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Primary Health Care Formulary

Prepared by

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for the

*U. S. Agency for
International Development*

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THIS FORMULARY WAS PREPARED

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The inclusion of certain brand names in this publication does not constitute an endorsement or recommendation by the U. S. Government in preference to others for the generic drugs appearing in this formulary. The approved commercial labelling of pharmaceuticals in the U. S. is under continuous review by the Food and Drug Administration. Consequently, this agency should be consulted for additional information on approved drugs, especially on newer drugs attaining generic status following expiration of their patent.

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.. February 1985 ..

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PREFACE

In a November 3, 1981, report to Dr. James Shepperd, AFR/DR/HN, Dr. Rosalyn C. King, then assigned to AFR/DR/HN and now with ST/HEA, proposed technical guidelines for providing basic medicines in rural primary health-care projects in Africa. In considering relevant problems in drug product selection where AID financial support is involved, the project formulary concept was advanced by Dr. King. It was intended that such a formulary would serve as a "source document for training, as a continuing reference text, and as a mechanism for minimizing duplication of drugs stored." Such a formulary was also intended to serve as a basis for answering project design questions on which drugs should be given priority in AID-assisted health projects.

During 1982, Dr. Albert Wertheimer of the University of Minnesota College of Pharmacy was engaged to draft a formulary document. Dr. Wertheimer was a technical consultant to the World Health Organization (WHO) in developing the WHO Model List of Drugs for Primary Health Care. His preliminary draft of August 27, 1982, served as a main source document for the first A.I.D. Primary Health Care Formulary, which was compiled by the present author in 1983. Additional materials were provided by Dr. King, and the author compiled several new sections and monographs for one or more antacids, laxatives, oral contraceptives and vaccines. The drug monographs were revised, updated and expanded.

New sections compiled by the author for the first edition of this Formulary included: preface, list of abbreviations and acronyms, introduction, list of selected references, glossary, indexes, tables and appendices.

Following a 1984 review of the first edition Formulary by AID's Health Sector Council, the author was engaged to compile shelf-life and illustrative price data for pharmaceutical preparations included in the formulary monographs, as well as provide information on expiry dating and its use in assuring drug product quality.

In January, 1985, the author was assigned to carry out a second revision of the formulary. In the current document:

- Only generic drugs with an approved New Drug Application (NDA) in the U.S. are included.
- The monographs are correlated with the "WHO Model List of Essential Drugs" and the "List of Basic Drug Requirements" in the WHO Emergency Health Kit.

- Data on drugs which cross the placental barrier and which are excreted in the milk of nursing mothers, are now included in the individual drug monographs as well as presented in separate tabular form to facilitate training and use.
- The "Contraindications" and "Remarks" sections of the monographs were consolidated with expanded cautionary information into a newly titled "Cautions and Warnings" section.
- The "Side-Effects" section has been renamed "Adverse Reactions".
- Shelf-life information has been included.
- The "suggested levels of use" tabulation has been updated and expanded from three to four levels -- the village dispensary, the rural clinic, the district health center, and the regional hospital.
- In special cases, dosages for infants and children are presented by age, weight and height. For some medications, dosages are given by weight and height for persons over 12 years of age. Such dosages are presented in convenient tabular form.

The monographs were written with the needs and special circumstances of less developed countries (LDCs) in mind and are based on current information from the literature. For instance, information on dosing and administration is related to diseases prevalent in the LDCs or tropical countries, where applicable, and dosing is given both in dosage units (metric) and in terms of quantities of the dosage form which will provide the desired dosage.

Proprietary or brand names are for illustrative purposes only and do not represent an endorsement of any particular product by the U. S. Agency for International Development or the author. Since all drugs included in the Primary Health Care Formulary are generic, the proprietary names cited are not intended to be exhaustive nor should they be considered to enjoy preferred status.

This formulary also incorporates suggestions on how the formulary may be used, illustrative price data and a discussion on expiry dating and its value in controlling pharmaceutical stock quality.

Information on prices and the procurement of pharmaceuticals and vaccines by U.S.A.I.D. was obtained through interviews with and from documents supplied by Mr. Kwyn Abrahams, chief of the Surveillance and Evaluation Division, and Mr. Theodore LaFrance, foreign service officer, both of the Office of Commodity Management, A.I.D./Washington. More current pricing information was obtained from the current edition of AMERICAN DRUGGIST BLUE BOOK. Because such information is in a constant state of change, price data in this Formulary should be viewed as being illustrative and, for instance, suitable for training purposes but not for procurement.

Dr. James Shelton and Ms. Anita Dorflinger, both of the AID Office of Population, conducted a special review of the monographs on the oral contraceptives; and Mr. Larry Cooper of the AID Office of Health, reviewed the monographs for antimalarial drugs. Ms. Sally Coghlan, information director for the PRITECH Project, and staff assisted in the preparation of the monograph on ORS by providing pertinent reference materials for the author's use.

Technical information included in this document is based on the official pharmaceutical compendia of the U.S., the commercial labelling of various manufacturers and current standard drug information references.

-- Ira C. Robinson, Ph.D.
Washington, D.C.

February 28, 1985

ABBREVIATIONS AND ACRONYMS*

■ ■ ■ ■ ■

AFRO	=	African Regional Organization
AID	=	Agency for International Development
BDL	=	Basic Drug List
C	=	Centigrade
CNS	=	Central Nervous System
CDC	=	Centers for Disease Control (U.S.)
DEA	=	Drug Enforcement Administration
DI	=	Drug Information
ECG	=	Electrocardiogram
EDL	=	Essential Drug List
F	=	Fahrenheit
FDA	=	Food and Drug Administration
GI	=	Gastrointestinal
HEA	=	Office of Health
HN	=	Office of Health and Nutrition
HSD	=	Health Services Delivery
IM	=	Intramuscular
IND	=	Investigational New Drug Application
IV	=	Intravenous
LDC	=	Less Developed Country
MOH	=	Ministry of Health; Minister of Health
NDA	=	New Drug Application (U.S.)
NF	=	National Formulary of the U.S.
PHC	=	Primary Health Care
ORS	=	Oral Rehydration Salts
ORT	=	Oral Rehydration Therapy
S&T	=	Bureau of Science and Technology
TBA	=	Traditional Birth Attendant
UNIPAC	=	United Nations Children's Fund Supply Division, Packaging and Assembly Centre
USP/U. S. P.	=	United States Pharmacopeia
VHW	=	Village Health Worker
WHO	=	World Health Organization
v/v	=	Volume to Volume
w/v	=	Weight to Volume
w/w	=	Weight to Weight

*See prefatory section on "Weights and Measures" for other abbreviations used in weighing and measuring. Also see Appendix E, "Illustrative Pharmaceutical Prices", for abbreviations used to describe dosage formulation type, strength and size.

WEIGHTS AND MEASURES

METRIC MEASURE

1 kilogram	=	1000 grams
1 gram (Gm.)	=	1000 milligram
1 milligram (mg.)	=	0.001 Gm.
1 microgram (mcg.)	=	0.001 mg.
1 gamma	=	1 mcg.
1 liter	=	1000 ml.
1 cc.	=	1 milliliter (ml.)

APOTHECARY WEIGHT

1 scruple	=	20 grains
1 drachm	=	3 scruples
	=	60 grains
1 ounce	=	8 drachms
	=	24 scruples
	=	480 grains
1 pound	=	12 ounces
	=	96 drachms
	=	288 scruples
	=	5760 grains

CONVERSION FACTORS

1 gram	=	15.4 gr.
1 grain	=	64.8 mg.
1 ounce (Avoir.)	=	28.35 Gm.
	=	437.5 gr.
1 ounce (Apoth.)	=	31.1 Gm.
	=	480 gr.
1 pound (Avoir.)	=	453.6 Gm.
1 kilogram	=	2.68 lbs. (Apoth.)
	=	2.20 lbs. (Avoir.)
1 fluid ounce (fl. oz.)	=	29.57 ml.
1 fluid drachm	=	3.697ml.
1 minim	=	0.06 ml.

COMMON MEASURES

1 teaspoonful	=	5 ml.
	=	1/6 fl. oz.
1 tablespoonful	=	15 ml.
	=	1/2 fl. oz.
1 wineglassful	=	60 ml.
	=	2 fl. oz.
1 teacupful	=	120 ml.
	=	4 fl. oz.
1 tumblerful	=	240 ml.

. HOW TO MAKE PERCENTAGE SOLUTIONS

Percentage concentrations of solutions may be expressed as follows, in accordance with the United States Pharmacopeias:

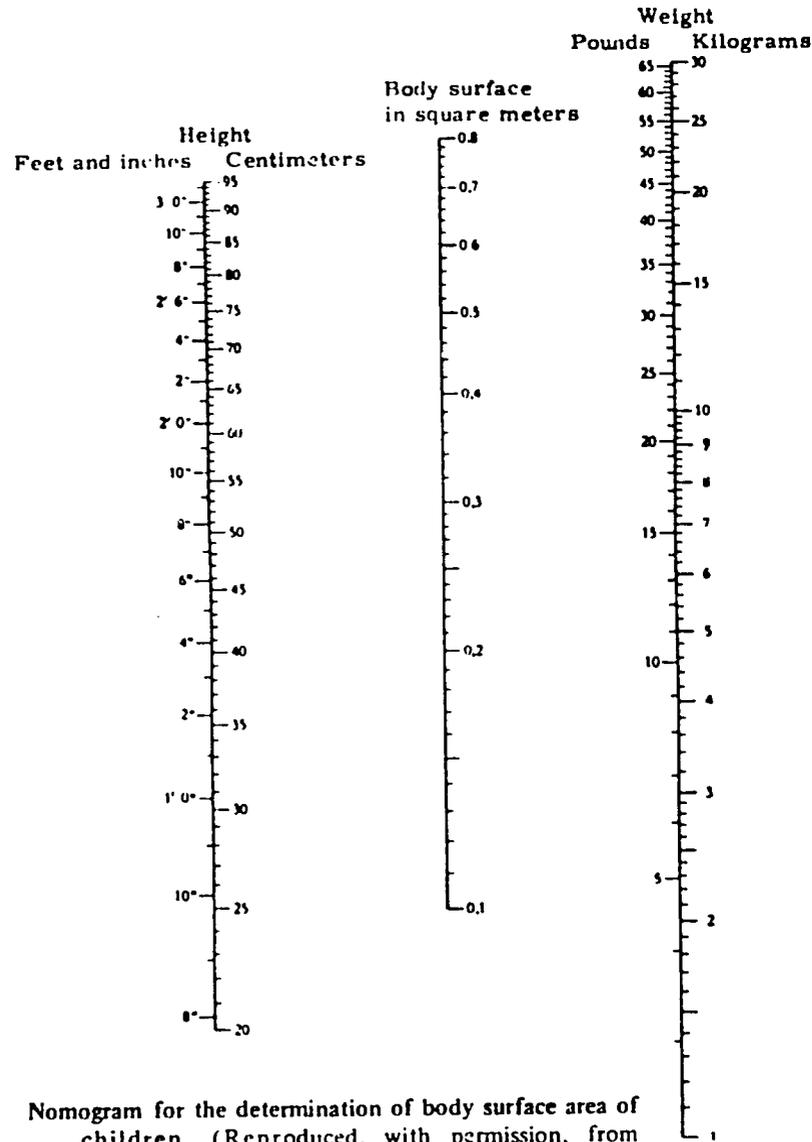
Per cent "weight in weight" (w/w) expresses the number of grams of an active constituent in 100 grams of solution.

Per cent "weight in volume" (w/v) expresses the number of grams of an active constituent in 100 milliliters of solution.

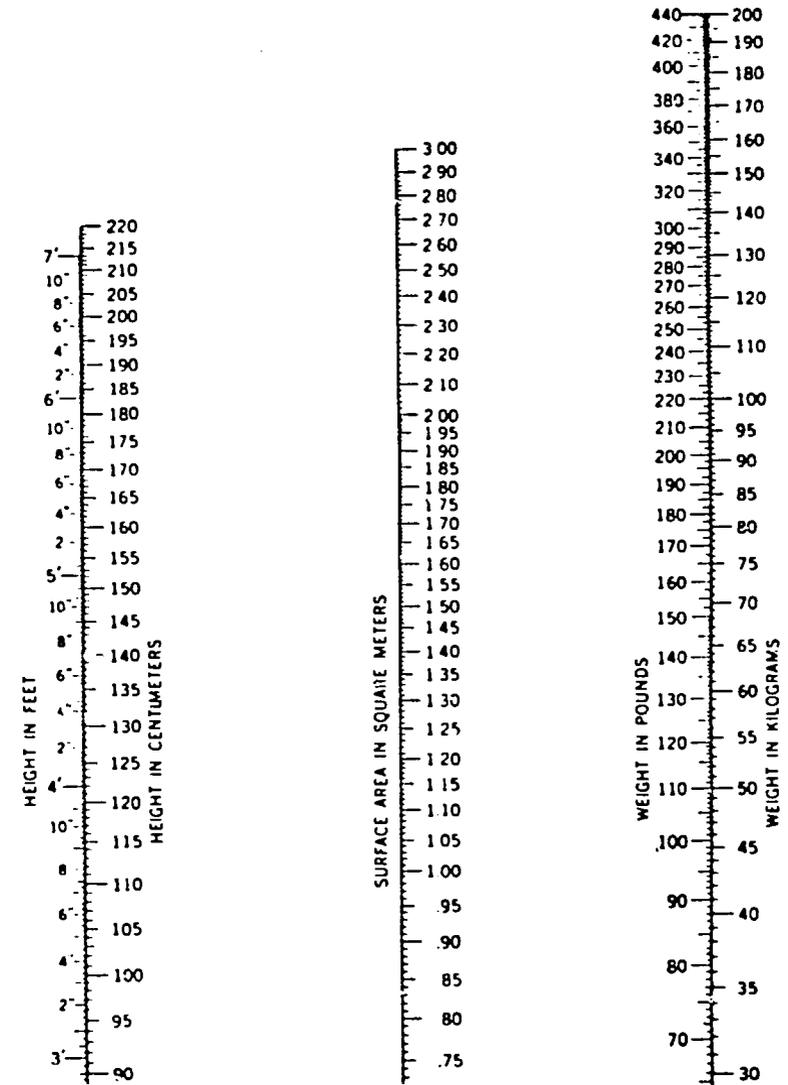
Percent "volume in volume" (v/v) expresses the number of milliliters of an active constituent in 100 milliliters of solution.

BASIS FOR MAKING PERCENTAGE SOLUTIONS (W/V)

One fl. oz. water at 25° C = 454.56 gr. = 480 minims.



Nomogram for the determination of body surface area of children. (Reproduced, with permission, from DuBois: *Basal Metabolism in Health and Disease*. Lea & Febiger, 1936.)



Nomogram for the determination of body surface area of children and adults. (Reproduced, with permission, from Boothby & Sandiford: Boston MSJ 185:337, 1921.)

GLOSSARY

ALLERGY -- A hypersensitivity to a specific substance or condition which in similar amounts is harmless to most people, resulting in a physiological disorder.

AMEBIASIS -- An infestation with a protozoan parasite.

ANALGESIC -- A drug which kills or reduces pain.

ANTHELMINTIC -- An agent used to treat parasitic worm infestations.

ANTIBIOTIC -- A substance produced as a result of the metabolic activities of living cells and which inhibit, in very low concentrations, the growth of microorganisms.

ANTIDIABETIC -- An agent used in the treatment of diabetes.

ANTIDIARRHEAL -- A product which reduces and controls watery stools.

ANTI-EMETIC -- A drug which reduces nausea and vomiting.

ANTI-HISTAMINE -- A drug used to treat allergies.

ANTIMALARIAL -- An agent which kills or inhibits the growth of a malaria-causing agent.

ANTIPYRETIC -- A drug which reduces fever.

ANTITUSSIVE -- A product which reduces coughing.

BRONCHITIS -- A condition in which the mucous lining of the bronchial tubes is inflamed.

CONTROLLED SUBSTANCE -- A drug the manufacture, distribution, prescribing and dispensing of which is controlled by the Drug Enforcement Administration of the U.S. because of its characteristic of causing physical or psychological dependence.

CHEWABLE TABLET -- A flavored solid oral dosage form prepared by compression and which requires chewing or breaking up into small pieces in order to release the medication.

DEHYDRATION -- The state of having lost excessive fluid from the body.

DERMATOLOGICAL -- A product used to prevent or treat disorders of the skin.

DRUG LIST -- A compilation of the generic and/or brand names of selected drugs.

EDEMA -- An abnormal accumulation of fluid in the cells, tissues or cavities of the body, resulting in swelling.

ELIXIR -- A hydroalcoholic solution of drugs, usually sweetened.

FORMULARY -- A compilation of information on selected drugs for use in a specific environment, including specifications on how the drugs are to be used in addition to their generic and/or brand names.

FORMULATION -- the combination of active and inactive ingredients in a pharmaceutical dosage form and the method utilized in the manufacture of the product.

GENERIC NAME -- The common or chemical name.

HALF-LIFE -- The time required for a given drug concentration in the blood (or a given amount of drug in the body) to be decreased by 50 percent or one-half.

HEPATIC -- Of or relating to the liver.

RENAL -- Of or relating to the kidneys.

SEPSIS -- A toxic state caused by the absorption of pathogenic or disease-causing organisms and their products in the bloodstream.

SEDATION -- Reduction in excitement, nervousness or irritation.

RECONSTITUTED -- Describes a preparation made by adding a specified amount of water or other suitable diluent to a powder, crystals or granules.

REHYDRATION -- A regain of vital body fluids into the tissues, cells and cavities of the body.

MALARIA -- An infectious, usually tropical, disease which is normally recurrent and intermittent and which is caused by various protozoans.

TOXEMIA -- A condition resulting from the distribution throughout the body by the bloodstream of toxins produced by pathogenic or disease-causing bacteria or by cells of the body.

PART I:

•• Introduction

•• Expiry Dating and Control
of Pharmaceutical Stock
Quality

•• Illustrative Price
Information

•• How to Use this Formulary

INTRODUCTION

This formulary is intended for use by AID staff as they work with host governments in developing the pharmaceutical component of health assistance projects.

The provision of essential drugs is a core activity of primary health care (PHC) at all levels but especially at the village level. Trainers of those who actually train village health workers (VHWs) and project designers have not often had a single, comprehensive reference on basic drugs available to them as they structure curricula or primary health care projects. This formulary was developed to fulfill that gap. As such, it is designed to supplement training documents such as those produced by MEDEX of the University of Hawaii John A. Burns School of Medicine. In providing this formulary to AID Missions, it is hoped that host governments will be encouraged to develop their own formularies incorporating drugs listed in this document and/or others.

Objectives and Content

This basic drug formulary was designed to fulfill the following three principal objectives:

1. To expand the trainer of trainers' and project designer's knowledge of drugs commonly used at the various levels of health care.
2. To permit comparison between a DRUG LIST and a DRUG FORMULARY for project design and implementation purposes.
3. To provide a reference document on pharmaceuticals commonly used in AID primary health care (PHC) projects and, therefore, a focus of procurement using AID funds.

In compiling the list of drugs to be included in this formulary, the preparer consulted the WHO/AFRO essential drug list; the WHO list of essential drugs, including the WHO list of 22 basic drugs for primary health care; the WHO Emergency Health Kit (standard drugs and clinic equipment for 10,000 persons for 3 months); several examples of formularies in countries in which AID provides health assistance; and their combined professional experience. The selection process, then, capitalized upon the considerable expertise of numerous individuals from around the world who had input into development of the WHO and country lists.

As a formulary, this document differs from a drug list, which contains primarily the names of drugs and their dosage

forms and strengths. Recommended drugs are identified according to level of use. This formulary includes the following information for each drug:

- Generic name
- Proprietary or trade names (common examples)
- Dosage form(s) and strength(s)
- Uses or indications
- Dosage and administration
- Adverse reactions (common side-effects and clinically significant drug-drug, drug-alcohol and drug-food interactions)
- Warnings and cautions (contraindications and precautions on use of the drug, especially in children and during pregnancy and lactation.)
- Storage conditions
- Shelf-life information

For the convenience of project planners, trainers and trainer trainees, drugs are listed alphabetically in this formulary. They are indexed both alphabetically and by therapeutic category. The categories of drugs included in this formulary, utilizing the WHO essential drug classifications, are:

- Analgesics, antipyretics and non-steroidal anti-inflammatory drugs
- Anesthetics
- Anti-allergics
- Anti-epileptics
- Anti-infective drugs
 - Anthelmintic drugs
 - Anti-amoebic drugs
 - Antibacterial drugs
 - Penicillins
 - Other antibacterial drugs
 - Anti-leprosy drugs
 - Anti-tuberculosis drugs
 - Antifilarial drugs
 - Antimalarial drugs
- Anti-Migraine Drugs

- Blood, Drugs affecting the
 - Anti-anemia drugs
- Cardiovascular drugs
 - Anti-anginal drugs
 - Anti-arrythmic drugs
 - Anti-hypertensive drugs
 - Cardiac glycosides
 - Drugs used in shock or anaphylaxis
- Dermatological drugs
 - Anti-infective drugs
 - Anti-inflammatory and antipruritic drugs
 - Scabicides and pediculicides
- Disinfectants
- Diuretics
- Gastro-intestinal drugs
 - Antacids and other anti-ulcer drugs
 - Anti-emetic drugs
 - Cathartic drugs
 - Diarrhea, drugs used for
- Hormones
 - Adrenal hormones and synthetic substitutes
 - Insulins and other antidiabetic agents
 - Oral contraceptives
- Immunologicals
 - Sera and immunoglobulins
 - Vaccines
- Ophthalmological preparations
 - Anti-infective drugs
 - Anti-inflammatory drugs
- Oxytocics
- Psychotherapeutic drugs
- Respiratory tract, drugs acting on the
 - Anti-asthmatic drugs
 - Antitussives
- Solutions correcting water, electrolyte and acid-base disturbances
 - Oral
- Vitamins and minerals

Basic criteria utilized in determining which drugs would be included in this formulary are:

- Generic status of the drug
- Patent status of the drug in the U. S.
- Types of medical problems most frequently encountered in developing countries.
- Proven clinical value and relative safety
- Ease of administration
- Drug availability
- Relative cost in comparison with equally effective medications

Where possible, the most stable dosage form(s) available were selected. Therefore, except for certain antibiotics and other drugs where this dosage form is deemed essential for effective medical treatment of certain disease states, injectable dosage forms, for example, are generally excluded. Almost all of the pharmaceuticals in the drug monographs are available from several manufacturer sources.

The Drug Formulary System

The development of a drug list is the initial step in the establishment of a drug formulary system. A formulary is the official compilation of drug products sanctioned for use within a given environment. It may, but will not necessarily, contain diagnostic and non-drug items related to patient care.

While a drug list will indicate what items are available or should be available, a formulary includes more information and guidelines as to how a product should be used. This may include information on recommended daily dosage, cautions, warnings, restrictions, pharmacology, side-effects, and other similar aids which facilitate safe and effective use. Generally, non-proprietary or generic names will be utilized in order to minimize prescribing and administrative errors, as well as to effect economies in cost, where possible. The review process carried out by the selection committee limits the influence of subjectivity in determining the list of drugs to be included in the formulary. The combined efforts of a representative group of peers on such a committee increase the quality of the decision as to which among comparative drugs will be included over that likely to be provided as a result of the evaluation of a single practitioner. Thus, a properly constructed formulary enables the prescriber to focus attention on meaningful choices.

The formulary manual, which a project might develop, is comprised of a series of drug monographs and often extends beyond that to include one or more supplemental sections which may describe:

- How the formulary was compiled.
- Procedures for amending the formulary.
- Prescribing regulations established by the project, institution, agency, or government.
- Technical aids, rules and advice to facilitate cost-containment efforts.
- Services offered by the dispensary or pharmacy.
- Special instructions covering therapeutic categories or particular pharmaceutical products.
- Data on selected medical conditions.
- Other regulations prescribed by the project, institution, agency or government.

The entire process through which the formulary manual is developed, implemented and updated is referred to as the FORMULARY SYSTEM. Such a system will normally involve the following:

1. An organized method by which a committee evaluates the therapeutic credentials of competing drug products. The committee is comprised primarily of health-care practitioners, including a pharmacist and a nurse.
2. Periodic publication of the information on the authorized drugs.
3. Methods for revising the list of and updating the information on the drugs to be included.
4. Interim communications means for informing medical, nursing, pharmacy and administrative personnel of modifications in approved drugs and drug use policies.

Although developing countries may differ significantly in the types and availability of health-care projects and institutions, the use of the formulary system remains one of the most viable alternatives for providing information on and control of essential drugs used in primary health care. A major difference in the approach to the use of the system could be that project, regional or system-wide governmental formularies could

be more appropriate in some countries. In others, where there is a surplus of hospitals in specific locales, the individual health-care institution (hospital and/or health center) would develop its own formulary manual. Without question, the government formulary system would apply to a system-wide effort to improve pharmaceutical logistics in a developing country.

Ten steps in developing a formulary of this type have been advanced by Dr. Aida Le Roy in Managing Drug Supply, published by Management Sciences for Health:

1. Obtain support for an essential drug list
 - a. Within the Ministry of Health
 - b. From the organized medical community
 - c. Among local health-care providers
2. Establish a Drug Selection Committee with appropriate representation.
3. Gather and analyze information on:
 - a. Prevalent morbidities
 - b. Drugs available
 - c. Patient characteristics (age, sex)
 - d. Types of health-care personnel at each level
 - e. Local manufacturing activities
 - f. Existing drug lists
 - g. Pharmaceutical logistics problems
4. Make decisions regarding:
 - a. Structure of the formulary
 - b. Format of the formulary
 - c. Criteria for selection
5. Select the drug products
6. Include prescribing information
7. Have draft reviewed by:
 - a. Nationally recognized specialists
 - b. Local health-care personnel
8. Undertake an educational campaign for:
 - a. Practicing health-care personnel
 - b. Patients
9. Promulgate regulations
10. Conduct annual update of the formulary

The single most important step in this process is the selection of the drug products to be embodied in the formulary. A set of guidelines for the selection of drugs for primary health care has been devised by the World Health Organization (See Appendix B). The basic principles embodied in these guidelines are:

- Selected drugs should be of proven efficacy and acceptable risk determined by studies utilizing accepted scientific methods involving human subjects.
- The minimum number of drugs needed to treat the prevalent diseases should be selected and unnecessary duplication and close similarities in drugs or dosage forms should be avoided.
- Newly released products should be compared with products having known efficacy and should be included only if they demonstrate distinct advantages over products currently in use.
- Combination products should be included only when they provide true benefit over the individual use of the component drugs.
- Where several alternatives are available, drugs with clear "drug of choice" indications for the prevalent diseases in the country should be selected.
- The administrative and cost impact of products should be evaluated in terms of ease of purchase, storage, distribution, dosage units needed, etc.
- Only drug products for which adequate standards of quality have been established, should be selected.
- The benefit/risk ratio of the product should be assessed by thorough investigation and evaluation of contraindications, precautions and adverse reactions.
- Drugs should be referred to by their generic names when ordering or in publishing the formulary in order to facilitate more economical drug therapy through increased physician familiarity with drug generic names and decreased reliance on trade name recognition.

