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MANAGEMENT SCIENCES FOR HEALTH
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MANAGEMENT SCIENCES FOR HEALTH
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PROCUREMENT AND USE OF MEDICINES

IN AFGHANISTAN

An interim report on the steps taken by the
Republic of Afghanistan
Ministry of Public Health
to bring Low-Cost, Quality Drugs to the people

October, 1974

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Preface

Management Sciences for Health (MSH) is providing management support to the Ministry of Public Health, Republic of Afghanistan, under an agreement between the Afghanistan government and the United States Agency for International Development. The basic purpose of the project is to assist the development of rural and family health services, the major goal of the new republic's Afghan Roctia (Health) Program.

MSH is an independent, tax-exempt foundation, with a primary commitment to provide support for the management development of public sector health programs.

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1. SUMMARY

In Afghanistan, the people pay considerably more money for drugs alone than the government's budget allows for all health services, including both the development budget (capital investment in buildings) and the operating budget (salaries and supplies including drugs). Recognizing this fact and the related, significant foreign exchange drain entailed in drug purchasing, the Ministry of Health has initiated an Analysis of Drug Procurement and Use as a necessary element in the Afghan Roctia (Health) Program. As the health focus for the new Republic's social development initiatives, the Afghan Roctia Program is putting priority on the cooperative use of all public and private resources to reach the rural, underserved majority of the population with practical, economically realistic health care.

Afghan and International experience suggests that a careful drug policy can be a major factor in extending access to health services within budgetary constraints, and the Afghan Cabinet has acted to implement such a policy. Key elements in the Afghan policy include:

A formulary restricted to needs;
Consolidated procurement;
A bid system with built-in quality and price controls;
Coordination of public and private interests;

and in the near term,

Probable use of an international agency for procurement assistance.

2. INTRODUCTION

In 1973, senior officials of the Afghan Ministry of Public Health (MOPH) and other government agencies expressed concern about the large amount of foreign exchange spent for medicines. The import cost of the drugs was estimated to be some five million dollars annually, mostly by private business, an amount comparable to the entire budget of the MOPH. Little attention had previously been paid to cost, perhaps only 15% of the people were being reached with these medicines, and it was unclear as to whether the medicines used were appropriate and relevant to Afghan health needs.

The new Republican Government has made a strong commitment to expansion of health services in rural areas a major element in its Afghan Roctia (Health) Program. The Government realizes that its own resources are insufficient to provide all services directly, and that both public and private resources must be coordinated to serve the people.

Management Sciences for Health (MSH), as part of a program to provide management support for the planning and delivery of rural and family health services, was asked to assist in the analysis of how drugs are currently obtained and used, and to investigate strategies for improvement of current procedures.

The following summarizes information developed to date by MOPH and MSH about low-cost, quality drugs and ways that existing Afghan resources may be used to make appropriate drugs more available to the people.

3. BACKGROUND ANALYSIS

Three areas are particularly significant in an analysis of the present process of drug procurement and use in Afghanistan: foreign exchange requirements, sources and flows of drugs, and the mechanisms used for drug regulation.

3.1 Economic Impact and Use of Foreign Exchange

Estimates of foreign exchange expenditure for drugs are available from at least two sources: Ministry of Commerce trade statistics, and the Ministry of Health's General Medical Depot records of drug import invoices. Figure 1 indicates that recorded expenditure of foreign exchange for importation of drugs and raw materials has doubled in the past few years, though 1973 imports countered the trend, apparently due to a foreign exchange shortage.

FIGURE 1

DRUG IMPORTS
ESTIMATED EXPENDITURES OF FOREIGN EXCHANGE
(Millions of Dollars)

	1967	1968	1969	1970	1971[1]	1973[2]
Total	2.5	3.3	3.9	5.0	5.5	(3.2) Private Wholesalers (0.9) Private Manufacturers (0.2) General Medical Depot 4.3 Total

[1] Ministry of Commerce Trade Statistics
[2] MOPH/GMD Import Invoice Analysis

4.3 million dollars spent at the wholesale level in 1973 suggests, conservatively, a final retail cost to the Afghan consumer of 6 - 8 million dollars. Drug importation by the military, police, or hospitals and services provided by other ministries and private industry have not been separately studied, and losses due to diversion are unknown.

3.2 Sources and Flows of Medicines

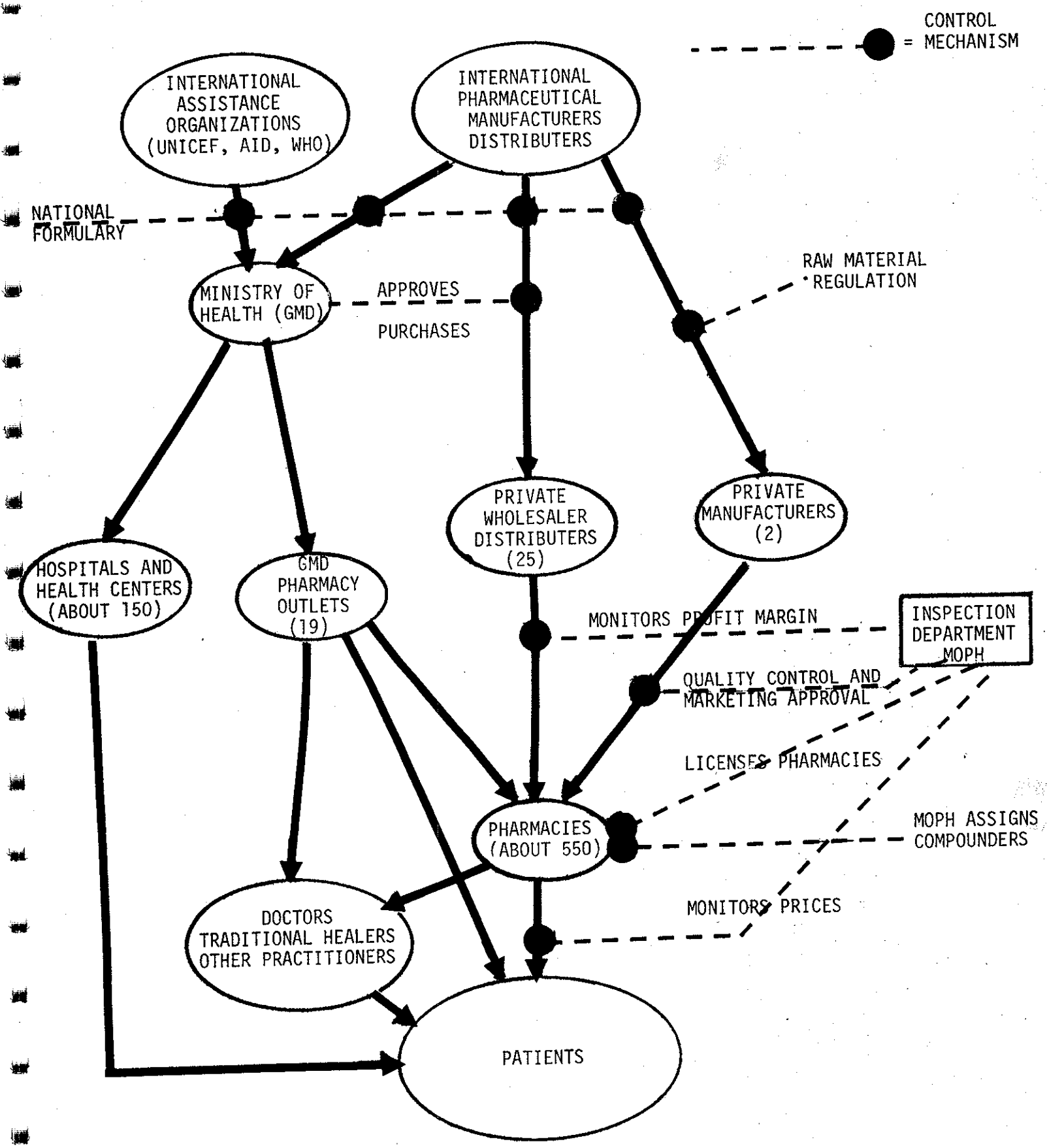
Figure 2 presents an outline of drug souces and flows in Afghanistan. Pharmaceuticals are imported in four ways:

1) direct purchase of proprietary (brand-name) drugs by approximately 25 wholesalers for re-sale to the nearly 600 private pharmacies, some owned by the wholesalers;

2) purchase and conversion of raw or bulk materials by two private manufacturers (one large, foreign-owned; one small, Afghan owned) for re-sale to the private pharmacy network;

FIGURE 2

DRUG SOURCES AND MOVEMENT IN AFGHANISTAN



3) purchase of medicines and raw materials by the General Medical Depot of the MOPH for use in government hospitals and Basic Health Centers, as well as for direct sale through a few government-run pharmacies;

4) donations and assisted purchases by international agencies, primarily for public health programs.

3.3 Regulation

Also noted in Figure 2 are the regulatory mechanisms which the MOPH uses to monitor the flow of drugs into and through the country. The General Medical Depot (GMD) and the Department of Inspection (DI) are the principal regulatory bodies of the MOPH.

The GMD is a semi-autonomous department responsible directly to the Minister of Health. It purchases medicines directly for government use and is responsible for approving all finished drug imports by the private sector. The GMD is also primarily responsible for the establishment and use of the Afghan National Formulary.

The DI regulates distributors and sales once the drugs have entered the country. It is supposed to enforce the officially approved profit margins for both wholesalers and pharmacies; it licenses pharmacies, inspects their operating procedures, and assigns government-trained compounders to each. In addition, the private, in-country drug manufacturers must obtain DI approval for the marketing of any pharmaceutical.

4. STEPS SUPPORTED TO DATE BY THE GOVERNMENT OF AFGHANISTAN

The new government, under the leadership of the MOPH, has begun to identify the problems blocking effective, economical drug procurement for the nation. Some of these problems have been noted above; others include: a lack of monitoring and regulation of the prices importers pay to foreign firms; competitive bids from suppliers are solicited only by GMD for their small quantity of purchases; the DI is undermanned and cannot perform all its functions as well as desired, and tensions exist between the private sector (in-country manufacturers and wholesalers) and the government with regard to price structure and distribution of drugs.

The MOPH has not been disheartened by obstacles but had proceeded, step-by-step, to analyze major background factors that affect possible strategies for supplying the best drugs at the lowest price to the Afghan people.

The MOPH analysis follows a practical sequence useful in a complex situation where complete information is rarely available: 1) Each decision is made on the basis of the best information currently available; 2) methods for receiving and analyzing new information are being developed; 3) the MOPH is prepared to modify or change decisions and plans based on new information and experience.

The important issues, data, and Ministry decisions to date are summarized below and in attached appendices. They include:

1. Analysis of Afghan Health Problems
2. Revision of the National Formulary
3. Analysis of Present Drug Imports
4. Exploration of Methods of Procurement
5. The Private Wholesalers and Pharmacies
6. A pilot project on rural drug utilization

4.1 Analysis of Afghan Health Problems

What are the prevalence, incidence, and distribution of health problems in Afghanistan? Several sources have published data on these parameters and some of their information appears in Appendix 1. This information is useful to determine what drugs are needed, as well as estimates of how much may be needed if health services were accessible to and used by all.

4.2 Revision of the Afghan National Formulary

What drugs are needed to deal with Afghan health problems? The Formulary is the basic document which specifies which drugs are legally allowed to be used, manufactured and/or imported into the country. The National Formulary was redrafted in late 1973 by a senior Afghan committee appointed for the purpose by the Minister of Health.

To simplify and thereby improve health practice, the Formulary Committee worked to adhere to several important principles:

Identification of each drug by its generic name, eliminating the complexity and confusion common when many commercial or proprietary names are used for what is essentially the same drug.

Limitation of the drugs used to only a few scientifically proven drugs required for effective coverage of each health problem and, when possible, to the least expensive drug in each area.

Elimination of most drugs composed of fixed-combinations of ingredients, which are generally unnecessary, more expensive and often inappropriate for most health problems.

Maintenance of many drugs customarily used by Afghan physicians.

This procedure reduced the Formulary to about 400 drugs, one-third the number of preparations previously listed. Additionally, a sub-list of 40 basic drugs was compiled through a collaborative effort of the MOPH, WHO, and MSH for use in the rural health services. It is thought to be adequate for 80 -90% of the problems seen in Basic Health Centers, and is included as Appendix 2.

The Cabinet of Ministers of the Republic has made a major commitment to the low-cost, quality drug initiative by enacting a national policy to purchase and refer to drugs by generic name.

4.3 Analysis of Present Drug Imports

What drugs now enter Afghanistan for sale to the public through the private sector? An understanding of the current situation provides insights into ways of improving the system. The GMD and MSH have carried out a detailed analysis of drugs imported in 1973, and a summary is included as Appendix 3.

Major findings include the following:

1) 99% of the drugs were brand-name items from 61 foreign firms, with but 4 foreign firms doing 50% of the business.

2) Fixed-combination brand-name drugs (not including poly-vitamins and B-complex) accounted for 41% of the total cost.

3) Antimicrobials, vitamins and minerals, analgesics and tranquilizers, accounted for 29%, 28% and 9% of the total cost respectively. These three categories - not coincidentally - generate the keenest competition for sales among suppliers of quality drugs.

4) Out of the leading 50 drugs, accounting for 55% of the total money expended, only two are available only as patented drugs. The rest are available generically (single drugs or the ingredients of fixed combination drugs).

