

MANPOWER AND SYSTEMS DEVELOPMENT FOR PRIMARY HEALTH CARE

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Synopsis of Approaches, Prototype Materials,
Adaptation Methods, and Samples of Country Adaptations

Based on Primary Health Care Development Experiences in Five Countries

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Health Manpower Development Staff
John A. Burns School of Medicine
University of Hawaii
1833 Kalakaua Avenue, Suite 700
Honolulu, Hawaii 96816 U.S.A.

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MANPOWER AND SYSTEMS DEVELOPMENT
FOR
PRIMARY HEALTH CARE

INTRODUCTION

This package of sample materials and the introductions accompanying them explain and illustrate the approach to primary health care development by the University of Hawaii's Health Manpower Development Staff (MEDEX). The sample materials are representative of the prototype materials which are being produced for primary health care (PHC) systems and manpower development. Comments and suggestions, especially those based on field experiences, will be most welcome. The prototype materials and the approaches presented and summarized here have undergone several revisions during, and as a result of, field application in five countries with which the Health Manpower Development Staff (HMDS) has worked to develop and strengthen PHC services. Those countries are:

Micronesia
Thailand
Guyana
Pakistan
Lesotho

On the basis of continuing feedback from field activities in those and other countries, the prototype materials are still being modified as the HMDS core staff in Honolulu finalizes their production and prepares them for dissemination. The full package of prototype materials and guidelines for their adaptation and use will be ready by mid-1983. Selected materials are available now for use in developing or strengthening PHC programs.

Information on how to obtain the materials and assistance from MEDEX network universities* in adapting and using them can be obtained from HMDS at the University of Hawaii. USAID missions can contact HMDS and make arrangements for visits to AID Missions, Ministries of Health and other institutions. Such visits by HMDS personnel are usually paid for under the University of Hawaii's School of Medicine's centrally funded contract with AID/Washington.

In early 1981, an external AID evaluation of work under the MEDEX contract validated HMDS' systems approach to PHC and the technology developed through work in the countries mentioned above. A summary of the evaluation report is available from AID/ Washington. The comprehensive nationwide approach developed by MEDEX continues in those countries that require an upgraded systematic approach to PHC. However, as a result of the positive evaluation, HMDS is now also permitted to collaborate with countries on a more limited basis, working with parts of the PHC system (e.g., planning, training, management or evaluation).

* University of Hawaii, University of North Dakota,
University of Washington

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OVERVIEW OF A SYSTEMS APPROACH AND RELATED MATERIALS FOR PRIMARY HEALTH CARE DEVELOPMENT

Health is important to true development, both because it is basic to well-being and because it is a prerequisite to any sector's development. Health service expenditures, if effective, are both investment and consumption, although probably increasing in their investment implications (compared to consumption) since the goal of development is to improve the quality of human life.

Primary health care (PHC), in the opinion of the governments of most developing countries and of the majority of people involved in collaborative international health efforts, offers the best opportunity for effective health services and for beneficial investments in health services. It attempts to provide essential services to all in acceptable and effective ways, including services in or near the homes of the poorest and most underserved people.¹ As a means of extending health services coverage, PHC is rational, culturally acceptable, feasible, and proven. The development and successful operation of PHC for a large population over a long time depends upon adequate manpower development, resource allocations and effective PHC-oriented management and support systems in the overall health services system.

In developing PHC, each country builds on what it has. Fortunately, most countries have experiences which can serve to facilitate development of PHC programs which make more effective use of limited health sector resources and bring community resources to bear on health. In most

¹ Primary Health Care, Joint Report by WHO and UNICEF on Proceedings of the International Conference on Primary Health Care, Alma Ata, USSR, 1978.

developing countries, pilot, demonstration, or small voluntary agency sponsored projects have provided valuable lessons which governments can apply in developing broader PHC services suitable to nationwide needs, including limited resources and local traditions. Fortunately, there is sufficient commonality in the problems and solutions involved to allow countries to take advantage of lessons already learned by others who have forged different paths in developing PHC. Much national experience in PHC development is now available. The international community, including the agencies and individuals assisting in PHC development, needs to facilitate the sharing and application of that experience among all of the countries which are now planning or developing PHC programs. Cooperation in this area, and especially technical cooperation among developing countries (TCDC)², appears to be a prerequisite to widespread success of PHC development, which the urgency of the world's health situation demands.

At the national level, a national long-range PHC development strategy is necessary for the successful delivery of PHC services to the majority of the population.³ Such a strategy should be developed early and should be reviewed and modified at regular intervals as experience dictates. It can then make full use of available national and international PHC experience.

The training of PHC personnel is critical to the delivery of health services. The PHC team should be broadly representative and span the central-peripheral gap in a rational, comprehensive approach. The manpower

² Global Strategy for Health for All by the Year 2000, WHO, EB67/PC/WP/3, January 1981, p. 55.

³ Guiding Principles for the Managerial Process for National Health Development in Support of Strategies for Health for All by the Year 2000, WHO, MPNHD/81.1, Geneva, 1981.

team which seems to be most appropriate for a variety of national programs includes a community level health worker (CHW) linked to the official health structure by a mid-level health worker (MLHW) who supervises, trains and supports the village worker. The MLHW is, in turn, supervised and supported by supervisory level MLHWs and/or PHC physicians. This team is augmented by community and clinic assistants at the health post level (e.g., midwives, malaria workers) as well as special technicians at the district level (in areas such as public health nursing, family planning, immunization, sanitation).

In the seventies, community (or village) health workers (CHWs) had been considered by some to be not only necessary but also sufficient for the delivery of PHC. Mounting evidence from many countries now indicates that they require continuing support and supervision if they are to be effective and permanently maintained. Support and supervision of CHWs on such a wide scale cannot be effectively provided by the limited numbers of physicians and other highly trained and expensive health workers who are primarily urban oriented. Even those few exceptional high level health workers who are willing to spend their time in underserved areas (especially rural areas which have thus far been the main focus of PHC) are neither well prepared nor inclined to provide appropriate support services for first line PHC workers such as CHWs.

Several countries have succeeded in training (or retraining) MLHWs who can, in turn, train and supervise front line PHC workers such as CHWs, link them and their communities to the established health services system, and help them to obtain and use support from that system.

The MLHWs themselves are usually based in peripheral health centers or posts, providing both curative and preventive community health services there. However, they spend much time working with front line PHC workers in the surrounding communities.

In this context, the system addresses far more than basic health care needs; it is also a vehicle for preventive measures such as improved gardening techniques which improve nutrition, improved human waste management, family planning, and immunization programs. In fact, the health workers at the mid-level and the village-level can be a principal arm for rural development in developing countries.

The University of Hawaii's Health Manpower Development Staff (MEDEX), through its collaborations with various countries in the planning and implementation of *nationwide* PHC programs, and through its extensive contacts with other PHC development efforts elsewhere, has synthesized lessons learned in a wide variety of situations and has tested systematic approaches to PHC planning, implementation and operations.⁴ It is believed that others will find these approaches (and related materials) useful, as they serve to facilitate the development of effective PHC programs suited to country-specific situations. They also make maximally effective the use of existing personnel and other available resources.

The remainder of this "overview" summarizes HMDS approaches to development of effective PHC and presents a framework within which to review and consider the accompanying materials. These sample materials are drawn from

⁴ An early formulation of these was presented in Manpower and Primary Health Care: Guidelines for Improving/Expanding Health Service Coverage in Developing Countries, edited by Richard A. Smith, M.D. (Honolulu: The University Press of Hawaii, 1978)

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the larger complete set of materials which are being produced for general distribution, adaptation and use throughout the global community.

HMDS considers that a successful approach to PHC should:

- Take into account the PHC experiences of others.
- Take a comprehensive systems approach to planning and development, with special emphasis on strengthening organization and management support for front line PHC.
- Incorporate a comprehensive manpower development strategy based on (1) PHC manpower analyses, (2) integration of vertical program personnel, (3) design of the organization of the PHC team, (4) curriculum design, and (5) evaluation.
- Adapt and use prototype materials embodying the applicable PHC experience of others (most readily achieved in part through adaptation and use of tested prototype materials which have been developed for ready adaptation to country specific needs and which are accompanied by proven methods and process materials to facilitate effective adaptation.
- Use a competency-based approach to training personnel for their roles in PHC development, support and operations.

The University of Hawaii and its affiliated universities stand ready to collaborate with countries which are committed to develop effective PHC services and which have committed their own resources and political will to that task. We intend to continue to cooperate with other groups and agencies which are also collaborating in such work, with the hope that our complementary experiences will produce a positive synergistic effect on PHC development.

⁵ Advantages of Prototype Materials:

- (a) Reduce lead time,
- (b) Assure consideration of major areas and of appropriate technology in each area,
- (c) Facilitate effective and systematic use of past experiences in PHC,
- (d) Maximize effectiveness of technical expertise in PHC,
- (e) Facilitate effective use of technical cooperation among developing countries,
- (f) Enhance commitment to and identification with PHC among participants in the adaptation process.

HMDS can assist in and provide materials for PHC development in the areas of planning, organization, management, training, and evaluation.

The Health Manpower Development Staff prefers to collaborate on all of those essential sub-component areas which are fundamental to PHC development success. However, technical assistance will also be given to USAID Missions and countries which either have adequate capabilities in some but not all of the essential areas, or are making provisions to develop or mobilize such capabilities (perhaps with collaboration from other sources). This approach of assisting with selected component parts of the PHC system, rather than the entire system is now possible following an external AID Evaluation of the MEDEX Phase III contract.

PLANNING

HMDS collaborative assistance in planning for PHC development focuses first on the development of an overall long-range strategy to achieve maximum effective use of existing national health resources and to mobilize new resources which may be available to the health sector, both from within the host country (e.g., community level) and from outside, (e.g., bilateral and multi-lateral donors). This leads to the production of a coordinated action plan for use of all available resources. The PHC strategy and the coordinated action plan are based on national realities for health, health services, and PHC. The strategy and plan emphasize both systems development and manpower development for PHC. An effective national mandate and capacity for PHC-oriented health planning must be developed and maintained in order to accommodate strategies,

plans, and their implementation, to changing conditions and to new information gained through growing national experience with PHC development.

ORGANIZATION AND MANAGEMENT

Appropriate organization and adequate management at all levels of the health sector are required if effective PHC is to be available to the majority of a country's population, especially in isolated rural areas. In working with ministries of health and other organizations to develop organization and management to permit effective PHC, HMDS uses a systems analysis approach, including basic organizational and management analysis methods, and applied, (and simplified) operational research techniques. To facilitate this process, prototype management analysis materials are adapted and utilized to meet specific country needs.

Development of organizational and management capacity adequate to support PHC depends upon the participation of all levels of the health services system in the gathering and analysis of information and in the decisions that must be made and implemented if changes are to be made. Much learning about planning and management takes place through such participation. More formal training in planning and management is also provided using competency based methods, either incorporated into the overall curriculum of MLHWS and reflecting their management roles in PHC delivery, or developed as specific training courses or programs for others (e.g., central and district level officials) who have management responsibilities related to PHC development, support and operations. The introduction to Section 5, Systems Development Materials, provides added information on a systems approach to PHC development and on the prototype materials and their

adaptation. Examples of prototype materials designed for adaptation to meet country specific needs in developing organization and management to support primary health care are presented in Sections 5.2.1 (Management Analysis Training Module), 5.2.2 (Management Analysis Workbook), 5.2.3 (Operations Reference Manual), 5.2.4 (Area Planning/Management Workshop Manual), 5.2.5 (Mid-Level Health Worker Management Training Modules), and 5.2.6 (Supervisory Mid-Level Health Worker Training Module).

MANPOWER DEVELOPMENT

The Health Manpower Development Staff gained its initial international experience through collaboration with several countries in the application of competency-based MLHW training techniques proven effective in the U.S. and elsewhere. These collaborations were designed to assist in better utilization of MLHWs in PHC programs with rural villages as their focus. This required strengthening the abilities of MLHWs (coming from backgrounds in nursing, sanitation, etc.) to work with rural villagers, their local leaders and other health workers. The promotion of preventive measures required strengthening of diagnostic and patient care knowledge and skills of MLHWs in order that they could respond more adequately to the immediate as well as preventive health problems of patients. Adequate MLHW response to such demands for curative care is necessary in order to establish credibility of the MLHW in the minds of the people; to diminish pressure on higher level facilities and personnel; and to increase the people's confidence in the ability of the emerging PHC system to help them meet their health care needs.

Training MLHWs to in turn train, supervise and support CHWs serves is

the basic rationale of an effective system and serves to strengthen the critical link between the community and the formal health services system. This relationship emphasizes the critical training and supervision interlock that can exist between the MLHW and CHW, a relationship which can minimize many of the serious problems encountered when CHWs are isolated from other parts of the health system.

One mainstay of HMDS collaboration in manpower development is competency-based training⁶ (including the analyses required for its effective application). Another is the use of tested prototype materials developed to be relevant to the generic needs of health systems in developing countries and readily adaptable to a country's specific requirements. The prototype materials are designed for use in the development and implementation of a competency-based training program. They include both prototype training materials for MLHWs and VHWs and other prototype materials to facilitate the analyses and processes required for job design, curriculum development, adaptation of prototypes, and preparation of trainers for the adapted competency-based program.

HMDS places much emphasis on the adaptation process, since even the best training materials and training program cannot be fully effective if they are not fully adapted to local requirements and conditions by local health professionals.

⁶ McGaghie, W., Miller, G., Sajid, A. and Telder, T., Competency-Based Curriculum Development in Medical Education, WHO, Geneva, 1978.

Manpower planning for PHC begins with an analysis of the current national health manpower situation, including projected training outputs and distribution factors. These supply factors are compared to personnel and training needs for PHC under several feasible alternative mixes of health workers in the PHC system. Planning decisions are made regarding the types and numbers of health workers required in various positions and locations and the roles which they will fill in the PHC system. Task analyses, initiated during studies of the existing manpower situation, continue to emphasize community health needs as part of the planning efforts for manpower and training. The focal point of curriculum planning and of materials adaptation for the training programs is the "curriculum adaptation workshop", a four to six week session in which health workers and officials from various levels of the health care system first work to finalize draft job descriptions and task lists for the MLHWs and the CHWs. They then develop a training program for each category and revise training materials so that the trainees will become competent to perform all of the tasks listed for their jobs under the conditions which will actually prevail in the field.

Prototype plans and other prototype materials for conducting the curriculum adaptation workshop have been assembled into a curriculum adaptation workshop manual, representative sections of which are presented in Section 4. The introduction to that section provides further information on adaptation methods, as does the introduction to Section 5 on Systems Development Materials.

The prototype training materials for MLHWs and CHWs⁷ are divided into "modules." Each module contains materials for teaching and learning the skills and knowledge necessary for competent performance of all tasks required in one area of the work of a MLHW or CHW. A list of the modules and other materials is shown in Section 2, and representative examples of materials from several modules are presented in Section 3.

Module components are listed and explained in the Introduction to MLHW and CHW training materials, Section 3.1.

Experience in several countries has shown that the prototype materials, modular format, and adaptation process and materials are readily accepted, adapted and used. Further, the graduates of the resulting training programs accept and perform competently the tasks assigned to them in the PHC system.⁸ Formative evaluations carried out during the training and comparison of pre- and post-training test performance indicate that relevant knowledge and skills improve during training.

We welcome all suggestions, comments and questions regarding the ideas, approaches and materials which we have developed in our efforts to facilitate PHC development. The materials and approaches continue to

⁷ We prefer the term Community Health Worker (CHW) to Village Health Worker (VHW), because we feel that front line PHC workers can be of great service in urban communities as well as in rural ones. Another reason for using "community" is that rural areas may be sub-sections of towns, or may not be arranged in villages.

⁸ Verified in Micronesia, Thailand, Guyana, Pakistan and Lesotho.

evolve on the basis of shared experience. We also welcome further opportunities to share our experiences with others and to collaborate with those developing and strengthening PHC systems in various parts of the world.

The production of materials which are represented by those presented here will be finished by June 1983. However, those who would like to review more extensive samples of materials and consider adapting and using them in their own PHC programs should contact HMDS. Further information and specific HMDS services in planning, management, training and evaluation are also available to countries which request them. At present, those services are available to many countries under the MEDEX contract between the University of Hawaii and the U.S. Agency for International Development. It has been found that it is very useful for staff from the MEDEX group to visit a country as a first step in considering or establishing a collaborative effort to strengthen PHC programs.

PRIMARY HEALTH CARE: GUIDELINES AND PROTOTYPE MATERIALS
FOR MANPOWER AND SYSTEMS DEVELOPMENT

1. Guidelines for Manpower and Systems Development for Primary Health Care **
 - 1.1 Overview of Manpower and Systems Development for Primary Health Care
 - 1.2 HMDS Experiences in Five Countries in Manpower and Systems Development for Primary Health Care
 - 1.3 Guidelines for Developing, Expanding and Strengthening Primary Health Care Programs
 - 1.4 Guidelines for Planning and Evaluation in Primary Health Care
 - 1.5 Guidelines for Management Training in Primary Health Care

2. Prototype Training Materials for Middle-Level Health Workers and Community Health Workers
 - 2.1 Primary Health Care: Orientation and Introduction for Middle-Level Health Workers
 - 2.2 Core Clinical Knowledge and Skills
 - 2.2.1 Anatomy and Physiology
 - 2.2.2 Medical History
 - 2.2.3 Physical Examination *
 - 2.3 General Clinical
 - 2.3.1 Common Skin Problems
 - 2.3.2 Dental and Eyes, Ears, Nose and Throat
 - 2.3.3 Respiratory and Heart Problems
 - 2.3.4 Gastro-intestinal Problems
 - 2.3.5 Genito-urinary Problems
 - 2.3.6 Infectious Diseases
 - 2.3.7 Common Medical Conditions (primarily of adults)
 - 2.3.8 Trauma and Emergency

* Samples of these materials are included in this set of sample materials.

** In early stages of development.

- 2.4 Maternal and Child Health
 - 2.4.1 Diseases of Infants and Children *
 - 2.4.2 Health Problems of Women
 - 2.4.3 Labor and Delivery
 - 2.4.4 Prenatal and Postnatal Care
 - 2.4.5 Child Spacing
- 2.5 Community Health
 - 2.5.1 Community Health I */***:
 - 2.5.2 Community Health II */***
 - 2.5.3 Working with Communities and with Community Health Workers
- 2.6 Training Community Health Workers (Incorporating materials which are also adapted and used later by the Mid-Level Health Workers and by others who train Community Health Workers)
 - 2.6.1 First Aid
 - 2.6.2 Diarrhea and Dehydration
 - 2.6.3 Nutrition
 - 2.6.4 Hygiene
 - 2.6.5 Clean and Safe Normal Delivery
 - 2.6.6 High Risk Pregnancies
 - 2.6.7 Community Cooperation
 - 2.6.8 Common Clinical Problems
 - 2.6.9 Child Spacing I
- 2.7 Management for Mid-Level Health Workers **
 - 2.7.1 Working with Support Systems
 - 2.7.2 Working with the Health Team
 - 2.7.3 Supervisory Mid-Level Health Workers *

3. Prototype Reference Manuals

- 3.1 Formulary
- 3.2 Diagnostic and Patient Care Guidelines (flow chart protocols)
- 3.3 Management Operations Procedures Manual **

* Samples of these materials are included in this set of sample materials.

** In early stages of development.

*** Problem assessment (I) and appropriate action to be taken (II) in areas such as nutritional status, high risk pregnancies, child spacing, environmental health.

- 3.4 Patient Care Procedures *
- 3.5 Training System Evaluation Manual (including prototype pre- and post-test questions)
- 4. Prototype Adaptation and Systems Development Materials
 - 4.1 Curriculum Adaptation Manual *
 - 4.2 Instructor Orientation and Preparation Manual
 - 4.3 Pre-deployment Workshop Manual (for Trainee Mid-Level Health Workers, Instructors/Field Supervisors, and other health team members) **
 - 4.4 Continuing Education Manual */**
 - 4.5 Module for Training Management System Analysts */**
 - 4.6 Workbooks for Analyzing Management Systems */**
 - 4.6.1 Finance
 - 4.6.2 Personnel
 - 4.6.3 Drugs & Medical Supply
 - 4.6.4 General Supply
 - 4.6.5 Facilities & Equipment Maintenance
 - 4.6.6 Transportation
 - 4.6.7 Communications
 - 4.6.8 Information
 - 4.7 Area Planning/Management Workshop Manual */**
 - 4.8 National Planning/Management Workshop Manual **

* Samples of these materials are included in this set of sample materials.
** In early stages of development.

3.1

3.1 Introduction to Mid-Level Health Worker and Community Health Worker Training Materials

3.1.1 CONCEPTS, APPROACHES AND PRACTICES

Approaching the goal of "Health for All" through Primary Health Care requires the training, support and supervision of community health workers and mid-level health workers who can provide needed basic services. Each country must meet those requirements in ways appropriate to its own specific needs and situations.

In primary health care training, competency-based training helps assure that students learn to perform all of their primary health care tasks, without including extraneous information. The tenets of competency-based training provide guidelines for developing a training system which maximizes student and teacher potential while maintaining sensitivity to the needs of the communities which will benefit from the services of the trained workers. The principles of competency-based training are:

- a. Training objectives are based on and defined after an assessment of needs.
- b. The training process emphasizes students' acquisition of knowledge and skills needed for specified job activities.
- c. Student success is measured against a specified standard (criterion evaluation).

- d. The instructional process is designed to be responsive to variations in student learning rates and learning modalities.
- e. Performance evaluations of graduates in field positions provide feedback for revision of needs assessments and, in turn, of the curriculum.

The implications of these principles for the student are that:

- a. The instructional objectives are related directly to job requirements and are included in the students' materials.
- b. Students are pretested and posttested on a regular basis as a means of monitoring their progress through the training.
- c. The performance standards required for success are clearly stated and are included in the students' materials.
- d. Students are given individual remedial assistance when their progress falls below the established standard.
- e. The instructional process is enhanced by learning activities which emphasize student participation in learning, rather than passive transfer of information.

Within this context of competency-based training, HMDS has developed prototype training materials. These are arranged in "modules." Each module provides sets of self-instructional materials, teaching materials

and learning activities, selected audio-visual aids, reference materials, and materials for competency assessment, all focused on assuring post-training competence in the specific task addressed by that module. Each module focuses on the knowledge and skills necessary to perform a specific PHC task as outlined in the task analysis table found in the instructor's manual. The student is asked to learn only that which will be useful in his or her future work. The student guides, which are found in the module text, explain exactly what is expected of him and how he will be evaluated. The student is evaluated on his competence to perform certain job-required skills and on his knowledge of certain basic facts. The major emphasis in evaluation is on "what the student can do," with less emphasis on written examinations.

The modular arrangement of materials permits much flexibility in developing training schedules.

Sets of modules have been developed for training both community health workers (CHWs) and mid-level health workers (MLHWs), within a system under which MLHWs -- after appropriate training for the tasks -- train, support and supervise CHWs, in addition to their other primary health care responsibilities. Lists of prototype training materials are included in the lists of materials being produced by HMDS, in Section 2 of this document.

All of these training materials are designed to facilitate their adaptation to the specific needs and conditions which a given country's PHC system must face. Approaches and methods for carrying out such adaptation have

been developed, accepted, and proven effective. (See Introduction to Concepts and Practices, in Adapting Training Materials and to Curriculum Adaptation Workshops, Section 4.1.)

The prototype modules are interrelated in a system based on concepts of competency-based training, the mid-level health worker-community health worker linkage, and a national management support structure. A given set of assumed (but common) environmental conditions and health problems is used to conceptualize and design all the prototype modules. This helps provide a framework linking the system of modules, and allows for ease of adaptation to a country where variations from the given set of conditions can be identified.

HMDS' approach and prototype training materials have now been adapted and are in use in national primary health care programs in Micronesia, Thailand, Guyana, Lesotho, and Pakistan.

This set of sample materials includes examples of unadapted prototype training materials and of materials which have been adapted (and translated, as necessary) to suit the needs of specific countries. Prototype and adapted versions of training materials for both Community Health Workers and Mid-Level Health Workers are included. Additional materials for management training for Mid-Level Health Workers are included in Section 5.2.5. The adapted modules are the result of country-specific matching of training requirements against the job requirements for the country's own PHC workers. Both the content required for doing the job and the process for making sure that the worker is prepared to do the job are welded together in a form which makes these adapted modules unique.

3.1.2 COMPONENTS OF THE MODULES

Each individual module is made up of four basic components -- the module (or student) text, the instructor's manual, the evaluation materials, and adaptation aids.

Text. This is a quasi-self-instructional unit for student use as well as for review and reference by the MLHW after graduation. Selected information is presented in the text as one of the many learning activities leading to the mastery of the knowledge and skills required to perform the specific task upon which the module focuses.

The following are the subcomponents of the module text:

Student Guides outline the entry level knowledge and skills required of the student to be able to complete a particular unit. The learning objectives for the unit are stated in behavioral terms, e.g., "You will be able to identify..., locate..., define...,". How the students' knowledge and skills are to be evaluated is explained. The learning activities in which the student will participate to enable him to meet the objectives are outlined. This outline of activities also helps to assure instructor accountability.

The Written Narrative provides the student with the knowledge base he will need, as well as skill descriptions which include the supplies needed and steps followed when performing a specific skill.

Text Visuals are included, when appropriate, to emphasize the content of the narrative. These visuals often require adaptation.

Review Questions allow the student the opportunity to assess his understanding of the material he has read. This also helps him to identify content areas for which he may need assistance from the instructor. Some modules include additional learning activities or exercises which the student can carry out alone or with others.

Diagnostic and Management/Patient Care Protocols, included in the text or supplementing it, assist the student to synthesize that which he has read and practiced.

Evaluation Forms, including cognitive and performance evaluations, address the knowledge and skills the student must master. In a competency-based training program, no attempt is made to "trick" the student. The student is informed of performance expectations, so as to prepare him to do his job as a PHC worker. Some of the responsibility for assuring that the student is thus prepared is thereby assigned to the student.

Instructor's Manual. This is intended to be a comprehensive training guide. Like the module text, it is adapted to accommodate locally available training resources. Instructors' preferences for particular student learning activities are taken into account during the adaptation process. This manual is also composed of several parts:

The Task Analysis Table is the primary guide followed during the adaptation process. The training requirements (skills and knowledge) are matched against the job (or work) requirements.

A Training Schedule is included, briefly outlining each day's learning activities. The same schedule is also included in the text material for the student.

Teaching Plans include the topic to be taught, the learning objectives for the session, the teaching methods to be used, the materials needed to conduct the session, instructor preparation suggestions, the specific learning activities to be conducted during the session, and the time allotted for each activity. Examples of learning activities are:

- patient contacts in health facilities
- community and home visits
- demonstrations
- large and small group discussions
- media presentations
- role plays and other simulation activities
- self-instructional activities such as reading
the module text and answering review questions
- class lectures

These are adapted by the individual instructor scheduled to teach the module.

Pre and Post-Test Answers, as well as answers to the review questions, are given in the instructor's manual.

Audio Visual Materials

Evaluation Materials are designed to facilitate student success. These materials permit the instructors to monitor student achievements in both the cognitive and psychomotor realms. The evaluation process permits trials and remediation until competence is attained. Performance evaluation criteria follow a graduated sequence (from simple to more complex activities) throughout the training.

Pre and Post-Tests are used to measure student entry and exit level knowledge. Pretesting also helps the instructor to identify those topics which may need more emphasis than others. Individual or group knowledge may indicate further testing (administering the post-test and skill performance evaluation, to determine whether certain modules or units within the module may not need to be studied by students who are already competent to perform some or all of the skills required for the task. For example, many students who are trained midwives have usually mastered many of the skills taught in the MCH modules.

Performance Checklists are used throughout the training and account for 70% of the student's total evaluation. These tools outline the component parts of each skill to be performed by the student.

The checklists are used by students as references when practicing skills and by the instructors when observing and assessing student performance. Performance evaluation materials are adapted for use by supervisors after the students have graduated, hence linking training to delivery service needs and providing feedback for curriculum revision and continuing education. The results of the use of these evaluation materials are also used to assist the instructors and program staff to assess the individual instructor's performance, the learning activities, and the content of the module text. If necessary, immediate adjustments can be made in the learning activities being conducted. In the long term, such evaluation provides valuable feedback when the time comes to further revise and improve the adapted modules.

Adaptation Aids include lists of the drugs and equipment needed for the student to perform the skills addressed in the module. Audio-visual materials such as slides, audiotapes, flip charts, overhead transparencies, or other media which may be appropriate for use in developing countries, are included. Like other module components, the audiovisual materials require adaptation. Copies of articles and references supporting the content of the module (for example, the appropriateness of using "diarrhea medicine water" for oral rehydration) are also attached.

In summary, the prototype modules for training mid-level health workers contain the following components and subcomponents:

Module (or student) Text

- student guides
- written narratives
- text visuals
- review questions
- protocols
- evaluation forms

Instructor's Manual

- task analysis tables
- training schedules (also found in module text)
- teaching plans
- pre-, post-test, and review question items and answers
- audiovisual materials (such as slides with narratives)

Evaluation Materials

- pre- and post-tests
- performance checklists

Adaptation Aids

- drug and equipment lists
- alternative audiovisual materials
- articles/references supporting content of module

Community Health Worker Training Materials

The prototype materials for training community health workers are included in the modules for training mid-level health workers to train community health workers. Those materials:

- are used for training mid-level health workers, to train community health workers;
- have the same module components;
- serve as training aids to the student and instructor; and
- are integrated into the mid-level health worker training schedule.

