

# Drug Nomenclature in West Africa

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During a short teaching visit to the Cameroons, it became obvious that there was more than a language difference with respect to the drugs used in the practice of medicine.

## METHOD

A list of important drugs used in Ghana had been compiled for teaching purposes. The French equivalent for each of these drugs was sought in text books (1), (2) and in the pharmaceutical guide known as Vidal, (3). Latter official names were checked in the French pharmacopea (4). The English names were also checked in text books (5), (6) and in the pharmaceutical guide known as African Mims, (7). The original list was modified to include French prototypes and frequently used French drugs. However, mixtures and preparations containing more than one active ingredient were omitted. Some 240 items have been classified under 44 headings in Table I. the non-proprietary name, or official name, is given in small letters while the proprietary name, or at least one of the proprietary names, is given with a capital letter. Both English and French names are listed for those drugs which are available in Anglophone and Francophone countries. Due to lack of space not all of the important drugs could be listed, not all of the proprietary names could be given and in some cases the salt of the active base is not mentioned. The most recently developed drugs are included even though data on their nomenclature is difficult to find.

## RESULTS

Trade names of English and French products were the same or nearly the same in 67 of the 240 drugs listed. In approximately the same number of cases the proprietary names were entirely different. Of course in some instances there was no proprietary name, epinephrine, atropine, morphine etc. And in some instances, to be mentioned later, there was no equivalent drug in one system to match the other. A few examples of the difference in trade name will suffice-chloromycetin in Anglophone countries and as Tifomycine in Francophone areas; Similarly isoproterenol is known as Norisodrine and Aleudrine respectively; and phenytoin as Epanutin and Dihydan respectively. The other 55 cases can be seen in table I.

A more confusing and unfortunate situation arises when the trade name used in one country becomes the official name in another country. This seems to be the case where phenylephrine

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has the trade name of Neosynephrine in Anglophone countries and the official name neosynephrine in Francophone countries. Mercaptopurine is known by the trade name Purinethol in English areas and by the official name, purinethol in French areas. Suxamethonium is a trade name in Francophone areas and official name in Britain.

Official names were not the same in both systems for 174 drugs but different in the case of 22 drugs. Thus the most potent antidiabetic drug is known in English as glibenclamide and in French as amiphenazole. The most widely used drug in leprosy is known in Ghana as dapsone and in Francophone areas as diaphenylsufone. It is also confusing that the cardiac glycoside called digitoxin in Britain, is called digitaline in France where digital is called digitale.

Another complication, not shown in the Table, is that an alkaloid maybe dispensed as a different salt. Thus, tablets of quinine in Anglophone countries contain the sulfate while tablets of quinine in Francophone countries contain the dihydrochloride. In this case the difference unimportant, but as will be seen later, in the case of chloroquine the salt used has a significant effect on the weight of the tablet. The duration of action of steroids is affected by the ester that is used so that the testosterone acetate. If a nitrogen atom is quaternized as, in changing from promethazine or Phenergan to thiazinium or Multergan, there may be a change in pharmacologic action. Even formulation may effect activity and toxicity.

A possible cause of error in the prescription of drugs arises when tablets of the same drug, even the same salt, contain different amounts of the active ingredient. British Nivaquine sulfate tablets contain 200 mg of sulfate or 150 mg of base. German Resochin contains 250 mg of the phosphate or 150 mg of the base. But the French Nivaquine tablets contain only 100 mg of base. British tablets of metronidazole (Flagyl) contains 200 mg while the French tablets contain 250 mg.

It is worth mentioning that there may be differences in the concentration of the active ingredient in some solutions. With sodium hypochlorite the difference between English and French preparation is small but with tincture of iodine the difference is large; two per cent iodine in Anglophone countries and five per cent iodine in Francophone areas.

