planus lensectomy
<b>PPLO</b>	pleuro-pneumonia-like organism
<b>ppm</b>	parts per million
<b>PPN</b>	peripheral parenteral nutrition
<b>PPNG</b>	penicillinase-producing <i>Neisseria gonorrhoeae</i>
<b>PPO</b>	preferred provider organization
<b>PPP</b>	preferred pharmacy program; postpartum psychosis
<b>PPPBL</b>	peripheral pulses palpable both legs
<b>PPPG</b>	postprandial plasma glucose
<b>PPROM</b>	prolonged premature rupture of membranes

<b>PPS</b>	postpartum sterilization; pneumococcal polysaccharide (vaccine); prospective payment system
<b>PPS codes</b>	professional pharmacy service codes
<b>PPTL</b>	postpartum tubal ligation
<b>PR</b>	per rectum; pulse rate; profile
<b>P&amp;R</b>	pulse and respiration; pelvic and rectal
<b>PRA</b>	plasma renin angiotensin; plasma renin activity
<b>PRAT</b>	platelet radioactive antiglobulin test
<b>PRBC</b>	packed red blood cells
<b>PRC</b>	packed red cells
<b>PRCA</b>	pure red cell aplasia
<b>PRE</b>	progressive/passive resistive exercise
<b>pre-op</b>	before surgery (preoperative)
<b>prep</b>	prepare (for surgery)
<b>PRG</b>	phleborrhheogram
<b>PRIMP</b>	primipara (first pregnancy)
<b>prn</b>	as needed ( <i>pro re nata</i> )
<b>pro</b>	protein
<b>PRO</b>	peer/professional review organization
<b>prob</b>	probable
<b>procto</b>	proctology; proctoscopic
<b>prog</b>	prognosis; prognathism
<b>PROM</b>	passive range of motion; premature rupture of membranes
<b>prov</b>	provisional
<b>PRP</b>	panretinal photocoagulation; polyribose ribital phosphate
<b>PRRB</b>	Provider Reimbursement Review Board
<b>PRRE</b>	pupils round, regular, equal
<b>PRs</b>	positive rolandic spikes
<b>PRTH-C</b>	prothrombin time control
<b>PRV</b>	polycythemia rubra vera
<b>PRW</b>	polymerized ragweed
<b>PS</b>	pulmonary stenosis; paradoxical sleep; pathologic stage; plastic surgery; serum from pregnant women; performance status
<b>P&amp;S</b>	paracentesis and suction; pain and suffering
<b>PS I</b>	healthy patient with localized pathological process
<b>PS II</b>	patient with mild to moderate systemic disease
<b>PS III</b>	patient with severe systemic disease limiting activity, but not incapacitating

<b>PS IV</b>	patient with incapacitating systemic disease
<b>PS V</b>	moribund patient not expected to live
<b>PSA</b>	prostate-specific antigen; psoriatic arthritis
<b>PSAO</b>	pharmacy services administrative organization
<b>PSC</b>	posterior subcapsular cataract; primary sclerosing cholangitis
<b>PSE</b>	portal systemic encephalopathy
<b>PSF</b>	posterior spinal fusion
<b>PSG</b>	polysomnography
<b>PSGN</b>	poststreptococcal glomerulonephritis
<b>PSH</b>	postspinal headache
<b>psi</b>	pounds per square inch
<b>PSM</b>	presystolic murmur
<b>PSP</b>	pancreatic spasmolytic peptide; progressive supranuclear palsy
<b>PSRBOW</b>	premature spontaneous rupture of bag of waters
<b>PSRO</b>	professional standards review organization
<b>PSS</b>	progressive systemic sclerosis; physiologic saline solution
<b>PSVT</b>	paroxysmal supraventricular tachycardia
<b>PSW</b>	psychiatric social worker
<b>PT</b>	physical therapy; patient; prothrombin time; physical therapist
<b>P&amp;T</b>	pharmacy and therapeutics (committee)
<b>PTA</b>	prior to admission; plasma thromboplastin antecedent; pretreatment anxiety; puretone average; physical therapy assistant; percutaneous transluminal angioplasty
<b>PTB</b>	patellar tendon bearing
<b>PTBD-EF</b>	percutaneous transhepatic biliary drainage–enteric feeding
<b>PTC</b>	plasma thromboplastin components; percutaneous transhepatic cholangiography
<b>PTCA</b>	percutaneous transluminal coronary angioplasty
<b>PTCB</b>	Pharmacy Technician Certification Board
<b>PTD</b>	period to discharge; permanent and total disability
<b>PTE</b>	proximal tibial epiphysis; pulmonary thromboembolism; pretibial edema
<b>PTF</b>	plasma thromboplastin factor
<b>PTH</b>	posttransfusion hepatitis; parathyroid hormone
<b>PTL</b>	preterm labor
<b>PTMDF</b>	pupils, tension, media, disc, fundus

<b>PTPM</b>	posttraumatic progressive myelopathy
<b>PTPN</b>	peripheral (vein) total parenteral nutrition
<b>PTS</b>	prior to surgery
<b>PTSD</b>	post-traumatic stress disorder
<b>PTT</b>	partial thromboplastin time
<b>PTx</b>	parathyroidectomy
<b>PTX</b>	pneumothorax
<b>PU</b>	peptic ulcer; pregnancy urine
<b>PUBS</b>	percutaneous umbilical blood sampling
<b>PUD</b>	peptic ulcer disease
<b>PUFA</b>	polyunsaturated fatty acids
<b>pul</b>	pulmonary
<b>PUN</b>	plasma urea nitrogen
<b>PUO</b>	pyrexia of undetermined origin
<b>PUPPP</b>	pruritic urticariat papules and plaques of pregnancy
<b>PUVA</b>	psoralen-ultraviolet A (light)
<b>PV</b>	polycythemia vera; polio vaccine; portal vein; pulmonary vein; per vagina
<b>P&amp;V</b>	pyloroplasty and vagotomy
<b>PVB</b>	premature ventricular beat
<b>PVC</b>	premature ventricular contraction; pulmonary venous congestion; polyvinyl chloride
<b>PVD</b>	peripheral vascular disease; posterior vitreous detachment
<b>PVE</b>	premature ventricular extrasystole; perivenous encephalomyelitis
<b>PVO</b>	peripheral vascular occlusion; pulmonary venous occlusion
<b>PVOD</b>	pulmonary vascular obstructive disease
<b>PVP</b>	peripheral venous pressure
<b>PVR</b>	peripheral vascular resistance; postvoiding residual; proliferative vitreoretinopathy; pulse-volume recording
<b>PVS</b>	peritoneovenous shunt; pulmonic valve stenosis; percussion, vibration, and suction
<b>PVT</b>	paroxysmal ventricular tachycardia; private
<b>PWB</b>	partial weight bearing
<b>PWL</b>	posterior wall of left ventricle
<b>PWP</b>	pulmonary wedge pressure
<b>PWV</b>	polistes wasp venom
<b>Px</b>	physical exam; prognosis; pneumothorax; practice
<b>PXE</b>	pseudoxanthoma elasticum

<b>PY</b>	pack years
<b>q</b>	every, each ( <i>quodque</i> ); quantity
<b>q4h</b>	every four hours
<b>QA</b>	quality assurance
<b>qAM</b>	every morning
<b>QCA</b>	quantitative coronary angiography
<b>qd</b>	every day
<b>QEEG</b>	quantitative electroencephalogram
<b>qhs</b>	every night
<b>qid</b>	four times daily ( <i>quarter in die</i> )
<b>qns</b>	quantity not sufficient
<b>QRRB</b>	Qualified Railroad Retirement Beneficiary
<b>qs</b>	sufficient quantity ( <i>quantum sufficiat</i> ); every shift
<b>QSAR</b>	quantitative structure-activity relationship
<b>qwk</b>	once a week
<b>r</b>	correlation coefficient
<b>R</b>	respiration; right; rectum; regular; rate
<b>R (AW)</b>	airway resistance
<b>RA</b>	rheumatoid arthritis; right atrium; right auricle; right arm; room air
<b>RABG</b>	room air blood gas
<b>RAC</b>	right atrial catheter
<b>RAD</b>	right axis deviation; radical
<b>RAE</b>	right atrial enlargement
<b>RAEB</b>	refractory anemia, erythroblastic
<b>RAI</b>	radioactive iodine
<b>RAIU</b>	radioactive iodine uptake
<b>RALT</b>	routine admission laboratory tests
<b>RAM</b>	rapid alternating movements
<b>RAN</b>	resident admission notes
<b>RAO</b>	right anterior oblique
<b>RAP</b>	right atrial pressure; resident assessment protocol
<b>RAPD</b>	relative afferent pupillary defect
<b>RAS</b>	renal artery stenosis
<b>RAST</b>	radioallergosorbent test
<b>RAT</b>	right anterior thigh
<b>RAU</b>	recurrent aphthous stomatitis
<b>RB</b>	retrobulbar; right buttock
<b>R&amp;B</b>	right and below
<b>RBA</b>	right brachial artery

<b>RBB</b>	right breast biopsy
<b>RBBB</b>	right bundle branch block
<b>RBC</b>	red blood cells
<b>RBCD</b>	right border cardiac dullness
<b>RBD</b>	right border of dullness
<b>RBE</b>	relative biological equivalent/effectiveness
<b>RBF</b>	renal blood flow
<b>RBOW</b>	rupture bag of water
<b>RBP</b>	retinol-binding protein
<b>RBRVS</b>	resource-based relative value scale
<b>RBV</b>	right brachial vein
<b>RCA</b>	right coronary artery; radionuclide cerebral angiogram; regional citrate anticoagulation
<b>RCC</b>	renal cell carcinoma
<b>RCD</b>	relative cardiac dullness
<b>RCM</b>	right costal margin; radiographic contrast media
<b>RCR</b>	replication-competent retrovirus
<b>RCS</b>	reticulum cell sarcoma
<b>RCT</b>	root canal therapy; randomized clinical trial
<b>RCV</b>	red cell volume
<b>RD</b>	registered dietitian; renal disease; retinal detachment; respiratory disease
<b>R&amp;D</b>	research and development
<b>RDA</b>	recommended daily allowance
<b>RDH</b>	registered dental hygienist
<b>RDI</b>	respiratory distress index
<b>RDPE</b>	reticular degeneration of pigment epithelium
<b>RDS</b>	respiratory distress syndrome
<b>RDT</b>	regular dialysis/hemodialysis treatment
<b>RDVT</b>	recurrent deep vein thrombosis
<b>RDW</b>	red cell size distribution width
<b>RE</b>	reticuloendothelial; rectal examination; regional enteritis; right eye; concerning
<b>REE</b>	resting energy expenditure
<b>REF</b>	renal erythropoietic factor; referred
<b>rehab</b>	rehabilitation
<b>rel</b>	religion
<b>REM</b>	rapid eye movement; roentgen equivalent in man
<b>REMS</b>	rapid eye movement sleep
<b>rep</b>	repeat; report; repair
<b>repol</b>	repolarization



<b>RER</b>	renal excretion rate; rough-surfaced endoplasmic reticulum
<b>RES</b>	reticuloendothelial system; resident; rehabilitation evaluation system
<b>resc</b>	resuscitation
<b>resp</b>	respiratory; respiration
<b>retic</b>	reticulocyte
<b>rev</b>	revolutions; review; reverse
<b>RF</b>	rheumatoid factor; renal failure; rheumatic fever
<b>RFA</b>	right frontoanterior; right femoral artery
<b>RFL</b>	right frontolateral
<b>RFP</b>	right frontoposterior
<b>RFT</b>	right frontotransverse
<b>RF test</b>	rheumatoid factor test
<b>RG</b>	right gluteal
<b>RGM</b>	right gluteus medius
<b>Rh</b>	Rhesus factor (in blood)
<b>RH</b>	right hyperphoria; right hand; room humidifier
<b>RHB</b>	raise head of bed
<b>RHC</b>	respiration has ceased; rural health clinic
<b>RHD</b>	rheumatic heart disease; relative hepatic dullness
<b>RHE</b>	recombinant human erythropoietin (R-HuEPO)
<b>RHF</b>	right heart failure
<b>RHL</b>	right hemisphere lesions
<b>RHT</b>	right hypertropia
<b>R-HuEPO</b>	recombinant human erythropoietin (RHE)
<b>RIA</b>	radioimmunoassay
<b>RIC</b>	right iliac crest; right internal carotid (artery)
<b>RICE</b>	rest and immobilization, ice, compression, elevation
<b>RICS</b>	right intercostal space
<b>RICU</b>	respiratory intensive care unit
<b>RID</b>	radial immunodiffusion
<b>RIF</b>	rigid internal fixation; right iliac fossa
<b>RIG</b>	rabies immune globulin
<b>RIH</b>	right inguinal hernia
<b>RIMA</b>	right internal mammary anastomosis
<b>RIND</b>	reversible ischemic neurologic defect
<b>RIP</b>	radioimmunoprecipitin (test); rapid infusion pump
<b>RISA</b>	radioiodinated serum albumin
<b>RIST</b>	radioimmunosorbent test
<b>RK</b>	radial keratotomy
<b>RL</b>	right leg; right lung; right lateral

<b>RLE</b>	right lower extremity
<b>RLF</b>	retrolental fibroplasia
<b>RLL</b>	right lower lobe
<b>RLQ</b>	right lower quadrant
<b>RLR</b>	right lateral rectus
<b>RLT</b>	right lateral thigh
<b>RM</b>	repetitions maximum; room; radical mastectomy; respiratory movement
<b>R&amp;M</b>	routine and microscopic
<b>RMA</b>	right menoanterior
<b>RMCA</b>	right main coronary artery
<b>RMCL</b>	right midclavicular line
<b>RMD</b>	rapid movement disorder
<b>RME</b>	right medilateral episiotomy
<b>RMEE</b>	right middle ear exploration
<b>RMI</b>	repetitive motion injuries
<b>RML</b>	right middle lobe
<b>RMP</b>	right mentoposterior
<b>RMR</b>	right medial rectus; resting metabolic rate
<b>RMSF</b>	Rocky Mountain spotted fever
<b>RMT</b>	right mentotransverse; registered music therapist
<b>RN</b>	registered nurse
<b>RNA</b>	radionuclide angiography; ribonucleic acid
<b>RND</b>	radial neck dissection
<b>RNEF</b>	resting/radionuclide ejection fraction
<b>RO</b>	rule out (R/O); routine order
<b>ROA</b>	right occiput anterior
<b>ROI</b>	return on investment
<b>ROM</b>	range of motion
<b>ROP</b>	right occiput posterior; retinopathy of prematurity
<b>ROS</b>	review of systems
<b>ROSC</b>	restoration of spontaneous circulation
<b>ROT</b>	right occipital transverse; remedial occupational therapy
<b>RP</b>	retinitis pigmentosa; retrograde pyelogram; Raynaud's phenomenon
<b>RPA</b>	right pulmonary artery; radial photon absorptiometry; registered physician assistant/associate
<b>RPCF</b>	Reiter protein complement fixation
<b>RPD</b>	removable partial denture
<b>RPE</b>	retinal pigment epithelium; rating of perceived exertion

<b>RPF</b>	renal plasma flow; relaxed pelvic floor
<b>RPGN</b>	rapidly progressive glomerulonephritis
<b>RPh</b>	registered pharmacist
<b>RPH</b>	retroperitoneal hemorrhage
<b>RPICCE</b>	round pupil intracapsular cataract extraction
<b>rpm</b>	revolutions per minute
<b>RPM</b>	renal parenchymal malacoplakia
<b>RPN</b>	renal papillary necrosis
<b>RPO</b>	right posterior oblique
<b>RPP</b>	rate-pressure product
<b>RPT</b>	registered physical therapist
<b>RQ</b>	respiratory quotient
<b>RR</b>	recovery room; respiratory rate; regular respirations
<b>R&amp;R</b>	rate and rhythm
<b>RRE</b>	round, regular, and equal (pupils)
<b>RREF</b>	resting radionuclide ejection fraction
<b>rRNA</b>	ribosomal ribonucleic acid
<b>RRND</b>	right radical neck dissection
<b>RRR</b>	regular rhythm and rate
<b>RRRN</b>	round, regular, react normally
<b>RS</b>	Reiter's syndrome; Reye's syndrome; rhythm strip; right side
<b>RSA</b>	right sacrum anterior; right subclavian artery
<b>RSDS</b>	reflex-sympathetic dystrophy syndrome
<b>RSI</b>	repetitive stress injury
<b>R-SICU</b>	respiratory-surgical intensive care unit
<b>RSO</b>	right salpingo-oophorectomy; radiation safety officer
<b>RSP</b>	right sacroposterior
<b>RSR</b>	regular sinus rhythm; relative survival rate
<b>RSV</b>	respiratory syncytial virus
<b>RSW</b>	right-sided weakness
<b>R/t</b>	related to
<b>RT</b>	right; radiation therapy; recreational therapy; renal transplant; running total; respiratory therapist; radiologic technician
<b>RT3U</b>	resin tri-iodothyronine uptake
<b>RTA</b>	renal tubular acidosis
<b>RTC</b>	return to clinic; round the clock
<b>RTECS</b>	Registry of Toxic Effects of Chemical Substances
<b>RTL</b>	reactive to light
<b>rTNM</b>	retreatment staging of cancer (tumor, node, metastasis)
<b>RTO</b>	return to office

<b>rtPA</b>	recombinant tissue-type plasminogen
<b>TRRR</b>	return to recovery room
<b>RTS</b>	real-time scan
<b>RTx</b>	radiation therapy
<b>RU</b>	rehabilitation unit
<b>RUA</b>	routine urine analysis
<b>RUE</b>	right upper extremity
<b>RUG</b>	retrograde urethrogram
<b>RUL</b>	right upper lobe
<b>rupt</b>	ruptured
<b>RUQ</b>	right upper quadrant
<b>RURTI</b>	recurrent upper respiratory tract infection
<b>RUSB</b>	right upper sternal border
<b>RV</b>	right ventricle; residual volume; rectovaginal; rubella vaccine
<b>RVD</b>	relative vertebral density
<b>RVE</b>	right ventricular enlargement
<b>RVET</b>	right ventricular ejection time
<b>RVG</b>	radionuclide ventriculography
<b>RVH</b>	right ventricular hypertrophy; renovascular hypertension
<b>RVL</b>	right vastus lateralis
<b>RVO</b>	retinal vein occlusion; relaxed vaginal outlet
<b>RVOT</b>	right ventricular outflow tract
<b>RVP</b>	red veterinary petrolatum
<b>RVR</b>	rapid ventricular response
<b>RVSWI</b>	right ventricular stroke work index
<b>RV/TLC</b>	residual volume to total lung capacity
<b>Rx</b>	therapy; drug; medication; treatment; take; prescription
<b>RXN</b>	reaction
<b>S</b>	subjective (finding); serum; suction; sacral; single; sister; without
<b>S<sub>1</sub></b>	first heart sound; first sacral vertebrae
<b>S<sub>2</sub></b>	second heart sound
<b>SA</b>	sinoatrial; sustained action; surface area
<b>S&amp;A</b>	sugar and acetone
<b>SAARD</b>	slow-acting antirheumatic drugs
<b>SAB</b>	subarachnoid block/bleed
<b>SAC</b>	short arm cast
<b>SACH</b>	solid ankle cushion heel