Interpretation of these findings under the new National Formulary and other government initiatives suggests that:

1) Many of the combination drugs will be replaced by more appropriate, and less expensive drugs.

2) Reallocation of the money now used for drugs can result in much more effective treatment of more people. This, in effect, will expand the pharmaceutical market to reach more of the rural people.

3) The current wholesaler/pharmacy/government relationships (Figure 2) can be used without great changes to administer new methods of drug buying and pricing.

4.4 Exploration of Methods of Drug Procurement

How should drugs be obtained? Drugs must be obtained. Decisions as to whether they should be made - converted to finished form from raw materials - or purchased in finished form, are important beacuse they require different kinds of planning, financing and personnel. The Ministry has decided to proceed with a reorganized plan for importation of finished drugs while exploring the economic and technical considerations necessary for in-country production.

4.4.1 Production

The Government and the Ministry are interested in promoting self-sufficiency in health. The issue of in-country drug production, however, is recognized as a complex problem with both economic and technical aspects.

To make economic sense, the net cost of manufacturing drugs locally has to be less, or equal to, the cost of importing the required drugs. Several considerations are important here:

1) Almost all of the raw materials have to be imported in either case; they are not available in Afghanistan.

2) Drug manufacture requires very few - but highly skilled - employees; therefore, very few jobs would be created for Afghans by in-country manufacture.

3) The size of the market in part determines what size and complexity of manufacturing plant is required; in view of changes in national policy, there may be relatively rapid shifts in drug usage in the next several years, which could change manufacturing requirements.

4) A large number of drugs, especially injectables and penicillin, would not be manufactured in-country in any case; they are not required in sufficient volume to justify production, and/or may require very specialized procedures.

In view of these considerations, the MOPH does not believe at this time that manufacture of drugs from raw materials is the appropriate course of action.

4.4.2 Purchase of Imported Drugs - Sources and Procedures

Most countries and institutions purchase their drug requirements from manufacturers and middlemen; in general, they do not manufacture drugs themselves. "Middlemen" include both profit-making firms and such international agencies as UNICEF, WHO, and bilateral assistance programs such as SIDA and USAID.

Many procedures are used to organize, simplify, economize, and insure quality as well as delivery of drugs. The Ministry has actively solicited information from large and knowledgeable drug purchasing bodies to compile a set of procedures which are suited to, and in the best interest of, the Afghan people. These have included: UNICEF, WHO, The New York Health and Hospitals Corporation, private generic pharmaceutical suppliers from several countries; and U.S. Government sources including the FDA, the Departments of Health, Education and Welfare, Defense, and the Veterans Administration.

Several important general guidelines have arisen from the above analysis which now form the basis of further Afghan policy developments. These suggest that quality, low-cost drugs are most likely to be obtained if the following principles are adhered to:

1) Limitation of drug purchases to the smallest number of drugs required for effective coverage of each category of action. Importing many chemical variants of tetracycline, for example, does not improve health more than any one quality tetracycline, while great economies of scale in purchasing and dispensation are lost by such duplication.

2) Consolidated purchasing of all the country's requirements, for both the government and private sector, to obtain the best prices and simplify quality control.

3) A careful bidding and contracting procedure for procurement, employing appropriate guarantees and safeguards for quality, stable low prices and delivery. Stringent certifications are readily accepted by suppliers - an indication of the intensity of competition in the drug field. Appendix 4 shows one major purchaser's ($20 million annually) bid instructions.

It is worth noting that under a competitive bid-system, with stringent pre-bid requirements, suppliers of high priced brand-name drugs will often sell their product under a generic label and can out-bid so-called "generic supply houses". Some firms offer a separate "generic line" of drugs using the same high quality standards as for their patented drugs. Thus there should be no compromise of quality in obtaining the lowest prices from qualified bidders. Quality control must be a part of a successful bid system, however.

4.4.3 Use of an International Agency to Act as Broker and Quality Controller for the Nation

Balancing the immediate importance of drug procurement for the Afghan Health Program with the importance of careful organization of Afghan procedures for procurement in the longer run, the MOPH is exploring the possibility of interim use of a knowledgeable outside broker to act on the Government's behalf, such as UNICEF or WHO.

For many reasons, a reputable, non-profit, international organization would be a desirable intermediary while in-country competence is being developed. The MOPH is actively investigating this possibility with specific requests and suggestions as noted in a recent Ministry paper presented to WHO, attached as Appendix 5.

4.5 The Private Wholesalers and Pharmacies in Afghanistan

How can their valuable expertise in marketing and distribution be used? As noted in the Introduction, the Ministry strongly believes that a cooperative, compatible working relationship between the public and private sector is necessary for the Afghan Roctia Program to have a realistic chance of extending health services to rural people. This concern is reflected in the Ministry presentation to WHO (Appendix 5) and in the discussions that the GMD has initiated with the private wholesalers on the new national formulary and drug procurement. Expansion of the volume of drugs purchased (through cost savings) and preservation of the profit margins for both wholesalers and pharmacies is expected to preserve the private sector incentive to cooperate in the national interest.

4.6 Rural Drug Utilization by the People

How can the drugs be gotten to the people? A MOPH pilot project is underway in two provinces, testing and revising such innovations as the Basic Health Center list of 40 drugs (Appendix 2), new locally prepared drug packaging (dispensing a standard complete course of therapy in one package) with pictorial instructions on dosage. Also tested will be logical-flow diagrams which instruct health workers in the evaluation and treatment of maternal/child health problems (using many of the drugs on the list of 40) - See Appendix 6.

Additional major MOPH initiatives include the developing concept of the Village Health Worker who would have access to a proportion of the drugs on the list of 40, but would return to the BHCs for simple training and resupply. The potential of village shopkeepers as additional providers of simple needs is also being explored.

5. Further Steps under Consideration by the MOPH

Evolution towards an economical, effective system of drug procurement and use is a major part of the Afghan Roctia Program; it is a process, with many important steps already taken, and with other important steps, decisions, and opportunities ahead. Among these are:

5.1 Continuous Monitoring of the Drug Procurement Process

Under the direction of the Minister, the GMD will shortly begin an improved procedure to keep track of drug procurement, with technical support from the MSH management team.

5.2 A Drug Reference Manual

The GMD sees the need to prepare a cross-referenced manual (containing indications for drugs, equivalent preparations, dosage and side-effects) for the use and continued education of physicians and other providers such as nurses, auxiliary nurse midwives and pharmacists.

5.3 Expanded MOPH/Private Sector Pharmacy Relationships

The broad reaponsibilities of the MOPH Inspection Department for controlling pharmacy activities can be expanded to include educational activities and policy support for use of the compounders and pharmacies directly to provide primary care and referral. It has been shown in many settings that the pharmacist's skills can be readily used to advantage in extending the reach of rural family health services.

5.4 Improvement of In-Country Quality Control and Laboratory Capability

The MOPH and WHO have already agreed on a project to upgrade Afghan pharmaceutical laboratory competence in parallel with interim drug procurement procedures noted above. This is an important step towards increased self-sufficiency in drug control.

APPENDIX 1

Summary Analysis of Afghan Health Problems

While health statistics are not widely and regularly available for Afghanistan, there are useful sources of data for planning purposes. In terms of estimates of the incidence, prevalence and distribution of diseases, the following sources are of value:

Buck, A, Health and Disease in Rural Afghanistan, York Press, Baltimore, 1972.

CINAM/UNICEF, Services for Children within Regional Development Zones, UNICEF, Kabul, 1973 Vols. I, II & III

Fisher L., Afghanistan/A Geomedical Monograph, Springer - Verlag, Berlin, 1968.

MAP (Medical Assistance Program) Annual and Final Reports, Kabul, 1973 & 1974

MOPH, Quarterly Statistical Reports, Department of Planning, Kabul

WHO, Annual Project Reports - tuberculosis, smallpox, malaria, environmental health, Basic Health Services, Nursing and Maternal and child health

A secondary examination of these sources was conducted in 1973 by MSH under the title "Measures of Pharmaceutical Need in Afghanistan", and the following materials in Appendix 1 cover a number of the health conditions thought to reflect perhaps 90% of rural illness at the Basic Health Center.

The list is organized by illness, age group incidence rate, and type of therapy and amount required.

APPENDIX I

ASSUMPTIONS MADE IN CONSTRUCTION OF A PROTOTYPE ANNUAL DRUG LIST FOR BASIC HEALTH CENTERS

(This list is only meant to demonstrate an approach to drug policy planning)

1. As a first approximation, assume a population of one million people prepared to go to 100 basic health centers on a regular basis for major and minor illnesses.
2. Demographic composition of that population is 200,000 people in the 0-4 age group; 100,000 in the 5-9 age group; 100,000 in the 10-14 group; 250,000 women 15-44 years old 250,000 men 15-44 and 100,000 adults over 44 years old.
3. "Average" child weight taken as 10 kg. to calculate dosages.
4. The following diseases are anticipated in the various age groups based on surveys by Buck, MAP, UNICEF. Treatments are intended to be expeditious and effective. Nearly 90% of all potential illnesses coming to BHCs may be covered by this drug list.
5. Vaccines and family planning medicines are not included in the cost analysis as they are invariably part of other programs.

Illness	Age Group	Attack Rate	Drugs Used	Anticipated Volume Duration of Therapy Per Patient
1. Diarrhea				
	0 - 4	2 severe/year per person	Oral therapy in 100% Ringer lactate in 10% Tetracycline in 25% Metronidazole in 1%	2 liters 1 liter 3 days 3 days
	5 - 9	1 severe/year per person	Oral therapy in 10% Ringer's in 1% Tetracycline in 25% Metronidazole in 1%	2 liters 2 liters 3 days 3 days
	over 10	0.5 severe/year per person	IV + oral fluids in 1% Tetracycline in 1% Metronidazole in 0.1% Kaolin in 100%	2 + 6 liters 3 days 3 days 4 oz.
2. Otitis Media				
	0 - 4	1 bout/year per person	Procaine Aluminum Monostearate Penicillin G (PAM Pen G) Triple sulfa	1 dose 300,000 u 3 days
	5 - 9	0.5 bout/year per person	PAM Pen G	1 dose 600,000 u

Illness	Age Group	Attack Rate	Drugs Used	Anticipated Volume Duration of Therapy Per Patient
3. URI				
	0 - 4	3 bouts/year per person	Phenylephrine Cough elixir	1/2 oz. 1 oz.
	5 - 9	2 bouts/year per person	Phenylephrine Cough elixir	1/2 oz. 1 oz.
	over 10	1 bout/year plus bronchitis per person	Phenylephrine Cough elixir	1/2 oz. 1 oz.
4. Exudative Tonsillitis				
	0 - 4	1/year/person	PAM Pen G	300,000 u
	5 - 9	0.25/year/person	PAM Pen G	600,000 u
	over 10	0.1/year/person	PAM Pen G	1.2 million u
5. Pneumonia				
	0 - 4	0.5 bouts/year per person	PAM Pen G Chloramphenicol	300,000 u 5 days
	5 - 9	0.1 bouts/year per person	PAM Pen G	600,000 u
	over 10	1%	PAM Pen G	1.2 million u
6. Asthma				
	0 - 4	0.1%	Epinephrine Aminophylline	in oil 7 mg/kilo
	5 - 9	0.1%	Epinephrine Aminophylline	in oil 7 mg/kilo
7. Tuberculosis				
	over 10	5% of population affected	INH/Thiacetazone Streptomycin in 1%	One year 3 months
8. Scabies				
	all ages	1% of population	Benzyl benzoate	2 oz.
9. Impetigo				
	0 - 10	5%	PAM Pen G	3-600,000 u
10. Tineasis				
	0 - 10	10%	Whitfield's ointment	1 oz.
11. Meningitis + toxic states (Typhus, Typhoid)				
	All ages	0.1%	Chloramphenicol	7-10 days

Illness	Age Group	Attack Rate	Drugs Used	Anticipated Volume Duration of Therapy Per Patient
12. Malaria	all ages	assume 5-10%	Chloroquine/Primaquine	3 day radical cure
13. Cutaneous Leishmaniasis	all ages	10%	Stibophen	one local injection
14. Leprosy	all ages	1,000 total	Dapsone	6 tab weekly
15. Malnutrition (Moderate)	0 - 4	5%	Multivits (A.D. folic, iron) food supplements	two weeks in winter season
16. Worms	0 - 4	100% ascaris 2.5% hookworm	Piperazine Tetrachlorethylene	4 tablets 1 cc
	5 - 9	100% ascaris 2.5% hookworm	Piperazine Tetrachlorethylene	4 tablets 1 cc
17. Urinary Tract Infection	0 - 4	5%	Triple sulfa	7 days
	5 - 9	1%	Triple sulfa	7 days
	over 10	2%	Triple sulfa	7 days
18. Anemia	all ages	7 - 10%	Iron tablets	1 daily 30 days
19. Conjunctivitis (including trachoma)	0 - 4	25%	Tetracycline eye ointment	1/2 oz.
	5 - 9	25%	Tetracycline eye ointment	1/2 oz.
	over 10	10%	Tetracycline eye ointment	1/2 oz.
20. Non-Specific Indigestion	over 5	2/year	Sodium bicarbonate	1-2 days
21. Constipation	all ages	3%	Milk of magnesia	1 oz.