There are 18 drugs in the English list not included in the French sources and 15 drugs in the French list not included in English sources. In some instances there is a reciprocal relationship. Ferrous sulfate is used in Anglophone countries and ferrous oxalate in Francophone areas, Benzalkonium in English countries is replaced by cetrivinium in French countries. Melarsoprol is used in Anglophone areas and melarsonyl in Francophone areas. Similarly carbarsone and diphetarsone are reciprocally related and both obsolete. Mercuramide appears only on the English list but mercurophylline appears on both lists. Sodium lactate solution can be placed by sodium bicarbonate for intravenous use. Ergonovine does not appear in the French list but can be replaced by methylergonovine. Thiazinium does not appear on the English list but there are many antihistamincs. Dextromoramide is a narcotic which is not used in the Anglophone countries. Similarly the antispasmodic, propyramazine, is not used in Anglophone countries. Benziodarone, a uricosuric agent, listed by the French may be replaced by probenecid. Broxyquinolein is almost identical with iodochloroquin.

This lives only two French products that are unique. One is adenosine, of doubtful value, and the other gamma hydroxyaminobutyric acid, a very useful intravenous general anesthetic that was introduced only recently.

There are ten English products that are unique. Carbenoxolone is of doubtful value in the treatment of peptic ulcer but the other agents are very useful, bethanechol to stimulate contraction of the urinary bladder, homatropine for short term dilation of the pupil, paraldehyde for the management of tetanus convulsions, pitressin for diabetes insipidus, iron sorbitol citrate (now advertised in French Journals) and iron dextran for parental administration, folinic acid for the treatment of tromexan overdosage and benzonice and salicylic acids for treating epidermophytosis.

## COMMENTARY

Vidal lists only two preparations of ephedrine containing no other ingredient but five preparations of ephedrine containing other ingredients including caffeine, lobeline, amidopyrine, bromide, phlocodeine, bromoform, sodium iodine, codethyline, belladonna, p-methoxy-cinnamate, extract guindelia or tincture drosera. African Mims lists no preparations of ephedrine alone but eleven containing other ingredients including theophylline, pheno barbitone, diprophylline, amylobarbitone, dipyrone, clemizole, phenacetin, bromvalerone, benzyphthalate, guaiphenesin, trifluoperazine, diphenylhydraline, thenyldiamine, chlormezanone, chlorphenoxamine, diethylamphenazone, papaverine, diethylaminetheophylline, camylofin, chlorphenoxamine, etamiphylline, prednisone and glyceryl guaicolate.

Competent authorities (9) have written that such "mixtures are not recommended as initial therapy or as a substitute for a single entity drug preparation unless there is definite evidence that a better response can be achieved with fewer adverse reactions in a particular patient".

Especially in developing countries, the practice of polypharmacy should be discouraged because, in addition to fostering careless diagnosis and inappropriate therapy, it imposes an unnecessary drain on the financial resources of the individual, the hospital, and the country.

The third regional conference on Tuberculosis that met in Upper Volta in December, 1972 "asked all doctors in the African Region and public health services to resist the economic pressure of pharmaceutical firms, who under diverse pretexts, would impose on Africa, in the chemotherapy of the first line, drugs that are costly and whose practical effectiveness is not superior to those drugs that are already known", (10)

## CONCLUSION

There is a need for greater international co-operation rather than for greater competition on the part of Pharmaceutical companies and Organizations. There is also a need for keen discrimination in teaching, practice and regulation of commerce in drugs. Improvements are needed in tendency for the development of polypharmacy.