However, they are unique enough in their contents and organization to be addressed separately.

These modules are designed to train medex to train either literate or non-literate community health worker candidates. The instructor's manuals included for use during the training of mid-level health workers can also be used by graduate mid-level health workers during the training of community health workers. "Special instructions for teaching the text" accompany the narrative in the module (or student) text. The "special instructions" are related especially to training techniques for the oral tradition trainee.

The role modeling concept in training is exploited in the materials by leading the tutors to teach mid-level health workers in the same manner they expect the mid-level health worker to teach community health workers and in turn the community health workers to teach other community members.

Community health worker reminders are included for the literate community health worker, in the form of other "special instructions" (regarding, for example, the nutritional needs of pregnant women) as well as in a visual form for both the literate and non-literate community health worker. The reminders consist of basic messages including key points for the community health worker and basic health education messages for the community. These reminders can serve as basic health education materials for rural communities.

3.2.1

SYSTEM FOR TEACHING ESSENTIALS TO
MID-LEVEL HEALTH WORKERS

PROTOTYPE MODULE TEXT

DISEASES OF
INFANTS AND CHILDREN
MODULE

(SELECTED SECTIONS)

DRAFT: MAY 1976

REVISED: AUGUST 1977

REVISED: 1979

REVISED PREPRODUCTION SAMPLE VERSION, MAY 1981

Health Manpower Development Staff
John A. Burns School of Medicine
University of Hawaii

This DISEASES OF INFANTS AND CHILDREN MODULE contains the two most important conditions of children:

Diarrhea and Dehydration* and Malnutrition*

plus others including common childhood infections and conditions of the newborn.

However, some other common health problems of children are handled in other modules:

1. Pneumonia - Respiratory and Heart Diseases
2. Otitis Media - Dental, Eyes, Ears, Nose and Throat Diseases
3. Pharyngitis and Upper Respiratory Infections - Dental, Eyes, Ears, Nose and Throat Diseases
4. Meningitis - Infectious Diseases
5. Malaria - Infectious Diseases
6. Worms - Gastrointestinal Diseases

*Sections included in these sample materials.

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*Module sections pertaining to the Malnutrition and Diarrhea and Dehydration Units are included in this set of sample materials. Evaluation materials are still being revised in accordance with rescheduling of Mid-Level Health Workers training course to intermingle classroom (module) and community learning activities.

REFERENCES USED IN THE DEVELOPMENT OF THE
1977 VERSION OF THE DISEASES OF INFANTS AND CHILDREN
PROTOTYPE MODULE*

General References:

- Baldwin, B., *Child Health, A Manual for Medical Assistants and Other Rural Health Workers*, African Medical Research Foundation, 1975.
- Essex, B.J., *Diagnostic Pathways in Clinical Medicine*, African Medical and Research Foundation, 1975.
- Jelliffe, D.B., *Diseases of Children in the Subtropics and Tropics*, second edition, Arnold, 1972.
- Kempe, C.H., Siver, H.K., O'Brien, D., *Current Pediatric Diagnosis and Treatment*, third edition, Lang, 1974.
- King, Maurice, et. al., *Nutrition for Developing Countries*, Oxford University Press, 1972.
- Morley, D., *Pediatric Priorities in the Developing World*, Butterworth, 1973.
- Watt, G.B., Watt, J.L., Halestrap, D.J., *Medical Assistant's Manual, A Guide to Diagnosis and Treatment*, McGraw-Hill, 1973.
- The Child in the Health Centre*, Lembaga Kesehatan Nasional, Jalan Indrapura, Surabaya, Indonesia, 1974.

Audio-Visual Materials:

- Illustration Bank, World Health Organization, Geneva, Switzerland, 1974.
- Royal Tropical Institute, Amsterdam, Holland.
- Talc Series, Institute of Child Health, University of London.
- The National Food and Nutrition Commission, Lusaka, Zambia
- Super Porridge Flip Chart -
Developed by Shanta Bhawan Community Health Program, Box 252; Printed by University Press, Kathmandu, Nepal.
- Salt-Sugar Medicine Flip Chart -
Church, M.A. "Fluids for the Sick Child, A Method of Teaching Mothers," Tropical Doctor, 1:119, 1972.

SPECIFIC REFERENCES USED IN DEVELOPING
THE 1977 PROTOTYPE VERSION*

Module: DISEASES OF INFANTS AND CHILDREN MODULE

*If not applicable - NA

Selection	Source	*Permission Requested (Date & Initial)	Permission Received (Date)
1. Six Basic Nutrition Messages	The Child in the Health Center, (English Experimental Edition) The Lembaga Kesehatan Nasional, Jalan Inderapura - Surabaya, Indonesia, p. 181-3, 1974	NA	
2. Chart for preparing Fortified Milk Solution.	Source same as #1; p. 192.	NA	
3. Super Porridge	Developed by Shanta Bhawan Community Health Program, Box 252, Kathmandu; Printed by University Press, Kathmandu, Nepal.	NA	
4. Rapid Rehydration of severe dehydration	Biddulph, J. "Standardized Management of Diarrhea in Young Children," <u>Tropical Doctor</u> , 2:114, 1972.	NA	
5. Salt-Sugar Medicine	Church, M.A. "Fluids for the Sick Child, A Method of Teaching Mothers," <u>Tropical Doctor</u> , 2:119, 1972.	NA	

*Reference lists are being updated.

DISEASES OF INFANTS AND CHILDREN MODULE

STUDENT GUIDE

MALNUTRITION UNIT

I. Specific Entry Level Knowledge and Skills

Before starting this unit, you should be able to:

1. Perform and record the results of a history and physical exam of an infant or child.
2. Use the diagnostic protocols.
3. Weigh and measure children and use the growth chart to identify malnourished children.
4. Use the armband method to identify malnourished children.
5. Discuss food groups as learned in Community Nutrition.

II. Objectives

Using the information and experiences provided by the instructor(s) and the module text, you will be able to:

1. Identify and differentiate the physical signs associated with mild, moderate and severe malnutrition.
2. Describe the usual causes, course and complications of malnutrition.
3. Use the diagnostic and patient care protocols as a guide to identification and care of malnutrition.
4. Describe the patient care procedures for malnourished children.
5. Use the super porridge flip chart to teach parents.
6. Discuss the prevention and care of malnutrition with parents.

III. Evaluation

Upon completion of this module, you will be rated on your attainment of the above objectives.

Knowledge: Written test based upon module content. Acceptable performance 80%.

Skill: See rating sheet for acceptable performance level.
Preparation of super porridge.
Use flip chart as a guide for teaching.
Record and interpret weight per age growth chart.
Teach the Six Basic Nutrition Messages.

IV. Activities to Accomplish the Objectives

1. Practice physical examinations of children.
2. Read the module text on malnutrition and answer and discuss the review questions.
3. View and discuss the slide presentation on signs of protein-calorie malnutrition.
4. Participate in demonstrations and discussions with parents.
5. Practice using the super porridge flip chart.
6. Review of growth charting procedures and practice growth charting.
7. Practice teaching the Six Basic Nutrition Messages.

MALNUTRITION

Some Facts About Malnutrition

A child suffering from malnutrition has not been eating the right amounts of foods. He may not have had enough food for his body's needs or he may not have been eating balanced meals or he may have been eating too much. In each case, he would suffer from malnutrition, but with different effects:

- Children who do not get enough food lose weight. They gradually starve (marasmus).
- Children who do not eat the right foods in balanced amounts develop problems. For example, they might get edema if they do not eat enough protein. They might get night blindness if they do not get enough Vitamin A.
- Children who eat too much food become overweight (obese).

This unit covers the first two kinds of malnutrition. Obesity in children will not be discussed because it is not very common and is not as serious a disease as malnutrition.

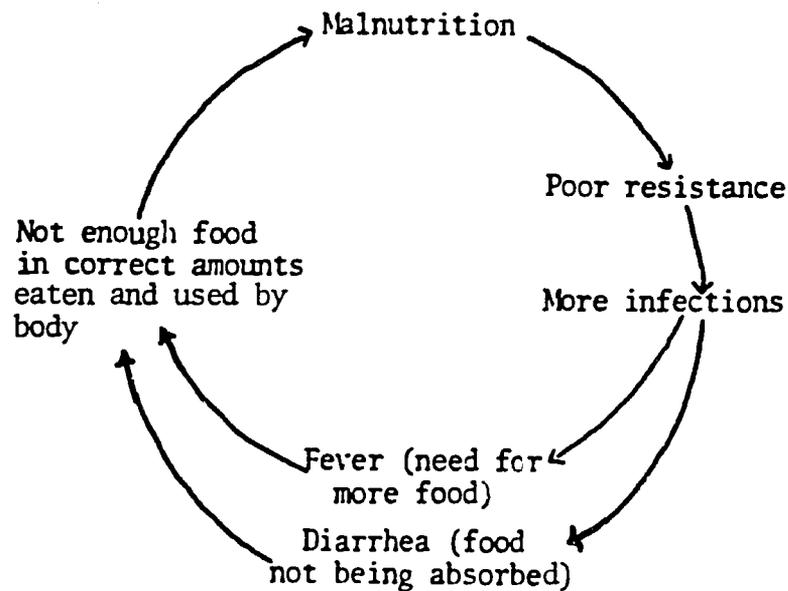
In most countries, most malnutrition is the result of not eating enough food or not eating enough of the right kinds of foods. Malnutrition is a very serious condition and often causes deaths in children. Children with malnutrition do not grow properly and they have a poor resistance to infections.

Healthy children grow quickly. A newborn baby will double his weight in a few months. Soon the healthy baby again doubles his weight. His body and brain are growing rapidly. Food in the right amounts is what allows the baby and child to grow properly. Without the right foods in the proper amounts, a child cannot grow normally. His weight and height do not increase as they should.

A malnourished child becomes ill from infections more easily than normal children. Malnutrition and infections are closely connected. Malnutrition causes infections to be more severe, and infections cause malnutrition to be more severe. Most infections cause a fever in a child. The fever is a sign that the body is using more food than usual. A child with a fever needs more food than when he is healthy. Diarrhea is a common sign of infections in children. Loose, frequent stools are signs that food is not being absorbed into the body.

In some children, infections occur again and again. Malnutrition and infections become linked in a dangerous circle:

MALNUTRITION - INFECTION CIRCLE



If this circle is not broken, the child will die.

Reasons for Malnutrition

Some parents in very poor families cannot get enough food for their children. But many children become malnourished because they are fed in the wrong way. Sometimes this is the result of harmful traditional ways of doing things. Sometimes it is caused by harmful new feeding habits.

- Some parents do not start giving the baby supplementary foods such as cereals and legumes (pulses, peas or beans) early enough. They wait until the baby is a year old, or more. Children should be given cereals and legumes at five or six months of age.
- Some mothers bottle-feed their babies instead of breastfeeding them. Often they make the formula too weak so that the baby does not get enough food. Often they use dirty water to make the formula. They feed the baby from bottles that have not been sterilized. This causes diarrhea. When a child has diarrhea, he does not absorb food properly.
- Often parents do not give their children the right kinds of food. For example, a child who does not get enough protein foods will get kwashiorkor. A child who does not get enough energy foods will become marasmic.

Figure IC

Marasuric child and bottle with a heavy "X" mark through it

(to be added here)

Malnutrition is most common in children between the ages of six months and three years. At this age, children are often weaned from the breast because the mother has become pregnant again. The child loses the rich source of energy and protein food - breast milk.

In places where mothers feed their babies with bottles, malnutrition is also common in children younger than six months of age. Infants who do not breastfeed are very often malnourished.

Malnutrition is common among people who have moved from rural areas to live in or near towns. They do not eat the same foods as before. The foods they can buy are not the same as they used to eat. The foods are more expensive, so they cannot buy enough. Often, this means that children will not get enough food or a proper balance of foods.

Figure IC

Picture of urban area on tin of baby food with a price tag

(to be added here)

Clinical Picture

Mild and Moderate Malnutrition:

A child who cries a lot and is not growing as fast as he should is mildly malnourished. Later, he has less energy and runs and plays less. He is thin with some muscle wasting, but he often does not look sick.

Figure 1C

Picture of mildly malnourished 2 year old

(to be added here)

Parents often do not notice these early signs of malnutrition. In some places, nearly every child is suffering from mild malnutrition. The signs of early malnutrition may be so common that parents think their children are normal. They do not notice or understand that their children do not grow as fast as they should. They do not understand that the reason the child cries a lot is that he is not getting enough of the right kinds of food.

While taking a child's history, you will often find that a young child who is suffering from malnutrition has been weaned. The mother stopped breastfeeding him because she became pregnant again. In other cases, you will find that a baby has been given only milk for eight to ten months and has had no supplementary foods. In other cases, you may find that the child is receiving other foods but is being given one or two bottle feedings a day.

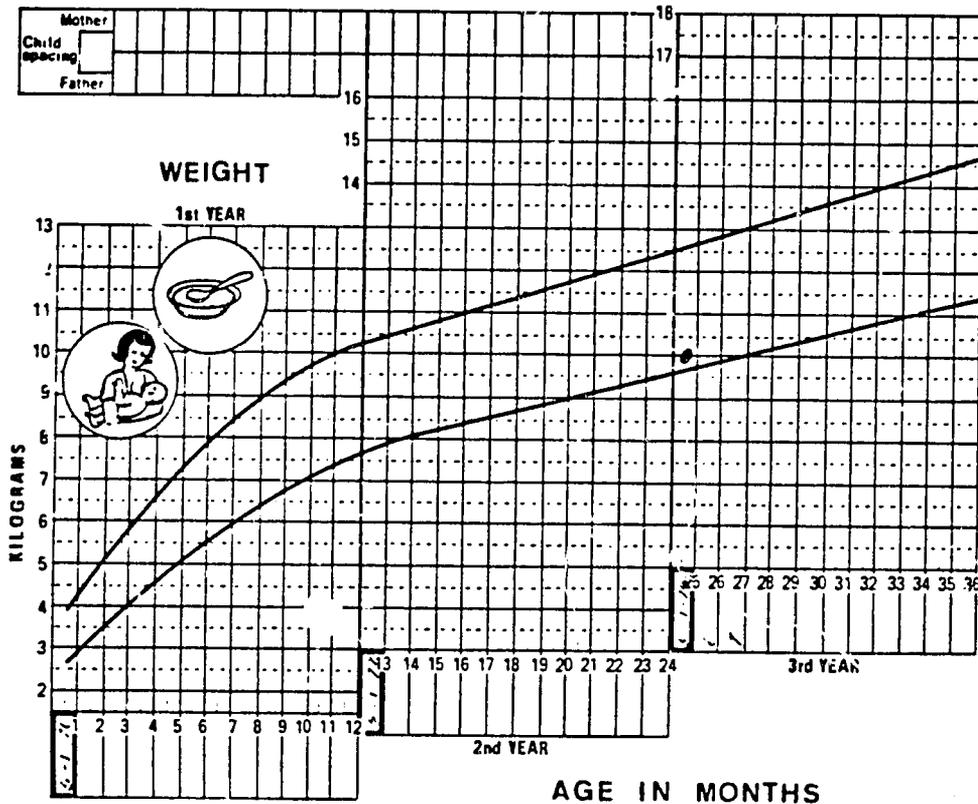
Malnutrition is often caused by:

1. Lack of breast milk
2. Lack of supplementary foods
3. Bottle feeding

Asking about these things helps you make the diagnosis of malnutrition.

Mothers usually do not bring their malnourished children to the clinic because they think they are suffering from malnutrition. Instead they bring them for other problems such as diarrhea, a cold, measles or pneumonia. These infections are connected to the problem of malnutrition.

The best way to find out if a young child has mild or moderate malnutrition is to weigh him at regular times. Mark the child's weight on the Growth Chart and compare it to the curves that show what is normal. The first sign of poor nutrition is a flattening of his growth curve. Later, it will dip down below the normal range. (See Community Health Modules I and II for additional information.)



Severe Malnutrition

If a child with mild or moderate malnutrition is not treated correctly, the signs of severe malnutrition may appear. The most common form of severe malnutrition is called marasmus. This occurs when a child has not had enough food over a long period of time. A child who has marasmus is very thin. His bones stick out - especially the bones of his face and his ribs. His body has little muscle or fat. His hair is coarse and falls out easily. He looks miserable and ill.

Another form of severe malnutrition is kwashiorkor. This occurs when a child has not had much food over a long period of time and what food he has been getting did not contain enough protein. A child with kwashiorkor becomes edematous. His upper arms are usually thin, but his face is round and puffy. Edema occurs over the feet and on the front part of the legs. There may be fluid in the abdomen (ascites). The child's hair becomes reddish and lighter in color. There are often sores on the skin.

There is also a mixed form of severe malnutrition. In some children you see signs of both marasmus and kwashiorkor - a very thin, bony child with edema.

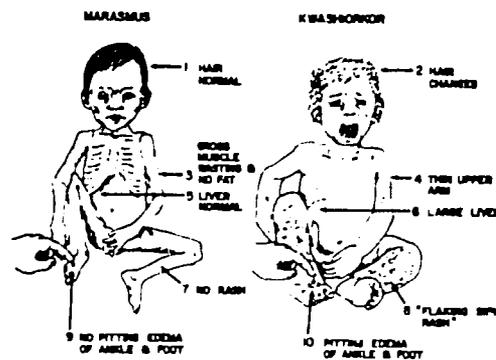


Fig. IC 2 - Marasmus and Kwashiorkor.

	MARASMUS	KWASHIORKOR
General Appearance:	"Skin and bones", miserable	Miserable and crying.
Muscle:	Very thin	Thin upper arms; forearms and legs swollen with edema.
Skin:	Very thin and wrinkled with "tenting"	"Flaking paint" rash, pitting edema of feet and ankles.
Weight:	Extremely underweight	Moderately underweight.
Face:	"Looks like a little old man"	Round "puffy" faced.
Hair:	Coarse and falls out easily	Lighter in color, reddish

Complications

Mild or moderate malnutrition can be present for a long time. If it is not corrected, the child's height will be permanently stunted. That means that he will be shorter as an adult than he would have been with better nutrition in childhood.

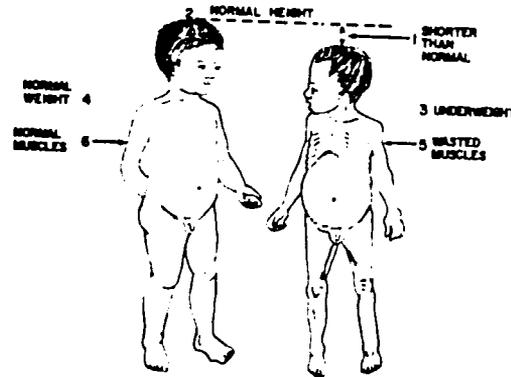


Fig. IC 1 - Growth failure can be seen easily when the child is compared with a normal child.

The malnourished child often does not get enough Vitamin A in his food. If untreated, this may lead to blindness. This kind of blindness begins when children cannot see as well as normal children at night. (See Community Health Modules I and II for further information.)

Children who are malnourished can also be suffering from other diseases which weaken them and make their malnutrition worse, such as:

- diarrhea and dehydration
- tuberculosis
- pneumonia
- otitis media
- malaria
- anemia
- worms

Patient Care for Mild to Moderate Malnutrition

The basic treatment for all malnutrition is enough food of the right kinds.

1. A child less than six months old

A child of this age who is malnourished either is not getting enough breast milk, or is getting contaminated or diluted milk from a bottle.

Treatment for such a child is:

- a) Breast milk, several times a day.
- b) Stop all bottle feeding.
- c) Examine and weigh once a month, especially until the child's weight is normal.
- d) Continue to feed, even when the child is ill.
- e) If breast milk is not available, give boiled milk with a cup and spoon and start giving small amounts of cereal/legume porridge three times a day.

2. A child older than six months and up to two years of age

Treatment for a malnourished child of this age is:

- a) Continue breast milk.
- b) Give the child at least four servings of cereal/legume porridge everyday.
- c) Give three servings of other foods, especially vegetables, fruits, eggs and meat or fish, daily.
- d) Stop all bottle feeding. Give liquids with a cup and spoon. Make sure that they are washed well before each meal.
- e) Continue to feed, even when the child is ill.
- f) Examine and weigh the child every month, at least until the child's weight is normal.

3. A child two years old to five years old

Treatment of a malnourished child of this age is:

- a) Give a mixed diet of adult foods, three or four times a day.
- b) Add three servings of cereal/legume porridge every day.
- c) Stop all bottle feeding.
- d) Wash the child's hands, or be sure he washes them, before he eats.
- e) Continue to feed, even when the child is ill.
- f) Examine and weigh once a month, at least until the child's weight is normal.

Patient Care for Severe Malnutrition

1. A child who is not able to eat or drink

If the child is unconscious, or too weak to swallow liquids or solids, send or take him to a hospital immediately.

2. A child who is able to eat or drink

If the child has kwashiorkor or marasmus, but is able to swallow liquids or solids, you can start treatment in his home or at the health center.

- a) The most important treatment is food. The child must eat at least ten to twelve times a day. He may have lost his appetite. Encourage him to eat.
- b) Give at least six small feedings daily of a mixed porridge such as super porridge for one week. Then continue those feedings and also add extra feedings of vegetables, fruit, eggs and milk.
- c) If the mother can still breastfeed, encourage her to do so.
- d) Weigh the child daily. A child who has marasmus will gradually gain weight. A child who is recovering from kwashiorkor will first lose weight, as the edema disappears. Then he will begin to gain weight.
- e) If a marasmic child loses weight or gets a respiratory infection, send or take him to a hospital.
- f) If a child with kwashiorkor gains weight during the first 3-4 days or gets a respiratory or other infection, send or take him to a hospital.
- g) If Bitot spots or night blindness are present, treat with Vitamin A capsules, 5,000 units daily for three weeks, or a single Vitamin A 100,000 unit intramuscular injection.

3. Care of the recovering child

As the child starts to improve:

- a) Make sure that the parents understand that lack of the right amounts of the right kinds of food is the reason for their child's illness.
- b) Continue the feedings of the mixed porridge.
- c) Explain to the mother that she must give the child a variety of foods.
- d) Teach the parents the Six Basic Nutrition Messages.

- e) Ask the parents to bring the child to see you at least once a week. This can be done at the regular MCH clinic. If there are several malnourished children, you can start a special "nutrition education" clinic. (See Community Health Modules I and II.) In this way, you can teach several families about nutrition, together.
- f) Keep the Growth Chart up-to-date.
- g) Register the names of recovering the children in your High Risk File. Make an effort to follow these High Risk children as closely as possible. Make sure that they are immunized at the correct times. Make sure that their nutrition continues to improve. (See Community Health Modules I and II.)

Prevention

The Community Nutrition units of the Community Health Modules contain more information about the prevention of malnutrition in children.

1. Six Basic Nutrition Messages *

Teach these to parents so that children get proper nourishment:

- a) The mother should breastfeed her child until he is two or three years old. She should not feed him by bottle.
- b) The mother must start giving her child super porridge made from grains and legumes at five to six months of age.
- c) Children over six months old should be given a variety of foods (fruits, vegetables, eggs, meat, and fish) as well as super porridge.
- d) Mothers must feed their children at least four meals a day. (Children need to eat more often than adults, because they are growing and their stomachs are small.)
- e) Mothers must feed their children even when the child is sick.
- f) Pregnant women and women who are breast feeding need more vegetables, and beans, milk, eggs, meat, or fish.

* These Six Basic Nutrition Messages are illustrated in a flip chart for training Mid-Level Health Workers and Community Health Workers and for Community Health Education.

2. Preparation of Super Porridge**

Super porridge is a very nutritious food. It can be prepared easily by mothers at home. It can be given as an extra food when a child is eating a number of other foods every day. You must teach mothers of malnourished children to make and use super porridge. These are the instructions:

Ingredients:

Soy beans
Corn
Wheat

Gram or pulses can be used instead of the soy beans. Rice or millet or any other grain can be used instead of corn or wheat. It is important that you select ingredients that are most readily available in all rural homes.**

Method:

Take two parts of soy beans, one part of corn and one part of wheat.

Dry roast these over a fire until slightly enlarged or popped.

Grind the roasted food very finely.

Mix all these foods together. Store the mixture in a covered pot. Keep rats and insects away from it.

Boil a half or a full cup of water in a pot. Add one or two handfuls of the mixture to the water. Mix. Bringing it to a boil again sometimes makes the porridge softer.

Let the porridge cool before it is fed to the baby.

3. Community Health Workers (CHWs)

Community Health Workers will be taught to teach the six basic nutrition messages and the cooking of super porridge to parents in their villages.

* This example of a mixed food porridge should be locally adapted to include one protein rich ingredient such as beans with two energy rich foods such as corn, maize, millet, wheat, or rice.

Figure 1C

Medex using arm band measurement on child

(to be added on)

Community Health Workers will use the arm band measurement to identify children in their village with malnutrition. Some of these children that are severely malnourished will be referred to your clinic. Those children that are mildly to moderately malnourished may be treated in their homes by the CHWs under your guidance. (See the Community Health Worker Modules.)

4. Maternal and Child Health Clinics

One of the most important reasons for holding MCH clinics is to make sure that children are receiving good nutrition. Children with malnutrition can be discovered through use of the Growth Charts. Their names would then be put into your High Risk file.

Children at high risk are likely to get more seriously malnourished and develop infections. Their mothers need extra advice about proper feeding.

MALNUTRITION REVIEW QUESTIONS

Page 2

5. Name 3 factors other than availability of food which affect the nutrition of a child.

6. The basic treatment for malnutrition is sufficient food. What should be done for a 4 month old child who is suffering from mild malnutrition and has been receiving diluted bottle milk from a bottle.

7. What should be done for a 2 year old child who is suffering from severe malnutrition but is conscious and able to take food by mouth. (Describe your feeding program, your instructions to the child's mother, and your follow-up schedule.)

8. In order to help prevent malnutrition, you conduct MCH clinics. During these clinics, you counsel parents on the six basic messages for avoiding malnutrition. Message 1 is "Breastfeed until child is 2 to 3 years old. NO BOTTLES!" Explain the importance of this message.

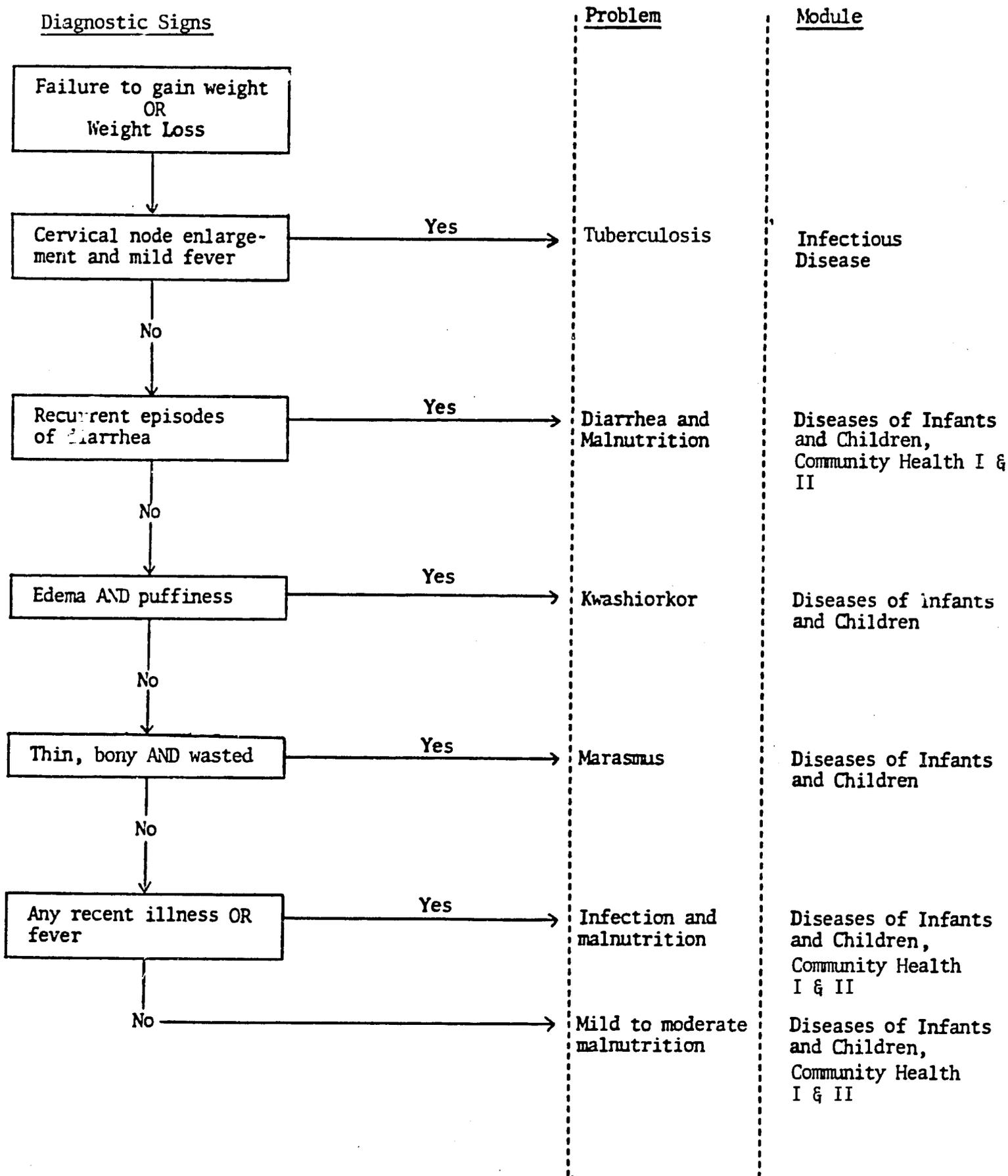
9. Malnourished children need highly nutritious food to get better. What food can you teach a mother to make at home, which will help her baby get better?