Illness	Age Group	Attack Rate	Drugs Used	Anticipated Volume Duration of Therapy Per Patient
22. Non-Specific Aches & Pains (head, back, etc.)	over 10	10/adult/year	Aspirin	20 per adult per yr (US consumption rate
23. Severe Pain/ Trauma	over 10	2,000 yearly	Morphine	20 vials per BHC per year
24. Minor Surgery (Lancing boils, suturing lacerations)	all ages	20,000 yearly	Iodine Lidocaine	One ampule/procedur
25. Mild Agitation, Insomnia, Hypertension(mild)	over 10	?	Phenobarbital 1/2 grain	2,000 tablets per Y per year
26. Maternal Care		45,000 births yearly	1. A + D + folic + iron tab. 2. Tetanus toxoid 3. Ergot preparation 4. Iron dextran for severe anemia (5%) 5. Family planning methods	1 combination ta daily, 60 days. twice 6-8 tablets 20 ml donated

APPENDIX II

Formulary for Basic Health Services

The attached drug list derives from assessment of Afghan health problems (Appendix 1) and judgements by the MOPH, WHO and Management Team working with the MOPH as to a drug list combining the characteristics of:

efficacy
simplicity
economy
ease of administration
stability and extended shelf life
acceptability in the Afghan environment.

UNICEF has provided the basic drugs for a MOPH test now underway in two provinces prior to a national implementation. The drugs are prepared in Afghanistan in simple "course of treatment" packages (similar to packages used for oral contraceptives) as plastic envelopes with instructions in the local language and in pictorial form.

LIST

APPENDIX II

MEDICINE	UNIT	USED FOR	COMMON DOSAGE(S)
1. Chloroquine	150 mg tab.	Malaria - adults (Adequate alone in Falciparum)	Cure: 6 tab 1st day, 2 tab for 2 days Prevention: 2 tab once weekly
2. Chloroquine	100 mg tab.	Malaria - children (Adequate alone in Falciparum)	Cure: 10 mg/kg (body weight) 4 days Prevention: ½ to 1 tab, once weekly
3 Ferrous Sulfate	300 mg tab.	Iron-deficiency anemia (Especially in maternal care)	Adults: 1 to 3 tab. daily, 1 to 3 months Children: 1 tab daily, 1 to 3 months
4. Folic Acid	5 mg tab.	Folate-deficiency anemia (Especially in maternal care)	1 tab. daily for 1 to 3 months
5. Glucose-Electrolyte Powder	Dissolve packet to 1-liter solution	Rehydration in Diarrhea (Especially children)	Ad libitum, 2-3 liters/day, 1-3 days
6. INH/Thiacetazone	300/100 mg tab.	TB	1 tab. daily for 18 months
7. Iron-Dextran	10 cc vial	SEVERE Iron-deficiency anemia	Adult only: 8 Ml In 2 Doses (4 Ml in each buttock)
8. Methyl Ergometrine	0.2 mg tabs.	Mild Post-partum bleeding, infection of womb	3 tabs. daily, 3 days
9. Methyl Ergometrine	0.2 mg AMPS	Severe Post-partum Bleeding	Once ½hourly for 2 doses
10. Penicillin Procaine (Aluminum Monostearate)	3 million units vials	Bacteria infections (especially respiratory, uterine, skin)	Children: ½ - 1 million units Adults: 1 - 2 million units

	MEDICINE	UNIT	USED FOR	COMMON DOSAGE(S)
11.	Piperazine	Liquid	Round Worms	75 mg/kg daily for 2 days
12.	Poly Vitamins	Capsules	Ususally for obvious malnutrition and in pregnancy	Once daily
13.	Primaquine	15 mg tab.	Malaria (Use after Chloroquine for Non-Falciparum Malaria)	Adult: 1 tab daily for 14 days
14.	Primaquine	7.5 mg tab.	Ditto	Child: 1 tab daily for 14 days
15.	Pyrimethamine	25 mg tab.	Prevention of Malaria, especially in children	Once monthly
16.	Ringer-Lactate	1.V. 1000 Ml Bottles	Rehydration, especially for Shock	As needed (in Diarrhea with shock, amount = to 10% body weight)
17.	Streptomycin	1 Gram Vial	Early in TB treatment	1 Gram daily for 60 days
18.	Tetracycline	250 mg tab.	Various respiratory and Diarrheal pathogens (Dysentery, Cholera)	Adults: 1 gram daily, 5-7 days Children: ½gram daily, 5-7 days
19.	Tetracycline Eye Ointment	3.5 Gram Tube	Trachoma, Purulent Conjunctivitis	Apply to eyes twice-thrice daily
20.	Triple Sulfa	500 mg tab.	Urinary tract infection	8 tab daily, 2-3 weeks
21.	Vitamin A + D	Combined Capsule	Usually in protein-calorie malnutrition, to ward off rickets, night blindness	1 tab daily, 2-4 weeks

LIST -

	MEDICINE	UNIT	USED FOR	COMMON DOSAGE(S)
22.	Aminophylline	250 mg tab.	Asthma	3-4 tab. daily until attack over
23.	Aspirin	300 mg tab.	Pains and fever	Adult: Up to 8 tab. per day Children: 1-4 tab per day, depending on age.
24.	Atropine Sulfate	0.3 mg tab.	Relief of non-specific abdominal cramps, peptic ulcer symptoms	1-2 tab., 3 times daily, to relief
25.	Benzyl Benzoate	1 oz. Lotion	Scabies	Smear on lesions once daily for 2 days
26.	Chloramphenical	250 mg tab.	Typhoid, typhus	4 tab. daily for two weeks
27.	Colloidal Silver	Suspension	Covering 2nd degree burns	Local on skin
28.	Diphenhydramine	25 mg tab.	Allergic reactions; also mild tranquilizer	1 tab, 4 times daily, to relief
29.	Epinephrine	AMP, 2cc	Severe allergic reaction (Especially penicillin)	0.1 - 0.5 ml subcutaneously
30.	Contraceptive Pills	tab.	Family planning	21-day cycles
31.	Iodine	Tincture Suspension	Antiseptic (especially pre-surgical)	Local on skin
32.	Kaolin	Suspension	Placebo in mild Diarrhea	Adults only: 1-2 Tablespoons, 4-5 times daily

	MEDICINE	UNIT	USED FOR	COMMON DOSAGE(S)
33.	Lidocaine	AMP 2 cc 0.5%	Local anaesthesia	One AMP/procedure
34.	Magnesium Hydroxide	Suspension	Heartburn, constipation	Adults: 2-4 Tablespoons for constipation; ½ that for heartburn
35.	Phenobarbital	30 mg Tab.	Sedative, Tranquilizer, mild Antihypertensive (This drug will be rarely used.)	1-2 tab., 3 times daily
36.	Phenylephrine	¼%, ½% solutions	Nasal decongestant	Adult: ½%, 2-3 drops, 4 times daily for 3-5 days Children: ¼%, 1-2 drops, 3 times daily, 3 days
37.	Sodium Bicarbonate	1 Gram tab.	Heartburn, indigestion	(See Sodamint) 1-2 tab, 3 times daily
38.	Terpin Hydrate	Solution (Note error on List B typed sheet)	Non-specific expectorant	4 Ml, 3 times daily for relief (Adults only)
39.	Whitfield's Ointment	1 Oz. tube	Fungus skin infection	Apply daily until clear
40.	Zinc Oxide Ointment	1 Lb. jar	Non-specific dressing of superficial wounds, burns	Apply daily until relief

(We have some overlap between colloidal silver and zinc oxide; between phenobarbital and diphenhydramine; between magnesium hydroxide and sodium bicarbonate.)

APPENDIX III

ANALYSIS OF AFGHANISTAN'S PRIVATE SECTOR DRUG IMPORTATIONS, 1973

(SELECTIONS FROM ORIGINAL)

Management Sciences for Health
Cambridge, Massachusetts
August, 1974

Acknowledgement

The assistance and considerable time extended by Dr. Salamuddin Weis and his colleagues at the General Medical Depot are most gratefully acknowledged.

Rationale

The Republic of Afghanistan is now considering ways to implement a rational policy to buy quality drugs, relevant to the people's needs, at lower possible cost. An analysis of past drug importations will provide important insights to assist in developing that policy.

Methods

Actual invoices or true copies said to cover all finished drug importations in the year 1973 were generously provided us by Dr. S. Weis and his staff at GMD. The information with regard to each drug purchase was coded and entered into a computer. This includes: exporter, importer, proprietary drug names, manufacturer, generic drug name, units, amount, cost, shipping charges, insurance, etc. Printouts forming the basis of this report are available separately; the major findings are summarized below.

Results

727 preparations of 529 different drug names entered Afghanistan in 1973, and represented about 400 generic equivalents. 99% of the drugs imported were brand-name. Only 20% of the drugs imported are also included in the new National (generic) Formulary.

The total dollar cost (conversion rates of March 1974 applied) was:

Drugs	$ 3,119,836
Shipping	153,929
	$ 3,273,765

When analyzed by category of drug action, the top ten groups of drugs in terms of % of total dollar cost were:

Category of Action	% of Total Dollar Cost
1. Combination Drugs *	41%
2. Vitamins (single, poly, B-complex)	19%
3. Antimicrobial	15%
4. Tranquilizers	3%
5. Hematopoietic	2%
6. Miscellaneous +	2%
7. Androgens	1%
8. Narcotic	1%
9. Anti-histamine	1%
10. Amebicides	1%
	86%

* (Drugs with 2 or more ingredients; standard poly-vitamins and B-complex not included)

\+ (Includes chemicals, hair tonics, x-ray contrast materials, etc.)

Combination drugs (no. 1 above) when broken down into principal category of action were as distributed as follows:

Category of Principal Action of Combination Drugs	% of Total Cost of Combination Drugs
1. Antimicrobial	35%
2. Calcium replacement	16%
3. Analgesic	12%
4. Hematopoietic	5%
5. Anti-histamine	4%
6. Vitamins	4%
7. Tranquilizers	3%
8. CNS stimulants	2%
9. Amebicides	2%
10. Expectorants	2%
	85%

When single ingredient and combination drugs are combined, antimicrobial drugs accounted for 29% of all costs and vitamins-minerals for 26%.

Combination drugs (excepting poly-vitamins and B-complex vitamins) are almost always sold as brand-name preparations. Their ingredients are generally at lower strength than what is recommended and their cost is non-competitively high. The possibility of adverse drug reactions

of course increases with multiple-ingredient drugs. The combination of some ingredients are not always clinically necessary. Five of the ten top drugs in terms of money expended were combination drugs:

Brand-name	% of Total Dollar Cost	Comment
1. Arcopulmin (Penicillin, streptomycin, quinine, vitamins A & D, expectorants, and anti-histamine)	6%	Non-rational combination
2. Becozym (B-complex)	4%	Generic equivalents much cheaper
3. Saridon (Salicylamide, phenacetin, aminophen, caffeine)	4%	No advantage over simple aspirin and has toxic ingredients
4. Supradyn (Poly-vitamins)	2%	Generic equivalents much cheaper
5. Calcium Arco D B12 (Calcium, ironcholine, glycerophosphate, formiate, vitamins B12, D2)	2%	Non-rational combination
6. Bactrim (Sulfamethoxazole, trimethoprim)	2%	High priced but useful in specific indications
7. Terramycin (Oxytetracycline)	2%	Tetracycline much cheaper as generic equivalent
8. Calcium-Sandoz Vitamin C (Calcium and Vitamin C)	2%	Effective generic equivalents available
9. Neo-codion (codeine-derivative)	1%	Effective generic equivalents available
10. Erytrarco (Eryrthromycin)	1%	Effective generic equivalents available

The drug companies who did most business with Afghanistan in 1973 were:

Exporter	Receiving % of Total Cost
1. Hoffman-Laroche	26%
2. Arco	11%
3. Ciba-Geigy	8%
4. Pfizer	7%
5. Sandoz	4%
6. Schering	3%
7. Cimex	2%
8. Hoechst	2%
9. Delalande	2%
10. Bouchara	2%

The Afghan wholesalers who did most export business in 1973 were:

Importers	Spending % of Total Cost
1. Zapsco	37%
2. Habib	15%
3. Khyber	11%
4. Ahmadshah	7%
5. Khawar	5%
6. Cina	4%
7. Hamid	3%
8. Soofizade	3%
9. Paktia	2%
10. Zernegar	2%
	89%

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PAGE OF	NUMBER	DATE

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SPECIAL INSTRUCTIONS ON BIDS FOR PHARMACEUTICAL PREPARATIONS

QUALIFICATIONS OF BIDDERS:

Bids will be accepted from those actively engaged in the large-scale manufacture or sales of the class of commodities called for in this bid request for a period of not less than one(1) year immediately prior to the date of the bid opening at which bidder's quotation is submitted.

Bidder must have a warehouse or place of business in, or within twenty-four(24) hours delivery time of, New York City from which emergency deliveries of the articles bid on may be made from a stock on hand.

The provision that bidders shall maintain a stock of items bid on is not applicable to items requiring the preparation of special formulas, or the printing of special labels. When such is the case, compliance with the requirement as to stock on hand will be determined by the bidder's stock of similar items.

Manufacturers of products called for in this bid request must maintain a mordern sanitary establishment with adequate facilities and personnel for the production, storage, testing and delivery of items bid on, in the quantities required by the Corporation. The operation of the plant shall be in strict accordance with good manufacturing practices for pharmaceutical preparations.