**TABLE I**  
**OFFICIAL AND PROPRIETARY NAMES**

ENGLISH	FRENCH
(Cholinergic) neostigmine (Prostigmine) bethanechol (Urecholine) flurophate (Floropryl)	(Cholinergique) néostigmine (Prostigmine) fluostigmine (Diflupyl)
(Adrenergic) metariminol (Aramine) epinephrine levarterenol (Levophed) levodopa (Larodopa) ephedrine amphetamine (Durophet M) isoproterenol (Norisodrine) phenylephrine (Neosynephrine) oriprenaline (Alupent) dexamphetamine (Dexedrine)	(Adrenergique) mtéariminol (Aramine) adrénaline noradrénaline (Lévophed) lévodopa (Larodopa) (Sobiodopa) éphédrine (Ephédroides) amphétamine isoprénaline (Aleudrine) (Isoprol) néosynéphrine (Phenylephrine) oriprenaline (Alupent) dexamphétamine (Maxiton)
(Anticholinergic) atropine homatropine scopolamine = hyoscine propantheline (Probanthine) trimethophan (Arfonad) d-tubocurarine (Curarin) succinylcholine = suxamethonium (Scoline) decamethonium (Sincurine)	(Anticholinergique) atropine scopolamine (Scopos) propanthéline (Probanthine) propyramazine (Diaspasmyl) methoplégium (Arfonad) d-tubocurarine succinylcholine (Suxaméthonium) décaméthonium (Curam)
(Adrenolytic) phenolamine (Regitine) propanolol (Inderal) guanethidine (Ismelin) methyldopa (Aldomet) aloprenol (Aptin)	(AdrénoLytique) phentolamine (Regitine) propanolol (Alvocardyl) guanethidine (Isméline) méthyldopa (Aldomet) pindolol (Visken) aloprénoL (Gibernal)
(Hypnotic) phenobarbital (Gardenal) butobarbital (Soneryl) pentobarbital (Nembutal) secobarbital (Seconal) thiopental (Pentothal) methaqualone (Melsedin) chloral hydrate (Noctec) paraldehyde	(Hypnotique) phénobarbital (Gardénal) butobarbital (Sonéryl) pentobarbital (Nembutal) sécobarbital (Imménocotal) penthiobarbital (Nesdonal) (Pentothal) méthaqualone (Toraflon) chloral hydrate mecloqualone (Nubarene)
Convulsant & Anticonvulsant nikethamide (Coramine) caffeine phenytoin (Epanutin) trimethadione (Tridione)	(Convulsivant & Anticonvulsivant) nicéthamide (Coramine) caféine phénytoïne (Dihydán) triméthadione (Épidione)
(Antipyretic) acetylsalicylic acid (Aspirin) acetaminophen = paracetamol (Febrilix) phenyl butazone (Butazolidin) phenacetin	(Antipyrétique) acide acétylsalicylique (Aspirine) paracétamol (Doliprane) phénylbutazone (Butazolidine) phenacetin

Table 1 continues

ENGLISH	FRENCH
digoxin (Lanoxin) digitoxin (Crystodigin) procaine amide (Pronestyl) quinidine	digoxine (Coragoxine) digitaline procaine amide (Pronestyl) quinidine (Quinicardine)
(Vasodilators) nitroglycerine aminophylline papavarine (Pavabid) tolazoline (Priscoline)	(Vaso-dilatateurs) nitroglycerine (Trinitrine) aminophylline (Carena) papavarine tolazoline (Priscol)
(Anticoagulant) heparin (Liquaemin) ethylbiscoumacetate (Tromexan) phenindione (Dindevan) warfarin (Marevan)	(Anticoagulantes) heparine (Liquemine) biscoumacetate diéthyle (Tromexan) phenindione (Pindoine) warfarin (Coumadine)
(Diuretics) mercuraphylline (Mercuxanthin) mercuramide (Neptal) hydrochlorthiazide (Esidrex) frusemide (Lasix) acetazolamide (Diamox) ammonium chloride spironolactone (Aldactone) triamterene (Dytac) ethacrynic acid (Edecrin)	(Diuretiques) mercurophylline (Novurit) hydrochlorthiazide (Esidrex) furosemide (Lasilix) acetazolamide (Diamox) chlorure d'ammonium spironolactone (Aldactone) triamterene (Teriam) acide éthacrynique (Edecrine)
(Gout) colchicine probenecid (Benemid) allopurinol (Zyloric)	(Goute) colchicine probenecide (Benemide) benziodarone (Amplivix) allopurinol (Zyloric)
(Calcium and Vitamine D) calcium gluconate calciferol (Drisdol) cholecalciferol	(Calcium et Calciferol) gluconate de calcium ergocalciferol (Sterogyl) cholécalficerol
(Antidiabetic) insulin regular insulin zinc suspension (Lente) protamine zinc insulin chlorpropamide (Diabinase) glibenclamide (Daonil) phenformin (Insoral) metformin (Glucophage) saccharin	(Traitement du Diabete) insuline (Insulyl) insuline zinc (Lente) insuline protamine zinc (Endopancrine) chlorpropamide (Diabinese) amiphenazole (Daonil) phenformine (Insoral) metformin (Glucophage) saccharine
(Pituitary Hormones) vasopressin (Pitressin) oxytocin (Syntocin) chorionic gonadotrophin (Physex) corticotrophin (Acthar)	(Hormones Hypophysaires) oxytocine (Syntocine) gonadotrophine chorionique corticotrophine
(Uterine Drugs) ergonovine (Ergotrate) methylethergometrine (Methergin)	(Alkaloides de l'Ergot) methylethérgobasine (Methergin)
(Sex Hormones) diethylstilbestrol testosterone propionate (Neo-hombreol)	(Hormones Sexuelles) diéthylstilboestrol (Distilbene) testosterone (Sterandryl)