PREVENTION OF MALNUTRITION *

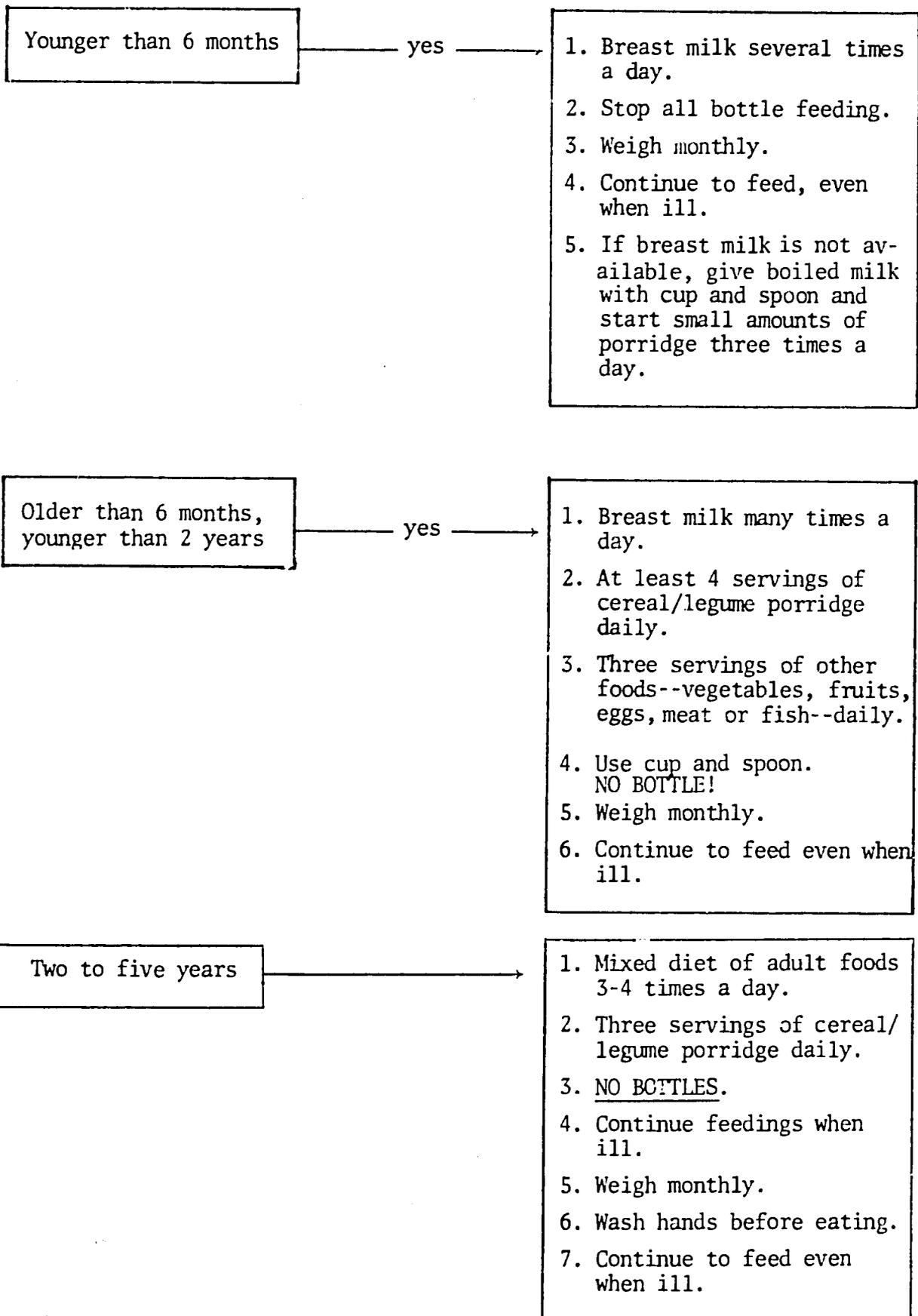
1. Be certain CHWs, parents and communities know and apply the Six Basic Messages:
 - a. Breast feed until the child is 2-3 years old. NO BOTTLES!
 - b. Start supplementary feedings such as mixed grain/legume porridge at 5-6 months.
 - c. Add a variety of fruits, vegetables, eggs, beans and meat for children over 6 months of age.
 - d. Feed children at least 4 meals a day.
 - e. Continue to feed sick children.
 - f. Give pregnant and lactating women more vegetables and protein rich foods.

* Also see Community Health Modules I and II

Failure to Gain Weight
OR
Weight Loss in a Child

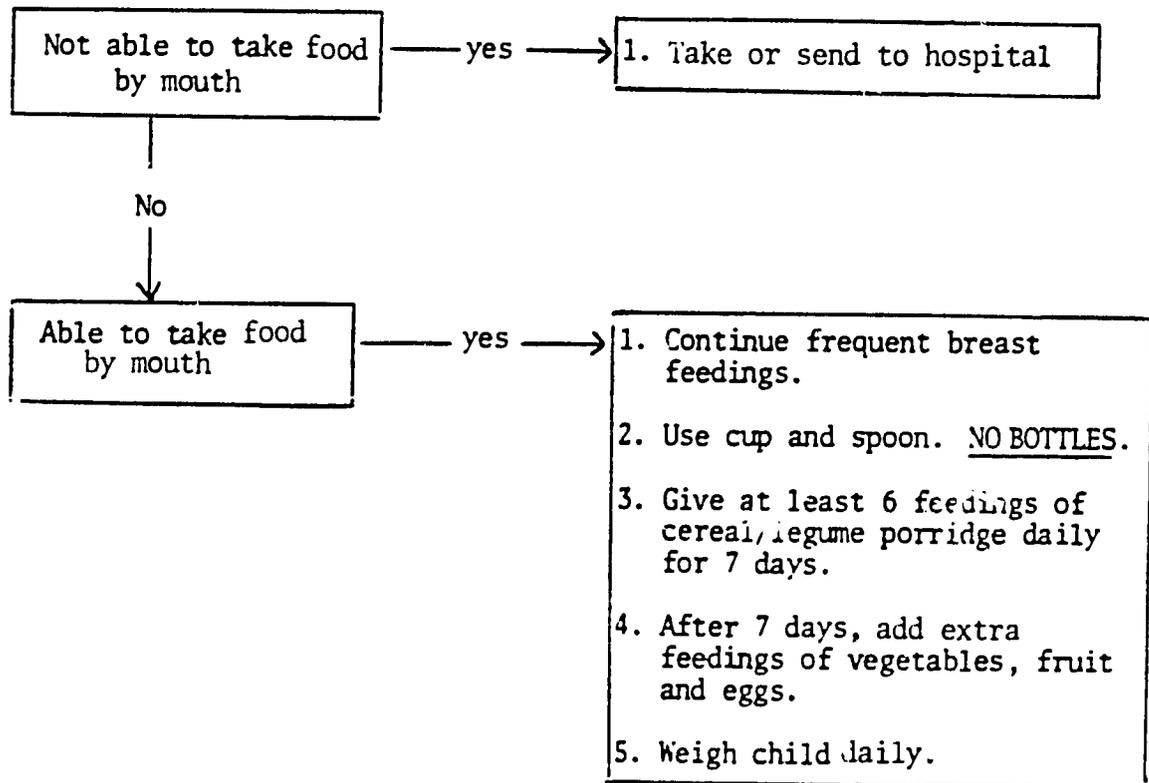


MILD TO MODERATE MALNUTRITION



SEVERE MALNUTRITION

MARASMIUS OR KWASHIORKOR



Complications:

1. Respiratory infections - refer.
2. If a child with kwashiorkor gains weight in the first 3-4 days, send him to the hospital.
3. Bitot spots or night blindness - give Vitamin A capsules 5,000 units daily for 3 weeks, or 1 injection of 100,000 units Vitamin A IM.
4. Others - treat as in protocols.

Care of Recovering Child

1. Be certain parents know that lack of food caused the illness.
2. Continue cereal/legume porridge.
3. Continue variety of foods.
4. Teach the Six Basic Nutrition Messages to parents.
5. See weekly in MCH Clinic.

STUDENT GUIDE

DIARRHEA AND DEHYDRATION

I. Specific Entry Level Knowledge and Skills

Before starting this unit, you should be able to:

1. Perform and record the results of a history and physical exam of an infant or child.
2. Use the diagnostic protocols.
3. Start and control an IV on an adult.

II. Objectives

Using the information and experiences provided by the instructor(s) and the module text, you will be able to:

1. Identify and differentiate the physical signs associated with diarrhea and dehydration (tenting skin, sunken fontanelles, dry mucous membranes, and changes in pulse and respiration).
2. Describe the usual causes, course and complications of diarrhea.
3. Use the diagnostic and patient care protocols as a guide to identification and care of diarrhea and dehydration.
4. Describe the patient care procedures for mild, moderate and severe dehydration.
5. Determine the amount of oral replacement fluids needed for a dehydrated child.
6. Calculate intravenous fluid needs for a dehydrated child.
7. Start and control an IV on a child.
8. Teach parents about the preparation and use of oral rehydration solution. (diarrhea medicine water).
9. Discuss the prevention and care of diarrhea and dehydration with parents.

III. Evaluation

Upon completion of this module, you will be rated on your attainment of the above objectives.

Knowledge: Written test based upon module content. Acceptable performance 80%.

Skill: See rating sheet for acceptable performance level.

1. Calculation of oral and intravenous fluid replacement.
2. Parent education on oral rehydration solution.
3. Start and control an IV on a child.
4. Use of diagnostic protocols to identify dehydration and to decide how severe it is.

IV. Activities to Accomplish the Objectives

1. Practice physical examinations of children.
2. Read the module text on diarrhea and dehydration and answer and discuss the review questions.
3. View and discuss the slides on diarrhea and dehydration.
4. Practice the calculation of fluid replacement needs.
5. Review case studies.
6. Practice using the diarrhea medicine water flip chart.
7. Practice identifying and caring for dehydrated children.
8. Participate in demonstrations and discussions with parents.

DIARRHEA AND DEHYDRATION

Some Facts About Diarrhea and Dehydration

In this unit, diarrhea and dehydration are discussed together, because they occur together. Diarrhea and dehydration are very common in young children.

When a child has diarrhea, he passes stools that are more watery than usual. Since a lot of water is being passed in the stools, the body does not have enough water for its needs. When this happens, the body is dehydrated. (See Figure 1) The more water a child loses by diarrhea, the more dehydrated he becomes. It is the dehydration that is dangerous. If it is very severe, it can cause the child to die.

Figure 1

Diagram showing that Dehydration is produced by child's loss of more water than he takes in.

(to be added here)

Diarrhea has many causes. It is very important to know what these are. Understanding them will help you help parents prevent their children from getting diarrhea. Some of the most important causes of diarrhea are:

1. Poor nutrition

When a child is malnourished he has little resistance to all infection, including diarrhea.

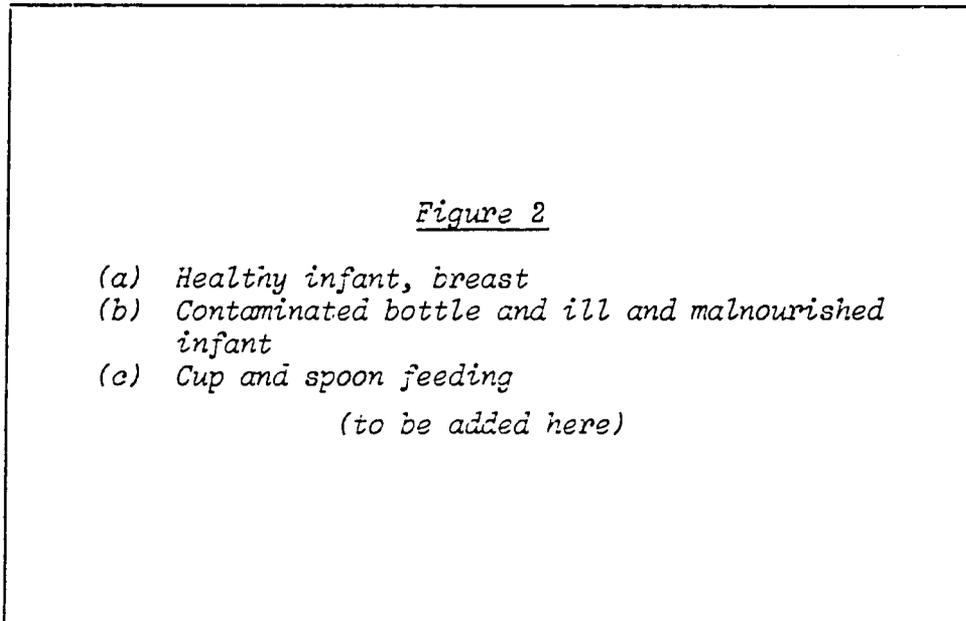
2. Weaning and Diarrhea

Children often get diarrhea when their mothers stop breastfeeding and begin to give them other milk or foods. Breast milk is clean but other foods, water and milk, are often dirty. The young child's body is not able to fight the germs which are present. These germs may cause diarrhea in the child.

3. Bottle feeding

Milk given in a bottle is likely to be contaminated and will cause diarrhea. It has been proven that bottlefed babies get diarrhea more often than babies who are breastfed. It is almost impossible to prepare milk in bottles without contaminating it, unless there is piped water in the house, an easy way to boil water and a refrigerator in which to store milk.

Breast milk is the best food for babies. It is clean. Do not encourage mothers to bottle feed their babies. **BOTTLES KILL!** Encourage mothers to breastfeed their children. Figure 2 compares the usual results of breast and bottle feeding.



If a mother cannot feed her infant with breast milk, she should be taught how to use a cup and spoon when feeding her baby and to boil milk before giving it to her infant.

4. Intestinal infections

There are many different kinds of infections which can cause diarrhea. The most common kinds are caused by germs which do not need antibiotics. Three kinds of intestinal infections are discussed in detail in the Gastro-Intestinal Disease Module. They are gastroenteritis, amebiasis and giardiasis.

5. Other infections

Diarrhea occurs with certain other infections:

- malaria
- measles
- otitis media
- tonsillitis
- urinary tract infections
- pneumonia

Children of any age can get diarrhea. Diarrhea is most dangerous in children under six years of age. Small children use about five times as much liquid per kilogram of their weight per day as an adult does. (*See Figure 3*) So a child with diarrhea is much more likely to get dehydrated than an adult.

Figure 3

*Comparison of relative water intake needs
of normal small children and of normal
adults*

(to be added here)

Some mothers make things worse for their children by not feeding them and by not giving them fluids when they are sick. They think that by not giving the baby or child fluids, the diarrhea will slow down. But the baby gets weaker and may die because it is dehydrated and is not getting enough fluid to make up for what is lost in the diarrhea, as was shown in Figure 1.

Clinical Picture

A child with diarrhea passes stools that are more watery than usual. His mother will tell you that he has had 5 to 10 to 20 stools during the day. Often the child has stomach cramps closely followed by a watery stool. Mucous or blood may be in the stools. Often the child is unable to control the stool and soils his clothing.

As a child loses more fluid by diarrhea, he becomes dehydrated. First, he becomes thirsty and wants to drink water or other fluids. This is mild dehydration.

As the loss of water continues, the child becomes restless and begins to look sick. His lips and mouth are dry. His eyes may begin to look sunken. If you pinch his skin, it may stay up in a small peak. This is called "tenting." He does not seem to pass as much urine as usual. This is moderate dehydration, as shown in Figure 4.

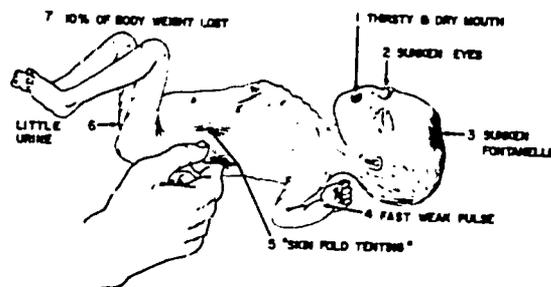
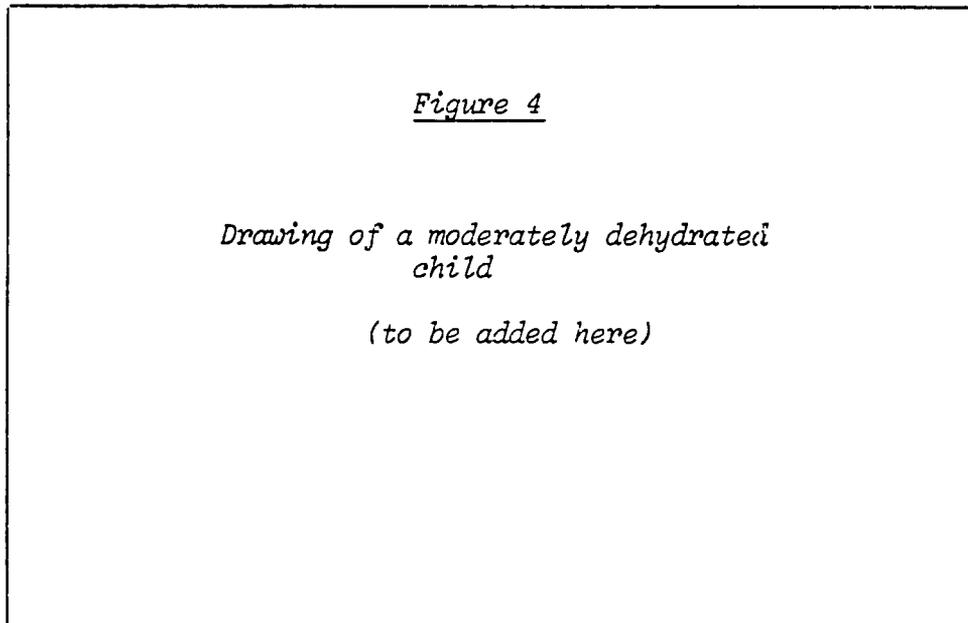


Figure 5 - Child with severe dehydration.

As the diarrhea continues, the dehydration becomes worse. Respirations and heart rate increase. In small babies the fontanelle is sunken. The eyes are sunken and tenting of the skin is present. This is severe dehydration, shown in Figure 5. Figure 6 compares the sunken fontanelle of a severely dehydrated baby to the normal fontanelle of a normal baby.



Figure 6 - A child on the left with sunken fontanelle is shown next to a child with a normal fontanelle

The amount of urine passed by the child may decrease until it stops. Eventually the child becomes unconscious and blue in color. If severe dehydration is not correctly treated immediately, the child will die.

It is important to detect dehydration early, to determine what level of dehydration a child has, and to begin correct care immediately.

The signs of each level of dehydration are given in the Table of Signs of Levels of Dehydration," Figure 7.

Figure 7: TABLE OF SIGNS OF LEVELS OF DEHYDRATION

MILD DEHYDRATION	MODERATE DEHYDRATION	SEVERE DEHYDRATION
Diarrhea	Diarrhea	Diarrhea
Thirst	Thirst	Thirst (if conscious)
Child appears "well" unless sick for some reason.	Child appears "sick." Cries often. Restless.	Child appears very sick and may be very drowsy or even unconscious.
Respirations normal, 20 - 40 per minute	Respirations normal, 20 - 40 per minute	Respirations rapid, 40 - 60 per minute. Deep breathing.
Pulse normal 120-140 beats per minute in a small baby	Pulse normal 120-140 beats per minute in a small baby	Pulse over 140 per minute. Pulse weak.
	Dry lips, mouth and skin	Dry lips, mouth, and skin
	Eyes may look sunken	Sunken eyes
	Fontanelles may be sunken in small baby	Fontanelles definitely sunken in small baby
	Skin may "tent" when pinched	Skin definitely "tents" when pinched
	Passes only a little urine	Very little or no urine passed
		Cyanosis (blueness)

Course and Complications

A malnourished child can become severely dehydrated in a few hours. A child who is well nourished resists diarrhea better and takes a longer time to get dehydrated.

Mild and moderate dehydration can become worse if correct rehydration is not done. With severe dehydration, the child could start convulsing (having fits), or go into coma. If this is not correctly treated, the child will go into shock and finally die.

Patient Care

When a child has diarrhea, he loses water and valuable minerals in the stool. His body cannot do without these and they must be replaced as soon as possible. There are two ways to do this. The best way is to replace water and minerals by mouth (rehydration by mouth or "oral rehydration", as explained in this section). The other method is to replace the water and minerals intravenously (as explained in the patient care procedures). The IV method is used only when a child cannot take fluids by mouth or is severely ill.

The box below (*Figure 8*) explains how to prepare diarrhea medicine water for rehydration by mouth. Figure 9 shows how it is done.

Figure 8

How to Prepare Diarrhea Medicine Water for Rehydration by Mouth*

A solution of water and minerals for rehydration by mouth (diarrhea medicine water) can be made at home using home ingredients or can be made by mixing a packet of rehydration salts** in water.

Home method:

Diarrhea medicine water (also called oral rehydration solution) can be made in the health center or in a child's home by mixing the following things together:

500 ml of clean boiled water***
1 two fingered pinch of salt
1 two fingered pinch of soda
1 fistful of sugar

If no soda can be found, use two pinches of salt.
The sugar in this mixture helps the diseased intestine absorb the water and minerals.

* Preparation of diarrhea medicine water is also illustrated in a flip chart for training of Mid-Level Health Workers and Community Health Workers and for Use in community health education.

** Use local name for packet

Packet method:

Mix the following things together:

1 liter of clean boiled water
1 packet of oral rehydration salts

* Use local name for packet

** Adapt to locally available common measurement

Figure 9

*Drawings showing the home preparation
of oral rehydration solution **

(to be added here)

1. Mild dehydration

A child with mild dehydration can be rehydrated at home by his mother. She must know how to make and feed him diarrhea medicine water.

- a. Teach the parents how to make and feed diarrhea medicine water.
- b. Begin the feeding of the child in the home or clinic to be certain the parents know the correct method.
- c. Children who are breastfed --

The mother should try to breastfeed the child every three hours, day and night. Between feedings at the breast, the child should be given as much diarrhea medicine water as he is able to take.

- d. Children who are not breastfed --

The mother should give diarrhea medicine water about every three hours, day and night. The child should be given as much diarrhea medicine water as he is able to take. Other foods should be continued.

- e. The table below (Figure 10) shows the least amount of diarrhea medicine water that should be given to a child with mild dehydration in 24 hours:

Figure 10: Least amounts of diarrhea medicine water that should be given in 24 hours to a child with mild dehydration, according to the child's age

Age	Amount of diarrhea medicine water	
	ml	cups
Newborn	500	2½
3 months	1,000	5
1 year	1,500	7½
3 years	2,250	11
6 years	3,000	15

- f. The parents must watch for diarrhea and vomiting. If the diarrhea increases or if vomiting begins, the child should return to the clinic the next day.

2. Moderate dehydration

A child who is moderately dehydrated can also be rehydrated by mouth, unless he has severe vomiting.

- a. If the child is not vomiting severely, ask his mother to give him as much diarrhea medicine water as he can take in two hours.

In the first two hours, he must take at least 20 mls of diarrhea medicine water for every kilogram of his weight. Weigh the child. Multiply his weight in kilograms by twenty. The answer to the multiplication will give you the least amount in milliliters that the child should drink in two hours.

Example:

A child weighs 10 kg.
Multiply 10 by 20.
The answer is 200.
The child should drink 200 ml of diarrhea medicine
water in 2 hours.

After two hours, continue giving diarrhea medicine water equal to the amount of liquid the child loses in the stool. Continue breast feeding and giving other soft foods.

The child and mother may leave the clinic after the child begins to urinate and the child has lost the signs of moderate dehydration. The mother should then follow the directions for home feeding of diarrhea medicine water as explained for treatment of mild dehydration.

- b. If the child is vomiting severely, you must give him fluids intravenously. This must be given in the clinic or hospital.
- (1) Connect a bottle of 5% Dextrose in Ringer's Lactate to the IV tubing. (See Patient Care Procedure
 - (2) Insert the needle into a vein on the wrist, ankle or scalp.
 - (3) Give an amount in milliliters equal to the child's weight in kilograms times 20 and run this in quickly.

For example: A 12 kg child should receive $12 \text{ kg} \times 20 \text{ ml} = 240 \text{ ml}$ of 5% Dextrose in Ringer's Lactate.
 - (4) After giving the first amount, slow down the IV. It is possible to give too much fluids intravenously. If the child's eyelids become swollen, take the IV needle out of his vein. You can still give diarrhea medicine water by mouth.
 - (5) Observe the child for signs of improving hydration. (That is, check the signs of dehydration to see if they are fewer and less severe.)
 - (6) When the child stops severe vomiting and can take fluids by mouth, remove the IV needles from his vein. Give diarrhea medicine water as explained for mild dehydration.

* Patient care procedure sheets for intravenous (peripheral vein techniques) and intraperitoneal infusion as included in this set of sample prototype materials. They follow the Review Questions at the end of this Dehydration and Diarrhea Unit.

3. Severe dehydration

Children with severe dehydration will die unless they are treated immediately and correctly. They need hospital care. In the hospital, doctors and nurses can give them care day and night. If you cannot get them to hospital, you must treat them at the clinic:

- a. If the child can drink, give sips of diarrhea medicine water. Be careful that the child does not suck it back into his lungs. Since he is very weak, he may not be able to swallow properly.
- b. Start an intravenous drip of 5% Dextrose in Ringer's Lactate in a wrist, ankle, or scalp vein.

Multiply the child's weight in kilograms by twenty. This will give you the amount of milliliters you should run in quickly by IV.

Example: Child's weight 15 kg.
 Multiplied by 20 300
 Amount to give IV 300 ml.

- c. When you have run in this amount, examine the child. If you think he is still very dehydrated, run in the same amount again in 30 minutes.
- d. Then continue the IV slowly (*see Table in Figure 11 below*) until the child is able to drink or the diarrhea has stopped.

Figure 11: Amounts of IV fluids to give after the first fast IV to a child who was severely dehydrated and who still has diarrhea and cannot drink.

Weight of child	Amount of IV fluids
less than 5 kg	25 ml per hour
5 - 9 kg	50 ml per hour
10- 14 kg	75 ml per hour
more than 15 kg	100 ml per hour

- e. You must not give the child too much intravenous fluid. Look out for swelling of the eyelids. This is the first sign that you have given too much fluid.

If you do give the child too much intravenous fluid, remove the IV needle from his vein. This is all you will have to do. You can still give diarrhea medicine water by mouth.

- f. When the child can take diarrhea medicine water by mouth, remove the IV. Treat the child then as you would a child with moderate or mild dehydration, depending on the level of dehydration he has.

Diet:

Encourage children with diarrhea to continue to eat as before. If milk (even breast milk) seems to make the diarrhea much worse, give soft foods and diarrhea medicine water alone for 24 hours (infants 12 hours only). Then start giving milk with soft foods and diarrhea medicine water again, and continue with milk if the child is doing well. If milk still seems to make the diarrhea worse, repeat.

Other Illnesses:

Look for signs of measles, tonsillitis, malaria, pneumonia and otitis media.

If any of these illnesses are present, treat it according to the information you have learned in other modules.

Drugs:

Unless you think the diarrhea was caused by amebiasis or giardiasis, you do not need to use drugs in cases of diarrhea. See the Gastro-intestinal Disease Module for the treatment of amebiasis or giardiasis.

Prevention

Diarrhea can be prevented by:

- Breastfeeding up to the age of 2 or 3 years.
- Never using a feeding bottle.
- Boiling all water given to children.
- Following the Six Basic Nutrition Messages.
- Using latrines and keeping houses clean.
- Washing fruits and vegetables eaten raw.
- Washing hands before eating and before feeding children.

* These messages for the prevention of diarrhea are illustrated in a flip chart for use in training mid-level health workers and community health workers and for community health education.

Dehydration of children with diarrhea can be prevented by:

- Giving them enough diarrhea medicine water.
- Continuing breast feeding.
- Continuing to feed children soft, nutritious foods even when they have diarrhea.

Figure 12

Drawings showing children:

- a) being given diarrhea medicine water*
- b) breast feeding*
- c) eating soft, nutritious foods*

(to be added here)

CHW

Community health workers will teach the use of diarrhea medicine water to parents and other community members of their village. They will identify children with diarrhea and help parents care for them. CHWs refer children with dehydration to the health center.