<b>SAD</b>	sugar and acetone determination; seasonal affective disorder
<b>SAE</b>	signal-averaged electrocardiogram
<b>SAF</b>	self-articulating femoral
<b>SAFE</b>	stationary attachment and flexible endoskeletal (prosthesis)
<b>Sag D</b>	sagittal diameter
<b>SAH</b>	subarachnoid hemorrhage; systemic arterial hypertension
<b>SAL12</b>	sequential analysis of 12 chemistry constituents
<b>SAM</b>	systolic anterior motion; self-administered medication
<b>SAN</b>	sinoatrial node (S-A node)
<b>S-A node</b>	sinoatrial node (SAN)
<b>SAPD</b>	self-administration of psychotropic drugs
<b>SAPHO</b>	synovitis, acne, pustulosis, hyperostosis, osteitis
<b>SAR</b>	structure-activity relationship
<b>SAS</b>	sleep apnea syndrome
<b>SAT</b>	subacute thyroiditis; saturation
<b>SAVD</b>	spontaneous assisted vaginal delivery
<b>SB</b>	stillbirth; stillborn; spina bifida; sternal border; Sengstaken-Blakemore (tube); sinus bradycardia; small bowel
<b>SBE</b>	subacute bacterial endocarditis
<b>SBFT</b>	small bowel follow-through
<b>SBGM</b>	self blood glucose monitoring
<b>SB-LM</b>	Stanford Binet Intelligence Test—Form LM
<b>SBO</b>	small bowel obstruction
<b>SBP</b>	systolic blood pressure; spontaneous bacterial peritonitis
<b>SBR</b>	strict bed rest
<b>SBT</b>	serum bacterial titers
<b>SC</b>	subcutaneous; subclavian; sternoclavicular; sickle-cell
<b>SCA</b>	subcutaneous abdominal (block)
<b>SCB</b>	strictly confined to bed
<b>SCBC</b>	small cell bronchogenic carcinoma
<b>SCC</b>	squamous cell carcinoma; sickle cell crisis
<b>SCCA</b>	semiclosed circle absorber
<b>SCD</b>	sudden cardiac death; sickle cell disease; subacute combined degeneration; service connected disability; spinal cord disease
<b>SCE</b>	sister chromatic exchange

<b>SCI</b>	spinal cord injury
<b>SCID</b>	severe combined immunodeficiency disease/disorders
<b>SCIV</b>	subclavian intravenous
<b>SCLC</b>	small-cell lung cancer
<b>SCLE</b>	subcutaneous lupus erythematosus
<b>SCLs</b>	soft contact lenses
<b>SCM</b>	sternocleidomastoid; spondylitic caudal myelopathy
<b>SCP</b>	sodium cellulose phosphate
<b>SCR</b>	spondylitic caudal radiculopathy
<b>SC/SP</b>	supracondylar/suprapatellar prosthesis
<b>SCt</b>	sickle-cell trait; sugar-coated tablet; sentence completion test
<b>SCUT</b>	schizophrenia chronic undifferentiated type
<b>SCV</b>	subcutaneous vaginal (block)
<b>SD</b>	senile dementia; scleroderma; spontaneous delivery; sterile dressing; surgical drain
<b>S&amp;D</b>	stomach and duodenum
<b>SDA</b>	steroid-dependent asthmatic
<b>SDAT</b>	senile dementia of Alzheimer's type
<b>SDH</b>	subdural hematoma
<b>SDL</b>	serum digoxin level
<b>SDS</b>	same-day surgery; sodium dodecyl sulfate
<b>SDT</b>	speech detection threshold
<b>SE</b>	side effect
<b>sec</b>	secondary
<b>sed</b>	sedimentation
<b>sed rt</b>	sedimentation rate
<b>SEER</b>	Surveillance, Epidemiology, and End Results (Program)
<b>seg</b>	segment; segmented neutrophil
<b>SEM</b>	systolic ejection murmur; scanning electron microscopy; standard error of mean
<b>SEMI</b>	subendocardial myocardial infarction
<b>sens</b>	sensorium
<b>SEP</b>	systolic ejection period; somatosensory evoked potential; separate
<b>SER-IV</b>	supination external rotation, type 4
<b>SERs</b>	somatosensory-evoked responses
<b>SES</b>	socioeconomic status
<b>SF</b>	scarlet fever; sugar free; salt free; symptom free; spinal fluid
<b>SFA</b>	superficial femoral artery; saturated fatty acids

<b>SFC</b>	spinal fluid count
<b>SFEMG</b>	single-fiber electromyography
<b>SFP</b>	spinal fluid pressure
<b>SFPT</b>	standard fixation preference test
<b>SG</b>	specific gravity; serum glucose; Swan-Ganz
<b>SGA</b>	small for gestational age
<b>SGD</b>	straight gravity drainage
<b>SGE</b>	significant glandular enlargement
<b>SGOT</b>	serum glutamic oxaloacetic transaminase
<b>SGPT</b>	serum glutamic pyruvic transaminase
<b>SH</b>	serum hepatitis; social history; shower; shoulder
<b>S&amp;H</b>	speech and hearing
<b>S/H</b>	suicidal/homicidal (ideation)
<b>SHA</b>	super heater aerosol
<b>SHb</b>	sickle hemoglobin
<b>SHEENT</b>	skin, head, eyes, ears, nose, throat
<b>SI</b>	sacroiliac
<b>S&amp;I</b>	suction and irrigation
<b>SIADH</b>	syndrome of inappropriate antidiuretic hormone secretion
<b>SIB</b>	self-injurious behavior
<b>sibs</b>	siblings
<b>SICT</b>	selective intracoronary thrombolysis
<b>SICU</b>	surgical intensive care unit
<b>SIDS</b>	sudden infant death syndrome
<b>SIJ</b>	sacroiliac joint
<b>SIMV</b>	synchronized intermittent mandatory ventilation
<b>SIRS</b>	systemic inflammatory response syndrome
<b>SISI</b>	short increment sensitivity index
<b>SIT</b>	sperm immobilization test; Slossen Intelligence Test
<b>SIW</b>	self-inflicted wound
<b>SJS</b>	Stevens-Johnson syndrome
<b>SL</b>	sublingual; slight
<b>SLB</b>	short leg brace
<b>SLC</b>	short leg cast
<b>SLE</b>	systemic lupus erythematosus; slit lamp examination
<b>SLGXT</b>	symptom limited graded exercise test
<b>SLK</b>	superior limbic keratoconjunctivitis
<b>SLR</b>	straight leg raising
<b>SLRC</b>	straight leg raising cast
<b>SLS</b>	sedation level score
<b>SLWC</b>	short leg walking cast

<b>SM</b>	systolic murmur; small
<b>SMA</b>	sequential multiple analyzer; simultaneous multichannel autoanalyzer; superior mesenteric artery; spinal muscular atrophy
<b>SMC</b>	special mouth care; somatomedin-C
<b>SMD</b>	senile macular degeneration
<b>SMI</b>	small volume infusion; sustained maximal inspiration; supplementary medical insurance
<b>SMM</b>	<i>State Medicaid Manual</i>
<b>SMON</b>	subacute myelopticoneuropathy
<b>SMP</b>	self-management program
<b>SMR</b>	submucosal resection; standardized mortality ratio; skeletal muscle relaxant
<b>SMSA</b>	standard metropolitan statistical area
<b>SMVT</b>	sustained monomorphic ventricular tachycardia
<b>SNAP</b>	sensory nerve action potential
<b>SNCV</b>	sensory nerve conduction velocity
<b>SND</b>	sinus node dysfunction
<b>SNE</b>	subacute necrotizing encephalomyelopathy
<b>SNF</b>	skilled nursing facility
<b>SNGFR</b>	single nephron glomerular filtration rate
<b>SNT</b>	Suppan nail technique
<b>S-O</b>	salpingo-oophorectomy
<b>SO<sub>4</sub></b>	sulfate
<b>SOA</b>	swelling of ankles; supraorbital artery
<b>SOAA</b>	signed out against advice
<b>SOAP</b>	subjective, objective, assessment, and plan
<b>SOB</b>	shortness of breath
<b>S&amp;OC</b>	signed and on chart (permission)
<b>SOD</b>	superoxide dismutase
<b>SOFAS</b>	Social and Occupational Functioning Assessment Scale
<b>sol</b>	solution ( <i>solutio</i> )
<b>SOM</b>	serous otitis media
<b>SOMI</b>	sterno-occipital mandibular immobilizer
<b>sono</b>	sonogram
<b>SONP</b>	solid organs not palpable
<b>SOP</b>	standard operating procedure
<b>SP</b>	suprapubic; sequential pulse; sacrum to pubis; speech pathologist; status post
<b>S/P</b>	status post
<b>SPA</b>	stimulation-produced analgesia



<b>SPAG</b>	small-particle aerosol generator
<b>SPBI</b>	serum protein bound iodine
<b>SPBT</b>	suprapubic bladder tap
<b>SPE</b>	serum protein electrolytes
<b>spec</b>	specimen
<b>SPECT</b>	single photon emission computer tomography
<b>SPEP</b>	serum protein electrophoresis
<b>SPF</b>	sun protection factor
<b>sp fl</b>	spinal fluid
<b>sp gr</b>	specific gravity
<b>SPK</b>	superficial punctate keratitis
<b>SPMA</b>	spinal progressive muscle atrophy
<b>SPMSQ</b>	Short Portable Mental Status Questionnaire
<b>SPN</b>	solitary pulmonary nodule
<b>SPP</b>	suprapubic prostatectomy
<b>SPROM</b>	spontaneous premature rupture of membrane
<b>SPS</b>	sodium polyethanol sulfanate
<b>SPT</b>	skin prick test
<b>sp tap</b>	spinal tap
<b>SPU</b>	short procedure unit
<b>SPVR</b>	systemic peripheral vascular resistance
<b>SQ</b>	subcutaneous
<b>Sq CCa</b>	squamous cell carcinoma
<b>SR</b>	sedimentation rate; sustained release; side rails; system review; sinus rhythm; sensitivity requirement
<b>SRBC</b>	sickle/sheep red blood cells
<b>SRBOW</b>	spontaneous rupture of bag of waters
<b>SRC</b>	scleroderma renal crisis
<b>Sr Cr</b>	serum creatinine
<b>SRF</b>	somatotropin-releasing factor
<b>SRF-A</b>	slow-releasing factor of anaphylaxis
<b>SRIF</b>	somatotropin-release-inhibiting factor
<b>SRMD</b>	stress-related mucosal damage
<b>SR/NE</b>	sinus rhythm, no ectopy
<b>SRNS</b>	steroid-responsive nephrotic syndrome
<b>SROM</b>	spontaneous rupture of membrane
<b>SRP</b>	signal recognition protein
<b>SRS-A</b>	slow-reacting substance of anaphylaxis
<b>SRT</b>	speech reception threshold; sedimentation rate test
<b>SRU</b>	side rails up
<b>SS</b>	salt substitute; Social Security; social services; slip sent; symmetrical strength; saturated solution

<b>S&amp;S</b>	signs and symptoms
<b>SSA</b>	Social Security Administration
<b>SSD</b>	Social Security Disability; source to skin distance
<b>SSDI</b>	Social Security Disability Income
<b>SSE</b>	saline solution enema; soapsuds enema; systemic side effects
<b>SSEP</b>	somatosensory evoked potential
<b>SSI</b>	Supplemental Security Income
<b>SSKI</b>	saturated solution of potassium iodide
<b>SSM</b>	superficial spreading melanoma
<b>SSN</b>	Social Security number
<b>SSPE</b>	subacute sclerosing panencephalitis
<b>SSRI</b>	selective serotonin reuptake inhibitor
<b>SSS</b>	sick sinus syndrome; sterile saline soak
<b>SSSS</b>	staphylococcal scalded skin syndrome
<b>ST</b>	speech therapist; sinus tachycardia; split thickness
<b>STA</b>	superficial temporal artery
<b>staph</b>	<i>Staphylococcus aureus</i>
<b>stat</b>	immediately ( <i>statim</i> )
<b>STB</b>	stillborn
<b>STBY</b>	standby
<b>STD</b>	sexually transmitted disease; skin test dose
<b>STD TF</b>	standard tube feeding
<b>STET</b>	submaximal treadmill exercise test
<b>STF</b>	special tube feeding
<b>STG</b>	short-term goals
<b>STH</b>	soft tissue hemorrhage; somatotrophic hormone
<b>STIIPCH</b>	systematic, totally integrated, individualized, patient-centered health care
<b>STJ</b>	subtalar joint
<b>STM</b>	short-term memory
<b>sTNM</b>	surgical-evaluative staging of cancer (tumor, node, metastasis)
<b>STNR</b>	symmetrical tonic neck reflex
<b>STORCH</b>	syphilis, toxoplasmosis, other agents, rubella, cytomegalovirus, and herpes
<b>STP</b>	standard temperature and pressure
<b>STPD</b>	standard temperature and pressure, dry
<b>STR</b>	short tandem repeat
<b>strep</b>	streptococcus; streptomycin
<b>STS</b>	serologic test for syphilis
<b>TSKG</b>	split thickness skin graft

<b>STU</b>	shock trauma unit
<b>SU</b>	sensory urgency; Somogyi units
<b>S&amp;U</b>	supine and upright
<b>SUB</b>	Skene's, urethral, and Bartholin (glands)
<b>subq</b>	subcutaneous
<b>SUD</b>	sudden unexpected death
<b>SUID</b>	sudden unexplained infant death
<b>SUND</b>	sudden unexpected nocturnal death
<b>SUP</b>	syndrome supinator; superior
<b>suppos</b>	suppository ( <i>suppositoria</i> )
<b>sur</b>	surgery; surgical
<b>SV</b>	single ventricle; stock volume; sigmoid volvulus
<b>SVC</b>	superior vena cava
<b>SVCO</b>	superior vena cava obstruction
<b>SVD</b>	spontaneous vaginal delivery
<b>SVE</b>	sterile vaginal examination
<b>SVPB</b>	supraventricular premature beat
<b>SVR</b>	supraventricular rhythm; systemic vascular resistance
<b>SVRI</b>	systemic vascular resistance index
<b>SVT</b>	supraventricular tachycardia
<b>SWD</b>	short-wave diathermy
<b>SWFI</b>	sterile water for injection
<b>SWI</b>	sterile water for injection
<b>SWS</b>	slow-wave sleep; Sturge-Weber syndrome
<b>SWT</b>	stab wound of the throat
<b>Sx</b>	symptom; signs; surgery
<b>Sz</b>	seizure; suction; schizophrenic
<b>T</b>	temperature (TPR)
<b>T(A)</b>	axillary temperature
<b>T(O)</b>	oral temperature
<b>T(R)</b>	rectal temperature
<b>T <math>\frac{1}{2}</math></b>	half-life
<b>T<sub>1</sub></b>	tricuspid first sound; first thoracic vertebra
<b>T<sub>3</sub></b>	tri-iodothyronine
<b>T<sub>3</sub>RU</b>	tri-iodothyroxine resin uptake
<b>T<sub>3</sub>UR</b>	tri-iodothyronine uptake ratio
<b>T<sub>4</sub></b>	thyroxine
<b>T<sub>7</sub></b>	free thyroxine factor
<b>TA</b>	therapeutic abortion; temperature axillary; tricuspid atresia, tonometry applanation
<b>T&amp;A</b>	tonsillectomy and adenoidectomy

<b>TAA</b>	total ankle arthroplasty; thoracic aortic aneurysm; tumor-associated antigen (antibodies); transverse aortic arch
<b>tab</b>	tablet ( <i>tabella</i> )
<b>TAB</b>	therapeutic abortion; triple antibiotic
<b>TAD</b>	transverse abdominal diameter
<b>TAE</b>	transcatheter arterial embolization
<b>TAF</b>	tissue angiogenesis factor
<b>TAH</b>	total abdominal hysterectomy; total artificial heart
<b>TAL</b>	tendon Achilles lengthening
<b>TANF</b>	Temporary Assistance for Needy Families
<b>TANI</b>	total axial lymph node irradiation
<b>TAO</b>	thromboangitis obliterans
<b>TAPVC</b>	total anomalous pulmonary venous connection
<b>TAPVD</b>	total anomalous pulmonary venous drainage
<b>TAPVR</b>	total anomalous pulmonary venous return
<b>TAR</b>	thrombocytopenia with absent radius
<b>TARA</b>	total articular replacement arthroplasty
<b>TAS</b>	therapeutics activities specialist
<b>TAT</b>	tetanus antitoxin; till all taken; Thematic Apperception Test; turnaround time
<b>TB</b>	tuberculosis
<b>TBA</b>	to be admitted; to be absorbed
<b>TBB</b>	transbronchial biopsy
<b>TBE</b>	tick-borne encephalitis
<b>TBG</b>	thyroxine-binding globulin
<b>TBI</b>	total body irradiation
<b>T bili</b>	total bilirubin
<b>tbl</b>	tablespoon or tablespoonful (15 mL) (tbs; tbsp)
<b>TBM</b>	tubule basement membrane
<b>TBNA</b>	treated but not admitted
<b>TBPA</b>	thyroxine-binding prealbumin
<b>TBR</b>	total bed rest
<b>tbs</b>	tablespoon or tablespoonful (15 mL) (tbl; tbs)
<b>TBSA</b>	total burn surface area
<b>tbsp</b>	tablespoon or tablespoonful (15 mL) (tbl; tbs)
<b>TBV</b>	total blood volume; transluminal balloon valvuloplasty
<b>TBW</b>	total body water
<b>TC</b>	throat culture; total cholesterol; true conjugate; transcobalamin
<b>T&amp;C</b>	type and crossmatch; turn and cough
<b>T/C</b>	to consider

<b>TCA</b>	tricyclic antidepressant; tricarboxylic acid cycle; tricuspid atresia; terminal cancer
<b>TCABG</b>	triple coronary artery bypass graft
<b>TCBS agar</b>	thiosulfate-citrate-bile salt-sucrose agar
<b>TCCB</b>	transitional cell carcinoma of bladder
<b>TCDB</b>	turn, cough, and deep breathe
<b>T cell</b>	small lymphocyte
<b>TCH</b>	turn, cough, hyperventilate
<b>TCID 50</b>	median tissue culture doses
<b>TCM</b>	transcutaneous monitor; tissue culture media
<b>TCMH</b>	tumor-direct cell-mediated hypersensitivity
<b>TCT</b>	thrombin clotting time
<b>TCVA</b>	thromboembolic cerebral vascular accident
<b>TD</b>	tardive dyskinesia (TDK); travelers diarrhea; treatment discontinued; tetanus-diphtheria (toxoid)
<b>TDD</b>	thoracic duct drainage
<b>TDE</b>	total daily energy (requirement)
<b>TDF</b>	tumor dose fractionation
<b>TDK</b>	tardive dyskinesia (TD)
<b>TDM</b>	therapeutic drug monitoring
<b>TdP</b>	Torsades de Pointes
<b>TDI</b>	tentative discharge tomorrow
<b>TE</b>	tracheoesophageal; trace elements; thromboembolism
<b>T&amp;E</b>	trial and error
<b>TEA</b>	total elbow arthroplasty; thromboendarterectomy
<b>TEC</b>	total eosinophil count
<b>TED</b>	tool for evaluation of documentation
<b>TEE</b>	transesophageal echocardiography
<b>TEF</b>	tracheoesophageal fistula
<b>TEFRA</b>	Tax Equity and Fiscal Responsibility Act of 1982
<b>TEG</b>	thromboelastogram
<b>tele</b>	telemetry
<b>TEM</b>	transmission electron microscopy
<b>TEN</b>	toxic epidermal necrolysis
<b>TENS</b>	transcutaneous electrical nerve stimulation
<b>tert</b>	tertiary
<b>TES</b>	treatment emergent symptoms; trace element solution
<b>TET</b>	treadmill exercise test
<b>TF</b>	tetralogy of Fallot (TOF); tactile fremitus; tube feeding; to follow
<b>TFB</b>	trifascicular block
<b>TFT</b>	thyroid function test

