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The selection of essential drugs

Second report of the
WHO Expert Committee

World Health Organization
Technical Report Series
641

World Health Organization Geneva 1979

ISBN 92 4 120641 1

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PRINTED IN SWITZERLAND

79/4523 — 10 000 — La Concorde

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Geneva, 2–6 July 1979

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WHO EXPERT COMMITTEE ON THE SELECTION OF ESSENTIAL DRUGS

Second Report

The WHO Expert Committee on the Selection of Essential Drugs met in Geneva from 2 to 6 July 1979. The meeting was opened on behalf of the Director-General by Dr V. Fattorusso, Director, Division of Prophylactic, Diagnostic and Therapeutic Substances.

1. INTRODUCTION

The main purpose of the meeting was to review and update the model list of essential drugs contained in the first report of the Expert Committee (WHO Technical Report Series, No. 615, 1977) by the addition or deletion of substances on the basis of the latest available knowledge and informed opinion. The criteria for the selection of essential drugs were laid down in the above-mentioned report. These criteria had been endorsed in 1978 by the World Health Assembly in resolution WHA31.32, which, recognizing the existence of wide variations in national health needs and in the degree of development of health services, also urged developing countries in particular to establish their own national lists of essential drugs.

The first report of the Committee was sent, with requests for comments, to all members of the WHO Expert Advisory Panels on Drug Evaluation and on the International Pharmacopoeia and Pharmaceutical Preparations, to the WHO regional offices, to national health authorities, and to interested international and nongovernmental organizations. The responses to this request, as well as many unsolicited comments, were collated and presented to a preparatory meeting convened in 1978. Proposals for the revision and updating of the model list were contained in the report of that meeting (unpublished WHO document DPM/79.2). Details of commonly used dosage forms and strengths selected for the drugs in the model list—a matter of obvious importance for developing countries wishing to use the model list as a basis for drawing up or revising their own national lists—as well as a number of proposals

for the eventual consideration of the Expert Committee were also included in the report of the preparatory meeting.

Finally, the provision of information on each drug in the model list for the guidance of prescribers raised a number of issues on which the advice of the Expert Committee was sought, due account being taken of the concomitant need for information and education on the proper use of the selected drugs for personnel at the different levels of health care systems.

2. GENERAL CONSIDERATIONS

In undertaking its work the Expert Committee noted the criteria for the selection of essential drugs enumerated in WHO Technical Report Series, No. 615, and recalled the following statement contained therein:

"Because of the great differences between countries, the preparation of a drug list of uniform, general applicability and acceptability is not feasible or possible. Therefore, each country has the direct responsibility of evaluating and adopting a list of essential drugs, according to its own policy in the field of health.

The list of essential drugs based on the guidelines put forward in this report is a model which can furnish a basis for countries to identify their own priorities and to make their own selection."

No modification of the initial model list was introduced unless definite advantages were considered to accrue from the change and, in some cases (e.g., the use of cimetidine in peptic ulcer, praziquantel in schistosomiasis, and timolol in glaucoma), drugs of considerable promise were omitted from the list on the ground that the currently available evidence of performance in general use in a variety of medical settings was insufficient. In every instance in which a change in the list was made a short comment was provided (see section 5). The Expert Committee considered that the list of antidotes and that of antineoplastic and immunosuppressive drugs should be fully reviewed at a future meeting on the basis of further expert opinion and documentation on the specialized use of these drugs.

3. GUIDELINES FOR THE SELECTION OF PHARMACEUTICAL FORMS

The purpose of selecting dosage forms and strengths for the drugs in the model list was to identify the most appropriate pharmaceutical forms and to give advice to countries wishing to standardize or minimize the number of preparations in their own drug lists. As a

general rule, pharmaceutical forms were selected on the basis of their general utility and their wide availability internationally. In many instances, a choice of preparations was provided, particularly in relation to solid dosage forms. It was recognized that tablets are usually less expensive than capsules, but that, while the cost factor should be taken into account, the selection should also be based on a consideration of pharmacokinetics, bioavailability, stability under ambient climatic conditions, availability of excipients, and established local preference.

In a few instances, exemplified by acetylsalicylic acid and paracetamol, a range of dosage strengths was provided from which suitable strengths should be selected on the basis of local availability and need. When precise dosage is not mandatory, the scoring of tablets was recommended as a simple method of making dosage more flexible if so required and, in some instances, to provide a convenient paediatric dose. Specific paediatric dosages and formulations were included in the list only when indicated by special circumstances. In most instances, dosage was specified in terms of a selected salt or ester but, in other instances—e.g., that of chloroquine—it was calculated, in accordance with common practice, in terms of the active moiety.

Bioavailability was reemphasized as a general problem in the quality of pharmaceutical forms and their utilization, particularly for certain drugs, such as digoxin and phenytoin (see WHO Technical Report Series, No. 536, 1974). It was felt that governments should be aware of possible shortcomings in the quality of pharmaceutical formulations when selecting drug products either of local manufacture or of foreign provenance.

4. REVISED MODEL LIST OF ESSENTIAL DRUGS

Explanatory Notes*

I. Numbers in parentheses following the drug names indicate:

(1) Listed as an example of this therapeutic category: choose cheapest effective drug product acceptable;

(2) Specific expertise, diagnostic precision or special equipment required for proper use;

* The numbers preceding the drug groups and subgroups in the model list (e.g., 11; 17.6.2) have been allocated, in accordance with the English alphabetical order, for convenience in referring to the various categories; they have no formal significance.—ED.

(3) Greater potency;
(4) In renal insufficiency, contraindicated or dosage adjustments necessary;
(5) To improve compliance;
(6) Special pharmacokinetic properties for purpose;
(7) Adverse effects diminish benefit/risk ratio;
(8) Limited indications or narrow spectrum of activity;
(9) For epidural anaesthesia;
(10) Drugs subject to international control under the Single Convention on Narcotic Drugs (1961) and the Convention on Psychotropic Substances (1971).

II. Letters in parentheses following the drug names indicate the reasons for the inclusion of *complementary drugs*:

(A) When drugs in the main list cannot be made available;
(B) When drugs in the main list are known to be ineffective or inappropriate for a given individual;
(C) For use in rare disorders or in exceptional circumstances.