MCH Clinics

One important reason for having MCH clinics is to be certain all mothers know how to make diarrhea medicine water and when to use it. When a child with diarrhea is seen in the clinic, it is not only an opportunity to teach the mother of the child to make and feed diarrhea medicine water, but all the mothers present will have an opportunity to learn and improve their understanding.

REVIEW QUESTIONS

1. Explain the relationship between diarrhea and dehydration.

2. A mother brings a child to your clinic with diarrhea. This child is thirsty but has no other signs of dehydration. How do you manage this problem?

3. Understanding the causes of diarrhea is important in helping families prevent diarrhea. Each of the following problems has a specific relationship to diarrhea. Briefly explain that relationship.
 - a) poor nutritional status: _____

 - b) weaning: _____

 - c) bottle feeding: _____

4. For each of the areas listed below, describe what you would find when you examined a four month old child with severe dehydration.
 - a. lips and mouth: _____
 - b. eyes: _____
 - c. fontanelles: _____
 - d. skin elasticity: _____
 - e. respiration: _____
 - f. pulse: _____
 - g. urine output: _____

5. If a child is brought to you to be treated for diarrhea and you find the child to be mildly dehydrated, what is the most important management step you can take? (Circle the one correct answer.)

- a. stop giving breast milk
- b. rehydrate with diarrhea medicine water
- c. check stool for worms

6. A child is moderately dehydrated. You decide to rehydrate with intravenous fluids because the child is vomiting. The child weighs 15 kg. Provide the following information:

- a. Solution used for rehydration: _____
- b. Best site for intravenous: _____
- c. Amount of I.V. fluid to be given immediately: _____

7. When you are replacing fluids through an I.V. and you notice edema of the eyelids, what should you do?

Why?

8. List four points to teach mothers to help them prevent diarrhea:

- 1. _____
- 2. _____
- 3. _____
- 4. _____

9. What are the Six Basic Health Messages of good nutrition?

- 1. _____
- 2. _____
- 3. _____
- 4. _____

5. _____

6. _____

10. List the three most important points to teach mothers about preventing dehydration when a child has diarrhea.

1. _____

2. _____

3. _____

11. What ingredients and what amounts are necessary to make diarrhea medicine water?

Ingredient	Amount

12. Severely dehydrated patients are at great risk of dying. They should be treated at a hospital where 24 hour care is available. If you had to treat a patient with severe dehydration at the clinic, because of distance and lack of transportation, for example, how would you treat him?

13. A 2 year old boy was brought in by his parents. He has had diarrhea for four days. The child cries a lot and seems restless. His eyes look a little sunken. His respiration are 25/min. and pulse 110. His lips seem dry. His skin seems dry but doesn't really tent when pinched. His mother said he's been very thirsty but hasn't passed much urine.

This child has: (check one)

- Mild dehydration
 Moderate dehydration
 Severe dehydration

How would you rehydrate this child?

14. Give the possible treatments for the three levels of dehydration.

15. TRUE OR FALSE (T or F)

Children with diarrhea should be encouraged to take food as long as they are able to eat without vomiting.

PATIENT CARE PROCEDURE

STARTING IV'S: PERIPHERAL VEIN TECHNIQUE

Supplies

Rubber tourniquet
Alcohol swab or soap and water
1 IV set
1 bottle of intravenous fluid (normal saline, 5% D/Lactated Ringers, dextrose in water, etc.)
Padded arm board if available
Adhesive tape
IV stand
Assorted IV needles, 18-22 gauge
Syringe filled with normal saline
Scissors

Purpose of Procedure

To place a needle into a vein in order to maintain a steady flow of fluid into the patient's circulatory system. A person is started on intravenous therapy when there has been a loss of body fluid through bleeding, infection, dehydration, or shock.

Steps in Procedure

1. Have the patient lying down in a comfortable position.
2. Immobilize, if patient is infant or small child.
3. Put supplies within easy reach and precut the tape.
4. Select an area on arm or leg which has veins that are easy to see, such as the back of the forearm or ankle. NOTE: It is important to make your first puncture of a vein as far from the heart as possible, then move closer if unsuccessful.
5. Use an arm board to hold the joint nearest the vein from moving. Place adhesive tape around the limb and board above and below the joint.
6. Cleanse the skin over the vein with alcohol swab or wash with soap and water.
7. Place the tourniquet around the upper arm or below the knee, to stop the flow of blood in the veins, causing the veins to "puff up" and be easily seen and punctured. If the veins are still difficult to see or feel, place a warm cloth over them or gently pat the area.

8. Fill the IV tubing with intravenous fluid from the bottle.
9. Hold the needle you will place in the vein with the hole facing up. Stretch the skin over the vein you have chosen. Put the needle through the skin about 1 cm below the point where you wish to enter the vein.
10. Gently advance the needle into the vein. Blood will appear in the needle's opening. If blood does not appear, gently reposition the needle until it does.
11. When blood is seen in the needle's opening, attach the tubing to the needle. Carefully release the tourniquet, and slowly run $\frac{1}{2}$ to 1 cc of fluid into the vein to check that the needle is in the vein. If the area around the needle swells, remove the needle and start again farther up the vein.
12. Fasten the needle where it enters the skin with a 2-3 cm piece of tape.
13. Loop a 7-8 cm long piece of tape under the IV needle, adhesive side up, and fold each end of the tape diagonally across the needle to hold it in place.
14. Loop the tubing once or twice and fasten it to the arm or ankle with tape. The tape should not go all the way around the arm or ankle.
15. Run in another $\frac{1}{2}$ to 1 cc of fluid to assure that the needle is still in the vein.
16. Regulate the flow to the desired rate.
17. Check the needle site every two hours for signs of swelling or bleeding under the skin. If present, remove the needle and restart in another site.

Results

If a large enough needle is well positioned in a vein, fluid should run in at almost any rate. If it does not, change the angle of the needle in the vein. If bleeding or swelling occurs, take the needle out and try a place nearer to the body. After several unsuccessful attempts, a venous cutdown may be necessary.

PATIENT CARE PROCEDURE

PERITONEAL INFUSION

Supplies

1 bottle of dextrose in $\frac{1}{2}$ normal saline
1 IV set
Sterile needle, 18 or 19 gauge
Antiseptic or soap and water
Adhesive tape
2" x 2" sterile gauze pads
Scissors

Purpose of Procedure

This technique is used when an IV cannot be started on an infant or small child. One-half normal saline can be given by this route. Do not perform this procedure if the intestines are distended.

Steps in Procedure

1. Attach the IV set to bottle and needle to IV set. Fill the tubing with fluid.
2. Lie patient down on his back. Restrain him if necessary.
3. Clean the abdomen well with antiseptic or soap and water.
4. Pinch the skin of the abdomen just above the umbilicus in the midline with your left hand.
5. Push the needle (attached to the IV set) through the skin and into the peritoneal cavity.
6. Tape the needle to the abdomen.
7. Adjust the rate of flow so that the required amount of fluid will run in over ten minutes.
8. When the fluid is in, remove the needle.
9. Cover the puncture site with a dry sterile dressing for 24 hours.

Figure 1

*Drawings illustrating performance of
peritoneal infusion*

(to be added here)

Results

Done quickly and properly, this can be a rapid way to rehydrate an infant or small child in need of fluids. Keep the needle in as short a time as possible to avoid peritonitis. If the flow stops, change the position of the needle.

Caution

If it is possible to start an IV or a cutdown, or if the child can be given fluids orally, use these better techniques and don't use a peritoneal infusion. If the child should develop signs of peritonitis (high fever, tender or rigid abdomen, absent bowel sounds) give 600,000 U of Procaine Penicillin and 40 mg/kg of Streptomycin, intramuscularly and transfer him as quickly as possible to the hospital.

3.2.2

SYSTEM FOR TEACHING ESSENTIALS TO
MID-LEVEL HEALTH WORKERS

PROTOTYPE INSTRUCTOR'S MANUAL

DISEASES OF
INFANTS AND CHILDREN
MODULE

(SELECTED SECTIONS)

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John A. Burns School of Medicine
University of Hawaii

11

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*Excerpts from the Instructor's Manual sections on Diarrhea and Dehydration are included in this set of sample materials. (Pre- and post-test questions, which are represented by the review questions in the module text in Section 3.2. are not included.)



DISEASES OF INFANTS AND CHILDREN MODULE
TASK ANALYSIS TABLE

TASK: Diagnose and manage common problems of infants and children.		
Program Objectives	S K I L L S	K N O W L E D G E
DUTIES		
<p>1.0 Do a medical history and physical examination of every child with a complaint, using the diagnostic protocols</p> <p>2.0 Determine the most likely of the following diagnoses:</p> <ul style="list-style-type: none"> -chicken pox -croup -diarrhea and dehydration -high fever -jaundice -low birth weight -malnutrition -measles -mumps -newborn septicemia -newborn tetanus -polio -rheumatic fever -sickle cell disease -thrush -whooping cough <p>3.0 Manage the above problems using the management protocols as guidelines. Management includes: initial treatment, referral, follow-up treatment, and prevention.</p>	<p>1.1 Use of diagnostic protocols for complaints of infants and children.</p> <p>1.2 Physical exam techniques</p> <ul style="list-style-type: none"> - Newborn physical exam (review) - Child physical exam (review) <p>2.1 Physical exam</p> <ul style="list-style-type: none"> -jaundice -bulging fontanelles -purulent umbilical cord -white spots of thrush -flaking skin of kwashiorkor -decreased subcutaneous fat and muscle mass of marasmus -edema of kwashiorkor -dehydration (tenting skin, sunken eyes, sunken fontanelle, deep and rapid respirations) -joint swelling and pain -rash of measles -enlarged liver -Bitot spots -stridor -enlarged spleen -rash of chicken pox -enlarged parotids -heart murmur -intercostal retractions <p>3.1 Management Procedures (skills)</p> <ul style="list-style-type: none"> -fluid replacement estimations for dehydrated children (P.O. & I.V.) -drug dosage calculations -parent education for preparation of super-porridge -passing N-G tubes in children -parent education for expressing breast milk. -parent education for preparation and administration of oral rehydration solution. 	<p>1.1.1 How to follow the diagnostic protocols of infants and children listed in this module.</p> <p>2.1.1 General considerations and clinical picture of listed problems</p> <p>3.1.1 Management and prevention of the listed problems.</p>

TRAINING SCHEDULE

DISEASES OF INFANTS AND CHILDREN MODULE*

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7	DAY 8
<p>Pretest</p> <p>Session 1</p> <p>-Introduction to Diseases of Infants and Children</p> <p>-Demonstration of Physical Examination of a Child</p>	<p>Session 3</p> <p>-Malnutrition: Diagnosis & Management</p> <p>Kwashiorkor</p> <p>Marasmus</p>	<p>Session 5</p> <p>-Mild Diarrhea and Dehydration</p>	<p>Session 7</p> <p>-Severe Diarrhea and Dehydration</p>	<p>Session 9</p> <p>-Common Infections of Children</p> <p>Whooping Cough</p> <p>Measles</p> <p>High Fever</p> <p>Mumps</p> <p>Chicken Pox</p> <p>Polio</p>	<p>Session 11</p> <p>Other Common Problems</p> <p>-Sickle Cell Disease</p> <p>-Rheumatic Fever</p> <p>-Coup</p>	<p>Session 13</p> <p>-Clinical Practice</p> <p>-Use of Protocol</p>	<p>Session 15</p> <p>-Post Test</p>
<p>Session 2</p> <p>-Clinical Practice</p> <p>Physical Examination of a Child</p>	<p>Session 4</p> <p>-Malnutrition: Clinical Practice:</p> <p>Super Porridge</p> <p>Parent Education</p>	<p>Session 6</p> <p>-Clinical Practice</p>	<p>Session 8</p> <p>-Newborn Problems:</p> <p>Tetanus</p> <p>Septicemia</p> <p>Hypoglycemia</p> <p>Cerebral Birth Trauma</p> <p>Thrush</p>	<p>Session 10</p> <p>-Common Infections of Children, continued</p>	<p>Session 12</p> <p>-Review</p>	<p>Session 14</p> <p>-Clinical Practice</p> <p>-Use of Protocols</p>	<p>Session 16</p> <p>-Skill Evaluation</p>

*This 1979 prototype schedule, included to show relative time allotments, is currently being revised to intermingle these module (classroom and clinic based) learning activities with community based learning activities.

AD

Diarrhea and Dehydration: Teaching Plan: Session 5

Learning Activities

1. Students read module text on dehydration and diarrhea and answer the review questions.
2. Instructor presents slides, with commentary as noted in the slide narratives:
 - 00727: Age distribution of infant diarrhea (associated with weaning process)
 - 00728: Reasons for association with weaning period:
 - poor environmental sanitation
 - contamination of food
 - poor nutritional status
 - cycle of diarrhea - decreased appetite - poorer nutrition - worse diarrhea - (maternal practice of reducing food/milk intake)
 - 00730: Standardized treatment regimen (Five D's)
 - 00731: Dehydration: clinical features
 - 00732: Loss of skin turgor
 - 00733: Dehydration in malnourished child
 - 00734: Home management of mild diarrhea without dehydration
 - 00735: Home management of mild diarrhea without dehydration
 - 00736: Rehydration
 - 00737: IV fluids through scalp vein needle
 - 00740: Administration of IV fluids
 - 00741: Continuation of breast feeding during management
 - 00742: Importance of working with family on better nutrition
 - 00743: Looking for associated causes of diarrhea
 - 00744: Association of malnutrition with diarrhea
 - Use of antimalarials
 - Avoidance of antidiarrheal drugs
 - Antibiotic therapy only with evidence of associated conditions (pneumonia, septicemia, otitis)
 - 00746: Nutrition rehabilitation essential
 - 00747: Bottles = death

3. Discussion: Use the following questions as the basis for a discussion in the class, after completion of slides and review questions:
 - 3.1 Explain what is meant by each of the following: (1) diarrhea, (2) dehydration, (3) malnutrition, (4) weaning, (5) resistance, (6) infection, (7) contamination.
 - 3.2 What are the physical signs associated with moderate to severe dehydration?
 - 3.3 What are the usual causes for diarrhea in young children? What are the associated conditions? How are they related to each other?
 - 3.4 What different patterns of diarrhea can you expect to find when you begin to work in the clinic?
 - 3.5 What are the specific points which must be emphasized when talking with parents about prevention of diarrhea? (In connection with this discussion, review flip chart).
4. Role play: Taking history from parent of child with diarrhea.
 - 4.1 Assign one student to play the role of the mid-level health worker. He/she is to obtain information from the "mother" (second student). The student should NOT be briefed as to what information is to be obtained, but the following specific information should be covered in the review of the student's performance:
 - (1) description of problem
 - (2) duration
 - (3) associated conditions
 - (4) feeding history
 - (5) kind and amount of fluids which mother has been offering to her infant and which the infant has been taking
 - 4.2 Assign second student to be MOTHER (preferably a female student who has a child). Student should be instructed to respond to questions with the following information:
 - (1) The infant is 11 months old.
 - (2) The infant has had 4-6 stools/ day, which are loose and runny, for the last 6 weeks.
 - (3) The mother has been giving the infant one cup of unboiled, diluted cow's milk in a bottle, daily, and has been giving the breast three times each day.
 - (4) The mother has been offering the infant two feedings (of a local staple food) each day. No special weaning foods have been given, and no attempts have been made to make the staple food more digestible.

- 4.3 Assign remainder of class to observe the role play and to record their observations.
- 4.4 At completion of the role play, lead discussion with class, focusing on the following issues:
 - (1) Based on the information obtained by the mid-level health worker, what is the problem? How long has it been going on? Is the infant malnourished? What are the probable reasons for the infant's clinical condition?
 - (2) What has the mother been feeding the infant? What could she do differently with the foods she is using?
 - (3) Do you think the mother would be willing to offer her infant undiluted, boiled cow's milk from a cup or with a spoon?
 - (4) Did the mid-level health worker establish a warm, supportive relationship with the mother?
 - (5) What comments can you make which will help the mid-level health workers carry out more effective interview with this kind of mother?
5. Role play: Demonstrating preparation of oral rehydration solution.
 - 5.1 Preparation: Identify practice area in which the students can actually boil water. Collect a pot, sugar, salt, prior to the demonstration.
 - 5.2 Assign one student to be a mid-level health worker, one student to be a parent, and one to be the infant.
 - 5.3 Assign remainder of class to observe and critique the demonstration.
 - 5.4 Program the 'parent' to raise the following questions and concerns during the demonstration, and to have the following child care practices:
 - (1) "I don't see why I have to boil the water. Fuel is scarce and I can't afford it."
 - (2) The parent has been feeding the infant diluted cow's milk in the bottle, without boiling it.
 - (3) The parent tends to reduce the infant's fluid intake during diarrhea.
 - (4) The infant is 6-months old and has been having 8 to 10 small loose greenish stools per day for the last 2 days. The infant is now restless, irritable, has signs of mild dehydration, and has vomitted twice.
 - 5.5 Following demonstration, lead a discussion with the class, focusing on the following issues:
 - (1) Did the mid-level health worker find out from the mother how long the infant has been sick, and how sick the child has been?

- (2) How did the mid-level health worker deal with the mother's current practices? Was he/she sympathetic to the mother's problems with the cost of fuel? Did he/she make a good case for boiling the water first? Were problems of giving diluted cow's milk from a bottle brought up and discussed?
- (3) Did the mid-level health worker deal with the mother's habit of reducing fluid intake when the infant is sick with diarrhea?
- (4) What additional comments or suggestions does the class have which will help the mid-level health worker deal with such cases?
(Have the students write them down and give them to the student who role-played the mid-level health worker.)

DISEASES OF INFANTS AND CHILDREN
- Audio-visual Supplements Available -

Session 3 - Malnutrition

-Slides 01583-01645 (Protein Calorie Malnutrition): No audio-tape, only narrative available.*

-Flip chart, "Super-Porridge"; located in module.

Session 4 - Malnutrition Management

-Slides 01583-01645 (Protein Calorie Malnutrition), repeat from Session 3.*

Session 5 - Diarrhea and Dehydration

-Slides 00725-48 (Diarrhea, Vomiting, Dehydration): No audio-tape, only narrative available.**

Session 7 - Diarrhea and Dehydration - Severe

-Flip chart, "Salt-Sugar Preparation"; located in module.

Session 9 - Common Infections of Children: Whooping Cough, Measles, Polio, Mumps, Chickenpox

-Title slide (Measles) Presentation: 1561, 1538, 1542-44, 1540-41, 1560, 1548-49, 1552, 1556, 1561, 1538, 1544, 1670; Audio-tape and script.**

-Audio-tape for above slide presentation; no pre- and posttest or presentation evaluation.

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3.2.3

SYSTEM FOR TEACHING ESSENTIALS TO MID-LEVEL HEALTH WORKERS

PROTOTYPE MODULE TEXT

COMMUNITY HEALTH MODULES I AND II

(SELECTED SECTIONS)

Drafts (of sections): 1976-1980
Revisions (of sections): 1977-1980
Revision and recombination of
sections to form Community Health
Modules I and II, in process: 1981
Revised Preproduction Sample Version,
May 1981

Health Manpower Development Staff
School of Medicine
University of Hawaii
Honolulu, Hawaii, U.S.A

COMMUNITY HEALTH MODULES I AND II
CONTENTS AND TRAINING SEQUENCES

Community Health Module I is learned before Community Health Module II.
Numbers indicate learning sequences within each module.

Community Health Module I

1. Introduction to Causes of Disease
2. Assessing the Nutritional State of the Family
3. Assessing the Health of Children in the Family
4. Identifying Pregnant Women Who are Considered High Risk
5. Assessment of Family Interest in and Need for Child Spacing Information
6. Interview Techniques and Communication Skills
7. Identify Environmental Factors Which Influence Health
8. Mapping the Community
9. Prioritizing Family and Community Health Risks
10. Community Services to Support Prevention Activities

Community Health Module II

1. Nutrition Education
2. Improving the Health of Children
3. Educating Pregnant Women Who are High Risk
4. Child Spacing Advice
5. Solving Environmental Health Problems *
6. Working with Communities and the Health Team to Improve Health

* Excerpts from the sections on Pit Privies and on Surface Water from the Community Health Module II unit on "Solving Environmental Health Problems" are included in these sample prototype materials.

STUDENT GUIDE

SURFACE WATER

(Skill Section: How to Use Environmental Health Protocols)

I. Specific Entry Level Knowledge and Skills

1. Understand the transmission of diseases associated with water.
2. Practice methods of good personal and community hygiene.
3. Perform community education techniques.
4. Definition of words "protocol", "diagnostic" and "management."

II. Objectives

Using the information and experiences provided by the unit text and your instructor, you will be able to:

1. Identify three ways in which clear, odorless surface water can be contaminated.
2. Describe the three ways to reduce the risk of using surface water.
3. Use environmental health protocols to evaluate sources of surface water and decide the right course of action.
4. Use the diagnostic and management protocols for surface water as a teaching guide in community health education activities.

III. Evaluation

Upon completion of this unit, you will be assessed on:

1. Knowledge
 - a. Written test based on content of the unit.
 - b. Acceptable performance, 80%.
2. Skills
 - a. Your ability to use environmental health protocols for evaluation of sources of surface water.
 - b. Your ability to use environmental health management protocols for determining the right course of action with regard to sources of surface water.
 - c. Your ability to use environmental health protocols as teaching guides for a health education presentation.

IV. Activities in which you will be participating in order to complete the unit objectives.

1. Read unit text and answer review questions.
2. Participate in group discussions.
3. Use the appropriate protocol to evaluate sources of surface water in the community.

4. Use a surface water management protocol to determine the right course of action to be taken.
5. Make a health education presentation related to surface water, in the community, using appropriate protocols as teaching guides.
6. Practice calculating the amount of chlorine necessary to make surface water safe.

SURFACE WATER

Surface water is that water found on the earth's surface in a pond, stream, canal or river water. It is a common source of drinking water. It is usually unsafe. Almost all kinds of surface water are contaminated. Even though the water may be clear, transparent and colorless, it probably is contaminated.

Surface water becomes contaminated in many ways.

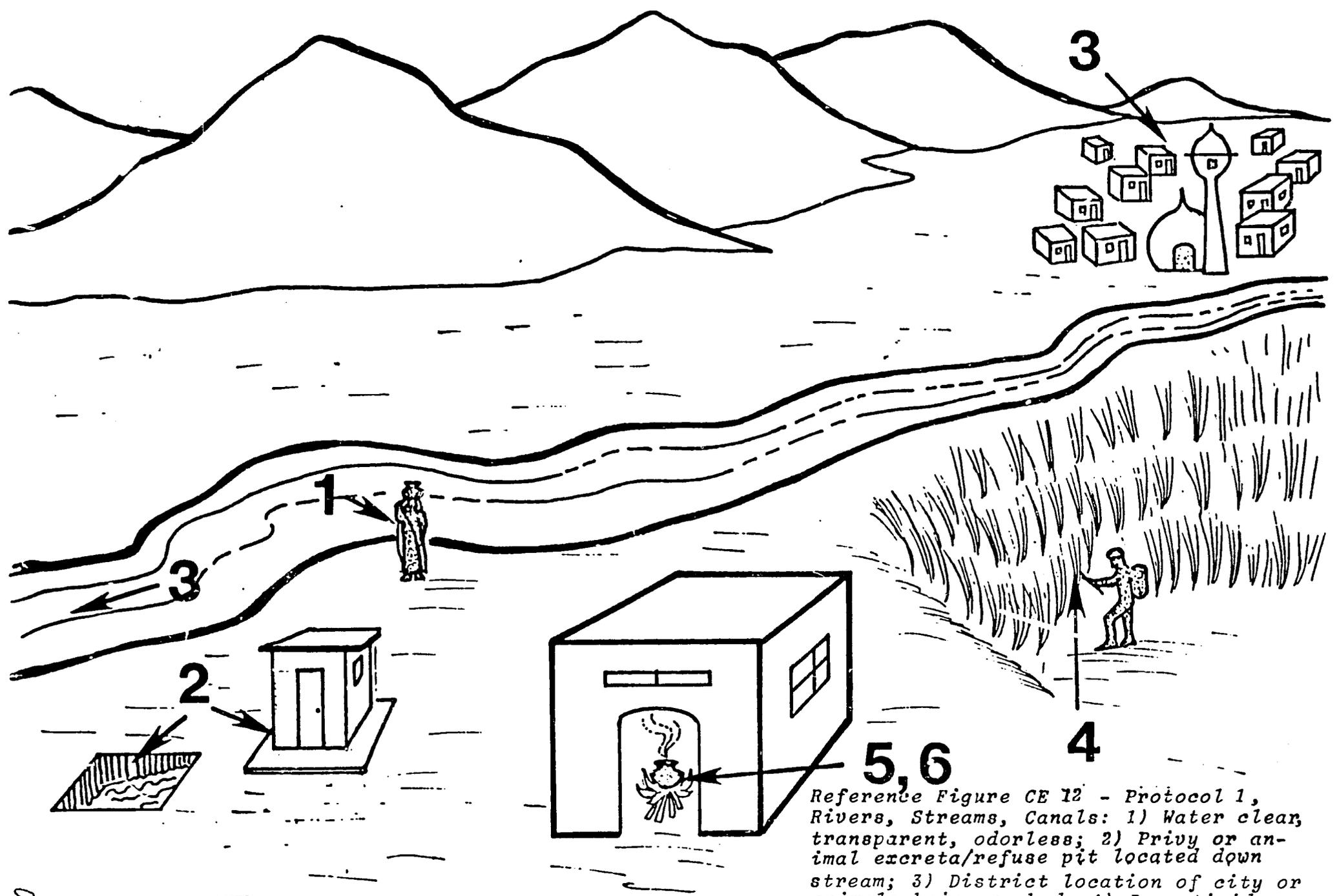
- a. It becomes contaminated if the nearest privy or animal excreta pit is located less than 36 feet (12 meters) from the point of drawing water. The excreta can seep through the ground and contaminate the water source.
- b. It becomes contaminated if there is a human or animal population near the point of drawing water. Humans and animals use the water for washing. The dirt contaminates the water. If animals are being washed upstream from or near this point, the water is contaminated. The contamination flows downstream.
- c. It becomes contaminated if insecticides or herbicides are being used upstream or near the point of drawing water.

The point of drawing river, stream, or canal water should be located upstream from causes of contamination. (See Fig. CE11) Attempts should be made to move the point of drawing water from lakes or ponds further away from contaminating sources. Attempts should be made to remove sources of contamination. An improved water source like a hand pump or dug well is much better and safer than surface water for drinking.

Until the family can be convinced to use a safer water source (i.e., hand pump well or dug well), home filtration and boiling or chlorination of drinking water is the only way to be sure the water is safe to drink.

(See Home Filtration Technique)

Protocols: Diagnostic for Rivers, Streams, and Canals
 Diagnostic for Lakes and Ponds
 Management for Surface Water sources

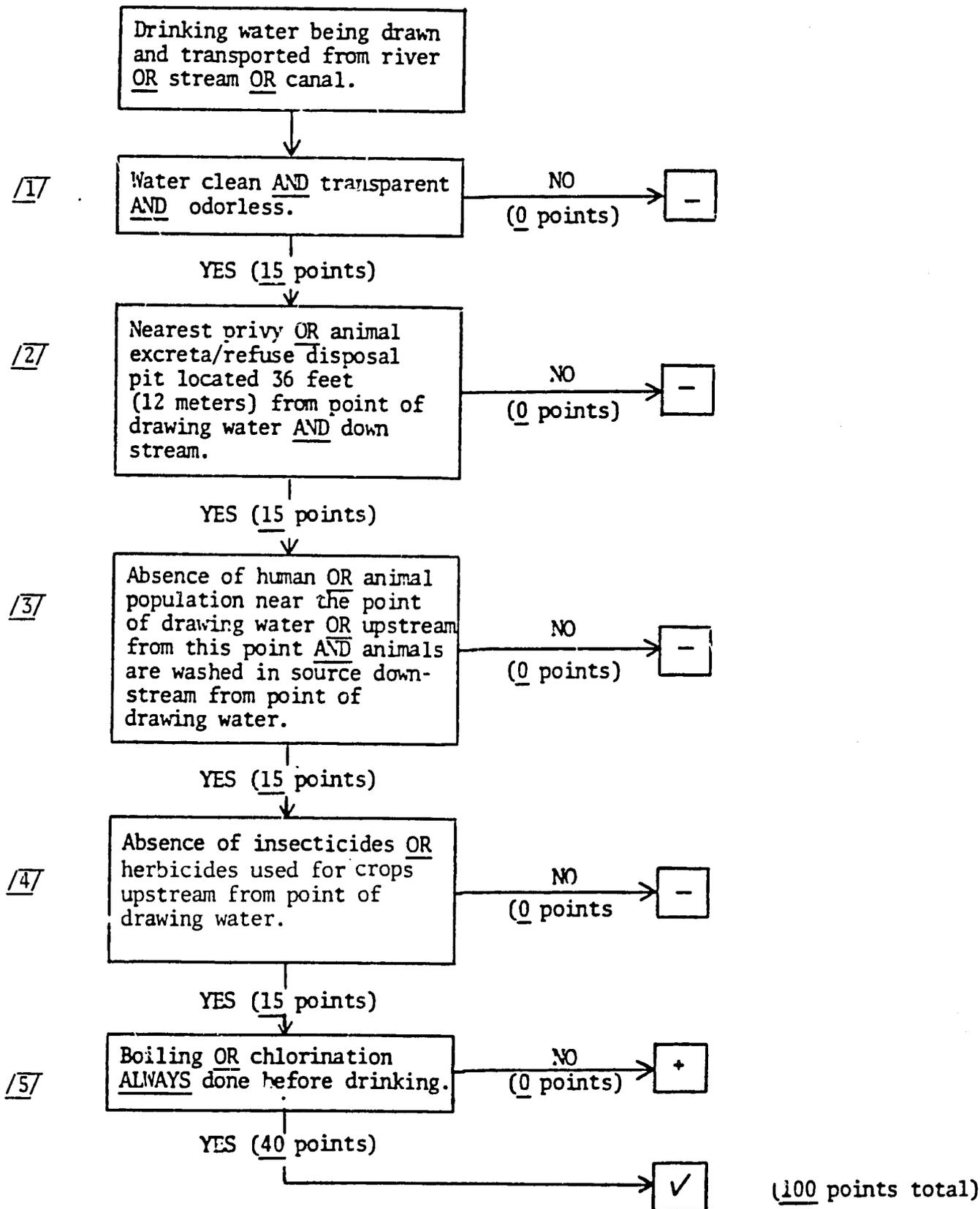


Reference Figure CE 12 - Protocol 1,
 Rivers, Streams, Canals: 1) Water clear,
 transparent, odorless; 2) Privy or animal
 excreta/refuse pit located down
 stream; 3) District location of city or
 animals being washed; 4) Insecticides;
 5) Home filtration; 6) Boiling or
 chlorination before drinking water.