The large number of drugs available throughout the world and the multiplicity of brandnames under which these are sold worldwide pose a special problem for governments seeking to curtail unbearable costs for providing essential drugs to the

people. One means of tackling this problem is the selection and procurement of drugs by their generic or non-proprietary names. This makes it possible to obtain more competitive prices from several manufacturers.

The generic name is but one of several names by which a drug may be known: it may be known by its chemical name, one or more brand or proprietary names, and by its non-proprietary, common or generic name. Use of the generic name is advantageous in that it identifies the drug irrespective of its manufacturer or source. Frequently, drugs sold by their generic names are less costly and, when obtained from reliable manufacturers, are as safe and as effective as those purchased under established brand names.

Development and adoption of a drug formulary system can provide enhanced safety and therapeutics for the patient through improved drug information and utilization, as well as economic and administrative benefits gained through more efficient and more cost-effective procurement and distribution.

The Formulary As a Training Document

Trainers and those being trained to train others should find this document to be a useful tool as it covers the breadth of basic information needed to assure the proper selection, use and storage of essential drugs in primary health care settings. There has been an attempt to emphasize potential problems and guidelines for minimizing those that threaten the availability of safe and effective, as well as economical, products for useful health-care interventions.

For instance, trainers and trainer trainees should be aware of potential problems which may manifest themselves in ineffective and potentially harmful pharmaceutical products. These include outdated products, as evidenced by expiration dates which have passed; physical changes in the product due to improper storage conditions; "bad" batches of product resulting from improper formulation or manufacture; sub- or super-potent products due to lax or ineffective quality control procedures during their manufacture.

Consequently, trainees must be cautioned to pay special attention to and transmit as a routine component of information given to patients and dispensers, at least the following EACH TIME A MEDICATION IS TO BE DISPENSED OR ADMINISTERED:

1. COMPLIANCE WITH DOSAGE AND INSTRUCTIONS FOR ADMINISTRATION of the medication -- Patients should take the full amount of the medication according to the daily schedule shown on the label.

2. POSSIBLE SIDE-EFFECTS from the medication being taken -- Patients should be cautioned to be alert to any adverse effects resulting from taking the drug.
3. SEEK ADVICE FROM THE DISPENSARY when needed -- Patients should be advised to return to the dispensary for advice should any questions arise about the dosage, administration, side-effects or any food/drug or drug/drug interactions.
4. CHECK PRODUCT EXPIRATION DATES to ascertain the age of the product and to guard against either the dispensing or administration of outdated medication.
5. CHECK the product FOR PHYSICAL CHANGES: color changes; hardness or brittleness of tablets or capsules; unusual odors in the medication container; crystallization of drug in the container; turbidity of previously clear solutions; aggregation, etc., in suspensions; and other physical changes -- as these may indicate changes in the safety and/or effectiveness of medication.
6. STORAGE OF MEDICATION -- Patients, trainees and dispensers should be urged to pay particular attention to the storage conditions for all medications to insure that they are protected from excessive light, heat and moisture, and that these medications are kept properly closed at all times.

Trainers should be certain that dispensers are provided with adequate information and indoctrination on:

- The SIGNIFICANCE OF EXPIRATION DATES in assuring pharmaceutical product quality.
- The SIGNIFICANCE OF PHYSICAL CHANGES in the product.
- The FUNCTION OF THE CONTAINER and closure in protecting the product from premature spoilage.
- The advisability of ADMINISTRATION OF THE FIRST DOSE of medication to the patient BY THE DISPENSER.

Additional potential problems in medicating patients are pediatric patient dosage and administration compliance, and the need to calculate the child's dose for many drugs as well as for certain adults or for certain drugs irrespective of the age of the patient.

Medication of children usually presents special problems. An important factor in pediatric patient compliance is taste. Young patients will oftentimes vomit or spit a foul tasting

product out of their mouths. When this occurs, it should be remembered that a significant portion of the medication usually will have been retained. In other cases, medication may not be available in dosage units suitable for administration to children. In some cases, it may be necessary, for instance, to crush tablets or to open capsules for administration to children.

While adult dosages are normally standardized within ranges, pediatric dosages must be calculated for many drugs. For required conversions, a table of weights and measures is included on Page iv at the front of this document. Nomograms for use in calculating either pediatric or adult dosages are also included in the front of this document on Page v.

For abbreviations or acronyms used in this document which are unfamiliar to the trainer, Page iii may be consulted. For unfamiliar terminology encountered in this formulary, the trainer may refer to a glossary on Page ix of the prefatory section.

For information on how to prepare percentage solutions, the trainer should consult Page vii of the prefatory section.

Controlling the quality of stock is so vital to maintaining drug supply that a separate section on "Expiry Dating and the Control of Stock Quality" immediately follows this sub-section. It includes a brief discussion and a delineation of the principal responsibilities of the storekeeper, dispenser and/or pharmacist in the handling of pharmaceutical stock in a manner as to ensure its quality throughout its useful shelf-life, as is indicated by the expiration date on the product label.

EXPIRY DATING AND CONTROL OF PHARMACEUTICAL STOCK QUALITY

Expiry dating is a vital tool in the quest for assuring the quality of pharmaceutical stock and a specific indicator of the useful shelf-life of a pharmaceutical product. Accordingly, its importance in primary health care cannot be overemphasized.

The expiry date is a specific date, normally expressed as a month and year, beyond which a product is deemed unsuitable for use because it no longer meets minimum standards for safe and efficacious use in medical care. This date is based on the results of stability studies conducted by the manufacturer on the specific formulation packaged in a specific container and closure.

Shelf-life is the length of time in years, months or, in limited cases, days during which a product can be expected to retain its stability and thus is safe and effective when administered to patients in the proper dosage. Product shelf-life is valid only for a given range of temperature as indicated on the label and for a specific container, closure and formulation. The conditions necessary to be maintained throughout the shelf-life of a pharmaceutical product are: 1) the chemical integrity and labelled potency, within specified limits, of the active ingredients; 2) the physical integrity -- appearance, dissolution, palatability, suspendability, uniformity, etc. -- of the dosage form; 3) sterility or resistance to microbial growth; 4) therapeutic effect; and 5) its original level of toxicity.

The relative stability of pharmaceutical dosage forms, in decreasing order of stability, is as follows:

- 1) SOLID dosage forms (tablets, capsules and powders)
- 2) SEMI-SOLID dosage forms (creams, jels and ointments)
- 3) LIQUID dosage forms (suspensions; solutions, including elixirs and syrups)

Therefore, where shelf-life is a project design issue, choose a formulation with the longer shelf-life.

Injectable products may consist of sterile powders for reconstitution at the time of administration, solutions, suspensions and emulsions. As a group, these are the most unstable of the pharmaceuticals and, therefore, should be stored only for those cases where their use offers clear advantages in therapy. The stability of reconstituted injectable or orally administered products is generally limited to a few days up to one to two weeks maximum.

Responsibilities of the Dispenser, Storekeeper and/or Pharmacist

The conditions of storage of pharmaceuticals influence the final characteristics of the drug when dispensed or administered to the patient. Further, the cost of medications can be kept at their minimum through judicious purchasing, storage, rotation and careful handling. Because it is imperative that economical, effective and safe drug therapy be available to the patient at the right time, the dispenser, storekeeper and/or pharmacist must be clearly aware of his/her obligations to:

- **REGULARLY ROTATE STOCK,** dispensing the oldest stock first and strictly observing expiry dates on product labels.
- **STORE PRODUCTS UNDER CONDITIONS RECOMMENDED BY THE MANUFACTURER.** When storage conditions are not specified, the product should be stored at controlled temperature away from excessive or variable heat, cold and light.
- **REGULARLY EXAMINE PRODUCTS FOR EVIDENCE OF DETERIORATION.** Changes in odor (in aspirin, for example) or color, crystal formation, precipitation or aggregation of matter from a solution or suspension, formation of turbidity, excessive microbiological growth, splitting or cracking of tablets or capsules, caking of dry powders, bleeding of water from or shrinkage in creams and ointments, surface film formation, and gas formation in sterile liquids are among the prime dosage form specific indicators of product instability.
- **REPACKAGE, DILUTE, MIX OR OTHERWISE TREAT OR MANIPULATE PHARMACEUTICALS PROPERLY.** This entails use of appropriate packaging materials (container and closure) when repackaging from larger bulk containers; repackaging only as much as is needed for a short period of time, unless stability data on the new package is available to indicate a shelf-life longer than the anticipated repackage quantity is expected to be in storage before use; including both lot number and an appropriate expiration date on the label of unit-dose or unit-of-use containers; discarding any vials repackaged from multi-dose vials after 24 hours, unless data supporting longer storage periods are available; maintaining suitable packaging records showing manufacturer, lot number, date, and persons responsible for repackaging and checking, where quantities in excess of immediate needs are repackaged; and using great caution in mixing and

diluting pharmaceuticals, always following the instructions supplied by the manufacturer and/or pharmacist, if available.

- INFORM THE PATIENT ABOUT PROPER STORAGE CONDITIONS for the medication at home and of a time after which the product should be discarded.
- PURCHASE ONLY THOSE MINIMUM QUANTITIES OF PRODUCT as may be safely stored for adequately serving the needs of a given population so as not to jeopardize the integrity of overstocked product.

It is good practice to routinely request stability data from a manufacturer prior to or at the time of purchase, especially when considering a change of supplier. The shelf-life of the product should be known prior to ordering and a minimum period of shelf-life after receipt should be specified in contracting and purchasing documents.

For AID-financed purchases, not more than 1/6 of the full dating period of from 1 to 18 months, nor more than 1/3 of the full dating period of more than 18 months should have expired on the date of shipment (AID Handbook 15). And remember: Only safe and effective pharmaceuticals, manufactured in accordance with accepted quality standards, should be procured.

CONTROLLED DRUGS (narcotics, barbiturates and other drugs identified as possessing high abuse potential) require special ordering procedures in accord with special AID requirements for the purchase of controlled substances. AID Missions desirous of funding the purchase of drugs of these types of products should contact AID/Washington's SER/COM/CPS for specific ordering instructions.

ILLUSTRATIVE PRICE INFORMATION

Pricing information is included in this document for illustrative purposes only, as prices fluctuate widely from manufacturer to manufacturer, from country to country, and from month to month. Exceptions are prices contracted between MOH's, AID, or another governmental or private agency and a supplier for a definite period of one or two years. The AID/Washington Office of Commodity Management should be consulted on U. S. Government or Federal Supply Schedule (FSS) prices. Other pricing information may be available locally.

Some of the prices included in this document are from the most recent or past FY FSS's. Other prices were obtained from the current edition of the AMERICAN DRUGGIST BLUE BOOK and its most recent monthly updates. However, these prices are average wholesale prices charged either to direct accounts or to all customers by the manufacturer. Prices to governmental and other large volume purchasers are usually less. Consequently, prices in this document should be used for illustrative purposes only -- such as in budgetting for procurement during project design -- as their value in actual procurement activity will be limited.

Illustrative prices are shown in Appendix E according to generic drug name, dosage form, potency and package type and size.

HOW TO USE THIS FORMULARY

This formulary was designed so that it could serve multiple purposes: (1) as drug information source; (2) for project management encompassing the development of a formulary as a means of providing essential drugs at the local, regional or national level in developing countries; (3) as a drug supply logistics management tool, focussing on AID-assisted procurement of pharmaceuticals in support of PHC projects and programs; and for training personnel who relate to the selection, procurement, distribution and use of essential drugs in PHC projects.

Drug information presented in the drug monographs is useful for project managers and as well as trainers of health care personnel involved in PHC. Alphabetical and therapeutic indexes, the latter keyed to the numerical groups and sub-groups of the WHO model essential drug list, facilitate the location of drug information on the selected drugs on the basis of their therapeutic class. VHWs, TBAs, nurses, pharmacists, and physicians may utilize this compilation as a convenient drug information resource on these pharmaceuticals.

Health and drug supply logistics planners and managers may find the section on "Expiry Dating and Control of Stock Quality" useful in establishing and evaluating policies governing the procurement of quality pharmaceuticals, enabling them to get more for their health care dollar. For instance, purchasing drug products with the longest possible shelf-lives at the time of delivery is one of the most effective means of reducing recurring costs associated with drug expenditures. On the other hand, purchasing drugs with little or no regard to remaining shelf-life on delivery is wasteful at several levels; it increases the frequency and overall costs for drug purchases; it results in less efficient utilization of storage space for drugs; it requires excessive manpower for ordering and re-ordering at more frequent intervals; and it increases the chances that outdated drug products will be dispensed or administered to the patient.

The alphabetical and therapeutic indexes constitute the drug list upon which this formulary is based. Aside from the AID Formulary drug list which identifies the drugs included in this formulary, the appendices include four additional examples of drug lists:

- WHO Model List of Essential Drugs (Appendix C)
- WHO Model List of Drugs for Primary Health Care (Appendix A)
- WHO Emergency Health Kit -- List A: Basic Drug Requirements for 10,000 Persons for 3 Months (Appendix D)

••• WHO Emergency Health Kit -- List B: Drugs for Use by Doctors and Senior Health Workers (Appendix D)

Studying each of these lists promotes increased understanding of the meaning of a drug list. For instance, the first list (Appendix C) comprises a comprehensive list of drugs to serve as a model for developing countries to use in developing their own official drug lists. The second, Appendix A) is intended to provide a minimum number of essential drugs for use at the village level, where a physician or nurse is unlikely to be available but where a trained VHW and/or TBA will be. While both the third and fourth lists are intended for disaster preparedness purposes, the former is based on the needs of a specified size population -- 10,000 people. The latter is a list of those drugs which are restricted for use by doctors and senior health workers because of potential safety problems requiring a broader knowledge of disease and medicine than is available through lower level health workers. Consequently, an excellent contrast is provided through these examples.

While the drug information in the various drug monographs comprise the core of the formulary, supplemental information is provided in the prefatory section, the introductory section, and sections on expiry dating and the control of drug stock quality, illustrative price information, recommended levels of use and a list of selected references for more detailed study of such areas. Therefore, the comparison between a drug formulary and a drug list is possible. Further, this document incorporates guidelines for the selection of drugs and the steps by which a drug formulary may be developed for a project or program -- private or governmental.

AID project managers can utilize this formulary as a reference document on pharmaceuticals frequently used in AID-assisted procurement in support of PHC. In furtherance of this aspect of use, only generic pharmaceuticals have been included although these may be available under a number of established brand names; the basis for effectively using expiration dates and shelf-lives as routine components of drug procurement specifications is discussed; health care loci on which AID-assisted procurement activity may be focussed, have been recommended (See suggested levels of use in Part II); and illustrative prices of drug products included in the monographs make it possible for one to make relative comparisons of course-of-treatment costs utilizing different dosage forms and, in some cases, similar drugs.

PART II:

The Drug Monographs

**Recommended Levels of
Use**

**Indexes to the Drug
Monographs**

- Alphabetical Index
- Therapeutic Index

GENERIC NAME: ACETAMINOPHEN; PARACETAMOL

Page: 21

BRAND NAMES: DATRIL; LIQUIPRIN; PANADOL; TEMPRA; TYLENOL; VALADOL

CATEGORY: Analgesic and antipyretic

USE(S): For mild to moderate pain and fever, especially in case of aspirin allergies, hemophilia, and upper gastrointestinal disease.

DOSE FORMS: Tablets -- 325 mg, 500 mg
Capsules -- 325 mg, 500 mg
Elixir (Liquid) -- 120 mg/5 ml
Drops, Pediatric -- 60 mg/0.6 ml (with graduated dropper)

DOSING AND ADMINISTRATION:

ADULTS -- Give two 325 mg or one to two 500 mg tablets by mouth 4 times daily (every 4 to 6 hours).

CHILDREN --

•• Less than 1 year of age: Give 30 mg (0.3 ml of 60 mg/0.6 ml drops) by mouth 4 times daily (every 4 to 6 hours).

•• One to 5 years of age: Give 60 to 120 mg (0.6 to 1.2 ml of 60 mg/0.6 ml drops OR 1/2 to 1 teaspoonful of 120 mg/5 ml elixir) by mouth 4 times daily (every 4 to 6 hours).

•• Six to 12 years of age: Give 240 mg (2 teaspoonful of 120 mg/5 ml of elixir or 1/2 of a 500 mg tablet) by mouth 4 times daily (every 4 to 6 hours).

•• Over 12 years of age: Give one or two 325 tablets by mouth 4 times daily (every 4 to 6 hours).

CAUTIONS AND WARNINGS: Acetaminophen is contraindicated in patients with liver or kidney disease. Do not use for more than 10 continuous days or exceed recommended dosage.

ADVERSE REACTIONS: Side-effects are rare. Excess dosage may result in liver or kidney damage.

STORAGE: Store in tightly closed container at 30 deg C or less.

SHELF-LIFE: Tablets, 3 to 5 years, and liquids, 2 to 3 years from date of manufacture.

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GENERIC NAME: ACETYLSALICYLIC ACID; ASPIRIN

Page: 22

PROPRIETARY NAMES: A. S. A. ; EMPIRIN

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CATEGORY: Antipyretic analgesic; nonsteroidal anti-inflammatory.

USE(S): Treatment of mild to moderate pain, fever and various inflammatory conditions associated with arthritis and rheumatism.

DOSAGE FORMS:

Tablets, Oral -- 325 mg, 500 mg
Tablets, Chewable -- 81 mg (Children)

DOSING AND ADMINISTRATION:

ADULTS -- For minor aches, pain and fever, two 325 mg tablets by mouth every four hours as needed.

For arthritis and rheumatism, two to four 325 mg or two 500 mg tablets by mouth four times daily (every 4 hours).

CHILDREN -- Give by mouth 1.5 Gm per square meter of body surface per day, in divided doses.

CAUTIONS AND WARNINGS: Should be taken with food or milk to minimize gastrointestinal discomfort. Do not use in patients with hemophilia or bleeding ulcers. Use with caution in presence of liver disease as may be evidenced by jaundice, enlarged veins, liver shrinkage and abdominal swelling. In pregnancy, aspirin may cause hemorrhage in the fetus. Also, the use of aspirin in nursing mothers may increase the risk of hemorrhage in the nursing infants. Should be used with extreme caution in children with viral infections.

ADVERSE REACTIONS: Primarily irritated stomach, diarrhea or other abdominal discomfort.

STORAGE: Store in a tightly closed bottle away from moisture and heat.

SHELF-LIFE: Two to 4 years from date of manufacture.

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GENERIC NAME: AMINOPHYLLINE

Page: 23

PROPRIETARY NAMES: SOMOPHYLLIN

=====

CATEGORY: Anti-asthmatic.

USE(S): Treatment of asthma.

DOSAGE FORMS:

Tablets -- 100 mg and 200 mg
Liquid -- 105 mg/5 ml

DOSING AND ADMINISTRATION:

For Acute Attack:

Adults -- By mouth, 6 mg per kg of body weight at once; then begin maintenance therapy (below) in 6 hours.

Children -- Give by mouth 3 mg per kg of body weight or 240 mg per square meter of body surface; begin maintenance therapy in 6 hours.

Maintenance Dose:

Adults -- Give by mouth 3 mg per kg of body weight every 6 hours.

Children-- Give by mouth 5 mg per kg of body weight or 150 mg per square meter of body surface every 6 hours. Adjust dosage as necessary to control symptoms.

CAUTIONS AND WARNINGS: Dosages must be individualized and taken around the clock. Aminophylline is contraindicated in individuals who have shown sensitivity to the drug. Should be used with great caution in patients with heart or liver disease.

ADVERSE REACTIONS: Side-effects include nausea, vomiting, restlessness, insomnia, agitation and fever.

STORAGE: Store in tight container.

SHELF-LIFE: Two to 4 years from date of manufacture.

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GENERIC NAME: AMPICILLIN

Page: 24

BRAND NAMES: AMCIL; OMNIPEN; PEN-A; PENBRITIN; POLYCILLIN; PRINCIPEN

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CATEGORY: Anti-infective.

USE(S): For treatment of pneumonia, and infections of the ear, urinary tract and skin.

DOSAGE FORMS:

Capsules -- 250 mg and 500 mg
Powder for Oral Solution -- 125 mg/5 ml, 250 mg/5 ml

DOSING AND ADMINISTRATION: The following doses should be administered by mouth:

Type Infection	Weight: Less than 20 kg Height: Less than 120 cm	Weight More than 20 kg Height More than 120 cm
Respiratory tract and soft tissue	62.5 mg to 250 mg every 6 hours	250 mg every 6 hours
Gastrointestinal and genitourinary tract	125 mg to 500 mg every 6 hours	500 mg every 6 hours

.....

CAUTIONS AND WARNINGS: The drug is contraindicated for use in patients who are allergic to penicillin. Have Neutrapen (penicillinase) available for signs of anaphylactic reaction (rash, itching, edema, labored breathing, wheezing, choking, coughing, loss of consciousness). Reconstituted solutions must be refrigerated to retain their potency. These solutions will normally retain their potency for less than 2 weeks.

ADVERSE REACTIONS: Allergic reaction (anaphylaxis), diarrhea, hypersensitivity and skin rash are among the more common side-effects.

STORAGE: Store below 25 deg C (77 deg F) in a tightly closed container protected from light.

SHELF-LIFE: Three to 5 years from date of manufacture.

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GENERIC NAME: BACITRACIN

Page: 25

PROPRIETARY NAMES: BACIGUENT

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CATEGORY: Topical anti-infective.

USE(S): For topical application to infected skin lesions, scrapes and superficial cuts. NOTE: For external use only.

DOSAGE FORMS:

Topical Ointment (500 units of bacitracin activity per gram)

DOSING AND ADMINISTRATION:

Apply small amount of ointment to the affected skin area 3 to 4 times daily.

CAUTIONS AND WARNINGS: Contraindicated in deep puncture wounds. Serious wounds may require systemic antibiotic therapy in addition to local treatment. This preparation is not to be used in the eyes or in the external ear canal if the eardrum is perforated.

ADVERSE REACTIONS: Skin irritation may be experienced by some.

STORAGE: Store in well-closed containers at controlled room temperature or in accordance with manufacturer's instructions.

SHELF-LIFE: Two to 3 years from date of manufacture.

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GENERIC NAME: BCG VACCINE

Page: 26

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CATEGORY: Vaccine; immunological.

USE(S): For universal immunization against tuberculosis.

DOSAGE FORMS: Injection (powder for solution), 1 ml.

DOSING AND ADMINISTRATION: A single dose of BCG vaccine should be injected intradermally or by the multipuncture method. The dosages for adults and children are as follows:

ADULTS -- 0.1 ml.

NEWBORN INFANTS -- 0.05 ml.

OLDER INFANTS AND CHILDREN -- Same as for adults: 0.1 ml.

CAUTIONS AND WARNINGS: Contraindicated in the acutely ill or those suspected of having respiratory tract, skin or other infection and those giving a positive tuberculin skin test. This vaccine should be restricted to persons in a tuberculosis threatening environment and should not be given to persons with active tuberculosis, within a month after they have been given a measles or polio vaccine, or if taking steroid drugs.

ADVERSE REACTIONS: Rare and mild. A blister filled with pus should develop at the injection site. Otherwise, the immunization did not take.

STORAGE: Refrigerate at +4 deg C to +8 deg C. Discard prepared vaccine if not used promptly.

SHELF-LIFE: Eighteen months to 2 years from date of manufacture.

GENERIC NAME: BENZYL BENZOATE

Page: 27

CATEGORY: Scabicide.

USE(S): For treatment of scabies.

DOSAGE FORMS: Lotion, 10 to 30 percent, for topical use.

DOSING AND ADMINISTRATION: For scabies, apply lotion over the entire body with a brush after thoroughly scrubbing the body with soft soap and hot water, taking care not to apply to the eyes. Apply a second coat when the first coat is dry and leave the lotion on the body for 24 hours. Bathe and dress in clean clothes. Adults require from 120 to 180 ml; a child requires from 60 to 90 ml.

CAUTIONS AND WARNINGS: Do not apply to the face.

ADVERSE REACTIONS: Severe skin irritation may occur in some patients.

STORAGE: Store in a tight container.

SHELF-LIFE: Two to 4 years from date of manufacture.

GENERIC NAME: CHLORAMPHENICOL

Page: 28

BRAND NAMES: CHLORMYCETIN

CATEGORY: Anti-infective.

USE(S): For the treatment of acute, serious infections such as typhoid fever and meningitis.

DOSAGE FORMS: Capsules -- 250 mg
Oral Suspension -- 30 mg/ml (100 ml btl)

DOSING AND ADMINISTRATION:

ADULTS -- Give by mouth the equivalent of 12.5 mg of chloramphenicol per kg of body weight every 6 hours, up to a maximum of 100 mg per kg of body weight daily.

OLDER CHILDREN -- Give orally the equivalent of 12.5 mg of chloramphenicol per kg of body weight every 6 hours, up to a maximum of 100 mg per kg of body weight daily.

INFANTS -- For premature and full-term infants up to 2 weeks of age, give by mouth the equivalent of 25 mg of chloramphenicol per kg of body weight daily, in divided doses. For infants 2 weeks of age or older, give the equivalent of up to 12.5 mg per kg of body weight every 6 hours or up to 25 mg per kg of body weight every 12 hours.