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
	1. Anaesthetics	
	1.1 *General anaesthetics and oxygen*	
ether, anaesthetic (2)		inhalation
halothane (2)		inhalation
nitrous oxide (2)		inhalation
oxygen		inhalation (medicinal gas)
thiopental (2)		powder for injection, 0.5 g, 1.0 g (sodium salt) in ampoule
	1.2 *Local anaesthetics*	
bupivacaine (1, 2, 9)		injection, 0.25%, 0.5% (hydrochloride) in vial
lidocaine (1)		injection, 1%, 2% (hydrochloride) in vial
		injection, 1%, 2% + epinephrine 1:100 000 in vial
		topical forms, 2–4% (hydrochloride)

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
2. Analgesics, Antipyretics, Nonsteroidal Antiinflammatory Drugs and Drugs Used to Treat Gout		
acetylsalicylic acid		tablet, 100–500 mg suppository, 50–150 mg
allopurinol (4)		tablet, 100 mg
ibuprofen (1)		tablet, 200 mg
indometacin		capsule or tablet, 25 mg
paracetamol		tablet, 100–500 mg suppository, 100 mg
	colchicine (B, C) (7)	tablet, 0.5 mg
	probenecid (B, C)	tablet, 500 mg
3. Analgesics, Narcotics and Narcotic Antagonists		
morphine (10)		injection, 10 mg (sulfate or hydrochloride) in 1-ml ampoule
naloxone		injection, 0.4 mg (hydrochloride) in 1-ml ampoule
	pethidine (A) (1,4,10)	injection, 50 mg (hydrochloride) in 1-ml ampoule
4. Antiallergics		
Antihistamines		
chlorphenamine (1)		tablet, 4 mg (maleate)
5. Antidotes		
5.1 *General*		
charcoal, activated		powder
ipecacuanha		syrup, containing 0.14% ipecacuanha alkaloids calculated as emetine
5.2 *Specific*		
atropine		injection, 1 mg (sulfate) in 1-ml ampoule

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
	5. Antidotes *(continued)*	
	5.2 *Specific* (continued)	
deferoxamine		injection, 500 mg (mesilate) in vial
dimercaprol (2)		injection in oil, 50 mg/ml in 2-ml ampoule
sodium calcium edetate (2)		injection, 200 mg/ml in 5-ml ampoule
sodium nitrite		injection, 30 mg/ml in 10-ml ampoule
sodium thiosulfate		injection, 250 mg/ml in 50-ml ampoule
	methylthioninium chloride (C)[b]	injection, 10 mg/ml in 10-ml ampoule
	penicillamine (C) (2)	capsule or tablet, 250 mg
	6. Antiepileptics	
diazepam		injection, 5 mg/ml in 2-ml ampoule
ethosuximide		capsule or tablet, 250 mg
phenobarbital (10)		tablet, 50 mg, 100 mg syrup, 15 mg/5 ml
phenytoin		capsule or tablet, 25 mg, 100 mg (sodium salt)
		injection, 50 mg (sodium salt)/ml in 5-ml vial
	carbamazepine (B, C)	tablet, 200 mg
	valproic acid (B, C) (2,4,7)	tablet, 200 mg (sodium salt)
	7. Antiinfective Drugs	
	7.1 *Amoebicides*	
metronidazole		tablet, 200–500 mg
	diloxanide (A)	tablet, 500 mg (furoate)

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

[b] Synonym: methylene blue.

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
	7. Antiinfective Drugs *(continued)*	
	7.1 *Amoebicides* (continued)	
	emetine (A, B) (1,7)	injection, 60 mg (hydrochloride) in 1-ml ampoule
	paromomycin (B)	capsule, 250 mg (as sulfate) syrup, 125 mg (as sulfate)/5 ml
	7.2 *Anthelmintic drugs*	
mebendazole		tablet, 100 mg
niclosamide		tablet, 500 mg
piperazine		tablet, 500 mg (citrate or adipate)
		elixir or syrup (as citrate) equivalent to 500 mg hydrate/5 ml
tiabendazole		chewable tablet, 500 mg
	bephenium hydroxy-naphthoate (B) (8)	granules, 5 g (equivalent to 2.5 g bephenium)
	7.3 *Antibacterial drugs*	
ampicillin (1,4)		capsule or tablet, 250 mg, 500 mg (anhydrous)
		powder for oral suspension, 125 mg (anhydrous)/5 ml
		powder for injection, 500 mg (as sodium salt) in vial
benzathine benzylpenicillin (5)		injection, 1.44 g benzylpenicillin (=2.4 million IU)/5 ml in vial
benzylpenicillin		powder for injection, 0.6 g (=1 million IU), 3.0 g (=5 million IU) (as sodium or potassium salt) in vial
chloramphenicol (7)		capsule, 250 mg
		powder for injection, 1 g (as sodium succinate) in vial
cloxacillin (1)		capsule, 500 mg (as sodium salt)
		powder for injection, 500 mg (as sodium salt) in vial

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
	7. Antiinfective Drugs *(continued)*	
	7.3 *Antibacterial drugs* (continued)	
erythromycin		capsule or tablet, 250 mg (as stearate or ethylsuccinate)
		oral suspension, 125 mg (as stearate or ethylsuccinate)/5 ml
		powder for injection, 500 mg (as lactobionate) in vial
gentamicin (4)		injection, 10 mg, 40 mg (as sulfate)/ml in 2-ml vial
metronidazole		tablet, 200–500 mg
phenoxymethylpenicillin		tablet, 250 mg (as potassium salt)
		powder for oral suspension, 250 mg (as potassium salt)/5 ml
salazosulfapyridine (2)		tablet, 500 mg
sulfadimidine (1,4)		tablet, 500 mg oral suspension, 500 mg/5 ml injection, 1 g (sodium salt) in 3-ml ampoule
sulfamethoxazole + trimethoprim (4)		tablet, 100 mg + 20 mg, 400 mg + 80 mg
tetracycline (1,4)		capsule or tablet, 250 mg (hydrochloride)
	amikacin (B, C) (1,4)	injection, 250 mg (sulfate)/ml in 2-ml ampoule
	doxycycline (B) (5,6)	capsule or tablet, 100 mg (as hydrochloride) injection, 100 mg (as hydrochloride)
	nitrofurantoin (A, B) (4,7)	tablet, 100 mg
	procaine benzylpenicillin (A) (7)	powder for injection, 1 g (= 1 million IU), 3 g (= 3 million IU)
	7.4 *Antifilarial drugs*	
diethylcarbamazine		tablet, 50 mg (citrate)
suramin sodium		injection, 1 g in vial

