

e-Perspectives

on the Medical Transcription Profession

April 2007

Issue 54



Contents

Sally C. Pitman	1	Spring Fever
Phil Cohen	3	How to Be an A+ Trade Show Attendee
John H. Dirckx, M.D.	6	Pharmaceutical Nomenclature: The Lawless Language
Update	16	What's New in Medicine
Richard Lederer, Ph.D.	21	Looking at Language: A Tense Time with Verbs



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Spring Fever

It's the middle of April here, and spring has come to my part of the country. I live in the Intermountain West where the four seasons are apparent on the landscape and in the weather, and spring renews our spirits with the anticipation of new freedom to enjoy the outdoors. Those of us who are only fair-weather walkers (and no excuse to avoid exercise is too flimsy for serious consideration) look forward to warmer weather and the proliferation of flowers and blossoms. So where's the fever?

If you didn't know how old you are, how old would you be? Younger in the spring than the winter? More vigorous in the fall after the sluggishness of long summers? How much are we affected by the seasons, the climate, and how many are so absorbed with our work that we hardly notice what's going on outside our workplace? Some of us never even notice the weather or climate. The seasons might as well be mere sentiments. I'm often guilty of that.

My husband Leon always notices the weather and climate. He enjoys each of the seasons for their unique offerings. Seasons aren't just a state of mind to him, although he would be the first to admit he's unusually affected by his surroundings. After all, he's a geographer and he taught cultural, physical, and economic geography and anthropology for 33 years. We celebrated our 45th wedding anniversary yesterday, and, though no cause-effect relationship is suggested here, next week Leon will undergo open heart surgery. This is a spring we will probably never forget, or if we are especially lucky, maybe we won't remember it at all.

This is the 54th issue of *Perspectives* magazine, which has evolved over 18 years of publication to its present electronic format. As an e-zine, *e-Perspectives* is now available to a wider audience of healthcare professionals who value the substantive original articles we publish. *e-Perspectives* is now available worldwide to anyone with an Internet connection. The PDF articles may be downloaded and printed by those who want a print copy for reference or sharing.

In this issue of *e-Perspectives*, Dr. John H. Dirckx provides an update of an article he wrote in the early 1990s: *Pharmaceutical Nomenclature: A Lawless Language*. Many medical transcriptionists, students, and teachers have asked for an update of the naming of drugs over the past 17 years.

Rich Lederer provides a column on verb tenses. Only he could make the past tense of verbs funny and informative.

Phil Cohen of PRN Funding reminds us of why we attend association and business trade shows—for networking and information. Making the most of attending a trade show or conference is good business and good education.

Four pages of terms in the What's New in Medicine column round out this issue. Many of the new terms will appear in the 11th edition of *Vera Pyle's Current Medical Terminology* (2007). Watch for additional information on the release date of the new edition.



Sally C. Pitman

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How to be an A+ Trade Show Attendee

by Phil Cohen

In the world of a medical transcription service owner (MTSO), life can be hectic. From hiring and staffing transcriptionists to collecting from slow-paying facilities, MTSOs have enough on their plate to worry about while they are in the office, let alone when their work pulls them away from the office. The idea of leaving for a couple of days just to attend a trade show is usually the last thing on an owner's mind.

Chances are you probably feel like you don't have enough time to attend a trade show. Before you start listing all of the reasons why you can't afford to go to a trade show (monetary, geographical, logistical, etc.), I'd like to share with you all the reasons why you can't afford to stay home!

One of the top concerns an MTSO may have about attending a trade show is getting there. Paying for flights, hotels, and conference registrations can add up quickly—that is if you wait until the last minute to book everything. Rule number one: plan ahead. Contact the trade show organizers as soon as you think you might want to attend the show, and ask if discounted flights and hotels are available. The answer will almost always be yes—unless you wait too long. Keep in mind that the prices often skyrocket a few weeks before the show begins, so a good rule of thumb is to book about three months in advance.

Something else to keep in mind is the possibility of not staying in the same hotel as the conference to save a little extra cash. Regardless of whether the preferred hotel is attached to the conference center, staying in it can sometimes be expensive even with a discounted rate. So I would suggest looking into booking a room in a smaller hotel in proximity to the conference location. Staying at an alternative hotel can save you a bundle, while still being a short, convenient walk to the show.

It's also a good idea to pre-register for the conference. Not only will you often save money by taking advantage of the pre-registering discount, it also saves you time once you're at the show. Instead of waiting in long lines outside of the trade show, you can use that time to walk the floor, network with colleagues or attend a scheduled seminar.

If you haven't decided ahead of time which classes you want to attend and which exhibitors you want to visit before you get to the show, it's a good idea to look through the updated show guide provided when you arrive. Take the time to walk the floor once to familiarize yourself with the layout

of the conference rooms as well as taking the time to note where the specific vendors you want to talk to are located. Note the companies' booth locations on your copy of the floor map so that you can find them quickly in-between classes and networking activities.

Once you are ready to start talking to the vendors one-on-one, there are five things that no attendee should be without while you are in the exhibit hall.

1. Lightweight clothes and comfortable walking shoes. Business casual is generally what you will see on the show floor. Just make sure that your clothing and shoes are professional and neat, but also comfortable enough to walk/stand in for long hours.

2. Name badge. It not only allows you to get through the exhibit hall doors, it also allows others to identify you and your company quickly and easily.

3. Business cards. You never know who you might meet at trade shows, so it's good to have business cards handy for when you bump into someone important whom you want to remember. Make sure you bring a big enough stack that you won't run out midway through the show. It's always better to bring too many than not enough.

4. Notebook and pen. Of course, taking notes during the classes will help you tremendously when you get back in the office. Keeping a pen and paper handy while walking the floor is also helpful to jot down notes about each vendor you speak to about your company.

5. Sturdy tote-bag. From giveaways and literature to books and brochures, attendees pick up a lot of items at trade shows. It's really nice to bring some kind of tote bag (even one on wheels!) to hold everything. (NOTE: Oftentimes, there will be at least one exhibitor who is handing out one of these types of bags, so make sure you visit their booth earlier on in the conference.)

Remember that new business relationships can also begin outside of the exhibit hall. Take advantage of the free networking events. You will find that everyone, vendors included, is more laid back in these social settings and not so pushy for

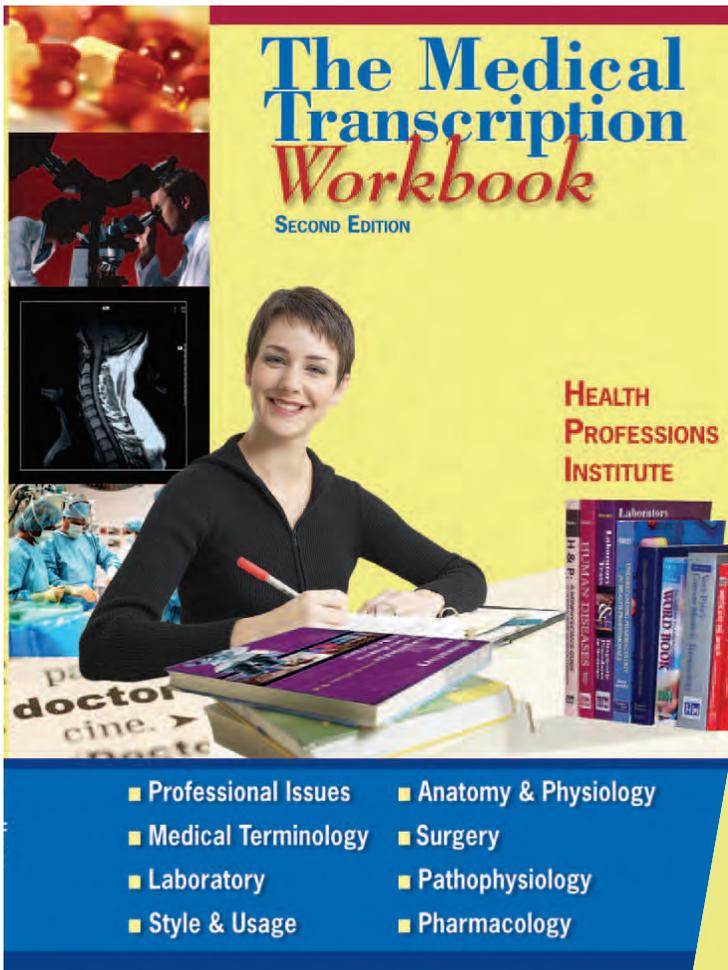
a sale. Take the time to get to know your fellow attendees and vendors off of the sales floor. Just be sure to bring a handful of business cards when you attend these outside activities.