<b>TG</b>	triglycerides
<b>TGA</b>	transient global amnesia; transposition of the great arteries
<b>TGF</b>	tissue/transforming growth factor
<b>TGFA</b>	triglyceride fatty acid
<b>TGS</b>	tincture of green soap
<b>TGT</b>	thromboplastin generation test
<b>TH</b>	total hysterectomy; thyroid hormone
<b>THA</b>	total hip arthroplasty; transient hemispheric attack
<b>THC</b>	transhepatic cholangiogram; tetrahydrocannabinol
<b>th-cult</b>	throat culture
<b>THE</b>	transhepatic embolization
<b>Ther Ex</b>	therapeutic exercise
<b>THI</b>	transient hypogammaglobulinemia of infancy
<b>THR</b>	total hip replacement
<b>TIA</b>	transient ischemic attack
<b>tib</b>	tibia
<b>TIBC</b>	total iron-binding capacity
<b>tid</b>	three times a day ( <i>ter in die</i> )
<b>TIE</b>	transient ischemia episode
<b>TIG</b>	tetanus immune globulin
<b>TIN</b>	tubulointerstitial nephritis
<b>tinct</b>	tincture ( <i>tinctura</i> )
<b>TJ</b>	triceps jerk
<b>TJN</b>	twin jet nebulizer
<b>TKA</b>	total knee arthroplasty
<b>TKNO</b>	to keep needle open
<b>TKO</b>	to keep open
<b>TKP</b>	thermokeratoplasty
<b>TKR</b>	total knee replacement
<b>TL</b>	tubal ligation; team leader; trial leave
<b>TLC</b>	triple lumen catheter; thin layer chromatography; total lung capacity; total lymphocyte count; tender loving care
<b>TLI</b>	total lymphoid irradiation
<b>TLS</b>	tumor lysis syndrome
<b>TLV</b>	total lung volume
<b>TM</b>	tympanic membrane; trabecular meshwork
<b>TMA</b>	transmetatarsal amputation
<b>TMB</b>	transient monocular blindness
<b>TMC</b>	transmural colitis
<b>TMET</b>	treadmill exercise test

<b>TMI</b>	threatened myocardial infarction
<b>TMJ</b>	temporomandibular joint
<b>TMP</b>	thallium myocardial perfusion
<b>TMS</b>	trace metal solution
<b>TMTC</b>	too many to count
<b>Tn</b>	intraocular tension, normal
<b>TNF</b>	tumor necrosis factor
<b>TNI</b>	total nodal irradiation
<b>TNM</b>	tumor/nodes/metastasis (classification)
<b>TNTC</b>	too numerous to count
<b>TO</b>	telephone order
<b>TOA</b>	tubo-ovarian abscess; time of arrival
<b>TOF</b>	tetralogy of Fallot (TF)
<b>TOGV</b>	transposition of the great vessels
<b>TOL</b>	trial of labor
<b>tomo</b>	tomography
<b>TOP</b>	termination of pregnancy
<b>TOPV</b>	trivalent oral polio vaccine
<b>TORCH</b>	toxoplasmosis, other (syphilis, hepatitis, Zoster), rubella, cytomegalovirus, and herpes simplex
<b>TORP</b>	total ossicular replacement prosthesis
<b>TOS</b>	thoracic outlet syndrome
<b>tox</b>	toxicology
<b>TP</b>	total protein
<b>TPA</b>	tissue plasminogen activator; tissue polypeptide antigen; total parenteral alimentation, third-party administrator
<b>TPC</b>	total patient care
<b>TPD</b>	tropical pancreatic diabetes
<b>TPE</b>	total protective environment
<b>TPH</b>	thromboembolic pulmonary hypertension
<b>TPL</b>	third-party liability
<b>TPM</b>	temporary pacemaker
<b>TPN</b>	total parenteral nutrition
<b>TP&amp;P</b>	time, place, and person
<b>TPP&amp;E</b>	time, person, place, and event
<b>TPPN</b>	total peripheral parenteral nutrition
<b>TPPP</b>	third-party prescription program
<b>TPR</b>	temperature, pulse, and respiration; temperature (T); total peripheral resistance
<b>TPT</b>	time to peak tension; total parenteral therapeutics
<b>TPVR</b>	total peripheral vascular resistance
<b>TQM</b>	total quality management

<b>tr</b>	trace; tremor; treatment; tincture
<b>TRA</b>	to run at
<b>trach</b>	tracheal; tracheostomy
<b>Trans D</b>	transverse diameter
<b>TRC</b>	tanned red cells
<b>TRD</b>	traction retinal detachment
<b>TRH</b>	thyrotropin-releasing hormone
<b>trig</b>	triglycerides
<b>tRNA</b>	transfer ribonucleic acid
<b>TRNG</b>	tetracycline resistant <i>Neisseria gonorrhea</i>
<b>TRP</b>	tubular reabsorption of phosphate, tamper-resistant packaging
<b>TRT</b>	thermoradiotherapy
<b>TS</b>	test solution; Tourette's syndrome
<b>T&amp;S</b>	type and screen
<b>TSA</b>	total shoulder arthroplasty
<b>TSBB</b>	transtracheal selective bronchial brushing
<b>TSD</b>	Tay-Sachs disease; target to skin distance
<b>T set</b>	tracheotomy set
<b>TSF</b>	triceps skin fold
<b>TSH</b>	thyroid-stimulating hormone
<b>tsp</b>	teaspoon (5 mL)
<b>TSP</b>	total serum protein
<b>T spine</b>	thoracic spine
<b>TSR</b>	total shoulder replacement
<b>TSS</b>	toxic shock syndrome
<b>TT</b>	thrombin time; thymol turbidity; twitch tension; transtracheal; tilt table
<b>TT<sub>3</sub></b>	total serum tri-iodothyronine
<b>TT<sub>4</sub></b>	total thyroxine
<b>T&amp;T</b>	touch and tone
<b>TTA</b>	total toe arthroplasty
<b>TTN</b>	transient tachypnea of the newborn (TTNB)
<b>TTNB</b>	transient tachypnea of the newborn (TTN)
<b>TTP</b>	thrombotic thrombocytopenic purpura
<b>TTS</b>	through the skin
<b>TTVP</b>	temporary transvenous pacemaker
<b>TTY-TDD</b>	teletypewriter for the deaf
<b>TU</b>	tuberculin units
<b>TUN</b>	total urinary nitrogen
<b>TUR</b>	transurethral resection
<b>turb</b>	turbidity



<b>TURBN</b>	transurethral resection bladder tumor
<b>TURP</b>	transurethral resection of prostate
<b>TURV</b>	transurethral resection valves
<b>TV</b>	tidal volume; trial visit
<b>TVC</b>	triple voiding cystogram; true vocal cord
<b>TVH</b>	total vaginal hysterectomy
<b>TVP</b>	transvenous pacemaker
<b>TW</b>	test weight
<b>TWD</b>	total white and differential count
<b>TWE</b>	tapwater enema
<b>TWETC</b>	tapwater enema till clear
<b>TWWD</b>	tapwater wet dressing
<b>Tx</b>	treatment; therapy; traction; transfuse; transplant
<b>TxA2</b>	thromboxane A <sub>2</sub>
<b>U</b>	
	units; urine
<b>UA</b>	uric acid; urinalysis; unauthorized absence; uncertain about
<b>UAC</b>	umbilical artery catheter
<b>UAE</b>	urinary albumin excretion
<b>UAL</b>	umbilical artery line
<b>UAO</b>	upper airway obstruction
<b>UAT</b>	up as tolerated
<b>UAVC</b>	univentricular atrioventricular connection
<b>UB</b>	uniform bill; uniform billing
<b>UBF</b>	unknown black female
<b>UBI</b>	ultraviolet blood irradiation
<b>UBM</b>	unknown black male
<b>UC</b>	urine culture; urethral catheter; uterine contraction; ulcerative colitis
<b>U&amp;C</b>	urethral and cervical; usual and customary
<b>UCC</b>	Uniform Commercial Code
<b>UCD</b>	usual childhood diseases
<b>UCG</b>	urinary chorionic gonadotropins
<b>UCHD</b>	usual childhood diseases
<b>UCI</b>	urethral catheter in
<b>UCO</b>	urethral catheter out
<b>UCR</b>	usual, customary, and reasonable
<b>UC</b>	urine culture
<b>UD</b>	urethral discharge; unit dose
<b>UDC</b>	usual diseases of childhood
<b>UDP</b>	uridine 5'-diphosphate

<b>UE</b>	upper extremity
<b>UES</b>	upper esophageal sphincter
<b>UFO</b>	unflagged order
<b>UFM</b>	uroflowmetry
<b>UG</b>	urogenital
<b>UGH</b>	uveitis, glaucoma, hyphema
<b>UGI</b>	upper gastrointestinal (series)
<b>UHBI</b>	upper hemibody irradiation
<b>UHDDS</b>	Uniform Hospital Discharge Data Set
<b>UIQ</b>	upper inner quadrant
<b>UK</b>	urokinase; unknown (unk)
<b>U/L</b>	upper and lower
<b>ULN</b>	upper limits of normal
<b>ULQ</b>	upper left quadrant
<b>UN</b>	urinary nitrogen
<b>UNA</b>	urinary nitrogen appearance
<b>ung</b>	ointment ( <i>unguentum</i> )
<b>unk</b>	unknown (UK)
<b>UO</b>	urine output
<b>UOQ</b>	upper outer quadrant
<b>U/P</b>	urine-to-plasma ratio
<b>UPC</b>	universal product code
<b>UPEP</b>	urine protein electrophoresis
<b>UPJ</b>	ureteropelvic junction
<b>UPP</b>	urethral pressure profile (studies)
<b>UPT</b>	urine pregnancy test
<b>UR</b>	utilization review
<b>URAC</b>	Utilization Review Accreditation Commission
<b>URC</b>	utilization review committee
<b>URI</b>	upper respiratory infection
<b>urol</b>	urology
<b>US</b>	ultrasound; ultrasonography
<b>USAEC</b>	United States Atomic Energy Commission
<b>USAN</b>	United States Adopted Names (Council)
<b>USB</b>	upper sternal border
<b>USC</b>	United States Code (a drug code)
<b>USD</b>	United States Dispensatory
<b>USFDA</b>	United States Food and Drug Administration
<b>USG</b>	ultrasonography
<b>USI</b>	urinary stress incontinence
<b>USN</b>	ultrasonic nebulizer
<b>USP</b>	<i>United States Pharmacopeia</i>

<b>USPC</b>	United States Pharmacopeial Convention
<b>USP DI</b>	<i>United States Pharmacopeial Dispensing Information</i>
<b>USPHS</b>	United States Public Health Service (PHS)
<b>USP-NF</b>	<i>United States Pharmacopeia–National Formulary</i>
<b>USRDS</b>	United States Renal Data System
<b>UTD</b>	up to date
<b>ut dict</b>	as directed ( <i>ut dictum</i> )
<b>UTF</b>	usual throat flora
<b>UTI</b>	urinary tract infection
<b>UTO</b>	upper tibial osteotomy
<b>UTP</b>	uridine triphosphate
<b>UTS</b>	ultrasound
<b>UUN</b>	urine urea nitrogen
<b>UV</b>	ultraviolet
<b>UVA</b>	ultraviolet A (light); ureterovesical angle
<b>UVB</b>	ultraviolet B (light)
<b>UVC</b>	umbilical vein catheter; ultraviolet C (light)
<b>UVJ</b>	ureterovesical junction
<b>UVL</b>	ultraviolet light
<b>UVR</b>	ultraviolet rays
<b>UWF</b>	unknown white female
<b>UWM</b>	unknown white male
<b>V</b>	
<b>VA</b>	vomiting; vein; vagina; five Veterans Administration; visual acuity; vacuum aspiration
<b>VAC</b>	ventriculoarterial connections
<b>VAD</b>	vascular/venous access device; vincristine, adriamycin, dexamthasone
<b>vag</b>	vagina
<b>vag hyst</b>	vaginal hysterectomy
<b>VAH</b>	Veterans Administration Hospital
<b>VAMC</b>	Veterans Administration Medical Center
<b>var</b>	variant
<b>VAS</b>	vascular; visual analogue scale
<b>VASC</b>	Visual-Auditory Screen Test for Children
<b>vas rad</b>	vascular radiology
<b>VB</b>	VanBuren (catheter)
<b>VBAC</b>	vaginal birth after cesarean
<b>VBI</b>	vertebrobasilar insufficiency
<b>VBS</b>	vertebral-basilar system

<b>VC</b>	vital capacity; vena cava; vocal cords; color vision; vomiting center
<b>VCG</b>	vectorcardiography
<b>VCT</b>	venous clotting time
<b>VCU</b>	voiding cystourethrogram
<b>VCUG</b>	vesicoureterogram; voiding cystourethrogram
<b>VD</b>	venereal disease; volume of distribution; voided
<b>VDA</b>	visual discriminatory acuity; venous digital angiogram
<b>VDG</b>	venereal disease—gonorrhea
<b>VDH</b>	valvular disease of the heart
<b>VDRR</b>	vitamin D-resistant rickets
<b>VDS</b>	venereal disease—syphilis
<b>VE</b>	vaginal examination; vertex; volume of expired gas
<b>VEB</b>	ventricular ectopic beat
<b>VEE</b>	Venezuelan equine encephalitis
<b>vent</b>	ventricular; ventral; ventilator
<b>VEP</b>	visual evoked potential
<b>VER</b>	visual evoked response; ventricular escape rhythm
<b>VF</b>	ventricular fibrillation; vision field; vocal fremitus
<b>V fib</b>	ventricular fibrillation
<b>VFP</b>	vitreous fluorophotometry
<b>VG</b>	vein graft; ventricular gallop; very good
<b>VH</b>	vaginal hysterectomy; viral hepatitis; vitreous hemorrhage; Veterans Hospital
<b>VI</b>	volume index
<b>vib</b>	vibration
<b>VID</b>	videodensitometry
<b>VIG</b>	vaccinia immune globulin
<b>VIP</b>	voluntary interruption of pregnancy; vasoactive intestinal peptide
<b>VIPPS</b>	Verified Internet Pharmacy Practice Site (program)
<b>V-Q</b>	Ventilation-Perfusion (Scan)
<b>VISC</b>	vitreous infusion suction cutter
<b>VIT</b>	vitamin; vital; venom immunotherapy
<b>vit cap</b>	vital capacity
<b>viz</b>	namely
<b>VKC</b>	vernal keratoconjunctivitis
<b>VLBW</b>	very low birth weight
<b>VLDL</b>	very low density lipoprotein
<b>VLH</b>	ventrolateral nucleus of the hypothalamus
<b>VMA</b>	vanillylmandelic acid
<b>VMH</b>	ventromedial hypothalamus

<b>VO</b>	verbal order
<b>VOCTOR</b>	void on call to operating room
<b>VOD</b>	vision right eye ( <i>oculus dexter</i> ); venocclusive disease
<b>vol</b>	voluntary
<b>VOR</b>	vestibular ocular reflex
<b>VOS</b>	vision left eye ( <i>oculus sinister</i> )
<b>VOU</b>	vision both eyes ( <i>oculus uterque</i> )
<b>VP</b>	venous pressure; variegate porphyria; ventriculoperitoneal; ventricular-peritoneal
<b>V&amp;P</b>	ventilation and perfusion; vagotomy and pyloroplasty
<b>VPB</b>	ventricular premature beat
<b>VPC</b>	ventricular premature contraction
<b>VPD</b>	ventricular premature depolarization
<b>VPL</b>	ventroposterolateral
<b>VR</b>	ventricular rhythm; verbal reprimand
<b>VRA</b>	visual reinforcement audiometry
<b>vs</b>	versus (VS)
<b>VS</b>	vital signs; versus (vs)
<b>VSR</b>	venous stasis retinopathy
<b>VSS</b>	vital signs stable
<b>VT</b>	ventricular tachycardia (V tach); tidal volume
<b>V tach</b>	ventricular tachycardia (VT)
<b>VTE</b>	venous thromboembolism
<b>VTX</b>	vertex
<b>v/v</b>	volume-to-volume ratio
<b>VV</b>	varicose veins
<b>V&amp;V</b>	vulva and vagina
<b>VVC</b>	vulvovaginal candidiasis
<b>VVFR</b>	vesicovaginal fistula repair
<b>VVOR</b>	visual-vestibulo-ocular reflex
<b>VW</b>	vessel wall
<b>VWM</b>	ventricular wall motion
<b>VZ</b>	varicella zoster
<b>VZIG</b>	varicella zoster immune globulin
<b>VZV</b>	varicella zoster virus
<b>w</b>	white; with; widowed
<b>WA</b>	while awake; when awake
<b>WAC</b>	wholesale acquisition cost
<b>WAIS</b>	Wechsler Adult Intelligence Scale
<b>WAIS-R</b>	Wechsler Adult Intelligence Scale—Revised
<b>WAP</b>	wandering atrial pacemaker

<b>WAS</b>	Wiskott-Aldrich syndrome
<b>WASS</b>	Wasserman test
<b>WB</b>	whole blood; weight bearing
<b>WBAT</b>	weight bearing as tolerated
<b>WBC</b>	white blood cell count
<b>WBH</b>	whole-body hyperthermia
<b>WBN</b>	wellborn nursery
<b>WC</b>	wheelchair; white count; whooping cough; workers' compensation
<b>W/D</b>	warm and dry; withdrawal
<b>W-D</b>	wet to dry
<b>WDHA</b>	watery diarrhea, hypokalemia, and achlorhydria
<b>WDL</b>	well-differentiated lymphocytes
<b>WDLL</b>	well-differentiated lymphocytic lymphoma
<b>WDWN-BF</b>	well-developed, well-nourished black female
<b>WDWN-BM</b>	well-developed, well-nourished black male
<b>WDWN-WF</b>	well-developed, well-nourished white female
<b>WDWN-WM</b>	well-developed, well-nourished white male
<b>WE</b>	weekend
<b>WEE</b>	western equine encephalitis
<b>WEP</b>	weekend pass
<b>WF</b>	white female
<b>WFI</b>	water for injection
<b>WFL</b>	within functional limits
<b>WFR</b>	wheel-and-flare reaction
<b>WHO</b>	World Health Organization
<b>WHV</b>	woodchuck hepatitis virus
<b>WHVP</b>	wedged hepatic venous pressure
<b>WIC</b>	Women, Infants, and Children (Program)
<b>wid</b>	widow; widower
<b>WISC</b>	Wechsler Intelligence Scale for Children
<b>WKS</b>	Wernicke-Korsakoff syndrome
<b>WLS</b>	wet lung syndrome
<b>WLT</b>	waterload test
<b>WM</b>	white male
<b>WMA</b>	wall motion abnormality
<b>WN</b>	well-nourished
<b>WND</b>	wound
<b>WNL</b>	within normal limits
<b>WO</b>	written order; week(s) old
<b>W/O</b>	without
<b>WP</b>	whirlpool

