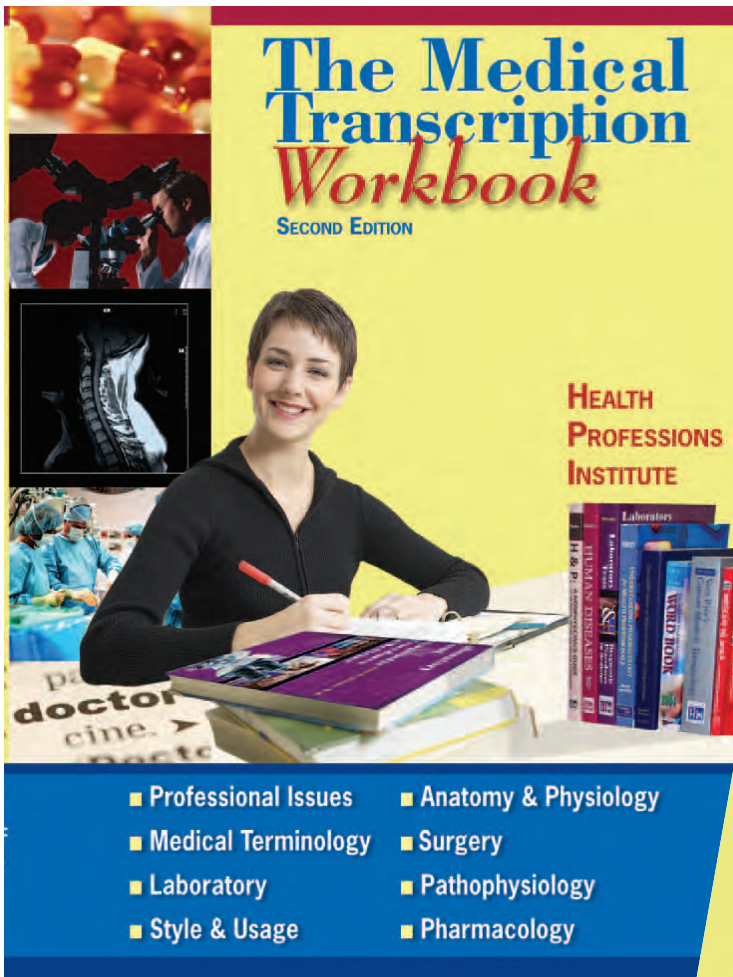
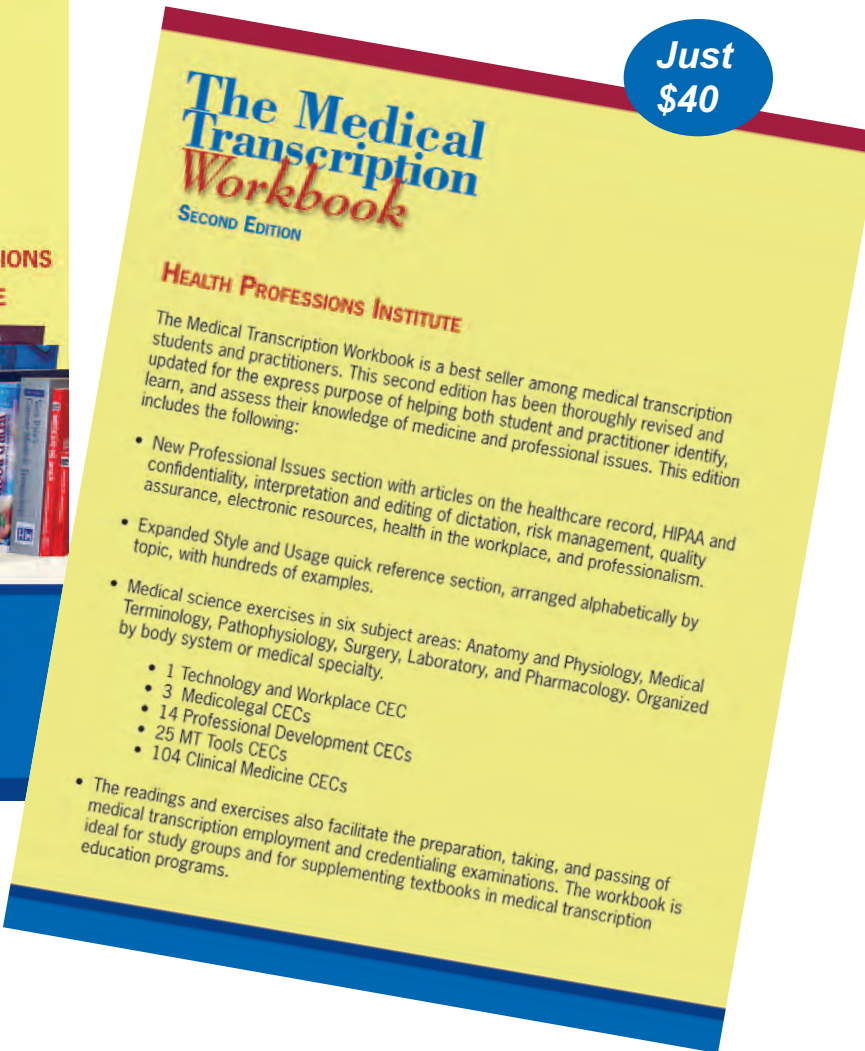


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# Pharmaceutical Nomenclature: The LAWLESS Language

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-

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*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.*

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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

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***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.***

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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 > Ledericillin 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.

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*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.*

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## 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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Adjunct Faculty  
Riverside Community College  
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### Scenario #1

## SUM Program Best Practices - Sample Order

**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&amp;P: A Nonphysician's Guide. . .</i> , 3rd ed.	One set included
<i>Human Diseases</i> , 2nd ed.	with initial purchase.
<i>Laboratory Tests &amp; 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&amp;P: A Nonphysician's Guide. . .</i> , 3rd ed.	
<i>Human Diseases</i> , 2nd ed.	
<i>Laboratory Tests &amp; 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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### Scenario #2

## SUM Program Best Practices - Sample Order

**School Owns Dictation in Transcription Practice Lab:** On-campus academic instruction and a transcription practice lab with 20 workstations. Transcription practice assignments are completed at school. Students buy all necessary textbooks, but use classroom references and SUM Program software in transcription lab. Includes beginning, intermediate, and advanced training. Assumes transcript answer keys are unlocked or student has access to print transcripts in transcription lab.

### 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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