CAUTIONS AND WARNINGS: This drug is contraindicated in cases of impaired kidney or liver function and in individuals exhibiting sensitivity to it. Not to be used on or near the eyes or in the ear canal if the eardrum is perforated. Use of this drug should be reserved for life-threatening infections. In all patients, chloramphenicol should be used for as short a period of time as possible -- not more than 7 days. Avoid use in infants, if at all possible. Do not use for topical infections, such as for sore throat or for prophylaxis against bacterial infections.

ADVERSE REACTIONS: Bone marrow depression is the most serious adverse reaction. Other side-effects which may occur are headache, depression, mental confusion, fever, rashes, and anaphylactic (allergic) reaction.

STORAGE: Store in tightly closed containers, protected from light; and below 25 deg C (77 deg F).

SHELF-LIFE: Two to 4 years from date of manufacture.

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GENERIC NAME: CHLORHEXIDINE GLUCONATE Page: 29

BRAND NAMES: HIBICLENS (Skin Cleanser); HIBISTAT (Hand Rinse); HIBITANE
(Patient Preoperative Skin Preparation)
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CATEGORY: Disinfectant.

USE(S): As a surgical hand scrub, hand-wash for healthcare personnel, and skin wound cleanser.

DOSAGE FORMS: Solution -- 4 percent; tincture -- 0.5 percent in 70 percent isopropyl alcohol.

DOSING AND ADMINISTRATION:

SURGICAL SCRUB -- Using 5 ml of the solution, scrub for three minutes and, with a wet brush, rinse thoroughly. Repeat and rinse under running water.

HAND WASH -- Apply 5 ml to wet hands and wash vigorously for 15 seconds. Rinse thoroughly.

SKIN WOUND CLEANSER -- Rinse area with water. Apply a small amount of the solution and wash gently to remove dirt and debris. Rinse again.

CAUTIONS AND WARNINGS: Contraindicated in persons with prior sensitivity to the drug. Do not use with perforated eardrum or in cases of irritation or photosensitivity. Keep out of eyes and ears.

ADVERSE REACTIONS: The drug is reported to cause deafness when instilled in the middle ear.

STORAGE: Preserve in tight containers and store according to directions of the manufacturer.

SHELF-LIFE: Two to 3 years from date of manufacture.

eye disturbances should be conducted for long treatments. Chloroquine crosses the placental barrier and can cause abnormalities in the fetus. Long-term and/or high-dosage therapy may cause irreversible retinal damage (generally with daily dosages exceeding 250 mg or total dosage exceeding 100 Gm). Indiscriminate use in sub-therapeutic doses leads to the development of chloroquine-resistant strains of the malaria parasite.

ADVERSE REACTIONS: May cause GI discomfort, nausea, diarrhea, rash, headache and CNS stimulation.

STORAGE: Store in tight, light-resistant containers at controlled room temperature.

SHELF-LIFE: Two to 4 years from date of manufacture.

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GENERIC NAME: CHLORPHENIRAMINE MALEATE; CHLORPHENAMINE MALEATE Page: 32

BRAND NAMES: CHLORTRIMETON; TELDRIN

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CATEGORY: Anti-allergic (anti-histamine)

USE(S): For the treatment of allergies and hay fever.

DOSAGE FORMS: Tablets -- 4 mg
Syrup -- 2 mg/5 ml

DOSING AND ADMINISTRATION:

ADULTS -- One tablet (4 mg) by mouth 3 to 4 times daily.

CHILDREN -- Two to 6 years, 2.5 ml (one-half teaspoonful) by mouth 3 to 4 times daily; 6 to 12 years, 5 ml (one teaspoonful) by mouth 3 to 4 times daily.

CAUTIONS AND WARNINGS: Should not be given to children under 2 years old, or in individuals with peptic ulcer, nursing mothers, pregnant women or those predisposed to urinary retention. As small amounts of chlorpheniramine are excreted in breast milk and the pronounced effect of antihistamines on infants, its use in nursing mothers is not recommended.

ADVERSE REACTIONS: May cause drowsiness, gastrointestinal discomfort, dizziness, sedation and urinary retention.

STORAGE: Store in tight, light resistant containers at controlled room temperature.

SHELF-LIFE: Two to 4 years from date of manufacture.

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GENERIC NAME: CHLORPROMAZINE

Page: 33

BRAND NAMES: THORAZINE

=====

CATEGORY: Psychotherapeutic drug

USE(S): As a major tranquilizer for psychotic disorders. Also may be used as an anti-emetic.

DOSAGE FORMS: Tablets -- 10 mg, 25 mg, 50 mg, 100 mg, 200 mg
Injection -- 25 mg/ml in 10 ml vials, 2 ml ampoules

DOSING AND ADMINISTRATION:

■ ■ For Agitation, Tension, Apprehension, Anxiety -- Give 10 mg by mouth 3 to 4 times daily, or 25 mg by mouth 2 to 3 times daily. Dosage may be increased by 25 to 50 mg twice weekly until patient becomes responsive, up to a maximum daily dosage of 200 mg. In exceptional cases, individuals may require up to 800 mg per day.

■ ■ For Nausea and Vomiting -- Give 10 to 25 mg by mouth every 4 to 6 hours as needed.

CAUTIONS AND WARNINGS: Contraindicated in comatose or depressed states, in impaired kidney function, jaundice or heart disease. Not recommended for use in children, pregnant women or nursing mothers. Use of this drug should be reserved for specialists familiar with CNS drugs.

ADVERSE REACTIONS: CNS depression, drowsiness, dizziness, muscle spasms, photosensitivity, rash, itching, dry mouth, bronchospasm, pigmentation of the skin, extrapyramidal symptoms.

STORAGE: Store in well-closed, light-resistant containers at controlled room temperature.

SHELF-LIFE: Two to 4 years from date of manufacture.

GENERIC NAME: CO-TRIMOXAZOLE;
TRIMETHOPRIM AND SULFAMETHOXAZOLE

Page: 34

BRAND NAMES: BACTRIM; BACTRIM DS; SEPTRA; SEPTRA DS

CATEGORY: Antibacterial

USE(S): For the treatment of urinary tract infections, acute ear infections and shigellosis.

DOSAGE FORMS: Tablets -- Trimethoprim 80 mg + Sulfamethoxazole 400 mg
Trimethoprim 160 mg + Sulfamethoxazole 800 mg
Oral Suspension -- Trimethoprim 40 mg + Sulfamethoxazole
200 mg/5 ml
IV Injection -- Trimethoprim 80 mg + Sulfamethoxazole 400
mg per 5 ml vial

DOSING AND ADMINISTRATION:

ADULTS -- Give the equivalent of 160 mg of trimethoprim + 800 mg of sulfamethoxazole by mouth every 12 hours for 10 to 14 days for urinary tract infections and for 5 days for shigellosis.

CHILDREN AND INFANTS -- For young infants aged 2 to 5 months, give 120 mg of co-trimoxazole by mouth every 12 hours. For children aged 6 months to 5 years, give 240 mg by mouth every 12 hours. For children 6 to 12 years of age, give 480 mg by mouth every 12 hours.

CAUTIONS AND WARNINGS: Contraindicated in pregnancy at term, nursing mothers and in children less than 2 months of age. The injectable form of the drug is intended for intravenous administration only. The IV form must be diluted in 5 percent dextrose and water with at least a 15:1 ratio or 75 ml per each 5 ml vial. The diluted drug must be refrigerated and used within 6 hours; it must be infused over 60 to 90 minutes. Do not give by bolus or rapid injection. The patient should force the intake of fluids of at least 10 percent more than normal.

ADVERSE REACTIONS: Among the side-effects are allergic reactions, rash, itching, skin eruptions, anaphylactic reaction, joint or muscle pain.

STORAGE: Store in a tightly closed container at controlled temperature.

SHELF-LIFE: Three to 4 years from date of manufacture.

GENERIC NAME: DAPSONE

Page: 35

BRAND NAMES: BENZENAMI'VE; DDS; AVLOBULFC'

CATEGORY: Anti-leprosy drug.

USE(S): For the treatment of all forms of leprosy.

DOSAGE FORMS: Tablets -- 25 mg, 100 mg

DOSING AND ADMINISTRATION:

The WHO Expert Committee on Leprosy has recommended that dapsone be commenced and maintained at full dosage without interruption in order to reduce secondary dapsone resistance. The recommended dosage is 6-10 mg/kg of body weight per week: 50-100 mg daily for full-size adults with correspondingly smaller doses in children. In lepromatous and borderline lepromatous patients, a full dosage of dapsone therapy should be administered for many years, at least 10 years after the patient is bacteriologically negative, and perhaps for life.

CAUTIONS AND WARNINGS: Contraindicated in patients with hypersensitivity to dapsone or its derivative. The drug must be used for an indefinite period of time.

ADVERSE REACTIONS: Dose-related hemolysis is the most common side-effect. Some of the more common side-effects are nausea, vomiting, GI upset, headache, nervousness, blurred vision, hemolytic anemia, liver damage, jaundice, rash and hyperexcitability.

STORAGE: Protect from light.

SHELF-LIFE: Three years from date of manufacture.

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GENERIC NAME: DEXTROMETHORPHAN HYDROBROMIDE + GUAIFENESIN

Page: 36

BRAND NAMES: ROBITUSSIN DM

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CATEGORY: Drugs acting on the respiratory tract.

USE(S): For the treatment of coughs.

DOSAGE FORMS: Syrup or Elixir -- Dextromethorphan hydrobromide, 100 mg/5 ml; guaiafenesin, 100 mg/5 ml.

DOSING AND ADMINISTRATION: The following doses should be given by mouth 4 times a day:

ADULTS -- Five ml (5 ml) to 15 ml (1 to 3 teaspoonsful).

CHILDREN under 12 years of age -- One-fourth to 1 teaspoonful (1.25 ml to 5 ml).

CAUTIONS AND WARNINGS: The cough mixture contains sugar and, therefore, should be used with caution in diabetics.

ADVERSE REACTIONS: Rare. However, hypersensitivity, rash, nausea and vomiting may occur.

STORAGE: Store in tightly closed containers at controlled room temperature.

SHELF-LIFE: Two to 4 years from date of manufacture.

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GENERIC NAME: DIAZEPAM (CS*)

Page: 37

BRAND NAMES: VALIUM
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CATEGORY: Anti-epileptic and psychotherapeutic drug.

USE(S): For the treatment of epilepsy, anxiety, alcohol withdrawal,
back sprain and back spasm.

DOSAGE FORMS: Tablets -- 2 mg, 5 mg, 10 mg
Injection -- 5 mg/ml in 2 ml ampouls, 10 mg/2ml

DOSING AND ADMINISTRATION:

=====
ADULTS --

- | | |
|----------------------------------|---|
| ■ For tension and anxiety states | Two to 10 mg by mouth
2-4 times daily. |
| ■ Acute alcohol withdrawal | Give 10 mg 3 or 4 times
during the first 24 hours;
then reduce to 5 mg, 3-4
times daily as needed. |
| ■ Back sprains and spasms | Give 2-10 mg, 3 or 4
times daily. |
| ■ Convulsive disorders | Give 2 to 10 mg, 2-4 times
daily. |

CHILDREN --

- | | |
|---------------------|--|
| ■ 5 years and older | Give 1 mg IV or IM every 2-5
minutes up to a maximum of 10
mg. Doses may be repeated in
2 to 4 hours, if necessary. |
|---------------------|--|
- =====

CAUTIONS AND WARNINGS: Contraindicated in patients showing hypersensitivity to any of the other benzodiazepines. Do not administer to pregnant women during the first trimester of pregnancy. Chronic usage during pregnancy may result in physical dependence and resultant withdrawal symptoms in the newborn. Since diazepam is excreted in breast milk, its use in infants may result in sedation. Chronic use of diazepam may result in physical dependence on the drug.

ADVERSE REACTIONS: Side-effects include CNS depression, hypotension, blurred vision, skin rash, confusion and diminished reflexes.

STORAGE: Store tablets in cool, dry place. The injection should be refrigerated until ready for use.

SHELF-LIFE: Two to 4 years from date of manufacture.

*Controlled substance subject to special AID/Washington order requirements.

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GENERIC NAME: DIETHYLCARBAMAZINE CITRATE

Page: 38

BRAND NAMES: HETRAZAN

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CATEGORY: Anti-filarial drug.

USE(S): For treatment of filariasis (*Wucheria bancrofti*), loaia-
sis (*Loa loa*), and onchocerciasis.

DOSAGE FORMS: Tablets -- 50 mg

DOSING AND ADMINISTRATION:

Filariasis -- Give 2 to 4 mg/kg by mouth 3 times daily for
for 1 to 4 weeks.

Loaiasis -- Give 2 mg/kg by mouth 3 times daily for 10 to
14 days.

CAUTIONS AND WARNINGS: Contraindicated in patients with hypersensitivity
to diethylcarbamazine.

ADVERSE REACTIONS: Side-effects include loss of appetite, nausea,
vomiting, headache, dizziness and drowsiness. Also possible are allergic
reactions (fever, tender swelling, muscle pains and rashes).

STORAGE: Store in tightly closed container at controlled room
temperature.

SHELF-LIFE: Three years from date of manufacture.

GENERIC NAME: DIGOXIN

Page: 39

BRAND NAMES: LANOXIN

CATEGORY: Cardiovascular drug -- cardiac glycoside

USE(S): For the treatment of congestive heart failure.

DOSAGE FORMS: Tablets -- 125 mcg, 250 mcg, 500 mcg
Elixir -- 500 mcg/2 ml, 60 ml container

DOSING AND ADMINISTRATION:

ADULTS -- The usual loading dose is 1 to 1.5 mg orally or 0.250 mg to 0.500 mg intramuscularly or intravenously, every 4 to 6 hours as needed for rapid digitalization. The maintenance dose is 0.125 mg to 0.500 mg once daily by mouth or parenterally. In previously undigitalized patients with normal renal function, maintenance therapy without a loading dose results in steady-state plateau concentrations in about 7 days.

CHILDREN -- The following amounts, divided into 2 or more doses, should be administered orally or IM to pediatric patients: 40 mcg to 60 mcg/kg for newborn infants; 60 mcg to 80 mcg/kg up to 2 years; and 40 mcg to 60 mcg/kg from 2 to 10 years. For children 10 years and older, follow the usual adult dosage.

CAUTIONS AND WARNINGS: Digitalization should be done in a place where parameters can be measured accurately and with sophisticated equipment. For this reason, rapid digitalization outside a medical center is discouraged. In cases of renal failure, patient dosage must be adjusted.

ADVERSE REACTIONS: Side-effects observed in overdosage include anorexia, nausea, vomiting, headache, weakness, lethargy, visual disturbances, drowsiness, confusion and delirium.

STORAGE: Preserve in tight containers. Store in accordance with manufacturer's instructions.

SHELF-LIFE: Two to 4 years from date of manufacture.

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GENERIC NAME: DIPHENHYDRAMINE HYDROCHLORIDE

Page: 40

BRAND NAMES: BENADRYL

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CATEGORY: Anti-allergic drug.

USE(S): For the treatment of allergies, motion sickness and insomnia.

DOSAGE FORMS: Capsules -- 25 mg, 50 mg
Elixir -- 12.5 mg per 5 ml

DOSING AND ADMINISTRATION:

ADULTS -- Give 25 mg to 50 mg by mouth 3 or 4 times daily. For insomnia, give 50 mg to 100 mg by mouth at bedtime.

CHILDREN -- Orally, give 1.25 mg per kg of body weight or 37.5 mg per square meter of body surface, 4 times a day, not to exceed 300 mg daily. Use is not recommended in premature and full-term infants under 1 year of age.

CAUTIONS AND WARNINGS: Contraindicated in children under 1 year of age; should be used with caution in pregnancy or in nursing mothers, and in patients with a history of bronchial asthma or peptic ulcer and those predisposed to urinary retention. Alcoholic beverages and other depressants should be avoided during diphenhydramine therapy.

ADVERSE REACTIONS: Side-effects include drowsiness, rash, dryness of mouth, sedation, dizziness, epigastric distress, and urinary retention.

STORAGE: Preserve in tight containers. Store at controlled room temperature (59 deg to 86 deg F). Protect from moisture. Dispense in a tight, moisture proof container.

SHELF-LIFE: Four years from date of manufacture.

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GENERIC NAME: DIPHtheria-PERTUSSIS-TETANUS VACCINE; DPT VACCINE Page: 41

BRAND NAMES: INFAGEN; TRI-IMMUNOL; TRIOGEN; TRIPLE ANTIGEN

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CATEGORY: Immunological for universal immunization.

USE(S): Routine immunization of infants and and pre-school age children against diphtheria, whooping cough (pertussis) and tetanus.

DOSAGE FORMS: Injection, multi-dose vial -- 7.5 ml (5 immunizations)

DOSING AND ADMINISTRATION:

Initial -- Inject 0.5 ml of vaccine IM at 2 months of age, then every 4 to 6 weeks for 3 doses.

Booster -- Inject 0.5 ml of vaccine IM 7 months to a year after the initial DPT injection, and 4 to 5 years later. Thereafter, tetanus and diphtheria toxoid (Td) should be given every 5 to 10 years.

CAUTIONS AND WARNINGS: Do not use in patients over 6 years of age, in those with epilepsy or other CNS diseases or allergy disorder, active infection or active respiratory tract disease. This product is available in both liquid and precipitated or adsorbed form. The adsorbed form is preferred because its slower absorption enhances immunogenicity.

ADVERSE REACTIONS: Adverse reactions are rare. The principal adverse reactions are allergic reactions. Tenderness at the injection site, fever, malaise, convulsions, and sterile abscess are rare side-effects.

STORAGE: Refrigerate at +4 deg C to +8 deg.

SHELF-LIFE: Eighteen (18) months from date manufacture.

=====
GENERIC NAME: EPHEDRINE SULFATE

Page: 43

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CATEGORY: Drug acting on the respiratory tract.

USE(S): For the treatment of bronchal asthma and nasal congestion.

DOSAGE FORMS: Capsules -- 25 mg, 50 mg
Syrup -- 20 mg/5 ml
Injection -- 25 mg/ml, 1 ml ampul; 50 mg/ml, 1 ml ampul

DOSING AND ADMINISTRATION:

ADULTS -- By mouth, give 25 mg to 50 mg every 3 to 12 hours as needed. Intravenously, 25 mg to 50 mg may be given slowly in 4 to 6 divided doses.

CHILDREN -- Give 12.5 to 25 mg every 3 to 4 hours.

CAUTIONS AND WARNINGS: Contraindicated in patients with histories of hypertension, heart disease, thyroid disease or diabetes. Do not exceed dosage recommendations.

ADVERSE REACTIONS: Side-effects include restlessness, anxiety, tension, tremor, headache, dizziness, flushing, palpitations and urinary retention.

STORAGE: Store in a tightly closed container, protected from light.

SHELF-LIFE: Capsules, 3 to 4 years from date of manufacture; syrup, 2 to 3 years; injection, 2 to 3 years.

=====
GENERIC NAME: EPINEPHRINE HYDROCHLORIDE

Page: 44

BRAND NAMES: ADRENALINE CHLORIDE; SUS-PHRINE
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CATEGORY: Drug used in shock or anaphylaxis; anti-asthmatic drug.

USE(S): For the treatment of respiratory distress due to bronchial spasms, for the rapid relief of hypersensitivity reactions to drugs and other allergens and for prolonging the action of infiltration anesthetics.

DOSAGE FORMS: Injection, Single and Multi-Dose Vials -- 1 mg/ml

DOSING AND ADMINISTRATION:

For IM or SC injection, the usual dose is 0.2 ml to 1 ml, starting with a small dose and increasing, if required. For bronchial asthma and allergic reactions, including anaphylactic shock, inject epinephrine SC. For cardiac resuscitation, a dose of 0.5 ml diluted to 10 ml with sodium chloride injection can be injected IV or intracardially to restore myocardial contractility. External heart massage should follow intracardial administration to facilitate the entry of the drug into coronary circulation.

PEDIATRIC -- Administer 0.01 ml/kg or 0.3 ml/sq meter to a maximum of 0.5 ml SC. If required, this may be repeated every 4 hours.

CAUTIONS AND WARNINGS: Contraindicated in coronary insufficiency, in labor, in combination with local anesthesia of fingers and toes, in individuals with organic brain damage, and in general anesthesia with halogenated hydrocarbons or cyclopropane. Should be administered with caution in elderly people, those with cardiac disease, hypertension, diabetes, or hyperthyroidism; in psychoneurotic patients; in pregnancy; and in patients with longstanding bronchial asthma and emphysema who have degenerative heart disease.

The effects of this drug may be potentiated by certain depressants (tricyclic); certain antihistamines (diphenhydramine, chlorpheniramine); and sodium l-thyroxine.

ADVERSE REACTIONS: Side-effects include some transient, minor reactions of anxiety, headache, fear and palpitations with therapeutic doses.

STORAGE: Store at controlled room temperature (59 deg to 86 deg F). Protect from exposure to light. Do not use if the solution is brown in color or if it contains a precipitate.

SHELF-LIFE: Two to 3 years after date of manufacture.

GENERIC NAME: ERGOTAMINE TARTRATE

Page: 45

BRAND NAMES: GYNERGEN; WYGRETTES

CATEGORY: Antimigraine drug.

USE(S): For the treatment of vascular headaches, migraine, cluster headache.

DOSAGE FORMS: Tablets -- 1 mg, 2 mg

DOSING AND ADMINISTRATION:

The average adult dose is 2 to 6 mg (two to six 1 mg or one to three 2 mg tablets) per day. The initial oral dose is 1 mg. Subsequently, up to 3 to 4 mg may be taken so long as the maximum of 6 mg is not exceeded in any one day. Total weekly dosage should not exceed 12 mg.

CAUTIONS AND WARNINGS: Contraindicated in heart disease, peripheral vascular disease, high blood pressure, impaired liver or kidney function, and in pregnancy. Tolerance may develop with prolonged or high dose use, necessitating discontinuation for a few days before resumption to restore its effectiveness.

ADVERSE REACTIONS: Side-effects include numbness and tingling of fingers and toes, muscle pain, weakness in extremities, nausea, vomiting, edema and itching.

STORAGE: Preserve in well-closed, light-resistant containers at a maximum temperature of 30 deg C (86 deg F).

SHELF-LIFE: Four years from date of manufacture.

=====

GENERIC NAME: ETHAMBUTOL HYDROCHLORIDE

Page: 46

BRAND NAMES: MYAMBUTOL

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CATEGORY: Anti-infective drug.

USE(S): For the treatment of pulmonary tuberculosis, in combination with other tuberculostatic drugs.

DOSAGE FORMS: Tablets -- 100 mg, 400 mg

DOSING AND ADMINISTRATION:

INITIAL TREATMENT for those who have never received anti-tubercular drugs in the past -- Give by mouth 15 mg per kg (7 mg per lb.) of body weight once daily, under medical supervision.

RETREATMENT of those who previously received anti-tubercular drugs -- Give by mouth 25 mg per kg (11 mg per lb.) of body weight once daily for 60 to 90 days. Then give 15 mg per kg (7 mg per lb.) of body weight once daily.

Use in children under 13 years of age is not recommended.

CAUTIONS AND WARNINGS: The presence of kidney disease requires dosage adjustment by analysis at several levels. In case of kidney disease, refer patient to appropriate hospital facilities. Use with caution during pregnancy and nursing. Ethambutol should always be used in conjunction with other anti-tubercular drugs (isoniazid, for example). Treatment should continue until clinical improvement occurs.

ADVERSE REACTIONS: Adverse reactions include decreased visual acuity, which appears to be related to dose and duration of treatment and which is usually reversible upon prompt discontinuation of the drug once this side-effect is experienced.

STORAGE: Store at controlled room temperature of 15-30 deg C (59-86 deg F).

SHELF-LIFE: Four years from date of manufacture.

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GENERIC NAME: FERROUS SULFATE

Page: 47

BRAND NAMES: FEOSOL; MOL-IRON

=====

CATEGORY: Anti-anemia drug.

USE(S): For the prevention and treatment of iron deficiency anemia.

DOSAGE FORMS: Tablets -- 300 mg (60 mg elemental iron per tablet)
Elixir -- 200 mg (44 mg elemental iron) per 5 ml

DOSING AND ADMINISTRATION:

Iron deficiency states require 90 to 300 mg of elemental iron daily. Give one to 5 of the 300 mg tablets by mouth to adults. Give 2 ml of the elixir to children by mouth daily.

CAUTIONS AND WARNINGS: Contraindicated in patients with hemolytic anemia, cirrhosis of the liver, peptic ulcer and ulcerative colitis. Antacids must not be taken along with ferrous sulfate as they will make the drug ineffective.

ADVERSE REACTIONS: The most common side-effects are gastrointestinal irritation, nausea, constipation and diarrhea. Overdosage is manifested by lethargy, vomiting, diarrhea, GI upset, weak pulse, low blood pressure and tarry stools. To minimize GI irritation, this drug may be taken right after eating.

STORAGE: Store in tight containers below 30 deg C (86 deg F).

SHELF-LIFE: Two to 4 years from date of manufacture.

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GENERIC NAME: GENTAMICIN SULFATE

Page: 48

BRAND NAMES: BAYGENT; GARAMYCIN; U-GENCIN

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CATEGORY: Antibacterial.

USE(S): The injectable form of the drug is useful for treatment of serious infections of the central nervous system (meningitis), urinary tract, respiratory tract, gastrointestinal tract, skin, bone and soft tissue, including burns.

The ophthalmic forms are used for matter-producing or dry exudate infections of the eye.

DOSAGE FORMS: INJECTION --
10 mg/ml, 2 ml vial (sterile)
40 mg/ml, 2 ml vial (sterile)
80 mg/ml, 2 ml vial (sterile)
OINTMENT AND SOLUTION for ophthalmic use (sterile) --
Each ml contains the equivalent of 3.0 mg gentamicin

DOSING AND ADMINISTRATION:

INJECTABLE FORMS The injectable form of the drug can be given IM or IV. If administered IV, it should be diluted in 50 to 200 ml of 0.9% sodium chloride or 5% dextrose and water and then infused over 30 to 120 minutes. The usual duration of treatment for all patients is 7-10 days.

CHILDREN -- The dosage for children from 1/2 year to 12 years of age is calculated on the basis of 2.0 to 2.5 mg/kg/day. For children exceeding 12 years of age, dosage is calculated on the basis of 3.0 - 5.0 mg/kg/day or 1.0 - 1.7 mg/kg of body weight every 8 hours.