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
	7. Antiinfective Drugs *(continued)*	
	7.5 *Antileprosy drugs*	
dapsone		tablet, 100 mg
	clofazimine (B)	capsule, 100 mg
	rifampicin (B)	capsule or tablet, 150 mg, 300 mg
	7.6 *Antimalarials*	
chloroquine (1)		tablet, 150 mg (as phosphate or sulfate) syrup, 50 mg (as phosphate or sulfate)/5 ml
primaquine		tablet, 7.5 mg, 15 mg (as phosphate)
pyrimethamine		tablet, 25 mg
quinine		tablet, 300 mg (as bisulfate or sulfate) injection, 300 mg (as dihydrochloride)/ml in 2-ml ampoule or 250 mg (as formiate) in 1-ml ampoule
	sulfadoxine + pyrimethamine (B)	tablet, 500 mg + 25 mg
	7.7 *Antischistosomals*	
metrifonate		tablet, 100 mg
niridazole (7,8)		tablet, 100 mg, 500 mg
oxamniquine		capsule, 250 mg syrup, 250 mg/5 ml
	antimony sodium tartrate (B)	injection, 60 mg in 1-ml ampoule
	sodium stibocaptate (B)	injection, 500 mg
	7.8 *Antitrypanosomals*	
melarsoprol (5)		injection, 3.6% solution
nifurtimox		tablet, 30 mg, 120 mg, 250 mg
pentamidine (5)		powder for injection, 200 mg (isetionate or mesilate)
suramin sodium		powder for injection, 1 g in vial

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
	7. Antiinfective Drugs *(continued)*	
	7.9 *Antituberculosis drugs*	
ethambutol		tablet, 100–500 mg (hydrochloride)[c]
isoniazid		tablet, 100 mg–300 mg
rifampicin		capsule or tablet, 150 mg, 300 mg
streptomycin (4)		injection, 1 g (as sulfate)
	7.10 *Leishmaniacides*	
pentamidine (5)		powder for injection, 200 mg (isetionate or mesilate)
sodium stibogluconate		injection, 33%, equivalent to 10% antimony, in 30-ml vial
	7.11 *Systemic antifungal drugs*	
amphotericin B		injection, 50 mg in vial
griseofulvin (8)		tablet or capsule, 125 mg, 250 mg
nystatin		tablet, 500 000 IU
	flucytosine (B) (1,4,8)	tablet or capsule, 250 mg
	8. Antimigraine Drugs	
ergotamine (2,7)		tablet, 2 mg (as tartrate)
	9. Antineoplastic and Immunosuppressive Drugs	
azathioprine (2)		tablet, 50 mg powder for injection, 100 mg (as sodium salt) in vial
bleomycin (2)		powder for injection, 15 mg (as sulfate) in vial
busulfan (2)		tablet, 2 mg
calcium folinate (2)[d]		tablet, 15 mg injection, 3 mg/ml in 10-ml ampoule

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

[c] Two strengths are required for individual dose adjustment.

[d] Drug for "rescue therapy" with methotrexate.

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
9. Antineoplastic and Immunosuppressive Drugs *(continued)*		
chlorambucil (2)		tablet, 2 mg
cyclophosphamide (2)		tablet, 25 mg powder for injection, 500 mg in vial
cytarabine (2)		powder for injection, 100 mg in vial
doxorubicin (1,2)		powder for injection, 10 mg, 50 mg (hydrochloride) in vial
fluorouracil (2)		injection, 50 mg/ml in 5-ml ampoule
methotrexate (2)		tablet, 2.5 mg (as sodium salt) injection, 50 mg (as sodium salt) in vial
procarbazine (2)		capsule, 50 mg (as hydrochloride)
vincristine (2)		powder for injection, 1 mg, 5 mg (sulfate) in vial
10. Antiparkinsonism Drugs		
levodopa		tablet or capsule, 250 mg
trihexyphenidyl (1)		tablet, 2 mg, 5 mg (hydrochloride)
	levodopa + carbidopa (B) (1,5,6)	tablet, 100 mg + 10 mg, 250 mg + 25 mg
11. Blood, Drugs Affecting the		
11.1 *Antianaemia drugs*		
ferrous salt (1)		tablet, equivalent to 60 mg iron (as sulfate or fumarate)
folic acid (2)		tablet, 1 mg injection, 1 mg in 1-ml ampoule
	iron dextran (B) (1,5)	injection, equivalent to 50 mg iron/ml in 2-ml ampoule
hydroxocobalamin (1,2)		injection, 1 mg in 1-ml ampoule
11.2 *Anticoagulants and antagonists*		
heparin (2)		injection, 1000 IU/ml, 25 000 IU/ml in 5-ml ampoule

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
11. Blood, Drugs Affecting the *(continued)*		
11.2 *Anticoagulants and antagonists* (continued)		
phytomenadione		injection, 10 mg/ml in 5-ml ampoule
protamine sulfate (2)		injection, 10 mg/ml in 5-ml ampoule
warfarin (1,2,6)		tablet, 5 mg (sodium salt)
12. Blood Products and Blood Substitutes		
12.1 *Plasma substitute*		
dextran 70		injectable solution, 6%
12.2 *Plasma fractions for specific uses*		
albumin, human normal (2,8)		injectable solution, 25%
	antihaemophilic fraction[e] (C) (2,8)	(dried)
	fibrinogen (C) (2,8)	(dried)
	plasma protein (C) (2,8)	injectable solution, 5%
	factor IX complex (coagulation factors II, VII, IX, X, concentrate) (C) (2,8)	(dried)
13. Cardiovascular Drugs		
13.1 *Antianginal drugs*		
glyceryl trinitrate		tablet (sublingual) 0.5 mg
isosorbide dinitrate (1)		tablet (sublingual) 5 mg
propranolol (1)		tablet, 10 mg, 40 mg (hydrochloride) injection, 1 mg (hydrochloride) in 1-ml ampoule

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

[e] Synonym: factor VIII.

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
13. Cardiovascular Drugs *(continued)*		
	13.2 *Antiarrhythmic drugs*	
lidocaine		injection, 20 mg (hydrochloride)/ml in 5-ml ampoule
procainamide (1)		tablet, 500 mg (hydrochloride) injection, 100 mg (hydrochloride)/ml in 10-ml ampoule
propranolol (1)		tablet, 10 mg, 40 mg (hydrochloride) injection, 1 mg (hydrochloride) in 1-ml ampoule
	quinidine (A, B) (1)	tablet, 200 mg (sulfate)
	13.3 *Antihypertensive drugs*	
hydralazine (1)		tablet, 50 mg (hydrochloride)
hydrochlorothiazide (1)		tablet, 50 mg
propranolol (1)		tablet, 40 mg (hydrochloride)
sodium nitroprusside (1,2,8)		injection, 10 mg/ml in 5-ml vial
	methyldopa (A, B) (7)	tablet, 250 mg
	reserpine (A) (1,7)	tablet, 0.1 mg, 0.25 mg injection, 1 mg in 1-ml ampoule
	13.4 *Cardiac glycosides*	
digoxin (4)		tablet, 0.0625 mg, 0.25 mg oral solution, 0.05 mg/ml injection, 0.25 mg/ml in 2-ml ampoule
	digitoxin (B) (6)	tablet, 0.05 mg, 0.1 mg oral solution, 1 mg/ml injection, 0.2 mg in 1-ml ampoule
	13.5 *Drugs used in shock or anaphylaxis*	
dopamine (2)		injection, 40 mg (hydrochloride)/ml in 5-ml vial