9.7

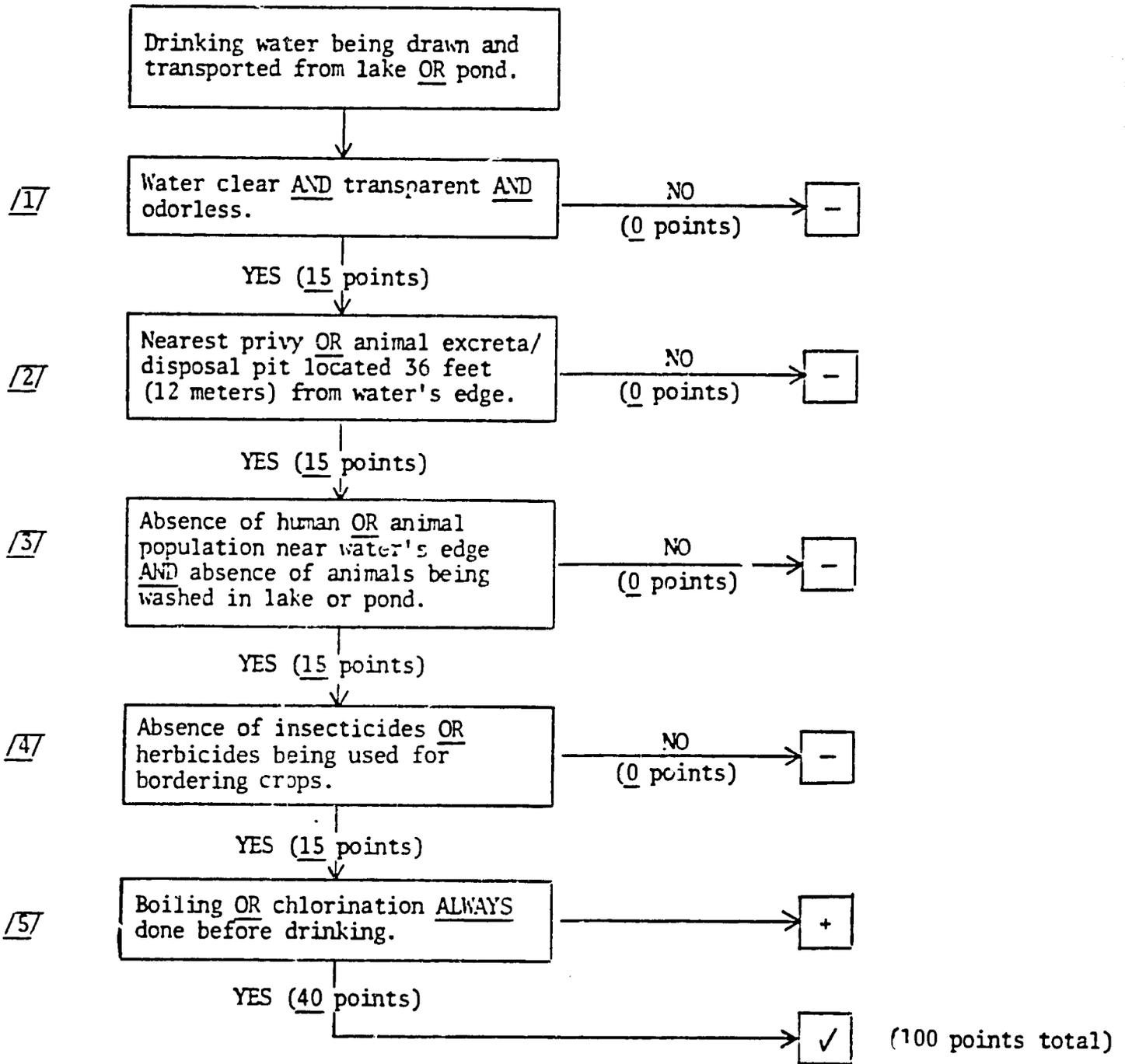
Protocol Number 1

DIAGNOSTIC PROTOCOL FOR RIVERS, STREAMS AND CANALS



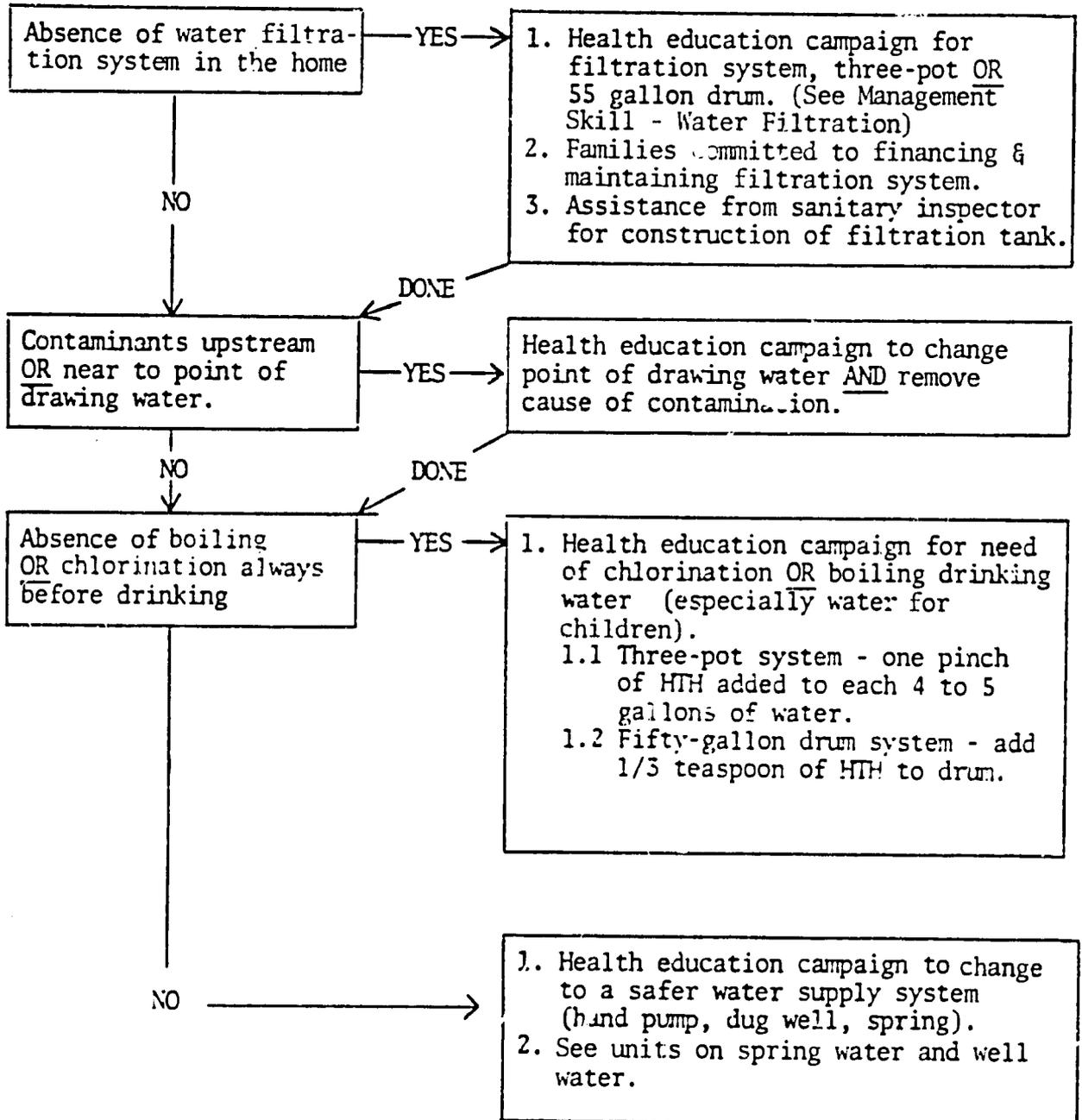
Protocol Number 2

DIAGNOSTIC PROTOCOL FOR LAKES AND PONDS



Protocol Number 3

MANAGEMENT PROTOCOL FOR SURFACE WATER SOURCES



REVIEW QUESTIONS

TRUE OR FALSE:

- ___ 1. Surface water is usually contaminated and unsafe.
 - ___ 2. Insecticides purify surface water.
 - ___ 3. Humans or animals upstream from a water source can cause contamination.
4. If a family is using surface water for drinking, they should:
(Choose the one most important of the three answers.)
- a. Boil or chlorinate their water
 - b. Let the water settle before drinking
 - c. Use a filter before drinking
5. You are going on a field trip for two weeks. You know that you must walk in areas where surface water is the only drinking water available. What would you do to prepare for the trip to be certain you will not get sick from drinking unsafe water?

STUDENT GUIDE

PIT PRIVIES, ANIMAL EXCRETA AND REFUSE DISPOSAL

I. Specific Entry Level Skills and Knowledge

1. Understand the transmission of diseases associated with water, human excreta disposal and insect vectors.
2. Practice methods of good personal and community hygiene.
3. Perform community education techniques.

II. Objectives

Using the information and experiences provided by the module text and your instructor(s), on completion of this unit, you will be able to:

1. Describe four ways in which untreated human excreta, used as fertilizer, is responsible for the transmission of disease.
2. Apply diagnostic and management protocols for pit privy and animal excreta and refuse disposal in the community.
3. Conduct informal health education sessions with CHWs and members of the community with regard to excreta and refuse disposal.
4. Build your own pit privy and assist other families to build theirs.

III. Evaluation

Upon completion of this unit, you will be assessed on:

1. Knowledge
 - a. Written test based on content of unit text.
 - b. Acceptable performance 80%.
2. Skills
 - a. Application of the principles of diagnosis and management protocols in real life situations.
 - b. Your ability to conduct informal health discussions among members of the community.

IV. Activities in which you will be participating in order to complete unit objectives:

1. Read unit text and answer review questions.
2. Participate in group discussions.
3. On site use of protocols for the pit privy, and animal excreta and refuse pit for fertilizer.
4. Conduct informal health discussions with members of the community, including community health workers.
5. Observe and assist families in building pit privies in rural areas.

HUMAN EXCRETA DISPOSAL

General Consideration

Many diseases are caused by improper handling and disposal of human and animal excreta. Intestinal parasites (worms and amebae) and gastroenteritis are spread by fecal-oral contact. Excreta in small amounts end up on fingers or in food. These small amounts are eaten by people and cause disease.

Since many people do not have privies, it is not uncommon for villagers to squat in open fields for defecating. This practice is responsible for hookworm disease and waterborne diseases like typhoid, dysentery, diarrhea, cholera, and intestinal worm infections. The unprotected water supplies often get contaminated. This occurs more often during rains and floods. These diseases result in the deaths of many of infants, children and adults.

Another common method of disposing of human excreta is the carriage system when defecation is done in one place and then the feces is removed and used as fertilizer. In some places the feces and other refuse is purchased by rural people from towns and cities for use as fertilizer. This excreta and refuse is often not treated before use. When it is used as fertilizer, it contaminates the vegetables grown in the field and the drinking water sources it comes near.

These methods of excreta disposal result in the spread of disease in the following ways:

- a. When untreated excreta is used as fertilizer, the vegetables grown in the fields become contaminated. Raw vegetables from such fields carry germs and parasites which cause disease.
- b. The excreta often contaminates the soil with hookworm eggs. The hookworm then invades the feet of field workers, causing disease.
- c. The field worker who carries and spreads the human excreta gets excreta on his hands. Small amounts often get into his food and mouth even after washing his hands.
- d. Human excreta attracts flies. The flies use the excreta as a breeding place. The flies then carry small amounts of excreta on their hairy legs to the food or utensils they settle on. This spreads disease.

Management

The use of privies, followed by proper washing of hands, will prevent most of the excreta borne diseases.

1. If privies are available, people should be encouraged to use them and maintain them.
2. If privies are not available, people should be encouraged to build one for each family unit. It is especially important for all health workers and their families to have privies.

REVIEW QUESTIONS

1. How are intestinal parasites and gastroenteritis spread?

2. Untreated human excreta used as fertilizer carries disease by .
(Circle those which are correct.)
 - a. Contaminating the soil with hookworm.
 - b. Causing respiratory illnesses.
 - c. Contaminating vegetables.

3. TRUE OR FALSE:
 - ___ a. The use of privies will decrease disease.
 - ___ b. Hands should be washed after using privies.
 - ___ c. Only health workers and their families should have and use privies.

THE PIT PRIVY

The pit privy can easily be built by family members. It is inexpensive because it can be made from materials available locally. If built correctly, it prevents the spread of diseases.

It should be located 12 meters away from drinking water sources. Since water runs downhill, the pit privy should always be built downhill from drinking water sources.

A pit, 10-15 feet deep and 3 feet by 4 feet across, is dug into the ground. The pit is lined with alternating bricks to a level two feet from the top of the pit. A floor squatting slab made of wood, bamboo or cement is placed over the top of the pit.

A shelter may be built around the pit for privacy. It can be made out of wood, cement, bricks, corn stalks, bamboo or leaves. The shelter should allow air to circulate freely. This prevents bad odors from collecting. (See Fig. CE 24)

Maintenance

The squatting platform must be kept clean. If excreta remains on the platform, flies will sit on the platform and diseases will be spread. The platform should be rinsed with water after every use.

A place for washing hands must be in or near the privy. Hands must be washed after defecation and urination. All the time and money spent for protecting water and building privies will be wasted if hands are not washed. Hand washing is very important for young children and school age children.

When the privy fills to 1½ feet or less from the top, it should be closed. The squatting slab and shelter should be moved to another pit. The filled pit should be covered with dirt to seal it from flies and animals. After about 6 months the old pit can be opened and used for fertilizer in the field. The germs and organisms die while sealed and the result is a safe and good fertilizer.

The place for the new privy should be selected as before. It should be the right distance and downhill from the drinking water source. Often it will be possible to build the new privy next to the old place. (See Protocols: Diagnostic Pit Privy, Management for Pit Privy)

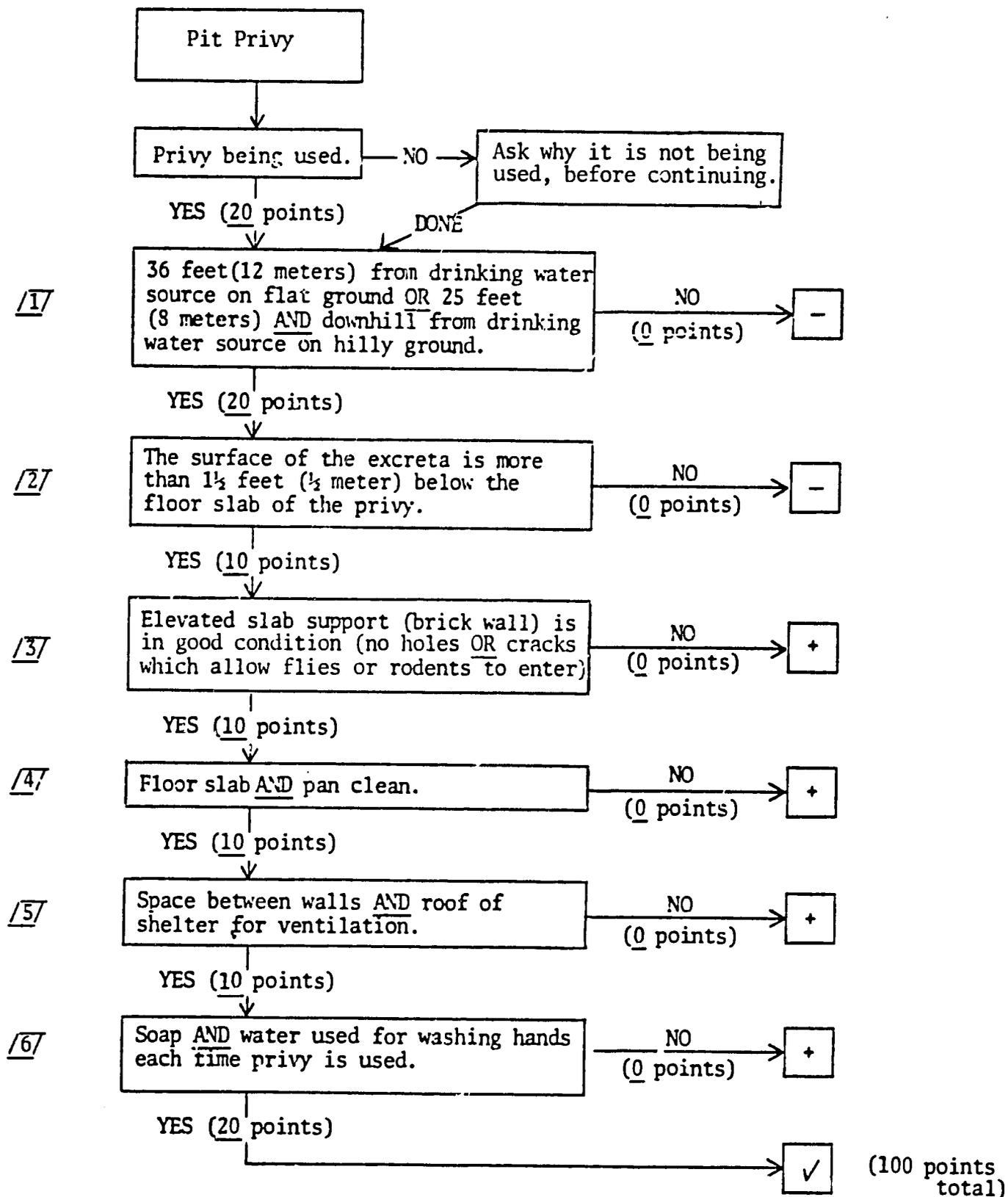
Other Kinds of Privies

Many other kinds of privies may be built. Most other kinds are more expensive and more difficult to build. Often technical help is necessary. A water seal pan made from porcelain or cement can be used with a pit or with a septic tank. The water seal toilet with a septic tank can be built for use inside the house. A sanitarian or a local businessman may be ready to help the family build this kind of privy.

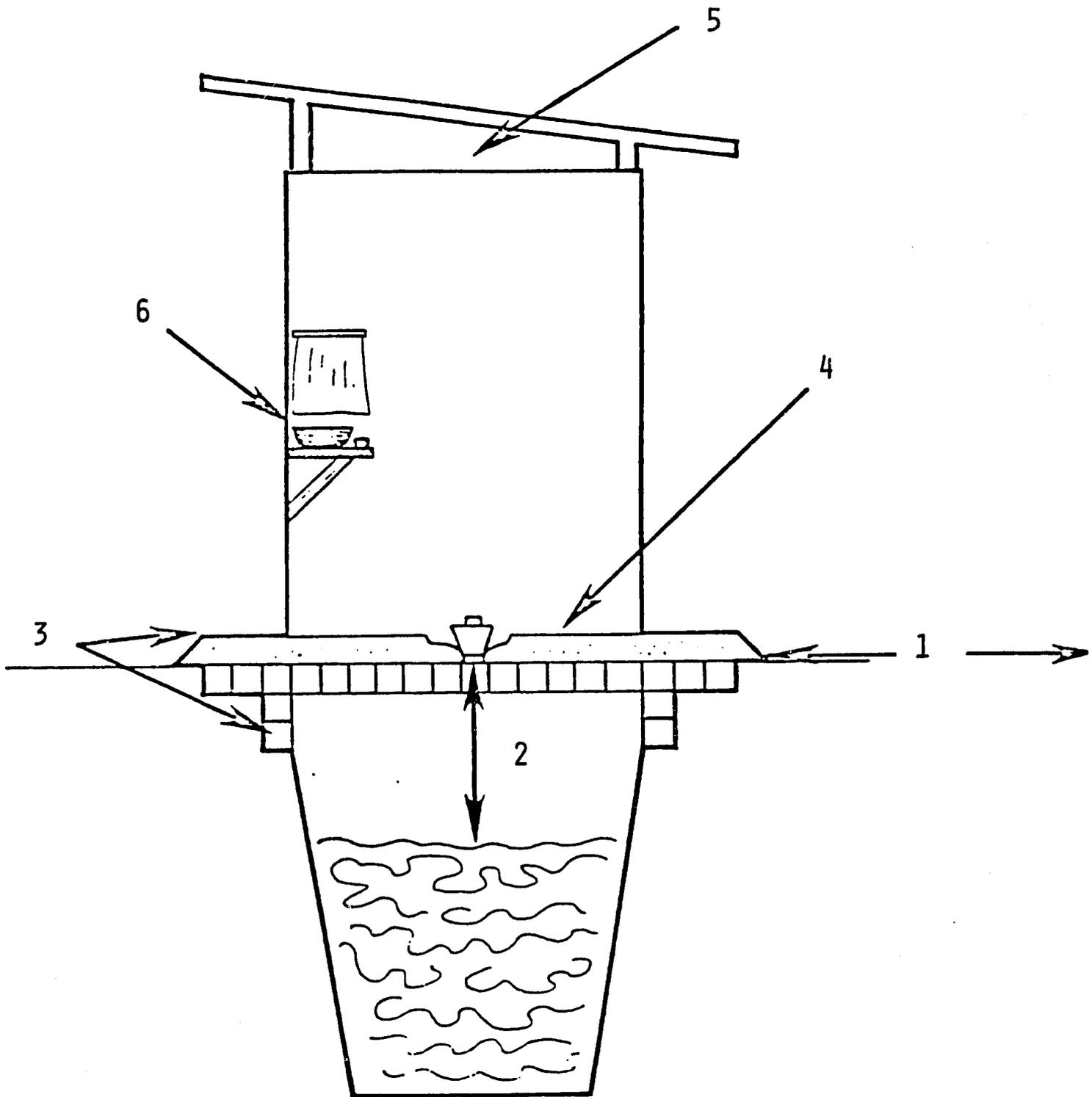
If no privy is available, it is important to cover excreta with dirt. This is often called the cat scratch method because cats cover their feces with dirt. The dirt covering the feces prevents flies from settling in the excreta and spreading it to food and utensils, but this method does not prevent the transmission of hookworm.

Protocol Number 11

DIAGNOSTIC PROTOCOL FOR PIT PRIVY*



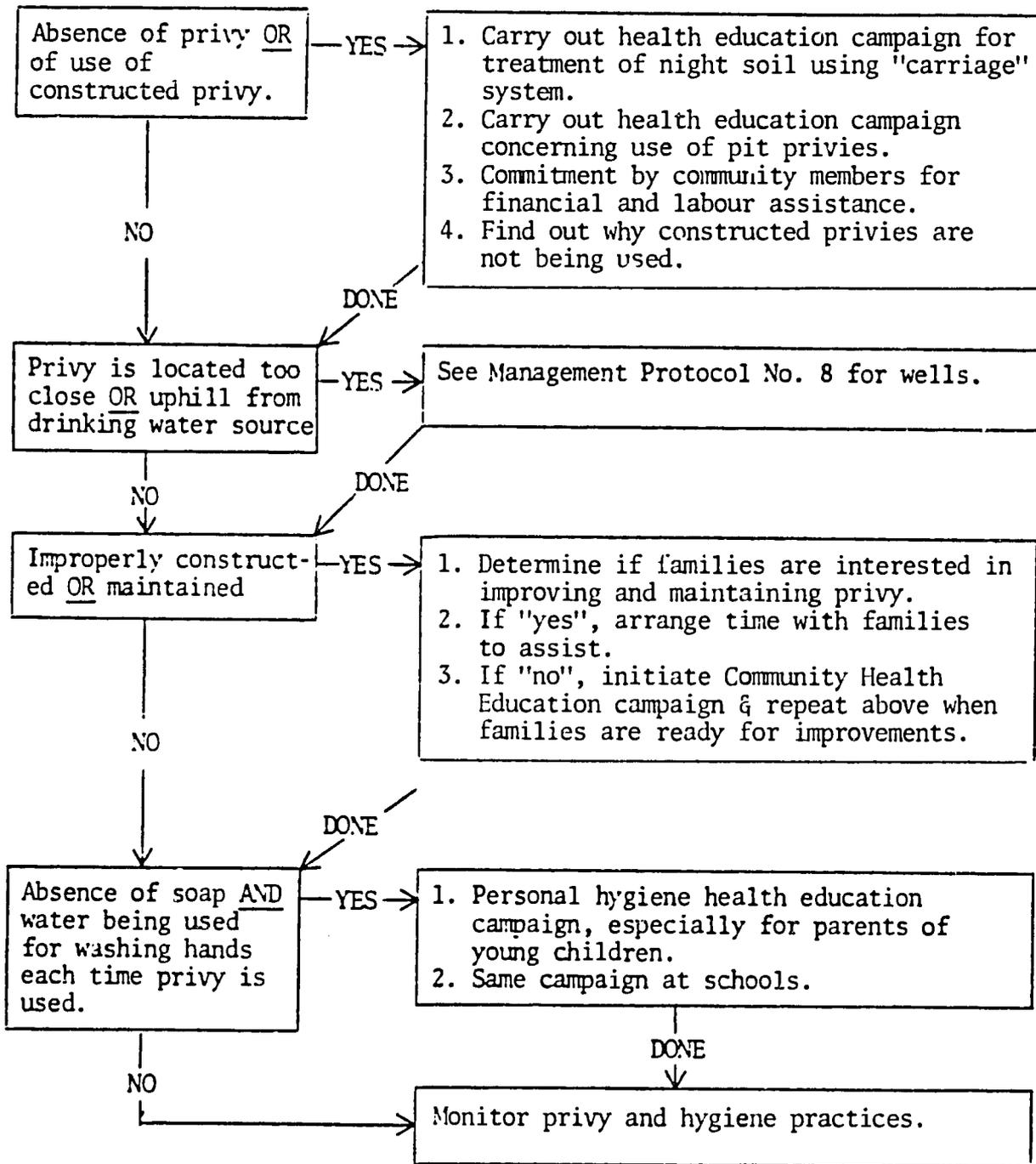
* (See Reference Figure on next page)



Reference Figure CE 24 - Protocol 11,
 Pit Privy: 1) Distance from water source;
 2) Depth of excreta; 3) Elevated slab
 support, no holes or cracks; 4) Floor
 slab and pan clean; 5) Ventilation;
 6) Soap and water for washing hands

Protocol Number 12

MANAGEMENT PROTOCOL FOR PIT PRIVY



REVIEW QUESTIONS

1. The safe pit privy has the following characteristics: (Check all of those which apply)
 - a. A tile roof.
 - b. A clean squatting platform.
 - c. A brick upper structure.
 - d. Hand washing facilities nearby
 - e. Is used regularly.
 - f. Is 15 feet from a well.
 - g. Is closed and sealed when full.

2. Describe how you would build your family pit privy.

3.3.1

COMMUNITY NUTRITION MODULE

STUDENT TEXT

1980
Rural Health Development Project
Ministry of Health and Social Welfare,
Maseru, Lesotho

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Nutritional Needs for a Child from 1 to 6 months to 2 years.

Continue breast feeding:

When a child reaches 4 to 6 months of life, he has grown to the stage that he needs more food than what is available in breast milk. The child needs additional foods. The young child should continue breast feeding until he is 2 years old.

Add supplementary foods:

This process of adding other foods must be gradually accomplished. The foods added should be chosen from each food group and should be clean and soft. If the child is not given mixed foods, malnutrition will result.

The young child grows fast and becomes more active. A porridge made of locally available foods that comes from a protein source food with two grains makes a high energy, high protective and high growth food to supplement breast milk. One such formula adaptable to several areas is super porridge.

Super Porridge

Super porridge is a soft cereal made from different grains and beans. This is good for the young child because it supplies both food for energy and food for body building.