OPHTHALMIC FORMS Place one or two drops of the ophthalmic solution into the affected eye every 4 hours. In serious infections, the dosage may be increased to as much as two drops once every hour.

Apply a small amount of the ophthalmic ointment to the affected eye 2 to 3 times daily.

CAUTIONS AND WARNINGS: Gentamicin is contraindicated in cases of hypersensitivity to the drug. Its use in pregnant women or nursing mothers is not recommended. The dose of the drug must be reduced in patients with impaired kidney functions. Blood levels of the drug must be closely monitored and, for that reason, use should be reserved for those situations where blood samples can be drawn and analyzed. The drug also should be used continuously for 7-10 days.

ADVERSE REACTIONS: Possible side-effects include significant kidney toxicity, loss of hearing, ringing in the ear, dizziness, confusion, headache, fever, rash, itching, weight loss, muscle weakness and decreased appetite.

STORAGE: Preserve in tight containers. Sterile products should be stored in tamper-evident containers to ensure sterility at the time of use. Store between 2 deg C and 30 deg C (between 36 deg F and 86 deg F).

SHELF-LIFE: Three years from date of manufacture.

GENERIC NAME: GENTIAN VIOLET

Page: 50

CATEGORY: Anti-infective

USE(S): For the treatment of yeast infection (Vulvovaginal candidi-
asis).

DOSEAGE FORMS: Liquid solution (vaginal douche).

DOSING AND ADMINISTRATION:

Flush high into the vagina with douche solution 1 to 2 times
daily for 7 to 14 days.

CAUTIONS AND WARNINGS: Contraindicated in patients with hypersensitivity
to gentian violet. During treatment, it is recommended that the patient
refrain from sexual intercourse or that the partner wear a condom to avoid
reinfection.

ADVERSE REACTIONS: Side-effects are rare and include a burning irritation.
Also, gentian violet may stain the skin.

STORAGE: Store in a tight container, protected from light.

SHELF-LIFE: Three years from date of manufacture.

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GENERIC NAME: HYDROCHLOROTHIAZIDE

Page: 51

BRAND NAMES: ESIDRIX; HYDRODIURIL

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CATEGORY: Antihypertensive drug; diuretic.

USE(S): For treatment of high blood pressure and fluid retention.

DOSAGE FORMS: Tablets -- 25 mg, 50 mg, 100 mg

DOSING AND ADMINISTRATION:

ADULTS --

•• Edema: To initiate diuresis, administer 25 mg to 200 mg daily until attained. To maintain diuresis, administer 25 to 100 mg daily or as needed.

•• Hypertension: Administer 50 mg to 100 mg as a single dose to start. Then give 25 mg to 100 mg daily in 2 divided doses, if desired.

CHILDREN --

•• Give by mouth 1 mg/lb. of body weight daily in 2 doses. Infants under 6 months of age may require 1.5 mg/lb. of body weight per day in 2 doses. Infants up to 2 years of age may be given 12.5 to 317.5 mg daily in 2 doses. Children from 2 to 12 years of age may be given 37.5 to 100 mg daily in 2 doses. Dosage should be based on body weight.

CAUTIONS AND WARNINGS: Use with caution in kidney or liver disease. Not recommended for use in pregnancy or nursing mothers. Therapy must be individualized according to patient response.

ADVERSE REACTIONS: Lack of appetite, nausea, dizziness, photosensitivity, rash, muscle spasm and weakness are some of the more common side-effects of hydrochlorothiazide.

STORAGE: Store in tightly closed containers.

SHELF-LIFE: Two to 4 years from date of manufacture.

GENERIC NAME: HYDROCORTISONE; HYDROCORTISONE ACETATE

Page: 52

BRAND NAMES: CORTEF ACETATE; CONTRIL; DERMACORT; HYTONE

CATEGORY: Anti-inflammatory and antipruritic.

USE(S): For the temporary relief of minor skin irritations, itching, and rashes from contact with plants such as poison ivy, poison oak, poison sumac, eczema, dermatitis, insect bites, various allergens, and for itchy genital and anal areas.

DOSAGE FORMS: Topical cream -- 1/2% , 1%, 2%
Topical ointment -- 1%, 2%

DOSING AND ADMINISTRATION:

Apply to the affected areas 3 or 4 times daily. When a favorable response has been achieved, gradually reduce dosage and eventually discontinue.

CAUTIONS AND WARNINGS: Topical steroids are contraindicated in patients who have demonstrated sensitivity to their components. In the presence of an infection, an appropriate antifungal or antibacterial agent should be used. Unless the effect of the hydrocortisone is observed promptly, the product should be discontinued in favor of a more favorable product. Hydrocortisone should be used with caution in pregnant women and should not be used in large amounts or for extended periods of time.

ADVERSE REACTIONS: Adverse reactions, especially under occlusive dressings, include burning, itching, irritation, folliculitis, hypopigmentation and allergic dermatitis.

STORAGE: Store in a cool place.

SHELF-LIFE: Two to 4 years from date of manufacture.

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GENERIC NAME: INSULIN, REGULAR

Page: 53

BRAND NAMES: REGULAR ILETIN

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CATEGORY: Antidiabetic agent.

USE(S): For the treatment of diabetes mellitus which is uncontrollable by diet alone.

DOSAGE FORMS: Injection -- 100 units/ml, 10 ml vial (sterile)

DOSING AND ADMINISTRATION:

The number and size of daily doses and the time of administration, as well as diet and exercise, are problems which require direct and continuous medical supervision. Maintenance doses of insulin are administered subcutaneously.

CAUTIONS AND WARNINGS: Insulin should be used only under the direct supervision of a physician. Each patient requires individual study. The patient should be instructed to keep a lump of sugar or candy bar readily available for use in the event of insulin reaction (too little sugar in the blood or hypoglycemia) which can occur with excess dosage, missed meals, and excess exercise or work. This reaction requires the prompt administration of carbohydrates.

ADVERSE REACTIONS: Side-effects are usually related to symptoms of low blood sugar or hypoglycemia -- weakness, fatigue, headache, lassitude, nausea, sweating, tremor.

STORAGE: Insulin should be stored in a cool place, preferably a refrigerator.

SHELF-LIFE: Two to 3 years from date of manufacture.

GENERIC NAME: ISONIAZID

Page: 54

BRAND NAMES: INH; NYDRAZID

CATEGORY: Anti-tuberculosis drug.

USE(S): For the prevention and treatment of tuberculosis.

DOSAGE FORMS: Tablets -- 100 mg, 300 mg

DOSING AND ADMINISTRATION:

ACTIVE TUBERCULOSIS THERAPY -- In combination with other tuberculostatic agents, isoniazid is given as a single daily dose by mouth. The maximum dose is 300 mg given once daily.

•• Children up to 12 years of age: Give 10 to 20 mg/kg of body weight daily.

•• Children over 12 years of age and adults: Give 5 mg/kg of body weight daily.

PREVENTIVE THERAPY --

•• Children -- Give 10 mg/kg of body weight per day as a single dose by mouth.

•• Adults -- Give 300 mg (three 100 mg tablets or one 300 mg tablet) daily as a single dose by mouth. Children over 12 years of age or taller than 140 cm are treated as adults.

CAUTIONS AND WARNINGS: Contraindicated in liver or kidney disease. The concomitant use of alcohol is contraindicated due to the possibility of hepatitis. Vitamin B6 (pyridoxine) should be administered concurrently with isoniazid in those individuals at risk to developing peripheral neuropathy (diabetics, alcoholics).

ADVERSE REACTIONS: Side-effects include peripheral neuropathy (numbness of hands and feet), nausea, vomiting, jaundice, fever and rash. Isoniazid overdose produces signs and symptoms within 30 minutes to 3 hours after ingestion and include nausea, vomiting, dizziness, slurring of speech, blurring of vision, visual hallucinations, respiratory distress, CNS depression progressing from stupor to profound coma and seizures. Treatment of overdose includes securing the airway and establishing respiratory exchange. To control convulsions, administer short-acting barbiturates IV followed by IV administration of 1 mg of Vitamin B6 for each mg of isoniazid ingested.

STORAGE: Store in a tightly closed container, protected from light.

SHELF-LIFE: Two to four years from date of manufacture.

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GENERIC NAME: LIDOCAINE HYDROCHLORIDE

Page: 55

BRAND NAMES: XYLOCAINE

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CATEGORY: Local anesthetic; anti-arrhythmic drug.

USE(S): For the production of local or regional anesthesia by infiltration techniques; and for the management of cardiac arrhythmias, particularly of the ventricular type.

DOSAGE FORMS: Injections -- 1%, 2% w/v in Water for Injection (sterile)
••Sterile Solutions for Local Anesthetic Infiltration
••Intramuscular Injection for Cardiac Arrhythmias

DOSING AND ADMINISTRATION:

The injections are to be used for cardiac arrhythmias only with constant ECG monitoring and emergency resuscitative equipment and drugs immediately available for possible adverse reactions involving the cardiovascular, respiratory or central nervous system. Continuous intravenous infusion of lidocaine (1 to 4 mg/min.) is necessary for anti-arrhythmic effect. However, the dose must be titrated based upon the output of cardiac response. Solutions for V infusion may be prepared by the addition of 1 or 2 Gm of lidocaine to 5% dextrose and water, ranging in volume from 250 ml to 1000 ml, depending on the fluid status of the patient. Lidocaine can be administered by the IV bolus infusion, usually 1 mg/kg given at 20 to 50 mg/min., with no more than 200 to 300 mg being given during a one hour period.

CAUTIONS AND WARNINGS: The use of lidocaine is contraindicated in patients with liver disease or a known history of hypersensitivity to local anesthetics of the amide type. Injections should be made with frequent aspirations to avoid possible inadvertent intravascular administration from IM injections for cardiac arrhythmias. This drug is for use only by those qualified to administer anesthetics. For cardiology purposes, only those thoroughly familiar with the drug and its effects should administer it.

ADVERSE REACTIONS: Side-effects include lightheadedness, drowsiness, dizziness, twitching, tremors, convulsions, respiratory depression, and cardiovascular collapse.

STORAGE: Protect from light.

SHELF-LIFE: Two years from date of manufacture.

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GENERIC NAME: MAGNESIUM HYDROXIDE AND ALUMINUM HYDROXIDE

Page: 56

BRAND NAMES: ALUDROX; MAALOX; MYLANTA; WINGEL

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CATEGORY: Antacids and other anti-ulcer drugs.

USE(S): For the treatment of hyperacidity in the stomach, upset stomach and indigestion.

DOSAGE FORMS: Tablets -- 300 mg to 800 mg each
Liquid Suspension -- Combined hydroxides of 400 mg to 800 mg per 5 ml (teaspoonful)

DOSING AND ADMINISTRATION: The dose and frequency of administration are dependent on the severity of symptoms and the rate and degree of relief obtained. The usual doses are as follows:

ADULTS -- Five ml to 10 ml of liquid or tablets containing 300 mg to 600 mg of combined magnesium and aluminum hydroxides should be taken by mouth along with water 4 times daily. Tablets must be chewed before they are swallowed. Liquid must be shaken well each time before taking. The liquid preparation provides more rapid relief.

CHILDREN -- One-half of the adult dose, 2.5 ml to 5 ml OR one-half or one teaspoonful of the liquid suspension or one-half to one 300 mg tablet, may be given. Adolescents may be given the usual adult dose.

CAUTIONS AND WARNINGS: Contraindicated in conjunction with any tetracycline antibiotic or iron therapy.

ADVERSE EFFECTS: Aluminum hydroxides alone tend to constipate while magnesium salts tend to lead to diarrhea when administered alone. Combination aluminum and magnesium hydroxide products tend to minimize these adverse effects. However, prolonged use may result in constipation in some individuals.

STORAGE: Store in a tight container in a cool, dry place.

SHELF-LIFE: Tablets, 3-4 years; liquid, 2-3 years from date of manufacture.

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GENERIC NAME: MAGNESIUM SULFATE

Page: 57

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CATEGORY: Cathartic.

USE(S): As a laxative to cause evacuation of the bowels. Magnesium sulfate is often used after the ingestion of anthelmintics or poisons to speed up the evacuation of the worms or toxic materials.

DOSAGE FORMS: Crystals or powder.

DOSING AND ADMINISTRATION: The usual adult dose is 15 Gm by mouth with a glass of water (8 fl. oz.) preferably on an empty stomach.

CAUTIONS AND WARNINGS: Contraindicated in patients with impaired kidney function. Not to be used along with neomycin. This or other laxatives should not be given to patients with undiagnosed abdominal pain, intestinal obstruction or fecal compaction. Magnesium sulfate should be taken for short periods only.

ADVERSE REACTIONS: Nausea, caused by the bitter taste, is a common side-effect of magnesium sulfate.

STORAGE: Preserve in a tight, well-closed container.

SHELF-LIFE: Two to 4 years from the date of manufacture.

=====

GENERIC NAME: MEASLES VIRUS VACCINE, LIVE

Page: 58

BRAND NAMES: ATTENUVAX; LIRUGEN; M-VAC

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CATEGORY: Immunological for universal immunization.

USE(S): For active immunization of children 15 months or older against measles (rubeola).

DOSAGE FORMS: Injection -- Single-dose vials, for subcutaneous injection

DOSING AND ADMINISTRATION: The dose of measles virus vaccine is the same for all patients -- 0.5 ml. A booster is not needed except for infants to whom the vaccine was administered while less than about 15 months of age, as in geographically isolated or other relatively inaccessible populations for whom immunization programs are logistically difficult, and in population groups where natural measles infection may occur in a large proportion of infants before the age of 15 months. NOTE: A new unused sterile disposable syringe with a 25 gauge 5/8 inch needle should be used for each injection of the vaccine since certain preservatives, antiseptics and detergents will inactivate the live measles virus vaccine.

CAUTIONS AND WARNINGS: Unless absolutely necessary due to serious logistical problems or widespread disease prevalence, measles vaccine should not be given to infants under 12 to 15 months of age. As some of the vaccines contain neomycin, use of the vaccine in persons sensitive to this antibiotic is contraindicated. In pregnancy, risk/benefit must be carefully weighed. DO NOT INJECT INTRAVENOUSLY.

ADVERSE REACTIONS: One of the more common side-effects of the measles virus vaccine is fever. Other side-effects, including encephalitis, which may develop within 30 days after vaccination, are rare.

STORAGE: Store the vaccine in a refrigerator at 2 to 8 deg. C (35.6 to 46.4 deg. F) prior to reconstitution and protect from light. After reconstitution, protect from light. During shipment, the vaccine must be maintained at 10 deg. C (50 deg. F) or less to avoid a loss in potency.

SHELF-LIFE: Eighteen (18) months from date of manufacture.

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GENERIC NAME: MEBENDAZOLE

Page: 59

BRAND NAMES: VERMOX

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CATEGORY: Anthelmintic.

USE(S): For the treatment of infestations of hookworm, pinworm, roundworm and whipworm.

DOSAGE FORMS: Chewable Tablets -- 100 mg

DOSING AND ADMINISTRATION: One dosage schedule applies equally to children and adults. The tablets should be chewed before they are swallowed.

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Control of:	Dosage in 100 mg Chewable Tabs
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••Hookworm	One tablet by mouth each morning and evening for 3 consecutive days.
••Roundworm	
••Whipworm	

••Pinworm	One tablet orally as a single dose.
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If the patient is not cured within 3 weeks following treatment, a second course of therapy should be advised.

CAUTIONS AND WARNINGS: Contraindicated for use in pregnancy or in nursing mothers. Use in children less than 2 years of age requires assessment of risk benefit, since the drug has not been extensively studied in this group. Swallowing the tablets whole will be ineffective since they are formulated to be chewed.

ADVERSE REACTIONS: Common adverse reactions include abdominal pain and diarrhea.

STORAGE: Store in a tightly closed container.

SHELF-LIFE: Four years from date of manufacture.

=====

GENERIC NAME: METHYLDOPA

Page: 60

BRAND NAMES: ALDOMET

=====

CATEGORY: Antihypertensive drug.

USE(S): For treatment of sustained moderate to severe hypertension.

DOSAGE FORMS: Tablets -- 125 mg, 250 mg, 500 mg

DOSING AND ADMINISTRATION:

ADULTS -- The usual starting dose for adults is 250 mg by mouth 2 or 3 times daily for 2 days. Maintenance therapy is 500 mg to 2 Gm (one to four 500 mg tablets) in 2 to 4 divided doses. The maximum recommended dose is 3 Gm (six 500 mg tablets) daily.

CHILDREN -- The recommended dosage for children is 20-40 mg per kg of body weight in 2 to 4 divided doses, up to a maximum of 65 mg/kg of body weight or 3.0 Gm daily, whichever is less.

CAUTIONS AND WARNINGS: Use with caution in patients with a history of liver disease or dysfunction. Periodic blood counts should be done during therapy to detect hemolytic anemia. Contraindicated in patients with hypersensitivity to methyldopa.

ADVERSE REACTIONS: Sedation, headache, weakness, dizziness, nausea, fever, nasal stuffiness and impotence are potential adverse reactions to the drug. Edema (and weight gain), bradycardia, aggravation of angina pectoris, liver and hematologic changes, rash as in exzema, nasal stuffiness, enlargement of breasts, lactation, amenorrhea, and decreased libido are infrequent adverse effects experienced with methyldopa.

STORAGE: Preserve in well-closed containers.

SHELF-LIFE: Four years from date of manufacture.

=====

GENERIC NAME: METHYLERGONOVINE MALEATE

Page: 61

BRAND NAMES: ERGOTRATE; METHERGINE

=====

CATEGORY: Oxytocic.

USE(S): Treatment of postpartum atony (lack of muscle tone) and hemorrhage; routine management after delivery of the placenta; and, under full obstetric supervision, may be used during second stage of labor following delivery of the anterior shoulder.

DOSAGE FORMS: Tablets -- 0.2 mg (1/320 gr)
Injection -- 0.2 mg/ml in 1 ml ampul

DOSING AND ADMINISTRATION:

INTRAMUSCULAR -- Inject 0.2 mg (1 ml) after delivery of the anterior shoulder, after delivery of the placenta, or during the puerperium. Dosage may be repeated as required, at intervals of 2 to 4 hours.

ORAL -- Give 0.2 mg by mouth 3 to 4 times daily for one week maximum.

CAUTIONS AND WARNINGS: Contraindicated in high blood pressure, for induction of labor, in cases of threatened spontaneous abortion, in toxemia and in pregnancy. Not recommended for IV administration due to the possibility of inducing sudden hypertensive and cerebrovascular accidents. Caution should be exercised in the presence of sepsis, vascular disease, and liver or kidney disease.

ADVERSE REACTIONS: Nausea, vomiting, transient high blood pressure, dizziness, headache, ringing in the ear, and chest pain are side-effects of methylergonovine therapy.

STORAGE: Store in a cool, dry place.

SHELF-LIFE: Tablets, 4 years from date of manufacture; injection, 3 years.

=====
GENERIC NAME: METRONIDAZOLE

Page: 62

BRAND NAMES: FLAGLYL
=====

CATEGORY: Anti-infective.

USE(S): For treatment of trichomoniasis and intestinal amebiasis.

DOSAGE FORMS: Tablets -- 250 mg

DOSING AND ADMINISTRATION:

ADULTS --

■ Trichomoniasis: Give one 250 mg tablet by mouth 3 times daily for 7 days. Where repeat treatment is required, 4 to 6 weeks should lapse between treatments, and the presence of the causative agent should be confirmed by laboratory tests.

■ Amebiasis: Give three 250 mg tablets by mouth 3 times a day for 5 to 10 days.

CHILDREN -- For amebiasis, children should be administered the equivalent of 35 mg to 50 mg/kg of body weight every 24 hours, divided into 3 doses, for 10 days.

CAUTIONS AND WARNINGS: Contraindicated during the first trimester of pregnancy. Use with extreme caution and only when other treatment has failed during the second and third trimester of pregnancy or during lactation. Alcohol should not be consumed at the same time as metronidazole is being taken, as a reaction -- which consists off flushing, headaches, abdominal cramping, nausea and vomiting -- may occur. Partners, wives and husbands should take the course of therapy for trichomoniasis.

ADVERSE REACTIONS: Adverse reactions include nausea, headache, loss of appetite, metallic taste in mouth, abdominal cramping, and darkened urine.

STORAGE: Preserve in tightly closed containers.

SHELF-LIFE: Four years from date of manufacture.

=====
GENERIC NAME: 1) NORGESTREL
2) NORGESTREL AND ETHINYL ESTRADIOL
BRAND NAMES: 1) OVRETTE
2) FEMENAL; LO-FEMENAL
=====

CATEGORY: Oral contraceptives.

USE(S): For the prevention of pregnancy in women who chose oral contraception in preference to other methods.

DOSAGE FORMS: Tablets -- 0.3 mg Norgestrel + 0.03 mg Ethinyl Estradiol
Tablets -- 0.5 mg Norgestrel + 0.05 mg Ethinyl Estradiol
Tablets -- 0.075 mg Norgestrel

DOSING AND ADMINISTRATION: These oral contraceptive tablets are available through AID/Washington in packaging arrangements to accommodate a 28-day regimen. The woman should be advised to take all of the tablets precisely as scheduled in order to prevent unwanted pregnancies.

Breast-feeding mothers should be encouraged to use a non-estrogen-containing oral contraceptive, especially during the first 4 to 6 months post-partum. The progestin only tablets (e.g., norgestrel) should be provided to lactating mothers who desire hormonal contraceptive protection.

■■■COMBINED ORAL CONTRACEPTIVES■■■
[Norgestrel and Ethinyl Estradiol]

■■■ REGIMEN (28-Day) --- For the initial cycle, the woman takes 1 tablet daily by mouth BEGINNING ON DAY 5 of the menstrual cycle and ENDING ON DAY 25, counting the first day of menstruation as DAY 1. BEGINNING ON DAY 26, the woman takes by mouth daily 1 of the remaining 7 tablets of a different color, to complete the 28-day cycle. A menstrual period should be expected during this last week of the cycle.

Immediately following completion of the initial 28-day regimen, repeat the 28-day regimen, taking one tablet daily in the sequence noted above, as long as the woman wishes to avoid pregnancy. The prescribed dosage schedule must be followed exactly.

■■■SINGLE ORAL CONTRACEPTIVE■■■
[Norgestrel (Ovrette)]

■■■ REGIMEN --- For the initial cycle, the woman takes 1 tablet daily by mouth BEGINNING ON DAY 5 of the menstrual cycle and ENDING ON DAY 25, counting the first day of menstruation as DAY 1. Beginning on DAY 26, the woman takes by mouth daily 1 of the remaining 7 tablets of a different color, to complete the 28-day cycle. A menstrual period should NOT be expected during this last week of the cycle. If menstruation occurs, it may be sporadic and irregular with spotting.

Immediately following completion of the initial 28-day regimen, repeat the 28-day regimen, taking one tablet daily in the sequence noted above, as long as the woman wishes to avoid pregnancy. The prescribed dosage schedule must be followed exactly. If the tablets were taken exactly as directed and

it has been 45 days since the last menstrual period, the possibility of pregnancy should be investigated.

A. I. D. provides progestin-only tablets for use exclusively by lactating women. Norgestrel (Ovrette) is taken on a continuing basis -- 1 tablet a day every day of the year. For a fully lactating woman (one who is nightfeeding and nursing more than 6 times daily), initiation of use of this single oral contraceptive may be delayed until the third month post-partum. In the absence of total breast feeding, the tablets should be initiated by the 7th week post-partum. Menstrual periods may or may not occur in lactating women using the progestin only product. If menstruation does occur, it may be sporadic or irregular with spotting. For non-lactating women who elect to use the "mini pills", the first tablet should be taken on the first day of the menstrual cycle.

CAUTIONS AND WARNINGS: Present and past conditions which preclude the use of oral contraceptives are clots in the legs, lungs or elsewhere; stroke, heart attack or angina pectoris (pain in the chest); known or suspected cancer of the breast or sex organs; severe liver disease; and irregular or scanty menstrual periods prior to taking the pill initially. Oral contraceptives are contraindicated in cases of undiagnosed unusual vaginal bleeding, breast nodules, diabetes, high blood pressure, high cholesterol, migraine headaches, heart or kidney disease, epilepsy, mental depression, fibroid tumors of the uterus, gall bladder disease, asthma, problems during a prior pregnancy, history of jaundice, or family history of breast cancer, or in pregnancy or nursing mothers (combined OC's).

Clinically significant drug interactions which reduce the effectiveness of oral contraceptive tablets can be expected with: rifampin, isoniazid, penicillin V, chloramphenicol, sulfonamides, nitrofuradantoin, barbiturates, phenytoin, pain killers, tranquilizers and anti-migraine compounds. The OC's may alter the effectiveness of oral anticoagulants, anticonvulsants, certain antidepressants, antihypertensive agents, vitamins and diabetic medications. Consequently, the physician or other qualified health worker should be informed if the patient is taking such drugs.

ADVERSE REACTIONS: The most serious side-effects encountered in the use of contraceptives include thrombophlebitis, thrombosis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, cerebral hemorrhage, hypertension, gall bladder disease, liver tumors, and congenital anomalies. Other side-effects include tenderness of breasts, nausea and vomiting; changes in menstrual flow, such as irregular spotting or bleeding; amenorrhea; worsening of migraine, asthma, epilepsy and kidney and heart disease due to water retention; mental depression; more frequent urination; nervousness; dizziness; loss or increase in sex drive; dysmenorrhea; and changes in weight. Studies indicate that the use of combined oral contraceptives during lactation may affect milk production.

STORAGE: Preserve in a cool, dry place.

SHELF-LIFE: Five years from date of manufacture.

GENERIC NAME: ORAL REHYDRATION SALTS

Page: 65

BRAND NAMES: LITROSOL; ORALYTE; ORESOL

CATEGORY: Oral solution correcting water, electrolyte and acid-base disturbances.

USE(S): For treatment of mild to severe diarrhea illnesses and dehydration. After dissolving, administer BY MOUTH ONLY. DO NOT USE THIS SOLUTION FOR INJECTION.

DOSAGE FORMS: Dry Powder in Packets -- To be mixed in 1 liter of potable water. Each powder packet contains the following:

===== (OR) =====

ORS-CITRATE (NEW)		ORS-BICARBONATE (ORIGINAL)	
Ingredient	Grams	Ingredient	Grams
Sodium chloride	3.5	Sodium chloride	3.5
Sodium citrate	2.9	Sodium bicarbonate	2.5
Potassium chloride	1.5	Potassium chloride	1.5
Glucose anhydrous	20.0	Glucose anhydrous	20.0

=====

The ORS-citrate is the more stable product and the formulation now being recommended by WHO. However, ORS-bicarbonate is equally effective and may be used as an alternate or until existing supplies are exhausted.