If you follow all of the above advice at the next trade show that you attend, I guarantee that it will be money well spent. Not only will you have the opportunity to rub elbows with some of the top vendors and leaders in the medical transcription industry, you will also have the opportunity to learn about market trends, network with fellow medical transcriptionists and learn how new products can help your business thrive. The contacts you can make and the information you can gather about competitors, suppliers, buyers and the overall medical transcription industry far outweigh the reservations you may have for leaving the office.

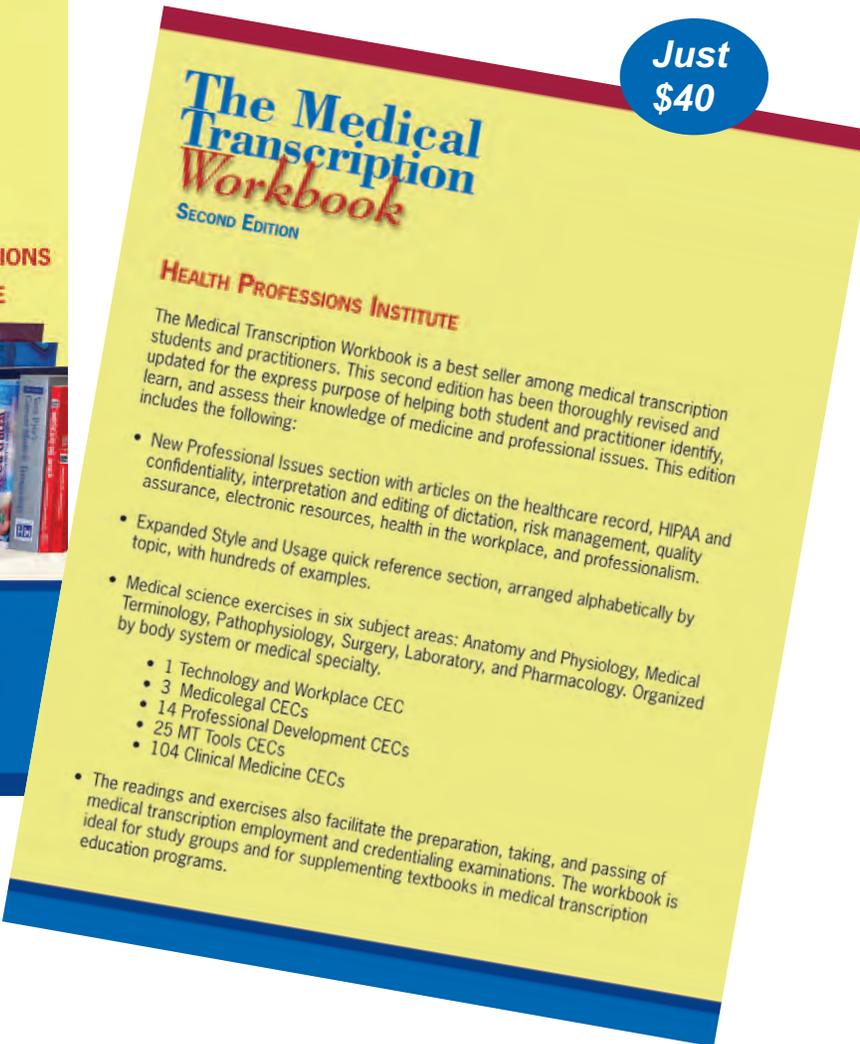


Philip Cohen is the President of PRN Funding, LLC, an accounts receivable factoring company that provides growth capital to small and mid-sized businesses that service the healthcare industry. Prior to founding PRN Funding, Cohen served as the Senior Vice President/General Manager of The MRC Group, where he was responsible for corporate development initiatives as well as the company's speech recognition product line. Web site: www.prnfunding.com E-mail: pcohen@prnfunding.com

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Pharmaceutical Nomenclature: The LAWLESS Language

by John H. Dirckx, M.D.

To the fledgling medical transcriptionist who has achieved a basic mastery of medical terminology, it must be something of a shock to encounter for the first time the intricacies and vagaries of pharmaceutical brand names. Here is a whole new set of stems, prefixes, and suffixes and a whole new set of semantic and spelling conventions, or rather inconsistencies, that must be learned if the transcriptionist is to function proficiently and independently.

Brand names of drugs turn up constantly in histories and physicals, progress notes, and discharge summaries. In addition, surgeons use instruments, implants, sutures, and dressing materials with brand names, and radiologists inject brand-name contrast media. Physicians often omit parts of brand names in writing drug orders and prescriptions as well as in dictating. They also frequently misspell them in writing and supply incorrect spellings in dictation.

Brand names are difficult and unpredictable partly because manufacturers, who are not held to any particular standards of linguistic decorum, deliberately vary the spelling of words, stems, prefixes, and suffixes to make it more phonetic (Azmacort, a drug for asthma), simpler (pseudoephedrine > Sudafed) or more exotic (sulfacetamide > Sulamyd). The difficulties for the transcriptionist are compounded by the need to capitalize brand names, which are usually indistinguishable from generic names in dictation, and by the many quirks of capitalization, compounding, hyphenation, contraction, and abbreviation found in this highly specialized and highly eccentric “language.”

Adequate up-to-date reference works on brand-name drugs are therefore a necessary resource for the transcriptionist. Besides having access to reference works, the transcriptionist also needs some basic understanding of how brand names come into being. Equipped with this knowledge, the transcriptionist will be better able to remember bizarre spellings as well as to recognize the nature or purpose of many drugs. For example, Dolobid is a drug for pain (Latin *dolor*) that is given twice a day (b.i.d.); Effersyllium, an effervescent laxative preparation containing psyllium seed; Pediacof, a cough medicine for children; Sleepinal, a bedtime sedative.

The following discussion of brand names should benefit not only the beginning transcriptionist but also the seasoned expert. I have included material on generic names because many brand names are based directly on generic names and because manufacturers use the same patterns of abridgment and spelling alterations and the same dubious logic in fabricating generic names. Space will not permit the expansion or full explanation of each example given. In most instances,

however, the “etymology” of a brand name, insofar as there is any pattern or coherence in its formation, should be evident to the reader.

Definitions

A necessary preliminary to the discussion of brand names is the definition of a few terms. A **trademark** is a distinctive word, name, symbol, or device used by manufacturers or sellers to identify their goods and distinguish them from the goods of others. Once registered with the United States Patent Office, a trademark becomes the exclusive property of the registrant. Unauthorized use by others constitutes infringement and is grounds for legal action.

Generally a firm registers its business name (e.g., GlaxoSmithKline), any logo or device with which it marks its products or goods, and the names of such of those products as are sufficiently distinctive to deserve names of their own, particularly when the manufacturer holds patents on them. A patent continues in effect only for a limited period (usually 17 years), after which other firms are permitted to manufacture and market the patented product. Any trade name, however, remains the exclusive property of the registrant. A firm marketing a product on which the patent has expired can register its own brand name for the product.

Although pharmaceutical manufacturers may register symbols, monograms, and even the shapes of tablets, our concern here is with that large class of trademarks that can be described as names or words and that are known technically as proprietary names or **brand names**. A firm may own brand names not only for the individual pharmaceuticals it manufactures or markets (such as Demerol, Motrin, and Tylenol) but also for distinctive or exclusive dosage forms or packaging or delivery systems (such as Abbo-Pac, Gelcap, and Spansule).

The brand name of a new drug is devised by the firm that develops, manufactures, or markets it. A brand name requires the approval of the Food and Drug Administration, which tries to promote simplicity of naming and to avoid names that may easily be confused with other names or that may give misleading information about the nature or purpose of a drug.

Selecting a brand name for a new product is a formidable undertaking. The eventual success of the product, or its acceptance in favor of similar products, may depend on the manufacturer’s crafting just the right sequence of syllables. The ideal brand name appeals to the ear, sends strongly positive messages to the brain both overtly and subliminally, is slightly quaint yet easy to remember and spell, and at least hints at the composition, purpose, or qualities of the product.

Brand names chosen for prescription drugs are designed primarily to solicit the attention and gain the approval of physicians. Hence they often incorporate subtle hints or arcane references that are lost on the lay public. In contrast, the names given to nonprescription drugs are adapted to plebeian tastes and intellectual capacities and are often about as subtle as a brick between the eyes.

The brand name of a drug or other product, being a registered trademark, should always be spelled with an initial capital letter, even if it has become a common noun in daily speech, as in the case of Band-Aid, Kleenex, Scotch Tape, Vaseline, Xerox, and Yellow Pages.

Although a drug may be marketed under various brand names by various manufacturers or suppliers, all of these will also identify it by its **generic name**. A generic name is a nonproprietary name (hence spelled with a small initial letter) that identifies the chemical or pharmaceutical nature of a drug irrespective of who manufactures or sells it—for example, castor oil, ferrous sulfate, paregoric, propranolol. A generic name is ordinarily proposed by the firm that develops the drug and plans to patent and market it.