<b>WPFM</b>	Wright peak flow meter
<b>WPPSI</b>	Wechsler Preschool Primary Scale of Intelligence
<b>WPW</b>	Wolff-Parkinson-White (syndrome)
<b>WR</b>	Wasserman reaction; wrist
<b>wt</b>	weight
<b>W/U</b>	workup
<b>w/v</b>	weight-to-volume ratio
<b>w/w</b>	weight-to-weight ratio
<b>WWAC</b>	walk with aid of cane
<b>X</b>	
	cross-match; start of anesthesia; except; times; ten; break
<b>X × 3</b>	orientation as to person, place, and time
<b>X&amp;D</b>	examination and diagnosis
<b>XL</b>	extended release
<b>XM</b>	cross-match (X-mat)
<b>X-mat</b>	cross-match (XM)
<b>XMM</b>	xeromammography
<b>XRT</b>	X-ray therapy; radiotherapy
<b>XS-LIM</b>	exceeds limits (of procedure)
<b>XT</b>	exotropia
<b>XX</b>	normal female sex chromosome type
<b>XY</b>	normal male sex chromosome type
<b>YACP</b>	
	young adult chronic patient
<b>YAG</b>	yttrium aluminum garnet (laser)
<b>YF</b>	yellow fever
<b>YJV</b>	yellow jacket venom
<b>YLC</b>	youngest living child
<b>YO</b>	year(s) old
<b>YSC</b>	yolk sac carcinoma
<b>ZEEP</b>	
	zero end-expiratory pressure
<b>ZES</b>	Zollinger-Ellison syndrome
<b>Z-ESR</b>	zeta erythrocyte sedimentation rate
<b>ZIFT</b>	zygote intrafallopian transfer
<b>ZIG</b>	zoster serum immune globulin
<b>ZIP</b>	zoster immune plasma
<b>ZMC</b>	zygomatic
<b>ZnO</b>	zinc oxide

# Latin/Greek Terminology

Abbreviation	Latin/Greek Words	English Definition
<b>a</b>	<i>ante</i>	before
<b>aa, a</b>	<i>ana (Greek)</i>	of each
<b>ad</b>	<i>ad</i>	to, up to
<b>add</b>	<i>adde</i>	add
<b>ad hib</b>	<i>ad hibendus</i>	to be administered
<b>ad lib</b>	<i>ad libitum</i>	at pleasure
<b>admov</b>	<i>admove</i>	apply
<b>ad sat</b>	<i>ad saturatum</i>	to saturation
<b>aeq</b>	<i>aequales</i>	equal
<b>agit</b>	<i>agita</i>	shake, stir
<b>agit ante sum</b>	<i>agita ante sumendum</i>	shake before taking
<b>alb</b>	<i>albus</i>	white
<b>alt</b>	<i>alter</i>	the other
<b>alt hor</b>	<i>alyernis horis</i>	every other hour
<b>AM</b>	<i>ante meridiem</i>	before noon
<b>ampul</b>	<i>ampulla</i>	ampoule, ampule, ampul
<b>aq</b>	<i>aqua</i>	water
<b>bull</b>	<i>aqua bulliens</i>	boiling water
<b>cal</b>	<i>aqua calida</i>	warm water
<b>aq dest</b>	<i>aqua destillata</i>	distilled water
<b>ferv</b>	<i>aqua fervens</i>	hot water
<b>font</b>	<i>aqua fontis</i>	spring water
<b>frig</b>	<i>aqua frigida</i>	cold water
<b>aq pur</b>	<i>aqua pura</i>	pure water
<b>aur, a</b>	<i>auris</i>	ear
<b>aut</b>	<i>aut</i>	or
<b>b</b>	<i>bis</i>	twice
<b>bene</b>	<i>bene</i>	well
<b>bib</b>	<i>bibe</i>	drink
<b>bid</b>	<i>bis in die</i>	twice daily
<b>bin</b>	<i>bis in noctus</i>	twice at night
<b>bis</b>	<i>bis</i>	twice



Abbreviation	Latin/Greek Words	English Definition
<b>bol</b>	<i>bolus</i>	large pill
<b>brevis</b>	<i>brevis</i>	short
<b>bull</b>	<i>bulliat</i>	let (it) boil
<b>caps</b>	<i>capsula</i>	capsule
<b>cerat</b>	<i>ceratum</i>	wax ointment
<b>chart</b>	<i>charta</i>	paper, powder paper
<b>cint</b>	<i>contra</i>	against
<b>coch mag</b>	<i>cochleare magnum</i>	tablespoonful
<b>coch med</b>	<i>cochleare medium</i>	dessertspoonful
<b>coch parv</b>	<i>cochleare parvum</i>	teaspoonful
<b>collut</b>	<i>collutorium</i>	mouthwash
<b>collyr</b>	<i>collyrium</i>	eyewash
<b>commisce</b>	<i>commisce</i>	mix together
<b>comp</b>	<i>compositus</i>	compounded of
<b>cong</b>	<i>congius</i>	gallon
<b>contus</b>	<i>contusus</i>	bruised
<b>cotula</b>	<i>cotula</i>	measure
<b>cuj lib</b>	<i>cujus libet</i>	of any you please
<b>d</b>	<i>da</i>	give
<b>d</b>	<i>dexter</i>	right
<b>d</b>	<i>dies</i>	day
<b>de d in d</b>	<i>de die in dieum</i>	from day to day
<b>dec</b>	<i>decanta</i>	pour off
<b>dent tal dos</b>	<i>dentur tales doses</i>	give of such doses
<b>det</b>	<i>detur</i>	let it be given
<b>dieb alt</b>	<i>diebus alternis</i>	every other day
<b>dieb tert</b>	<i>diebus tertiis</i>	every third day
<b>dil</b>	<i>dilue, dilutus</i>	dilute, diluted
<b>dim</b>	<i>dimidus</i>	one-half
<b>disp</b>	<i>dispensa</i>	dispense
<b>div</b>	<i>divide</i>	divide
<b>div in par aeq</b>	<i>dividatur in partes aequales</i>	let it be divided into equal parts
<b>dos, d</b>	<i>dosis</i>	dose
<b>dtd</b>	<i>dentur tales doses</i>	give of such doses
<b>dulc</b>	<i>dulcis</i>	sweet
<b>dur</b>	<i>durus</i>	hard
<b>dur dolor</b>	<i>durante dolore</i>	while pain lasts

Abbreviation	Latin/Greek Words	English Definition
<b>emp</b>	<i>ex modo praescripto</i>	as directed
<b>emp</b>	<i>emplastrum</i>	plaster
<b>emuls</b>	<i>emulsio</i>	emulsion
<b>epistom</b>	<i>epistomium</i>	stopper
<b>ex</b>	<i>ex</i>	out of
<b>ext</b>	<i>extende; extractum</i>	spread; extract
<b>ferv</b>	<i>fervens</i>	boiling
<b>filt</b>	<i>filtra</i>	filter
<b>fl</b>	<i>fluidus</i>	fluid
<b>fort</b>	<i>fortis</i>	strong
<b>frig</b>	<i>frigidus</i>	cold
<b>ft</b>	<i>fiat</i>	let it be made
<b>garg</b>	<i>gargarisma</i>	gargle
<b>gm</b>	<i>gramma</i>	gram
<b>gr</b>	<i>granum</i>	grain
<b>grad</b>	<i>gradatim</i>	by degrees
<b>gran</b>	<i>granulatus</i>	granulated
<b>gt, gtt</b>	<i>gutta, guttae</i>	drop, drops
<b>guttat</b>	<i>guttae guttatim</i>	by drops
<b>haust</b>	<i>haustus</i>	draught
<b>hor decub</b>	<i>hora decubitus</i>	bedtime
<b>hor 1 spat</b>	<i>horae unius spatio</i>	one hour's time
<b>hs</b>	<i>hora somni</i>	bedtime
<b>ic</b>	<i>inter cibos</i>	between meals
<b>idem</b>	<i>idem</i>	the same
<b>inf</b>	<i>infusum</i>	let it infuse
<b>int</b>	<i>intime</i>	thoroughly
<b>juxt</b>	<i>juxta</i>	near
<b>la</b>	<i>lege artis</i>	according to the art
<b>laev</b>	<i>laevus</i>	left
<b>lb</b>	<i>libra</i>	pound
<b>lev</b>	<i>levis</i>	light
<b>lin</b>	<i>linimentum</i>	liniment
<b>liq</b>	<i>liquor</i>	solution

Abbreviation	Latin/Greek Words	English Definition
<b>lot</b>	<i>lotio</i>	lotion
<b>m</b>	<i>mane</i>	in the morning
<b>m</b>	<i>mitte</i>	send
<b>M</b>	<i>misce</i>	mix
<b>mac</b>	<i>macera</i>	macerate
<b>man prim</b>	<i>mane primo</i>	first thing in the morning
<b>mas</b>	<i>massa</i>	mass
<b>m dict</b>	<i>more dicto</i>	as directed
<b>med</b>	<i>medicamentum</i>	medicine
<b>m et n</b>	<i>mane et nocte</i>	morning and night
<b>mist</b>	<i>mistura</i>	mixture
<b>mitt</b>	<i>mitte</i>	send
<b>mod</b>	<i>modicus</i>	moderate sized
<b>mod praesc</b>	<i>modo praescripto</i>	in the manner written
<b>moll</b>	<i>mollis</i>	soft
<b>mor dict</b>	<i>more dicto</i>	in the manner directed
<b>mor sol</b>	<i>more solito</i>	as accustomed
<b>nebul</b>	<i>nebula</i>	spray
<b>no</b>	<i>numero</i>	number
<b>noct</b>	<i>nocte</i>	at night
<b>noct maneq</b>	<i>nocte manequae</i>	night and morning
<b>non rep</b>	<i>non repetatur</i>	do not repeat
<b>nunc</b>	<i>nunc</i>	now
<b>O</b>	<i>Octarius</i>	pint
<b>od</b>	<i>oculus dexter</i>	right eye
<b>ol</b>	<i>oculus laevus</i>	left eye
<b>om mane vel noc</b>	<i>omni mane vel nocte</i>	every morning or night
<b>omn bid</b>	<i>omnibus bidendis</i>	every two days
<b>omn bih</b>	<i>omni bihoris</i>	every second hour
<b>omn hor</b>	<i>omni hora</i>	every hour
<b>om 1/4 h</b>	<i>omni quadrantiae horae</i>	every 15 minutes
<b>os</b>	<i>oculus sinister</i>	left eye
<b>ou</b>	<i>oculus uterque</i>	both eyes
<b>part aeq</b>	<i>partes aequales</i>	equal parts
<b>part vic</b>	<i>partitus vicibus</i>	individual doses
<b>parv</b>	<i>parvus</i>	small

Abbreviation	Latin/Greek Words	English Definition
<b>pc</b>	<i>post cibus; post cibos</i>	after food; after meals
<b>pil</b>	<i>pilula</i>	pill
<b>PM</b>	<i>post meridiem</i>	after noon
<b>po</b>	<i>per os</i>	by mouth
<b>ppa</b>	<i>phiala prius agitate</i>	bottle being first shaken
<b>prn</b>	<i>pro re nata</i>	as needed
<b>pro rat aet</b>	<i>pro ratione aetatis</i>	according to patient's age
<b>pulv</b>	<i>pulvis</i>	powder
<b>q, qq</b>	<i>quodque</i>	each, every
<b>qid</b>	<i>quarter in die</i>	four times a day
<b>qq hor</b>	<i>quaque hora</i>	every hour
<b>qs</b>	<i>quantum sufficiat</i>	sufficient quantity
<b>quot op cit</b>	<i>quoties opus sit</i>	as often as necessary
<b>qv</b>	<i>quantum voleris</i>	as much as you wish
<b>red in pulv</b>	<i>redactus in pulverem</i>	reduced to powder
<b>rept</b>	<i>repetatur</i>	to be repeated
<b>rub</b>	<i>ruber</i>	red
<b>S, Sig</b>	<i>signa, signetur</i>	write
<b>sa</b>	<i>secundum artem</i>	according to art
<b>sic</b>	<i>siccus</i>	dried
<b>sig</b>	<i>signa; signetur</i>	write; let it be labeled
<b>sing</b>	<i>singulorum</i>	of each
<b>sol</b>	<i>solutio</i>	solution
<b>solv</b>	<i>solve</i>	dissolve
<b>sos</b>	<i>si opus sit</i>	if there is need
<b>ss</b>	<i>semi, semisse</i>	half
<b>stat</b>	<i>statim</i>	immediately
<b>subind</b>	<i>subinde</i>	frequently
<b>suc</b>	<i>succus</i>	juice
<b>sum</b>	<i>sume</i>	take
<b>sum tal</b>	<i>summat talem</i>	take one such
<b>suppos</b>	<i>suppositoria</i>	suppository
<b>syr</b>	<i>syrupus</i>	syrup
<b>tab</b>	<i>tabella</i>	tablet
<b>tid</b>	<i>ter in die</i>	three times a day
<b>tinct</b>	<i>tinctura</i>	tincture

Abbreviation	Latin/Greek Words	English Definition
<b>tnt</b>	<i>tritura</i>	triturate or grind
<b>ult praes</b>	<i>ultimus praescriptus</i>	the last ordered
<b>ung</b>	<i>unguentum</i>	ointment
<b>ut dict</b>	<i>ut dictum</i>	as directed

# Weights and Measures

## *APOTHECARY SYSTEM*

Weight units (Basic unit is the grain.)

Name of unit	Symbol	Equivalent weights				
grain	gr					
scruple	℥	20 gr				
drachm	ʒ	60 gr	3 ℥			
ounce	℥	480 gr	24 ℥	8 ʒ		
pound	lb	5,760 gr	288 ℥	96 ʒ	12 ʒ	

Volume units (Basic unit is the minim.)

Name of unit	Symbol	Equivalent volumes					
minim	℥						
fluid drachm	fl ʒ	60 ℥					
fluid ounce	fl ℥	480 ℥	8 fl ʒ				
pint	pt or O	7,680 ℥	128 fl ʒ	16 fl ℥			
quart	qt	15,360 ℥	256 fl ʒ	32 fl ℥	2 pt		
gallon	gal or C	61,440 ℥	1,024 fl ʒ	128 fl ℥	8 pt	4 qt	

## *AVOIRDUPOIS SYSTEM*

Weight units (Basic unit is the grain.)

Name of unit	Symbol	Equivalent weights				
grain	gr					
ounce	oz	437.5 gr				
pound	lb	7,000 gr			16 oz	

**IMPERIAL MEASURE (BRITISH)**

Volume units (Basic unit is the minim.)

<b>Name of unit</b>	<b>Symbol</b>	<b>Volume equivalents</b>			
minim	℥				
fluid dram	fldr	60 ℥			
fluid ounce	floz	480 ℥	8 fldr		
pint	0 (pt)	9,600 ℥	160 fldr	20 floz	
gallon	cong	76,800 ℥	1,280 fldr	160 floz	8 pt

**METRIC SYSTEM**

Length units (Basic unit is the meter.)

<b>Name of unit</b>	<b>Symbol</b>	<b>Length equivalent (meters)</b>
nanometer	nm	0.000,000,001
micrometer	μm	0.000,001
millimeter	mm	0.001
centimeter	cm	0.01
decimeter	dm	0.10
meter	m	1.0
decameter	Dm or dam	10.0
hectometer	Hm or hm	100.0
kilometer	km	1000.0

Weight units (Basic unit is the gram.)

<b>Name of unit</b>	<b>Symbol</b>	<b>Weight equivalents (grams)</b>
nanogram	ng	0.000,000,001
microgram	μm or mcg	0.000,001
milligram	mg	0.001
centigram	cg	0.01

decigram	dg	0.1
gram	gm or g	1.0
decagram	dg or dag	10.0
hectogram	Hg or hg	100.0
kilogram	Kg or kg	1000.0

Volume units (Basic unit is the liter.)

Name of unit	Symbol	Volume equivalents (liters)
microliter	$\mu$ l	0.000,001
milliliter	ml	0.001
centiliter	cl	0.01
deciliter	dl	0.1
liter	l	1.0
decaliter	dal	10.0
hectoliter	hl	100.0
kiloliter	kl	1000.0

### CONVERSION EQUIVALENTS

Weight measure	Weight equivalents	
1 milligram	0.015432	grain
1 gram	15.432	grains
1 gram	0.25720	apothecary drachm
1 gram	0.03527	avoirdupois ounce
1 gram	0.03215	apothecary ounce
1 kilogram	35.274	avoirdupois ounces
1 kilogram	32.151	apothecary ounces
1 kilogram	2.2046	avoirdupois pounds
1 grain	64.7989	milligrams
1 grain	0.0647989	gram
1 apothecary drachm	3.88	grams



1 avoirdupois ounce	28.3495	grams
1 apothecary ounce	31.1035	grams
1 avoirdupois pound	453.5924	grams
1 apothecary pound	373.25038	grams

<b>Liquid measure</b>	<b>Volume equivalents</b>	
1 U.S. gallon	0.8326394	British gallon
1 British gallon	1.201	U.S. gallons
1 milliliter	16.23	minims
1 milliliter	0.2705	fluid drachm
1 milliliter	0.0338146	fluid ounces
1 liter	33.8148	fluid ounces
1 liter	2.1134	pints
1 liter	1.0567	quarts

<b>Liquid measure</b>	<b>Volume equivalents</b>	
1 liter	0.2642	gallon
1 fluid drachm	3.697	milliliters
1 fluid ounce	29.573	milliliters
1 pint	473.168	milliliters
1 quart	946.332	milliliters
1 gallon	3.785	liters
1 liter	1.0567	quarts

<b>Length measure</b>	<b>Volume equivalents</b>	
1 inch	2.54	centimeters
1 foot	30.48	centimeters
1 yard	91.44	centimeters
1 yard	0.9144	meter
1 centimeter	0.3937	inch
1 centimeter	0.03281	foot
1 meter	1.0936	yards

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# U.S. Schools and Associations

## *ACCREDITED SCHOOLS AND COLLEGES OF PHARMACY*

### *Alabama*

Auburn University Harrison School of Pharmacy  
217 Pharmacy Building  
Auburn, AL 36849-5501  
334-844-8350  
334-844-8353 (fax)  
[pharmacy.auburn.edu](http://pharmacy.auburn.edu)

Samford University McWhorter School of Pharmacy  
800 Lakeshore Drive  
Birmingham, AL 35229  
205-726-2820  
205-726-2759 (fax)  
[www.samford.edu/schools/pharmacy.html](http://www.samford.edu/schools/pharmacy.html)

### *Arkansas*

University of Arkansas for Medical Sciences College of Pharmacy  
4301 West Markham, Slot 522  
Little Rock, AR 72205-7122  
501-686-5557  
501-686-8315 (fax)  
[www.uams.edu/cop](http://www.uams.edu/cop)

### *Arizona*

Midwestern University College of Pharmacy—Glendale  
19555 North Fifty-Ninth Avenue  
Glendale, AZ 85308  
623-572-3500  
623-572-3510 (fax)  
[www.midwestern.edu/cpg](http://www.midwestern.edu/cpg)

The University of Arizona College of Pharmacy  
1703 East Mabel Street  
P.O. Box 210207  
Tucson, AZ 85721  
520-626-1427  
520-626-4063 (fax)  
[www.pharmacy.arizona.edu/](http://www.pharmacy.arizona.edu/)

### *California*

Loma Linda University School of Pharmacy  
West Hall  
Loma Linda, CA 92350  
909-558-1300  
909-558-4849 (fax)  
[www.llu.edu/llu/sps/index.html](http://www.llu.edu/llu/sps/index.html)

University of California at San Diego School of Pharmacy  
and Pharmaceutical Sciences  
9500 Gelman Drive  
San Diego, CA 92093-0657  
858-822-4900  
858-822-5591 (fax)  
[www.pharmacy.ucsd.edu](http://www.pharmacy.ucsd.edu)

University of California at San Francisco School of Pharmacy  
513 Parnassus Avenue  
San Francisco, CA 94143-0446  
415-476-2733  
415-476-0688 (fax)  
[pharmacy.ucsf.edu/](http://pharmacy.ucsf.edu/)