In the event a manufacturer cannot perform a required test in his laboratory, he may use an outside testing laboratory provided the laboratory is acceptable to the Corporation. Manufacturer's stock, facilities and competency of his personnel will be subject to approval on investigation by the Corporation's Office of Procurement Services.

The director of the manufacturer's laboratory must have been actively engaged in the full-time supervision of a large-scale manufacturer for a period of not less than two(2) years.

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The decision of the Corporation as to compliance with qualification requirements shall be conclusive and binding on the bidder.

BIDDER'S MANUFACTURING STATEMENT:

Bidder is to indicate below whether the product(s) bid upon is (are):

/ / Manufactured completely in his own plant

/ / Manufactured partially in his own plant

/ / Manufactured by a sub-contractor

If the answer is "partially" or "sub-contractor" the bidder shall state the name and address of the sub-contractor(s) and list the items so manufactured:

_____

_____

_____

_____

_____

_____

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NATIONAL INSTITUTE OF HEALTH LICENSING:

Manufacturers of Biological and/or Blood Fractionation products must be licensed by the National Institute of Health and all products shipped to New York City Health & Hospitals Corporation facilities under the terms of this agreement shall conform to the standards set forth by the N.I.H. in the Public Health Service Regulations of the Department of Health, Education and Welfare.

Upon receipt of an award for supplying Biological and/or Blood Fractionation products, successful bidders shall forward a copy of their N.I.H. license to the New York City Health and Hospitals Corporation, Office of Procurement Services, 346 Broadway, Room 511, New York, 10013.

VERIFICATION OF SATISFACTORY-USE EXPERIENCE:

The Corporation reserves the right to require that the pharmaceutical preparations which bidders offer to the Corporation must have been subjected to clinical trial in at least one hospital of 300 or greater bed capacity which is accredited by the Joint Commission on Accreditation of Hospitals, from which verification of a record of uninterrupted satisfactory-use experience can be expeditiously obtained. It shall be the responsibility of the bidder promptly to furnish proof of satisfactory-use experience on the request of the Office of Procurement Services. Proof shall include copies of invoices indicating what quantity of the item quoted on has been sold to the above hospital under the manufacturer's label.

FOOD AND DRUG ADMINISTRATION CERTIFICATION:

For each pharmaceutical preparation requiring certification by the FDA, the Corporation reserves the right to request copies of such certification covering specific lots of pharmaceutical preparations shipped to HHC using-facilities.

When requested, copies of FDA Certifications must be sent to the New York City Health and Hospitals Corporation, Office of Procurement Services, 346 Broadway, Room 511, New York, New York, 10013.

PROTOCOLS:

The Corporation reserves the right to require that, upon request, the low and/or successful bidder shall submit a true copy of his complete protocol of production and assay of any lot or lots of pharmaceutical preparations bid on and/or furnished to the Corporation. These protocols must be sent to the New York City Health and Hospitals Corporation, Office of Procurement Services, 346 Broadway, Room 511, New York, New York, 10013.

STANDARDS FOR PURITY, QUALITY AND STRENGTH:

Unless otherwise specified, all pharmaceutical ingredients and preparations shall conform to the standards set by the United States Pharmacopoeia and the National Formulary as far as prescribed by these authorities.

The New York City Health and Hospitals Corporation reserves the right to reject any Pharmaceutical Preparation which on administration is found to cause sudden vital depression or otherwise to affect the patient adversely by virtue of any deviation from the preparation's characteristic and well-known action.

In judging a product's compliance with this requirement, the Corporation will consider the known physiological action of the drug of prepartion, the method of administration, the quantity or dose administered, and the age, weight, condition or any individual idiosyncracy of the patient.

PACKAGING:

Each bottle, vial and package must indicate the name of the manufacturer and his lot or control number. In the event a bidder offers a product manufactured by a subsidiary company, the name of the subsidiary company must appear on the label as the manufacturer. All goods must be delivered in the original manufacturer's packaged, except where the manufacturer ships in bulk, at which time the repacker's container is acceptable provided the manufacturer's name appears on the label.

All labels must conform with Federal Food, Drug and Cosmetic Act.

Shipping containers shall be clearly marked with the following:

1. Complete descriptive name of the item or items shipped.

2. The number of individual merchandise containers in the shipping carton.

DELIVERY:

Delivery shall be made to individual Health and Hospitals Corporation facilities within ten (10) days after date of the purchase order. EMERGENCY DELIVERIES must be made within forty-eight (48) hours after the request.

INSPECTION FEE DEPOSIT:

The successful bidder for any item listed herein shall, upon request by the Corporation, deposit a sum of money sufficient to cover the cost of inspection and laboratory testing of selected lots delivered under the terms of this agreement. Should any unexpended balance remain at the termination of this agreement, it shall revert to the successful bidder.

PROVISION OF ORDERING INFORMATION:

Within sixty (60) days following the end of each quarterly period during the term of this agreement, successful bidders shall submit a record of sales to each HHC ordering facility. This information is to be broken out by item and where possible, shall be classified as SALES THIS QUARTER, plus TOTAL SALES TO DATE.

This information shall be sent to the New York City Health and Hospitals Corporation, Office of Procurement Services, 346 Broadway, Room 511, New York, New York 10013.

DEFINITIONS FOR PURPOSE OF THIS AGREEMENT:

Protocol of Production is defined as the control record of every step or procedure employed in the manufacture of the lot or lots of pharmaceutical preparations furnished to the Corporation.

Protocol of Assay is defined as the complete record of every step or procedure, including all calculations, employed in the assay of the lot or lots of pharmaceutical preparations furnished to the Corporation and shall show clearly how the manufacturer arrived at the potency and standards of purity stated on the label.

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OPTION FOR EXTENSION FOR A PERIOD OF SIX (6) MONTHS:

The vendor hereby agrees to furnish the above listed items for an additional period of six(6) months YES_____ NO_____. An award will generally be made to a single bidder. However, the N.Y.C. Health and Hospitals Corporation reserves the right to award by class or by item if it is deemed to be more advantageous to do so.

MINIMUM ORDER PROVISION:

Any order placed by an individual hospital will be in multiples of product packaging as stipulated in the contract and for a minimum of $_____.

APPENDIX V

Comments of the Afghan Delegation for the Technical Discussion on Rationality in Supply, Control and Utilization of Drugs

WHO / Regional Committee for the Eastern Mediterranean

September 1974

We would like to express our thanks , Mr. Chairman, for inclusion of this very important and practical item on the agenda, and for this opportunity to present Afghanistan's comments.

Afghanistan shares a concern for the need to proceed towards more rational policies for drug procurement and utilization. At present, Afghanistan spends 4 to 5 million dollars U.S. annually to import drugs, an amount equal to the entire Ministry of Health Budget for both Operations and Development.

The health policy of the New Republic is to extend health services throughout the country using all available resources, through both direct government activity and through the private sector. The present process for drug procurement and use is detrimental to the effective pursuit of this health policy. These negative effects, underscoring the points raised in the Technical Discussion paper, include:

1) The needlessly high cost of drugs for the people-for example, Ampicillin Capsules from reputable suppliers are [illegible] purchased for $ 4.50 per hundred, not $

pharmacy price is over $ 20.00 per hundred in Kabul.

2) Poor Quality Control -

3) Unnecessary Confusion - for both health providers and consumers - due to the multiplicity of drug preparations, drug combinations, and names for the same basic drug.

4) Dangerous and Unproven Drug Preparations - such as the antibiotic and steroid combination drugs sold in Afghanistan.

To alleviate these problems, the Republic of Afghanistan has enacted , as part of the National Health Program, a National Drug Policy which shares the objectives outlined for this Technical Discussion. At the heart of this National Policy lies the desire to obtain quality drugs for the people at the lowest cost.

The steps already taken to date in implementing this policy include:

1) Analysis of Afghan Health Problems, a basis for determining what drugs are required.

2) Revision of Afghan National Formulary, with the objectives of diminishing the drugs available in the country to a small number of drugs, procured and used under their generic name. This list is designed to include the most useful, scientifically proven and inexpensive drugs for each catagory of action required. This Formulary now includes about 400 drugs ; it is an evolving list, and both additions and deletions are expected.

3) Analysis of recent drug imports, and determination of the approximate utilization levels in each category of drug action.

4) Discussions with private wholesalers / Distributors , to

work out cooperatively the transition to generic purchasing and use throughout the country.

Our experience, as well as that of the few other countries who have implemented such a policy , suggest that quality, low cost drugs are most likely to be obtained if three principles are adhered to:

1) Limitation of drug purchases to the smallest number of drugs required for effective coverage of each category of action - 20 chemical variants of tetracycline do not improve health more than one or two quality tetracyclines, and great economies of scale in purchasing and dispensation are lost by allowing such duplication.

2) Consolidated National Purchasing of all the Country's requirements - for both the government and private sector, to obtain the best prices.

3) A careful bidding and contracting procedure for procurement, Employing appropriate guarantees and safeguards for quality and delivery.

Afghanistan looks forward to developing the laboratory facilities and internal administrative procedures necessary to control drug quality and to procure drugs efficiently; however this will take time. As an interm step, the international agencies could be of great help.

Both UNICEF and WHO have mechanisms for procurement for member states, although the WHO mechanism has not yet been used to any degree by Afghanistan. It would be a great service to Afghanistan to use this procurement mechanism for national drug needs while domestic competance is expanded.

The Afghan Ministry of Health is ready to pursue the National

Procurement Policy to the best of its ability, but would prefer to begin in cooperation with the international community, in a process as outlined in the attached figure.

The process is a simple one and initially includes the following steps:

1) A Central Afghan Purchasing Office is authorized to receive drug orders and payments from government agencies and private wholesaler/distributors;

2) Each agency and private wholesaler/distributor estimates their requirements for a drug, (tetracycline for example) and submits an order to the central purchasing office;

3) The Central Purchasing office submits the consolidated order from all Afghan sources to the International Purchasing Authority - WHO for example;

4) The International Purchasing Authority, using established procedures to ensure quality and delivery, obtain bids, selects the qualified bidder, and arranges shipment, either directly to the Afghan Central Purchasing Office or to the government agencies and private wholesalers.

There are several advantages in this approach :

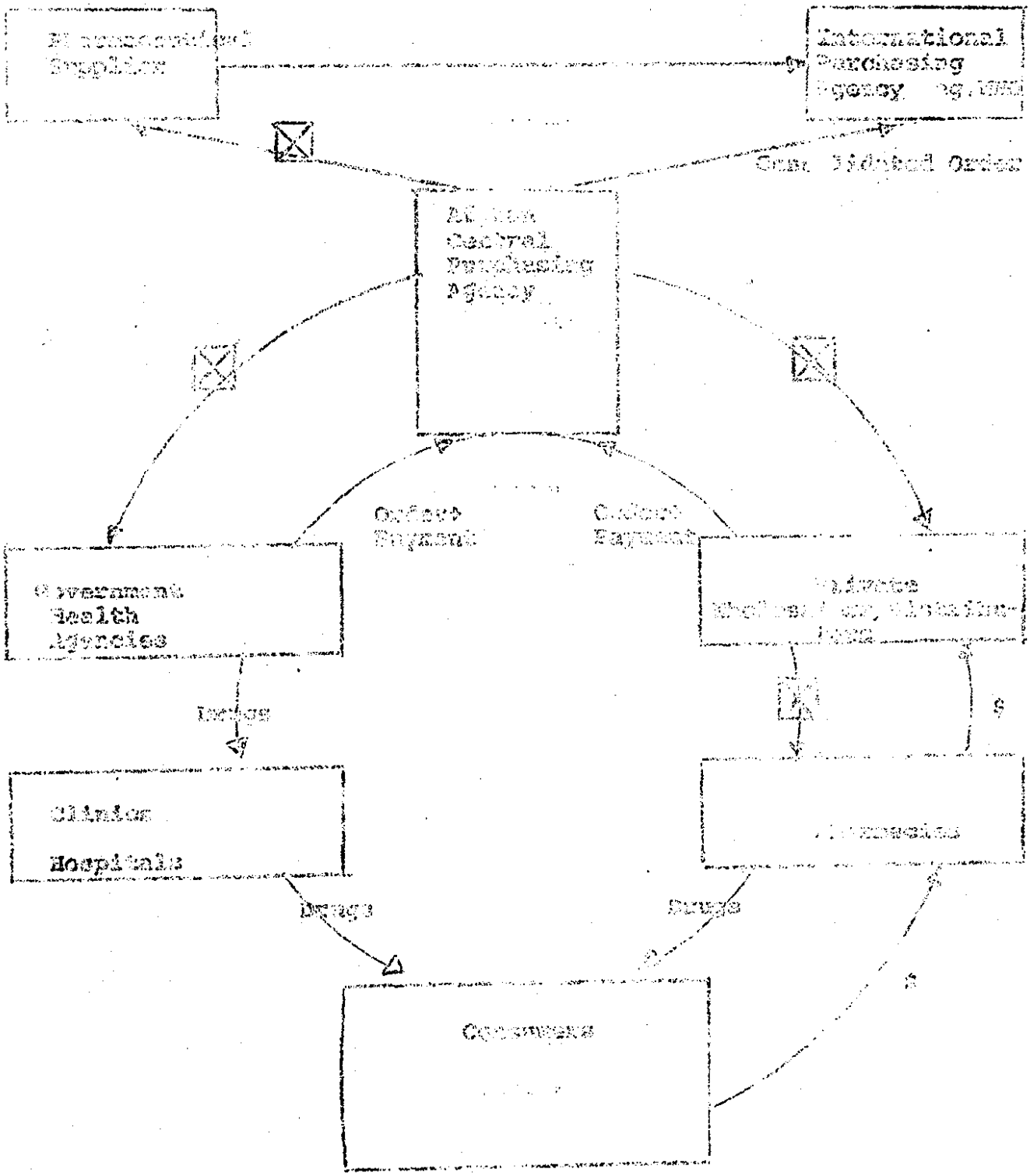
1) The international purchasing agency is close to the suppliers and can keep track of the market; additionally drug suppliers will be careful to provide only high quality goods to such an international agency;

2) The best prices are obtained by the competitive bidding process on large quantities of each drug;

3) The existing strengths of the government and private suppliers are utilized for the benefit of the people:

a) The wholesaler/distributors obtain high quality drugs

Proposed Drug Procurement Plan - Afghanistan



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APPENDIX VI

Problem-Action Guidelines for Basic Health Care

A Tool for Extending Effective Services Through Auxiliary Health Workers

PREFACE

Physician-provided health care probably is not required, and certainly is not realistically possible for health problems faced by most people, most of the time, across most of the world. Fortunately, health care workers in both developed and developing countries are proving that appropriate health care can be delivered by non-physicians.