In the U.S., generic names must be submitted for approval by the United States Adopted Names (USAN) Council, formed in 1964 under the joint sponsorship of the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeial Convention, Inc., which publishes the United States Pharmacopeia. The USAN council was created to provide a central authority that would establish and enforce a set of standards for generic names. These standards, incorporating guidelines set by the U.S. Food and Drug Administration (FDA), call for simplicity on the one hand and consistency on the other.

Most generic names are formed from more complex chemical names according to a kind of shorthand, largely standardized. For example, *ph* in a chemical name is replaced with *f*, and *methylhydro-* is shortened to *medro-*. Standard short forms have been approved for many organic chemical radicals: in a generic name the glucoheptonate radical is called *gluceptate*, and 1,1'-methylene bis (2-hydroxy 3-naphthoate) is simply *pamoate*.

Although most generic names are based on chemical names, a few refer to pharmacologic action—for example, colestipol, a cholesterol-lowering copolymer. The suffix *-olol* (as in atenolol, metoprolol, and propranolol) indicates a beta-adrenergic blocking agent, and the suffix *-sartan* (as in candesartan, irbesartan, and olmesartan) indicates an angiotensin II receptor antagonist.

The USAN Council cooperates with the World Health Organization and with health authorities in many foreign countries to ensure international consistency in drug naming. In spite of these efforts, generic names of some drugs do differ from country to country. For example, in the United Kingdom furosemide and meperidine are known respectively as frusemide and pethidine.

Occasionally a generic name is changed in order to achieve further simplicity or to improve consistency of naming. Thus, glyceryl guaiacolate became guaifenesin; diphenyl-

Capitalize only the first letter of each word in a brand name. Eryc, Neggram, PhisoHex, Rhogam, and Tace are just as clear and unequivocal as ERYC, NegGram, pHisoHex, RhoGAM, and TACE, and perhaps a little easier on the eyes.

hydantoin, phenytoin; and azidothymidine, zidovudine. In such a case the brand name remains unchanged, for once a brand name has achieved a favorable reputation among prescribing physicians, the manufacturer cannot change it without risking severe financial loss.

In fact, manufacturers sometimes exploit the reputation of an established drug by creating a name for an unrelated new product that implies some connection with or derivation from the earlier drug. Neo-Synephrine is a long-established brand name for forms of phenylephrine, including nasal sprays. But Neo-Synephrine II Nasal Spray contains a different topical decongestant, xylometazoline, instead of phenylephrine. The brand name Sudafed is based on the generic name, pseudoephedrine. In the face of legal restrictions on the sale of pseudoephedrine to curb widespread abuse, the manufacturer released an alternative product, Sudafed PE, which instead of pseudoephedrine contains . . . phenylephrine!

A brand name may remain unchanged despite substantial changes in the composition of the product. Several years ago the pain and fever reliever phenacetin was pulled from the market because it caused renal damage and hemolytic anemia with unacceptable frequency. The manufacturer of the enormously popular over-the-counter product Anacin (originally aspirin, phenacetin, and caffeine) removed the phenacetin without public notice or change of name. Phenaphen, once a combination of phenacetin, aspirin, and phenobarbital, now contains only acetaminophen and none of the original ingredients. The formula of Cheracol cough syrup has changed many times since the product first went on the market.

As soon as the patent on a drug expires, one or more firms usually market it under their own brand names, or perhaps simply under its generic name. The unfortunate term **generic drug** is often misinterpreted as referring to the nature or quality of the drug itself. A generic drug is simply one that is labeled and marketed only under its generic name. It may well be manufactured and marketed by the same firm that makes the corresponding brand-name product.

Generic drugs are usually less expensive than their brand-name counterparts, sometimes by a substantial margin. They may also be inferior in quality or potency, although manufacturers and sellers of generic drugs are held to the same standards as brand-name firms. State laws vary in the latitude permitted to a pharmacist in filling a prescription written for a brand-name drug with its generic equivalent.

The FDA permits certain drugs to be handled and distributed only by physicians and pharmacists. The labeling of

these drugs must include the legend: “CAUTION: Federal Law prohibits dispensing without prescription.” Hence prescription drugs are often known as **legend drugs**. Detailed legislation regarding the writing and filling of prescriptions is the responsibility of the individual states. A special class of prescription drugs, comprising narcotics, hypnotics, and other substances liable to abuse, is subject to stricter regulation by the Drug Enforcement Administration (DEA), a branch of the United States Department of Justice. Drugs regulated by the DEA are called **controlled substances**. Besides being licensed to practice medicine, a physician must have a narcotic license issued by the DEA to prescribe these. Drugs that may be purchased by the lay consumer without a prescription are called nonprescription drugs or over-the-counter (OTC) drugs.

Sources of Pharmaceutical Terms

It must be conceded at the outset that the range of processes by which brand names come into existence is so broad as to defy simple classification. Only the most elaborate breakdown could find convenient niches for brand names as various as Akineton (Greek, ‘motionless’), a drug for parkinsonism; Nivea (Latin, ‘snowy’), a skin moisturizer; Flagyl, an antimicrobial originally used against flagellate parasites; Marezine (Latin *mare* ‘sea’ or Spanish *mareo* ‘seasickness’), a drug for motion sickness; Marinol, another antinauseant, made from marijuana; Ocean, a saline nasal spray; Premarin, an estrogenic material derived from **pregnant mares’ urine**; GoLYTELY, an isosmotic laxative; Tears Naturale, an artificial ocular lubricant; and Bugs Bunny Plus Iron Children’s Chewable Vitamins (Sugar Free). But despite this broad diversity, it is possible to identify a number of recurring patterns in the formation of pharmaceutical brand names.

The semantic or lexical material on which most brand names are based comes from a fairly narrow range of sources: the chemical designation of the drug, usually its generic name (cefazolin > Kefzol; betamethasone valerate > Valisone); its pharmacologic action (Surfak, a surfactant; Reglan, a regulator of gastrointestinal motility); the state it is intended to induce or maintain (Cylert, to improve alertness in attention deficit disorder; Tranxene, a tranquilizer); the disease or condition it is meant to correct or mitigate (Parlodol and Zelopar, drugs for parkinsonism; Condylox, for condylomata acuminata); the administration form (Amphojel, Cortifoam, Libritabs); the dose (Augmentin 875, Thiosulfil Forte); the concentration (Benzac 10, Humulin 70/30); the delivery characteristics (Niaspan, Slo-Mag); and the manufacturer’s name (Gilead > Viread, Robins > Robaxin).

As the examples given above clearly show, a drug name is typically formed by abridgment of the source material, by alteration of its spelling, or by a combination of both processes.

Abridgment

Contraction of the generic name by the simple omission of certain letters is a common practice. This may consist in removing the beginning of the generic name:

ceftazidime > Tazidime
tolnaftate > Aftate

removing the end:

ciprofloxacin > Cipro
ursodiol > Urso

removing the middle:

cefaclor > Ceclor
haloperidol > Haldol
indomethacin > Indocin
vancomycin > Vancocin

or removing selected letters:

ferrous gluconate > Fergon
isosorbide mononitrate > Ismo
minocycline > Minocin
norfloxacin > Noroxin

Brand names for combination products—that is, products containing more than one drug entity—are often formed by fusion of a phrase and deletion of selected letters:

belladonna alkaloids, phenobarbital > Donnatal
benzoyl peroxide, clindamycin > BenzaClin
magnesium and aluminum hydroxides > Maalox
polymyxin B, trimethoprim > Polytrim

For the names of some brand names of combination products, other brand names serve as raw materials:

Avandia + metformin > Avandamet
Dyrenium + hydrochlorothiazide > Dyazide
Inderal + chlorothiazide > Inderide
Tylenol + oxycodone > Tylox

The process of contraction is also often used to shorten or simplify a word or phrase that describes the pharmacologic action of a drug:

anthelmintic > Antiminth
calcium antagonist > Calan
detrusor (bladder muscle) control > Detrol
keratolytic > Ceralyte

the name of the disease or condition for which the drug is prescribed:

amenorrhea > Amen
endogenous depression > Endep
herpes simplex > Herplex
tinea versicolor > Tinver

or a phrase including both the generic name of the drug and some information about its origin, formulation, purpose, or use:

enteric-coated aspirin > Ecotrin
nasal flunisolide > Nasalide
synthetic thyroid supplement > Synthroid
timolol optical solution > Timoptic

The shortening of a generic name, a description of the drug action, or some other relevant word or phrase, can be carried further by the use of a letter abbreviation. With some of these, periods are used:

dihydroergotamine > D.H.E. 45
erythromycin ethylsuccinate > E.E.S.
multivitamin infusion > M.V.I.

but more often the capital letters are written without intervening spaces or punctuation:

particles of coated erythromycin > PCE
rectal morphine sulfate > RMS
silver sulfadiazine > Flint SSD