University of the Pacific Thomas J. Long School of Pharmacy  
and Health Sciences  
3601 Pacific Avenue  
Stockton, CA 95211  
209-946-2561  
209-946-2410 (fax)  
[www.uop.edu/](http://www.uop.edu/)

University of Southern California School of Pharmacy  
1985 Zonal Avenue  
Los Angeles, CA 90089  
323-442-1369  
323-442-1681 (fax)  
[pharmacy.usc.edu](http://pharmacy.usc.edu)

Western University of Health Sciences School of Pharmacy  
College Plaza  
309 East Second Street  
Pomona, CA 91766-1889  
909-469-5500  
909-469-5539 (fax)  
[www.westernu.edu](http://www.westernu.edu)

### ***Colorado***

University of Colorado Health Sciences Center School of Pharmacy  
4200 East Ninth Avenue  
Denver, CO 80262-0238  
303-315-5055  
303-315-6281 (fax)  
[www.uchsc.edu/sop/](http://www.uchsc.edu/sop/)

### ***Connecticut***

The University of Connecticut School of Pharmacy  
372 Fairfield Road, Unit 2092  
Storrs, CT 06269-2092  
860-486-2129  
860-486-1553 (fax)  
[pharmacy.uconn.edu](http://pharmacy.uconn.edu)

### ***District of Columbia***

Howard University College of Pharmacy, Nursing and AHS  
2300 Fourth Street, NW  
Washington, DC 20059  
202-806-6530  
202-806-4636 (fax)  
[www.cpnahs.howard.edu/pharmacy/index.htm](http://www.cpnahs.howard.edu/pharmacy/index.htm)

***Florida***

Florida Agricultural and Mechanical University College of Pharmacy  
and Pharmaceutical Sciences  
201 Dyson Pharmacy Building  
P.O. Box 367  
Tallahassee, FL 32307  
850-599-3593  
850-599-3347 (fax)  
[www.pharmacy.famu.edu](http://www.pharmacy.famu.edu)

Nova Southeastern University College of Pharmacy  
3200 South University Drive  
Fort Lauderdale, FL 33328  
954-262-1300  
954-262-2278 (fax)  
[pharmacy.nova.edu](http://pharmacy.nova.edu)

Palm Beach Atlantic College School of Pharmacy  
901 South Flager Drive  
West Palm Beach, FL 33416  
561-803-2000  
561-803-2437 (fax)  
[www.pbac.edu](http://www.pbac.edu)

University of Florida College of Pharmacy  
1600 SW Archer Road, M-454  
P.O. Box 100484 JHMH  
Gainesville, FL 32610-0484  
352-392-9713  
352-392-3480 (fax)  
[www.cop.ufl.edu/](http://www.cop.ufl.edu/)

***Georgia***

Mercer University Southern School of Pharmacy  
3001 Mercer University Drive  
Atlanta, GA 30341-4155  
678-547-6304  
678-547-6315 (fax)  
[www.mercer.edu/pharmacy](http://www.mercer.edu/pharmacy)

South University School of Pharmacy  
709 Mall Boulevard  
Savannah, GA 31406  
912-201-8123  
912-201-8154 (fax)  
[www.southcollege.edu/campus/SchoolsIndex.asp?id=1](http://www.southcollege.edu/campus/SchoolsIndex.asp?id=1)

University of Georgia College of Pharmacy  
D.W. Brooks Drive  
Athens, GA 30602  
706-542-1911  
706-542-5269 (fax)  
[www.rx.uga.edu](http://www.rx.uga.edu)

### ***Iowa***

Drake University College of Pharmacy and Health Sciences  
2507 University Avenue  
Des Moines, IA 50311  
515-271-2172  
515-271-4171 (fax)  
[pharmacy.drake.edu](http://pharmacy.drake.edu)

The University of Iowa College of Pharmacy  
115 South Grand Avenue  
118 Pharmacy Building  
Iowa City, IA 52242  
319-335-8794  
319-335-9418 (fax)  
[www.uiowa.edu/pharmacy/](http://www.uiowa.edu/pharmacy/)

### ***Idaho***

Idaho State University College of Pharmacy  
970 South Fifth Avenue  
Campus Box 8288  
Pocatello, ID 83209  
208-282-2175  
208-282-4482 (fax)  
[pharmacy.isu.edu](http://pharmacy.isu.edu)

## ***Illinois***

Midwestern University Chicago College of Pharmacy  
555 Thirty-First Street  
Downers Grove, IL 60515-1235  
630-971-6417  
630-971-6097 (fax)  
[www.midwestern.edu/pages/ccp.html](http://www.midwestern.edu/pages/ccp.html)

Southern Illinois University at Edwardsville School of Pharmacy  
Campus Box 2000  
Edwardsville, IL 62026-200  
618-650-5150  
618-650-5152 (fax)  
[www.siu.edu/PHARMACY](http://www.siu.edu/PHARMACY)

University of Illinois at Chicago College of Pharmacy  
833 South Wood Street, Suite 145  
Chicago, IL 60612  
312-996-7240  
312-996-3272 (fax)  
[www.uic.edu/pharmacy](http://www.uic.edu/pharmacy)

## ***Indiana***

Butler University College of Pharmacy and Health Sciences  
4600 Sunset Avenue  
Indianapolis, IN 46208  
317-940-9322  
317-940-6172 (fax)  
[www.butler.edu/www/cophs](http://www.butler.edu/www/cophs)

Purdue University School of Pharmacy and Pharmacal Sciences  
1330 Heine Pharmacy Building  
West Lafayette, IN 47907-1330  
765-494-1368  
765-494-7880 (fax)  
[www.pharmacy.purdue.edu](http://www.pharmacy.purdue.edu)

### ***Kansas***

University of Kansas School of Pharmacy  
1251 Wescoe Hall Drive  
2056 Malot Hall  
Lawrence, KS 66045-2500  
785-864-3591  
785-864-5265 (fax)  
[www.pharm.ukans.edu/dean/index.htm](http://www.pharm.ukans.edu/dean/index.htm)

### ***Kentucky***

University of Kentucky College of Pharmacy  
Rose Street—Pharmacy Building  
Lexington, KY 40536-0082  
859-323-7601  
859-257-2128 (fax)  
[www.mc.uky.edu/Pharmacy/](http://www.mc.uky.edu/Pharmacy/)

### ***Louisiana***

The University of Louisiana at Monroe College of Pharmacy  
700 University Avenue  
Monroe, LA 71209-0470  
318-342-1600  
318-342-1606 (fax)  
[www.Rxweb.ulm.edu/pharmacy](http://www.Rxweb.ulm.edu/pharmacy)

Xavier University of Louisiana College of Pharmacy  
1 Drexel Drive  
New Orleans, LA 70125  
504-483-7500  
504-485-7930 (fax)  
[www.xula.edu](http://www.xula.edu)

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Massachusetts College of Pharmacy and Health Sciences School  
of Pharmacy—Boston  
179 Longwood Avenue  
Boston, MA 02115  
617-732-2825  
617-732-2244 (fax)  
[www.mcp.edu](http://www.mcp.edu)



Massachusetts College of Pharmacy and Health Sciences School  
of Pharmacy—Worcester  
19 Foster Street  
Worcester, MA 01608  
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508-890-8515 (fax)  
[www.mcp.edu](http://www.mcp.edu)

Northeastern University School of Pharmacy, Bouve College  
of Health Sciences  
206 Mugar Hall  
Boston, MA 02115  
617-373-3380  
617-373-7655 (fax)  
[www.neu.edu/bouve/pharma.html](http://www.neu.edu/bouve/pharma.html)

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University of Maryland School of Pharmacy  
20 North Pine Street  
Baltimore, MD 21201-1180  
410-706-7651  
410-706-4012 (fax)  
[www.pharmacy.umaryland.edu](http://www.pharmacy.umaryland.edu)

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220 Ferris Drive  
Big Rapids, MI 49307-2740  
231-591-2254  
231-591-3829 (fax)  
[www.pharmacy.ferris.edu](http://www.pharmacy.ferris.edu)

The University of Michigan College of Pharmacy  
428 Church Street  
Ann Arbor, MI 48109-1065  
734-764-7312  
734-763-2022 (fax)  
[www.umich.edu/~pharmacy/](http://www.umich.edu/~pharmacy/)

Wayne State University  
Eugene Applebaum College of Pharmacy and Health Sciences  
259 Mack Avenue  
Detroit, MI 48201  
313-577-1574  
313-577-5589 (fax)  
[www.cphs.wayne.edu/](http://www.cphs.wayne.edu/)

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University of Minnesota College of Pharmacy  
308 Harvard Street SE  
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612-624-1900  
612-624-2974 (fax)  
[www.pharmacy.umn.edu](http://www.pharmacy.umn.edu)

University of Minnesota—Duluth College of Pharmacy  
Room 386 Kirby Plaza  
Duluth, MN 55812-2496  
218-726-6000  
218-726-6500 (fax)  
[www.pharmacy.umn.edu/duluth](http://www.pharmacy.umn.edu/duluth)

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5005 Rockhill Road  
Kansas City, MO 64110-2499  
816-235-1609  
816-235-5190 (fax)  
[www.umkc.edu/pharmacy](http://www.umkc.edu/pharmacy)

St. Louis College of Pharmacy  
4588 Parkview Place  
St. Louis, MO 63110  
314-367-8700  
314-367-2784 (fax)  
[www.stlcop.edu](http://www.stlcop.edu)

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The University of Mississippi School of Pharmacy  
Thad Cochran Research Center  
P.O. Box 1848  
University, MS 38655-9814  
662-915-7265  
662-915-5704 (fax)  
[www.olemiss.edu/depts/pharm\\_school/](http://www.olemiss.edu/depts/pharm_school/)

***Montana***

University of Montana School of Pharmacy and Allied Health Sciences  
32 Campus Drive #1512  
Missoula, MT 59812-1075  
406-243-4621  
406-243-4209 (fax)  
[www.umt.edu/pharmacy](http://www.umt.edu/pharmacy)

***Nebraska***

University of Nebraska College of Pharmacy  
986000 Nebraska Medical Center  
Omaha, NE 68198-6000  
402-559-4333  
402-559-5060 (fax)  
[www.unmc.edu/pharmacy/college.html](http://www.unmc.edu/pharmacy/college.html)

Creighton University School of Pharmacy and Health Professions  
2500 California Plaza  
Omaha, NE 68178  
402-280-2950  
402-280-5738 (fax)  
[pharmacy.creighton.edu](http://pharmacy.creighton.edu)

***Nevada***

Nevada College of Pharmacy  
5740 South Eastern Avenue, Suite 240  
Las Vegas, NV 89119  
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702-990-4435 (fax)  
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160 Frelinghuysen Road  
Piscataway, NJ 08854  
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732-445-5767 (fax)  
[www.rutgers.edu/aboutru/colleges/collphar.htm](http://www.rutgers.edu/aboutru/colleges/collphar.htm)

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University of New Mexico College of Pharmacy  
2502 Marble Northeast  
Albuquerque, NM 87131  
505-272-2461  
505-272-6749 (fax)  
[hsc.unm.edu/pharmacy/](http://hsc.unm.edu/pharmacy/)

### ***New York***

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Arnold and Marie Schwartz College of Pharmacy and Health Sciences  
75 DeKalb Avenue  
Brooklyn, NY 11201  
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718-488-0628 (fax)  
[www.liu.edu/cwis/pharmacy/pharmacy/html](http://www.liu.edu/cwis/pharmacy/pharmacy/html)

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Professions  
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Jamaica, NY 11439  
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718-990-1871 (fax)  
[www.stjohns.edu](http://www.stjohns.edu)

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106 New Scotland  
Albany, NY 12208  
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518-445-7202 (fax)  
[www.acp.edu](http://www.acp.edu)

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C126 Cooke-Hall  
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716-645-3688 (fax)  
[www.pharmacy.buffalo.edu](http://www.pharmacy.buffalo.edu)

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Campbell University School of Pharmacy  
101 Main Street  
P.O. Box 1090  
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910-893-1685  
910-893-1697 (fax)  
[www.campbell.edu/pharmacy/index.html](http://www.campbell.edu/pharmacy/index.html)

University of North Carolina School of Pharmacy  
7360 Beard Hall  
Chapel Hill, NC 27599-7360  
919-966-1121  
919-966-6919 (fax)  
[www.pharmacy.unc.edu](http://www.pharmacy.unc.edu)

Wingate University School of Pharmacy  
P.O. Box 3087  
Wingate, NC 28174-0159  
704-233-8331  
704-233-8332 (fax)  
[www.pharmacy.wingate.edu/faculty/home.asp](http://www.pharmacy.wingate.edu/faculty/home.asp)

***North Dakota***

North Dakota State University College of Pharmacy  
123 Sudro Hall  
Fargo, ND 58105  
701-231-6469  
701-231-7606 (fax)  
[www.ndsu.nodak.edu/pharmacy/](http://www.ndsu.nodak.edu/pharmacy/)

## ***Ohio***

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525 South Main  
Ada, OH 45810  
419-772-2275  
419-772-2720 (fax)  
[www.onu.edu/pharmacy](http://www.onu.edu/pharmacy)

University of Cincinnati College of Pharmacy  
3223 Eden Avenue  
P.O. Box 670004  
Cincinnati, OH 45267  
513-558-3784  
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[pharmacy.uc.edu](http://pharmacy.uc.edu)

The Ohio State University College of Pharmacy  
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The University of Toledo College of Pharmacy  
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[www.utoledo.edu/pharmacy](http://www.utoledo.edu/pharmacy)

## ***Oklahoma***

Southwestern Oklahoma State University School of Pharmacy  
100 Campus Drive  
Weatherford, OK 73096  
580-774-3105  
580-774-7020 (fax)  
[www.swosu.edu/depts/pharmacy/index.htm](http://www.swosu.edu/depts/pharmacy/index.htm)

University of Oklahoma College of Pharmacy  
1110 North Stonewall Avenue  
P.O. Box 26901  
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405-271-6484  
405-271-3830 (fax)  
[www.oupharmacy.com](http://www.oupharmacy.com)

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203 Pharmacy Building  
Corvallis, OR 97331  
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541-737-3999 (fax)  
[pharmacy.oregonstate.edu](http://pharmacy.oregonstate.edu)

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306 Bayer Learning Center  
Pittsburgh, PA 15282  
412-396-6380  
412-396-1810 (fax)  
[www.duq.edu/pharmacy/](http://www.duq.edu/pharmacy/)

Lake Erie College of Osteopathic Medicine  
LECOM School of Pharmacy  
1858 West Grandview Boulevard  
Erie, PA 16509  
814-866-6641  
814-866-8450 (fax)  
[www.lecom.edu/pharmacy](http://www.lecom.edu/pharmacy)

Temple University of the Commonwealth of Higher Education  
School of Pharmacy  
3307 North Broad Street  
Philadelphia, PA 19140  
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215-707-3678 (fax)  
[www.temple.edu/pharmacy](http://www.temple.edu/pharmacy)

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University of the Sciences in Philadelphia  
Philadelphia College of Pharmacy  
600 South Forty-Third Street  
Philadelphia, PA 19104  
215-596-8870  
215-596-8977 (fax)  
[www.usip.edu/academics/pharmacy.html](http://www.usip.edu/academics/pharmacy.html)

Wilkes University Nesbitt School of Pharmacy  
Stark Learning Center  
P.O. Box 111  
Wilkes-Barre, PA 18766  
570-408-4280  
570-408-7828 (fax)  
[pharmacy.wilkes.edu](http://pharmacy.wilkes.edu)

### ***Rhode Island***

University of Rhode Island College of Pharmacy  
41 Lower College Road  
Kingston, RI 02881-0809  
401-874-2614  
401-874-5014 (fax)  
[www.uri.edu/pharm/](http://www.uri.edu/pharm/)

### ***South Carolina***

Medical University of South Carolina College of Pharmacy  
280 Calhoun Street  
Charleston, SC 29425-2301  
843-792-3115  
843-792-9081 (fax)  
[www.musc.edu/pharmacy/](http://www.musc.edu/pharmacy/)



University of South Carolina School of Pharmacy  
700 Sumter Street  
Columbia, SC 29208  
803-777-4151  
803-777-2775 (fax)  
[www.pharm.sc.edu](http://www.pharm.sc.edu)

***South Dakota***

South Dakota State University College of Pharmacy  
Pharmacy Building  
Brookings, SD 57007-0099  
605-688-6197  
605-688-6232 (fax)  
[www3.sdstate.edu/academics/collegeofpharmacy/](http://www3.sdstate.edu/academics/collegeofpharmacy/)

***Tennessee***

University of Tennessee College of Pharmacy  
874 Monroe Avenue, Suite 226  
Memphis, TN 38163  
901-448-6036  
901-448-7053 (fax)  
[www.utmem.edu/pharm/pharm.html](http://www.utmem.edu/pharm/pharm.html)

***Texas***

Texas Southern University College of Pharmacy and Health Sciences  
3100 Cleburne  
Houston, TX 77004  
713-313-7164  
713-313-1091 (fax)  
[www.tsu.edu/pharmacy/index.htm](http://www.tsu.edu/pharmacy/index.htm)

Texas Tech University School of Pharmacy  
1300 South Coulter Street  
Amarillo, TX 79106  
806-354-5463  
806-354-4017 (fax)  
[ismo.ama.ttuhsc.edu](http://ismo.ama.ttuhsc.edu)

University of Houston College of Pharmacy  
141 Science and Research 2 Building  
Houston, TX 77204  
713-743-1300  
713-743-1259 (fax)  
[www.uh.edu/pharmacy](http://www.uh.edu/pharmacy)

University of Texas at Austin College of Pharmacy  
2409 University Avenue  
Austin, TX 78712-1074  
512-471-3718  
512-471-8783 (fax)  
[www.utexas.edu/pharmacy](http://www.utexas.edu/pharmacy)

### ***Utah***

University of Utah College of Pharmacy  
201 Skaggs Hall  
Salt Lake City, UT 84112  
801-581-6731  
801-581-3716 (fax)  
[www.pharmacy.utah.edu/](http://www.pharmacy.utah.edu/)

### ***Virginia***

Hampton University School of Pharmacy  
Kittrell Hall  
Hampton, VA 23668  
757-727-5071  
757-727-5840 (fax)  
[www.hampton.edu/pharm/index.htm](http://www.hampton.edu/pharm/index.htm)

Shenandoah University  
Bernard J. Dunn School of Pharmacy  
1460 University Drive  
Winchester, VA 22601  
540-665-1282  
540-665-1283 (fax)  
[pharmacy.su.edu](http://pharmacy.su.edu)

Virginia Commonwealth University School of Pharmacy  
410 North Twelfth Street  
MCV Campus-Box 581  
Richmond, VA 23298-0581  
804-828-3006  
804-827-0002 (fax)  
[views.vcu.edu/pharmacy](http://views.vcu.edu/pharmacy)

### ***Washington***

University of Washington School of Pharmacy  
Health Science Building  
Seattle, WA 98195  
206-543-2030  
206-685-9297 (fax)  
[depts.washington.edu/pha/](http://depts.washington.edu/pha/)

Washington State University College of Pharmacy  
105 Wegner Hall  
Pullman, WA 99164-6501  
509-335-5901  
509-335-0162 (fax)  
[www.pharmacy.wsu.edu](http://www.pharmacy.wsu.edu)

### ***West Virginia***

West Virginia University School of Pharmacy  
Health Science Center  
1136 HSN  
Morgantown, WV 26506  
304-293-5101  
304-293-5483 (fax)  
[www.hsc.wvu.edu/sop](http://www.hsc.wvu.edu/sop)