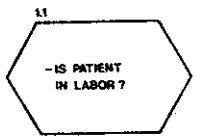
The attached flow charts, or problem-action guidelines, are one tool which may assist health workers to improve the service they provide by helping to:

1. classify the problems patients bring to the health worker;
2. logically display important questions and examination steps to be followed by the health worker;
3. isolate the most appropriate actions and treatments for the problem, using a limited set of available drug supplies;
4. encourage referral of difficult problems to the appropriate workers or physicians;
5. provide a basis for supportive supervision and in-service training.

These problem-action guidelines are evolving as part of a continuing development process. Inquiries, suggestions and criticisms are welcomed by the:

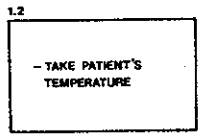
Problem-Action Guideline Project
Management Sciences for Health
One Broadway 10th floor
Cambridge, Massachusetts 02142
U.S.A.

KEY TO SYMBOLS



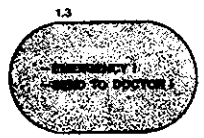
NUMBER DEFINES POINT IN FLOW.

BOX CONTAINS QUESTION ABOUT THE PATIENT.

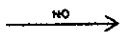


INSTRUCTION TO TAKE ACTION.

ANSWER TO QUESTION. "YES" USUALLY INDICATES SOME ABNORMALITY OR EXISTING CONDITION NEEDING ACTION.



INDICATES A COMPLICATED OR SERIOUS CONDITION OR EMERGENCY, NEEDING IMMEDIATE ACTION AND DOCTOR'S ATTENTION.

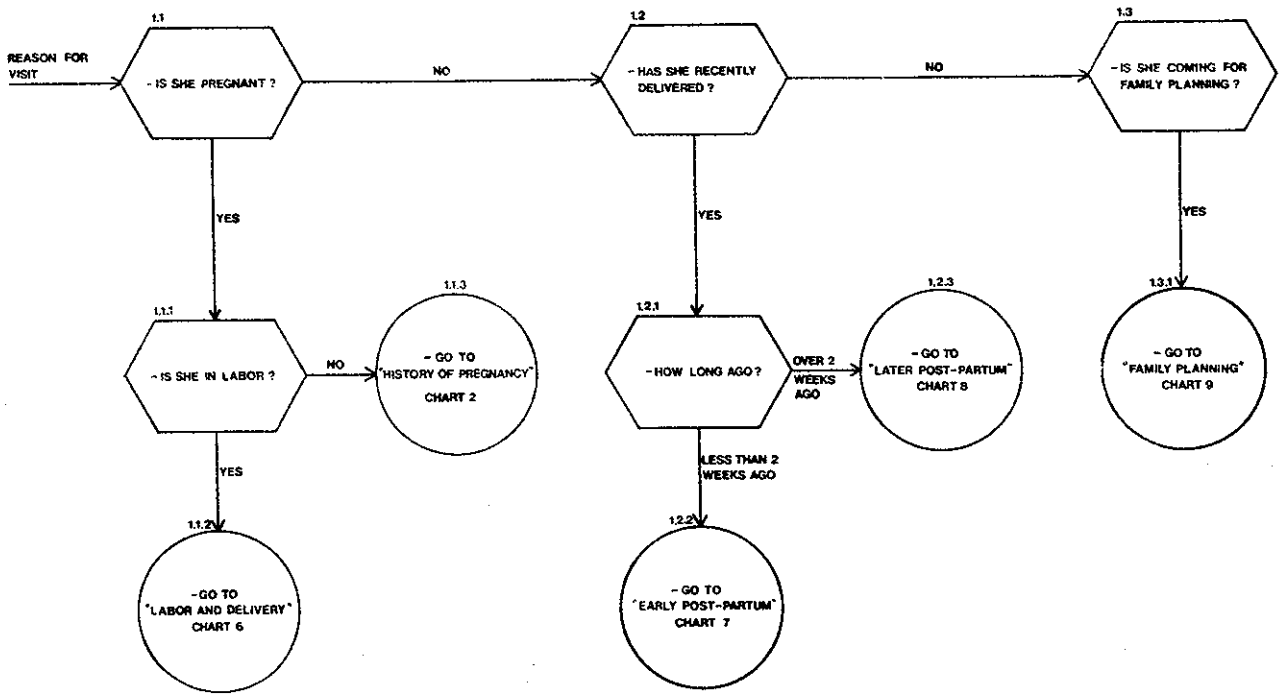


ANSWER TO QUESTION. "NO" USUALLY INDICATES NO ABNORMALITY.

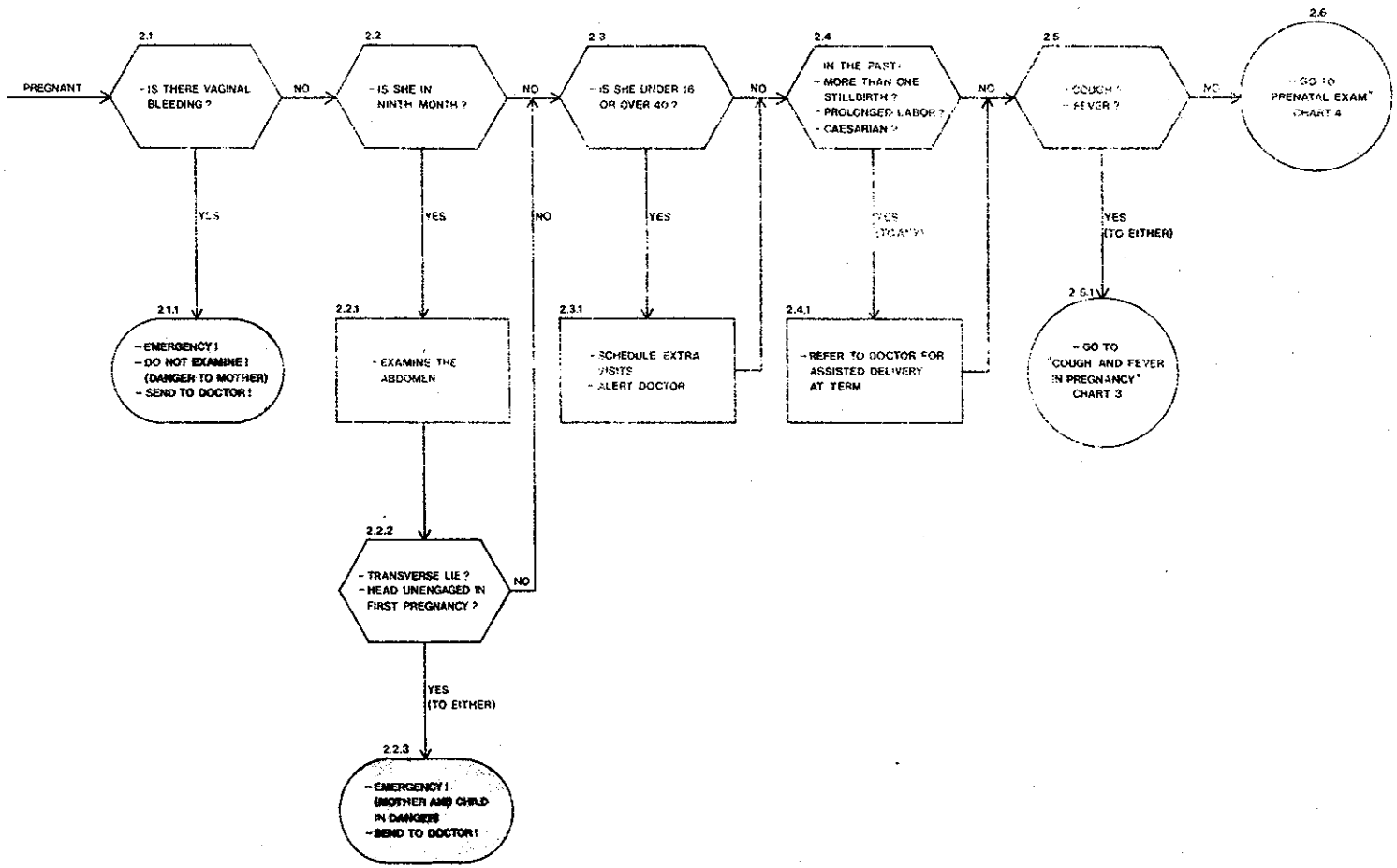
ARROW WITH TIME INDICATES PASSAGE OF TIME AFTER ACTION IS TAKEN.

FINAL INSTRUCTIONS AND DIRECTION TO PROCEED ELSEWHERE.