These groups of capital letters, each the first letter of a word or syllable in a phrase, are called initialisms. When such a sequence of initial letters is pronounced as a word, it is called an acronym:

inactivated polio vaccine > IPOL
tri-para-anisylchloroethylene > TACE

Usually the acronym is incorporated into a longer name. In some cases, the part of the name that is an acronym is spelled in all capitals:

griseofulvin in polyethylene glycol > Gris-PEG
Haemophilus influenzae type b vaccine > ProHIBIT
zero-order release aspirin > ZORprin

while in others it is not:

alfa interferon in polyethylene glycol > Pegasys
NSAID (nonsteroidal anti-inflammatory drug) > Ansaid
SIL (squamous intraepithelial lesion due to papillomavirus) > Gardasil

Spelling Changes

Alteration of spelling, as contrasted with abridgment, usually takes the form of a change to a more phonetic spelling, either by omission of a silent or nonfunctional letter:

ascend > Asendin
block > Blocadren
breath > Brethine

Omit hyphens inserted after prefixes or before appended words, abbreviations, or numerals. Probanthine, Neosyneprine, Constant T, Atromid S, Esgic Plus, Antivert 25, and Bleph 10 should be acceptable substitutes for Pro-Banthine, Neo-Syneprine, Constant-T, Atromid-S, Esgic-Plus, Antivert/25, and Bleph-10.

fluoride > Poly-Vi-Flor
islets of Langerhans > Iletin
pneumonia > Pnu-Immune
psoriasis > Soriatane
rhythm > Rythmol

or by substitution of a more “logical” letter:

bronchus > Bronkosol
cephalexin > Keflex
cephradine > Velosef
encainide > Enkaid
potassium chloride, effervescent > Klorvess

Manufacturers are particularly fond of changing *i* to *y*:

dicloxacillin > Dycill
diabetes mellitus > Dymelor
rhinorrhea > Rynatan
tigecycline > Tygacil

but the reverse process is also common:

halcyon (denoting tranquillity) > Halcion
live typhoid vaccine > Vivatif

Phonetic respelling is occasionally carried to the length of replacing a word or syllable by a letter whose name resembles the missing sound:

Aches-N-Pain (N = and)
Evac-Q-Kit (Q = cu)

Conversely, the sound of a letter or letters may be spelled out:

(vitamin) B > Allbee with C, Berocca
(vitamin) C > Cee-500, Ferancee
KCl (potassium chloride) > Kay Ciel, Kaylixir
(penicillin) V > Pen Vee K, Veetids

Many brand names are formed by metathesis—a change in the sequence of some of the letters in the source word or phrase, usually with the addition of supplemental letters:

allergy > Allegra
 cromolyn > Crolom
 mexilitene > Mexitil
 rifaximin > Xifaxan
 sucralfate > Carafate
 sulfasalazine > Azulfidine
 ticlopidine > Ticlid

A Garland of Stems

It is possible to identify, in the somewhat chaotic lexicon of pharmaceutical brand names, a number of recurring meaningful elements, and to divide these into stems (word fragments, usually of one syllable, such as *derm* ‘pertaining to skin’), prefixes (sense-modifying elements added at the beginning of a word or stem, such as *pro-* ‘for’ or ‘in place of’), and suffixes (modifying elements added at the end, such as *-ase*, denoting an enzyme). The three examples I have just given have been borrowed by the drug manufacturers from standard medical terminology. However, many of the word elements found among brand names are peculiar to pharmaceutical nomenclature and are not known in general medical terminology. Some of these are more or less standard in generic naming, while others occur exclusively in proprietary names.

The following survey of stems, prefixes, and suffixes is not meant to be exhaustive. It is intended only to illustrate some basic principles and patterns of brand name formation and to introduce the reader to some of the more common lexical elements.

Many stems refer to the chemical nature of a drug:

cal ‘calcium’: Caltrate, Neo-Calglucon, Os-Cal
 cef ‘cephalosporin’: Ceftin, Spectracef, Omnicef
 cort ‘adrenocortical steroid’: Cortef, Cortisporin, Westcort
 ery ‘erythromycin’: Ery-Tab, Eryc, Eryped
 est ‘estrogen’: Estrace, Estraderm, Prefest
 hal ‘halogen’: Halog, Halotestin, Halotex
 kef ‘cephalosporin’: Keflex, Kefurox, Kefzol
 mycin ‘antibiotic’: Garamycin, Sumycin, Vibramycin
 nitro ‘nitroglycerin’: Nitro-BID, Nitro-DUR, Nitrolingual Pumpspray
 p(i)rin ‘aspirin’: Empirin, Gelpirin, ZORprin

A substantial number of widely used stems refer to pharmaceutical action:

ac ‘acne medicine’: Accutane, Benzac, Xerac
 bac(t) ‘antibacterial’: Bactrim, Bactroban, Dynabac
 bron ‘bronchodilator or expectorant’: Asbron, Bronkephrine, Quibron
 cain(e) ‘local anesthetic’: Hurracaine, Novocain, Nupercainal
 card ‘cardiac’: Cardene, Procardia, Tonocard
 c(h)ol ‘cholesterol lowering agent’: Lescol, Pravachol, WelChol

dol ‘pain medicine’: Dolophine, Midol, Stadol
 flex ‘muscle relaxant’: Flexeril, Norflex, Paraflex
 flo ‘improving flow’: Flovent, Flomax, Flonase
 gard ‘protection, prevention’: Corgard, Nitrogard, ParaGard

hist ‘antihistamine’: Comhist, Fedahist, Histussin
 lax ‘laxative’: Dulcolax, Ex-Lax, Nytilax
 lo ‘lowering’: Lomotil, Lopid, Lopressor
 nor(m) ‘normalizing’: Norpace, Tenormin, Zelnorm
 ov ‘preventing ovulation’: Enovid, Lo/Ovral, Ovcon
 pres(s) ‘antihypertensive’: Apresoline, Catapres, Minipress
 stat ‘fungistatic’: Femstat, Monistat, Oxistat
 ten ‘antihypertensive’: Capoten, Loniten, Tenex
 trol ‘control’: Glucotrol, Limbitrol, Rocaltrol
 tuss ‘antitussive’: Hycotuss, Robitussin, Tussionex
 ur ‘urinary tract’: Monurol, Urised, Urobiotic
 vas(s) ‘blood vessels’: Vasocidin, Vasodilan, Vasosulf
 vent ‘ventilation’: Atrovent, Serevent, Ventolin
 vir ‘antiviral’: Retrovir, Viranol, Zovirax

The following stems refer to the dosage or pharmacodynamic characteristics of specific drug formulations:

bid ‘administered twice daily (b.i.d.)’: Lorabid, Macrobid, ProcanBID
 derm ‘dermatologic’: Dermoplast, Exelderm, Lubriderm
 dur ‘sustained action’: Duraquin, K-Dur, Theodur
 fem ‘product for women’: Femara, Femcap, Sarafem
 lo ‘low dose or concentration’: Loestrin, Lonalac, Lo/Ovral
 nas ‘nasal’: Beconase, Nasalide, Vancenase
 or ‘oral’: Dymelor, Orapred, Quinora
 pedia ‘pediatric form’: Pediacof, Pedialyte, Pediapred
 slo(w) ‘slow release’: Slo-Phyllin, Slo-bid, Slow-K
 sol ‘solution, soluble’: Fer-In-Sol, Poly-Vi-Sol, Solu-Cortef
 span ‘sustained release’: Cerespan, Hemaspan, Meprospan

Many manufacturers incorporate their firm names, or parts of them, into the brand names of some of their products:

Abbott > Abbokinase, Abbo-Pac
 Armour > Albuminar, Gammar
 Burroughs Wellcome > Wellbutrin, Wellcovorin
 Ciba > Cibacalcin, Cibalth-S
 Lederle > Lederhillin VK, Lederplex
 Ortho > Ortho-Gynol, Ortho-Novum
 Robins > Robinul, Robitussin
 Roche > Rocaltrol, Rocephin
 Sandoz > Sanorex, Sansert
 Syntex > Naprosyn, Synalar
 Winthrop > Talwin, Winstrol
 Wyeth-Ayerst > Wymox, Wytensin

Embellishments Fore and Aft

Prefixes and suffixes are distinguished from other word elements by their exclusive placement either before or after the body or semantic core of a word. Some of the stems listed in the preceding section might justifiably be considered either prefixes or suffixes, and several of them can function as either.