### ***Wisconsin***

University of Wisconsin—Madison School of Pharmacy  
777 Highland Avenue  
Madison, WI 53705  
608-262-1416  
608-262-3397 (fax)  
[www.pharmacy.wisc.edu/](http://www.pharmacy.wisc.edu/)

## **Wyoming**

University of Wyoming School of Pharmacy  
P.O. Box 3375  
Laramie, WY 82071  
307-766-6120  
307-766-2953 (fax)  
[www.uwyo.edu/pharmacy/](http://www.uwyo.edu/pharmacy/)

## ***NATIONAL PHARMACY ASSOCIATIONS***

Academy of Managed Care Pharmacy (AMCP)  
100 North Pitt Street, Suite 400  
Alexandria, VA 22314  
703-683-8416  
703-683-8417 (fax)  
[www.amcp.org/](http://www.amcp.org/)

American Association of Colleges of Pharmacy (AACP)  
1426 Prince Street  
Alexandria, VA 22314-2841  
703-739-2330  
703-836-8982 (fax)  
[www.aacp.org](http://www.aacp.org)

American Association of Pharmaceutical Scientists (AAPS)  
2107 Wilson Blvd, Suite 700  
Arlington, VA 22201-3046  
703-243-2800  
703-243-9650 (fax)  
[www.aaps.org](http://www.aaps.org)

American College of Apothecaries (ACA)  
P.O. Box 341266  
Memphis, TN 38184  
901-383-8119  
901-383-8882 (fax)  
[www.acainfo.org](http://www.acainfo.org)

American College of Clinical Pharmacy (ACCP)  
3101 Broadway, Suite 650  
Kansas City, MO 64111  
816-531-2177  
816-531-4990 (fax)  
[www.accp.com](http://www.accp.com)

American Council of Pharmaceutical Education (ACPE)  
20 North Clark Street  
Chicago, IL 60602-5109  
312-664-3575  
312-664-4652 (fax)  
[www.acpe-accredit.org](http://www.acpe-accredit.org)

American Foundation for Pharmaceutical Education (AFPE)  
1 Church Street, Suite 202  
Rockville, MD 20850  
301-738-2160  
301-738-2161 (fax)  
[www.afpenet.org](http://www.afpenet.org)

American Institute for the History of Pharmacy (AIHP)  
777 Highland Avenue  
Madison, WI 53705-2222  
608-262-5378  
608-262-3397 (fax)  
[www.aihp.org](http://www.aihp.org)

Association of Natural Medicine Pharmacists (ANMP)  
P.O. Box 150727  
San Rafael, CA 94915-0727  
415-868-1909  
415-868-1996 (fax)  
[www.anmp.org](http://www.anmp.org)

American Pharmacists Association (APhA)  
2215 Constitution Avenue, NW  
Washington, DC 20037-2985  
202-628-4410  
202-783-2351 (fax)  
[www.aphanet.org](http://www.aphanet.org)

American Society of Automation in Pharmacy (ASAP)

492 Norristown Road, Suite 160

Blue Bell, PA 19422

610-825-7783

610-825-7641 (fax)

[www.asapnet.org](http://www.asapnet.org)

American Society of Consultant Pharmacists (ASCP)

1321 Duke Street

Alexandria, VA 22314-3563

703-739-1300

703-739-1321 (fax)

[www.ascp.com](http://www.ascp.com)

American Society of Health-System Pharmacists (ASHP)

7272 Wisconsin Avenue

Bethesda, MD 20814

301-657-3000

301-664-8877 (fax)

[www.ashp.org](http://www.ashp.org)

American Society for Pharmacy Law (ASPL)

1224 Centre West, Suite 400B

Springfield, IL 62704

217-391-0219

217-793-0041 (fax)

[www.aspl.org](http://www.aspl.org)

Board of Pharmaceutical Specialties (BPS)

2215 Constitution Avenue, NW

Washington, DC 20037-2985

202-429-7591

202-429-6304 (fax)

[www.bpsweb.org](http://www.bpsweb.org)

National Association of Boards of Pharmacy (NABP)

700 Busse Highway

Park Ridge, IL 60068-2402

847-698-6227

847-698-0124 (fax)

[www.nabp.net](http://www.nabp.net)

National Association of Chain Drug Stores (NACDS)

P.O. Box 1417-D49

Alexandria, VA 22313-1480

703-549-3001

703-836-4869 (fax)

[www.nacds.org](http://www.nacds.org)

National Community Pharmacists Association (NCPA)

205 Daingerfield Road

Alexandria, VA 22314

703-683-8200

703-683-3619 (fax)

[www.ncpanet.org](http://www.ncpanet.org)

National Council on Patient Information and Education (NCPIE)

4915 Saint Elmo Avenue, Suite 505

Bethesda, MD 20814-6082

301-656-8565

301-656-4464 (fax)

[www.talkaboutrx.org](http://www.talkaboutrx.org)

National Pharmaceutical Association (NPhA)

107 Kilmayne Drive, Suite C

Cary, NC 27511

800-944-6742

919-469-5870 (fax)

[www.npha.net](http://www.npha.net)

Pharmaceutical Care Management Association (PCMA)

2300 Ninth Street, Suite 210

Arlington, VA 22204

703-920-8480

703-920-8491 (fax)

[www.pcmanet.org](http://www.pcmanet.org)

United States Pharmacopoeial Convention, Inc. (USPC)

12601 Twinbrook Parkway

Rockville, MD 20852

301-881-0666

301-816-8299 (fax)

[www.usp.org](http://www.usp.org)

U.S. Public Health Service (USPHS)  
5600 Fishers Lane, Room 9A-05  
Rockville, MD 20857  
301-443-4010  
301-443-3847 (fax)  
[www.usphs.gov](http://www.usphs.gov)

### ***STATE PHARMACY ASSOCIATIONS***

Alabama Pharmacy Association  
1211 Carmichael Way  
Montgomery, AL 36106-3672  
334-271-5422  
334-271-5423 (fax)  
[www.aparx.org](http://www.aparx.org)

Alaska Pharmaceutical Association  
4107 Laurel Street, #101  
Anchorage, AK 99508  
907-563-8880  
907-563-7880 (fax)  
[www.alaskapharmacy.org](http://www.alaskapharmacy.org)

Arizona Pharmacy Association  
1845 East Southern Avenue  
Tempe, AZ 85282-5831  
480-838-3385  
480-838-3557 (fax)  
[www.azpharmacy.org](http://www.azpharmacy.org)

Arkansas Pharmacists Association  
417 South Victory  
Little Rock, AR 72201  
501-372-5250  
501-372-0546 (fax)  
[www.arpharmacists.org](http://www.arpharmacists.org)

California Pharmacists Association  
1112 I Street, Suite 300  
Sacramento, CA 95814  
916-444-7811  
916-444-7929 (fax)  
[www.cpha.com](http://www.cpha.com)



Colorado Pharmacists Society  
6825 East Tennessee Avenue, Suite 440  
Denver, CO 80224  
303-756-3069  
303-756-3649 (fax)  
[www.copharm.org](http://www.copharm.org)

Connecticut Pharmacists Association  
35 Cold Spring Road, Suite 121  
Rocky Hill, CT 06067  
860-563-4619  
860-257-8241 (fax)  
[www.ctpharmacists.org](http://www.ctpharmacists.org)

Delaware Pharmacists Society  
27 North Main Street  
P.O. Box 454  
Smyrna, DE 19977-0454  
302-659-3088  
302-659-3089 (fax)  
[www.depharmacy.org/Index.htm](http://www.depharmacy.org/Index.htm)

Florida Pharmacy Association  
610 North Adams Street  
Tallahassee, FL 32301  
850-222-2400  
850-561-6758 (fax)  
[www.pharmview.com](http://www.pharmview.com)

Georgia Pharmacy Association  
50 Lenox Pointe NE  
Atlanta, GA 30324  
404-231-5074  
404-237-8435 (fax)  
[www.gpha.org](http://www.gpha.org)

Hawaii Pharmacists Association  
P.O. Box 22472  
Honolulu, HI 96823-2472  
808-432-5536  
808-432-5535 (fax)

Idaho State Pharmacy Association  
P.O. Box 140117  
Boise, ID 83714-0117  
208-424-1107  
208-424-3131 (fax)  
[www.idahopharmacy.org](http://www.idahopharmacy.org)

Illinois Pharmacists Association  
204 West Cook  
Springfield, IL 62704-2526  
217-522-7300  
217-522-7349 (fax)  
[www.ipha.org](http://www.ipha.org)

Indiana Pharmacists Alliance  
729 North Pennsylvania Street  
Indianapolis, IN 46204-1171  
317-634-4968  
317-632-1219 (fax)  
[www.indianapharmacists.org](http://www.indianapharmacists.org)

Iowa Pharmacy Association  
8515 Douglas Avenue, Suite 16  
Des Moines, IA 50322  
515-270-0713  
515-270-2979 (fax)  
[www.iarx.org](http://www.iarx.org)

Kansas Pharmacists Association  
1020 SW Fairlawn Road  
Topeka, KS 66604  
785-228-2327  
785-228-9147 (fax)  
[www.kansaspharmacy.org](http://www.kansaspharmacy.org)

Kentucky Pharmacists Association  
1228 U.S. 127 South  
Frankfort, KY 40601-4330  
502-227-2303  
502-227-2258 (fax)  
[www.kphanet.org](http://www.kphanet.org)

Louisiana Pharmacists Association  
525 Florida Street, Suite 300  
Baton Rouge, LA 70801  
225-408-5900  
225-408-8270 (fax)  
[www.louisianapharmacists.com](http://www.louisianapharmacists.com)

Maine Pharmacy Association  
725 Main Street  
South Portland, ME 04106  
800-639-1609  
207-989-6743 (fax)  
[www.mparx.com](http://www.mparx.com)

Maryland Pharmacists Association  
650 West Lombard Street  
Baltimore, MD 21201-1572  
410-727-0746  
410-727-2253 (fax)  
[www.erols.com/mpha](http://www.erols.com/mpha)

Massachusetts Pharmacists Association  
681 Main Street, Suite 3-32  
Waltham, MA 02451-0621  
781-736-0101  
781-736-0080 (fax)  
[www.masspharmacists.org](http://www.masspharmacists.org)

Michigan Pharmacists Association  
815 North Washington Avenue  
Lansing, MI 48906-5198  
517-484-1466  
517-484-4893 (fax)  
[www.michiganpharmacists.org](http://www.michiganpharmacists.org)

Minnesota Pharmacists Association  
1935 West County Road B2  
Roseville, MN 55113-2722  
651-697-1771  
651-697-1776 (fax)  
[www.mpha.org](http://www.mpha.org)

Mississippi Pharmacists Association  
341 Edgewood Terrace Drive  
Jackson, MS 39206-6299  
601-981-0416  
601-981-0451 (fax)  
[www.mspharm.org](http://www.mspharm.org)

Missouri Pharmacy Association  
211 East Capitol  
Jefferson City, MO 65101  
573-636-7522  
573-636-7485 (fax)  
[www.morx.com](http://www.morx.com)

Montana Pharmacy Association  
34 West Sixth Street 2E  
Helena, MT 59601  
406-449-3843  
406-443-1592 (fax)  
[www.rxmt.com](http://www.rxmt.com)

Nebraska Pharmacists Association  
6221 South Fifty-Eighth Street, Suite A  
Lincoln, NE 68516-3687  
402-420-1500  
402-420-1406 (fax)  
[www.npharm.org](http://www.npharm.org)

Nevada Pharmacy Alliance  
5740 South Eastern, Suite 24 C  
Las Vegas, NV 89119  
702-259-3449  
702-259-3521 (fax)  
[www.nvphall.org](http://www.nvphall.org)

New Hampshire Pharmacists Association  
2 Eagle Square, Suite 400  
Concord, NH 03301-4956  
603-229-0292  
603-224-7769 (fax)  
[www.nphanet.org](http://www.nphanet.org)

New Jersey Pharmacists Association  
760 Alexander Road, CN1  
Princeton, NJ 08543  
609-275-4246  
609-275-4066 (fax)  
[www.njpharma.org](http://www.njpharma.org)

New Mexico Pharmaceutical Association  
4800 Zuni Southeast  
Albuquerque, NM 87108  
505-265-8729  
505-255-8476 (fax)  
[www.nm-pharmacy.com](http://www.nm-pharmacy.com)

New York, Pharmacists Society of the State of  
210 Washington Avenue Extension  
Albany, NY 12203  
518-869-6595  
518-464-0618 (fax)  
[www.pssny.org](http://www.pssny.org)

North Carolina Association of Pharmacists  
109 Church Street  
Chapel Hill, NC 27516  
919-967-2237  
919-968-9430 (fax)  
[www.ncpharmacists.org](http://www.ncpharmacists.org)

North Dakota Pharmaceutical Association  
1906 East Broadway Avenue  
Bismarck, ND 58501-4700  
701-258-4968  
701-258-9312 (fax)  
[www.nodakpharmacy.com](http://www.nodakpharmacy.com)

Ohio Pharmacists Association  
6037 Franz Road, Suite 106  
Dublin, OH 43017  
614-798-0037  
614-798-0978 (fax)  
[www.ohiopharmacists.org](http://www.ohiopharmacists.org)

Oklahoma Pharmacists Association  
45 NE Fifty-Second Street  
P.O. Box 18731  
Oklahoma City, OK 73154  
405-528-3338  
405-528-1417 (fax)  
[www.opha.com](http://www.opha.com)

Oregon State Pharmacists Association  
29702-B SW Town Center Loop West  
Wilsonville, OR 97070  
503-582-9055  
503-582-9046 (fax)  
[www.oregonpharmacists.com](http://www.oregonpharmacists.com)

Pennsylvania Pharmacists Association  
508 North Third Street  
Harrisburg, PA 17101-1199  
717-234-6151  
717-236-1618 (fax)  
[www.papharmacists.com](http://www.papharmacists.com)

Puerto Rico, Colegio de Farmaceuticos de  
P.O. Box 360206  
San Juan, PR 00936-0206  
787-753-7157  
787-759-9793 (fax)  
[www.cfpr.org](http://www.cfpr.org)

Rhode Island Pharmacists Association  
1643 Warwick Avenue  
Warwick, RI 02889  
401-737-2600  
401-737-0959 (fax)  
[www.ripharm.com](http://www.ripharm.com)

South Carolina Pharmacy Association  
1350 Browning Road  
Columbia, SC 29210  
803-354-9977  
803-354-9207 (fax)  
[www.scrx.org](http://www.scrx.org)

South Dakota Pharmacists Association  
215 West Sioux Avenue  
P.O. Box 518  
Pierre, SD 57501  
605-224-2338  
605-224-1280 (fax)  
[www.sdpha.org](http://www.sdpha.org)

Tennessee Pharmacists Association  
226 Capitol Boulevard, Suite 810  
Nashville, TN 37219-1893  
615-256-3023  
615-255-3528 (fax)  
[www.tnpharm.org](http://www.tnpharm.org)

Texas Pharmacy Association  
P.O. Box 14709  
Austin, TX 78761-4709  
512-836-8350  
512-836-0308 (fax)  
[www.txpharmacy.com](http://www.txpharmacy.com)

Utah Pharmaceutical Association  
1850 South Columbia Lane  
Orem, UT 84097  
801-762-0452  
801-762-0454 (fax)  
[www.upha.com](http://www.upha.com)

Vermont Pharmacists Association  
P.O. Box 90  
Woodstock, VT 05091  
802-483-2646  
802-483-6315 (fax)  
[www.vtpharmacists.org](http://www.vtpharmacists.org)

Virginia Pharmacists Association  
5501 Patterson Avenue, Suite 200  
Richmond, VA 23226  
804-285-4145  
804-285-4227 (fax)  
[www.vapharmacy.org](http://www.vapharmacy.org)

Washington DC Pharmaceutical Association  
908 Caddington Avenue  
Silver Spring, MD 20901-1109  
301-593-3292  
301-593-7215 (fax)

Washington State Pharmacists Association  
1501 Taylor Avenue SW  
Renton, WA 98055-3139  
425-228-7171  
425-277-3897 (fax)  
[www.wsparx.org](http://www.wsparx.org)

West Virginia Pharmacists Association  
2003 Quarrier Street  
Charleston, WV 25311-2212  
304-344-5302  
304-344-5316 (fax)

Wisconsin, Pharmacy Society of  
701 Heartland Trail  
Madison, WI 53717  
608-827-9200  
608-827-9292 (fax)  
[www.pswi.org](http://www.pswi.org)

Wyoming Pharmacists Association  
1022 Ponderosa Court  
Powell, WY 82435  
307-754-4663  
307-754-4145 (fax)  
[www.wpha.net](http://www.wpha.net)

### ***STATE BOARDS OF PHARMACY***

Alabama Board of Pharmacy  
1 Perimeter Park South, Suite 425 South  
Birmingham, AL 35243  
205-967-0130  
205-967-1009 (fax)  
[www.albop.com](http://www.albop.com)



Alaska Board of Pharmacy  
333 Willoughby Avenue  
P.O. Box 110806  
Juneau, AK 99811  
907-465-2589  
907-465-2974 (fax)  
[www.dced.state.ak.us/occ/ppha.htm](http://www.dced.state.ak.us/occ/ppha.htm)

Arizona State Board of Pharmacy  
4425 West Olive Avenue, Suite 140  
Glendale, AZ 85302  
623-463-2727  
623-934-0583 (fax)  
[www.pharmacy.state.az.us](http://www.pharmacy.state.az.us)

Arkansas State Board of Pharmacy  
101 East Capitol, Suite 218  
Little Rock, AR 72201  
501-682-0190  
501-682-0195 (fax)  
[www.state.ar.us/asbp](http://www.state.ar.us/asbp)

California Board of Pharmacy  
400 R Street, Suite 4070  
Sacramento, CA 95814  
916-445-5014  
916-327-6308 (fax)  
[www.pharmacy.ca.gov/](http://www.pharmacy.ca.gov/)

Colorado State Board of Pharmacy  
1560 Broadway, Suite 1310  
Denver, CO 80202-5146  
303-894-7750  
303-894-7764 (fax)  
[www.dora.state.co.us/pharmacy](http://www.dora.state.co.us/pharmacy)

Connecticut Commission of Pharmacy  
165 Capitol Avenue  
State Office Building, Room 147  
Hartford, CT 06106  
860-713-6070  
860-713-7242 (fax)  
[www.ctdrugcontrol.com/rxcommision.htm](http://www.ctdrugcontrol.com/rxcommision.htm)

Delaware State Board of Pharmacy  
P.O. Box 637  
Dover, DE 19901  
302-739-4798  
302-739-3071 (fax)  
[www.professionallicensing.state.de.us](http://www.professionallicensing.state.de.us)

District of Columbia Board of Pharmacy  
825 North Capitol Street NE, Room 2224  
Washington, DC 20002  
202-442-9200  
202-442-9431 (fax)

Florida Board of Pharmacy  
4052 Bald Cypress Way, Bin #C04  
Tallahassee, FL 32399-3254  
850-245-4292  
850-413-6982 (fax)  
[www.doh.state.fl.us/mqa](http://www.doh.state.fl.us/mqa)

Georgia State Board of Pharmacy  
237 Coliseum Drive  
Macon, GA 31217-3858  
478-207-1686  
438-207-1699 (fax)  
[www.sos.state.ga.us/plb/pharmacy/](http://www.sos.state.ga.us/plb/pharmacy/)

Hawaii State Board of Pharmacy  
P.O. Box 3469  
Honolulu, HI 96801  
808-586-2694  
808-586-2689 (fax)  
[www.state.hi.us/dcca/pvl/](http://www.state.hi.us/dcca/pvl/)