Table 1 continues

ENGLISH	FRENCH
digoxin (Lanoxin) digitoxin (Crystodigin) procaine amide (Pronestyl) quinidine	digoxine (Coragoxine) digitaline procaine amide (Pronestyl) quinidine (Quinidine)
(Vasodilators) nitroglycerine aminophylline papavarine (Pavabid) tolazoline (Priscoline)	(Vaso-dilatateurs) nitroglycerine (Trinitrine) aminophylline (Carena) papavarine tolazoline (Priscol)
(Anticoagulant) heparin (Liquaemin) ethylbiscoumacetate (Tromexan) phenindione (Dindevan) warfarin (Marevan)	(Anticoagulantes) heparine (Liquemine) biscoumacetate diéthylique (Tromexan) phenindione (Pindione) warfarin (Coumadine)
(Diuretics) mercuraphylline (Mercuxanthin) mercuramide (Neptal) hydrochlorothiazide (Esidrex) frusemide (Lasix) acetazolamide (Diamox) ammonium chloride spironolactone (Aldactone) triamterene (Dytac) ethacrynic acid (Edecrin)	(Diurétiques) mercurophylline (Novurit) hydrochlorothiazide (Esidrex) furosemide (Lasix) acetazolamide (Diamox) chlorure d'ammonium spironolactone (Aldactone) triamterene (Teriam) acide éthacrynique (Edecrine)
(Gout) colchicine probenecid (Benemid) allopurinol (Zyloric)	(Goute) colchicine probenecide (Benemide) benziodarone (Amplivix) allopurinol (Zyloric)
(Calcium and Vitamine D) calcium gluconate calciferol (Drisdol) cholecalciferol	(Calcium et Calciferol) gluconate de calcium ergocalciferol (Sterogyl) cholécalférol
(Antidiabetic) insulin regular insulin zinc suspension (Lente) protamine zinc insulin chlorpropamide (Diabinese) glibenclamide (Daonil) phenformin (Insoral) metformin (Glucophage) saccharin	(Traitement du Diabète) insuline (Insulyl) insuline zinc (Lente) insuline protamine zinc (Endopancrine) chlorpropamide (Diabinese) amiphenazole (Daonil) phenformine (Insoral) metformin (Glucophage) saccharine
(Pituitary Hormones) vasopressin (Pitressin) oxytocin (Syntocin) chorionic gonadotrophin (Physex) corticotrophin (Acthar)	(Hormones Hypophysaires) oxytocine (Syntocine) gonadotrophine chorionique corticotrophine
(Uterine Drugs) ergonovine (Ergotrate) methylethergometrine (Methergin)	(Alcaloïdes de l'Ergot) méthylérgobasine (Methergin)
(Sex Hormones) diethylstilbestrol testosterone propionate (Neo-hombreol)	(Hormones Sexuelles) diéthylstilboestrol (Distilbene) testosterone (Sterandryl)