Dissolve a packet in 1 liter of potable water. Normal drinking water may be used although it is preferred that the water be boiled and cooled prior to adding the ORS to it. BE SURE TO CHECK THE LABEL CONTENTS on each packet to be sure of the amount of water required for mixing its contents.

NOTE: ORS tablets are being made available by at least one supplier. Since various products may differ in ORS composition, be sure to read the product label to ascertain the amount of water required to dissolve the contents.

DOSING AND ADMINISTRATION: The primary consideration in oral rehydration therapy is the replacement of the OUTPUT of water and electrolytes from the body in stools, vomit, urine, sweat, etc., by an INPUT of water and electrolytes. In administering fluids to a dehydrated patient with severe diarrhea remember that fluids should fulfil the following three needs:

• REHYDRATION -- Correction of the existing deficiencies of water and electrolytes as indicated by the presence of signs of dehydration.

••MAINTENANCE -- Replacement of continuing abnormal losses of water and electrolytes due to ongoing diarrhea in order to prevent the recurrence of dehydration.

••NORMAL REQUIREMENTS -- Providing normal daily requirements for fluids during rehydration and maintenance.

Therapy is usually possible by the oral administration of ORS solution, except in cases of severe dehydration, uncontrollable vomiting or other serious complication which prevents successful intake of ORS solution by mouth.

•••

REHYDRATION THERAPY -- In dehydrated patients, it is necessary that the existing water and electrolyte losses be replaced promptly and adequately. In ORT, a steady but comfortable rate of ingestion is normally adequate to achieve proper rehydration. Guidelines for rehydration therapy, showing average volumes and rates of administration, are shown in Table I.

Table I: WHO Guidelines for Rehydration Therapy

DEGREE OF DEHYDRATION:	AGE GROUP:	TYPE OF FLUID:	VOLUME OF FLUID (PER Kg BODY WEIGHT):	TIME OF ADMINISTRATION:
Mild	All	ORS Solution	50 ml/kg	Within 4 hours
Moderate	All	ORS Solution	100 ml/kg [1]	Within 4 hours
		I.V. Ringer's Lactate [2]	30 ml/kg	Within 1 hour
		FOLLOWED BY:		
Severe	Infants	I.V. Ringer's Lactate	40 ml/kg	Within next 2 hours
		FOLLOWED BY:		
		ORS Solution	40 ml/kg	Within next 3 hours
	Older children and adults	I.V. Ringer's Lactate	110 ml/kg	Within 4 hrs. (Initially as fast as possible)

[1] During initial therapy, adults can usually consume up to 750 ml/hour and children can usually consume up to 300 ml/hour.

[2] Included in this monograph for information only as this preparation is not included in this formulary. Only ORS is covered by this monograph.

MAINTENANCE THERAPY -- After signs of dehydration are gone, it is vital that **ONGOING ABNORMAL LOSSES** of fluid and electrolytes associated with continuing diarrhea **BE REPLACED**. The most practical method for estimating stool and urine losses is to use diapers or a "cholera cot" and a weighing scale. This will assist in matching **INPUT** of fluids with **OUTPUT** -- the basic principle in maintenance therapy.

Table II: WHO Guidelines for Maintenance Therapy

AMOUNT OF DIARRHEA	KIND OF FLUID	ADMINISTRATION	AMOUNT OF FLUID
MILD diarrhea (Not more than one stool every 2 hours or longer, OR less than 5 ml stool per kg per hour)	ORS Solution	By mouth at home	100 ml/kg body weight per day until diarrhea stops [1]
SEVERE diarrhea (More than one stool every 2 hours, OR more than 5 ml of stool per kg per kg per hour)	ORS Solution	By mouth; at the treatment facility	Replace stool losses, volume for volume; if not measurable, give 10-15 ml/kg body weight per hour.
SEVERE diarrhea with RECURRENCE of signs of DEHYDRATION.		Treat as for severe dehydration in Table I.	

[1] As an alternative, mothers can be advised to give infants 10 ml/kg body weight after each stool. For older children and adults, their thirst serves as a reliable guide as to their fluid needs: they can be told to drink as much as they want to satisfy their thirst.

NORMAL DAILY FLUID REQUIREMENTS -- Meeting the body's normal daily fluid requirements can be achieved in the following ways:

*****BREAST FEEDING OF INFANTS** should be continued, allowing the infant to feed as often as it desires **IN ADDITION TO** the needed volume of ORS solution.

*****MILK AND OTHER FLUIDS NORMALLY CONSUMED BY THE INFANT WHO IS NOT BREAST-FED** should be restarted. However, the milk should be **DILUTED** with an equal volume of clean plain water. These should be given **IN ADDITION TO** the ORS solution. However, until the diarrhea stops, approximately 2/3 of the total fluid intake should be ORS solution and the remainder, milk and other fluids.

■■■■PLAIN WATER SHOULD BE GIVEN TO OLDER CHILDREN AND ADULTS throughout rehydration therapy, IN ADDITION TO ORS solution, in whatever amounts they wish to drink.

■■■

CAUTIONS AND WARNINGS: ORS has been found to be remarkably safe. It is only in the small proportion of persons who are severely dehydrated that ORS may not be used initially -- I.V. therapy using an appropriate sterile solution, such as Lactated Ringer's Solution, should be used in these patients by or under the supervision of a properly trained professional. ORS can be administered by family members and CHWs trained in ORT.

As soon as initial rehydration is achieved, cereals and similar locally available foods should be offered as soon as the appetite returns. Once diarrhea ceases, it is recommended that more than the usual amount of food be given for a short period of time.

ADVERSE REACTIONS: Vomiting, edema and swelling around the eyes (which reverses upon discontinuation of ORS administration). Vomiting, which oftentimes occurs following administration of ORS solution, will normally subside after a short while, particularly if the solution is given in sips of small amounts at a time.

STORAGE: Store the ORS packets in a cool, dry place. After the solution has been made, it should be kept covered and protected from contamination. Fresh ORS solutions should be prepared daily due to their susceptibility to rapid bacterial growth. Family members and CHWs should be told to discard any unused ORS solution after 24 hours.

SHELF-LIFE: When properly stored, the shelf-life of the ORS packets is normally up to 1 year (ORS-bicarbonate formula) or up to 2 years (ORS-citrate formula) from the date of manufacture, if packaged in aluminum laminate or equivalent packaging. The ORS-citrate formula is the more stable product -- it has the longer shelf-life.

=====

GENERIC NAME: PENICILLIN G, BENZATHINE, PARENTERAL

Page: 69

BRAND NAMES: BICILLIN L-A; PERMAPEN

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CATEGORY: Anti-infective.

USE(S): For the treatment of upper respiratory infections (Group A streptococcal, i.e., pharyngitis) and venereal disease, such as syphilis and yaws.

DOSAGE FORMS: Injection, Intramuscular -- 300,000 units/ml
600,000 units/ml
900,000 units/ml
1,200,000 units/ml
2,400,000 units/ml

DOSING AND ADMINISTRATION:

UPPER RESPIRATORY INFECTION (PHARYNGITIS) -- Administer dose as a single intramuscular injection.

••• ADULTS -- 1,200,000 Units.

••• OLDER CHILDREN -- 900,000 Units.

••• INFANTS AND CHILDREN UNDER 60 POUNDS -- 300,000 to 600,000 units.

EARLY SYPHILIS -- For primary, secondary or latent syphilis, the recommended dose is 2,400,000 units IM as a single injection.

SYPHILIS OF MORE THAN 1 YEAR'S DURATION -- Administer 2,400,000 units weekly for 3 successive weeks, for a total of 7,200,000 units.

CONGENITAL SYPHILIS --

••• CHILDREN UP TO 2 YEARS OF AGE: The equivalent of 50,000 units of penicillin G per kg of body weight to be administered as a single dose.

••• CHILDREN 2 TO 12 YEARS OF AGE: Adjust dosage on the basis of the usual adult dose for syphilis.

CAUTIONS AND WARNINGS: Contraindicated in patients with a history of hypersensitivity to penicillin. Do not use benzathine penicillin G for gonorrhea -- only for syphilis. Have penicillinase available for signs of anaphylactic reaction (rash, itching, coma, labored breathing, wheezing, choking, coughing, loss of consciousness). Check the expiration date of the drug before administering to be sure it is in date.

ADVERSE REACTIONS: Severe anaphylactic reaction and pain at the injection site.

STORAGE: This drug must be refrigerated after the drug is suspended in sterile water. The original sealed container may be stored at 20-25 deg C (68-77 deg F) under normal use but for long periods of storage, it should be refrigerated. Pre-mixed product, such as Permapen, should be refrigerated at between 2-8 deg C (36-48 deg F) during storage at all times.

SHELF-LIFE: Three to 4 years from date of manufacture.

=====

GENERIC NAME: PENICILLIN G, PROCAINE, AQUEOUS

Page: 71

BRAND NAMES: BICILLIN C-R; CRYSTICILLIN A.S.; PFIZERPEN A.S.; WYCILLIN

=====

CATEGORY: Anti-infective agent.

USE(S): For treatment of gonorrhoea, diphtheria, anthrax, rat bite fever, syphilis, and pelvic inflammatory disease. For intramuscular injection only.

DOSAGE FORMS: Injection, Intramuscular -- 300,000 units/ml, 10 ml vial
600,000 units/ml, 1 ml syringe
1,200,000 units/ml, 2 ml syringe
2,400,000 units/ml, 4 ml syringe

DOSING AND ADMINISTRATION:

■■■GONORRHEA -- Administer 4,800,000 units intramuscularly, divided into at least 2 doses injected during one visit, together with 1 Gm of probenecid given 30 minutes prior to injection.

■■■DIPHTHERIA -- Administer 300,000 to 600,000 units daily for 10 days.

■■■ANTHRAX -- Administer 600,000 to 1,000,000 units daily for 10 days.

■■■RAT BITE FEVER -- Administer 600,000 to 1,000,000 units daily for 10 days.

■■■EARLY SYPHILIS -- For primary, secondary, and latent syphilis of less than 1 year's duration, administer a 600,000 units daily for 8 days, totalling 4,800,000 units.

■■■SYPHILIS OF MORE THAN 1 YEAR'S DURATION -- For latent syphilis of indeterminate or more than 1 year's duration, administer 600,000 units daily for 15 days, for a total of 9,000,000 units.

■■■CONGENITAL SYPHILIS IN INFANTS AND CHILDREN -- Up to 32 kg of body weight, administer 10,000 units equivalent of penicillin G per kg of body weight daily for at least 10 days. The adult dose applies for children 12 years of age and older.

CAUTIONS AND WARNINGS: A history of hypersensitivity to penicillin precludes use of this drug. Always check the expiration date on the container to be sure that the drug is in date.

ADVERSE REACTIONS: Anaphylactic reaction and pain at the injection site are adverse reactions to this drug. Have penicillinase available for signs of anaphylactic reaction (rash, itching, coma, labored breathing, wheezing, choking, coughing, loss of consciousness).

STORAGE: Refrigerate, especially for extended periods of storage. If this is not possible, store sealed container below 30 deg C (86 deg F).

SHELF-LIFE: Two to 3 years from date of manufacture.

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GENERIC NAME: PENICILLIN V POTASSIUM

Page: 73

BRAND NAMES: LEDERCILLIN VK; PEN-VEE K; PFIZERPEN VK; UTICILLIN VK

=====

CATEGORY: Anti-infective agent.

USE(S): For the treatment of mild to moderately severe infections due to penicillin G-sensitive microorganisms -- certain streptococcal infections (mild to moderately severe infections of the upper respiratory tract, scarlet fever, etc.), groups A, C, G, H, L and M; mild to moderately severe upper respiratory tract pneumococcal infections; and mild staphylococcal infections of the skin and soft tissues.

DOSAGE FORMS: Tablets -- 250 mg (400,000 units), 500 mg (800,000 units)
Powder for Oral Solution -- 125 mg/5 ml (200,000 units)
250 mg/5 ml (400,000 units)

DOSING AND ADMINISTRATION:

The dosage of penicillin V should be determined according to the sensitivity of the causative microorganisms and severity of infection, and adjusted to the clinical response of the patient. The recommended usual dosages FOR ADULTS AND CHILDREN 12 YEARS OLD AND OVER are as follows:

■ ■ ■ Streptococcal Infections -- mild to moderately severe -- of the upper respiratory tract and scarlet fever -- administer 200,000 to 500,000 units every 6 to 8 hours for 10 days.

■ ■ ■ Pneumococcal Infections -- mild to moderately severe -- of the upper respiratory tract and otitis media: Administer 400,000 to 500,000 units every 6 hours until the patient has been without fever for at least 2 days.

■ ■ ■ Staphylococcal Infections (mild infections of the skin and soft tissue): Administer 400,000 to 500,000 units every 6 to 8 hours.

FOR INFANTS AND CHILDREN UNDER 12 YEARS OF AGE -- Therapy is calculated on the basis of body weight. For infants and small children the recommended dose is 25,000 to 90,000 units per kg per day in 3 to 6 divided doses.

CAUTIONS AND WARNINGS: Previous hypersensitivity reaction to any penicillin is a contraindication for use of this product. Penicillin should be used with caution in individuals with histories of significant allergies and/or asthma. Prolonged use of antibiotics may promote the overgrowth of nonsusceptible organisms, including fungi.

ADVERSE REACTIONS: The most common adverse reactions to oral penicillin are nausea, vomiting, epigastric distress, diarrhea, and black hairy tongue. The hypersensitivity reactions are skin eruptions, urticaria, laryngeal edema, and anaphylaxis.

STORAGE: Store in a cool, dry place. The reconstituted solutions can be stored in a refrigerator for 14 days.

SHELF-LIFE: Two to 4 years from date of manufacture for both tablets and powder for oral solution.

=====

GENERIC NAME: PHENOBARBITAL; PHENOBARBITONE (CS*)

Page: 75

BRAND NAMES: SK-PHENOBARBITAL

=====

CATEGORY: Anti-epileptic.

USE(S): To prevent convulsions; also used as a sedative.

DOSAGE FORMS: Tablets -- 15 mg, 30 mg, 60 mg, 100 mg
Elixir -- 20 mg/5 ml

DOSING AND ADMINISTRATION:

ADULTS --

- Anticonvulsant: Give 120 to 210 mg by mouth once daily at bedtime.
- Sedative: Give 15 to 30 mg by mouth 2 to 4 times daily.

CHILDREN --

- Anticonvulsant: By mouth, give 3 to 5 mg/kg of body weight or 125 mg per sq meter of body surface daily.
- Sedative: By mouth, give 2 mg per kg of body weight or 60 mg per sq meter of body surface 3 times daily.

CAUTIONS AND WARNINGS: Do not use in respiratory disease with evidence of obstruction, or with signs of impaired kidney function, such as blood in the urine or reduced urine output. Do not use with alcohol. Phenobarbital has a long half-life (2 to 5 days) and can be habit-forming with continued use.

ADVERSE REACTIONS: Depression of the central nervous system.

STORAGE: Store in a tightly closed container below 30 deg C (86 deg F).

SHELF-LIFE: Four to 5 years from date of manufacture.

*Controlled substance subject to special AID/Washington order requirements.

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GENERIC NAME: PHENYTOIN

Page: 76

BRAND NAMES: DILANTIN

=====

CATEGORY: Anti-epileptic.

USE(S): For the treatment of grand mal and psychomotor seizures.

DOSAGE FORMS: Capsules -- 30 mg, 100 mg
Suspension, Oral -- 30 mg/5 ml (pediatric), 125 mg/5 ml

DOSING AND ADMINISTRATION:

ADULTS -- Give one 100 mg capsule by mouth 3 times daily. The dosage may have to be adjusted up or down to a satisfactory maintenance dose of 300 mg to 400 mg daily. The final maintenance dose may be up to 600 mg per day.

CHILDREN -- Initially, give 5 mg/kg/day in 2 or 3 equally divided doses, with subsequent dosage individualized to a maximum of 300 mg per day. The recommended maintenance dose is usually 4 to 8 mg/kg. Children over 6 years of age may be given the minimum adult dose of 100 mg three times a day (300 mg/day) by mouth. The pediatric suspension should be given to infants and young children.

CAUTIONS AND WARNINGS: The use of phenytoin is contraindicated in the presence of liver disease. Good oral hygiene is necessary in order to prevent or reverse arrested gum development. The IV injection should be reserved for use by an individual familiar with the drug and in cases where the oral form cannot be administered.

ADVERSE REACTIONS: Adverse reactions include visual disturbances, slurred speech, dizziness, insomnia, fatigue, depression, nausea, rash, gum overgrowth and weight gain.

STORAGE: Store in tight containers in a cool, dry place.

SHELF-LIFE: Two to 4 years from date of manufacture.

=====

GENERIC NAME: PIPERAZINE CITRATE

Page: 77

BRAND NAMES: ANTEPAR

=====

CATEGORY: Anthelmintic drug.

USE(S): For the treatment of roundworm (*Ascaris lumbricoides*) and pinworm (*Enterobius vermicularis*) infestation.

DOSAGE FORMS: Tablets -- 500 mg equivalence of piperazine hexahydrate
Syrup -- 500 mg/5 ml equivalence of piperazine hexahydrate

DOSING AND ADMINISTRATION:

FOR ROUNDWORM:

ADULTS -- Give 3.5 Gm (seven 500 mg tablets) by mouth daily for 2 consecutive days.

CHILDREN -- For children 12 years and under, give by mouth 75 mg/kg of body weight for 2 consecutive days. For children over 1/2 year old, the syrup should be used.

For severe infections, the 2-day treatment may be repeated after 7 days. Where mass therapy of ascariasis is desired or where repeated therapy is not practicable, one single dose of 150 mg/kg of body weight, up to a maximum dose of 3 Gm may be given. However, the maximum cure rate is usually obtained using the multiple-dose regimen.

The use of laxatives or dietary restrictions is not necessary.

FOR PINWORM:

ADULTS AND CHILDREN -- A dose of 65 mg/kg should be given once daily before breakfast for 7 consecutive days to treat pinworm infections. The maximum daily dose is 2.5 Gm (five 500 mg tablets or 5 teaspoonsful of syrup). For severe infections the treatment regimen may be repeated after 3 weeks. Specific daily dosages, to be given for 7 consecutive days, are:

••• Adults	2.5 Gm
••• Children weighing less than 7 kg	250 mg
7 to 13.5 kg	500 mg
13.5 to 27 kg	1 Gm
over 27 kg	2 Gm

CAUTIONS AND WARNINGS: Contraindicated in patients showing hypersensitivity to piperazine or any of its salts and in patients with impaired kidney or liver function or convulsive disorders. Piperazine paralyzes the roundworm muscle with resultant expulsion of the worm.

Prolonged or repeated treatment in excess of that recommended should be avoided, especially in children, due to potential neurotoxicity.

ADVERSE REACTIONS: Nausea, abdominal cramping, headache, dizziness, muscular weakness, blurring of vision, convulsions, itching, fever, vertigo, headache, and tremors.

STORAGE: Store in a tightly closed container below 30 deg C (86 deg F).

SHELF-LIFE: Three to 5 years from date of manufacture.

=====

GENERIC NAME: POLIOVIRUS VACCINE LIVE, ORAL

Page: 79

BRAND NAMES: DIPLOVAX; DRAMUNE MONOVALENT; DRAMUNE TRIVALENT

=====

CATEGORY: Immunological for universal immunization.

USE(S): For immunization of patients against poliomyelitis.

DOSAGE FORMS: Oral Suspension --

••• Human Cell Culture, Live, Oral Trivalent: Two (2) drops of suspension per dose in 10-dose containers, and 0.5 ml per dose in single-dose container.

••• Monkey Kidney, Live, Oral Trivalent: Two (2) drops per dose in 10-dose container, and 0.5 ml or 2 ml per dose in single-dose container.

••• Type I, II or III, Live Oral Monovalent: Two drops per dose in 10-dose container, or 2 ml per dose in single-dose container.

DOSING AND ADMINISTRATION: The trivalent type of poliovirus vaccine is more frequently used in order to simplify record-keeping. The monovalent and trivalent types are equally effective. Booster doses are not required.

MONOVALENT VACCINE -- Orally administer 2 drops or 2 ml of the vaccine, depending upon the product used and the manufacturer's instructions, in the sequence of Type I, Type II and Type III.

••• Infants: Administer 3 doses by mouth separately at intervals of 6 to 8 weeks. A fourth dose, consisting of trivalent oral poliovirus vaccine should be given at 12 to 15 months of age.

••• Older Children and Adolescents: For primary immunizations, give 3 doses separately at intervals of 6 to 8 weeks. The fourth dose, consisting of the trivalent vaccine, should be administered after an interval of from 8 to 12 months.

TRIVALENT VACCINE -- Each dose contains approximately 800,000 tissue culture infective doses of Type I, 100,000 of Type II, and 500,000 of Type III vaccine in 2 drops or 2 ml, depending on the concentration used.

••• Infants: At 2 months of age, administer by mouth 2 drops or 2 ml, depending on the concentration used. Then give the second and third doses at 6- to 8-week intervals. The fourth dose should be administered at about 15 to 18 months.

••• Older Children and Adolescents: Administer the first 2 doses by mouth 6 to 8 weeks apart; the third, 8 to 12 months after the second dose; and a single booster dose upon entering school.

CAUTIONS AND WARNINGS: This vaccine should not be administered in patients with diarrhea, lymphomas, leukemias, generalized malignancies or in therapeutic regimens which lead to lowered resistance (corticosteroids, anti-cancer agents, irradiation, etc.).

ADVERSE REACTIONS: Paralysis, though rare, is a side-effect of the polio virus vaccine.

STORAGE: Keep polio vaccine in the freezer (-15 to -25 deg C) at central and regional storage facilities. At facilities lower down the cold chain, this vaccine may be refrigerated for a month. Otherwise, the vaccine will lose its potency and be ineffective. Once vaccines have lost some of their potency, it cannot be restored by cooling or refreezing.

SHELF-LIFE: Eighteen (18) months from date of manufacture.

=====

GENERIC NAME: PREDNISONE

Page: 81

BRAND NAMES: DELTASONE; METICORTEN; DRASONE

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CATEGORY: Hormone.

USE(S): For treatment of Addison's disease, dermatological conditions such as extensive rashes, and allergic states, including asthma.

DOSAGE FORMS: Tablets -- 1 mg, 2.5 mg, 5 mg

DOSING AND ADMINISTRATION: Administer 5 mg to 60 mg per day. The dose is dependent upon the patient's condition and the disease being treated.

CAUTIONS AND WARNINGS: Prednisone is contraindicated in systemic fungus disease such as oral thrush or vaginal yeast infection. Dosage must be individualized. Use of prednisone should be reserved for serious conditions and instituted only by individuals familiar with the drug and its effects.

ADVERSE REACTIONS: Adverse reactions include osteoporosis, fluid retention, peptic ulcer, abdominal distention, convulsions, suppression of growth in children, weight gain and insomnia. Long-term use leads to cushingoid syndrome or round "moon" face or "buffalo" hump.

STORAGE: Preserve in well-closed, light-resistant containers.

SHELF-LIFE: Five years from date of manufacture.

=====

GENERIC NAME: PROMETHAZINE HYDROCHLORIDE

Page: 82

BRAND NAMES: BAYMETH; RAMSED; MEPERGAN; PHENERGAN

=====

CATEGORY: Anti-allergic; sedative.

USE(S): For management of allergic manifestations; sedation; and nausea and vomiting associated with anesthesia.

DOSAGE FORMS: Tablets -- 12.5 mg, 25 mg, 50 mg
Syrup -- 6.25 mg/5 ml, 25 mg/5 ml

DOSING AND ADMINISTRATION: The average oral dose is 25 mg taken by mouth before retiring. However, 12.5 mg may be taken before meals and at bedtime. For children, 25 mg taken at bedtime or 6.25 mg to 12.5 mg by mouth before meals is usually adequate. After the initial treatment, the dosage should be adjusted to the smallest amount required for relief of symptoms.

ALLERGY ADULTS -- Usually 25 mg at bedtime or 12.5 mg taken 3 times daily and at bedtime.

CHILDREN -- One 25 mg tablet at bedtime or 6.25 mg to 12.5 mg taken by mouth 3 times daily.

NAUSEA AND VOMITING The average oral dose for children or adults is 25 mg taken twice daily. In children, the dosage should be adjusted to the age and weight of the patient and the severity of the condition being treated. For the prevention of nausea and vomiting, 25 mg should be given by mouth at 4- to 6-hour intervals, as necessary.

SEDATION ADULTS -- The oral dose usually required is 25 to 50 mg for night-time, presurgical or obstetrical sedation.

CHILDREN -- The oral dose for children is usually 12.5 to 25 mg at bedtime.

CAUTIONS AND WARNINGS: Contraindicated in patients with known hypersensitivity to the drug. Since the sedative action of promethazine is additive to the sedative effects of CNS depressants, agents such as alcohol, barbiturates, and narcotic analgesics should either be eliminated or given in reduced dosage during promethazine therapy. Ambulatory patients should be cautioned against driving automobiles or operating dangerous equipment while undergoing promethazine therapy.

ADVERSE REACTIONS: The more common adverse reactions include dryness of mouth and throat, drowsiness, blurring of vision, and less commonly, dizziness.

STORAGE: Store in a tightly closed container, protected from light.

SHELF-LIFE: Tablets and Syrup -- Three to 5 years from date of manufacture.

=====

GENERIC NAME: PROPRANOLOL

Page: 83

BRAND NAMES: INDERAL

=====

CATEGORY: Cardiovascular drug.

USE(S): For the treatment of angina attacks, arrhythmias, hypertension and migraine headaches.