Idaho Board of Pharmacy  
3380 American Terrace, Suite 320  
P.O. Box 83720  
Boise, ID 83720-0067  
208-334-2356  
208-334-3536 (fax)  
[www.state.id.us/bop](http://www.state.id.us/bop)

Illinois Department of Professional Regulation  
320 West Washington Street, Third Floor  
Springfield, IL 62786  
217-785-0800  
217-782-7645 (fax)  
[www.dpr.state.il.us](http://www.dpr.state.il.us)

Indiana Board of Pharmacy  
402 West Washington Street, Room 041  
Indianapolis, IN 46204-2739  
317-232-2960  
317-233-4236 (fax)  
[www.in.gov/hpb/boards/isbp/](http://www.in.gov/hpb/boards/isbp/)

Iowa Board of Pharmacy Examiners  
400 SW Eighth Street, Suite F  
Des Moines, IA 50309-4688  
515-281-5944  
515-281-4609 (fax)  
[www.state.ia.us/ibpe](http://www.state.ia.us/ibpe)

Kansas State Board of Pharmacy  
900 Jackson, Room 513  
Topeka, KS 66612  
785-296-4056  
785-296-8420 (fax)  
[www.accesskansas.org/pharmacy](http://www.accesskansas.org/pharmacy)

Kentucky Board of Pharmacy  
23 Millcreek Parkway  
Frankfort, KY 40601-9230  
502-573-1580  
502-573-1582 (fax)  
[www.state.ky.us/boards/pharmacy](http://www.state.ky.us/boards/pharmacy)

Louisiana Board of Pharmacy  
5615 Corporate Boulevard, Suite 8E  
Baton Rouge, LA 70808-2537  
225-925-6496  
225-925-6499 (fax)  
[www.labp.com](http://www.labp.com)

Maine Board of Pharmacy  
35 State House Station  
Augusta, ME 04333  
207-624-8603  
207-624-8637 (fax)  
[www.maineprofessionalreg.org](http://www.maineprofessionalreg.org)

Maryland Board of Pharmacy  
4201 Patterson Avenue  
Baltimore, MD 21215-2299  
410-764-4755  
410-358-6207 (fax)  
[www.dhmf.state.md.us/pharmacyboard/](http://www.dhmf.state.md.us/pharmacyboard/)

Massachusetts Board of Registration in Pharmacy  
239 Causeway Street  
Boston, MA 02113  
617-727-9953  
617-727-2197 (fax)  
[www.state.ma.us/reg/boards/ph](http://www.state.ma.us/reg/boards/ph)

Michigan Board of Pharmacy  
611 West Ottawa, First Floor  
P.O. Box 30670  
Lansing, MI 48909-8170  
517-373-9102  
517-373-2179 (fax)  
[www.michigan.gov/cis/0,1607,7-154-10568\\_17671\\_17688-42779](http://www.michigan.gov/cis/0,1607,7-154-10568_17671_17688-42779--,00.html)  
[--,00.html](http://www.michigan.gov/cis/0,1607,7-154-10568_17671_17688-42779--,00.html)

Minnesota Board of Pharmacy  
2829 University Avenue SE, Suite 530  
Minneapolis, MN 55414-3251  
612-617-2201  
612-617-2212 (fax)  
[www.phcybrd.state.mn.us](http://www.phcybrd.state.mn.us)

Mississippi Board of Pharmacy  
P.O. Box 24507  
Jackson, MS 39225-4507  
601-354-6750  
601-354-6071 (fax)  
[www.mbp.state.ms.us](http://www.mbp.state.ms.us)

Missouri Board of Pharmacy  
3605 Missouri Boulevard  
P.O. Box 625  
Jefferson City, MO 65102  
573-751-0091  
573-526-3464 (fax)  
[www.ecodev.state.mo.us/pr/pharmacy](http://www.ecodev.state.mo.us/pr/pharmacy)

Montana Board of Pharmacy  
111 North Jackson  
P.O. Box 200513  
Helena, MT 59620-0513  
406-841-2356  
406-841-2343 (fax)  
[http://discoveringmontana.com/dli/bsd/license/bsd\\_boards/pha\\_board/  
board\\_page.htm](http://discoveringmontana.com/dli/bsd/license/bsd_boards/pha_board/board_page.htm)

Nebraska Board of Examiners in Pharmacy  
301 Centennial Mall South  
P.O. Box 94986  
Lincoln, NE 68509  
402-471-2115  
402-471-0555 (fax)  
[www.hhs.state.ne.us](http://www.hhs.state.ne.us)

Nevada State Board of Pharmacy  
555 Double Eagle Court, Suite 1100  
Reno, NV 89521-8991  
775-850-1440  
775-850-1444 (fax)  
<http://glsuitewww.glsuite.com/nvbopweb/>

New Hampshire Board of Pharmacy, State of  
57 Regional Drive  
Concord, NH 03301-8518  
603-271-2350  
603-271-2856 (fax)  
[www.state.nh.us/pharmacy](http://www.state.nh.us/pharmacy)

New Jersey Board of Pharmacy  
124 Halsey Street  
P.O. Box 45013  
Newark, NJ 07101  
973-504-6450  
973-648-3355 (fax)  
[www.state.nj.us/lps/ca/brief/pharm.htm](http://www.state.nj.us/lps/ca/brief/pharm.htm)

New Mexico Board of Pharmacy  
1650 University Boulevard NE, Suite 400B  
Albuquerque, NM 87102  
505-841-9102  
505-841-9113 (fax)  
[www.state.nm.us/pharmacy](http://www.state.nm.us/pharmacy)

New York Board of Pharmacy  
89 Washington Avenue, Second Floor W  
Albany, NY 12234-1000  
518-474-3817, x130  
518-473-6995 (fax)  
[www.nysed.gov/prof/pharm.htm](http://www.nysed.gov/prof/pharm.htm)

North Carolina Board of Pharmacy  
Carrboro Plaza  
P.O. Box 459  
Carrboro, NC 27510-0459  
919-942-4454  
919-967-5757 (fax)  
[www.ncbop.org](http://www.ncbop.org)

North Dakota State Board of Pharmacy  
405 East Broadway, Third Floor  
P.O. Box 1354  
Bismarck, ND 58502-1354  
701-328-9535  
701-258-9312 (fax)

Ohio State Board of Pharmacy  
77 South High Street, Room 1702  
Columbus, OH 43215-6126  
614-466-4143  
614-752-4836 (fax)  
[www.state.oh.us/pharmacy](http://www.state.oh.us/pharmacy)

Oklahoma State Board of Pharmacy  
4545 Lincoln Boulevard, Suite 112  
Oklahoma City, OK 73105-3488  
405-521-3815  
405-521-3758 (fax)  
[www.pharmacystate.ok.us](http://www.pharmacystate.ok.us)

Oregon Board of Pharmacy  
800 NE Oregon Street #9  
State Office Building, Room 425  
Portland, OR 97232  
503-731-4032  
503-731-4067 (fax)  
[www.pharmacy.state.or.us](http://www.pharmacy.state.or.us)

Pennsylvania State Board of Pharmacy  
124 Pine Street  
P.O. Box 2649  
Harrisburg, PA 17105-2649  
717-783-7156  
717-787-7769 (fax)  
[www.dos.state.pa.us/bpoa/phabd/mainpage.htm](http://www.dos.state.pa.us/bpoa/phabd/mainpage.htm)

Puerto Rico Board of Pharmacy  
Department of Health  
Call Box 10200  
Santurce, PR 00908  
787-725-8161  
787-725-7903 (fax)

Rhode Island Board of Pharmacy  
3 Capitol Hill, Room 205  
Providence, RI 02908  
401-222-2837  
401-222-2158 (fax)

South Carolina Board of Pharmacy  
110 Centerview Drive, Suite 306  
Columbia, SC 29211-1927  
803-896-4700  
803-896-4596 (fax)  
[www.llr.state.sc.us/pol/pharmacy](http://www.llr.state.sc.us/pol/pharmacy)

South Dakota Board of Pharmacy  
4305 South Louise Avenue, Suite 104  
Sioux Falls, SD 57106  
605-362-2737  
605-362-2738 (fax)  
[www.state.sd.us/dcr/pharmacy](http://www.state.sd.us/dcr/pharmacy)

Tennessee Board of Pharmacy  
500 James Robertson Parkway, Second Floor  
Davy Crockett Tower  
Nashville, TN 37243  
615-741-2718  
615-741-2722 (fax)  
[www.state.tn.us/commerce/pharmacy](http://www.state.tn.us/commerce/pharmacy)

Texas State Board of Pharmacy  
333 Guadalupe, Tower 3, Suite 600, Box 21  
Austin, TX 78701-3942  
512-305-8000  
512-305-8082 (fax)  
[www.tsbp.state.tx.us](http://www.tsbp.state.tx.us)

Utah Board of Pharmacy  
160 East 300 South  
P.O. Box 146741  
Salt Lake City, UT 84114-6741  
801-530-6179  
801-530-6511 (fax)  
[www.commerce.state.ut.us/dopl/dopl1.htm](http://www.commerce.state.ut.us/dopl/dopl1.htm)

Vermont Board of Pharmacy  
26 Terrace Street, Drawer 09  
Montpelier, VT 05609-1106  
802-828-2875  
802-828-2465 (fax)  
[www.vtprofessionals.org](http://www.vtprofessionals.org)

Virginia Board of Pharmacy  
6606 West Broad Street, Suite 400  
Richmond, VA 23230-1717  
804-662-9911  
804-662-9313 (fax)  
[www.dhp.state.va.us/pharmacy/default.htm](http://www.dhp.state.va.us/pharmacy/default.htm)



Washington State Board of Pharmacy

P.O. Box 47863

Olympia, WA 98504-7863

360-236-4825

360-586-4359 (fax)

<http://wws2.wa.gov/doh/hpqa-licensing/HPS4/Pharmacy/default.htm>

West Virginia Board of Pharmacy

232 Capitol Street

Charleston, WV 25301

304-558-0558

304-558-0572 (fax)

Wisconsin Pharmacy Examining Board

1400 East Washington

P.O. Box 8935

Madison, WI 53708

608-266-2812

608-261-7083 (fax)

[www.state.wi.us/agencies/drl](http://www.state.wi.us/agencies/drl)

Wyoming State Board of Pharmacy

1720 South Poplar Street, Suite 4

Casper, WY 82601

307-234-0294

307-234-7226 (fax)

<http://pharmacyboard.state.wy.us>

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# Canadian Schools and Associations

## ***CANADIAN FACULTIES AND SCHOOLS OF PHARMACY***

### ***Alberta***

University of Alberta Faculty of Pharmacy and Pharmaceutical Sciences  
3118 Dentistry/Pharmacy Centre  
Edmonton, Alberta T5G 2N8  
780-492-3362  
780-492-1217 (fax)  
[www.pharmacy.ualberta.ca](http://www.pharmacy.ualberta.ca)

### ***British Columbia***

University of British Columbia  
Faculty of Pharmaceutical Sciences  
2146 East Mall  
Vancouver, British Columbia V6T 1Z3  
604-822-2343  
604-822-3035 (fax)  
[www.ubcpharmacy.org](http://www.ubcpharmacy.org)

### ***Manitoba***

University of Manitoba Faculty of Pharmacy  
202 Pharmacy Building  
50 Shifton Road  
Winnipeg, Manitoba R3T 1Z3  
204-474-8794  
204-474-7617 (fax)  
[www.umanitoba.ca/faculties/pharmacy](http://www.umanitoba.ca/faculties/pharmacy)

***Newfoundland***

Memorial University of Newfoundland  
School of Pharmacy  
Prince Philip Drive  
St. John's, Newfoundland A1B 3V6  
709-737-6571  
709-737-7044 (fax)  
[www.pharm.mun.ca](http://www.pharm.mun.ca)

***Nova Scotia***

Dalhousie University  
College of Pharmacy  
5968 College Street  
Halifax, Nova Scotia B3H 3J5  
902-494-2378  
902-494-1396 (fax)  
[www.dal.ca/pharmacy](http://www.dal.ca/pharmacy)

***Ontario***

University of Toronto Faculty of Pharmacy  
19 Russell Street  
Toronto, Ontario M5S 2S2  
416-978-2880  
416-978-8511 (fax)  
[www.utoronto.ca/pharmacy](http://www.utoronto.ca/pharmacy)

***Québec***

Université de Montréal Faculté de pharmacie  
C.P. 6126, Station Centreville  
Montréal, Québec H3C 3J7  
514-343-6422  
514-343-2102 (fax)  
[www.pharm.umontreal.ca](http://www.pharm.umontreal.ca)

Université Laval Faculté de pharmacie  
Pavillon Ferdinand-Vandry  
Québec, Québec G1K 7P4  
418-656-3211  
418-656-2305 (fax)  
[www.pha.ulaval.ca](http://www.pha.ulaval.ca)

### ***Saskatchewan***

University of Saskatchewan College of Pharmacy and Nutrition  
110 Science Place  
Saskatoon, Saskatchewan S7N 5C9  
306-966-6328  
306-966-6377 (fax)  
[www.usask.ca/pharmacy-nutrition](http://www.usask.ca/pharmacy-nutrition)

## ***CANADIAN NATIONAL PHARMACY ASSOCIATIONS***

Association of Faculties of Pharmacy of Canada  
2609 Eastview  
Saskatoon, Saskatchewan S7J 3G7  
306-374-6327  
306-374-0555 (fax)  
[www.afpc.info](http://www.afpc.info)

Canadian Association of Chain Drug Stores  
301-45 Sheppard Avenue  
Toronto, Ontario M2N 5W9  
416-226-9100  
416-226-9185 (fax)  
[www.cacds.com](http://www.cacds.com)

Canadian Association of Pharmacy Technicians  
P.O. Box 1271 Station  
Toronto, Ontario M4Y 2V8  
[www.capt.ca](http://www.capt.ca)

Canadian Council for Accreditation of Pharmacy Programs  
110 Science Place  
Thorvaldson Building, Room 123  
Saskatoon, Saskatchewan S7J 5C9  
306-966-6388  
306-966-6377 (fax)  
[www.napra.ca](http://www.napra.ca)

Canadian Council on Continuing Education in Pharmacy  
3861 Athol Street  
Regina, Saskatchewan S4S 3J2  
306-584-5703  
306-584-5703 (fax)  
[www.cccep.org](http://www.cccep.org)

Canadian Pharmacists Association  
1785 Alta Vista Drive  
Ottawa, Ontario K1G 3Y6  
800-917-9489 (inside Canada); 613-523-7877 (outside Canada)  
613-523-0445 (fax)  
[www.cdnpharm.ca](http://www.cdnpharm.ca)

Canadian Society of Hospital Pharmacists  
350-1145 Hunt Club Road  
Ottawa, Ontario K1V 0Y3  
613-736-9733  
613-736-5660 (fax)  
[www.cshp.ca](http://www.cshp.ca)

National Association of Pharmacy Regulatory Authorities  
402-222 Somerset Street West  
Ottawa, Ontario K2P 2G3  
613-569-9658  
613-569-9659 (fax)  
[www.napra.org](http://www.napra.org)

Pharmacy Examining Board of Canada  
601-415 Yonge Street  
Toronto, Ontario M3B 2E7  
416-979-2431  
416-599-9244 (fax)  
[www.pebc.ca](http://www.pebc.ca)

### ***CANADIAN PROVINCIAL VOLUNTARY ORGANIZATIONS***

Alberta College of Pharmacists  
10130-112th Street, Seventh Floor  
Edmonton, Alberta T5K 2K4  
780-990-0321  
780-990-0328 (fax)  
[www.altapharm.org](http://www.altapharm.org)

Association des pharmaciens des établissements de santé du Québec  
1470 rue Peel, Tour B, Bureau 900  
Montréal, Québec H3A 1T1  
514-286-0776  
514-286-1081 (fax)  
[www.apesquebec.org](http://www.apesquebec.org)

Association professionnelle des pharmaciens salariés du Québec  
3560 La Vérendrye  
Sherbrooke, Québec J1L 1Z6  
819-563-6464  
819-563-6464 (fax)

Association québécoise des pharmaciens propriétaires  
4378 avenue Pierre-de-Coubertin  
Montréal, Québec H1V 1A6  
514-254-0676; 800-361-7765  
514-254-1288 (fax)

British Columbia Pharmacy Association  
1503-1200 West Seventy-Third Avenue  
Vancouver, British Columbia V6P 6G5  
604-261-2092  
604-261-2097 (fax)  
[www.bcpharmacy.ca](http://www.bcpharmacy.ca)

College of Pharmacists of British Columbia  
200-1765 West Eighth Avenue  
Vancouver, British Columbia V6J 1V8  
604-733-2440  
604-733-2493 (fax)  
[www.collpharmbc.org](http://www.collpharmbc.org)

Manitoba Society of Pharmacists  
22-90 Garry Street  
Winnipeg, Manitoba R3C 4H1  
204-956-6680  
204-956-6686 (fax)  
[www.msp.mb.ca](http://www.msp.mb.ca)

New Brunswick Pharmacists' Association, Inc.  
410-212 Queen Street  
Fredericton, New Brunswick E3B 1A8  
506-459-6008  
506-459-0736 (fax)  
[www.nbnet.nb.ca](http://www.nbnet.nb.ca)

Ontario Pharmacist Association  
301-23 Lesmill Road  
Don Mills, Ontario M3B 3P6  
416-441-0788  
416-441-0791 (fax)  
[www.opatoday.com](http://www.opatoday.com)

Pharmacists Association of Alberta  
1800-10303 Jasper Avenue NW  
Edmonton, Alberta T5J 3N6  
780-990-0326  
780-990-1236 (fax)  
[www.altapharm.org](http://www.altapharm.org)

Pharmacy Association of Newfoundland and Labrador  
488 Water Street, Apothecary Hall  
St. John's, Newfoundland A1E 1B3  
709-753-5877  
709-753-8615 (fax)

Pharmacy Association of Nova Scotia  
1526 Dresden Row  
P.O. Box 3214 (S)  
Halifax, Nova Scotia B3J 3H5  
902-422-9583  
902-422-2619 (fax)  
[www.pans.ns.ca](http://www.pans.ns.ca)

Pharmacy Society of Yukon  
9 Basswood Street  
Whitehorse, Yukon Y1A 4P4  
867-393-8737

Prince Edward Island Pharmaceutical Association  
P.O. Box 1404  
Summerside, Prince Edward Island C1N 4K2  
902-859-3800  
902-422-2619 (fax)

Representative Board of Saskatchewan Pharmacists  
700-4010 Pasqua Street  
Regina, Saskatchewan S4S 7B9  
306-359-7277  
306-584-9695 (fax)

### ***CANADIAN PROVINCIAL REGULATORY AUTHORITY***

Alberta College of Pharmacists  
10130-112th Street, Seventh Floor  
Edmonton, Alberta T5K 2K4  
780/990-0321  
780/990-0328 (fax)  
[www.altapharm.org](http://www.altapharm.org)

College of Pharmacists of British Columbia  
200-1765 West Eighth Avenue  
Vancouver, British Columbia V6J 1V8  
604/733-2440  
604/733-2493 (fax)  
[www.collpharmbc.org](http://www.collpharmbc.org)

Manitoba Pharmaceutical Association  
187 St. Mary's Road  
Winnipeg, Manitoba R2H 1J2  
204/233-1411  
204/237-3468 (fax)

New Brunswick Pharmaceutical Society  
30 Gordon Street, Suite 101  
Moncton, New Brunswick E1C 1L8  
506/857-8957  
506/857-8838 (fax)



Newfoundland Pharmaceutical Association  
488 Water Street, Apothecary Hall  
St. John's, Newfoundland A1E 1B3  
709/753-5877  
709/753-8615 (fax)

Northwest Territories Regulatory Authority  
P.O. Box 1320  
Yellowknife, Northwest Territories X1A 2L9  
867/920-8058  
867/873-0484 (fax)

Nova Scotia Pharmaceutical Society  
1526 Dresden Row  
P.O. Box 3363 (S)  
Halifax, Nova Scotia B3J 3J1  
902/422-8528  
902/422-2619 (fax)

Ontario College of Pharmacists  
483 Huron Street  
Toronto, Ontario M5R 2R4  
416/962-4861  
416/962-1619 (fax)  
[www.ocpinfo.com](http://www.ocpinfo.com)

Ordre des pharmaciens du Québec  
266 rue Notre-Dame Ouest, Bureau 301  
Montréal, Québec H2Y 1T6  
514/284-9588  
514/284-3420 (fax)  
[www.opq.org](http://www.opq.org)

Prince Edward Island Pharmacy Board  
P.O. Box 89  
Crapaud, Prince Edward Island C0A 1J0  
902/658-2780  
902/658-2198 (fax)

Saskatchewan Pharmaceutical Association  
700-4010 Pasqua Street  
Regina, Saskatchewan S4S 7B9  
306/584-2292  
306/584-9695 (fax)

Yukon Regulatory Authority  
P.O. Box 2703  
Whitehorse, Yukon Y1A 2C6  
867/667-5111  
867/667-3609 (fax)



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# Oath of a Pharmacist

At this time, I vow to devote my professional life  
to the service of all humankind  
through the profession of pharmacy.