Prefixes in brand names are usually derived from prefixes already present in generic names. A few exceptions may be listed:

- ant(i)- 'against': Antabuse, Antivert
- bi- 'two products combined': Biavax, Bicillin
- com(bi)- 'combination product': Combipres, Comtrex
- eu- 'restoring a normal state': Eucerin, Euthroid
- max- 'maximum strength': Maxiflor, Maxzide
- neo- 'new, improved': Neothylline, Neo-Synephrine
- novo- 'new, improved': Novocain, Novolin
- nu- 'new, improved': NuLev, Numorphan
- pan- 'all, broad-spectrum': Panalgesic, Pantopon
- per- 'increased, extreme': Percodan, Pertofrane
- poly- 'many, broad-spectrum': Polycillin, Polymox
- pro- 'for, in place of': Pro-Banthine, Prostigmin

Most brand-name suffixes seem to be chosen simply because they round off the name in a way that is pleasing to the ear. Fully 25% of them end with an n sound (which may be spelled *-in*, *-ine*, *-an*, *-ane*, *-on* or *-one*). Other popular endings for brand names are *-ol*, *-ide*, and *-ate*. Most of these endings owe their frequency to the fact that they are standard chemical suffixes and thus happen to appear in many generic names.

The lexical elements used in forming brand names come into the same kinds of conflict and engender the same kinds of ambiguity that sometimes occur in formal medical terminology. Notice, for example, that the stem *lo* (which some would prefer to call a prefix) appears in both the chemical-nature and pharmaceutical-action lists above, with different meanings.

Notice also that, while the suffix *-ase* generally indicates an enzyme preparation (as in Elase and Pancrease), it has been adopted by Pharmacia as a standard ending for the names of oral hypoglycemics (Glynase, Micronase). Moreover, it incidentally appears at the end of brand names for nasal steroid sprays (Beconase, Vancenase) and for the sustained-release form of Valium, Valrelease.

A brand name may survive after its semantic basis has been lost or obscured, as also happens in more formal medical terminology. For example, Nizoral (ketoconazole) was so named by the manufacturer because it was the first antifungal of its class to be marketed in oral form. When ketoconazole was later released in topical form, the brand name Nizoral was retained. The brand name Dilantin was based on the generic name diphenylhydantoin. Although the generic name of this drug has now been changed to phenytoin, the brand name Dilantin remains unaltered.

Type initialisms as capital letters without spaces, periods, or other marks. ATS, DHE 45, EES, and MMR convey the same message as A/T/S, D.H.E. 45, E.E.S., and M-M-R, and take only about half as much time to type.

Miscellaneous Appendages

Some brand names include modifying words, abbreviations, or numerals that come after the designation of the drug and supply additional qualifying or quantifying information. An appended word often indicates a variation in the strength of a product:

- forte (Latin, 'strong'): Inflammase Forte, Thiosulfil Forte, Vicon Forte
- plus (with an additional ingredient): Calcet Plus, Dialose Plus, Esgic-Plus

A following abbreviation may supply information about the strength of a product:

- DS 'double strength': Bactrim DS, Limbitrol DS, Tolectin DS
- HP 'high potency': Ferancee-HP, Mission Prenatal H.P., Synalar-HP
- Jr. 'pediatric strength': Caltrate, Jr.; Extendryl Jr.; Unicap Jr.

about its absorption characteristics:

- LA 'long-acting': Bicillin L-A, Entex LA, Inderal LA
- SA 'sustained action': Choledyl SA, Isosorbide Dinitrate S.A., Tedral SA
- SR 'sustained release': Calan SR, Dilatrate-SR, Indocin SR

or about an additional ingredient:

- DM 'dextromethorphan': Dimetapp-DM, Robitussin-DM
- FA 'folic acid': Nestabs FA, Pramilet FA
- HC 'hydrocortisone': Carmol HC, Vanoxide-HC

Sometimes, however, a following abbreviation identifies the principal or only active ingredient of the product:

- Constant-T (theophylline)
- Deponit NTG (nitroglycerin)
- Orabase B (benzocaine)
- Orabase HCA (hydrocortisone acetate)
- Span FF (ferrous fumarate)

The abbreviation USP (United States Pharmacopeia) follows only generic names:

haloperidol tablets, USP, 0.5 mg
paregoric, USP

A numeral following a drug name usually shows the unit dose of a tablet or capsule or the concentration of a solution:

Antivert/25 (meclizine hydrochloride tablets, 25 mg)
Tavist-1 (clemastine fumarate tablets, 1 mg)
Formula B-50 (each capsule contains 50 mg each of several B vitamins)
Klor-Con 8 (potassium chloride tablets providing 8 mEq of potassium each)
Bleph-10 (sulfacetamide ophthalmic solution, 10%)
Benzac 10 (benzoyl peroxide gel, 10%)
Afrin Nasal Spray 0.05%
Albuminar-25 (albumin solution, 25%)
D.H.E. 45 (dihydroergotamine injection, 45 mg)
Pentam 300 (pentamidine injection, 300 mg)
Slo-Phyllin 80 (theophylline syrup, 80 mg/15 mL)

After the name of a combination product, doses of both ingredients may be indicated:

Triavil 2-10 (perphenazine 2 mg, amitriptyline hydrochloride 10 mg)
Novolin 70/30 (70% isophane insulin, 30% regular insulin)

Following numerals may have various other meanings:

Chlor-3: a salt substitute containing three chlorides (sodium, potassium, and magnesium)
Monistat 7: a package of 7 miconazole vaginal suppositories
Triphasil-21: a package of 21 oral contraceptive tablets
PreSun 15: a sunscreen with an ultraviolet protection factor of 15
Pneumovax 23: a pneumococcal vaccine formulated with 23 polysaccharide isolates

Several products containing codeine in combination with another analgesic are numbered to show the amount of codeine present in each tablet. Empirin with Codeine No. 3 contains aspirin and codeine phosphate, 30 mg. Phenaphen with Codeine No. 3 and Tylenol with Codeine No. 3 contain acetaminophen and codeine phosphate, 30 mg. Dolprn #3 contains both acetaminophen and aspirin along with codeine phosphate, 30 mg. Although the manufacturers' names for these products are as I have given them here, physicians almost invariably write and dictate, for example, "Tylenol No. 3" instead of using the complete name.

A Roman numeral II usually indicates an advanced or derived product:

Deconsal II, Festal II, Mylanta II

Sometimes an Arabic numeral is used for this application:

Gaviscon-2, Prelu-2 (a higher-dose form of Preludin), Tussar-2

Without Rhyme or Reason

In the material presented thus far, the alert reader will have noted a number of inconsistencies among brand names in capitalization, spacing, hyphenation, and other forms of punctuation. I offer the following examples without further comment:

All capitals:

ERYC, IBU-TAB, RID

Capitalization of second "word" without spacing:

BuSpar, CoAdvil, NegGram, OxyContin, ParaGard, WinGel

Mixed capitals and small letters:

AcipHex, AeroBID, AquaMEPHYTON, CaldeCORT, ColBENEMID, GoLYTELY, HibTITER, RhoGAM; ALternaGEL, ProHIBIT

Hyphens:

Anusol-HC but Carmol HC
Atromid-S but Betoptic S
Esgic-Plus but Dimetapp Plus
Heptavax-B but Recombivax HB
Neo-Synephrine but Neosporin
Peri-Colace but Peritinic
Pro-Banthine but Prostigmin
Transderm-Nitro but TransdermScop
Tussi-Organidin but Tussirex

Virgules:

A/T/S, Fulvicin P/G, Fulvicin U/F, Lo/Ovral, Quibron T/SR

And other oddities:

Pen Vee K, ACE + Z, K + 10, B & O Suprettes, VoSol, Diaßeta

Unfortunately not all of these variations are accurately recorded in standard reference works, some of which try to avoid difficulties by printing brand names in all capitals. Drug manufacturers themselves are not entirely consistent, sometimes using one form in labeling or advertising copy and another in professional product literature, or even vacillating between two forms in a single piece of printed material. Some brand names, including a few shown in the last section above, are virtually beyond the capacity of standard computer software. Moreover, typing names with bizarre alternations of small and capital letters or with superfluous hyphens or other marks is a tedious process full of opportunities for error.

For these reasons, it seems advisable for the transcriptionist to have a few basic principles to fall back on when in doubt as to how to type a pharmaceutical brand name. Granted that the ideal is to know the correct form and reproduce it exactly, adhering to the following simple rules should not lead to any medical inaccuracy or ambiguity.

1. Capitalize only the first letter of each word in a brand name. Eryc, Neggram, PhisoHex, Rhogam, and Tace are just as clear and unequivocal as ERYC, NegGram, pHisoHex, RhoGAM, and TACE, and perhaps a little easier on the eyes.

2. Omit hyphens inserted after prefixes or before appended words, abbreviations, or numerals. Probanthine, Neosynephrine, Constant T, Atromid S, Esgic Plus, Antivert 25, and Bleph 10 should be acceptable substitutes for Pro-Banthine, Neo-Synephrine, Constant-T, Atromid-S, Esgic-Plus, Antivert/25, and Bleph-10.