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
13. Cardiovascular Drugs *(continued)*		
13.5 *Drugs used in shock or anaphylaxis* (continued)		
epinephrine[f]		injection, 1 mg (as bitartrate) in 1-ml ampoule[f]
	isoprenaline (C)	injection, 1 mg (hydrochloride)/ml in 2-ml ampoule
14. Dermatological Drugs		
14.1 *Antiinfective drugs*		
neomycin + bacitracin (1)		ointment, 5 mg neomycin + 500 IU bacitracin zinc/g
14.2 *Antiinflammatory drugs*		
betamethasone (1,3)		ointment or cream, 0.1% (as valerate)
hydrocortisone (1)		ointment or cream, 1% (acetate)
14.3 *Astringents*		
aluminium acetate		solution 13% for dilution
14.4 *Fungicides*		
benzoic acid + salicylic acid		ointment or cream, 6% + 3%
miconazole (1)		ointment or cream, 2% (nitrate)
nystatin		ointment or cream, 100 000 IU/g
14.5 *Keratoplastic agents*		
coal tar		solution, topical 20%
salicylic acid		solution, topical 5%
14.6 *Scabicides and pediculicides*		
benzyl benzoate		lotion, 25%
gamma benzene hexachloride		cream or lotion, 1%

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester in brackets is preceded by the word "as".

[f] Epinephrine is the L-isomer. Appropriate dosage adjustment is required when the racemic form (racepinefrine) is used.

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
15. Diagnostic Agents		
edrophonium (2,8)		injection, 10 mg (chloride) in 1-ml ampoule
tuberculin, purified protein derivative (PPD)		injection
15.1 *Ophthalmic*		
fluorescein		eye drops, 1% (sodium salt)
15.2 *Radiocontrast media*		
adipiodone meglumine (1)		injection, 25% in 20-ml vial
barium sulfate (1)		powder
iopanoic acid (1)		tablet, 500 mg
meglumine amidotrizoate (1)		injection, 60% in 20-ml ampoule
sodium amidotrizoate (1)		injection, 50% in 20-ml ampoule
16. Diuretics		
amiloride (1)		tablet, 5 mg (hydrochloride)
furosemide (1)		tablet, 40 mg injection, 10 mg/ml in 2-ml ampoule
hydrochlorothiazide (1)		tablet, 50 mg
mannitol		injectable solution, 10%, 20%
	chlortalidone (B) (6)	tablet, 50 mg
17. Gastrointestinal Drugs		
17.1 *Antacids* (nonsystemic)		
aluminium hydroxide		tablet, 500 mg oral suspension, 320 mg/5 ml
magnesium hydroxide		oral suspension, equivalent to 550 mg magnesium oxide/10 ml
	calcium carbonate (A, B)	tablet, 600 mg

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
17. Gastrointestinal Drugs *(continued)*		
17.2 *Antiemetics*		
promethazine (1)		tablet, 10 mg, 25 mg (hydrochloride) elixir or syrup, 5 mg (hydrochloride)/5 ml injection, 25 mg (hydrochloride)/ml in 2-ml ampoule
17.3 *Antihaemorrhoidals*		
local anaesthetic, astringent and antiinflammatory drug (1)		ointment or suppository
17.4 *Antispasmodics*		
atropine (1)		tablet, 1 mg (sulfate) injection, 1 mg (sulfate) in 1-ml ampoule
17.5 *Cathartics*		
senna (1)		tablet, 7.5 mg (sennosides)
17.6 *Diarrhoea*		
17.6.1 *Antidiarrhoeal*		
codeine (1, 10)		tablet, 30 mg (phosphate)
17.6.2 *Replacement solution*		
oral rehydration salts (for glucose-salt solution)		
For 1 litre of water:		(sachet) mmol/l
sodium chloride (table salt)		3.5 g, Na^+ 90
sodium bicarbonate (baking soda)		2.5 g, HCO_3^- 30
potassium chloride		1.5 g, K^+ 20
glucose (dextrose)		20.0 g, glucose 111

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
	18. Hormones	
	18.1 *Adrenal hormones and synthetic substitutes*	
dexamethasone (1)		tablet, 0.5 mg, 4 mg injection, 4 mg (sodium phosphate) in 1-ml ampoule
hydrocortisone		powder for injection, 100 mg (as sodium succinate) in vial
prednisolone (1)		tablet, 5 mg
	fludrocortisone (C)	tablet, 0.1 mg (acetate)
	18.2 *Androgens*	
testosterone (2)		injection, 200 mg (enantate) in 1-ml ampoule injection 25 mg (propionate) in 1-ml ampoule
	18.3 *Estrogens*	
ethinylestradiol (1)		tablet, 0.05 mg
	18.4 *Insulins*	
compound insulin zinc suspension (1)		injection, 40 IU/ml in 10-ml vial, 80 IU/ml in 10-ml vial
insulin injection		injection, 40 IU/ml in 10-ml vial, 80 IU/ml in 10-ml vial
	18.5 *Oral contraceptives*	
ethinylestradiol + levonorgestrel (1)		tablet, 0.03 mg + 0.15 mg, 0.05 mg + 0.25 mg

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
	18. Hormones *(continued)*	
	18.5 *Oral contraceptives* (continued)	
ethinylestradiol + norethisterone (1)		tablet, 0.05 mg + 1.0 mg
	norethisterone (B)	tablet, 0.35 mg
	18.6 *Progestogens*	
norethisterone (1)		tablet, 5 mg
	18.7 *Thyroid hormones and antagonists*	
levothyroxine		tablet, 0.05 mg, 0.1 mg (sodium salt)
potassium iodide		tablet, 60 mg
propylthiouracil (1)		tablet, 50 mg
	18.8 *Ovulation inducer*	
	clomifene (C) (2,8)	tablet, 50 mg (citrate)
	19. Immunologicals	
	19.1 *Sera and immunoglobulins*	
anti-D immunoglobulin (human)		injection, 0.25 mg/ml
antirabies hyperimmune serum		injection, 1000 IU in 5-ml ampoule
antivenom sera		injection
diphtheria antitoxin		injection, 10 000 IU, 20 000 IU in vial
immunoglobulin, human normal (2)		injection
tetanus antitoxin		injection, 50 000 IU in vial