I will consider the welfare of humanity  
and relief of human suffering  
my primary concerns.

I will apply my knowledge, experience, and skills  
to the best of my ability  
to assure optimal drug therapy outcomes  
for the patients I serve.

I will keep abreast of developments  
and maintain professional competency  
in my profession of pharmacy.

I will maintain the highest principles  
of moral, ethical, and legal conduct.

I will embrace and advocate change  
in the profession of pharmacy  
that improves patient care.

I take these vows voluntarily  
with the full realization of the responsibility  
with which I am entrusted by the public.

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Developed by the American Pharmaceutical Association Academy of Students of Pharmacy/American Association of Colleges of Pharmacy Council of Deans (APhA-ASP/AACP-COD) Task Force on Professionalism, June 26, 1994. Reprinted with permission of the American Association of Colleges of Pharmacy.



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# Pledge of Professionalism

As a student of pharmacy, I believe there is a need to build and reinforce a professional identity founded on integrity, ethical behavior, and honor. This development, a vital process in my education, will help ensure that I am true to the professional relationship I establish between myself and society as I become a member of the pharmacy community. Integrity must be an essential part of my everyday life and I must practice pharmacy with honesty and commitment to service.

To accomplish this goal of professional development, I, as a student of pharmacy, should:

**DEVELOP** a sense of loyalty and duty to the profession of pharmacy by being a builder of community, one able and willing to contribute to the well-being of others and one who enthusiastically accepts the responsibility and accountability for membership in the profession.

**FOSTER** professional competency through lifelong learning. I must strive for high ideals, teamwork, and unity within the profession in order to provide optimal patient care.

**SUPPORT** my colleagues by actively encouraging personal commitment to the Oath of Maimonides and a Code of Ethics as set forth by the profession.

**INCORPORATE** into my life and practice dedication to excellence. This will require an ongoing reassessment of personal and professional values.

**MAINTAIN** the highest ideals and professional attributes to ensure and facilitate the covenantal relationship required of the pharmaceutical caregiver.

---

Developed by the American Pharmaceutical Association Academy of Students of Pharmacy/American Association of Colleges of Pharmacy Council of Deans (APhA-ASP/AACP-COD) Task Force on Professionalism, June 26, 1994. Reprinted with permission of the American Association of Colleges of Pharmacy.

The profession of pharmacy is one that demands adherence to a set of rigid ethical standards. These high ideals are necessary to ensure the quality of care extended to the patients I serve. As a student of pharmacy, I believe this does not start with graduation; rather, it begins with my membership in this professional college community. Therefore, I must strive to uphold these standards as I advance toward full membership in the profession of pharmacy.

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# Code of Ethics for Pharmacists

## **PREAMBLE**

Pharmacists are health professionals who assist individuals in making the best use of medications. This Code, prepared and supported by pharmacists, is intended to state publicly the principles that form the fundamental basis of the roles and responsibilities of pharmacists. These principles, based on moral obligations and virtues, are established to guide pharmacists in relationships with patients, health professionals, and society.

### **I. A pharmacist respects the covenantal relationship between the patient and pharmacist.**

Considering the patient-pharmacist relationship as a covenant means that a pharmacist has moral obligations in response to the gift of trust received from society. In return for this gift, a pharmacist promises to help individuals achieve optimum benefit from their medications, to be committed to their welfare, and to maintain their trust.

### **II. A pharmacist promotes the good of every patient in a caring, compassionate, and confidential manner.**

A pharmacist places concern for the well-being of the patient at the center of professional practice. In doing so, a pharmacist considers needs stated by the patient as well as those defined by health science. A pharmacist is dedicated to protecting the dignity of the patient. With a caring attitude and a compassionate spirit, a pharmacist focuses on serving the patient in a private and confidential manner.

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Adopted by the membership of the American Pharmaceutical Association, October 27, 1994. Reprinted with permission of the American Pharmacists Association.



**III. A pharmacist respects the autonomy and dignity of each patient.**

A pharmacist promotes the right of self-determination and recognizes individual self-worth by encouraging patients to participate in decisions about their health. A pharmacist communicates with patients in terms that are understandable. In all cases, a pharmacist respects personal and cultural differences among patients.

**IV. A pharmacist acts with honesty and integrity in professional relationships.**

A pharmacist has a duty to tell the truth and to act with conviction of conscience. A pharmacist avoids discriminatory practices, behavior, or work conditions that impair professional judgment, and actions that compromise dedication to the best interests of patients.

**V. A pharmacist maintains professional competence.**

A pharmacist has a duty to maintain knowledge and abilities as new medications, devices, and technologies become available and as health information advances.

**VI. A pharmacist respects the values and abilities of colleagues and other health professionals.**

When appropriate, a pharmacist asks for the consultation of colleagues or other health professionals or refers the patient. A pharmacist acknowledges that colleagues and other health professionals may differ in the beliefs and values they apply to the care of the patient.

**VII. A pharmacist serves individual, community, and societal needs.**

The primary obligation of a pharmacist is to individual patients. However, the obligations of a pharmacist may at times extend beyond the individual to the community and society. In these situations, the pharmacist recognizes the responsibilities that accompany these obligations and acts accordingly.

**VIII. A pharmacist seeks justice in the distribution of health resources.**

When health resources are allocated, a pharmacist is fair and equitable, balancing the needs of patients and society.



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# Principles of Practice for Pharmaceutical Care

## **PREAMBLE**

Pharmaceutical Care is a patient-centered, outcomes-oriented pharmacy practice that requires the pharmacist to work in concert with the patient and the patient's other health care providers to promote health, to prevent disease, and to assess, monitor, initiate, and modify medication use to assure that drug therapy regimens are safe and effective. The goal of Pharmaceutical Care is to optimize the patient's health-related quality of life and achieve positive clinical outcomes, within realistic economic expenditures. To achieve this goal, the following must be accomplished:

### **A. A professional relationship must be established and maintained.**

Interaction between the pharmacist and the patient must occur to assure that a relationship based upon caring, trust, open communication, cooperation, and mutual decision making is established and maintained. In this relationship, the pharmacist holds the patient's welfare paramount, maintains an appropriate attitude of caring for the patient's welfare, and uses all his/her professional knowledge and skills on the patient's behalf. In exchange, the patient agrees to supply personal information and preferences and participate in the therapeutic plan. The pharmacist develops mechanisms to assure the patient has access to pharmaceutical care at all times.

### **B. Patient-specific medical information must be collected, organized, recorded, and maintained.**

Pharmacists must collect and/or generate subjective and objective information regarding the patient's general health and activity status, past

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medical history, medication history, social history, diet and exercise history, history of present illness, and economic situation (financial and insured status). Sources of information may include, but are not limited to, the patient, medical charts and reports, pharmacist-conducted health/physical assessment, the patient's family or caregiver, insurer, and other health care providers, including physicians, nurses, midlevel practitioners, and other pharmacists. Since this information will form the basis for decisions regarding the development and subsequent modification of the drug therapy plan, it must be timely, accurate, and complete, and it must be organized and recorded to assure that it is readily retrievable and updated as necessary and appropriate. Patient information must be maintained in a confidential manner.

**C. Patient-specific medical information must be evaluated and a drug therapy plan developed mutually with the patient.**

Based upon a thorough understanding of the patient and his/her condition or disease and its treatment, the pharmacist must, with the patient and with the patient's other health care providers as necessary, develop an outcomes-oriented drug therapy plan. The plan may have various components which address each of the patient's diseases or conditions. In designing the plan, the pharmacist must carefully consider the psychosocial aspects of the disease as well as the potential relationship between the cost and/or complexity of therapy and patient adherence. As one of the patient's advocates, the pharmacist assures the coordination of drug therapy with the patient's other health care providers and the patient. In addition, the patient must be apprised of (1) various pros and cons (i.e., cost, side effects, different monitoring aspects, etc.) of the options relative to drug therapy and (2) instances where one option may be more beneficial based on the pharmacist's professional judgment. The essential elements of the plan, including the patient's responsibilities, must be carefully and completely explained to the patient. Information should be provided to the patient at a level the patient will understand. The drug therapy plan must be documented in the patient's pharmacy record and communicated to the patient's other health care providers as necessary.

**D. The pharmacist assures that the patient has all supplies, information, and knowledge necessary to carry out the drug therapy plan.**

The pharmacist providing Pharmaceutical Care must assume ultimate responsibility for assuring that his/her patient has been able to obtain, and is appropriately using, any drugs and related products or equipment called

for in the drug therapy plan. The pharmacist must also assure that the patient has a thorough understanding of the disease and the therapy/medications prescribed in the plan.

**E. The pharmacist reviews, monitors, and modifies the therapeutic plan as necessary and appropriate, in concert with the patient and health care team.**

The pharmacist is responsible for monitoring the patient's progress in achieving the specific outcomes according to strategy developed in the drug therapy plan. The pharmacist coordinates changes in the plan with the patient and the patient's other health care providers as necessary and appropriate in order to maintain or enhance the safety and/or effectiveness of drug therapy and to help minimize overall health care costs. Patient progress is accurately documented in the pharmacy record and communicated to the patient and to the patient's other health care providers as appropriate. The pharmacist shares information with other health care providers as the setting for care changes, thus helping assure continuity of care as the patient moves between the community setting, the institutional setting, and the long-term care setting.

## **PRACTICE PRINCIPLES**

### **1. Data Collection**

- 1.1 The pharmacist conducts an initial interview with the patient for the purposes of establishing a professional working relationship and initiating the patient's pharmacy record. In some situations (e.g., pediatrics, geriatrics, critical care, language barriers) the opportunity to develop a professional relationship with and collect information directly from the patient may not exist. Under these circumstances, the pharmacist should work directly with the patient's parent, guardian, and/or principal caregiver.
- 1.2 The interview is organized, professional, and meets the patient's need for confidentiality and privacy. Adequate time is devoted to assure that questions and answers can be fully developed without either party feeling uncomfortable or hurried. The interview is used to systematically collect patient-specific subjective information and to initiate a pharmacy record which includes information and data regarding the patient's general health and activity status, past medical history, medication history, social history (including economic situation), family history, and history of present illness.

The record should also include information regarding the patient's thoughts or feelings and perceptions of his/her condition or disease.

- 1.3 The pharmacist uses health/physical assessment techniques (blood pressure monitoring, etc.) appropriately and as necessary to acquire necessary patient-specific objective information.
- 1.4 The pharmacist uses appropriate secondary sources to supplement the information obtained through the initial patient interview and health/physical assessment. Sources may include, but are not limited to, the patient's medical record or medical reports, the patient's family, and the patient's other health care providers.
- 1.5 The pharmacist creates a pharmacy record for the patient and accurately records the information collected. The pharmacist assures that the patient's record is appropriately organized, kept current, and accurately reflects all pharmacist-patient encounters. The confidentiality of the information in the record is carefully guarded and appropriate systems are in place to assure security. Patient-identifiable information contained in the record is provided to others only upon the authorization of the patient or as required by law.

## **2. Information Evaluation**

- 2.1 The pharmacist evaluates the subjective and objective information collected from the patient and other sources then forms conclusions regarding (1) opportunities to improve and/or assure the safety, effectiveness, and/or economy of current or planned drug therapy; (2) opportunities to minimize current or potential future drug or health-related problems; and (3) the timing of any necessary future pharmacist consultation.
- 2.2 The pharmacist records the conclusions of the evaluation in the medical and/or pharmacy record.
- 2.3 The pharmacist discusses the conclusions with the patient, as necessary and appropriate, and assures an appropriate understanding of the nature of the condition or illness and what might be expected with respect to its management.

## **3. Formulating the Plan**

- 3.1 The pharmacist, in concert with other health care providers, identifies, evaluates, and then chooses the most appropriate action(s) to (1) improve and/or assure the safety, effectiveness, and/or cost-

- effectiveness of current or planned drug therapy and/or (2) minimize current or potential future health-related problems.
- 3.2 The pharmacist formulates plans to effect the desired outcome. The plans may include, but are not limited to, work with the patient as well as with other health providers to develop a patient-specific drug therapy protocol or to modify prescribed drug therapy, develop and/or implement drug therapy monitoring mechanisms, recommend nutritional or dietary modifications, add nonprescription medications or nondrug treatments, refer the patient to an appropriate source of care, or institute an existing drug therapy protocol.
  - 3.3 For each problem identified, the pharmacist actively considers the patient's needs and determines the desirable and mutually agreed upon outcome and incorporates these into the plan. The plan may include specific disease state and drug therapy end points and monitoring end points.
  - 3.4 The pharmacist reviews the plan and desirable outcomes with the patient and with the patient's other health care provider(s) as appropriate.
  - 3.5 The pharmacist documents the plan and desirable outcomes in the patient's medical and/or pharmacy record.

#### **4. Implementing the Plan**

- 4.1 The pharmacist and the patient take the steps necessary to implement the plan. These steps may include, but are not limited to, contacting other health providers to clarify or modify prescriptions; initiating drug therapy; educating the patient and/or caregiver(s); coordinating the acquisition of medications and/or related supplies, which might include helping the patient overcome financial barriers or lifestyle barriers that might otherwise interfere with the therapy plan; or coordinating appointments with other health care providers to whom the patient is being referred.
- 4.2 The pharmacist works with the patient to maximize patient understanding and involvement in the therapy plan, assures that arrangements for drug therapy monitoring (e.g., laboratory evaluation, blood pressure monitoring, home blood glucose testing, etc.) are made and understood by the patient, and that the patient receives and knows how to properly use all necessary medications and related equipment. Explanations are tailored to the patient's level of comprehension and teaching and adherence aids are employed as indicated.



- 4.3 The pharmacist assures that appropriate mechanisms are in place to ensure that the proper medications, equipment, and supplies are received by the patient in a timely fashion.
- 4.4 The pharmacist documents in the medical and/or pharmacy record the steps taken to implement the plan, including the appropriate baseline monitoring parameters, and any barriers which will need to be overcome.
- 4.5 The pharmacist communicates the elements of the plan to the patient and/or the patient's other health care provider(s). The pharmacist shares information with other health care providers as the setting for care changes, in order to help maintain continuity of care as the patient moves between the ambulatory, inpatient, or long-term care environment.

## **5. Monitoring and Modifying the Plan/Assuring Positive Outcomes**

- 5.1 The pharmacist regularly reviews subjective and objective monitoring parameters in order to determine if satisfactory progress is being made toward achieving desired outcomes as outlined in the drug therapy plan.
- 5.2 The pharmacist and patient determine if the original plan should continue to be followed or if modifications are needed. If changes are necessary, the pharmacist works with the patient/caregiver and his/her other health care providers to modify and implement the revised plan as described in "Formulating the Plan" and "Implementing the Plan."
- 5.3 The pharmacist reviews ongoing progress in achieving desired outcomes with the patient and provides a report to the patient's other health care providers as appropriate. As progress toward outcomes is achieved, the pharmacist should provide positive reinforcement.
- 5.4 A mechanism is established for follow-up with patients. The pharmacist uses appropriate professional judgment in determining the need to notify the patient's other health care providers of the patient's level of adherence with the plan.
- 5.5 The pharmacist updates the patient's medical and/or pharmacy record with information concerning patient progress, noting the subjective and objective information which has been considered, his/her assessment of the patient's current progress, the patient's assessment of his/her current progress, and any modifications that are being made to the plan. Communications with other health care providers should also be noted.

## **APPENDIX**

Pharmaceutical care is a process of drug therapy management that requires a change in the orientation of traditional professional attitudes and reengineering of the traditional pharmacy environment. Certain elements of structure must be in place to provide quality pharmaceutical care. Some of these elements are (1) knowledge, skill, and function of personnel; (2) systems for data collection, documentation, and transfer of information; (3) efficient work flow processes; (4) references, resources and equipment; (5) communication skills; and (6) commitment to quality improvement and assessment procedures.

### **Knowledge, Skill, and Function of Personnel**

The implementation of pharmaceutical care is supported by knowledge and skills in the area of patient assessment, clinical information, communication, adult teaching and learning principles, and psychosocial aspects of care. To use these skills, responsibilities must be reassessed and assigned to appropriate personnel, including pharmacists, technicians, automation, and technology. A mechanism of certifying and credentialing will support the implementation of pharmaceutical care.

### **Systems for Data Collection and Documentation**

The implementation of pharmaceutical care is supported by data collection and documentation systems that accommodate patient care communications (e.g., patient contact notes, medical/medication history), interprofessional communications (e.g., physician communication, pharmacist-to-pharmacist communication), quality assurance (e.g., patient outcomes assessment, patient care protocols), and research (e.g., data for pharmacoepidemiology, etc.). Documentation systems are vital for reimbursement considerations.

### **Efficient Work Flow Processes**

The implementation of pharmaceutical care is supported by incorporating patient care into the activities of the pharmacist and other personnel.

## **References, Resources, and Equipment**

The implementation of pharmaceutical care is supported by tools which facilitate patient care, including equipment to assess medication therapy adherence and effectiveness, clinical resource materials, and patient education materials. Tools may include computer software support, drug utilization evaluation (DUE) programs, disease management protocols, etc.

## **Communication Skills**

The implementation of pharmaceutical care is supported by patient-centered communication. Within this communication, the patient plays a key role in the overall management of the therapy plan.

## **Quality Assessment/Improvement Programs**

The implementation and practice of pharmaceutical care is supported and improved by measuring, assessing, and improving pharmaceutical care activities utilizing the conceptual framework of continuous quality improvement.

This document will not cover each and every situation; that was not the intent of the Advisory Committee. This is a dynamic document and is intended to be revised as the profession adapts to its new role. It is hoped that pharmacists will use these principles, adapting them to their own situation and environments, to establish and implement pharmaceutical care.

*Note:* Although “drug therapy” typically refers to intended, beneficial effects of pharmacologic drugs, in this document, “drug therapy” refers to the intended, beneficial use of drugs—whether diagnostic or therapeutic—and thus includes diagnostic radiopharmaceuticals, X-ray contrast media, etc., in addition to pharmacologic drugs. Similarly, “drug therapy plan” includes the outcomes-oriented plan for diagnostic drug use in addition to pharmacologic drug use.

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