3. Type initialisms as capital letters without spaces, periods, or other marks. ATS, DHE 45, EES, and MMR convey the same message as A/T/S, D.H.E. 45, E.E.S., and M-M-R, and take only about half as much time to type.

So What's New?

An earlier version of the present article appeared in 1991. Since then several trends have become evident in the naming of new drugs. Increasing eccentricity of spelling is virtually inevitable in a field where each new product demands a name that is sufficiently distinctive to limit the risk of confusion with other products. But one feels that some kind of limit is being approached with brand names such as Aptivus, Centany, Copegus, Errin, Junel, Luniq, Striant, Tysabri,

Vfend, Xigris, and Yaz. Some of these sound more like sport or luxury car models than medicines.

One of the more striking developments has been the creation of two new classes of suffixes or endings for drug names. The members of one of these classes, which might be called feminine suffixes, are applied exclusively to products for women, chiefly oral contraceptives:

- elle: Aranelle, Cryselle, Lunelle, Vivelle
- esse: Alesse, Clindesse, Enpresse
- ette: Mircette, Nordette, Ovrette

An even more remarkable new departure has been the appearance of literally dozens of drug names ending in *-a*, none of which existed 10 years ago. The following is only a partial list: Activella, Alinia, Alora, Amitiza, Apidra, Arava, Arixtra, Avandia, Avinza, Boniva, Byetta, Camila, Cesia, Clenia, Climara, Cymbalta, Emtriva, Enjuvia, Evista, Exubera, Finacea, Frova, Glumetza, Hepsera, Inspira, Jolessa, Kaletra, Kariva, Keppra, Levitra, Luteru, Lyrica, Materna, Menactra, Meridia, Mononessa, Nelova, Orenzia, Parcopa, Portia, Prezista, Ranexa, Relenza, Renova, Rosula, Solia, Strattera, Tarka, Trinessa, Trivora, Truvada, Vaqta, Viagra, Zebeta, Zetia.

What kind of drug names does the future hold? No doubt we can expect to see more names formed with the less frequently used letters *k*, *q*, *x*, and *z*, more departures from convention (*q* without following *u*), unusual doublings (*aa*, *jj*, *yy*), and jumbings of upper- and lowercase letters. We have at least one name (Diaβeta) spelled with a Greek letter; will we move on to Hebrew and Japanese?

Specific predictions based on a system whose very essence is novelty and nonconformity aren't especially likely to come true. Let's agree on the more general surmise that the creation of pharmaceutical names will continue to be driven, as in the past, by a spirit of innovation, whimsy, and popular appeal.

John H. Dirckx, M.D., is the author of *Laboratory Tests and Diagnostic Procedures in Medicine* (2004), *Human Diseases*, 2nd ed. (2003), *H&P: A Nonphysician's Guide to the Medical History and Physical Examination*, 3rd ed. (2001), published by Health Professions Institute. He is an editorial consultant to the publisher of Stedman's medical reference books and medical editor of HPI publications.



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Students Own Dictation, Practice At Home: On-campus academic instruction but no transcription practice lab. Includes beginning, intermediate, and advanced training. Class size can be any number of students, though larger classes will qualify for larger discounts from publishers. Students buy all necessary books, software, and foot pedal. Reading and transcription practice are both completed at home. Assumes students have home PCs with Windows. Assumes transcript answer keys are unlocked or student has access to print transcripts in classroom. Allows student to progress at own pace and repeat transcription practice assignments until proficient.

Schools should purchase:

<i>Beginning Medical Transcription</i> , 2nd ed.	\$700
<i>Surgery Transcription Unit</i>	\$420
<i>Advanced Medical Transcription</i>	\$840
<i>H&P: A Nonphysician's Guide. . .</i> , 3rd ed.	One set included
<i>Human Diseases</i> , 2nd ed.	with initial purchase.
<i>Laboratory Tests & Diagnostic Procedures</i>	
<i>The Medical Transcription Workbook</i>	
Foot pedal (USB \$69; Game port \$49)	\$69
Textbooks from other publishers	\$150 *
References from other publishers	\$250 *

Cost to school for initial purchase of SUM Program software and a full set of books \$2500

* Less if your school qualifies for discounts; ask each publisher.

Students Purchase Through School Bookstore:

<i>Beginning Medical Transcription</i> , 2nd ed.	\$60
<i>Surgery Transcription Unit</i>	\$48 **
<i>Advanced Medical Transcription</i>	\$95 **
Workbook bundle of following four books:	\$100
<i>H&P: A Nonphysician's Guide. . .</i> , 3rd ed.	
<i>Human Diseases</i> , 2nd ed.	
<i>Laboratory Tests & Diagnostic Procedures</i>	
<i>The Medical Transcription Workbook</i>	
Foot pedal (USB \$69; Game port \$49)	\$69
Textbooks from other publishers	\$150 *
References from other publishers	***

Total cost to student \$525
(Buy surgery and advanced CDs when needed.)

* Less if your school qualifies for discounts; ask each publisher.

** Purchase when needed, not at beginning of year.

*** Can use classroom references in some cases.

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Schools should purchase:

Beginning Medical Transcription, 2nd ed.	\$700
20 additional workstations at \$60 each	\$1200
Surgery Transcription Unit	\$420
19 additional workstations at \$48 each	\$960
Advanced Medical Transcription	\$840
19 additional workstations at \$95 each	\$1900
H&P: A Nonphysician’s Guide. . ., 3rd ed.	One set included with initial purchase.
Human Diseases, 2nd ed.	
Laboratory Tests & Diagnostic Procedures	
The Medical Transcription Workbook	
20 Foot pedals (USB \$69; Game port \$49)	\$1380
Textbooks from other publishers (teacher’s set)	\$150 *
References from other publishers (two sets)	\$500 *

Cost to school for SUM Program software and foot pedals for 20 workstations, plus two full sets of reference books in transcription lab \$8050 **

* Less if your school qualifies for discounts; ask each publisher.
** Average cost of \$400/workstation; use year after year.

Students Purchase Through School Bookstore:

Workbook bundle of following four books:	\$100
H&P: A Nonphysician’s Guide. . ., 3rd ed.	
Human Diseases, 2nd ed.	
Laboratory Tests & Diagnostic Procedures	
The Medical Transcription Workbook	
Textbooks from other publishers	\$150 *

Total cost to student \$250
(All items should be purchased in the beginning.)

* Less if your school qualifies for discounts; ask each publisher.

Some students may still wish to purchase SUM Program CDs and a foot pedal for extra practice at home. Discounts on CDs are extended to schools only, so these purchases should go through your bookstore. Phone HPI at 209-551-2112 x 216 with any questions.

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What's New in Medicine

AcrySof Restor apodized diffractive optic posterior intraocular lens—a multifocal, permanent artificial lens. It is convex on both sides. It is folded and inserted into the eye through a tiny incision smaller than the optic diameter of the lens. After insertion, the lens gently unfolds. Also acceptable, Acrysof ReSTOR.

ActivaScrew—a fixation device for use with bone fractures, osteotomies, arthrodeses, bone grafts and osteochondral fractures of upper extremity, ankle and foot. It is made of a completely bioabsorbable material that degrades in vivo by hydrolysis into alpha-hydroxy acids that are metabolized by the body. The ActivaScrew gradually loses its strength but remains functional for at least 8 weeks. Bioabsorption takes place approximately within 2 years, thus eliminating the need for implant removal surgery.

Adacel—vaccine to prevent whooping cough in people ages 11 to 64.

Allen Brain Atlas—the first gene map of the brain.

Anderson-Hynes dismembered pyeloplasty—see *laparoscopic dismembered pyeloplasty*.

ankle joint distraction—surgical treatment for ankle arthritis. The surgery involves placing pins in the leg and the foot and mechanically distracting (pulling apart) the joint surfaces to allow them a chance to heal. Usually an arthroscopy of the ankle is done at the same time to remove any spurs or fragments of debris in the joint. Candidates for this surgery are patients under 60 years old.

apodization—a term that may be used in reference to telescope optics, lasers, and LASIK surgery. In LASIK surgery, it is a gradual reduction or blending of the diffractive step heights to distribute the appropriate amount of light to

near and distant focal points, regardless of the lighting situation, thus improving image quality while minimizing visual disturbances resulting in increased range of vision.

ArteFill—an injectable substance that is used to help smooth nasolabial folds around the mouth.

Artificial Silicon Retina (ASR) microchip—a silicon chip consisting of approximately 5,000 microscopic solar cells called “microphotodiodes” that convert light energy into electrochemical impulses. Surgically implanted behind the retina in patients with macular degeneration and retinitis pigmentosa, it enhances vision by inducing visual signals in the remaining functional cells. Powered solely by incident light, the chip is 2 mm in diameter and 25 micrometers thick, thinner than a human hair.