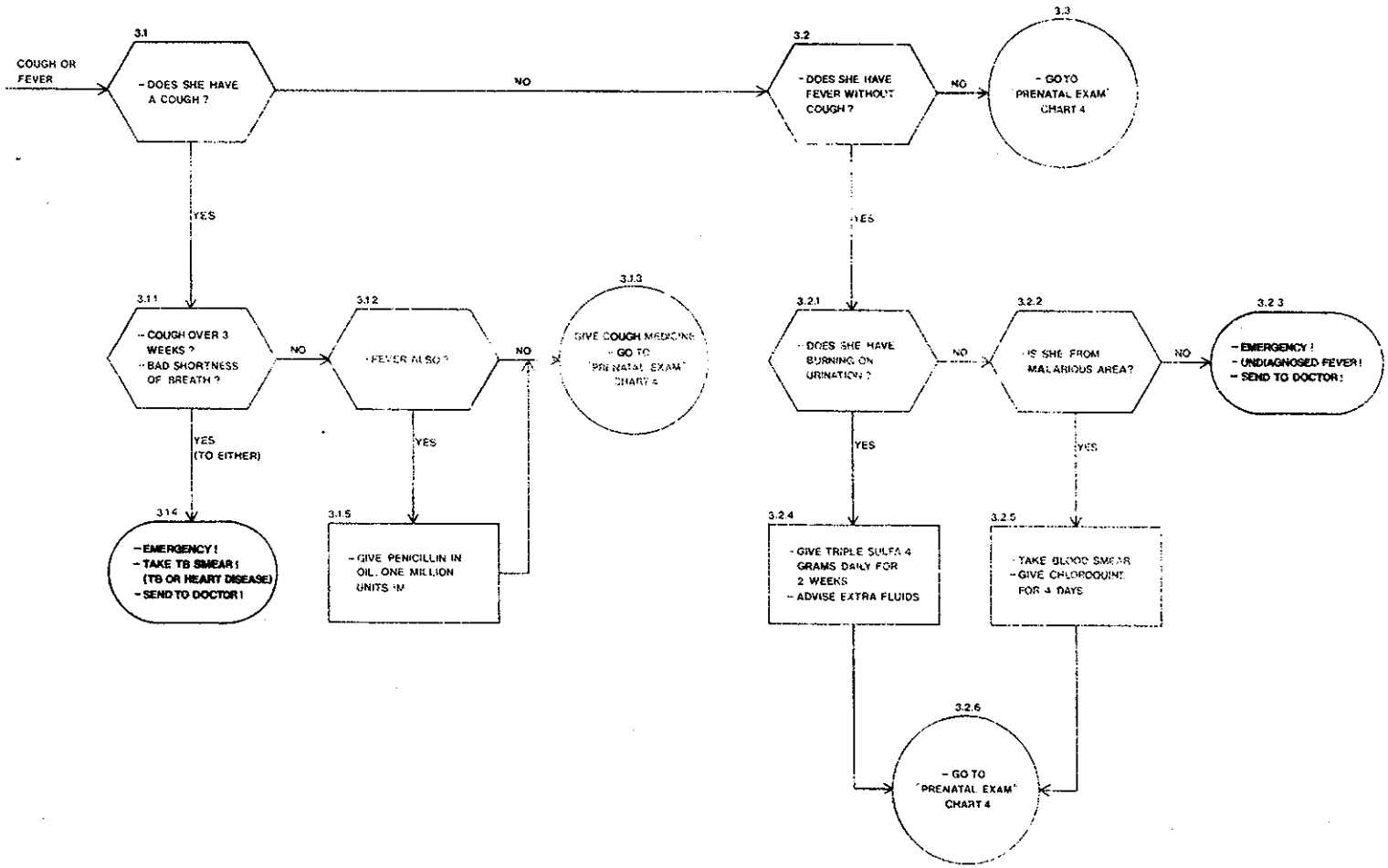
1: MATERNAL CARE AND FAMILY PLANNING



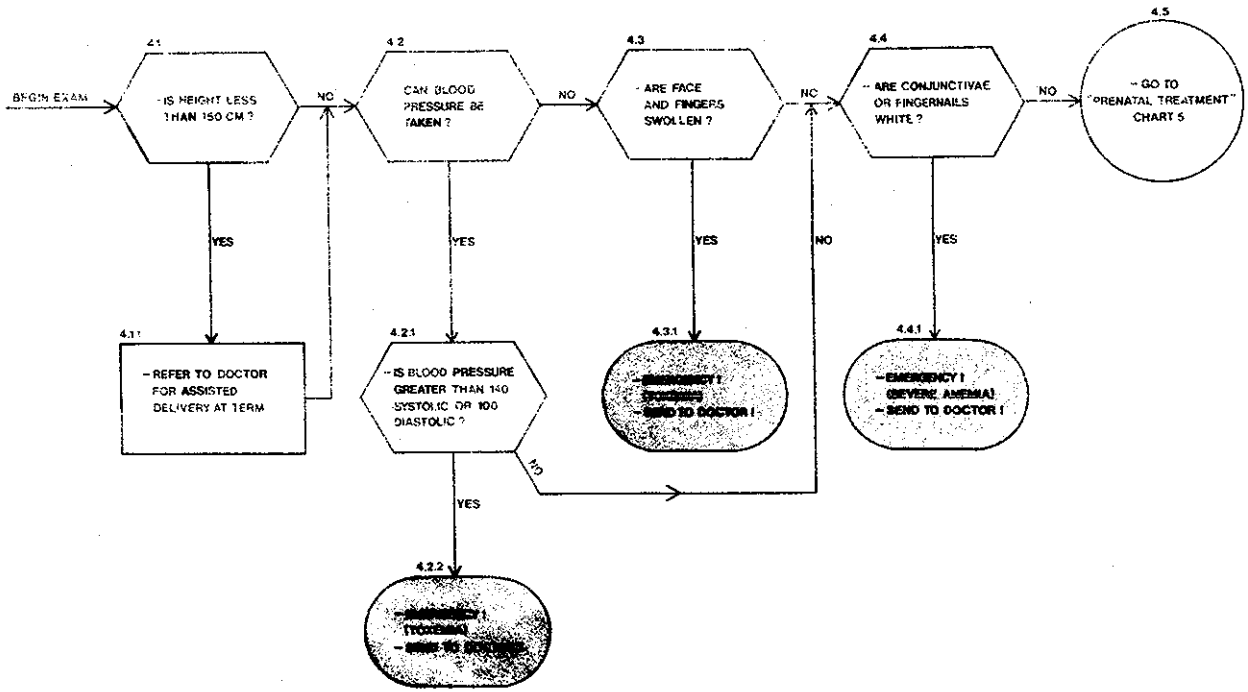
2: HISTORY OF PREGNANCY



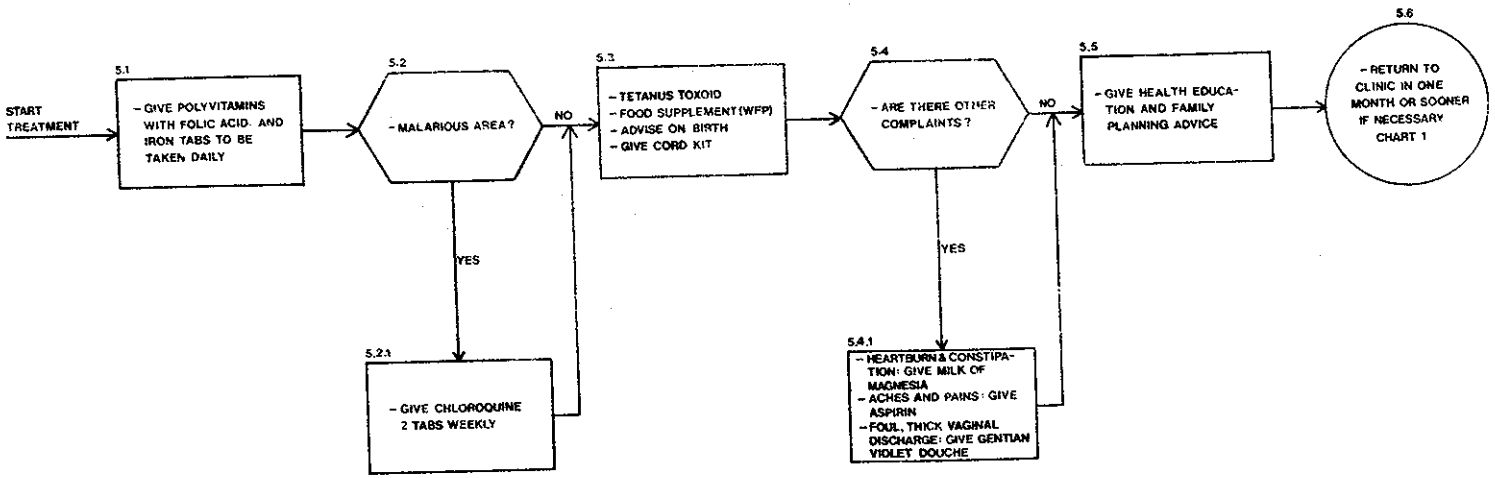
3: COUGH OR FEVER DURING PREGNANCY

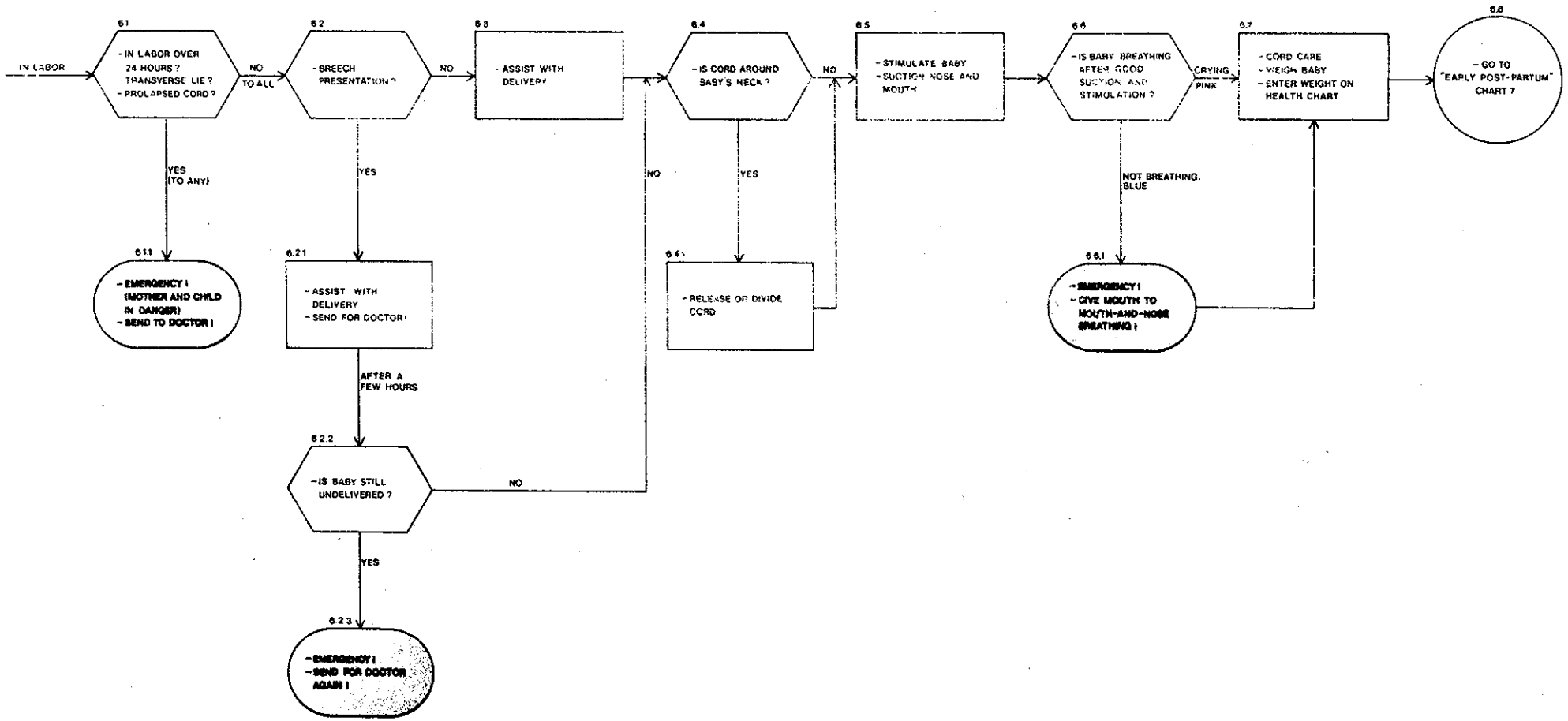


4: PRENATAL EXAMINATION

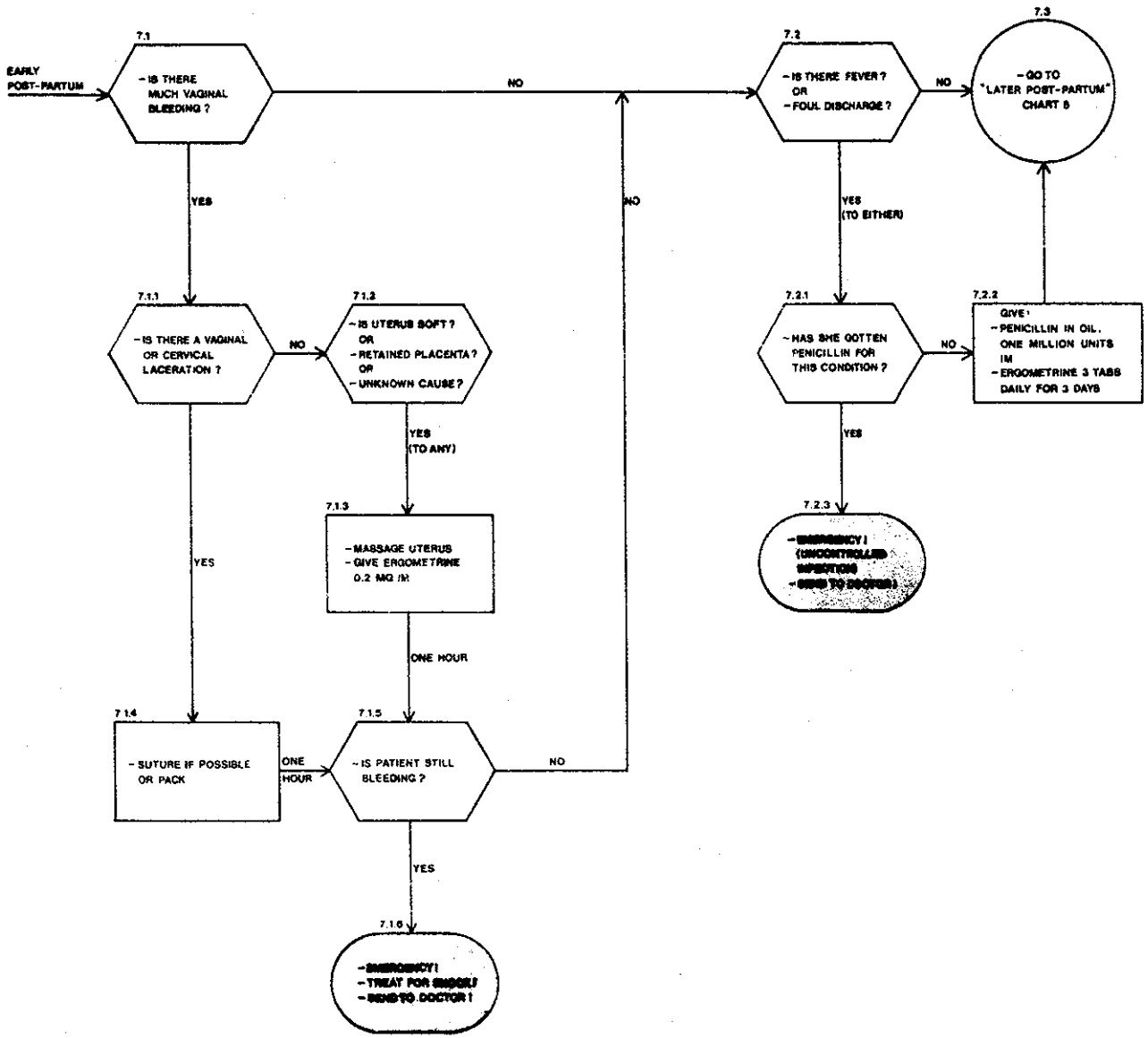