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]	
19. Immunologicals *(continued)*			
19.2 *Vaccines*			
19.2.1 *For universal immunization*			
BCG vaccine (dried)		injection	All vaccines should comply with the WHO Requirements for Biological Substances[g]
diphtheria-pertussis-tetanus vaccine		injection	
diphtheria-tetanus vaccine		injection	
measles vaccine		injection	
poliomyelitis vaccine (live attenuated)		oral solution	
smallpox vaccine		multiple puncture	
tetanus vaccine		injection	
19.2.2 *For specific groups of individuals*			
influenza vaccine		injection	
meningococcal vaccine		injection	
rabies vaccine		injection	
typhoid vaccine		injection	
yellow fever vaccine		injection	
20. Muscle Relaxants (Peripherally Acting) and Cholinesterase Inhibitors			
neostigmine (1)		tablet, 15 mg (bromide) injection, 0.5 mg (metilsulfate) in 1-ml ampoule	
suxamethonium (2)		injection, 50 mg (chloride)/ml in 2-ml ampoule	

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester is preceded by the word "as".

[g] Dried BCG Vaccine (Revised 1978) (WHO Technical Report Series, No. 638, 1979); Diphtheria Toxoid, Pertussis Vaccine, Tetanus Toxoid, and Combined Vaccines (Revised 1978) (WHO Technical Report Series, No. 638, 1979); Measles Vaccine (Live) and Measles Vaccine (Inactivated) (WHO Technical Report Series, No. 329, 1966); Poliomyelitis Vaccine (Oral) (Revised 1971) (WHO Technical Report Series, No. 486, 1972); Smallpox Vaccine (WHO Technical Report Series, No. 323, 1966); Tetanus Toxoid (Revised 1978) (WHO Technical Report Series, No. 638, 1979); Influenza Vaccine (Inactivated) (Revised 1978) (WHO Technical Report Series, No. 638, 1979); Meningococcal Polysaccharide Vaccine (WHO Technical Report Series, No. 594, 1976), Addendum 1977, incorporating Addendum 1976 (WHO Technical Report Series, No. 626, 1978); Rabies Vaccine for Human Use (WHO Technical Report Series, No. 530, 1973), Revision available 1980; Typhoid Vaccine (WHO Technical Report Series, No. 361, 1967); Yellow Fever Vaccine (Revised 1975) (WHO Technical Report Series, No. 594, 1976).

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
20. Muscle Relaxants (Peripherally Acting) and Cholinesterase Inhibitors *(continued)*		
tubocurarine (1,2)		injection, 10 mg (chloride)/ml in 1.5-ml ampoule
	pyridostigmine (B) (2,8)	tablet, 60 mg (bromide) injection, 1 mg (bromide) in 1-ml ampoule
21. Ophthalmological Preparations		
21.1 *Antiinfective*		
silver nitrate		solution (eye drops) 1%
sulfacetamide		eye ointment, 10% (sodium salt) solution (eye drops), 10% (sodium salt) eye ointment, 1% (hydrochloride)
21.2 *Antiinflammatory*		
hydrocortisone (2,7)		eye ointment, 1% (acetate)
21.3 *Local anaesthetics*		
tetracaine (1)		solution (eye drops), 0.5% (hydrochloride)
21.4 *Miotics*		
pilocarpine		solution (eye drops), 2%, 4% (hydrochloride or nitrate)
21.5 *Mydriatics*		
homatropine (1)		solution (eye drops), 2% (hydrobromide)
	epinephrine (A, B) (2)	solution (eye drops), 2% (as hydrochloride)
21.6 *Systemic*		
acetazolamide		tablet, 250 mg

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
	22. Oxytocics	
ergometrine (1)		tablet, 0.2 mg (maleate) injection, 0.2 mg (maleate) in 1-ml ampoule
oxytocin		injection, 10 IU in 1-ml ampoule
	23. Peritoneal Dialysis Solution	
intraperitoneal dialysis solution (of appropriate composition)		parenteral solution
	24. Psychotherapeutic Drugs	
amitriptyline (1)		tablet, 25 mg (hydrochloride)
chlorpromazine (1)		tablet, 100 mg (hydrochloride) syrup, 25 mg (hydrochloride)/5 ml injection, 25 mg (hydrochloride)/ml in 2-ml ampoule
diazepam (1)		tablet, 5 mg
fluphenazine (1,5)		injection, 25 mg (decanoate or enantate) in 1-ml ampoule
haloperidol (1)		tablet, 2 mg injection, 5 mg in 1-ml ampoule
lithium carbonate (2,4,7)		capsule or tablet, 300 mg
	25. Respiratory Tract, Drugs Acting on the	
	25.1 *Antiasthmatic drugs*	
aminophylline (1)		tablet, 200 mg injection, 25 mg/ml in 10-ml ampoule
epinephrine		injection, 1 mg (as hydrochloride) in 1-ml ampoule

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
25. Respiratory Tract, Drugs Acting on the *(continued)*		
25.1 *Antiasthmatic drugs* (continued)		
salbutamol (1)		tablet, 4 mg (sulfate) oral inhalation (aerosol), 0.1 mg (sulfate) per dose syrup, 2 mg (sulfate)/5 ml
	beclometasone (B) (8)	oral inhalation (aerosol), 0.05 mg (dipropionate) per dose
	cromoglicic acid (B) (2,8)	oral inhalation (cartridge), 20 mg (sodium salt) per dose
	ephedrine (A)	tablet, 30 mg (as hydrochloride) elixir, 15 mg (as hydrochloride)/5 ml injection, 50 mg (sulfate) in 1-ml ampoule
25.2 *Antitussives*		
codeine (10)		tablet, 10 mg (phosphate)
26. Solutions Correcting Water, Electrolyte and Acid-Base Disturbances		
26.1 *Oral*		
oral rehydration salts (for glucose-salt solution)		For composition, see 17.6.2 *Replacement solution*
potassium chloride		oral solution
26.2 *Parenteral*		
compound solution of sodium lactate		injectable solution
glucose		injectable solution, 5% isotonic, 50% hypertonic
glucose with sodium chloride		injectable solution, 4% glucose, 0.18% sodium chloride (Na^+ 30 mmol, Cl^- 30 mmol/l)
potassium chloride		injectable solution

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester is preceded by the word "as".