DOSAGE FORMS: Tablets -- 10mg, 20 mg, 40 mg, 80 mg

DOSING AND ADMINISTRATION:

- Arrhythmias -- Give 10 mg to 30 mg three to four times a day.
- Angina Pectoris -- The dosage must be individualized. Start with 20 mg to 20 mg by mouth 3 or 4 times daily. The dose should be increased or decreased until optimal response is achieved. The average optimum dose is 160 mg per day.
- Hypertension -- The dosage must be individualized. The usual initial dose is 40 mg by mouth twice a day. Increase or decrease the dose until optimal control is achieved. The usual dosage is 160 mg to 480 mg per day. As much as 640 mg per day may be required.
- Migraine -- The usual initial dose is 20 mg by mouth 4 times a day. The dosage range is from 160 mg to 240 mg per day.

CAUTIONS AND WARNINGS: Contraindicated in patients with a history of bronchial asthma. Use cautiously in patients with a history of cardiac failure. Use of propranolol in children is not recommended. Do not suddenly stop the administration of propranolol. If to be discontinued, the drug must be withdrawn gradually.

ADVERSE REACTIONS: Congestive heart failure, dizziness, lightheadedness, depression, nausea, diarrhea and bronchospasm are some of the more common adverse reactions to propranolol.

STORAGE: Store in tight containers in a cool place.

SHELF-LIFE: Four years from date of manufacture.

=====
GENERIC NAME: SULFADOXINE AND PYRIMETHAMINE

BRAND NAMES: FALCIDAR; FANSIDAR
=====

CATEGORY: Antimalarial drug.

USE(S): For the prevention and treatment of malaria caused by chloroquine-resistant strains of plasmodia.

DOSAGE FORMS: Tablets -- Each containing 500 mg of sulfadoxine and 25 mg of pyrimethamine.

DOSING AND ADMINISTRATION: This product is compatible with other anti-malarial drugs, particularly quinine, and with antibiotics. Dosage and administration information for the treatment of acute malaria attacks (Table I) and for prophylaxis management (Table II) is presented below.

CURATIVE TREATMENT

A single dose of this drug combination may be given by mouth in accordance with the following. The number of tablets indicated may be given alone or in sequence with quinine or primaquine.

Table I: Single-Dose Regimen for Curative Treatment

AGE GROUP		TO BE TAKEN AS SINGLE DOSE QUANTITIES OF DRUG TABLETS		
C H I L D R E N	ADULTS	All ages	Sulfadoxine 1500 mg and primethamine 75 mg	3 Tablets
		15 yrs and older	Sulfadoxine 1500 mg and primethamine 75 mg	3 Tablets
		9 to 14 yrs	Sulfadoxine 1000 mg and pyrimethamine 50 mg	2 Tablets
		4 to 8 yrs	Sulfadoxine 500 mg and pyrimethamine 25 mg	1 Tablet
		1 to 3 yrs	Sulfadoxine 250 mg and pyrimethamine 12.5 mg	1/2 Tablet
INFANTS	Under 1 yr/ Over 2 mos	Sulfadoxine 125 mg and pyrimethamine 6.25 mg	1/4 Tablet	

PROPHYLAXIS

For prophylaxis management, this drug may be given alone.

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The first dose should be taken 1 or 2 days prior to departing for a malarious area. The prophylactic dose should be continued during the stay and for 4 to 6 weeks after return.

Table II: Once-A-Week Dosage Regimen for Prophylaxis

AGE GROUP		DOSAGE TO BE TAKEN ONCE A WEEK		
		QUANTITIES OF DRUG		TABLETS
ADULTS	All ages	Sulfadoxine 500 mg and primethamine 25 mg		1 Tablet
CHILDREN	15 yrs and older	Sulfadoxine 500 mg and primethamine 25 mg		1 Tablet
	9 to 14 yrs	Sulfadoxine 375 mg and pyrimethamine 18.75 mg		3/4 Tablet
	4 to 8 yrs	Sulfadoxine 250 mg and pyrimethamine 12.5 mg		1/2 Tablet
	Under 4 yrs/ Over 2 mos	Sulfadoxine 125 mg and pyrimethamine 6.25 mg		1/4 Tablet

CAUTIONS AND WARNINGS: This combination should not be used in patients with a history of allergy to sulfonamides or pyrimethamine, in premature or newborn infants up to 2 months of age, or during the last trimester of pregnancy. This product should be used with caution in patients with impaired liver or kidney function, those with folate deficiency, and those with severe allergy or bronchial asthma. The patient must intake adequate fluids in order to prevent crystalluria or stone formation. Antifolate drugs such as sulfonamides or trimethoprim-sulfamethoxazole combinations should not be used during prophylaxis with this product. Use of this combination in sub-therapeutic doses, as has occurred in areas where there are drug availability problems, is thought to have contributed to the emergence and spread of parasite drug resistance.

ADVERSE REACTIONS: Blood dyscrasias, allergic reactions, GI disturbances, certain CNS reactions and other types of reactions, including drug fever, chills and nephrotoxicity are possible side-effects of sulfonamides and pyrimethamine. A generally mild and reversible leukopenia has been reported during prophylactic treatment of 2 months or longer. As both drugs cross the placental barrier and are excreted in breast milk, its use during pregnancy at term or during the nursing period may cause kernicterus.

STORAGE: Store in a cool, dry place.

SHELF-LIFE: Four years from date of manufacture.

=====

GENERIC NAME: TETANUS TOXOID

=====

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CATEGORY: Immunological for universal immunization.

USE(S): For primary immunization of adults and children, in whom DTP use is contraindicated, against tetanus and for prophylaxis of tetanus-prone wounds in previously immunized patients.

DOSAGE FORMS: Injection --

Fluid: 7.5 ml multiple-dose vial; and 0.5 ml single-dose vial w/cartridge and needle; sterile

Adsorbed: 5 ml multiple-dose vial; and 0.5 ml single-dose vial w/cartridge and needle; sterile

DOSING AND ADMINISTRATION:

ADULTS -- Initially, give a subcutaneous or intramuscular injection of 0.5 ml (adsorbed). Repeat the dose 1 month later, 1 year following the second dose, and every 10 years thereafter.

CHILDREN -- Give an initial injection of 0.5 ml at 1 1/2 to 2 months, followed by a 0.5 ml dose at 2 1/2 to 3 months, 3 1/2 to 4 months, 16 months, 5 years and every 10 years thereafter.

CAUTIONS AND WARNINGS: Do not administer these toxoids by IV injection.

ADVERSE REACTIONS: Side-effects are rare but generally higher in adults over 25 years of age. These include reddening, induration and tenderness at the injection site, fever and malaise.

STORAGE: Refrigerate, otherwise this toxoid will rapidly lose its effectiveness. Store at +4 to +8 deg C. DO NOT FREEZE tetanus toxoid.

SHELF-LIFE: Two years (24 months) from date of manufacture.

=====

GENERIC NAME: TETRACYCLINE HYDROCHLORIDE

Page: 89

BRAND NAMES: ACHROMYCIN; CYCLOPAR; PANMYCIN

=====

CATEGORY: Antibacterial.

USE(S): For the treatment of skin and eye infections, syphilis, gonorrhoea, pelvic inflammatory disease, typhus fever, bronchitis and other infections caused by susceptible organisms.

DOSAGE FORMS: Capsules, Tablets -- 250 mg, 500 mg
Ointment, Ophthalmic -- 1 percent (sterile)

DOSING AND ADMINISTRATION:

ADULTS -- The usual oral adult dose is one or two 250 mg capsules or tablets taken 4 times daily or two to four 500 mg capsules or tablets taken twice daily on an empty stomach. Tetracycline should be taken at least one hour before or two hours after food intake.

■■■ SYPHILIS: The usual course of treatment consists of 30 to 40 Gm taken by mouth over a period of 10 to 15 days, in equally spaced doses throughout each day.

■■■ Thirty Gm in 10 Days - Give three 250 mg tablets or capsules by mouth 4 times daily (every 6 hours) for 10 days.

■■■ Thirty Gm in 15 Days - Give two 250 mg tablets or capsules by mouth 4 times daily (every 6 hours) for 15 days.

■■■ Forty Gm in 10 Days - Give four 250 mg or two 500 mg tablets or capsules by mouth 4 times daily (every 6 hours) for 10 days.

■■■ SYPHILIS OF MORE THAN ONE YEAR'S DURATION: Give two 250 mg tablets or capsules or one 500 mg tablet or capsule by mouth 4 times daily (every 6 hours) for 4 days.

■■■ GONORRHEA: Give 1.5 Gm (six 250 mg or three 500 mg tablets or capsules) by mouth initially, followed by 500 mg every 6 hours for 4 days.

■■■ PELVIC INFLAMMATORY DISEASE: Give 500 mg (two 250 mg or one 500 mg) tablet or capsule by mouth every 6 hours for 10 days.

■■■ SKIN INFECTIONS: Give 500 mg by mouth twice daily for 5 to 10 days.

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CHILDREN 8 YEARS AND OLDER -- The usual dose of tetracycline for children over 8 years of age is 6.25 to 12.5 mg/kg of body weight every 6 hours; or 12.5 to 25 mg/kg body weight every 12 hours.

Apply the ophthalmic ointment to affected eye-lids three times daily as instructed on the label.

CAUTIONS AND WARNINGS: Contraindicated for use in children under 8 years of age, in pregnant women and in nursing mothers. Therapy should be continued for 24 to 48 hours after symptoms and fever have subsided. Antacids containing aluminum, calcium or magnesium impair the absorption of tetracycline. Therefore, antacids, milk and other dairy products should not be taken within an hour before or after tetracycline is taken.

Tetracyclines will stain the teeth in young children.

Be sure the drug is in date. Outdated tetracycline is harmful to the liver.

ADVERSE REACTIONS: Its principal adverse reactions are stomach upset, increased sensitivity to the sun, rash, fever, itching and headache.

STORAGE: Store in a tightly closed container, protected from light at a temperature not exceeding 25 deg C or 77 deg F.

SHELF-LIFE: Tablets and capsules 4 years from date of manufacture; ophthalmic ointment, 3 years.

=====

GENERIC NAME: THiopENTAL SODIUM (CS*)

Page: 91

BRAND NAMES: PENTOTHAL

=====

CATEGORY: General anesthetic.

USE(S): As an ultra-short-acting general anesthetic.

DOSAGE FORMS: Injections, Intravenous ---

Syringes with 250 mg, 500 mg
Vials of 500 mg w/diluent; 1 Gm w/diluent

DOSING AND ADMINISTRATION: Dosage depends entirely upon patient response and, therefore, must be individualized. Recommended dosages are based on 3 to 4 mg/kg of body weight. The initial dose is 2 to 3 ml of a 2.5% solution every 30 to 60 seconds. The maintenance dose is 0.5 to 2 ml of the 2.5% solution as required.

CAUTIONS AND WARNINGS: Contraindicated in patients with liver or kidney dysfunction, severe cardiovascular disease, absence of suitable veins for IV injection, and hypersensitivity to the drug. Thiopental should be administered only by physicians or other persons qualified in the use of IV anesthetics. Keep resuscitative and endotracheal intubation equipment and oxygen readily available. Maintain open, unobstructed airway at all times.

ADVERSE REACTIONS: CNS depression and death due to cardio-respiratory failure.

STORAGE: Store in a cool, secure place.

SHELF-LIFE: Two to 3 years from the date of manufacture.

*Controlled substance subject to special AID/Washington order requirements.

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GENERIC NAME: TOLBUTAMIDE Page: 92

BRAND NAMES: ORINASE; SK-TOLBUTAMIDE

=====

CATEGORY: Anti-diabetic agent.

USE(S): For treatment of adult, maturity-onset diabetes.

DOSAGE FORMS: Tablets -- 250 mg, 500 mg

DOSING AND ADMINISTRATION: The usual starting dose is 1 to 2 Gms daily and should be increased or decreased based on individual patient response. As with insulin, there is no fixed dosage regimen. The dose may be given once daily or divided into two doses 12 hours apart to minimize gastrointestinal problems. The ideal dose of tolbutamide is the smallest amount which will give optimum control. Maintenance doses in excess of 2 Gms per day are seldom required; and may be as small as 250 mg, especially in some elderly patients, or -- rarely -- as much as 3 Gms.

CAUTIONS AND WARNINGS: Tolbutamide should not be used alone in juvenile or growth onset diabetes nor in diabetes of the unstable, brittle type; in diabetes complicated by acidosis, ketosis or coma; in severe kidney failure; or in pregnancy or nursing mothers. In the presence of other acute complications such as fever, severe trauma, or infections, diabetics may require appropriate doses of insulin to insure continued control.

Patients should be cautioned to avoid the use of alcoholic beverages while taking tolbutamide as the combination may cause abdominal cramps, nausea, vomiting, headaches, flush and hypoglycemia. Caution must be exercised in administering the thiazide-type diuretics to diabetic patients taking tolbutamide because of the possibility of aggravation of the diabetic state, increased tolbutamide requirements or loss of control. Beta blockers will diminish the effects of tolbutamide.

Sulfonamides, oxyphenbutazone, aspirin and other salicylates, probenecid, phenylbutazone, monoamine oxidase inhibitors, bishydroxycoumarin and phenylramidol, and insulin will prolong or enhance the effects of tolbutamide.

ADVERSE REACTIONS: See section on "Cautions and Warnings" for drug interactions which may adversely affect the patient on tolbutamide therapy. Most other reactions consist of GI disturbances (nausea, heartburn, epigastric fullness), headache, weakness, fatigue and variable allergies. Less common side-effects include blood dyscrasias and jaundice.

STORAGE: Store in a tight container below 30 deg C (86 deg F).

SHELF-LIFE: Five years from the date of manufacture.

=====

GENERIC NAME: VITAMIN A

Page: 93

BRAND NAMES: AQUASAL A

=====

CATEGORY: Vitamin.

USE(S): For the prevention and treatment of Vitamin A deficiencies.

DOSAGE FORMS: Capsules -- 25,000 I.U., 50,000 I.U.
Drops (Water solubilized vitamin A) -- 5,000 I.U./0.1 ml

DOSING AND ADMINISTRATION:

ADULTS AND CHILDREN OVER 8 YEARS OF AGE --

■ ■ ■ For Severe Deficiency: Give 100,000 I.U. (two 50,000 I.U. capsules or four 25,000 I.U. capsules) daily for 3 days followed by 50,000 I.U. (one 50,000 I.U. capsule or two 25,000 I.U. capsule) daily for 2 weeks.

■ ■ ■ For Follow-Up Therapy: Give 10,000 to 20,000 I.U. daily for 2 months.

ADULTS AND CHILDREN OVER 4 YEARS OF AGE --

As a dietary supplement, 0.1 ml of the drops (3 drops) or 5,000 I.U. daily.

CHILDREN UP TO 4 YEARS OF AGE --

Give 2 drops of liquid daily, which represents 133% of the U.S. recommended daily allowance.

CAUTIONS AND WARNINGS: Avoid overdosage and keep out of the reach of children. Prolonged daily administration of over 20,000 I.U. of vitamin A should be under close supervision. Significant increases in the plasma levels of vitamin A have been observed in women on oral contraceptives.

ADVERSE REACTIONS: The side-effects associated with vitamin A overdosage include fatigue, malaise, lethargy, abdominal discomfort, anorexia and vomiting. The treatment of hypervitaminosis A syndrome consists of immediate withdrawal of the vitamin along with symptomatic and supportive treatment.

STORAGE: Protect from light. Store in a cool, dry place.

SHELF-LIFE: Two years from date of manufacture.

=====
GENERIC NAME: 1) VITAMINS, MULTIPLE Page: 94
2) VITAMINS WITH IRON, MULTIPLE

BRAND NAMES: 1) ENGRAN; THERAGRAN; VIGRAN; VI-DAYLIN; VITERRA
2) VI-DAYLIN WITH IRON; VIGRAN WITH IRON
=====

CATEGORY: Vitamins and minerals.

USE(S): Nutritional supplement for use in malnourished states and during nutritionally lacking dietary intake.

DOSAGE FORMS: Tablets, Oral
Capsules, Oral
Liquid, Oral

DOSING AND ADMINISTRATION:

ADULTS AND CHILDREN OVER 12 -- Give one tablet or capsule or label-recommended dose of liquid by mouth each day.

CHILDREN UNDER 12 AND INFANTS -- The label recommended dosage of liquid (in ml) should be given daily.

CAUTIONS AND WARNINGS: These preparations should be taken for extended periods of time only under professional supervision.

ADVERSE REACTIONS: Though rare, upset stomach and discoloration of the urine may occur. Patients should be instructed to take vitamins with food in order to minimize stomach upset.

STORAGE: Store in a cool place, protected from light and humidity.

SHELF-LIFE: Two to 4 years.

Suggested Levels of Use

Generic Names for Drugs in Formulary	Health Center (1)	Rural Clinic (2)	Village Dispensary (3)
Acetaminophen	X	X	X
Acetylsalicylic Acid	X	X	X
Aminophylline	X	-	-
Ampicillin	X	-	-
Aspirin	X	X	X
Bacitracin	X	X	X
BCG Vaccine	X	X	-
Benzyl Benzoate	X	X	X
Chloramphenicol	X	-	-
Chlorhexidine Gluconate	X	X	X
Chloroquine Phosphate	X	X	X
Chlorphenamine Maleate	X	X	X
Chlorpheniramine Maleate	X	X	X
Chlorpromazine*	-	-	-
Co-Trimoxazole	X	-	-
Cough Mixture	X	X	X
Dapsone	X	-	-
Dextromethorphan	X	X	X
Diazepam**	X	-	-
Digoxin*	-	-	-
Diphenhydramine Hydrochloride	X	X	X
Diphtheria-Pertussis-Tetanus Vaccine	X	X	-
Diphtheria-Tetanus Vaccine	X	X	-
DPT Vaccine	X	X	-
DT Vaccine	X	X	-
Ephedrine Sulfate	X	X	X
Ergotamine Tartrate	X	-	-
Ethambutol Hydrochloride	X	X	X
Ferrous Sulfate	X	X	X
Gentamicin*	-	-	-
Gentian Violet	X	X	X
Guaiafenesin	X	X	X
Hydrochlorothiazide	X	-	-
Hydrocortisone	X	X	X
Insulin, Regular	X	-	-

- (1) Suggested use at District Health Center level based on the assumption that a Physician and trained Nurse are available.
 (2) Suggested use at the Rural Clinic level based on the assumption that a trained Nurse is available.
 (3) Suggested use at the Village Dispensary level based on the assumption that a trained Village Health Worker and/or Birth Attendant are available.

*This drug should be limited primarily to the regional hospital level, where physician specialists may be available.
 **Controlled substance with abuse potential; procurement via AID/Washington is regulated by special requirements for the acquisition of controlled substances.

Generic Names For Drugs in Formulary	Health Center (1)	Rural Clinic (2)	Village Dispensary (3)
Isoniazid	X	-	-
Lidocaine Hydrochloride	X	-	-
Magnesium and Aluminum Hydroxides	X	X	X
Magnesium Sulfate	X	X	X
Measles Virus Vaccine, Live	X	X	-
Mebendazole	X	X	X
Methyl dopa	X	-	-
Methylergonovine Maleate*	-	-	-
Metronidazole	X	-	-
Norgestrel	X	X	X
Norgestrel & Ethinyl Estradiol	X	X	X
Oral Rehydration Salts (ORS)	X	X	X
Paracetamol	X	X	X
Penicillin G Benzathine Parenteral	X	-	-
Penicillin G Procaine Aqueous	X	-	-
Penicillin V Potassium	X	-	-
Phenobarbital (Phenobarbitone)**	X	-	-
Phenytoin	X	-	-
Piperazine Citrate	X	X	X
Poliovirus Vaccine Live, Oral	X	X	-
Prednisone	X	-	-
Promethazine Hydrochloride*	-	-	-
Propranolol*	-	-	-
Sulfadoxine + Pyrimethamine	X	-	-
Sulfamethoxazole + Trimethoprim	X	-	-
Tetanus Toxoid	X	X	-
Tetracycline Hydrochloride			
Oral Capsules/Tablets	X	-	-
Eye Ointment	X	X	X
Thiopental Sodium*/**	-	-	-
Tolbutamide	X	-	-
Trimethoprim + Sulfamethoxazole	X	-	-
Vitamin A	X	X	X
Vitamins, Multiple	X	X	X

(1) Suggested use at District Health Center level based on the assumption that a Physician and trained Nurse are available.

(2) Suggested use at the Rural Clinic level based on the assumption that a trained Nurse is available.

(3) Suggested use at the Village Dispensary level based on the assumption that a trained Village Health Worker and/or Birth Attendant are available.

*This drug should be limited primarily to the regional hospital level.

**Controlled substance with abuse potential; procurement via AID/Washington is regulated by special requirements for their acquisition.

**Formulary Drugs Which Cross the
Placental Barrier and/or Which
Are Excreted in Breast Milk**

DRUGS	PREGNANCY (Possible Effects on Fetus)	BREAST FEEDING (Possible Effects on Infant)
Aspirin	Fetal hemorrhage	Increased risk of hemorrhage
Chloramphenicol	Fetal death	Bone marrow depression
Chloroquine	Congenital deafness; abnormal retinal pig- mentation; auditory nerve damage	ND**
Chlorpheniramine	ND	May inhibit lactation
Chlorpromazine	Jaundice; prolonged extrapyramidal signs	ND
Contraceptives, Oral	Congenital anomalies	
Co-Trimoxazole	(See Sulfamethoxazole)	
Diazepam	Chronic use: physical dependency; congenital malformations.	Lethargy; sedation 30 mg + doses IV/IM within 15 hrs of birth --neonatal apnea, hypo- thermia, reluctance to feed.
Diphenhydramine	ND	May inhibit lactation
Ethambutol	ND; fetal abnormalities found in animal studies	ND
Gentamicin	Otological damage	ND
Hydrochlorothiazide	ND; not recommended in uncomplicated pregnancies or in nursing mothers	

*ND = Problems in humans have not been documented. However, risk/benefit should be carefully weighed before this drug is used.

(CONTINUED ON NEXT PAGE)

DRUGS	PREGNANCY (Possible Effects on Fetus)	BREAST FEEDING (Possible Effects on Infant)
Metronidazole**	ND; animal studies have shown carcinogenicity	ND
Phenobarbital	Respiratory depression in neonate; physical dependence	CNS depression; physical dependence
Sulfamethoxazole	Low level of prevalence: hemolytic anemia in some neonates; hyperbilirubinemia; kernicterus.	
Tetracycline	Permanent discoloration of teeth, enamel hypoplasia, inhibition of skeletal growth in the fetus and in infants	
Tolbutamide	ND; animal studies have shown fetal death and teratogenic effects	Hypoglycemia

*ND = Problems in humans have not been documented. However, risk/benefit should be carefully weighed before this drug is used.

**Its use in trichomoniasis during either the 2nd or 3rd trimester of pregnancy should be restricted to patients whose symptoms are not amenable to local palliative treatment.

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*Generic name used outside the U.S.A. is shown in parenthesis.

**Non-narcotic controlled substance the ordering of which is subject to special ordering requirements of AID/Washington.

***Drug not included on WHO model list of essential drugs but intentionally included in this formulary because of its relative safety and economy in use, handling and storage.

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PART IV:

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Appendix A

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WHO MODEL DRUG LIST FOR PRIMARY HEALTH CARE

***	Acetylsalicylic Acid; Aspirin	2.1*
***	Activated Charcoal	4.1
***	Antacid	17.1
***	Antihemorrhoidal	17.3
***	Atropine (Antispasmodic)	4.2, 17.4
***	Benzoic Acid and Salicylic Acid	13.1
***	Benzyl Benzoate	13.6
***	Calamine Lotion	13.3
***	Chlorhexidine	15
***	Chloroquine	6.7
***	Chlorpheniramine; Chlorphenamine	3
***	Ephedrine (Asthma)	25.1
***	Ergometrine (Post-Partum Hemorrhage)	22
***	Iodine	15
***	Ipecacuanha	4.1
***	Iron/Folic Acid	10.1
***	Lindane	13.6
***	Mebendazole	6.1
***	Oral Rehydration Salts	17.6.2, 26.1
***	Paracetamol; Acetaminophen	2.1
***	Piperazine	6.1
***	Tetracycline Eye Ointment	6.3.2, 21.1

The drugs in this formulary suggested for use at the village level differ somewhat from the above list, as this document's primary purpose is to serve as a training and reference document on drugs available through U.S. sources for expanded primary health care.

*WHO Model List of Essential Drugs group or sub-group numbers.

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WHO Guidelines for Establishing a List of Essential Drugs

Criteria for the selection of essential drugs are intended to ensure that the process of selection will be unbiased and based on the best available scientific information, yet allow for a degree of variation to take into account local needs and requirements. The following guidelines are recommended:

(1) Each country should appoint a committee to establish a list of essential drugs. The committee should include individuals competent in the fields of clinical medicine, pharmacology and pharmacy, as well as peripheral health workers. Where individuals with adequate training are not available within the country, assistance from WHO could be sought.

(2) Drug selection should be based on the results of benefit and safety evaluations obtained in controlled clinical trials and/or epidemiological studies. Guidelines for such trials have been set forth in the report of a WHO Scientific Group.¹

(3) The international nonproprietary (generic) names for drugs or pharmaceutical substances should be used whenever available.² A cross-index of nonproprietary and proprietary names should initially be provided to the prescribers.

(4) Regulations and facilities should be available to ensure that the quality of selected pharmaceutical products meets adequate quality control standards, including stability and, when necessary, bioavailability. Where national resources are not available for this type of control, the suppliers should provide documentation of the product's compliance with the requested specifications.

(5) Cost represents a major selection criterion. In cost comparisons between drugs, the cost of the total treatment, and not only the unit cost, must be considered. In addition, the cost of nonpharmaceutical therapeutic modalities should be taken into account.

(6) Local health authorities should decide the level of expertise required to prescribe single drugs or a group of drugs in a therapeutic category. Consideration should also be given to the competence of the personnel to make a correct diagnosis. In some instances, while individuals with advanced training are necessary to prescribe initial therapy, individuals with less training could be responsible for maintenance therapy.

(7) The influence of local diseases or conditions on pharmacokinetic and pharmacodynamic parameters should be considered in making the selections: e.g., malnutrition, liver disease.

(8) When several drugs are available for the same indication, select the drug, pharmaceutical product and dosage form that provide the highest benefit/risk ratio.

(9) When two or more drugs are therapeutically equivalent, preference should be given to:

- (i) the drug which has been most thoroughly investigated;
- (ii) the drug with the most favourable pharmacokinetic properties, e.g., to improve compliance, to minimize risk in various pathophysiological states;
- (iii) drugs for which local, reliable manufacturing facilities for pharmaceutical products exist;
- (iv) drugs, pharmaceutical products and dosage forms with favourable stability, or for which storage facilities exist.