Ascensia breeze 2 blood glucose monitoring system.

AxSYM CORE—lab test used to detect antibodies associated with hepatitis B virus (HBV) infection.

Baker IV capsular formation after failed silicone gel implant augmentation.

balloon-occluded retrograde transvenous obliteration (BRTO)—procedure for gastric variceal bleeding.

Barid Collamend implant.

Bauer bandage—a bandage made of pure activated carbon in textile form with lower adherence to wound surfaces and deodorization properties. It is used for a variety of skin ulcers, bedsores, burns, and other wounds.

biosurgery—see *maggot therapy*.

Boostrix—vaccine to prevent whooping cough, for children ages 10-18.

BRTO—see *balloon-occluded retrograde transvenous obliteration*.

Cadwell Easynet nasal pressure module.

Chantix—drug used to help smokers kick the habit.

C-leg—a leg prosthesis, so-named because it contains a computer microprocessor in the knee that makes 50 calculations per second to adapt to the user's gait. Do not confuse with *sea legs*.

conchal cartilage butterfly graft—a method for alleviation of postrhinoplasty internal nasal valve dysfunction.

Confidence fenestrated introducer needle.

C-port distal anastomosis system—a system designed to facilitate end-to-side distal anastomosis of blood vessels during on- or off-pump coronary artery bypass surgery, decrease the time required to complete anastomoses, and improve the quality and consistency of anastomoses.

CTC (computed tomographic colonography)—a technique for detecting colonic neoplasms. CTC is reliable for detecting lesions 6 mm or larger in size. It permits evaluation of the region proximal to an occlusive growth, which is often not possible with conventional colonoscopy.

CUP (cancer of unknown primary).

da Vinci prostatectomy—a robotic prostatectomy utilizing the da Vinci Surgical System, a sophisticated robotic platform designed to enable complex surgery using an MIS approach, which consists of a surgeon's console, a patient-side cart with four interactive robotic arms, a high-performance vision system, and proprietary EndoWrist instruments. Motion scaling and tremor

See other new, difficult, and hard-to-find medical terms in the 11th edition of *Vera Pyle's Current Medical Terminology* published by Health Professions Institute, 2007. Watch for future announcements.

Update

reduction further interpret and refine the surgeon's hand movements. It is said to minimize opportunities for human error when compared with traditional approaches.

DTPA-Lys(40)-Exendin 4—a radio-labeled imaging medium used in imaging of infection and highly sensitive imaging of GLP-1 receptor-positive tissues in vivo.

Eclipse total ankle implant.

Farrzyme human high avidity anti-dsDNA enzyme immunoassay kit. fibered confocal fluorescence microscopy (FCFM)—minimally invasive technique that permits microscopic examination of bronchial epithelium with a 1-mm fiberoptic probe introduced through a bronchoscope; useful in studying premalignant lesions and airway remodeling in asthma.

Forsure One Step Dip & Read—drug screen test.

fractionated stereotactic radiotherapy (FSRT)—a treatment for brain tumors that are close to critical structures, such as the visual apparatus. Preliminary studies suggest that FSRT is a safe and effective treatment for parasellar meningiomas.

Gardasil—cervical cancer vaccine for girls and women ages 11 to 26. It prevents infection from certain strains of human papillomavirus, the main cause of cervical cancer.

Gore Dualmesh Plus Biomaterial.

Gore Mycromesh Plus Biomaterial.

Gore Propaten vascular graft.

HELEX septal occluder—a minimally invasive device intended for the closure of ostium secundum atrial septal defects using cardiac catheterization.

Hem-Com bandage—an innovative dressing used to stop bleeding from gushing wounds. It uses an organic substance from shrimp shells to help blood cells form clots.

impedance planimetry—a procedure used to study the biomechanical properties and their relationships to the sensory and motor function of the GI tract, from the esophagus to the rectum. This system measures cross-sectional area (CSA) and intraluminal pressure simultaneously and facilitates calculation of some of the biomechanical properties of the wall of the esophagus or rectum.

Inamed—a silicone-filled breast implant. The implants are available with textured and smooth surfaces and with various profiles and sizes. For use in breast reconstruction in women age 22 and older.

intervertebral body stapling—surgical treatment for scoliosis.

Isologen—an autologous “living cell therapy” dermal filler. A punch biopsy is taken from behind the patient's ear and sent to Isologen where the collagen-producing cells, called fibroblasts, are separated from the rest of the tissue, then stimulated to multiply into tens of millions of new cells. About six weeks later, 1 to 1.5 mL of cultured fibroblasts are sent back to the doctor for injection into the patient's wrinkles, lines, and scars. Generally three sets of injections will be performed, about two weeks apart. It is believed that the injected fibroblasts will continue to multiply and create new collagen that may fill dermal imperfections and wrinkles, and may reduce the signs of aging. Cryogenic storage of cultured cells may also permit patients to receive future treatments with cells that were harvested when the patient was younger.

Januvia—once-daily pill for type 2 diabetes mellitus.

Kibra gene—a human gene that affects short-term memory. Drug companies are working to reduce

age-related memory loss by manipulating this gene.

laparoscopic dismembered pyeloplasty—an operative procedure for the correction of ureteropelvic junction obstruction with less trauma than open surgery despite a longer operating time and a long learning curve. Also called *Anderson-Hynes dismembered pyeloplasty*.

LARS (laparoscopic antireflux surgery)—for treatment of GERD.

larval therapy—see *maggot therapy*.

Lotke offset osteotome—designed to remove osteophytes from the posterior femoral condyles during knee arthroplasty.

macular translocation surgery with 360-degree peripheral retinectomy (MT360)—surgical treatment for age-related macular degeneration involving a two-stage surgery. In the first procedure, the retina is rotated to shift the degenerating macula to a healthy area away from abnormally growing blood vessels and scar tissue. In the second stage, the eye is rotated to account for the ensuing tilt in a person's visual field.

maggot therapy—a carefully controlled, artificially induced benign myiasis; also known as *biosurgery*, *larval therapy*, or *maggot debridement therapy*.

magnetic chemotherapy—a technique under investigation by interventional radiologists in which magnets are used to pull chemotherapy drugs into tumors. Microscopic magnetic particles attached to cancer-killing drugs are infused through a catheter into the blood vessel that feeds the tumor. A rare earth magnet positioned over the patient's body directly above the site of the tumor pulls the drug-carrying particles out of the blood vessel so that they lodge in the tumor.

Update

MCE—see *myocardial contrast echocardiography*.

Mentor MemoryGel—a silicone gel-filled breast implant for use in breast reconstruction and also for breast augmentation in females age 22 and older.

MII—see *multichannel intraluminal impedance*.

modified Mini-Maze procedure—minimally invasive procedure to treat atrial fibrillation. During the procedure, surgeons insert instruments into the chest through several keyhole-size incisions between the ribs. With the aid of a tiny video camera, a specially designed instrument is placed around the top of one of the atria and energy is delivered to destroy the tissue near the origin of the irregular impulses. The damaged tissue disrupts the abnormal signaling pathways, stopping the irregular impulses.

molecular condom—a vaginal gel composed of molecules that are liquid at room temperature but when applied in the vagina turn into a gel and effectively coat the tissue; the gel then releases anti-HIV drugs when it comes into contact with semen during intercourse. The product is still investigational but has promise.

Mooncup—a reusable menstrual cup about 2 inches long and made from soft silicone rubber. It is worn internally like a tampon but collects menstrual fluid rather than absorbing. Unlike tampons, the Mooncup is not a disposable product, so the customer needs only one.

MT360 (macular translocation surgery with 360° peripheral retinectomy).

multichannel intraluminal impedance (MII)—a technique for evaluating esophageal function and gastroesophageal reflux (GER). The presence and character of a liquid or gas bolus can be assessed through changes in impedance (resistance to flow of current) between two elec-

trodes placed near the upper and lower ends of the esophageal lumen. The combination of this technique with esophageal manometry (MII-EM) provides simultaneous information on intraluminal pressure changes and bolus movement. The volume and acidity of esophageal refluxate in GER, as well as refluxate clearance time, can be observed by a combination of impedance testing and pH monitoring (MII-pH). MII-pH is a promising tool for assessment of GER in the postprandial period and of patients with persistent symptoms despite acid suppression therapy.

myocardial contrast echocardiography (MCE)—an ultrasound imaging technique that detects not only microvascular volume but also blood flow, the only multivariate predictor of global recovery of function (compared to SPECT and standard echo).

nanobandages—investigational ultrafine polymer nanofibers infused with chemicals that open a wound to oxygen and reduce inflammation, kill bacteria and repair slow-healing wounds faster than conventional methods.

neuro rescue—technique that involves delicately removing part of a patient's skull to allow the brain to swell instead of putting pressure on the brainstem. After closing the scalp, microballoons and medications are used to unclog any narrowed blood vessels. When swelling has subsided several months after the injury, a computer-aided model of the patient's head is used to create a hard acrylic implant to insert when closing up the skull.

nonsurgical treatment—the use of a catheter to administer drugs into diseased areas through blood vessels or body cavities with only a puncture. The catheters are guided by radiologic imaging.