Main list	*Complementary drugs*	*Route of administration, pharmaceutical forms and strengths*[a]
26. Solutions Correcting Water, Electrolyte and Acid-Base Disturbances *(continued)*		
	26.2 *Parenteral* (continued)	
sodium bicarbonate		injectable solution, 1.4% isotonic (Na^+ 167 mmol/l, HCO_3^- 167 mmol/l)
sodium chloride		injectable solution, 0.9% isotonic (Na^+ 154 mmol/l, Cl^- 154 mmol/l)
water for injection		in 2-ml, 5-ml, 10-ml ampoules
27. Surgical Disinfectants		
chlorhexidine (1)		solution, 5% (gluconate) for dilution
iodine (1)		solution, 2.5%
28. Vitamins and Minerals		
ascorbic acid		tablet, 50 mg
ergocalciferol (1)		capsule or tablet, 1.25 mg (50 000 IU) oral solution, 0.25 mg/ml (10 000 IU)
nicotinamide (1)		tablet, 50 mg
pyridoxine		tablet, 25 mg (hydrochloride)
retinol		capsule or tablet, 7.5 mg (25 000 IU), 60 mg (200 000 IU)[h] oral solution, 15 mg/ml (50 000 IU)
riboflavin		tablet, 5 mg
sodium fluoride		tablet, 1.1 mg
thiamine		tablet, 50 mg (hydrochloride)
	calcium gluconate (c) (2,8)	injection, 100 mg/ml in 10-ml ampoule

[a] When the strength is specified in terms of a selected salt or ester, this is mentioned in brackets; when it refers to the active moiety, the name of the salt or ester is preceded by the word "as".

[h] For use in the treatment of xerophthalmia with a single dose, not to be repeated before 4 months have elapsed.

* Complementary drug.

* Complementary drug.

* Complementary drug.

* Complementary drug.

5. CHANGES INTRODUCED IN THE REVISION OF THE MODEL LIST

5.1 Review of the explanatory notes

In undertaking the revision of the model list, the Expert Committee considered that the explanatory notes provided on page 20 of the first report (WHO Technical Report Series, No. 615),

qualifying the inclusion of certain drugs within the list, should be modified.

Notes (4), (6) and (10) were amended as follows:

" (4) In renal insufficiency, contraindicated or dosage adjustments necessary [this enabled drugs, generally contraindicated in renal insufficiency (e.g., tetracycline, nitrofurantoin) to be accommodated within the list without ambiguity];

(6) Special pharmacokinetic properties for purpose;

(10) Drugs subject to international controls under the Single Convention on Narcotic Drugs (1961) and the Convention on Psychotropic Substances (1971)."

Furthermore, the Expert Committee considered that the reasons for including each complementary drug within the list should be mentioned, and the following revised text was adopted to replace the last paragraph of the explanatory notes referred to above:

"Letters in parentheses following the drug names indicate the reasons for the inclusion of *complementary drugs*:

(A) When drugs in the main list cannot be made available;

(B) When drugs in the main list are known to be ineffective or inappropriate for a given individual;

(C) For use in rare disorders or in exceptional circumstances."

5.2 Detailed review of the model list

After careful consideration of the model list appearing in the first report (WHO Technical Report Series, No. 615) the following amendments (in alphabetical order) were adopted by the Expert Committee:

albumin, human normal (group 12.2): was added, with notes (2, 8), to the main list of plasma fractions for specific uses.

allopurinol (group 2): note (6) was replaced by note (4).

amikacin (group 7.3): notes (B, C) were added to this complementary antibacterial drug.

amiloride (group 16): was added, with note (1), to the main list, since it is an effective diuretic with potassium sparing property.

amodiaquine: was deleted from the list of antimalarials (group 7.6), because of its similarity to chloroquine, to which note (1) was

added to indicate that amodiaquine is an acceptable alternative.

ampicillin (group 7.3): note (4) was added to this antibacterial drug.

antidotes (group 5): under this heading a number of drugs were added, but the Expert Committee felt that the whole list should be reviewed at a future meeting on the basis of detailed documentation on their specialized use.

antihaemophilic fraction (group 12.2): was added, with notes (C) and (2, 8), to the list of complementary plasma fractions for specific uses.

antimony sodium tartrate (group 7.7): was added, with note (B), to the list of complementary antischistosomal drugs, since it is effective and cheap.

antineoplastic and immunosuppressive drugs (group 9): under this heading a number of drugs were added and one was deleted, but the Expert Committee felt that the whole list should be reviewed at a future meeting on the basis of detailed documentation on the specialized use of these drugs.

antivenom sera (group 19.1): replaced the designation "Snake antivenom" to indicate that the selection of antivenoms (snake, scorpion, fish), either specific or polyvalent, should be determined on the basis of local needs.

azathioprine (group 9): was added, with note (2), to the main list of antineoplastic and immunosuppressive drugs.

beclometasone (group 25.1): was added, with notes (B) and (8), to the list of complementary antiasthmatic drugs, for nonsystemic, corticosteroid prophylaxis of asthma attacks.

benzoic acid + salicylic acid: was transferred from keratoplastic agents (group 14.5) to fungicides (group 14.4).

benzyl benzoate (group 14.6): was transferred from the complementary to the main list of scabicides and pediculicides, because of its low toxicity and general availability.

bephenium hydroxynaphthoate (group 7.2): note (B) was added to this complementary anthelmintic drug.

bleomycin (group 9): was added, with note (2), to the main list of antineoplastic and immunosuppressive drugs.

bupivacaine (group 1.2): note (1) was added to indicate that similar local anaesthetics exist.

calcium carbonate (group 17.1): was added, with notes (A, B), to the list of complementary antacids (nonsystemic), since it acts rapidly and is inexpensive.

calcium folinate (group 9): was added, with note (2), to the main list of antineoplastic and immunosuppressive drugs, since it is needed for "rescue therapy" in patients treated with methotrexate.

calcium gluconate (2) (group 28): was transferred from the main list of vitamins and minerals to the complementary list, with notes (C) and (8) added, since it is indicated only in the emergency treatment of hypocalcaemic tetany.

carbamazepine (group 6): notes (B, C) were added to this complementary antiepileptic drug.

chlorambucil (group 9): was added, with note (2), to the main list of antineoplastic and immunosuppressive drugs.

chlorhexidine (group 27): was added, with note (1), to the main list under the new heading "surgical disinfectants".

chlormethine: was deleted from the main list of antineoplastic and immunosuppressive drugs (group 9), since it offers no clear advantage over the other drugs listed.

chloroquine (group 7.6): note (1) was added to this drug to indicate that it can be replaced by amodiaquine, previously listed as a complementary antimalarial drug.

chlortalidone (group 16): note (B) was added to this complementary diuretic drug.

clofazimine (group 7.5): note (B) was added to this complementary antileprosy drug.

clomifene (group 18.8): was added, with notes (C) and (2, 8), as a complementary drug under the new subheading "ovulation inducer".

cloxacillin (group 7.3): the comment "penicillinase-resistant" was deleted.