5: PRENATAL TREATMENT

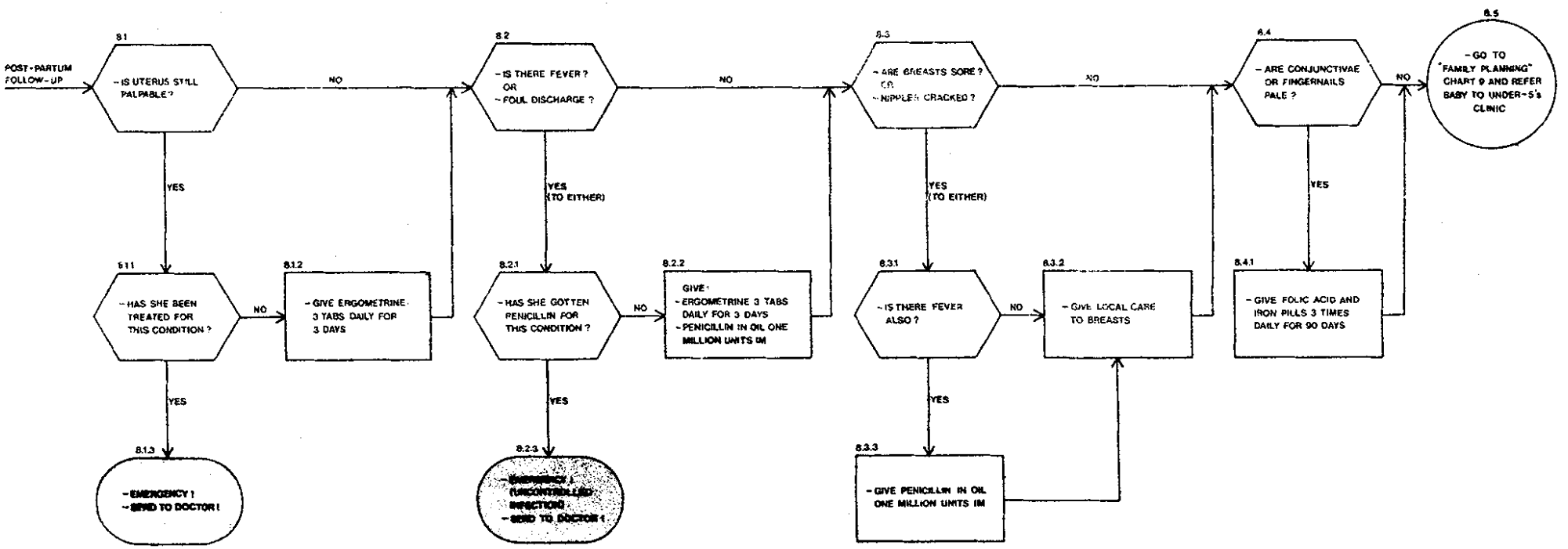




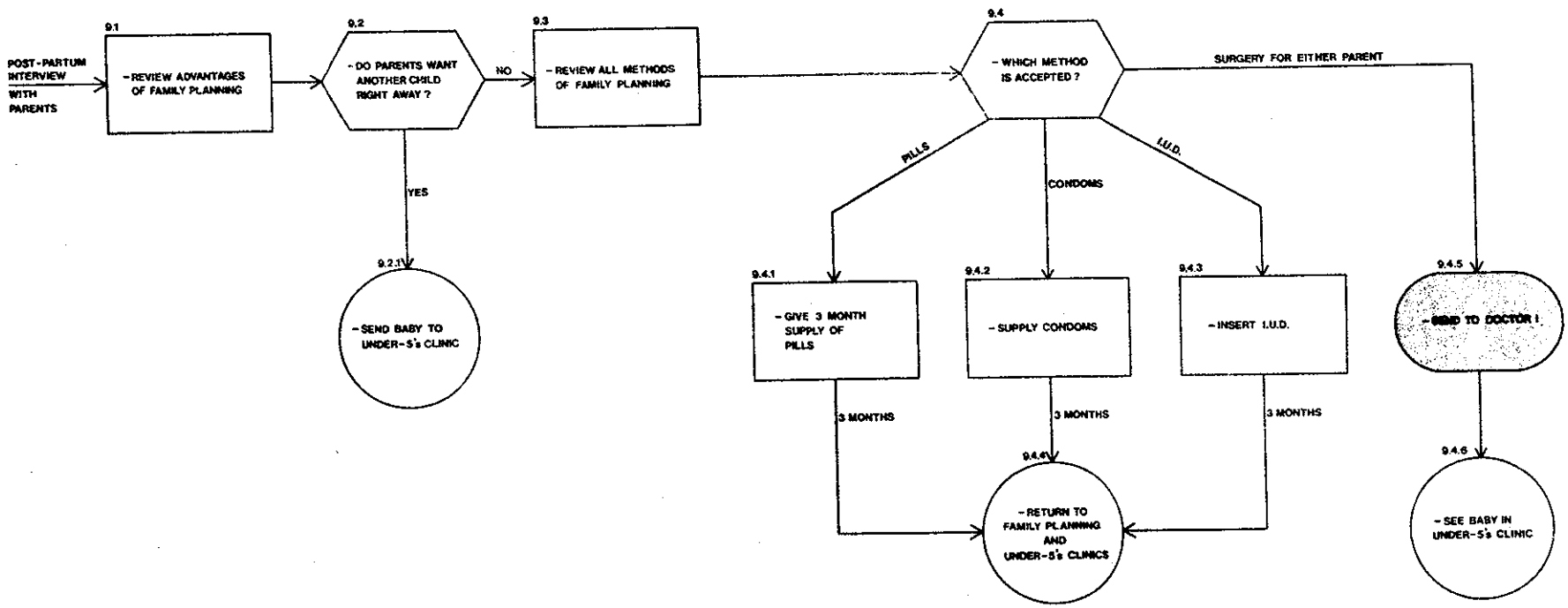
7: EARLY POST-PARTUM
0-14 Days



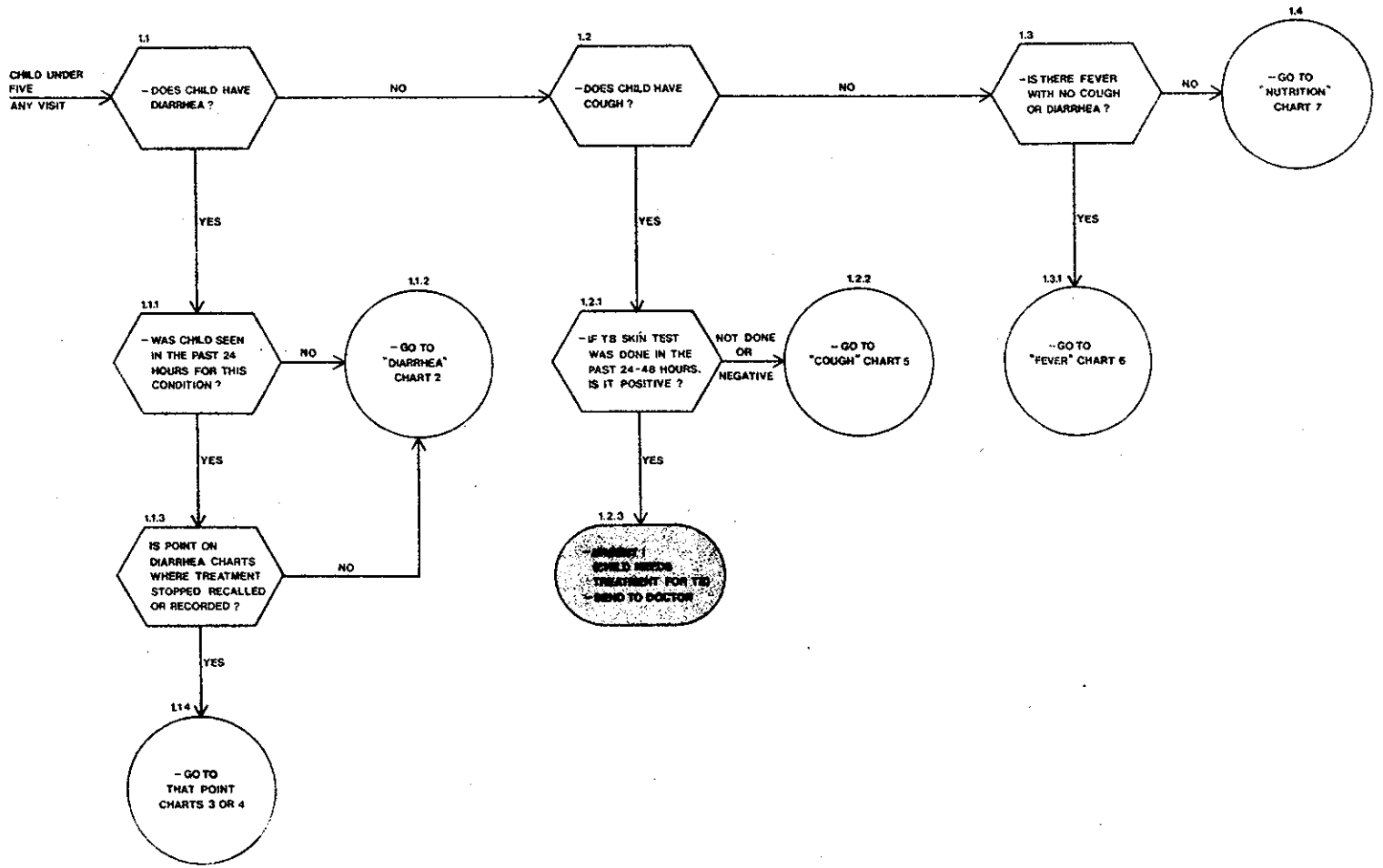
8: LATER POST-PARTUM
Over 14 Days



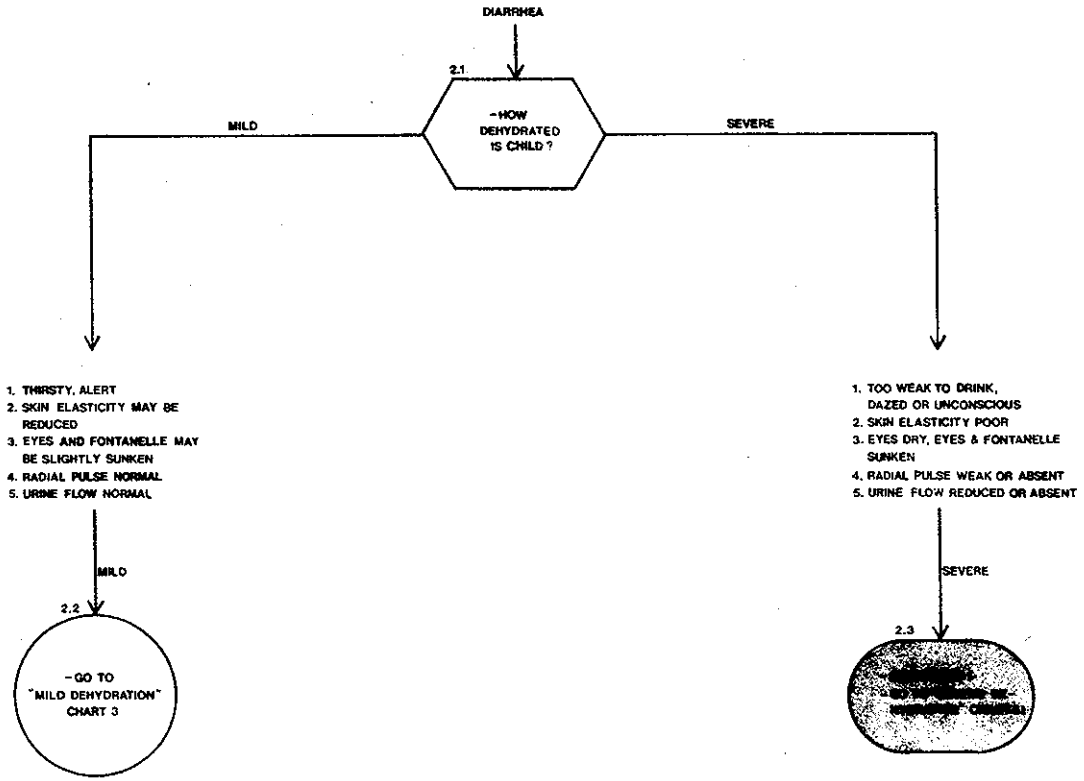
9: FAMILY PLANNING



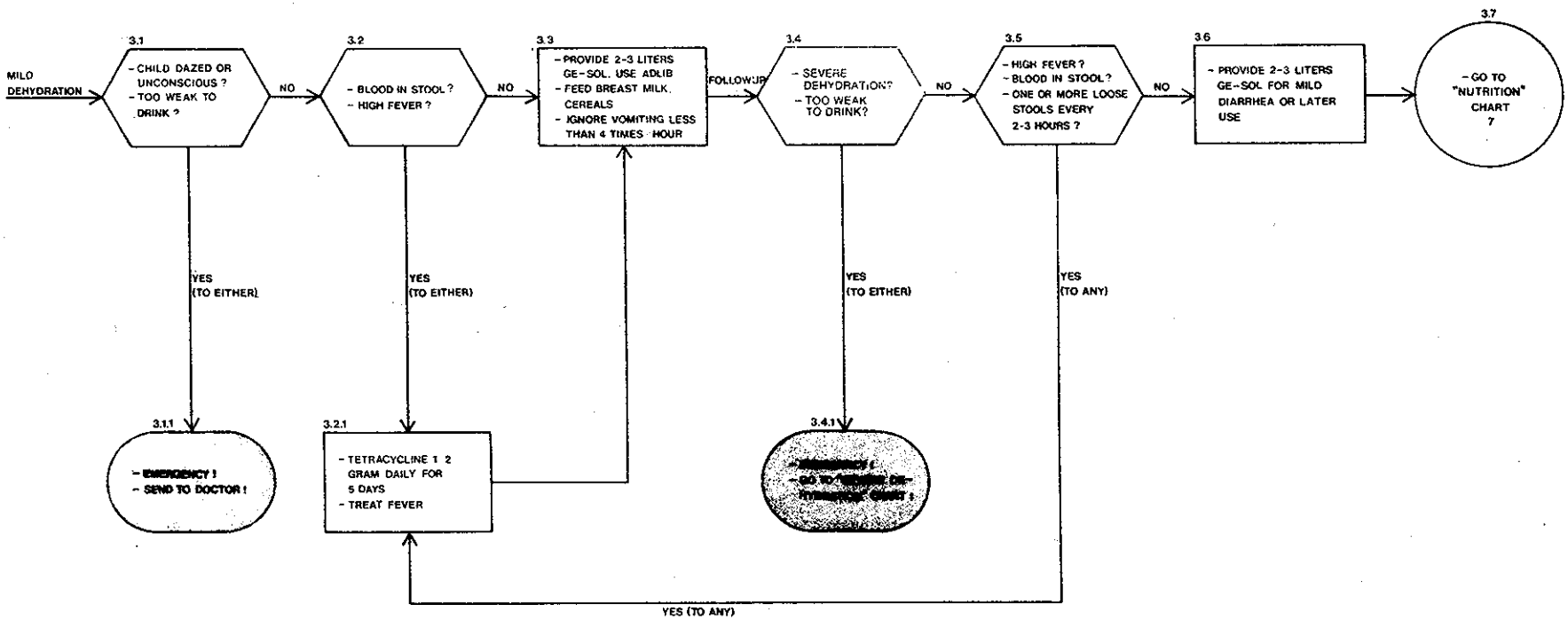