(10) Fixed-ratio combinations are only acceptable if the following criteria are met:

- (i) clinical documentation justifies the concomitant use of more than one drug;
- (ii) the therapeutic effect is greater than the sum of the effect of each;
- (iii) the cost of the combination product is less than the sum of the individual products;
- (iv) compliance is improved;
- (v) sufficient drug ratios are provided to allow dosage adjustments satisfactory for the majority of the population.

(11) The list should be reviewed at least once a year and whenever necessary. New drugs should be introduced only if they offer distinct advantages over drugs previously selected. If new information becomes available on drugs already in the list which clearly shows that they no longer have a favourable benefit/risk ratio, they should be deleted and replaced by a safer drug. It should be remembered that for the treatment of certain conditions, nonpharmacological forms of therapy, or no therapy at all, may be preferable.

9. SPECIALIZED APPLICATIONS OF THE ESSENTIAL-DRUGS CONCEPT

Although the concept of essential drugs is directed primarily to the needs of developing countries, it has value in other contexts. The provision of drugs on ships provides an obvious example. It is particularly noteworthy that the model list was used to prepare the list of standard drugs and clinic equipment for 10 000 persons for 3 months developed jointly by WHO and the Office of the United Nations High Commissioner for Refugees as part of an emergency health kit.¹ This kit is also being adopted by other organizations involved in meeting emergency health care needs.

10. REVISED MODEL LIST OF ESSENTIAL DRUGS Explanatory Notes²

In many instances various drugs could serve as alternatives to those on the list. In these cases, the substance selected provides an *example of a therapeutic group* and is distinguished by being preceded by a square symbol (□). It is imperative that this should be understood when drugs are selected at national level, since the choice is then influenced by the comparative cost and availability of equivalent products. Examples of acceptable substitutions include:

□ Codeine: other drugs for the symptomatic treatment of diarrhoea such as diphenoxylate or loperamide or, when indicated for cough relief, noscapine or dextromethorphan.

□ Hydrochlorothiazide: any other thiazide-type diuretic currently in broad clinical use.

□ Hydralazine: any other peripheral vasodilator having an anti-hypertensive effect.

□ Senna: any mild stimulant laxative (either synthetic or of plant origin).

□ Sulfadimidine: any other short-acting systemically-active sulfonamide unlikely to cause crystalluria.

Numbers in parentheses following the drug names indicate:

¹ UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES. *Handbook for emergencies*. Geneva, 1982, 23, pp. 253-262. The list will be available separately from WHO in English, French, and Spanish.

² 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.

- (1) Drugs subject to international control under the Single Convention on Narcotic Drugs (1961) and the Convention on Psychotropic Substances (1971);
- (2) Specific expertise, diagnostic precision or special equipment required for proper use;
- (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.

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 list	Route of administration, dosage forms, and strengths ^a
I. Anaesthetics		
1.1 General anaesthetics and oxygen		
ether, anaesthetic (2)		inhalation
halothane (2)		inhalation
nitrous oxide (2)		inhalation
oxygen		inhalation (medical gas)
thiopental (2)		powder for injection, 0.5 g, 1.0 g (sodium salt) in ampoule
1.2 Local anaesthetics		
□ bupivacaine (2, 9)		injection, 0.25%, 0.5% (hydrochloride) in vial
□ lidocaine		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 list	Route of administration, dosage forms, and strengths ^a
2. Analgesics, Antipyretics, Nonsteroidal Antiinflammatory Drugs and Drugs Used to Treat Gout		
2.1 <i>Non-opioids</i>		
acetylsalicylic acid		tablet, 100-500 mg suppository, 50-150 mg
allopurinol (4)		tablet, 100 mg
^U ibuprofen		tablet, 200 mg
indometacin		capsule or tablet, 25 mg
paracetamol		tablet, 100-500 mg suppository, 100 mg
	colchicine (n, c) (7)	tablet, 0.5 mg
	probenecid (n, c)	tablet, 500 mg
2.2 <i>Opioid analgesics and antagonists</i>		
morphine (1)		injection, 10 mg (sulfate or hydrochloride) in 1-ml ampoule
naloxone		injection, 0.4 mg (hydrochloride) in 1-ml ampoule
	^U pethidine (A) (4, 10)	injection, 50 mg (hydrochloride) in 1-ml ampoule
3. Antiallergics		
^U chlorphenamine		tablet, 4 mg (maleate) injection, 10 mg in 1-ml ampoule
epinephrine		injection, 1 mg (as hydrochloride) in 1-ml ampoule
	cromoglicic acid (n) (2, 8)	oral inhalation (cartridge) 20 mg (sodium salt) per dose
4. Antidotes and Other Substances Used in Poisonings		
4.1 <i>General</i>		
charcoal, activated		powder
ipecacuanha		syrup, containing 0.14% ipecacuanha alkaloids calculated as emetine
^U sodium sulfate		powder 5-15 g

^aWhen 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 list	Route of administration, dosage forms, and strengths ^a
4. Antidotes and Other Substances Used in Poisonings (continued)		
4.2 <i>Specific</i>		
atropine		injection, 1 mg (sulfate) in 1-ml ampoule
deferoxamine		injection, 500 mg (mesilate) in vial
dimercaprol (2)		injection in oil, 50 mg/ml in 2-ml ampoule
naloxone		injection, 0.4 mg (hydrochloride) in 1-ml ampoule
protamine sulfate		injection, 10 mg/ml in 5-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
	pencicillamine (c) (2)	capsule or tablet, 250 mg
5. Antiepileptics		
diazepam		injection, 5 mg/ml in 2-ml ampoule
ethosuximide		capsule or tablet, 250 mg
phenobarbital (1)		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 (n, c)	tablet, 200 mg
	valproic acid (n, c) (2, 4, 7)	tablet, 200 mg (sodium salt)

^aWhen 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".

^bSynonym: methylene blue

Main list	Complementary list	Route of administration, dosage forms, and strengths ^a
6. Antiinfective Drugs		
6.1. Anthelmintic drugs		
□ mebendazole		tablet, 100 mg
□ piperazine		tablet, 500 mg (citrate or adipate) elixir or syrup (as citrate) equivalent to 500 mg hydrate/5 ml
□ pyrantel		chewable tablet, 250 mg (as embonate) oral suspension, 50 mg (as embonate)/ml
□ tiabendazole		chewable tablet, 500 mg
6.2. Antiamoebic drugs		
□ chloroquine		tablet, 200 mg (as phosphate or sulfate)
□ diloxanide		tablet, 500 mg (furoate)
□ metronidazole		tablet, 200-500 mg
	dehydroemetine (n) (1, 7)	injection, 60 mg (hydrochloride) in 1-ml ampoule
6.3. Antibacterial drugs		
6.3.1. Penicillins		
□ ampicillin (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
□ phenoxymethylpenicillin		tablet, 250 mg (as potassium salt) powder for oral suspension 250 mg (as potassium salt)/5 ml
□ procaine benzylpenicillin (7)		powder for injection, 1 g (= 1 million IU), 3 g (= 3 million IU)

^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 list	Route of administration, dosage forms, and strengths ^a
6. Antiinfective Drugs (continued)		
6.3.2. Other antibacterial drugs		
□ chloramphenicol (7)		capsule, 250 mg powder for injection, 1 g (as sodium succinate) in vial
□ cloxacillin		capsule, 500 mg (as sodium salt) powder for injection, 500 mg (as sodium salt) in vial
□ 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, 30 mg (as sulfate)/ml in 2-ml vial
□ metronidazole		tablet, 200-500 mg injection, 500 mg in 100 ml suppository, 500 mg, 1 g
	salazosulfapyridine (2) spectinomycin (8)	powder for injection, 2 g (as hydrochloride) in vial
□ sulfadimidine (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 (4)		capsule or tablet, 250 mg (hydrochloride)
	□ anakacin (n, c) (4) doxycycline (n) (5, 6)	injection, 250 mg (sulfate)/ml in 2-ml ampoule capsule or tablet, 100 mg (as hydrochloride) injection, 100 mg (as hydrochloride)/5 ml in ampoule
	□ nitrofurantoin (A, B) (4, 7)	tablet, 100 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 in brackets is preceded by the word "as".

Main list	Complementary list	Route of administration, dosage forms, and strengths ^a
6. Antiinfective Drugs (continued)		
6.3.3 Antileprosy drugs		
clofazimine		capsule, 100 mg
dapsone		tablet, 50 mg, 100 mg
rifampicin		capsule or tablet, 150 mg, 300 mg
	ethionamide (b)	tablet, 125 mg, 250 mg
	prothionamide (b)	tablet, 125 mg
6.3.4 Antituberculosis drugs		
ethambutol		tablet, 100-500 mg (hydrochloride)
isoniazid		tablet, 100-300 mg
pyrazinamide		tablet, 500 mg
rifampicin		capsule or tablet, 150 mg, 300 mg
streptomycin (4)		powder for injection, 1 g (as sulfate) in vial
thioacetazone + isoniazid		tablet, 50 mg + 100 mg, 150 mg + 300 mg
6.4 Antifilarial drugs		
diethylcarbamazine		tablet, 50 mg (citrate)
suramin sodium		powder for injection, 1 g in vial
6.5 Antifungal drugs		
amphotericin B		powder for injection, 50 mg in vial
griseofulvin (8)		tablet or capsule, 125 mg, 250 mg
nystatin		tablet, 500 000 IU
		pessary, 100 000 IU
	flucytosine (b)	capsule, 250 mg
	(4, 8)	infusion, 2.5 g in 250 ml
6.6 Antileishmaniasis drugs		
pentamidine (5)		powder for injection, 200 mg (isetionate or mesilate) in vial
sodium stibogluconate		injection, 33%, equivalent to 10% antimony, in 30-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"

^c Two strengths are required for individual dosage adjustment

Main list	Complementary list	Route of administration, dosage forms, and strengths ^a
6. Antiinfective Drugs (continued)		
6.7 Antimalarial drugs		
^U chloroquine		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)
quinine		tablet, 300 mg (as bisulfate or sulfate)
		injection, 300 mg (as dihydrochloride); ml in 2-ml ampoule
	amodiaquine (b)	suspension, 150 mg (as hydrochloride); 5 ml
	sulfadoxine + pyrimethamine (b)	tablet, 500 mg + 25 mg
6.8 Antischistosomal drugs		
metrifonate		tablet, 100 mg
oxamniquine		capsule, 250 mg
		syrup, 250 mg/5 ml
praziquantel		tablet, 600 mg
6.9 Antitrypanosomal drugs		
melarsoprol (5)		injection, 3.6% solution
pentamidine (5)		powder for injection, 200 mg (isetionate or mesilate)
suramin sodium		powder for injection, 1 g in vial
	^U nifurtimox (c)	tablet, 30 mg, 120 mg, 250 mg
	(2, 8)	
7. Antimigraine Drugs		
ergotamine (2, 7)		tablet, 2 mg (as tartrate)

^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 list	Route of administration, dosage forms, and strengths ^a
8. 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) ^f		tablet, 15 mg injection, 3 mg/ml in 10-ml ampoule
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 (2)		powder for injection, 10 mg, 50 mg (hydrochloride) in vial
flourouracil (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		capsule, 50 mg (as hydrochloride)
vincristine (2)		powder for injection, 1 mg, 5 mg (sulfate) in vial

9. Antiparkinsonism Drugs

[†] biperiden		tablet, 2 mg (hydrochloride) injection, 5 mg (lactate) in 1-ml ampoule
levodopa + [†] carbidopa (5, 6)		tablet, 100 mg + 10 mg, 250 mg + 25 mg
	levodopa (A)	tablet or capsule, 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 in brackets is preceded by the word "as"

^f Drug for "rescue therapy" with methotrexate

Main list	Complementary list	Route of administration, dosage forms, and strengths ^a
10. Blood, Drugs affecting the		
10.1 Antianemia drugs		
ferrous salt		tablet, equivalent to 60 mg iron (as sulfate or fumarate) oral solution, equivalent to 15 mg iron (as sulfate) in 0.6 ml
folic acid (2)		tablet, 1 mg injection, 1 mg (as sodium salt) in 1-ml ampoule
[†] hydroxocobalamin (2)		injection, 1 mg in 1-ml ampoule
	ferrous salt + folic acid (c)	tablet, 60 mg + 200 µg
	^{††} iron dextran (B) (5)	injection, equivalent to 50 mg iron/ml in 2-ml ampoule
10.2 Anticoagulants and antagonists		
heparin		injection, 1000 IU/ml, 5000 IU/ml, 20 000 IU/ml in 1-ml ampoule
phytomenadione		injection, 10 mg/ml in 5-ml ampoule
protamine sulfate (2)		injection, 10 mg/ml in 5-ml ampoule
[†] warfarin (2, 6)		tablet, 5 mg (sodium salt)

11. Blood Products and Blood Substitutes

11.1 Plasma substitute

dextran 70		injectable solution, 6% ^a
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11.2 Plasma fractions for specific uses

albumin, human normal (2, 8)		injectable solution, 25% ^a	All plasma fractions should comply with the WHO Requirements for the Collection, Processing and Quality Control of Human Blood and Blood Products
	antihæmophilic fraction ^c (c) (2, 8)	(dried)	

^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 Synonym: factor VIII

Main list	Complementary list	Route of administration, dosage forms, and strengths ^a
11. Blood Products and Blood Substitutes (continued)		
11.3 Plasma substitute (continued)		
	factor IX complex (coagulation factors II, VII, IX, X, concentrate) (c) (2, 8)	(dried) } All plasma fractions should comply with the WHO Requirements for the Collection, Processing and Quality Control of Human Blood and Blood Products/
12. Cardiovascular Drugs		
12.1. Antianginal drugs		
glyceryl trinitrate		tablet, (sublingual) 0.5 mg
<input type="checkbox"/> isorbide dinitrate		tablet, (sublingual) 5 mg
<input type="checkbox"/> propranolol		tablet, 10 mg, 40 mg (hydrochloride)
		injection, 1 mg (hydrochloride) in 1-ml ampoule
<input type="checkbox"/> verapamil		tablet, 40 mg, 80 mg (hydrochloride)
		injection, 2.5 mg/ml (hydrochloride) in 2-ml ampoule
12.2 Antiarrhythmic drugs		
isoprenaline		tablet, 10 mg; 15 mg (hydrochloride or sulfate)
lidocaine		injection, 20 mg (hydrochloride)/ml in 5-ml ampoule
<input type="checkbox"/> procainamide		tablet, 250 mg, 500 mg (hydrochloride)
		injection, 100 mg (hydrochloride)/ml in 10-ml ampoule
<input type="checkbox"/> propranolol		tablet, 10 mg, 40 mg (hydrochloride)
		injection, 1 mg (hydrochloride) in 1-ml ampoule
<input type="checkbox"/> quinidine (A, B)		tablet, 200 mg (sulfate)

^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".

/ WHO Technical Report Series, No. 626, Annex 1, 1978.

Main list	Complementary list	Route of administration, dosage forms, and strengths ^a
12. Cardiovascular Drugs (continued)		
12.3 Antihypertensive drugs		
<input type="checkbox"/> hydralazine		tablet, 50 mg (hydrochloride)
<input type="checkbox"/> hydrochlorothiazide		tablet, 50 mg
<input type="checkbox"/> propranolol		tablet, 40 mg, 80 mg (hydrochloride)
<input type="checkbox"/> sodium nitroprusside (2, 8)		powder for preparing infusion, 50 g in ampoule
	methyldopa (A, B) (7)	tablet, 250 mg
	<input type="checkbox"/> reserpine (A) (7)	tablet, 0.1 mg, 0.25 mg
		injection, 1 mg in 1-ml ampoule
12.4 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
12.5 Drugs used in shock or anaphylaxis		
dopamine (2)		injection, 40 mg (hydrochloride)/ml in 5-ml vial
epinephrine		injection, 1 mg (as hydrochloride) in 1-ml ampoule
13. Dermatological Drugs		
13.1 Antifungal drugs		
	benzoic acid + salicylic acid	ointment or cream, 6% + 3%
<input type="checkbox"/> miconazole		ointment or cream, 2% (nitrate)
	nystatin	ointment or cream, 100 000 IU/g

^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 list	Route of administration, dosage forms, and strengths ^a
13. Dermatological Drugs (continued)		
13.2 Antinfective drugs		
□neomycin + □bacitracin		ointment, 5 mg neomycin sulfate + 500 IU bacitracin zinc/g
13.3 Antiinflammatory and antipruritic drugs		
□betamethasone (3)		ointment or cream, 0.1% (as valerate)
□calamine lotion		lotion
□hydrocortisone		ointment or cream, 1% (acetate)
13.4 Astringent drugs		
aluminium acetate		solution, 13% for dilution
13.5 Keratoplastic and keratolytic agents		
coal tar		solution, topical 20%
salicylic acid		solution, topical 5%
13.6 Scabicides and pediculicides		
benzyl benzoate		lotion, 25%
lindane [†]		cream or lotion, 1%
14. Diagnostic Agents		
edrophonium (2, 8)		injection, 10 mg (chloride) in 1-ml ampoule
tuberculin, purified protein derivative (PPD)		injection
14.1 Ophthalmic drugs		
fluorescein		eye drops, 1% (sodium salt)

^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".

[†] Previously identified as gamma benzene hexachloride

Main list	Complementary list	Route of administration, dosage forms, and strengths ^a
14. Diagnostic Agents (continued)		
14.2 Radiocontrast media		
□adipiodone meglumine		injection, 25% in 20-ml vial
□barium sulfate		powder
□iopanoic acid		tablet, 500 mg
□meglumine amidotrizoate		injection, 60% in 20-ml ampoule
□sodium amidotrizoate		injection, 50% in 20-ml ampoule
15. Disinfectants		
□chlorhexidine		solution, 5% (gluconate) for dilution
□iodine		solution, 2.5%
16. Diuretics		
□amiloride		tablet, 5 mg (hydrochloride)
□furosemide		tablet, 40 mg
		injection, 10 mg/ml in 2-ml ampoule
□hydrochlorothiazide		tablet, 50 mg
		injectable solution, 10%, 20%
		tablet, 25 mg
chlortalidone (n) (6)		tablet, 50 mg
17. Gastrointestinal Drugs		
17.1 Antacids and other antiulcer drugs		
aluminium hydroxide		tablet, 500 mg
		oral suspension, 320 mg/5 ml
cimetidine		tablet, 200 mg
		injection, 200 mg in 2-ml ampoule
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 in brackets is preceded by the word "as".

Main list	Complementary list	Route of administration, dosage forms, and strengths ^a
17. Gastrointestinal Drugs (continued)		
17.2 <i>Antiemetic drugs</i>		
□promethazine		tablet, 10 mg, 25 mg (hydrochloride) elixir or syrup, 5 mg (hydrochloride)/5 ml injection, 25 mg (hydrochloride)/ml in 2-ml ampoule
	metoclopramide (c)	tablet, 10 mg (as hydrochloride)
17.3 <i>Antihæmorrhoidal drugs</i>		
□local anaesthetic, astringent and anti-inflammatory drug		ointment or suppository
17.4 <i>Antispasmodic drugs</i>		
□atropine		tablet, 1 mg (sulfate) injection, 1 mg (sulfate) in 1-ml ampoule
17.5 <i>Cathartic drugs</i>		
□senna		tablet, 7.5 mg (sennosides)
17.6 <i>Diarrhoea, drugs used in</i>		
17.6.1 <i>Antidiarrhoeal (symptomatic) drugs</i>		
□codeine (1)		tablet, 30 mg (phosphate)
17.6.2 <i>Replacement solution</i>		
oral rehydration salts (for glucose-salt solution)	<i>g/litre</i>	
sodium chloride	3.5	
sodium bicarbonate	2.5	
potassium chloride	1.5	
glucose	20.0	

^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 list	Route of administration, dosage forms, and strengths ^a
18. Hormones		
18.1 <i>Adrenal hormones and synthetic substitutes</i>		
□dexamethasone		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		tablet, 5 mg
	fludrocortisone (c)	tablet, 0.1 mg (acetate)
18.2 <i>Androgens</i>		
testosterone (2)		injection, 200 mg (enantate) in 1-ml ampoule injection, 25 mg (propionate) in 1-ml ampoule
18.3 <i>Estrogens</i>		
□ethinylestradiol		tablet, 0.05 mg
18.4 <i>Insulin: and other antidiabetic agents</i>		
□compound insulin zinc suspension		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
□glibenclamide		tablet, 5 mg
18.5 <i>Oral contraceptives</i>		
□ethinylestradiol + □levonorgestrel		tablet, 0.03 mg + 0.15 mg, 0.05 mg + 0.25 mg
□ethinylestradiol + □norethisterone		tablet, 0.05 mg + 1.0 mg
□norethisterone (b)		tablet, 0.55 mg
18.6 <i>Ovulation inducers</i>		
clomifene (c)		tablet, 50 mg (citrate) (2, 8)

^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 list	Route of administration, dosage forms, and strengths ^a
18. Hormones (continued)		
18.7 Progestogens		
<input type="checkbox"/> norethisterone		tablet, 5 mg
18.8 Thyroid hormones and antithyroid drugs		
levothyroxine		tablet, 0.05 mg, 0.1 mg (sodium salt)
potassium iodide		tablet, 60 mg
<input type="checkbox"/> propylthiouracil		tablet, 50 mg
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

All plasma fractions should comply with the WHO Requirements for the Collection, Processing and Quality Control of Human Blood and Blood Products^b

^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 WHO Technical Report Series, No. 626, Annex 1, 1978

Main list	Complementary list	Route of administration, dosage forms, and strengths ^a
19. Immunologicals (continued)		
19.2 Vaccines		
19.2.1 For universal immunization		
BCG vaccine (dried)		injection
diphtheria-pertussis-tetanus vaccine		injection
diphtheria-tetanus vaccine		injection
measles vaccine		injection
poliomyelitis vaccine (live attenuated)		oral solution
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		
<input type="checkbox"/> neostigmine		tablet, 15 mg (bromide) injection, 0.5 mg (metilsulfate) in 1-ml ampoule
<input type="checkbox"/> gallamine (2)		injection, 40 mg (triethiodide)/ml in 2-ml ampoule

All vaccines should comply with the WHO Requirements for Biological Substances^c

^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 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), Addendum 1981 (WHO Technical Report Series, No. 673, 1982), Measles Vaccine (Live) and Measles Vaccine (Inactivated) (WHO Technical Report Series, No. 329, 1966), Poliomyelitis Vaccine (Oral) (Revised 1982) (WHO Technical Report Series, No. 687, 1983), 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 1980 (WHO Technical Report Series, No. 658, 1981), Rabies Vaccine for Human Use (Revised 1980) (WHO Technical Report Series, No. 658, 1981), Typhoid Vaccine (WHO Technical Report Series, No. 361, 1967), Yellow Fever Vaccine (Revised 1975) (WHO Technical Report Series, No. 594, 1976)

<i>Main list</i>	<i>Complementary list</i>	<i>Route of administration, dosage forms, and strengths^a</i>
20. Muscle Relaxants (Peripherally Acting) and Cholinesterase Inhibitors (continued)		
suxamethonium (2)		injection, 50 mg (chloride)/ml in 2-ml ampoule
	pyridostigmine (n) (2, 8)	tablet, 60 mg (bromide) injection, 1 ml (bromide) in 1-ml ampoule
21. Ophthalmological Preparations		
21.1 <i>Antimicrobial agents</i>		
silver nitrate		solution (eye drops), 1%
sulfacetamide		eye ointment, 10% (sodium salt) solution (eye drops), 10% (sodium salt)
□tetracycline		eye ointment, 1% (hydrochloride)
21.2 <i>Antiinflammatory agents</i>		
hydrocortisone (2, 7)		eye ointment, 1% (acetate)
21.3 <i>Local anaesthetics</i>		
□tetracaine		solution (eye drops), 0.5% (hydrochloride)
21.4 <i>Miotics</i>		
pilocarpine		solution (eye drops), 2%, 4% (hydrochloride or nitrate)
21.5 <i>Mydriatics</i>		
□homatropine		solution (eye drops), 2% (hydrobromide)
	epinephrine (A, B) (2)	solution (eye drops), 2% (as hydrochloride)
21.6 <i>Systemic preparations</i>		
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 in brackets is preceded by the word "as".

<i>Main list</i>	<i>Complementary list</i>	<i>Route of administration, dosage forms, and strengths^a</i>
22. Oxytocics		
Uergometrine		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		tablet, 25 mg (hydrochloride)
□chlorpromazine		tablet, 100 mg (hydrochloride) syrup, 25 mg (hydrochloride)/5 ml injection, 25 mg (hydrochloride)/ml in 2-ml ampoule
□diazepam		tablet, 5 mg
□fluphenazine (5)		injection, 25 mg (decanoate or enantate) in 1-ml ampoule
□haloperidol		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 <i>Antiasthmatic drugs</i>		
□aminophylline		tablet, 200 mg injection, 25 mg/ml in 10-ml ampoule
epinephrine		injection, 1 mg (as hydrochloride) in 1-ml ampoule
□salbutamol		tablet, 4 mg (sulfate) oral inhalation (aerosol), 0.1 mg per dose syrup, 2 mg (sulfate)/5 ml

^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 list	Route of administration, dosage forms, and strengths ^a
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25. Respiratory Tract, Drugs Acting on the (continued)

25.1 Antiasthmatic drugs (continued)

beclomethasone (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 (1)	tablet, 10 mg (phosphate)
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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: <i>Replacement solution</i> }
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/l, Cl ⁻ 30 mmol/l)
potassium chloride sodium bicarbonate	injectable solution
sodium chloride	injectable solution, 1.4% isotonic (Na ⁺ 167 mmol/l, HCO ₃ ⁻ 167 mmol/l)
water for injection	injectable solution, 0.9% isotonic (Na ⁺ 154 mmol/l, Cl ⁻ 154 mmol/l)
	in 2-ml, 5-ml, 10-ml ampoules

^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 list	Route of administration, dosage forms, and strengths ^a
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27. Vitamins and Minerals

ascorbic acid	tablet, 50 mg
†ergocalciferol	capsule or tablet, 1.25 mg (50 000 IU) oral solution, 0.25 mg/ml (10 000 IU)
†nicotinamide	tablet, 50 mg
pyridoxine	tablet, 25 mg (hydrochloride)
retinol	capsule or tablet, 7.5 mg (25 000 IU), 60 mg (200 000 IU) oral solution, 15 mg/ml (50 000 IU)
riboflavin	tablet, 5 mg
sodium fluoride (8)	tablet, 0.5 mg (as fluoride)
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 in brackets is preceded by the word "as".