codeine (group 17.6.1): notes (1, 10) were added.

colchicine (group 2): notes (B, C) were added to this complementary drug used to treat gout.

compound insulin zinc suspension (group 18.4): "lente" was deleted.

cromoglicic acid (group 25.1): was added, with notes (B) and (2, 8), to the list of complementary antiasthmatic drugs for the prophylaxis of asthma attacks.

cyanocobalamin: was replaced by hydroxocobalamin (1, 2) in the main list of antianaemia drugs (group 11.1); note (1) after hydroxocobalamin indicates that cyanocobalamin is an acceptable alternative.

cytarabine (group 9): was added, with note (2), to the main list of antineoplastic and immunosuppressive drugs.

deferoxamine (group 5.2): was added to the main list of antidotes, for use in the treatment of iron poisoning and chronic iron overload—e.g., haemolytic anaemias.

dexamethasone (group 18.1): the comment "long-acting" was deleted.

dextran 40: was replaced by dextran 70 as a plasma substitute (group 12.1).

diazoxide injection: was deleted from the main list of antihypertensive drugs (group 13.3), since it is covered by note (1) after sodium nitroprusside.

digitoxin (group 13.4): notes (B) and (6) were added to this complementary cardiovascular drug.

diloxanide (group 7.1): note (A) was added to this complementary amoebicidal drug.

doxorubicin (group 9): note (1) was added to this antineoplastic drug.

doxycycline (group 7.3): note (B) was added to this complementary antibacterial drug.

emetine (group 7.1): notes (A, B) and (1) were added to this complementary amoebicidal drug, since there are alternative drugs, such as dehydroemetine.

ephedrine (group 25.1): note (A) was added to this complementary antiasthmatic drug.

epinephrine (group 21.5): was added, with notes (A, B) and (2), as a complementary mydriatic drug, since it is used in the treatment of glaucoma; it was also included in the main list of drugs used in shock or anaphylaxis (group 13.5).

ergocalciferol (group 28): note (1) was added to indicate that colecalciferol is an acceptable alternative.

ergotamine (group 8): notes (2, 7) were added to this antimigraine drug.

ethinylestradiol + levonorgestrel (group 18.5): was added, with note (1), to the main list of oral contraceptives.

factor IX complex (coagulation factors II, VII, IX and X, concentrate) (group 12.2): was added, with notes (C) and (2, 8), to the list of complementary plasma fractions for specific uses.

fibrinogen (group 12.2): was added, with notes (C) and (2, 8), to the list of complementary plasma fractions for specific uses.

flucytosine (group 7.11): notes (B) and (4) were added to this complementary systemic antifungal drug.

fludrocortisone (group 18.1): note (C) was added to this complementary hormonal drug.

fluorescein (group 15.1): was added to the main list of diagnostic agents.

furosemide (group 16): note (1) was added to indicate that similar diuretics are available.

guanethidine: was deleted from the main list of antihypertensive drugs (group 13.3), since it offers no clear advantage over the other drugs listed.

hexavitamin: was deleted from the main list of vitamins and minerals (group 28) and its components (ascorbic acid, ergocalciferol, nicotinamide, retinol, riboflavin and thiamine) were listed as separate entries. Vitamins are considered part of nutrition and vitamin preparations should not be used indiscriminately. Although no multivitamin preparation can be recommended for general use, some groups of people may benefit from a particular combination of vitamins, but this should be worked out for each particular problem.

hydralazine (group 13.3): note (1) was added to this antihypertensive drug, since it can be replaced by equivalent drugs, such as prazosin.

hydrocortisone (group 14.2): note (1) was added to this dermatological drug.

hydroxocobalamin (group 11.1): with notes (1, 2) replaces cyanocobalamin in the main list of antianaemia drugs; note (1) indicates that cyanocobalamin is an acceptable alternative.

influenza vaccine (group 19.2.2): was added to the main list of vaccines, for use during pandemics for chronically ill individuals who are specially at risk and for those responsible for maintaining essential services.

intraperitoneal dialysis solution (group 23): the comment "(1.5% glucose)" was replaced by "(of appropriate composition)", since different solutions are needed.

iodine: was transferred from dermatological drugs (group 14) to surgical disinfectants (group 27).

ipecacuanha (group 5.1): was added to the main list of antidotes as a drug to induce emesis.

iron dextran (group 11.1): notes (B) and (1) were added to this complementary antianaemia drug.

isoprenaline (group 13.5): note (C) was added to this complementary drug used in shock or anaphylaxis.

levodopa + carbidopa (group 10): with notes (B) and (1) replaced levodopa + peripheral decarboxylase inhibitor in the list of complementary antiparkinsonism drugs; note (1) indicates that levodopa + benserazide is an acceptable alternative.

lidocaine (group 1.2): note (1) was added to this drug to indicate that equivalent local anaesthetics are available.

meningococcal vaccine (group 19.2.2): was added to the main list of vaccines for prophylaxis during meningococcal epidemics.

methyldopa (group 13.3): notes (A, B) were added to this complementary antihypertensive drug.

methylthioninium chloride (synonym: methylene blue) (group 5.2): was added, with note (C), to the list of complementary antidotes, for use in the treatment of methaemoglobinaemia.

metronidazole (group 7.3): was included in the main list of antibacterial drugs because of its value against anaerobic organisms.

morphine (group 3): note (10) was added to this drug in the main list of analgesics, narcotics and narcotic antagonists.

neomycin + bacitracin (group 14.1): note (1) was added to this dermatological drug, to indicate that alternative drugs can be used.

neostigmine (group 20): note (1) was added to this drug in the main list of muscle relaxants (peripherally acting) and cholinesterase inhibitors.

nicotinamide (group 28): was added, with note (1), to the main list of vitamins and minerals.

niridazole (group 7.7): notes (7, 8) were added to this antischistosomal drug.

nitrofurantoin (group 7.3): was added, with notes (A, B) and (4, 7), to the list of complementary antibacterial drugs, since it is an effective and inexpensive drug for the treatment of urinary-tract infections.

norethisterone (group 18.5): was added, with note (B), to the list of complementary oral contraceptives, to provide, when needed, a contraceptive containing progesterone only.

oxygen (group 1.1): was added to the main list under a new heading, "general anaesthetics and oxygen".

paromomycin (group 7.1): note (B) was added to this complementary amoebicidal drug.

penicillamine (group 5.2): was added, with notes (C) and (2), to the list of complementary antidotes, for use in heavy-metal poisoning.

pethidine (group 3): notes (A) and (4, 10) were added to this drug in the list of complementary analgesics, narcotics and narcotic antagonists.

phenobarbital (group 6): note (10) was added to this antiepileptic drug.