This is how super porridge is made:

- a. Measure out: 2 parts lentils, peas (or other pulse)
1 part wheat (or other whole cereal grain)
1 part maize (or a second whole cereal grain)
- b. Clean well the pulse and cereal grains separately.
- c. Soak beans overnight.
- d. Cook the beans.
- e. Add one part wheat, one part maize to water and cook.
- f. Add cooked beans to porridge.
- g. Cooked vegetables or fruit can be mashed and mixed into this porridge.



Figure CN 3 - The three ingredients of Super Porridge - Wheat, corn, and beans.

Nutrition Education

Nutrition education may be shared with individuals or groups, in buses, clinics, community meetings or houses. Home visits are a good time and place for nutrition lessons. You will be able to determine what foods and cooking utensils are available for preparing food, and use those actual items while teaching.

You and the VHW will be the primary persons responsible for teaching the community about good nutrition and food habits.

The important thing to remember is to teach only what the persons needs to know. A woman would not need to know the lesson on feeding a newborn child if all her children are grown. Consider what the person needs to know and share that. Do not try to teach too much at one time. Teach one main idea at a time. Repeat often to emphasize and clarify what you have said. Do not go on to another idea until you are certain that the one you are teaching is understood.

This module has a series of flash cards and flip charts with some standard nutrition messages.

What are the important ideas in each Lesson?

Lesson I is about good nutrition for your family. It may be helpful for any adult, particularly those with children over three years old. You may wish to routinely teach this lesson in the clinic waiting area. As your goal would be to have every adult in the community understanding and practicing good nutrition, this lesson on good nutrition is a valuable one to present to community groups. Lesson I contains the following ideas:

1. Every person needs good food.
2. Food is used by the body for growth.
3. Food is used to provide for the energy needed for work or play.
4. Food provides resistance to illness.
5. Not enough good food can make people sick and can be fatal.
6. Good food for the young child until he is 2 years old is breast milk.

REVIEW QUESTIONS

1. A record of how much food a person eats, what variety of foods, and how often he eats them is called a _____.

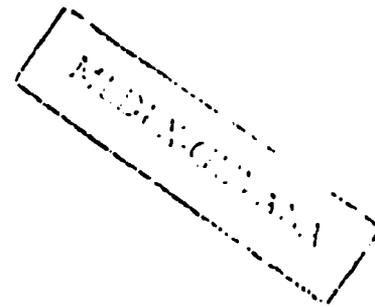
Using the following table, answer questions 2-4:

	Breast Feed	Body-Building Food	Protective Food	Energy Food	No. of Meals Per Day
Infant Birth: 4-6 months	Yes				
Young Child 4-6 mo.- 2 years	Yes	1	1	1	3
Older Child 2 yrs. & older		1	1	1	3
Adult		1	1	2	2
Pregnant and Lactating Women		2	2	2	3

2. Determine how many different fruits or vegetables (protective foods) the pregnant woman needs at each meal. _____.
3. Determine how many meals a young child needs each day. _____.
4. Determine how many different energy foods an average adult needs at each meal. _____.

3.3.2

SYSTEM FOR TEACHING ESSENTIALS TO MEDEX (STEM)



MODULE TEXT
COMMON MEDICAL PROBLEMS
INSTRUCTOR TEXT

Adapted for:

Medex Guyana
By Guyana Team

REVIEW QUESTIONS:

1. Place a tick () in front of the groups of people who are high risk of getting malaria.

 Infants

 ✓ Children

 Adults

 ✓ Travellers

 ✓ Pregnant women

 Elderly people

2. Describe briefly the life cycle of a malaria parasite on humans.

Female healthy mosquito bites infected man, and healthy mosquito becomes infected. Infected mosquito can now spread infection to other people by biting them.

3. List briefly the three (3) factors affecting the spread by carriers.

- 1) Temperature
- 2) Breeding areas
- 3) Mosquito's life span

4. Discuss briefly the difference between endemic and epidemic disease.

Endemic - Localized in one area.

Epidemic - Widespread throughout the community.

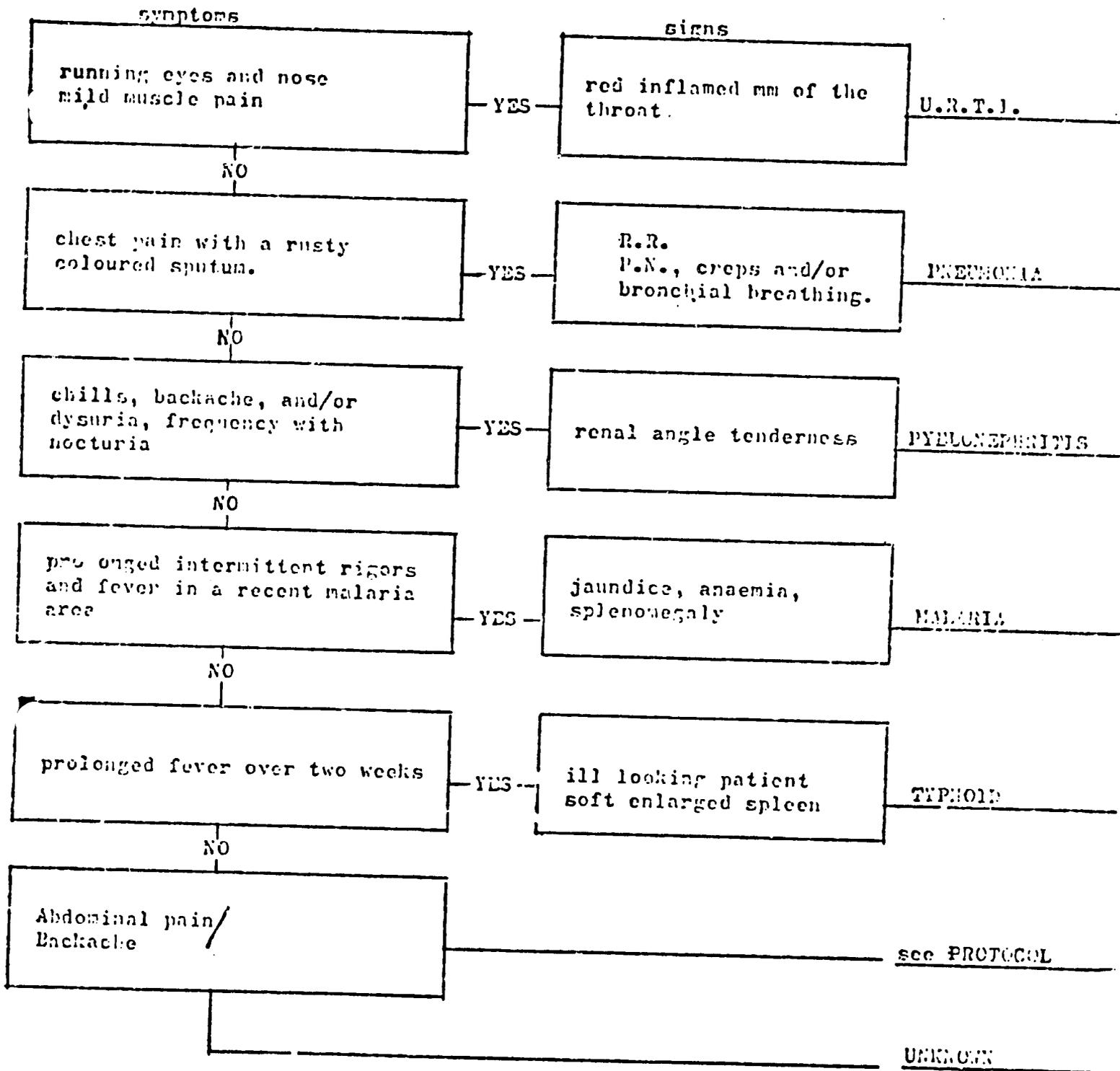
5. List the three (3) major clinical signs of malaria.

- 1) Anaemia
- 2) Elevated temperature in spikes of 102° - 104° F
- 3) Splenomegaly to mild jaundice

6. Briefly explain why the malarial patient develops anaemia and jaundice.

- 1) Because the RBC's are repeatedly ruptured in each paroxysm - anemia develops.
- 2) When RBC's rupture in the blood stream, they release a yellowish greenish pigment of destroyed hemoglobin, which makes the skin yellow if produced in excess.

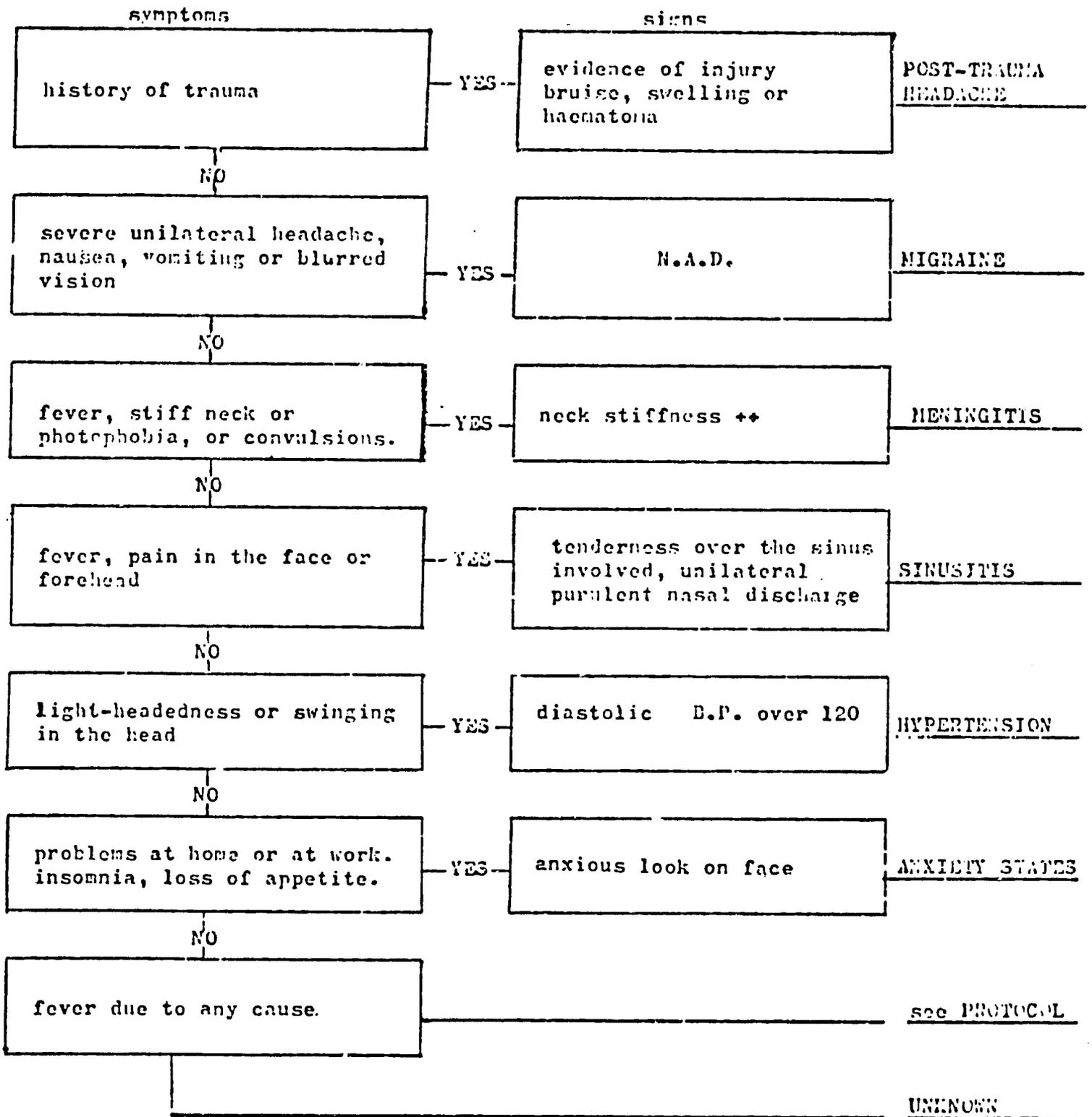
FEVER IN AN ADULT



Best Available Document

115

HEADACHE



116

Generalised:

WEARNESS

symptoms

signs

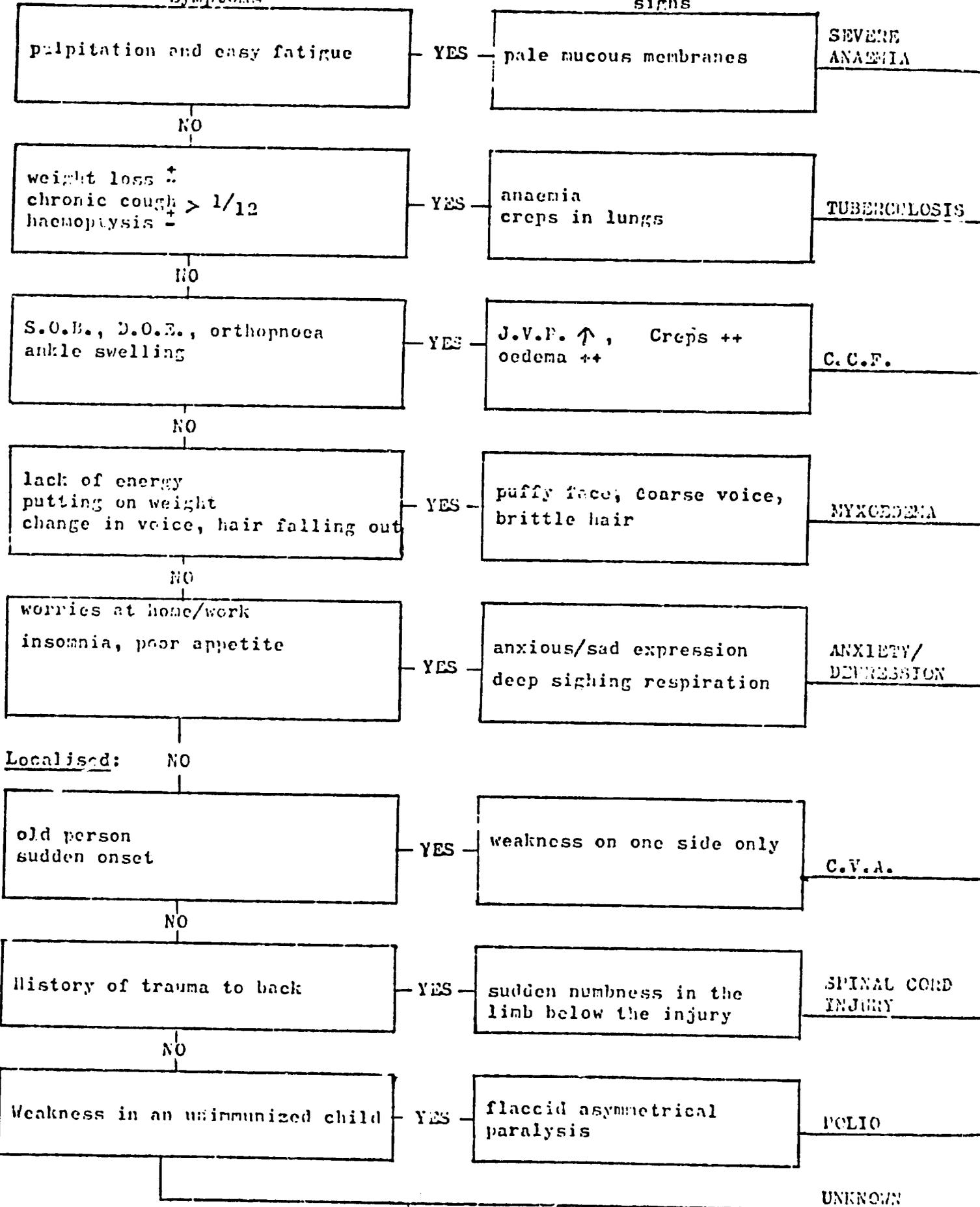
SEVERE ANAEMIA

TUBERCULOSIS

C.C.F.

MYXEDEMA

ANXIETY/
DEPRESSION



MEDEX/THAILAND

ระบบการสอนสิ่งที่ครูสำหรับเวชกร (ร.ก.ว.)

โมดูล การวางแผนครอบครัว

Family Planing Module - Protocol # 43

ส่วนพัฒนาเจ้าหน้าที่

โครงการพัฒนาและประเมินผลระบบการให้บริการอนามัยชุมชน
กระทรวงสาธารณสุข ประเทศไทย

3.3.3 THAILAND

Best Available Document

ร.ก.ว.....๐๕/๒๐/๐๒ เวชกร/ ประเทศไทย, จังหวัดลำปาง

11
2

ระบบการสอนสิ่งที่ต้องรู้สำหรับเวชกร (ร.ก.ว.)

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โปรโตคอล # ๔๓ การวางแผนครอบครัว

Protocol # 43 Family Planing

.....

ส่วนพัฒนาเจ้าหน้าที่

โครงการพัฒนาและประเมินผลระบบการให้บริการอนามัยผสมผสาน

กระทรวงสาธารณสุข ประเทศไทย

โปรโตคอล # ๔๓ การวางแผนครอบครัว

ปัญหา

สภาพหรืออาการที่นำผู้ป่วยมาขอรับการรักษา

สตรีในวัยเจริญพันธุ์/มีฐานะซักสม/เจ็บป่วยด้วยโรคที่ไม่สมควรจะมีบุตรต่อไป เช่น โรคหัวใจ, วัณโรคปอด, โรคไตอักเสบเรื้อรัง

๓๑๖

สุขภาพหรือส่วนีของการทำหมัน _____ ใช้ _____ →

วิธีของการเกิด วิธีอื่นที่ใช่โคสำหรับสตรี แต่ขอไม่ขอจะแน่นอน คือ.-

๑. การงดเว้นการร่วมประเวณี (Abstinence)
๒. การให้น้ำกามหลังออกมาภายนอก (Coitus Interruptus)
๓. หมวกยางครอบปากมดลูก (Cervical cap)
๔. หมวกขวางใส่ภายในของคลอด (Diaphragm)

(๑) ทักษะ PP # การจายยาเม็ดคุมกำเนิดโดยใช้ check list

(๒) ทักษะ PP # การใส่ห่วงอนามัย

ประวัติ/การตรวจร่างกาย/การชันสูตรโรค

มีบุตรมากพอแล้ว เช่น ๒-๓ คน และมารคามีอายุน้อย เช่นต่ำกว่า ๓๕ ปี

มีบุตรมากพอแล้ว เช่น ๒-๓ คนและภรรยาไม่พร้อมที่จะรับบริการ

ปัญหา

ใช้ → การทำหมันในหญิง (ภรรยา)
- เข้าทางหน้าท้อง, เข้าทางใต้สะดือ
- เข้าทางช่องคลอด
Endoscopic - Laparo scope
- Culdos scope
- Hystero scope

รับประทานยาเม็ดคุมกำเนิด (๑)
ใส่ห่วงอนามัย (๒)

การคุมกำเนิดโดยวิธีชายอื่น
การผูกท่อนำไข่ชาย (Vasectomy)
การใช้ถุงยางอนามัย (Condom)

๕. การสวนล้างของคลอดด้วยน้ำยาภายหลังร่วมเพศ (Vaginal Douch)
๖. ยาฆ่าตัวอสุจิชนิดสอดใส่ในช่องคลอด (ยาเม็ดเกิดคู่ - Foam tablet พองครีม - Acrosols ยาเหน็บของคลอด- Pessaries, เบอธี่ หรือครีม - gelly and cream
๗. ระยะเวลาปลอดภัย (Safe Period or Rhythm)
๘. วิธีผสมกันการปฏิสนธิหลายแบบรวมกัน (Combined Methods)

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โปรโตคอล # ๔๓ การวางแผนครอบครัว

ทักษะ/สิ่งที่ต้องรู้

วิธีแนะนำและชักชวนให้ประชาชนยอมรับและใช้บริการของการวางแผนครอบครัว

๑. อธิบายให้เข้าใจถึงความหมาย และประโยชน์ของการวางแผนครอบครัวที่จะเกิดขึ้นต่อตนเอง ต่อครอบครัวและต่อประเทศชาติ
๒. อธิบายวิธีการต่าง ๆ ที่ใช้ในการวางแผนครอบครัว ตลอดจน^{ข้อ}ดีและข้อเสีย ของแต่ละวิธี
๓. แจ้งให้ประชาชนเลือกวิธีที่เขาชอบหรือพอใจด้วยตนเอง
๔. ถ้าหากเขายังลังเลไม่รู้จะเลือกวิธีใด ก็แนะนำให้ใช้วิธีใส่ห่วงอนามัย บาล์มคุมกำเนิด หรือยาตัดห้ามันในชายและหญิง ตามแต่ความเหมาะสม

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ทักษะ/สิ่งที่ต้องรู้

โปรโตคอล # ๔๓ การวางแผนครอบครัว

ปัญหา

การวางแผนครอบครัว (Family Planning) ความหมาย และประโยชน์

หมายถึงการที่ครอบครัว คือสามีและภรรยาได้ปรึกษากัน ทดลองกันล่วงหน้าว่าจะมีบุตรเมื่อใด และจะมีจำนวนเท่าใด และจะเว้นระยะห่างของการมีบุตรนานเท่าใด เพื่อให้ได้ มารดามีสุขภาพสมบูรณ์แข็งแรง และมีโอกาสเสี่ยงอันตรายจากการตั้งครรภ์และการคลอดคนน้อยของ หรือเพื่อให้มารดาได้รักษาโรคเรื้อรังประจำตัวให้เขาเสียก่อนเป็นคน นอกจากนั้นการที่แต่ละครอบครัวมีบุตรในจำนวนและในระยะเวลาที่เหมาะสม จะทำให้ครอบครัวนั้น ๆ สามารถเก็บเงินได้มากขึ้น เพื่อเป็นทุนในการหำมาค้าขาย หรือในการที่จะหาความ สุขสำหรับครอบครัวความอภัพใด การที่แต่ละครอบครัวมีสุขภาพดี มีการศึกษา และมีเงินทอง จะทำให้ประเทศโดยรวมมีความมั่นคงและสามารถพัฒนาต่อไปได้มากและโดยง่ายยิ่งขึ้น

ในทำนองตรงกันข้าม สำหรับคู่สามีภรรยาที่แต่งงานแล้ว ไม่มีบุตร การวางแผนครอบครัวหมายถึงการช่วยเหลือให้ครอบครัวนั้น ได้มีบุตรได้ตามที่ประสงค์ วิธีการที่ใช้ในการวางแผนครอบครัว

วิธีหรืออุปกรณ์การคุมกำเนิดที่ดีที่สุดตามอุดมคติ จะต้องมีความสมบูรณ์ดังนี้

- ๑. ราคาถูก
- ๒. ใช้ได้ระยะดี
- ๓. ใช้สะดวก
- ๔. ปลอดภัยกับธรรมชาติ
- ๕. มีอาการข้างเคียงน้อย หรือไม่เป็นอันตรายต่อผู้ใช้
- ๖. เป็นที่ยอมรับทั้งฝ่ายสามีและภรรยา และสังคมนั้น

1/2/20

ทักษะ/สิ่งที่ต้องรู้

วิธีที่ใช้ในการวางแผนครอบครัว	ข้อดี	ประสิทธิภาพ No. of pregnancies per 100 women-year	ข้อเสีย	ข้อห้ามใช้
<p>ไม่คุมกำเนิดเลย</p> <p>๑. วิธีชั่วคราว (สามารถกลับมีบุตรได้ก็เหมือนหยุดใช้)</p> <p>๑.๑ การใช้น้ำเม็ทคุมกำเนิด</p> <p>๑.๒ การใช้ห่วงอนามัย</p> <p>๑.๓ การใช้ถุงยางอนามัย</p> <p>๑.๔ การคุมกำเนิดโดยไข่แข็ง</p> <p>๑.๕ การรณรงค์การรวมประเวณี</p> <p>๑.๖ การให้คำแนะนำหลังออกมาภายนอก</p> <p>๑.๗ หมวกยางคลุมปากมดลูก</p> <p>๑.๘ หมวกยางใส่ภายในของคลอด</p> <p>๑.๙ การสวนล้างของคลอดภายหลังรวมเพศ</p> <p>๑.๑๐ ยาฆ่าตัวตวจิตนิกสอติใส่เข้าไปในช่องคลอด</p> <p> ๑.๑๐.๑ From tablet</p> <p> ๑.๑๐.๒ Acornol</p> <p> ๑.๑๐.๓ Passaris</p> <p> ๑.๑๐.๔ Gally or cream</p> <p>๑.๑๑ ระยะปลอดภัย (safe Period)</p> <p>๑.๑๒ วิธีป้องกันการปฏิสนธิหลายแบบรวมกัน (Combim Methods)</p>	<p>สามารถกลับมีบุตรได้ก็เหมือนหยุดใช้</p> <p>๑.๑ ไร้โค่นตติ และเป็นเวลานาน</p> <p>๑.๒ ใส่ครั้งเดียวใช้ได้นานนับ ๑๐ ปี</p> <p>๑.๓ ใคยดูแลป้องกันการแพร่เชื้อโรค เช่น เฮอร์ปัส, นูริสตามโรค</p> <p>๑.๔ ฉีกครั้งเดียวคุมได้นาน</p> <p>๑.๕ ใคยดูแลนอน</p> <p>๑.๖ ไม่สิ้นเปลือง</p> <p>๑.๗ ใคยดูแลนอน</p> <p>๑.๘ ใคยดูแลนอน</p> <p>๑.๙ ใคยดูแลนอน</p> <p>๑.๑๐ ใคยดูแลนอน</p> <p>๑.๑๑ ไม่สิ้นเปลืองและใคยดูแลนอน</p> <p>๑.๑๒ ใคยดูแลนอน</p>	<p>๕๐-๑๐๐</p> <p>๐-๒.๓</p> <p>๑-๓</p> <p>๐.๔</p> <p>๐</p> <p>๓๐-๓๕</p> <p>๓-๓๕</p> <p>๓-๓๕</p> <p>๑๕-๓๖</p> <p>๖-๕๕</p> <p>ต่ำกว่า ๑.๕.๑</p> <p>๕-๕๖</p> <p>๕-๓๖</p> <p>๑๕-๓๕</p> <p>คี่น</p>	<p>๑.๑ ต้องรับประทานยาทุกวันลืมไม่ได้</p> <p>๑.๒ ปวดเข็มเล็กน้อยเวลาใส่</p> <p>๑.๓ ต้องใส่ทุกครั้งก่อนการรวมเพศ</p> <p>๑.๔ ประจำเดือนไม่แน่นอน</p> <p>๑.๕ ใคยดูแลนอน</p> <p>๑.๖ " และไม่สะดวก</p> <p>๑.๗ " "</p> <p>๑.๘ " "</p> <p>๑.๙ " "</p> <p>๑.๑๑ ใคยดูแลนอนใคยเฉพาะในรายที่ประจำเดือนไม่สม่ำเสมอ</p> <p>๑.๑๒ ความแหวัดใช้ร่วมกัน</p>	<p>๑.๑ โรคภัย, เมานวาม, โรคแพ้งางๆ ปวดท้อง, คอพอก-เป็นพิษ ความดันสูง มะเร็งเต้านม มะเร็งปากมดลูก</p> <p>๑.๒ มีภาวะอักเสบ, กังกรรภเนื่องอกมดลูก บวม</p> <p>๑.๓ ไม่มี</p> <p>๑.๔ เหมือน ๑.๑</p> <p>๑.๕ ไม่มี</p> <p>๑.๖ ไม่มี</p> <p>๑.๗ ปากมดลูกอักเสบ, หรือมะเร็ง</p> <p>๑.๘ "</p> <p>๑.๙ "</p> <p>๑.๑๐ "</p> <p>๑.๑๑ ไม่มี</p> <p>๑.๑๒ ความแหวัดใช้ร่วมกัน</p>

12/2

3.4.1

SYSTEM FOR TEACHING ESSENTIALS TO
MID-LEVEL HEALTH WORKERS

MODULE TEXT

TRAINING THE CHW
(LITERATE AND NON-LITERATE)

N U T R I T I O N

REVISED PREPRODUCTION SAMPLE VERSION MAY 1981

MEDEX INSTRUCTIONAL OBJECTIVES

The Medex will use role play demonstrations, discussions and village visits to teach CHWs the following:

1. Measurement of children under five years in their homes with arm band.
2. Identification of children with moderate or severe malnutrition.
3. Care of children with moderate malnutrition.
4. Care of children with severe malnutrition.
5. Teaching parents the basic nutrition messages.
6. Identification of practices which cause malnutrition.
7. Promotion of good nutrition practices.

INTRODUCTION

Most malnutrition in children is the result of not eating enough food or not eating enough of the right kinds of food. This often causes more illnesses and deaths in children less than five years of age.

Community health workers can identify malnourished children in their villages and homes. They can give advice about right feeding practices.

In this module, we will learn how to teach the identification and care of malnourished children and how to teach the basic nutrition messages. We will continue to use the rule that we teach as we have been taught. You will be taught the CHW nutrition module with the methods you should use when you are teaching CHWs in your health post.

Before going on in this module, review your MEDEX module texts on nutrition and malnutrition in children (Diseases of Infants and Children and Community Health I & II).

Gathering Information from the Village

Whenever we work with CHWs in a village, we should become aware of local traditions that are practiced by villagers to care for their health. Discussing these with the CHWs will help them to become more aware of the practices used in their village. The CHWs can use this information when they are working in their villages.