Table 1 continues

ENGLISH	FRENCH
testosterone acetate (Acetosterandryl) methyltestosterone (Teston) methoxyethinylestradiol (Mestranol) norethynodrel + Mestranol (Enavid) methandrostenolone (Dianabol) clomiphene (Clomid)	acetate de testosterone (acetoster andryl) méthyltestosterone (Glossosterandryl) methoxyéthinylaestradiol (Mestranol) norethynodrel + Mestranol (Enidrel) Métandienone (Dianabol) clomifene (Clomid)
(Thyroid & Antithyroid) liothyronine (Cytomel) methimazole (Tapazole) Lugol's solution	(Thyroidienne et Antithyroidienne) tri-iodothyronine (Trithyrone) thiamazole (Basolan) solute dit de Lugol
(Adrenal Hormones) hydrocortisone (Efcortelan) prednisone (Decortisyl) dexamethasone (Decadron) fluocinolone (Synalar)	(Hormones Cortico-Surrenales) hydrocortisone (Cortomister) deltacortisone (Cortancyl) dexamethasone (Decadron) fluocinolone (Synalar)
(Antianemic Drugs) ferrous sulfate (Feosol) ferric ammonium citrate iron sorbitol citric acid (Jectofer) iron dextran (Imferon) folic acid (Folvite) folinic acid (Leucovorin)	(Medicaments Anti-anémiques) oxalate de fer citrate de fer ammociacal acide folique (Foldine) adenosine (Nucleocardyl)
(Vitamins) ascorbic acid (Ascorvel) thiamine (Benerva) riboflavine (Beflavite) vitamin A menadione sodium (Synkavit) nicotinamide (Benerva) pyridoxine hydroxycobalamine (Cobalex)	(Vitamines) acide ascorbique (Vitascorbol) thiamine (Benerva) riboflavine (B-Deugyl) retinol (Arovit) manadione sodium (Bilkavy) nicotinamide (Nicobion) pyridoxine hydroxycobalamine (Dolcelan)
(Nutrients) sodium chloride sodium bicarbonate sodium lactate potassium chloride glucose dextran (Macrodex)	(Modificateurs de Metabolisme) adenosine (Nucleocardyl) chlorure de sodium carbonate monosodique chlorure de potassium glucose dextran (Rheomacrodex)
(Chelating Agents) pralidoxime (Protopam) desferrioxamine (Desferal) dimercaprol calcium disodium edetate (Versenate)	(Chelates) pralidoxime (Contrathion) desferrioxamine B (Desferal) dimercaprol calciedetate de sodium (Calcitetra-acemate)
(Sulfonamides etc.) Sulfadiazine sulfamethoxazole (Gantanol) sulfaguanidine (Ivax) sulfacetamide (Sulamyd) dapson (Avlosulfone) nitrofurantoin (Furadantin) naledixic acid (Negram)	(Sulfamides etc.) sulfidiazine (Adiazine) sulfisomazole (Gantanol) sulfaguanidine (Ganidan) sulfacetamide (Antebor) diaphenylsulfone (Disulone) nitrofurantoin (Furandentoin) acide naledixique (Negram)