NOTES (natural orifice transenteric surgery)—a gastric-bypass operation that is conducted through a hole in the stomach, reached via the mouth. It is said to leave no scar, and patients can be back to their regular activities the next day.

Oberlin's partial ulnar nerve transfer—surgical procedure for treatment of Erb's birth palsy.

Olympic Cool-Cap—designed to provide selective head cooling with mild below-normal body temperature cooling in term newborns. The main components are a cooling unit, a control unit, temperature probes, and a water-filled cap.

Omar technique—a simplified spleno-renal shunt procedure that is an alternative to the still popular Linton procedure developed in 1947. It involves dissection of the fusion fascia of Toldt and is said to help achieve good vascular control, permit easier dissection of the splenic vein, enable an ideal anastomosis, decrease intraoperative blood loss, and reduce the duration of surgery.

Paragon Z CRT rigid gas-permeable contact lens—for corneal refractive therapy.

PELD—see *percutaneous endoscopic lumbar discectomy*.

Penenberg gluteus retractors. percutaneous endoscopic lumbar discectomy (PELD)—minimally invasive slipped disk surgery, done under local anesthesia.

phakic intraocular lens (IOL)—so-called because it is applied without removing the patient's original lens. It is intended to correct myopia and some astigmatisms in patients age 21-45 who have healthy eyes and stable vision.

Piezosurgery—a device that uses piezoelectric ultrasonic technology to generate mechanical microvibrations for bone cutting and ultrasonic scaling, with minimal trauma

Update

to soft tissue. The device is supplied with sharp, smoothing and blunt insert tips for use in oral surgery, including implantology, periodontal surgery, endodontic surgery and surgical orthodontics.

Protégé GPS and Protégé RX carotid stent systems.

QMMI (Quality Measurement and Management Initiative) **score**—a clinical prediction instrument for major adverse outcomes in coronary bypass grafting. Variables to determine the score include age, gender, prior coronary bypass grafting, cardiogenic shock, ejection fraction, creatinine, and history of liver disease, stroke, COPD, and hypertension.

qPCR (real-time PCR).

Radiesse—an injectable calcium hydroxylapatite implant in the form of a gel, to temporarily add volume to facial tissue and restore a smoother appearance to the face.

RADPLAT (radiation+platinum)

protocol—an acronym used to describe an investigational therapy for advanced head and neck squamous cell carcinoma. The therapy combines intra-arterial delivery of cisplatin with systemic neutralization by IV sodium thiosulfate and concurrent radiotherapy with excellent locoregional control rates in patients with unresectable disease with a favorable side-effect profile when compared with conventional chemoradiation protocols. RADPLAT may also be of benefit in selected patients with resectable disease, allowing for preservation of organ function and quality of life without compromising locoregional control or survival.

Redler small bone caliper.

ReSTOR (or Restor) **lens**—see *AcrySof ReSTOR* apodized diffractive optic posterior intraocular lens.

Reviderm Intra—an injectable implant made of flexible dextran (a carbohydrate complex, the liquid form of which was once used in place of saline in breast implants) microbeads, 40-60 microns in size, evenly suspended in a non-animal hyaluronic acid.

Robb cement curette.

sequence-specific oligonucleotide probes (SSOP); **SSOP-ELISA method**—a lab test similar to the PCR-RFLP technique.

Sifilcon A, Sifilcon B—spherical, toric, multifocal and multifocal contact lenses.

SmartPill GI monitoring system with SmartPill pH.p capsule—a computer-aided GI monitoring system which makes use of an ingestible, wireless capsule that measures pressure, pH, and temperature as it transits the GI tract. This information is used to provide gastric emptying time, combined small and large bowel transit time, total transit time, pressure contraction patterns from the antrum and duodenum and motility indices. The procedure can be performed in a doctor's office, and patients are free to go about their normal routine during the test.

Smithwick carotid shunt.

Soliris (eculizumab)—for the treatment of paroxysmal nocturnal hemoglobinuria, a rare type of blood disorder that can lead to disability and premature death. Soliris is classified as an orphan drug.

Sorrells posterior condylar chisel.

Sorrells tibia protector plates.

SpiderFX embolic protection device—a percutaneously delivered device that can be delivered over any 0.014 inch or 0.018 inch guidewire. It contains a capture wire composed of a nitinol mesh filter mounted on a 190-cm or a convertible 190/320 cm PTFE-coated 0.014

inch stainless steel guidewire and a dual-ended SpiderFX catheter for delivery and recovery.

Stelkast Surpass—a ceramic-on-ceramic artificial hip replacement system.

Sure Grip soft tissue grasper.

Tenderflow pediatric venous return cannula—a device used to drain the right atrium and superior or inferior vena cava in pediatric patients.

Thornhill offset proximal femoral elevators.

Trilogy AB—an acetabular prosthesis used in hip replacement surgery.

TRU-MR laryngoscope set.

Turkish tulip technique—for the primary repair of bilateral cleft lips simultaneously. With this technique it is possible to lengthen the columello-prolabial complex with cleft lip repair in the same session without any intervention to any part of the nose including the columella.

ultrasound osteotomy—a term coined by orthopedic surgeons who use an ultrasound bone scalpel to perform correctional osteotomy of the metacarpal bone. See *Piezosurgery device*.

Visian ICL—a phakic intraocular lens. See phakic intraocular lens.

Wubben lateral fat pad retractor.

Xpert EV test—uses molecular biology to quickly detect the presence of viral meningitis (as opposed to the more deadly form, bacterial meningitis).

Zeus Micro Wrist robotic system.

Zolinza—drug for use in patients with T-cell lymphoma, and currently being studied for other types of blood and lymph cancers.

Zostavax—vaccine to prevent shingles, recommended for people over age 60 (who are at greatest risk of post-herpetic neuritis).

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Looking at Language

A Tense Time with Verbs

by Richard Lederer, Ph.D.

Have you heard the one about the man who went to trial for having pulled a woman down a street by the hair? When the judge asked the arresting officer, “Was she drugged?” the policeman answered, “Yes sir, a full block.” Or the one about the woman who asked a Boston cab driver where she could get scrod. “I didn’t know that the verb had that past tense,” muttered the cabbie.

Both jokes rely on the fact that verb tenses in English are crazy, fraught with a fearful asymmetry and puzzling unpredictability. Some verbs form their past tense by adding *-d*, *-ed*, or *-t*—*walk*, *walked*; *bend*, *bent*. Others go back in time through an internal vowel change—*begin*, *began*; *sing*, *sang*. Another cluster adds *-d* or *-t* and undergoes an internal vowel change—*lose*, *lost*; *buy*, *bought*. And still others don’t change at all—*set*, *set*; *put*, *put*. No wonder, then, that our eyes glaze and our breath quickens when we have to form the past tense of verbs like *dive*, *weave*, *shine*, *sneak*, and *baby-sit*.

The past tenses of verbs in our language cause so many of us to become tense that I’ve written a poem about the insanity:

The verbs in English are a fright.
How can we learn to read and write?
Today we speak, but first we spoke;
Some faucets leak, but never loke.
Today we write, but first we wrote;
We bite our tongues, but never bote.

Each day I teach, for years I taught,
And preachers preach, but never praught.
This tale I tell; this tale I told;
I smell the flowers, but never smold.

If knights still slay, as once they slew,
Then do we play, as once we plew?
If I still do as once I did,
Then do cows moo, as they once mid?

I love to win, and games I’ve won;
I seldom sin, and never son.
I hate to lose, and games I lost;
I didn’t choose, and never chost.

I love to sing, and songs I sang;
I fling a ball, but never flang.
I strike that ball, that ball I struck;
This poem I like, but never luck.

I take a break, a break I took;
I bake a cake, but never book.
I eat that cake, that cake I ate;
I beat an egg, but never bate.

I often swim, as I once swam;
I skim some milk, but never skam.
I fly a kite that I once flew;
I tie a knot, but never tew.

I see the truth, the truth I saw;
I flee from falsehood, never flaw.
I stand for truth, as I once stood;
I land a fish, but never lood.

About these verbs I sit and think.
These verbs don’t fit. They seem to wink
At me, who sat for years and thought
Of verbs that never fat or wrought.

Richard Lederer, Ph.D., is the author of more than 3,000 books and articles about language and humor. His syndicated column, “Looking at Language,” appears in newspapers and magazines throughout the United States. His new title, *Comma Sense: A Fun-damental Guide to Punctuation*, with John Shore, is now available from St. Martin’s Press. E-mail: richard.lederer@pobox.com



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