phentolamine: was deleted from the list of complementary antihypertensive drugs (group 13.3), since it poses special problems in use and there is little need for it.

plasma protein (group 12.2): was added, with notes (C) and (2, 8), to the list of complementary plasma fractions for specific uses.

podophyllin: was deleted from the list of complementary keratoplastic agents (group 14.5) because of its low benefit/risk ratio.

potassium chloride (group 26.2): the previously recommended strength was deleted.

pralidoxime: was deleted from the main list of antidotes (group 5), because atropine alone is sufficient in the treatment of organophosphate poisoning and because pralidoxime poses special problems in use.

prednisolone (group 18.1): note (1) was added to indicate that prednisone is an acceptable alternative.

probenecid (group 2): was added, with notes (B, C), to the list of complementary analgesics, antipyretics, nonsteroidal antiinflammatory drugs and drugs used to treat gout, because it is a uricosuric useful in the treatment of gout; in addition, it is used in the treatment of gonorrhoea together with penicillin(s).

procainamide (group 13.2): note (1) was added to this drug because other antiarrhythmic drugs are similarly effective.

procaine benzylpenicillin (group 7.3): note (A) was added to this complementary antibacterial drug.

procarbazine (group 9): was added, with note (2), to the main list of antineoplastic and immunosuppressive drugs.

pyridostigmine (group 20): note (B) was added to this complementary drug in the list of muscle relaxants (peripherally acting) and cholinesterase inhibitors.

quinidine (group 13.2): was transferred from the main list of antiarrhythmic drugs to the complementary list; notes (A, B) and (1) were added, since other antiarrhythmic drugs are similarly effective.

reserpine (group 13.3): notes (A) and (1) were added to this complementary antihypertensive drug, since it can be replaced by other rauwolfia preparations and derivatives.

riboflavin (group 28): was added to the main list of vitamins and minerals.

rifampicin (group 7.5): note (B) was added to this complementary antileprosy drug.

salazosulfapyridine: note (2) was added to this antibacterial drug, to indicate that the diagnosis of ulcerative colitis should be proved before the drug is used.

salicylic acid (group 14.5): was added to the main list of keratoplastic agents, since it is effective, commonly used and inexpensive.

snake antivenom: see under *antivenom sera* (group 19.1).

sodium bicarbonate (group 26.2): the concentration was reduced to 1.4% (isotonic).

sodium fluoride (group 28): was added to the main list of vitamins and minerals for use in the prophylaxis of dental caries where water supplies are not fluoridated.

sodium nitrite (group 5.2): was added to the main list of antidotes for treatment of cyanide poisoning.

sodium nitroprusside (group 13.3): was added, with notes (1, 2, 8), to the main list of antihypertensive drugs, for emergency use in hypertensive crises.

sodium stibocaptate (group 7.7): note (B) was added to this complementary antischistosomal drug.

sodium thiosulfate (group 5.2): was added to the main list of antidotes, for use in the treatment of cyanide poisoning.

spironolactone: was deleted from the main list of diuretics (group 16), since it can be replaced by amiloride.

streptomycin (group 7.9): note (4) was added to this antituberculosis drug.

sulfadiazine: was deleted from the list of complementary antibacterial drugs (group 7.3), since it has no clear advantage over sulfadimidine, for which, however, it is an acceptable alternative.

sulfadimidine (group 7.3): note (4) was added to this antibacterial drug.

sulfadoxine + pyrimethamine (group 7.6): with note (B) replaced sulfadoxine alone in the list of complementary antimalarial drugs, since it is more effective against resistant plasmodia.

sulfamethoxazole + trimethoprim (group 7.3): note (4) was added to this antibacterial drug.

testosterone (group 18.2): the comment "ester injection" was deleted.

tetrachloroethylene: was deleted from the list of complementary anthelmintic drugs (group 7.2), since it has a low benefit/risk ratio.

thiamine (group 28): was added to the main list of vitamins and minerals.

thioacetazone: was deleted from the list of complementary antituberculosis drugs (group 7.9) because of its doubtful efficacy.

triamterene: was deleted from the main list of diuretics (group 16), since it can be replaced by amiloride.

valproic acid (group 6): was added, with notes (B, C) and (2, 4, 7), to the list of complementary antiepileptic drugs.

yellow fever vaccine (group 19.2.2): was added to the main list of vaccines, for the protection of individuals moving to and from endemic areas.

* * *

NOTE: In its review of the model list, the Expert Committee used the international nonproprietary (generic) names for drugs or pharmaceutical substances whenever these were available. (See *International Nonproprietary Names (INN) for Pharmaceutical Substances: Cumulative List No. 5*, Geneva, World Health Organization, 1977. Further lists of proposed and recommended INN are issued periodically as supplements to the *WHO Chronicle*; the latest list of proposed INN (List 42) and of recommended INN (List 18) appeared as supplements to the *WHO Chronicle*, 1979, Vol. 33, No. 9 and No. 10 respectively.)

6. TRANSFER OF INFORMATION ON ESSENTIAL DRUGS

The need for accurate and objective information about each drug in the national lists of essential drugs which would be appropriate to the needs of consumers and all levels of professional personnel involved with drug procurement and use was underscored in WHO Technical Report Series, No. 615. Comprehensive drug information sheets—similar to the model presented in that report—which are approved by responsible national drug regulatory agencies are now required as a condition of the licensing of products in several countries; abstracts of information from these sources that are relevant to drugs of international interest are included in *Drug Information*—a bulletin issued periodically by WHO in the form of a mimeographed document.

Having regard to the rapid development of this source of national documentation and to the widely varying conditions under which drugs are licensed and used in different countries, the Expert Committee felt that many problems of harmonization would arise in adapting this information in a comprehensive manner to subserve international needs. It was therefore considered that the transfer of information on essential drugs generated at the international level should focus predominantly on the rationale for the selection and the recommended use of each drug included in the model list.

Seminars or workshops organized in developing countries on the selection and use of essential drugs, particularly in primary health care, could help in identifying the type of basic information that should accompany the model list in order to make it more useful and easier to understand.

Finally, the Expert Committee also stressed the importance of an exchange of information with the pharmaceutical industry on the drugs included in the model list in order to ensure the availability of raw materials and of the most appropriate and economical pharmaceutical forms to meet the health needs of developing countries.

ACKNOWLEDGEMENTS

The Expert Committee wishes to record its appreciation of the contributions made by the following persons: Dr S. Butera, Medical Officer, Division of Prophylactic, Diagnostic and Therapeutic Substances, WHO, Geneva, Switzerland; and Dr W. B. Wanandi, Scientist, Drug Policies and Management, WHO, Geneva, Switzerland.