1: UNDER-FIVES CLINIC



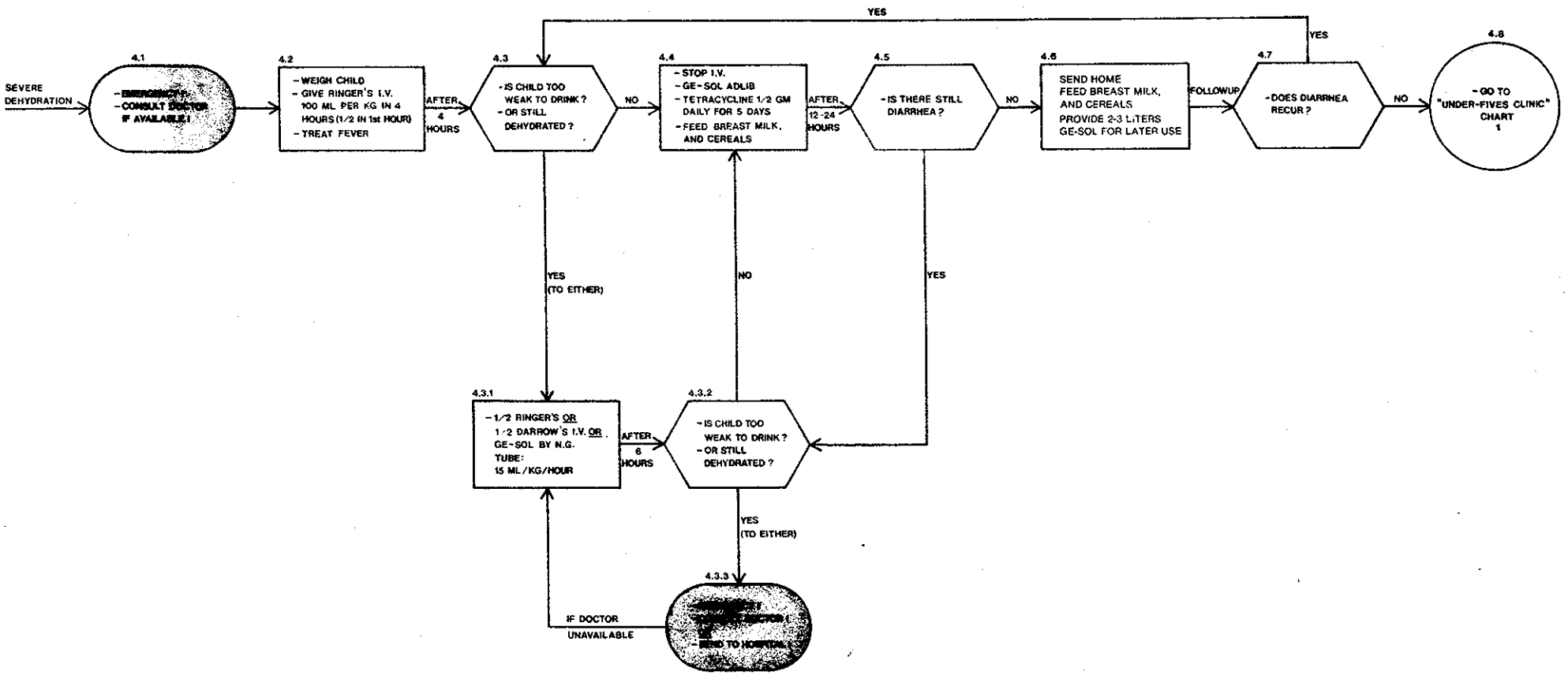
2: DIARRHEA IN INFANTS AND SMALL CHILDREN



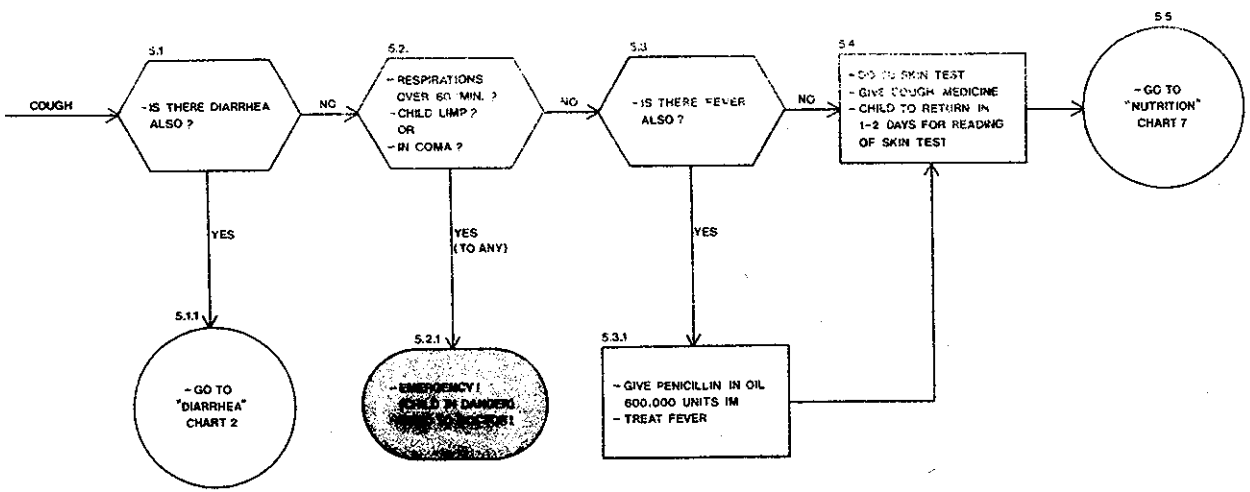
3: MILD DEHYDRATION



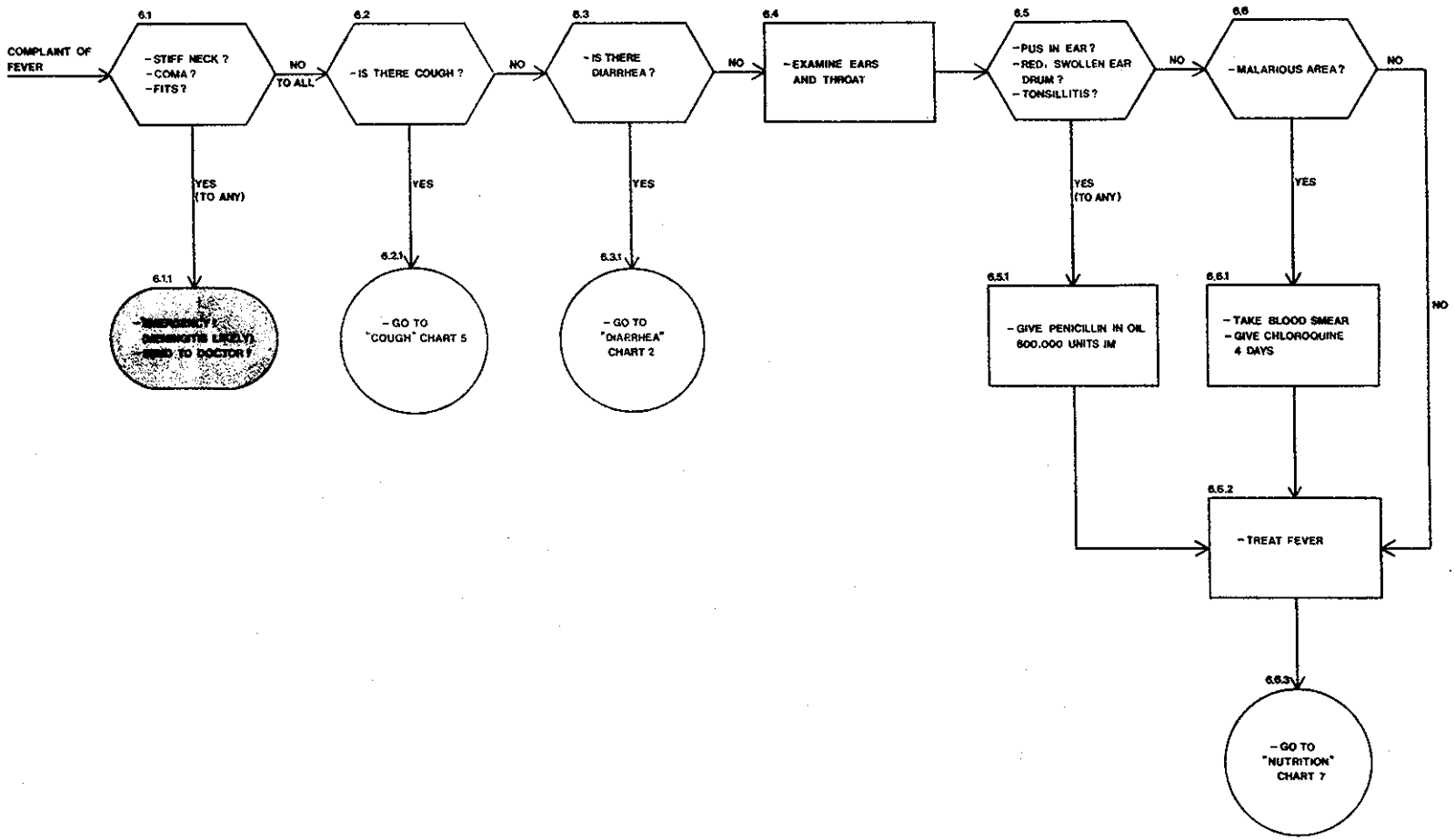
4: SEVERE DEHYDRATION



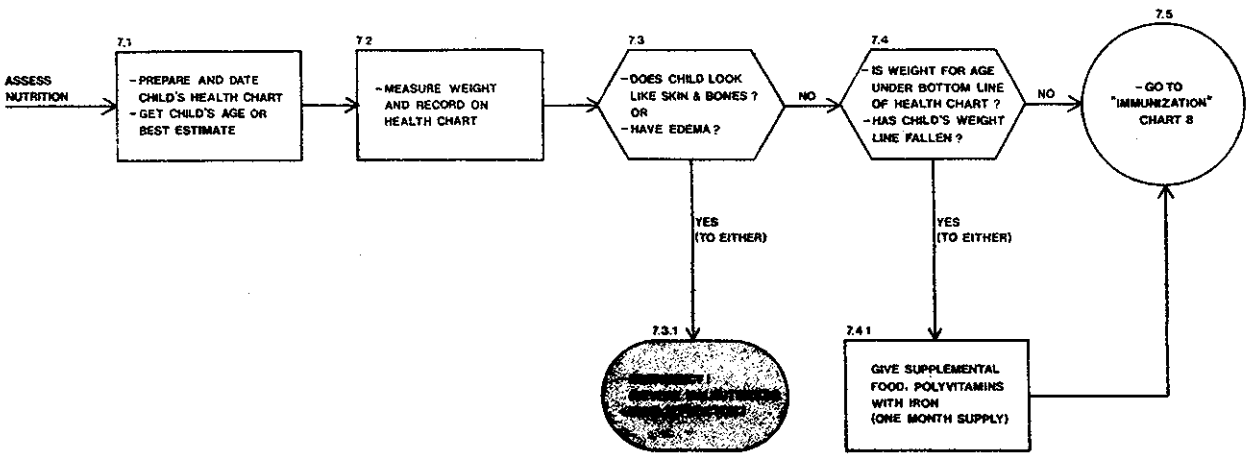
5: COUGH



6: FEVER



7: NUTRITION



8: IMMUNIZATION