Discussions with the CHWs will help you, as a Medex, learn about local care practices. If the local treatment is helpful, you can help the CHWs find ways to support the local treatment. If the local treatment is harmful, then you must find ways to substitute for the harmful practice with a better one.

Talking about local practices with CHWs is a good way to learn about this. "Leading questions" help in getting this information. Some of the questions you need answers to include:

1. Do villagers recognize malnutrition in children?
2. What is the local name for severe malnutrition in a child?
3. What is the local name for mild malnutrition in a child?
4. What do villagers think causes malnutrition in a child?
5. What is the traditional treatment for malnutrition in a child?

After learning about local ideas about malnutrition from the CHWs, you can begin to think of several ways to use the basic nutrition messages. You also may begin to think about some problems that may face CHW's when they begin to care for malnourished children.

Teaching Methods

When you use role play or demonstrations, always use real materials and props from village homes. Firewood, cooking pots, etc., should always be present in the village if they are used in teaching. Do not use things that are only found in a health post, hospital or in large city.

When you use a picture or photograph, explain it by pointing out the figure and the message. One should not expect everyone to see the same figure you do. The message of the picture must be taught. This is true for most people and always true for people who are not able to read or write.

ACTIVITY 1

NUTRITION

Special Instructions For Teaching	Text for Teaching CHW
<p>*SHOW FOLDERS: (Select only the marasmus folder if kwashiorkor is not a problem.)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">normal</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">mild</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Maras- mus</div> </div> <p>Point out skin folds, boney ribs, prominent stomach, and no fat in marasmus picture.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">normal</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">mild</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">Kwashi- iorkor</div> </div> <p>Point out puffiness of the face, and swollen limbs in the kwashiorkor picture.</p> <p>*DISCUSSION The identification of malnourished children is more difficult if it is common in the village because people learn to accept it as being normal. This discussion may take some time to get the right answers. Be encouraging and helpful but keep asking these questions. Continue to use the word malnutrition, until you are certain that the local word</p>	<p>"Today, we are going to talk about a problem often seen in children under five years of age. This problem is called malnutrition. It is caused by the child not getting enough of the right food at the right time while he is growing. A child who has not received enough of the right foods is underfed. He looks thinner and is weaker than a child who has had enough food."</p> <p>*</p> <p>"A child who has not had enough growth-producing foods like milk, beans, eggs, fish or meat will get puffy looking."</p> <p>*"Have you see children who are underfed in your village? In your home?"</p> <p>"At what age do children, usually become malnourished?"</p> <p>"Is there a special name for children who are malnourished in your village?"</p> <p>"What do villagers think causes this?"</p> <p>"What local treatments are used for children who are underfed and malnourished?"</p>

Best Available Document



Picture credits - M. Krantz

124



Picture credits - M. Krantz and A. Haaland

130
Best Available Document

Special Instructions For Teaching	Text for Teaching CHW
<p>given, really malnutrition. This can be checked by seeing many children with malnutrition and asking on what the parents call the illness.</p>	
<p>*SHOW FOLDERS AGAIN.</p>	<p>*"Infants and children grow quickly and need plenty of the right food at the right time to grow strong and healthy. Normal well-fed children are plump, alert and active."</p> <p>"You can tell whether a child is malnourished or not by looking at him closely and deciding whether he looks like the children in the picture."</p> <p>"You also will be able to measure his arm with a special arm band."</p> <p>"Today, we will learn how to use the arm band to measure children."</p> <p>"The arm band will help you decide which children are malnourished which are normal."</p>
<p>*Show the arm band. Give one arm band to each CHW.</p> <p>Show the black line. Have each CHW show the line to you on their arm band.</p>	<p>*"The arm band is divided into three color bands. One is red; one is yellow; and one is green."</p> <p>"There is also one black line made through the arm band."</p>
<p>*DEMONSTRATE Have two to four under 5-year old children for measuring practice. Put the arm band around the upper arm of the child.</p>	<p>*"To see if a child is well fed or underfed, we measure his upper arm. Have the child hold his arm at his side. Put the arm band around the middle of the upper arm. Check to see where the black line meets the colored area."</p>
<p>Show the line touching the green area.</p>	<p>"If the line touches the green band, the child can be considered normal."</p>
<p>Show the line touching the yellow area.</p>	<p>"If the line touches the yellow area, the child has moderate malnutrition."</p>
<p>Show the line touching the red area.</p>	<p>"If the line touches the red area, the child has severe malnutrition."</p>

Special Instructions
For Teaching

Text for teaching CHW

*Have each CHW measure the arm of one of the children. Do this one by one and check each one. Ask each CHW to tell you what color the line touches and whether the child is normal, moderately or severely malnourished.

*If CHWs are literate have them write information in a small copy book. (Show in Medex copy book.)

Child's Name	House No. or Location	Arm Band
Ram	25/100	Yellow
Maya	Next to pond	Red
Lila	Tea Shop	Green

*If all CHWs are non-literate, omit the writing section.

"If the arm band touches the green color, the child is probably well nourished, but if it touches the yellow or red, he is malnourished."

"Each one of you can practice using the arm band. If the black line touches the green area, the child is normal. If the line touches the yellow area, the child is malnourished. If the line touches the red area, the child is severely malnourished."

HOME ASSIGNMENT

"Take the arm band home with you and check all the children in your home. Check at least three children. If necessary, go to your neighbors to get extra children to check."

"Write the names of the children, house number or location, and their color on the arm band in your copy books."

*Remember the names of the children, where their home is and what color the line touched. Be ready to share this information next session.

ACTIVITY 2

NUTRITION

Special Instructions For Teaching	Text for Teaching CHW
<p>*DISCUSSION Let each CHW describe their findings. Ask for the child's name and color on the band. (Write the names and colors for non-literate CHWs in a book or on the board. This will help the CHW to understand the importance of the information even though he/she will not read what you have written.) Check the recordings taken by literate CHWs.</p> <p>*DEMONSTRATION Arrange for some children for measuring practice. Have each CHW measure a child with the arm band while you check their technique. Ask them to tell you what color the line touches.</p> <p>*SHOW PHOTO/FOLDER Use the folder to show the children with different kinds of nourishment.</p>	<p>*"What did you find out?"</p> <p>"Were any of the children well nourished?"</p> <p>"Were any of the children malnourished?"</p> <p>"Did you find out anything new about malnutrition?"</p> <p>*"Let's review how to use the arm band.</p> <p>"The children who are in the green area are growing well if they continue to eat enough of the right foods."</p> <p>"The children who are in the red or yellow area are malnourished and we will learn how to treat them."</p> <p>*"A well-fed child looks healthy, happy, alert, and active. He has some fat on his limbs and body and a roundness to his face. A malnourished child looks pale and listless. He is thin and you can usually see his bones."</p> <p>"The arm band helps us decide if the child is underfed. The red area tells us the child is seriously malnourished and needs to see the Medex at the health unit immediately. The yellow line tells us the child is malnourished and needs more food. If the line touches the green mark, the child is normal but needs to keep eating to grow properly."</p> <p>"A child who has a red or yellow mark needs special help. This help is best given by the child's parent because it is caused by what the child eats in the home."</p>

Special Instructions For Teaching	Text for Teaching CHW
<p>*Show picture of mother breast feeding.</p> <p>*Show picture of supplementary food.</p> <p>*Show picture of cup and spoon.</p> <p>*Show picture of mother feeding child who looks ill.</p> <p>*Show picture of "mother" eating.</p> <p>For literate CHWs, pass out cards and read basic messages. For non-literate CHWs, review the five messages with the pictures.</p> <p><u>ROLE PLAY #1</u></p> <p>Have two trainees act as a mother and father of a very malnourished child. The 12-month old child is using a bottle and only gets one small bowl of porridge each day.</p> <p>The medex should play the part of the CHW. He should talk to the parents, measure the child with an arm band, and talk to the parents about the five basic messages. (Following the role play, all CHWs take turn in the role play.)</p>	<p>"There are five basic nutrition messages that you must learn so that you can help children who are malnourished."</p> <ol style="list-style-type: none"> *1. Breast milk for at least two years. *2. Add super porridge, legumes, eggs and vegetables at four to six months of age and feed three to four times a day. *3. Use cup and spoon. No bottle. *4. Continue to feed child when he is ill. *5. Give extra legumes, eggs, fish and meat and vegetables to mothers who are breast feeding and pregnant women. <p>"These messages should be memorized."</p> <p>"Bottlefeeding is very dangerous and kills babies because dirty water, flies and fingers spread germs that grow in warm milk. These germs cause diarrhea in the child. A cup and spoon is much better because they can be washed easily."</p>



Ken Tull, World Neighbors

1995

Special Instructions For Teaching	Text for Teaching CHW
<p>Stress the importance of removing the bottle, substituting cup and spoon and feeding a variety of foods four times a day.</p> <p><u>ROLE PLAY #2</u></p> <p>Have two trainees take the parts of the mother and mother-in-law. They have an 8 month old child who measures gree with the arm band. The mother asks the CHW what she should be feeding her child.</p> <p>(The teaching Medex takes the role of the CHW first. Then all CHW's take turns in the role play.)</p> <p>Emphasis breast milk and cheap local foods three to four times a day. Extra food for the mother must be remembered.</p> <p>(THE REMAINDER OF THIS ACTIVITY IS NOT INCLUDED IN THESE SAMPLE MATERIALS.)</p>	<p>"Breast milk is the best food for a baby for the first six months of life. After six months, he needs other foods to keep growing. Cereals, eggs, fruits and vegetables should be given four times a day."</p> <p>*"We should always encourage the mother to breast feed her child and to use local foods. A small child needs to be fed many times during a day. His stomach is small. He needs to eat more often than an adult. Remember to ask the mother how much her child actually eats at each feeding. The child should have three to four feedings of food in addition to breast milk each day."</p> <p>"Some parents feel that a child should not be fed when he is sick -- with fever, a cold or with diarrhea. But a sick child needs more food. The food must be offered several times a day. The parent must gently encourage the child to eat. Because he feels sick, he is often too tired to eat so special favorite foods can be helpful. Food is necessary to be certain he will get well."</p>

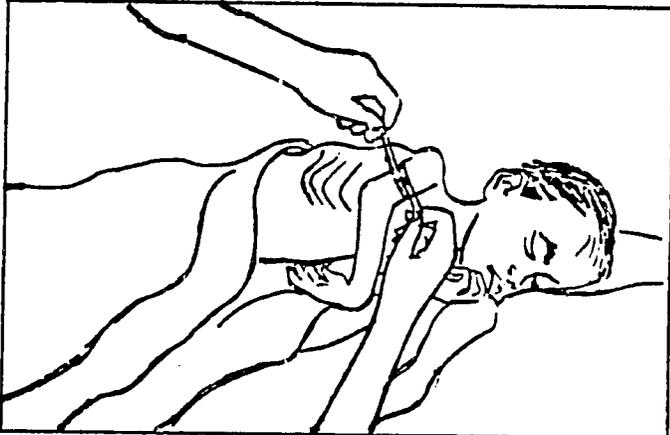
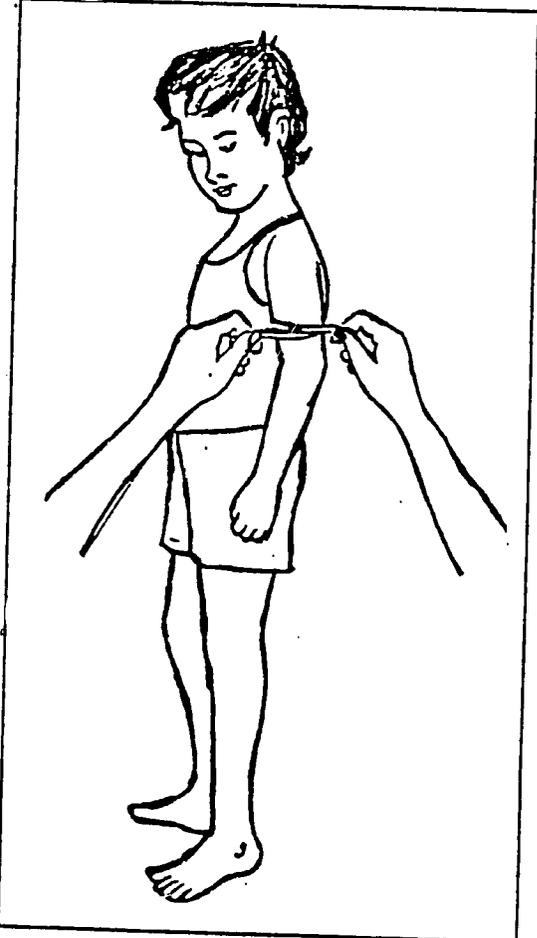
EVALUATION OF CHW IN VILLAGE
(NUTRITION)

1 - adequate
0 - inadequate

	VISIT 1	VISIT 2	VISIT 3	VISIT 4	VISIT 5	VISIT 6
1. The CHW knows where all the malnourished children live in the village.						
2. How many malnourished children has the CHW referred or brought to the health post.						
3. During visit to village, discuss nutrition and find out if three village families know the importance of breast feeding.						
4. During visit to village, find out if three lactating or pregnant women know about eating protein-rich foods and vegetables.						
5. The CHW uses the arm band correct to measure children.						

REMINDER FOR CHW

NUTRITION

Special Instructions	Visuals for Literate and Non-Literate CHW
<p>Measure the upper arm of each child with an arm band.</p> <p>If mark is in the red area:</p> <ol style="list-style-type: none">1. Accompany to the health post immediately.2. If fever or diarrhea is present, sent to the hospital and notify the medex at the health post. <p>If mark is in the yellow area:</p> <ol style="list-style-type: none">1. Encourage parents to give extra food to their child.2. Visit home once a week and measure with the arm band.3. Ask parents how much food child is actually eating.4. If fever or diarrhea, accompany to medex at the health post.5. Teach the five basic nutrition messages. <p>If mark is in the green area (normal):</p> <ol style="list-style-type: none">1. Encourage parents to continue to give nutritious food to their child.	 

TEACHING PLAN

Session 1

Topic: Teaching the CHW: Identification of malnourished Children

Objectives: Upon completion of this session, the Medex will be able to conduct training sessions using role play, teaching folders, demonstrations and discussions to teach the CHW:

1. Identification of malnourished child through the use of an arm band.
2. Care of malnourished children.
3. Parent teaching of basic nutrition messages.

Methods: Role play, demonstration, discussion.

Materials: Teaching folder, arm band, visuals for nutrition messages, nutrition message cards.

Time - 5 hr. 30 min.

Procedure:

Preparation: Arrange area to simulate village situation. Arrange for tutors to monitor small groups. (One tutor for every 5 students.) Identify some mothers and children to assist in the role plays.

Learning Activities:

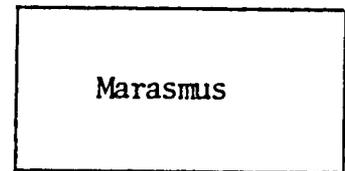
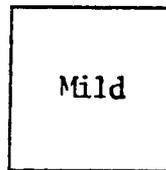
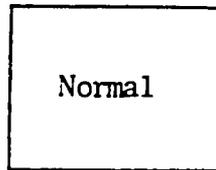
- | | |
|---|---------|
| 1. Students read the introduction to the module text on nutrition for teaching CHWs and review nutrition sections in STEM module. (Diseases of Infants and Children and Community Health I & II.) | 30 min. |
| 2. CHW Nutrition Activity 1 | 2 hrs. |
| a) You, as Medex, simulate teaching lesson with other Medex trainees acting as CHWs. (If Kwashiorkor is not present in your area, eliminate Kwashiorkor.) | |
| b) Divide into groups of 5 with one acting Medex and others as CHWs to practice teaching. (Be sure all Medex trainees have opportunity to practice teaching.) | |
| 3. CHW Nutrition Activity 2 | |
| a) You, as Medex, simulate teaching lesson with other Medex trainees acting as CHWs. Use two out of the 3 role plays. | 30 min. |
| b) Divide into small groups of 5 with one Medex teaching. (All Medex trainees should have opportunity to practice teaching.) | 2 hrs. |

Teaching Plan -- Session 1 (cont'd.)

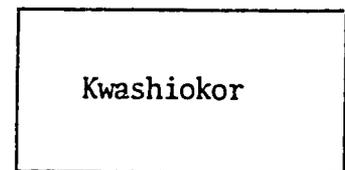
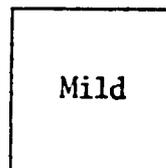
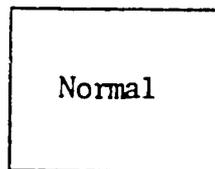
	Time
<p>4. Group Discussion</p> <p>a) Medex role in helping CHW if following occur:</p> <ol style="list-style-type: none">1) CHW has some difficulty using the arm band.2) CHW forgets to send malnourished child to health post. <p>(The key essential in teaching people in oral tradition is to repeat the instructions if there are any errors. Always remain positive.)</p>	<p>15 min.</p>
<p>b) Special points to remember in teaching CHWs:</p> <ol style="list-style-type: none">1) Is the Medex using village language?2) Is the Medex giving the CHW a chance to practice?3) Is the Medex offering suggestions for the CHW to improve his "simulated" practice?	<p>15 min.</p>

MATERIALS AND EQUIPMENT FOR CHW

1. Folder (photos)



2. Folder (Photos)



3. Arm Bands

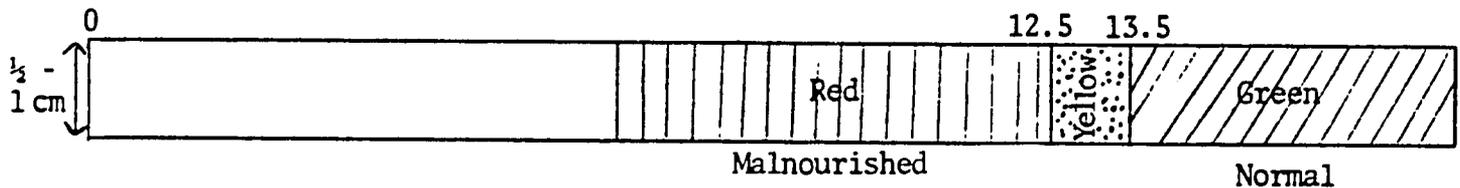
4. Diary/copy/pencil for literate CHWs and one for Medex.

5. Basic message cards (For literate only).

Construction of the Arm Band (Shakir Strip)*

1. Measure and cut a $\frac{1}{2}$ - 1 cm. strip of cleaned x-ray film.
2. Scratch a line across the strip (0 cm.)
3. From the scratched line (0 cm.) make a second scratched line a distance of 12.5 cm. from the first one (0 cm.)
4. From the first scratched line (0 cm.), make a third scratched line 13.5 cm. from the first one (0 cm.)
5. Color the distance from the first line (0 cm.) to the second line (12.5 cm.) with a red felt tip pen.
6. Color the area between the second line (12.5 cm.) and the third line (13.5 cm.) with a yellow felt tip pen.
7. Color the area after the third line (13.5 cm.) with a green felt tip pen.

ARM BAND (SHAKIR STRIP)



*Adapted from TALC's "Child to Child Program", Institute of Child Health, London.

SYSTEM FOR TEACHING ESSENTIALS TO
MID-LEVEL HEALTH WORKERS

MODULE TEXT

TRAINING THE CHW
(LITERATE AND NON-LITERATE)

H Y G I E N E

REVISED PREPRODUCTION SAMPLE VERSION MAY 1981

14⁰⁰

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CHW CLASS SCHEDULE FOR HYGIENE	
PRETEST AND POSTTEST	
EVALUATION OF CHW IN VILLAGE	
REMINDERS FOR CHW	

INSTRUCTIONAL OBJECTIVES

The medex will use role play, discussion and a village visit to help the CHW learn the following:

1. Construction of a sanitary latrine.
2. Maintenance and use of a sanitary latrine.
3. Identification of village water sources.
4. Collection of safest available water for drinking.
5. Storage of drinking water in the home.
6. Identification and practice of personal hygiene habits.
7. Construction of covered gutters and area for disposal of village waste water and garbage.
8. Identification of community leaders to promote village hygiene.

3.4.3

NURSE CLINICIAN
LEARNING
TO
TEACH
VHVs D I A R R H O E A

1980
Rural Health Development Project
Ministry of Health and Social Welfare
Maseru, Lesotho

ACTIVITY 1

DIARRHOEA

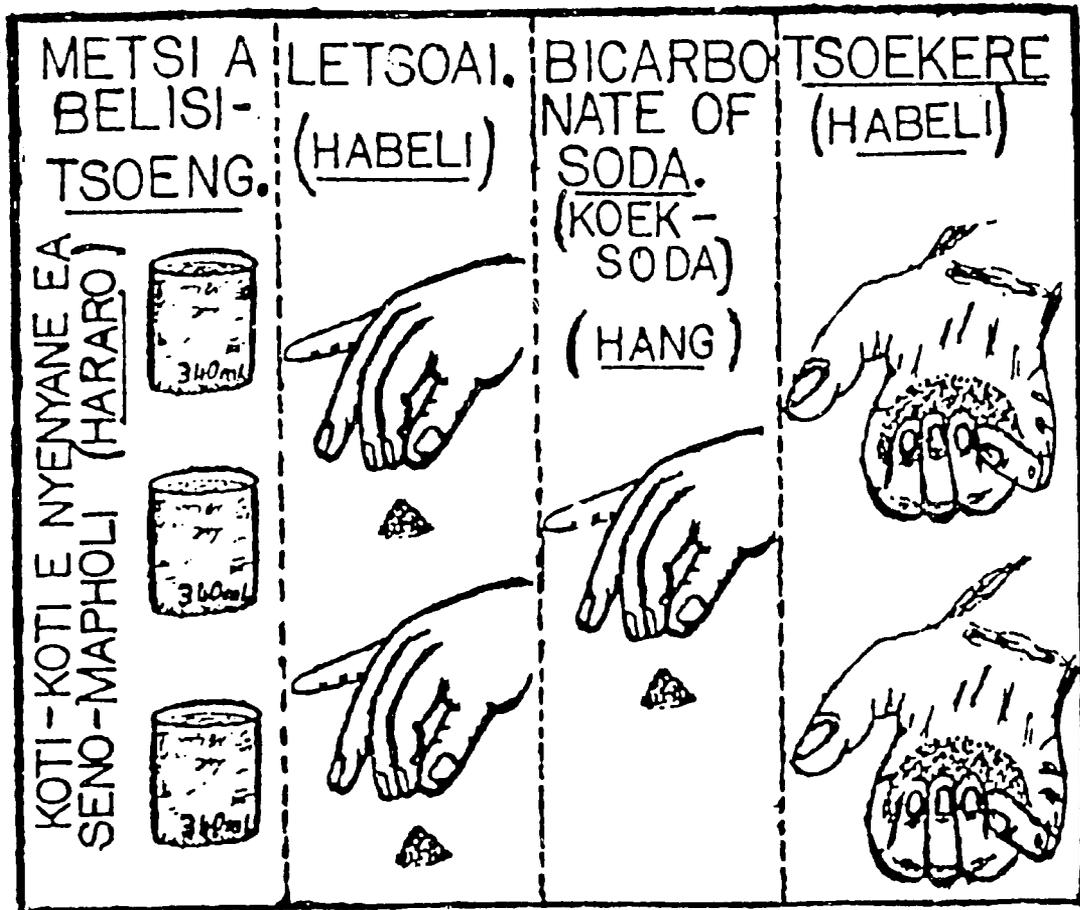
Special Instructions For Teaching Text	Text for Teaching
<p>*DISCUSSION</p> <p>Once the local name for diarrhoea is identified, always use that name in further discussions.</p>	<p>"Today, we are going to talk about diarrhoea. When children and adults have loose watery stools, they are said to have diarrhoea."</p> <p>* "Do children in your village have diarrhoea?"</p> <p>"What is the name of diarrhoea in your village?"</p> <p>"When do children usually get diarrhoea?"</p> <p>"Do you see diarrhoea more often at certain times of the year?"</p> <p>"What do you usually do for it?"</p>
<p>*Use ORAL REHYDRATION flip-chart.</p> <p>-Show page of child with diarrhoea, then page of child vomiting.</p>	<p>"Diarrhoea is when a child passes loose, watery stools. This means that the child is losing water (fluids) from his body. The child can also lose water by vomiting. Since the child is losing water from his body, we must be sure that the water is replaced. This is important in order to prevent the child from getting sicker and dying."</p> <p>"For the child or adult who is having loose, watery stools, or is vomiting, the best treatment we can give is oral rehydration solution."</p>
<p>-Show page of three tins and boiling water.</p>	<p>"This oral rehydration solution can be made in the village home by boiling one litre of water. You can measure one litre of water by using an empty beer, or coca cola tin and filling the tin three times with water. This gives you one litre."</p>
<p>-Show page of things to make oral rehydration solution.</p> <p>-Show picture of pinches and fistfuls of ingredients.</p>	<p>"Gather together, sugar, salt, soda and a clean pan for mixing. To the cooled boiled water, add two pinches of salt, one pinch of Koek-soda, and two fistfuls of sugar."</p>
<p>-Show picture of woman pouring oral rehydration solution in cup,</p>	<p>"Pour the oral rehydration solution in a clean cup and feed it to the child."</p>

8.

Activity 1 - Diarrhoea (cont.)

Special Instructions For Teaching Text	Text for Teaching
<p>*SHOW TEACHING POSTER</p> <p>Boil one litre of water. Add two pinches of salt. Add one pinch Koek-soda. Add two fistfuls of sugar. Cool and feed to the child.</p> <p>HANDOUT</p> <p>Give an oral rehydration solution teaching poster to each VHW. Ask each VHW to put the poster on some wall of their house. Ask them to tell the story of the poster to the members of their family.</p>	<p>* "Remember the importance of feeding the child the oral rehydration solution. The child must drink at least one full glass for every stool passed. This is the essential part of the treatment."</p> <p>"Remember that it is our responsibility as VHWS to teach the parents how to make the oral rehydration solution and to feed it to their children. VHWS should also always have one bottle (capped) of fresh boiled water in your home so that you can make it into oral rehydration solution and can give it immediately in case someone comes to your house suffering from diarrhoea. Give your oral rehydration solution but also teach the mother or father how to make it at home. This is done at the villager's home if the villagers are from your village. If not, make it in your home."</p> <p>"Keep one bottle of fresh boiled water in your home so that you can make oral rehydration solution for treating a child with diarrhoea. When a child is brought to your home with diarrhoea add two pinches of salt and one pinch Koek-soda, and two fistfuls of sugar and feed it to the child."</p> <p>HOME ASSIGNMENT:</p> <p>"Tonight at home, make <u>one litre</u> of oral rehydration solution. Wash the bottle carefully before you put the oral rehydration solution in it. Cap it and bring the bottle to class tomorrow."</p>

THUSO EA PELE HA NGOANA
 A HLATSA KAPA A TSOLLA:
 NOESA NGOANA KOPI EA MOTSOAKO
 ONA NAKO LE NAKO HA A QETA
 HO TSOLLA.



HAPE TSOELAPELE HO NYANTS'A NGOANA LE HA A TSOLLA.

NO.23
7/80

BOPHELONG
HEU

3.5.1

3.5.1 Introduction to Materials for Continuing Education

Continuing education is necessary in order to maintain, expand and improve skills and knowledge at all levels. The most effective, important and appropriate continuing education takes place through supervision and other on-the-job interactions. More formally structured and identified continuing education activities (such as continuing education for mid-level health workers via two-way radio sessions in Guyana), although important, are secondary to training and motivation through regular contacts.

Continuing education and supervision should be closely linked, in fact integrated, if they are to be effective. In the five countries with which HMDS has collaborated, mid-level health workers have been prepared to train and support the community health workers who provide the most essential health services at the community and family level. Positive support, continuing education and supervision for the mid-level health workers may be provided by several types of supervisors, including physicians, technical specialists and especially competent and experienced mid-level health workers specifically trained to supervise other MLHW's.

Continuing education and supervision, to be effective in improving and maintaining appropriate and high quality primary health care services, must support and motivate the health

worker and strengthen his relationships with both the health system and the community. This view contradicts actual practices in many countries, but once the benefits of supportive supervision have been demonstrated, the required changes can be made and are usually accepted. Support of health workers by supervisors does not eliminate the need for assessments of work performance. However, such assessments, which are also necessary for effective continuing education, can come to be seen positively by both workers and supervisors, as linked to potential rewards rather than only to losses and punishment.

A matrix type of organization, where it is possible, can facilitate appropriate technical support and continuing education for all levels of the health system while still maintaining relatively clear and functional lines of authority and responsibility.

The sample materials presented here indicate how some operational program responses to the points discussed above are facilitated by prototype materials and guidelines. The samples represent materials prepared specifically to facilitate analysis of continuing education needs of Micronesia's mid-level health workers ('Medex') and community health workers ('Health Assistants') and development, through workshops, of a continuing education program and skilled personnel to meet those needs.