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

LIST A

BASIC DRUG REQUIREMENTS FOR
10 000 PERSONS FOR 3 MONTHS

Reference No.	Drug [group in Essential Drugs list ^a]	Pharmaceutical form and strength	Total required for 3 months (rounded up)
A.1	Analgesics [2.1]		
	A.1.1 acetylsalicylic acid	tab. 300 mg	17 000 tab.
	A.1.2 paracetamol	tab. 500 mg	4 500 tab.
A.2	Anthelmintics [6.1]		
	A.2.1 mebendazole <input type="checkbox"/>	tab. 100 mg	2 100 tab.
	A.2.2 piperazine	syrup 500 mg/5 ml (30-ml bottles)	5 litres
A.3	Antibacterials [6.3]		
	A.3.1 ampicillin <input type="checkbox"/>	pulv. susp. 125 mg/5 ml	420 bottles of 60 ml
	A.3.2 benzylpenicillin	pulv. inj. 0.6 g (1 million IU)	500 vials
	A.3.3 phenoxymethylpenicillin	tab. 250 mg	9 500 tab.
	A.3.4 procaine benzylpenicillin	pulv. inj. 3.0 g (3 million IU)	375 vials

^aThe figures in square brackets refer to the categories and subcategories in the Model List of Essential Drugs contained in the report of the WHO Expert Committee on the Use of Essential Drugs (WHO Technical Report Series, No. 685, 1983).

Square symbol indicates that alternative drugs could be used. See page 7, under Explanatory note 1.

Abbreviations used:

amp.	= ampoule(s)
cap.	= capsule(s)
oint.	= ointment
pulv. inj.	= powder for injection
pulv. susp.	= powder for suspension
tab.	= tablet(s)

REPRINTED FROM:

WHO, "WHO Emergency Health Kit: Standard Drugs and Clinic Equipment for 10000 Persons for 3 Months", World Health Organization, Geneva, Switzerland, 1984.

List A

Reference No.	Drug [group in Essential Drugs list ^a]	Pharmaceutical form and strength	Total required for 3 months (rounded up)
	A.3.5 sulfamethoxazole + trimethoprim <input type="checkbox"/>	tab. 400 mg + 80 mg	7 500 tab.
	A.3.6 tetracycline <input type="checkbox"/>	tab. 250 mg	9 000 tab.
A.4	Antimalarials [6.7]^b		
	A.4.1 chloroquine <input type="checkbox"/>	tab. 150 mg	8 000 tab.
	A.4.2 chloroquine <input type="checkbox"/>	syrup 50 mg/5 ml	3 litres
A.5	Antianaemia [10.1]		
	A.5.1 ferrous salt + folic acid (for use during pregnancy only)	tab. 60 mg + 0.2 mg	15 000 tab.
	A.5.2 ferrous salt	tab. 60 mg	30 000 tab.
A.6	Dermatologicals [13]		
	A.6.1 benzoic acid + salicylic acid	oint. 6% + 3%, 25-g tube	100 tube
	A.6.2 neomycin + bacitracin <input type="checkbox"/>	oint. 5 mg + 500 IU/g, 25-g tube	50 tube
	A.6.3 calamine lotion <input type="checkbox"/>	lotion	5 litre
	A.6.4 benzyl benzoate	lotion 25%	35 litre
	A.6.5 gentian violet (not in Essential Drugs list)	crystals	200 g (8 bottl)

^aThe figures in square brackets refer to the categories and subcategories in the Model List of Essential Drugs contained in the report of the WHO Expert Committee on the Use of Essential Drugs (WHO Technical Report Series, No. 685, 1983).

^bFor treatment of chloroquine-resistant malaria, see List B - item B.6.2.

Square symbol indicates that alternative drugs could be used. See page 7, under Explanatory note 1.

Abbreviations used:

amp.	= ampoule(s)
cap.	= capsule(s)
oint.	= ointment
pulv. inj.	= powder for injection
pulv. susp.	= powder for suspension
tab.	= tablet(s)

Reference No.	Drug [group in Essential Drugs list ^a]	Pharmaceutical form and strength	Total required for 3 months (rounded up)
A.7	Disinfectants [15]		
	A.7.1 chlorhexidine <input type="checkbox"/>	solution 20%	5 litres
A.8	Antacids [17.1]		
	A.8.1 aluminium hydroxide	tab. 500 mg	5 000 tab.
A.9	Cathartics [17.5]		
	A.9.1 senna <input type="checkbox"/>	tab. 7.5 mg	400 tab.
A.10	Diarrhoea (replacement solution) [17.6]		
	A.10.1 oral rehydration salts	sachet 27.5 g/litre	6 000 sachets
A.11	Ophthalmologicals [21.1]		
	A.11.1 tetracycline <input type="checkbox"/>	eye oint. 1%, 5-g tube	750 tubes
A.12	Solutions [26.2]		
	A.12.1 water for injection	amp. 2 ml	500 amp.
	A.12.2 water for injection	amp. 10 ml	500 amp.
A.13	Vitamins [27]		
	A.13.1 retinol (vitamin A)	cap. 60 mg (200 000 IU)	500 cap.
	A.13.2 retinol (vitamin A)	cap. 7.5 mg (25 000 IU)	400 cap.

^aThe figures in square brackets refer to the categories and subcategories in the Model List of Essential Drugs contained in the report of the WHO Expert Committee on the Use of Essential Drugs (WHO Technical Report Series, No. 685, 1983).

Square symbol indicates that alternative drugs could be used. See page 7, under Explanatory note 1.

Abbreviations used:

amp.	= ampoule(s)
cap.	= capsule(s)
oint.	= ointment
pulv. inj.	= powder for injection
pulv. susp.	= powder for suspension
tab.	= tablet(s)

LIST B

DRUGS FOR USE BY DOCTORS AND SENIOR HEALTH WORKERS

(in addition to List A)

Refer- ence No.	Drug [group in Essential Drugs list ^a]	Pharmaceutical form and strength	Total amount
B.1	Local anaesthetics [1.2]		
	B.1.1 lidocaine <input type="checkbox"/>	inj. 1% vial of 50 ml	10 vials
B.2	Analgesics [2.2]		
	[B.2.1 pethidine <input type="checkbox"/> ^b	inj. 50 mg in 1-ml amp.	10 amp.]
B.3	Antiallergics [3]		
	B.3.1 chlorphenamine <input type="checkbox"/>	tab. 4 mg	100 tab.
B.4	Antiepileptics [5]		
	B.4.1 diazepam	inj. 5 mg/ml, 2-ml amp.	10 amp.

^aThe figures in square brackets refer to the categories and subcategories in the Model List of Essential Drugs contained in the report of the WHO Expert Committee on the Use of Essential Drugs (WHO Technical Report Series, No. 685, 1983).

^bThis substance is subject to international control under the Single Convention on Narcotic Drugs (1961) and the Convention on Psychotropic Substances (1971). *NOT* supplied with the Emergency Health Kit: to be obtained locally in accordance with approved national procedures.

Square symbol indicates that alternative drugs could be used. See page 7, under Explanatory note 1.

Abbreviations used:

amp.	= ampoule(s)
cap.	= capsule(s)
inj.	= injection
inj. sol.	= injectable solution
oint.	= ointment
pulv. inj.	= powder for injection
tab.	= tablet(s)

List B

Reference No.	Drug [group in Essential Drugs list ^a]	Pharmaceutical form and strength	Total amount
B.5	Antiinfectives [6]		
	B.5.1 metronidazole <input type="checkbox"/>	tab. 250 mg	1 500 tab. (2 tds 5/7 for 50 patients)
	B.5.2 benzylpenicillin	pulv. inj. 3.0 g	100 vials
	B.5.3 chloramphenicol <input type="checkbox"/>	cap. 250 mg	2 000 cap. (2 qds 5/7 for 50 patients)
	B.5.4 cloxacillin <input type="checkbox"/>	cap. 500 mg	3 000 cap. (1 qds 7/7 for 35 adults) (1 bd 7/7 for 30 children)
B.6	Antimalarials [6.7]		
	B.6.1 quinine	inj. 300 mg/ml	20 amp. of 2 ml (average of 4 ml per patient)
	B.6.2 sulfadoxine + pyrimethamine	tab. 500 mg + 25 mg	150 tab. (2-3 stat. for 50 patients)
B.7	Plasma substitute [11.1]		
	B.7.1 dextran 70	inj. sol. 6%/500 ml with 10 giving sets	5 litres

^aThe figures in square brackets refer to the categories and subcategories in the Model List of Essential Drugs contained in the report of the WHO Expert Committee on the Use of Essential Drugs (WHO Technical Report Series, No. 685, 1983).

Square symbol indicates that alternative drugs could be used. See page 7, under Explanatory note 1.

Abbreviations used:

amp.	= ampoule(s)
bd	= take twice a day
cap.	= capsule(s)
inj.	= injection
inj. sol.	= injectable solution
oint.	= ointment
pulv. inj.	= powder for injection
qds	= take 4 times a day
stat.	= at once
tab.	= tablet(s)
tds	= take 3 times a day
x/7	= x number of days per week

Reference No.	Drug [group in Essential Drugs list ^a]	Pharmaceutical form and strength	Total amount
B.8	Cardiovascular [12]		
B.8.1	glyceryl trinitrate	tab. 0.5 mg	100 tab.
B.8.2	propranolol☐	tab. 40 mg	100 tab.
B.8.3	digoxin	tab. 0.25 mg	100 tab.
B.8.4	digoxin	inj. 0.25 mg/ml in 2-ml amp.	10 amp.
B.8.5	epinephrine	inj. 1 mg/ml in 1-ml amp.	10 amp.
B.9	Dermatologicals [13]		
B.9.1	nystatin	cream 100 000 IU/g, 30-g tube	10 tubes
B.9.2	hydrocortisone	cream 1%, 30-g tube	10 tubes
B.10	Diuretics [16]		
B.10.1	furosemide☐	tab. 40 mg	100 tab.
B.10.2	furosemide☐	inj. 10 mg/ml in 2-ml amp.	10 amp.
B.11	Gastrointestinals [17]		
B.11.1	promethazine☐	tab. 25 mg	100 tab.
B.11.2	promethazine☐	syrup 5 mg/5ml, bottle of 250 ml	10 bottles

^aThe figures in square brackets refer to the categories and subcategories in the Model List of Essential Drugs contained in the report of the WHO Expert Committee on the Use of Essential Drugs (WHO Technical Report Series, No. 685, 1983).

☐ Square symbol indicates that alternative drugs could be used. See page 7, under Explanatory note 1.

Abbreviations used:

amp.	= ampoule(s)
cap.	= capsule(s)
inj.	= injection
inj. sol.	= injectable solution
oint.	= ointment
pulv. inj.	= powder for injection
tab.	= tablet(s)

List B

Reference No.	Drug [group in Essential Drugs list ^a]	Pharmaceutical form and strength	Total amount
	[B.11.3 codeine□ ^b	tab. 30 mg	100 tab.]
B.12	Hormones [18]		
	B.12.1 hydrocortisone	pulv. inj. 100 mg	10 vials
B.13	Ophthalmologicals [21.1]		
	B.13.1 sulfacetamide	eye oint. 10 %, 5-g tube	250 tubes
B.14	Oxytocics [22]		
	B.14.1 ergometrine□	tab. 0.2 mg	100 tab.
	B.14.2 ergometrine□	inj. 0.2 mg/ml in 1-ml amp.	10 amp.
B.15	Psychotherapeutics [24]		
	B.15.1 diazepam□	tab. 5 mg	100 tab.
B.16	Respiratory [25]		
	B.16.1 aminophylline□	inj. 25 mg/ml in 10-ml amp.	10 amp.
	B.16.2 salbutamol□	oral inhalation. 0.1 mg per dose	5 aerosols
	B.16.3 beclometasone	oral inhalation, 0.05 mg per dose	5 aerosols

^aThe figures in square brackets refer to the categories and subcategories in the Model List of Essential Drugs contained in the report of the WHO Expert Committee on the Use of Essential Drugs (WHO Technical Report Series, No. 685, 1983).

^bThis substance is subject to international control under the Single Convention on Narcotic Drugs (1961) and the Convention on Psychotropic Substances (1971). NOT supplied with the Emergency Health Kit; to be obtained locally in accordance with approved national procedures.

□ Square symbol indicates that alternative drugs could be used. See page 7, under Explanatory note 1.

Abbreviations used:

amp.	= ampoule(s)
cap.	= capsule(s)
inj.	= injection
inj. sol.	= injectable solution
oint.	= ointment
pulv. inj.	= powder for injection
tab.	= tablet(s)

Reference No.	Drug [group in Essential Drugs list ^a]	Pharmaceutical form and strength	Total amount
B.17	Solutions [26.2]		
B.17.1	compound solution of sodium lactate [□]	inj. sol., 500 ml	10 litres
B.17.2	glucose	inj. sol. 50% hypertonic, 10-ml amp.	10 amp.
B.17.3	sodium chloride	inj. sol. 0.9% isotonic, 500 ml with 10 giving sets	5 litres
B.17.4	water for injection	10-ml amp.	100 amp.

^aThe figures in square brackets refer to the categories and subcategories in the Model List of Essential Drugs contained in the report of the WHO Expert Committee on the Use of Essential Drugs (WHO Technical Report Series, No. 685, 1983).

[□]Square symbol indicates that alternative drugs could be used. See page 7, under Explanatory note 1.

Abbreviations used:

amp.	= ampoule(s)
cap.	= capsule(s)
inj.	= injection
inj. sol.	= injectable solution
oint.	= ointment
pulv. inj.	= powder for injection
tab.	= tablet(s)

Appendix E

ILLUSTRATIVE PHARMACEUTICAL PRICES

The following abbreviations are used to indicate dosage form type, potency, and package type and size:

AMP -- Ampul	OINT -- Ointment
AQ -- Aqueous	OPH -- Ophthalmic
BTL -- Bottle	OS -- Oral Solution; Oral Suspension
CAPS -- Capsules	PKT -- Packet
CH -- Chewable	PO -- Powder
CRM -- Cream	PO/OS -- Powder for Oral Suspension; for Oral Solution
CRYS -- Crystal	SC -- Sugar Coated
CS -- Controlled Substance	SOLN -- Solution
EC -- Enteric Coated	SUSP -- Suspension
ELIX -- Elixir	SYRP -- Syrup
EMUL -- Emulsion	TABS -- Tablets
INJ -- Injection; Injectable	TOP -- Topical
IV -- Intravenous	U -- Units
LIQ -- Liquid	VAC -- Vaccine
M -- 1,000	
MM -- 1,000,000	
N/A -- Not Applicable	

GENERIC NAME	FORM	POTENCY	PKG	SIZE	PRICE	
Acetaminophen (Paracetamol)*	Caps	500mg	bt1	100s	\$ 1.84	
		500mg	bt1	1000s	14.50	
	Drops	60mg/0.6ml	bt1	1/2oz	1.75	
		Elix	120mg/5ml	bt1	4oz	0.75
			120mg/5ml	bt1	16oz	1.95
	Tabs	120mg/5ml	bt1	Gal	10.95	
		325mg	bt1	100s	\$ 0.95	
		325mg	bt1	1000s	5.75	
		500mg	bt1	1000s	8.75	
Aminophylline	Liq	105mg/5ml	bt1	16oz	3.45	
		Tabs	100mg	bt1	100s	0.75
	100mg		bt1	1000s	4.15	
	200mg		bt1	100s	1.15	
	200mg		bt1	1000s	5.95	
	TabsEC		100mg	bt1	1000s	9.50
		200mg	bt1	1000s	12.50	
Ampicillin*	Caps	250mg	bt1	100s	4.25	
		250mg	bt1	500s	18.40	
		500mg	bt1	100s	7.65	
		500mg	bt1	500s	37.80	

	PO/OS	125mg/5ml	bt1	100ml	0.90
		125mg/5ml	bt1	200ml	1.43
		250mg/5ml	bt1	100ml	1.33
		250mg/5ml	bt1	200ml	2.07
Aspirin*	Tabs	325mg	bt1	100s	0.45
		325mg	bt1	1000s	3.40
		325mg	ctn	5000s	16.63
		650mg	bt1	100s	1.25
		650mg	bt1	1000s	7.25
	TabsCH	81mg	bt1	1000s	3.50
	TabsEC	325mg	bt1	100s	0.98
		325mg	bt1	1000s	5.55
		650mg	bt1	100s	1.31
		650mg	bt1	1000s	6.85
BCG Vaccine	Inj	Single dose	vial	1ml	1.52
Bacitracin*	OintTop	500u/Gm	tube	15Gm	0.59
		500u/Gm	tube	30Gm	0.71
	OintOph	500u/Gm	tube	3.5Gm	0.56
Benzyl Benzoate*	Lotn	50%	bt1	16oz	3.80
		50%	bt1	Gal	23.40
Chloramphenicol	Caps*	250mg	bt1	100s	17.50
	OS	30mg/ml	bt1	60ml	9.63
Chlorhexidine*	Soln	4%	bt1	4oz	1.06
		4%	bt1	8oz	1.66
		4%	bt1	16oz	3.22
		4%	bt1	32oz	5.18
		4%	bt1	Gal	19.00
Chloroquine Phosphate	Syrp	50mg base/5ml	bt1	16oz	1.80
	Tabs*	150mg base	bt1	100s	3.75
		150mg base	bt1	1000s	11.80
Chlorpheniramine Maleate*	Syrp	2mg/5ml	bt1	16oz	1.61
		2mg/5ml	bt1	Gal	8.47
	Tabs	4mg	bt1	100s	0.52
		4mg	bt1	1000s	1.50
Chlorpromazine	Inj	25mg/ml	amp	2ml	1.51
		25mg/ml	vial	10ml	6.92
	Tabs*	10mg	bt1	100s	1.25
		10mg	bt1	1000s	8.25
		25mg	bt1	100s	1.60
		25mg	bt1	1000s	10.50
		50mg	bt1	100s	1.95
		50mg	bt1	1000s	15.50
Co-Trimoxazole (Sulfamethoxazole	Tabs	80:400	bt1	100s	7.20

		80:400	bt1	500s	34.20
		160:800	bt1	100s	12.60
Cough Mixture (Dextromethorphan and Guaiafenesin)	Syrp/E1	100mg/5ml	bt1	4oz	0.79
Dapsone	Tab	25mg	bt1	1000s	14.60
Dextromethorphan and Guaiafenesin	Syrp/E1	100mg/5ml	bt1	4oz	0.79
Diazepam*	Inj	5mg/ml	amp	2ml	1.61
		5mg/ml	vial	10ml	7.37
	Tab	2mg	bt1	120s	7.11
		5mg	bt1	120s	10.94
		10mg	bt1	120s	18.49
Diethylcarbamazine Citrate**	Tab	50mg	tin	1000s	5.20
Digoxin*	Tab	250mcg	bt1	100s	1.50
		250mcg	bt1	1000s	9.60
Diphenhydramine Hydrochloride*	Cap	25mg	bt1	100s	1.25
		25mg	bt1	1000s	7.95
		50mg	bt1	100s	1.49
		50mg	bt1	1000s	9.60
	Elix	12.5mg/5ml	bt1	16oz	1.50
		12.5mg/5ml	bt1	Gal	8.26
Diphtheria-Pertussis-Tetanus Vac	Vac	5doses	vial	7.5ml	7.00
Diphtheria and Tetanus Toxoid	Vac	Pediatric	vial	5ml	5.71
Ephedrine Sulfate	Cap	25mg	bt1	100s	1.40
		25mg	bt1	1000s	10.67
	Inj	25mg/5ml	amp	1ml	0.54
		50mg/5ml	amp	1ml	0.58
		20mg/5ml	bt1	Gal	16.95
Epinephrine Hydrochloride	Inj	1mg/ml	vial	30ml	3.03
Ethambutol Hydrochloride	Tab	400mg	bt1	1000s	248.88
Ferrous Sulfate*	Elix	200mg/5ml	bt1	Pt	2.85
	TabSEC	300mg	bt1	100s	0.89
		300mg	bt1	1000s	4.95
	TabSC	300mg	bt1	100s	0.85
		300mg	bt1	1000s	4.40
Gentamicin Sulfate	Inj	40mg/ml	vial	2ml	3.25
	DintCrm	0.1%	tube	15Gm	3.29
	DintDph	0.1%	tube	1/8oz	2.35
Gentian Violet*	Soln	1%	bt1	1oz	0.70
		1%	bt1	2oz	0.95
Hydrochlorothiazide*	Tab	25mg	bt1	100s	0.65

		25mg	bt1	1000s	2.90
		50mg	bt1	100s	0.75
		50mg	bt1	1000s	3.50
		100mg	bt1	100s	0.90
		100mg	bt1	1000s	10.50
Hydrocortisone	OintTop	1/2%	tube	30Gm	0.90
		1/2%	jar	120Gm	3.15
		1%	tube	30Gm	2.38
		1%	jar	120Gm	8.20
Insulin, Regular	Inj	100u/ml	vial	10ml	8.14
Isoniazid	Tabs	100mg	bt1	100s	0.70
		100mg	bt1	1000s	4.50
		300mg	bt1	100s	1.98
Lidocaine Hydrochloride*	Inj	1%	vial	2ml	0.26
		1%	vial	30ml	0.46
		1%	vial	50ml	0.50
		2%	vial	2ml	0.28
		2%	vial	30ml	0.48
		2%	vial	50ml	0.52
Magnesium Sulfate	PO/CRYS	Pure	bt1	4oz	1.52
Magnesium Hydroxide/Aluminum Hydroxide	Susp	400mg/5ml	bt1	12oz	2.17
	Tabs	300mg	bt1	100s	2.85
Measles Virus Vaccine Live	VAC	1dose	vial		5.42
Mebendazole	TabsCH	100mg	bt1	12s/36s	Check
Methyldopa	Tabs	125mg	bt1	100s	8.42
		250mg	bt1	100s	11.49
		250mg	bt1	1000s	115.36
		500mg	bt1	100s	21.41
Methyergonovine Maleate	Inj	0.2mg/ml	amp	1ml	0.58
		0.2mg	bt1	100s	10.92
Metronidazole	Tabs	250mg	bt1	100s	31.50
		250mg	bt1	500s*	86.50
Norgestrel*	Tabs	0.075mg	pkt	28s	0.13
Norgestrel/Ethinyl Estradiol*	Tabs	0.3+.03mg	pkt	28s	0.13
		0.5+.05mg	pkt	28s	0.13
Oral Rehydration Salts	PO	--	pkt	For 1L	0.10
Penicillin G Benzathine Parent	Inj	300Mu	amp	10x2ml	37.53
		600Mu	amp	10x1ml	26.11
		900Mu	amp	10x1.5ml	36.56

	Inj	1.2MMu	amp	10x2ml	45.23
	Inj	2.4MMu	amp	10x4ml	90.57
Penicillin G Procaine Aqueous	Inj	600Mu/ml	vial	1ml	0.95
		600Mu/ml	vial	2ml	1.57
		600Mu/ml	vial	4ml	3.35
Penicillin V Potassium	OS	125mg/5ml	bt1	60ml	0.99
	OS	125mg/5ml	bt1	80ml	1.19
	OS	250mg/5ml	bt1	100ml	1.25
	OS	250mg/5ml	bt1	200ml	1.73
	Tab* 500mg (800Mu)	bt1	100s		1.94
			bt1	100s	3.68
Phenobarbital	Elix	20mg/5ml	bt1	16oz	3.57
	Tab	15mg	bt1	1000s	1.99
		30mg	bt1	1000s	3.05
Phenytoin	Caps	30mg	bt1	100s	2.40
		100mg	bt1	1000s	18.90
Piperazine Citrate*	Tab	250mg	bt1	100s	1.45
		250mg	bt1	1000s	7.45
	Syrp	500mg/5ml	bt1	4oz	2.95
Polio Virus Vaccine Live	OS	10doses	vial	10ml	27.50
Prednisone	Tab	2.5mg	bt1	100s	3.79
	Tab	5mg	bt1	100s	4.25
Promethazine Hydrochloride	Syrp	6.25mg/5ml	bt1	16oz	4.01
	Tab	12.5mg	bt1	1000s	61.96
		25mg	bt1	100s	10.61
		25mg	bt1	1000s	98.49
		50mg	bt1	100s	16.00
Propranolol	Tab	10mg	bt1	100s	7.38
		10mg	bt1	1000s	70.87
		20mg	bt1	100s	10.37
		20mg	bt1	1000s	99.72
		40mg	bt1	100s	14.95
		40mg	bt1	1000s	143.64
		80mg	bt1	100s	24.93
	80mg	bt1	1000s	239.59	
Sulfadoxine and Pyrimethamine	Tab	500mg	bt1	25s	19.85
Tetanus Toxoid	Inj	1dose	vial	0.5ml	0.85
		15doses	vial	7.5ml	4.21
Tetracycline Hydrochloride*	Caps	250mg	bt1	100s	1.95
		250mg	bt1	1000s	15.25
		500mg	bt1	100s	3.35
		500mg	bt1	1000s	31.36

Thiopental Sodium*	Inj	2%/2.5Gm	kit	25s	276.75
		2%/5Gm	kit	25s	426.00
		2.5%/1Gm	kit	25s	136.00
		2.5%/2.5Gm	kit	25s	276.75
		250mg	Syrng	25s	99.00
		500mg	Syrng	25s	130.75
Tolbutamide	Tabs	500mg	bt1	100s	2.67
		500mg	bt1	1000s	18.95
Vitamin A	Caps	25Mu	bt1	100s	1.50
		25Mu	bt1	1000s	11.90
		50Mu	bt1	100s	1.75
		50Mu	bt1	1000s	16.95
Vitamins, Multiple	Tabs	--	bt1	100s	1.35
		--	bt1	1000s	5.50
Vitamins, Multiple w/Iron	Tabs	--	bt1	1000s	7.00
	Drops	--	bt1	50ml	1.30

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*FY 1984 prices obtained from AID/Washington; now superseded.

**1984 UNICEF/New York prices.