Table 1 continues

ENGLISH	FRENCH
(Penicillins)	(Penicillines)
penicillin G	penicillin G (Specilline)
procaine penicillin G (Crysticillin)	procaine penicillin G
benzathine penicillin G (Bicillin)	benzathine penicillin G (Extencillin)
the three above (Penadur)	trois (Extencillin-Bipenicillin)
penicillin V (Compocillin)	penicilline V (Dracilline)
oxacillin (Prostaphlin)	oxacilline (Bustopen)
carbenicillin (Pyopen)	
ampicillin (Penbritin)	ampicilline (Totapen) (Penbritin)
cephaloridine (Loridine)	cephaloridine (Ceporine)
(Broad Spectrum Antibiotics)	(Antibiotiques Large Spectre)
tetracycline (Tetracin)	tetracycline (Tetracyne)
chloramphenicol (Chloromycetin)	chloramphenicol (Tifomycine)
erythromycin (Ilotycin)	erythromycine (Abboticine)
(Antituberculosis Drugs)	(Drogues contre Tuberculose)
streptomycin	streptomycin
aminosalicylic acid (Pamisyl)	acide aminosalicylique
isoniazid (Nydrazid)	isoniazide (Rimifon)
thiacetazone	thiacetazone
rifampin (Rifadin)	rifampicine (Rifadine)
neomycin (Mycifradin)	neomycine
ethambutol (Myambutol)	ethambutol (Myambutol)
(Metallic Drugs)	(Metalloïdes)
antimony potassium tartrate	emetique
tryparsamide	tryparsamide
stibophen (Fuadin)	stibophene (Fouadine)
melarsoprol (Arsobal)	melarsonyl (Trimelarsen)
(Antiamoebic Drugs)	(Drogues contre l'Amibiase)
metronidazole (Flagyl)	metronidazole (Flagyl)
emetine	emetine
iodochloroquin (Enterovioform)	chloroiodoquin (Enteroviform)
	broxyquindein (Colipar)
carbarsone (Leukarsone)	diphetarzone (Bemarsal)
(Antimalarials)	(Antipaludisme)
pyrimethamine (Daraprim)	pyrimethamine (Malocide)
chloroquine (Nivaquine)	chloroquine (Nivaquine)
proguanil (Paludrine)	proguanil (Paludrine)
quinine	quinine
primaquine	primaquine
trimethoprim + sulfa (Septrin)	trimethoprim + sulfa (Bactrim)
(Anthelmintics)	(Anthelmentiques)
piperazine (Antepar)	pipérazine (Nématorazine)
bephenium (Alcopar)	béphenium (Alcopar)
niclosamide (Yomesan)	niclosamide (Trédémine)
quinacrine (Atabrine)	mépacrine (Quinacrine-)
thiabendazole (Mintezole)	
niridazole (Ambilhar)	niridazole (Ambilhar)
diethylcarbamazine (Hetrazan)	diéthylcarbamazine (Notézine)
suramin (Antrypol)	suramine (Moranyl)
(Antiseptics)	(Antiseptiques)
tincture of iodine 2%	teinture d'iode 5%
benzalkonium (Zephiran)	cétriminium (Cétavlon)



Table 1 concluded

ENGLISH	FRENCH
cresol (Lysol) sodium hypochlorite 2% thimerosal (Merthiolate)	crésol soluté de Dakin 1.5% thiomersal (Merseptyl)
(Antifungal Drugs) benzoic & salicylic acid (Whitfield) griseofulvin (Grifulvin) nystatin (Mycostatin) amphotericine B (Fungizone)	(Antimycoses) griséofulvine (Griséfulvine) nystatine (Mycostatine) amphotéricine B (Fungizone)
(Antitumour Agents) bisulfan (Myleran) cyclophosphamide (Cytosan) methotrexate mercaptopurine (Purinethol) azathiopurine (Imuran) melphalan (Alkeran)	(Drogues Anticancereux) bisulfan (Misulban) cyclophosphamide (Endoxan) améthoptérine purinéthol azathioprine (Imural) melphalan (Sarcolysine)
(Insecticides) chlorophenothane benzene hexachloride (Lorexane) benzyl benzoate pralidoxime (Protopam)	(Insecticides) chlorophenothane hexachlorocyclohexane (Aptiria) benzoate de benzyl pralidoxime (Contrathion)

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