3.5.2

CURRICULUM:

MID-LEVEL HEALTH WORKER

CONTINUING EDUCATION SEMINAR MATERIALS

MICRONESIA, 1979

Health Manpower Development Staff (MEDEX)
John A. Burns School of Medicine
University of Hawaii

June 15, 1979

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TENTATIVE SCHEDULE - CONTINUING EDUCATION SEMINAR I - PONAPE

Week 1

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30a	Welcome. Introduction to seminar objectives/activities. Review and discussion of Seminar Manual Unit I	Identify 10 common MCH problems to be managed by Mx and HA's.	Identify the physical exam and historical indicators of successful diagnosis for the 10 clinical problems.	Field test assessment tools in clinical settings: hospital, OPD, rural clinics.	Develop assessment tools for physical examination skills management procedures.
10:30a	↓	Develop standing orders for management of these problems.	↓	↓	↓
12:00p			LUNCH		
1:00p	Identify problems commonly managed by Mx and HA's.	Identify 10 common community health problems to be managed by Mx and HA's.	Develop assessment procedures for diagnosis and management success using the methods of observation, record review and radio communication.	Review and revise assessment tools.	Field test assessment tools in clinic and revise.
2:30p 4:30p	Develop standing orders for management of these problems.	Develop standing orders for management of these problems.	↓	↓	↓

06/15/79;ms

TENTATIVE SCHEDULE - CONTINUING EDUCATION SEMINAR I - PONAPE

Week 2

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30a	Develop assessment tools for Mx and HA of MCH. ↓	Develop assessment for management of community health problems by Mx and HA's. ↓	Complete field test and revision of MCH and community health problems. ↓	Field test and revise dispensary management assessment procedures. ↓	Plan for Supervision of Mx and HA continued: ↓
12:00p			LUNCH		
1:00p	Field test and revise. ↓	Field test and revise. ↓	Develop assessment of dispensary management. ↓	Develop plan for supervision of medex and health assistants. ↓	Wrap up. ↓
4:00p					

06/15/79;ms

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TENTATIVE SCHEDULE - CONTINUING EDUCATION SEMINAR II - PONAPE

Week 1

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:30a	Review of Seminar 1 Orientation: Task Analysis Discussion	Read "Training Curriculum" Answer Review Questions Review training material	Read "Sub-Systems" Review Questions, orientation and discussion	Read "Common Problems" Review Questions Discussion: Common Problems	Read "Components of CE"; answer review questions Orientation: Components of CE Discussion
10:00a	Task analysis adaptation exercises	Orientation: Standards implicit in training materials Discussion	Sub-systems worksheets	Prioritization of common problems Discussion	Worksheets
12:00p			LUNCH		
1:00p	Formulation of task analyses from job descriptions	Prepare assessment tools from training materials	Interview Mx and IAs in Ponape re sub-systems	Interview Mx/HA in Ponape re job requirements	Implementation of components of CE Orientation and discussion
3:30p	Adaptation of task analysis for Medex supervisors	Test assessment tools on Mx in OPD Report findings	Present findings Discussion	Identify CE needs as a result of interview Discussion	Present implementation plan Critique ³ and discussion

1.7 The ability of the present health care delivery system to meet assessed needs

To reiterate, the needs that appeared evident to the consultant team were for:

- a. the development of an effective supervisory system for Medex and Health Assistants,
- b. continuing assessment of Medex and Health Assistants' performance via the supervisory system,
- c. subsequent determination of continuing education needs for Medex and Health Assistants on the basis of performance assessment,
- d. definition of the continuing education curriculum and understanding and application of appropriate instructional methodologies linked to the supervisory process.

It is the opinion of the consultant group that the present health care delivery system in Micronesia would be capable of meeting these needs, with minimum additional outlay. There would, of course, have to be general consensus and commitment in order to establish a receptive framework and there would have to be a certain willingness to modify some current emphases in staffing and responsibility.

Prerequisites for successfully meeting the assessed needs are perceived as:

- a. the assignment of highly-motivated Medical Officers as supervisors of Medex,
- b. the appointment of selected Medex as field supervisors of Medex deployed to the Outer Islands and provision for travel of supervising Medex on Field Trip Ships for the purpose of assessing performance,
- c. the assignment of responsibility to Medex deployed in the outer islands for supervision of Health Assistants.

These three requirements could be met with no additional cost, using existing manpower and would necessitate merely a modification of present assignments.

The only additional facilitating factor considered as of prime importance would be the improvement of radio communications between the Outer Islands and the District Center, wherever feasible.

1.8 Outcome needs

The needs listed in 1.7 above should be considered as outcome needs for the proposed continuing education effort.

Although at first sight, it might not appear obvious that these outcome needs constitute, in themselves, an important area for continuing education to address, it is strongly felt that only by addressing these identified needs can one hope to lay the basis for a meaningful program providing lasting benefits by improving the health care delivery system and the quality of care provided.

In other words, training in supervision and assessment, as in curriculum planning and implementation, is in itself, a continuing education activity and not merely a prelude to such activity. The consultant group has agreed that the best service that HMDS can provide at the present time is to provide continuing education in the areas mentioned, rather than to offer short-term instruction in isolated clinical topics. At this point, it is considered more important to improve the system than to increase individual or collective clinical skills. Once a firm basis of supervision has been established and assessment and instructional skills have been imparted, those who have participated in the initial continuing education endeavor will be in a position to adapt and use prototype materials that are available at HMDS and elsewhere to meet the specific educational needs of individual Medex and Health Assistants.

It seems to the consultants that they would indeed be doing a disservice to the Medex and Health Assistants of Micronesia if their initial efforts were not directed to education in supervisory skills and instructional methodologies.

SCHEDULE FOR PROPOSED SEMINARS

<p><u>PRESEMINAR I:</u></p> <ul style="list-style-type: none"> - IRMS Submission of Curriculum, June 15, 1979 - IRMS Submission of CE Manual for Supervisors, Upon Approval of Curriculum 	<p><u>SEMINAR I:</u></p> <ul style="list-style-type: none"> - 2 Weeks in Ponape 	<p><u>POST-SEMINAR I:</u></p> <ul style="list-style-type: none"> - 6 Days - 3 IRMS Consultants (1 per 2 Designated Districts; 3 days per District max.) - 1 MIO Consultant (1 Designated District; 3 days max.; E. Goon, optional) 	<p>IMPLEMENTATION OF ON-GOING ASSESSMENT OF MX. & IA</p>
<p><u>PRESEMINAR II:</u></p> <ul style="list-style-type: none"> - Seminar I Participants Tabulate Assessment Data - Seminar I Participants Complete Preliminary Identification of CE Needs 	<p><u>SEMINAR II:</u></p> <ul style="list-style-type: none"> - 3 to 6 Months from Seminar I - 2 Weeks in Ponape 	<p><u>POST-SEMINAR II:</u></p> <ul style="list-style-type: none"> - 6 Days - 3 IRMS Consultants (1 per 2 Designated Districts; 3 days per District max.) - 1 MIO Consultant (1 Designated District; 3 days max.; E. Goon, optional) 	<p>IMPLEMENTATION OF ON-GOING CE FOR MX. & IA</p>

TRAINING MANUAL FOR FIRST CONTINUING EDUCATION SEMINAR, MICRONESIA

INTRODUCTION

This training manual has been designed to assist you during the first of two seminars devoted to preparation for continuing education of Medex and Health Assistants in Micronesia.

Before starting on any preparatory activities, it is important that we all understand what is meant by the term "continuing education". It means different things to different people! Some people think of it as a series of workshops where health workers are "retrained". Others think of it as self-instructional materials; others as clinical preceptorship. So we need to agree as to what we mean by continuing education, so as to avoid confusion and to allow us to plan for it properly.

When we talk about continuing education during this seminar, we shall be meaning all those educational activities that take place after the Medex or Health Assistant has finished training. This would include workshops, preceptorships and self-instruction, of course. However, we shall be giving a special meaning to the term. Continuing education will mean for us especially those activities that are on-going and are directly related to the needs of individual Medex and Health Assistants.

It is important that we realize that continuing education -- or CE -- does not consist only of workshops or preceptorships or rotations through hospital. Although these are included in CE, they are only a small part of it. Real continuing education takes place when problems are identified in the work of each individual Medex or Health Assistant and special assistance is given in solving such problems. Just as problems in work arise all the time, so must educational assistance be given all the time. This is what is meant by the on-going nature of continuing education. It is an activity that goes on and on.

This is the big difference between "training" or "retraining" as we know it and CE. By training someone, we try to give them the knowledge and skills necessary to do a certain job. What often happens when they start to do the job is that they discover that they have forgotten much of the knowledge and many of the skills that they learned, or perhaps problems arise in their work for which no training was given. Sometimes, too, people start to take "short-cuts" in their work, so that they no longer work exactly as they were trained to do. This is where continuing education comes in.

The aims of continuing education are:

- a) to prevent skills and knowledge from being forgotten,
- b) teach any new skills or knowledge that are necessary on the job
- c) correct wrong knowledge or defective skills

How can we learn whether a Medex or Health Assistant remembers the skills and knowledge he or she had immediately after training? How can we tell if he or she needs to learn new skills? How can we know what skills they are performing badly or what wrong ideas they have about parts of their work? The answer to all three of these questions is, of course, SUPERVISION. Only through effective supervision can we hope to know what the real educational needs of health workers are. So quite a large part of this seminar will be devoted to the problems of supervision and how an effective system of supervision can be set up in the different Districts of Micronesia.

However, before we can even start to look at supervision, there is a need to agree on certain standards. Each Medex and Health Assistant must know clearly exactly what his or her job is supposed to be and, secondly, how he or she is supposed to perform it. This means that we have to look carefully at the jobs and analyze what needs to be done. Then we have to agree on guidelines that will tell the Medex and Health Assistants how they are supposed to do it, we will have a baseline for evaluating them and finding out what their real educational needs are. Without this baseline and without the evaluation or assessment we can only make guesses -- and to set up a continuing education program on guesswork would mean that probably we would not teach Medex and Health Assistants what they really need to know.

Once we do know, we can then proceed with setting up a plan for continuing education and provide a means for conveying to health workers the information they need and provide for them the practical experiences that will help them to maintain and improve their skills.

During this workshop, then, you will be learning about:

- a) the meaning of continuing education
- b) analyzing the tasks that Medex and Health Assistants perform
- c) developing guidelines for management of common problems
- d) setting up a supervisory system
- e) assessing performance
- f) planning a CE program, using different methods

It is hoped that these activities will be of assistance to you in setting up the kind of program in your District that will ensure that Medex and Health Assistants give quality health care to the populations they serve.

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4.1

INTRODUCTION TO CONCEPTS AND PRACTICES IN ADAPTING TRAINING MATERIALS AND TO CURRICULUM ADAPTATION WORKSHOPS

This introduction covers the advantages of adapting and using prototype materials, the need to adapt them, the adaptation process developed and tested in the five countries with which HMDS has collaborated, and the prototype materials which facilitate the adaptation process. It also discusses the workshops which provide focal points for adaptation activities.

The clear advantages which result from adapting and using prototype materials for primary health care development include:

1. Reduce the lead time required to establish, expand and strengthen effective national PHC programs
2. Assure that all major areas (e.g., job design and task analysis, training, system planning, management support) are considered, and that appropriate technologies are considered in each
3. Facilitate effective and systematic use of past experience in primary health care
4. Maximize effectiveness of technical cooperation for primary health care
5. Facilitate effective use of technical cooperation among developing countries

6. Enhance commitment to and identification with primary health care among participants in the adaptation process

It is equally clear that materials and approaches must be carefully adapted if the advantages listed are not to be outweighed by the dangers and failures which result when inappropriate materials and methods are used. The systems approach to primary health care development advocated by HMDS, and the prototype materials developed within that approach, facilitate their own adaptation to help each country meet its own specific needs.

The adaptation process is one of the unique features of the MEDEX approach to primary health care. In the area of PHC training, prototype materials and training approaches are adapted by each country to insure that the graduates of the training programs are able to respond appropriately and competently to that country's specific problems and within the framework of its PHC program. This has been done with assistance from HMDS core staff and long term advisors during the development and refinement of the approaches and prototype materials.

The process of developing a competency-based training curriculum starts with an assessment of the communities' health needs. Using this assessment and information and decisions regarding health workers' availability and roles, the job of the health worker is derived and analyzed. This analysis results in the definition of skills and knowledge to be acquired during training. This cycle of activity, which includes community needs assessment as a determining factor in the specification of the training curriculum, assures the preparation

of health workers who are trained to serve the primary health care needs of the community.

The focal point of curriculum planning and of materials adaptation for the training programs is the "curriculum adaptation workshop". This is a two to six week session in which health workers and officials from various levels of the health care system first work to finalize draft job descriptions and task lists for the Mid-Level Health Workers and Community Health Workers. They then develop a training program for category of worker and revise training materials to assure that the trainees will become competent to perform all of the tasks listed for their jobs under the conditions which will actually prevail in the field.

The workshop format produces a period of concentrated activity to plan and advance the ongoing activities of adaptation and implementation. Groups of knowledgeable persons familiar with the needs and health problems, attitudes and practices of the rural people assemble for the workshops. The thirty to fifty participants are selected to include health workers with significant rural experience (such as sanitarians and public health nurses), central and district level administrators with rural experience and responsibilities, tutors, and doctors with known technical credibility and peripheral experience. Within this mix of participants resides the knowledge base for an informal needs assessment which is directly applied to the adaptation of materials. The appropriateness of the content and adapted materials derived from the process depends on the correct mix of participants. Consideration of each candidate for workshop participation is based on his/her knowledge, experience and position, to assess the person's potential contributions to adaptation and probable future involvement in the country's primary

health care program. In addition to ensuring content appropriate to the needs of the country, the participation of these groups of people reinforces a receptive framework for the changes they will propose, promote, and ultimately implement. The workshop also provides a continuing education opportunity for the transfer of some of the skills and knowledge required for implementing an effective primary health care program. During the curriculum adaptation workshop, the roles of the CHW and MLHW are also explored further, as are the entry level of trainees, selection of trainees, certification procedures, supervisory structure, and logistic support considerations.

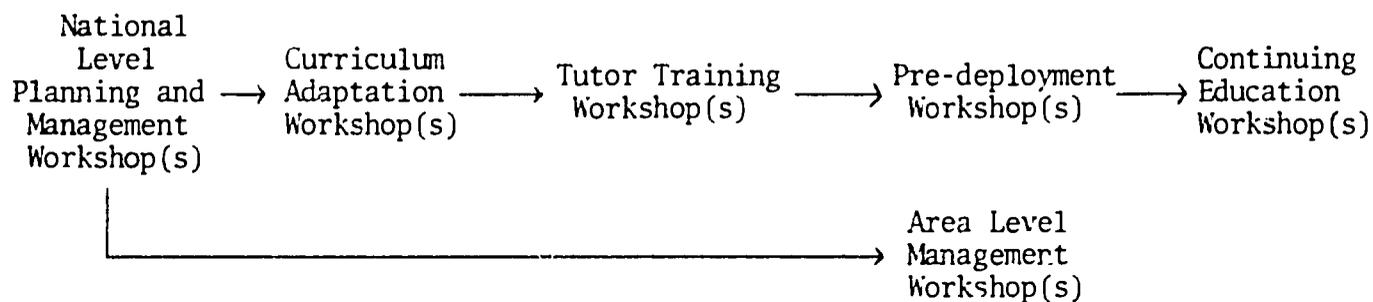
At the completion of the curriculum adaptation workshops, the roles of both mid-level health workers and community health workers have been defined to the extent of analyzing job descriptions into tasks and the tasks, in turn, into the skills and knowledge required. This forms the basis for the detailed adaptation of the individual modules. Plans for the completion of the student text adaptation have been made and implementation of that process has begun. The adaptation of the student texts continues in small working groups for a number of months after the workshop.

Prototype plans and other prototype materials for conducting the curriculum adaptation workshop have been assembled into a curriculum adaptation workshop manual, representative sections of which are presented in this Section

Other workshops are closely related to the process of adapting training materials and approaches. The workshops are arranged to feed into one another, leading participants stepwise to preparation of an

infrastructure support system sufficient for the needs of graduate health workers and to prepare competency-based training materials for the training of new primary care workers. Following analyses of organization and support systems, planning and management workshops produce specific action plans to improve systems. Some participants from these workshops also participate in the curriculum adaptation workshop. The tutor training workshop is held after completion of the adaptation of student texts and before commencement of mid-level health worker training, to prepare tutors to use competency-based training methodology. The instructors' materials and other tutor-related materials are adapted during this workshop. Prior to the community health worker section of the mid-level health worker training, a preceptor deployment workshop prepares tutors to train mid-level health workers to train community health workers, as well as preparing the tutor for managing the community phase of training. District level planning and management workshops feed operations information into this workshop. After graduation of the first class, a continuing education workshop is held to help tutors, supervisors and graduate mid-level health workers to plan a continuing education program linked to ongoing supervision.

One recommended sequence of workshops is as follows:



Prototype workshop manuals are used to guide core staff, LTAs and national counterparts in organizing workshops. These manuals provide materials which assist in the process. The prototype Curriculum Adaptation Workshop Manual,

for example, includes: prototype drug and supply lists; description of the health services delivery system implicit in the prototype system of materials for training mid-level health workers and community health workers; descriptive information on competency-based training and non-formal education approaches; task analysis tables for each module; and other workshop aids. Prior to the workshop, the manuals are adapted for use in the country. They are used flexibly, choosing from the variety of materials available which are most appropriate for the country and for the workshop participants.

The materials developed by HMDS facilitate adaptation of approaches and of the materials themselves. Prototype training materials, for example, can facilitate adaptation by their:

- Inclusiveness in relation to common health problems facing PHC workers;
- Quality, both in terms of content and pedagogically;
- Control of levels of tasks and of task complexity;
- Appropriate (but flexible) sequencing of content and of learning activities (both within and across modules); and
- Controlled language and reading levels (including considerations of the problems of training and supporting illiterate community health workers).

Other materials also aid adaptation by facilitating and provoking or clarifying decisions regarding various aspects of the primary health care system. Such materials include the task tables, other materials in the modules and instructor's manuals, and with that specific intent, the materials for systems analysis and development discussed and presented in Section 5, "Systems Development Materials."

CURRICULUM ADAPTATION WORKSHOP MANUAL

Health Manpower Development Staff
John A. Burns School of Medicine
University of Hawaii
Honolulu, Hawaii U.S.A.

May 1981

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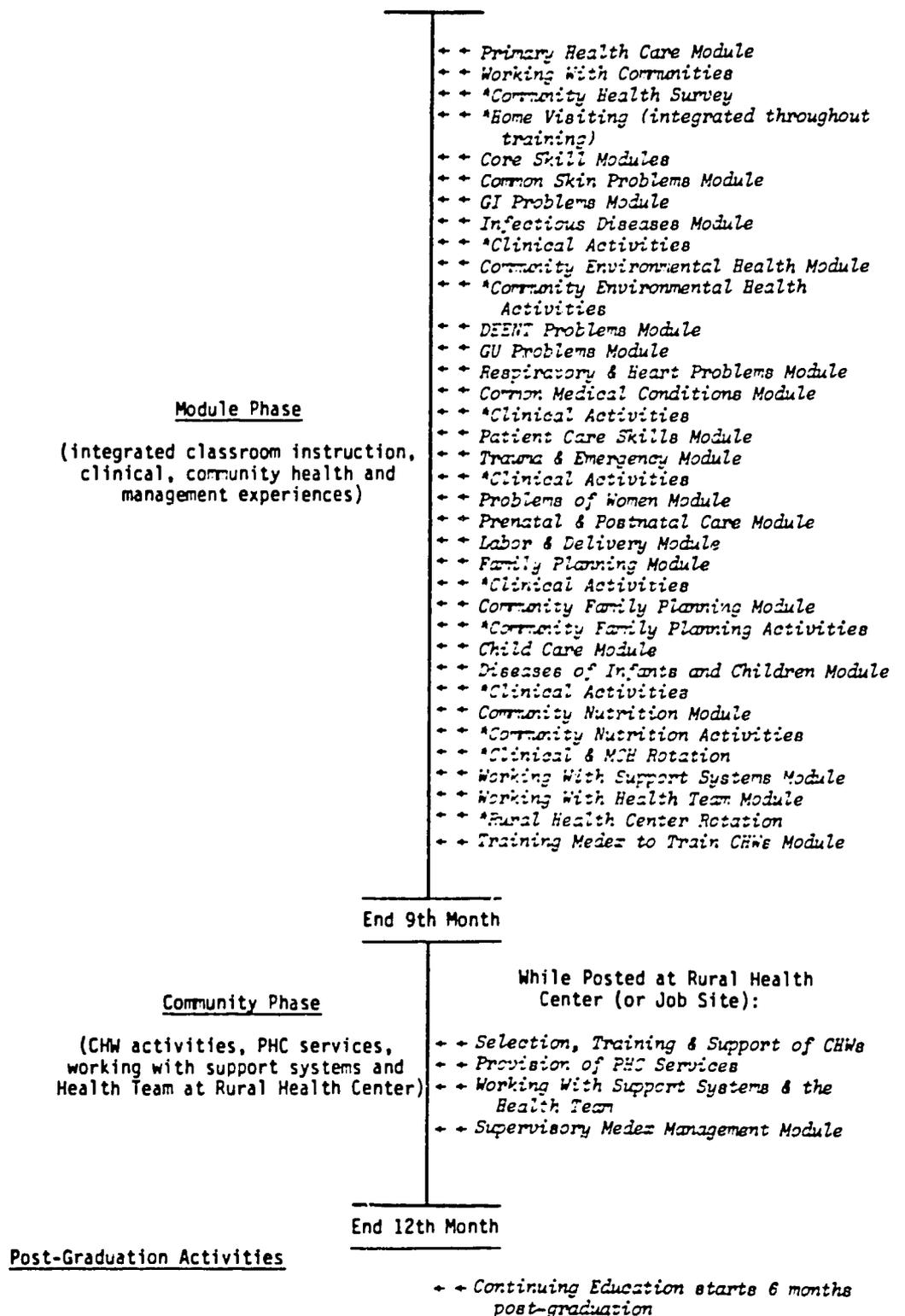
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CURRICULUM ADAPTATION WORKSHOP

OBJECTIVES

1. Adapt all task analysis tables for both Medex, including training for CHWs.
2. Familiarize participants with adaptation process and develop specific guidelines for adaptation. Recommendations for decisions about the content of the training curriculum will develop through further analysis of the following issues:
 1. Entry level of students.
 2. Disease Spectrum
 3. Identification of the roles of other health workers
 4. Conditions of employment for Medex: hours, pay grade, administrative load, field work, per diem, travel allowance, housing, etc.
 5. Plans for supervision and referral system: distance and time for referral.
 6. Equipment, supplies and facility required to perform scope of work.
 7. Drug availability and distribution system to health centers.
 8. Health center location, population served, physical description of community, i.e., transportation.
3. Familiarize participants with module components and begin adaptation.
4. Familiarize participants with HMDS training system.
 - a. Role of Medex vis a vis the community health worker.
 - b. Integration of health system management concepts into the Medex scope of work, i.e., dispensary management, training, and supervisory responsibilities, administrative policies and procedures of the health system.
 - c. Implementation of the HMDS training approach.

Example Training Sequence



*Clinical and Community Health activities integrated throughout module phase of training.

SKILLS AND KNOWLEDGE IDENTIFICATION

Skills

Once the tasks and the duties (program objectives) have been agreed upon, you are now ready to begin thinking about the skills that the Medex or CHW needs in order to perform the duties and thus accomplish the tasks.

Skills are sometimes hard to define. They include:

- a. use of the hands (psychomotor skills)
- b. explaining or persuading (communication skills)
- c. making decisions (thinking skills)

Consider each duty in turn and ask yourself these questions:

"In order to perform this duty, does the Mx or CHW need to use his hands for anything?"

"In order to perform this duty, does the Mx or CHW need to explain something to somebody, or persuade somebody of something?"

"In order to perform this duty, does the Mx or CHW need to make any kind of decisions?"

Activity

For each duty that is listed, try to identify the skills and knowledge that would be involved. Remember that skills are of three kinds -- those that are performed with the hands, those that involve communication and those that involve decision making. Only that knowledge required for the Mx or CHW to perform the skill components of the duty are to be included.*

On the blank Task Analysis Table provided, write in the task. Then write in your first duty. Next to this duty complete the skills and knowledge requirements to perform this duty. Repeat this for all of the duties you previously listed.

Knowledge

Specification of the knowledge component for the training person is fairly simple once you have clearly identified the adequate skills. As

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you list each skill, you are to consider what knowledge is needed by the Mx or CHW in order to accomplish the duty expected of her.

The question you will constantly keep in mind while making your list of things that a Mx or CHW needs to know is:

"What exactly does she need to know in order to perform the skills associated with each duty?"

Here we are NOT DEALING with what it would be NICE for her to KNOW! We ARE DEALING with what she MUST KNOW. Your list of knowledge should include only information which is essential in assisting the Mx or CHW. to perform the skills.

Common Skin Problems

Anal fissures	Filariasis	Pinworms
Boils	Hemorrhoids	Ringworms
Cellulitis	Herpes simplex	Scabies
Dermatitis	Impetigo	Tropical ulcer
Drug reactions	Lice	Warts
Eczema	Onchocerciasis	

Dental, Eye, Ear, Nose, Throat Problems

Anterior nasal hemorrhage	Dental decay	Tonsillitis
Blindness	Foreign bodies	Trachoma
Canker sore	Gingivitis	Ulcerative gingivitis
Conjunctivitis	Nasal hemorrhage	URI
Corneal laceration	Otitis media	
Dental abscess	Stye	

Respiratory System and Heart Problems

Acute bronchitis	Emphysema
Bronchial asthma	Pleural fluid
Chest pain	Pneumonia
Congestive heart failure (CHF)	Rheumatic heart disease
Chronic bronchitis	Tuberculosis

Gastro-intestinal Problems

Acute abdomen	Gastroenteritis	Intestinal obstruction
Amebiasis	Giardiasis	Parasites (round worms, thread worms, hook worms, tapeworms)
Appendicitis	Hepatitis	
Cirrhosis	Hyperacidity & peptic ulcer disease	
Enteric fever (Typhoid)		

Genito-urinary Problems

Gonorrhea	Prostatism	Urinary tract infection (UTI)
Nephritis	Scrotal swelling	Urinary tract stones
Nephrotic syndrome	Syphilis	
Penile swellings		

Infectious Diseases

Diphtheria	Meningitis	Tetanus
Leprosy	Rabies	Typhus
Malaria		

Common Medical Conditions

Cancer	Epilepsy	Mental illnesses
Cerebral vascular accident	Hypertension	Osteoarthritis
Diabetes mellitus	Hyperthyroidism	Osteomyelitis
Goiter	Hypothyroidism	Rheumatoid Arthritis

Diseases of Infants and Children

Chicken pox	Malnutrition	Polio
Croup	Measles	Rheumatic fever
Diarrhea & dehydration	Mumps	Sickle cell disease
Fever	Newborn septicemia	Thrush
Jaundice	Newborn tetanus	Whooping cough
Low birth weight		

Problems of Women

Breast problems	Menopausal associated problems
CA of cervix and uterus	Minor conditions of pregnancy:
Common problems associated with contraceptives	-burning on urination
Complications of labor and delivery:	-constipation
-abnormal presentation	-heartburn
-delay of labor	-hemorrhoids
-multiple pregnancy	-nausea
-premature labor	-vaginitis
-prolapse of cord	Ovarian tumor
-rupture of uterus	Pelvic inflammatory disease
Complications of pregnancy:	Puerperal sepsis
-anemia	Sterility
-bleeding	Uterine fibroids
-diabetes	Vaginitis - trich, monilia, non-specific, senile
-heart disease	
-intrauterine fetal death	
-toxemia	

Trauma and Emergencies

- Airway obstruction
 - burn
 - trauma
 - food choking
 - foreign body
 - acute febrile illness
- Near drowning
- Electric shock
- Hypovolemic shock
- Septic shock
- Anaphylactic shock
- Bleeding
- Burns
 - 1st degree
 - 2nd degree
 - 3rd degree
- Poisoning
 - petroleum products
 - kerosene
 - gasoline
 - insecticides
 - chlorinated hydrocarbons
 - organic phosphates
 - pharmaceuticals
 - aspirin
 - iron salts
 - phenobarbital
 - others (listed informulary)
 - methanol
 - caustic acids
 - caustic alkalis
- Coma
 - meningitis (see 71)
 - cerebral malaria
 - head injury
 - convulsion
 - poisoning
 - diabetes
 - other causes
- Lacerations
 - with foreign material in the wound
 - disruption of vessels
 - disruption of nerves
 - disruption of tendons
 - disruption of muscles
- Head trauma
 - cerebral concussion
 - cerebral contusion
 - compression of skull
 - skull fracture
- Eye trauma
 - black eye
 - laceration of cornea
 - laceration of sclera
 - sudden blindness
 - hyphema
 - fracture of orbit
 - foreign body
 - laceration of canal
 - perforation of ear drum
- Dental trauma
 - loss of tooth/teeth
 - broken tooth/teeth
 - loose tooth/teeth
 - laceration of mucous membrane
- Spinal trauma
 - fracture of spinal column
- Chest injury
 - fracture of rib(s)
 - fracture of clavicle
 - pneumothorax
 - hemothorax
 - pneumo/hemothorax
 - hydrothorax
- Abdominal trauma
 - penetrating wounds
 - contusion/rupture of liver
 - contusion/rupture of spleen
 - contusion/rupture of kidney
 - ruptured intestine
 - ruptured bladder
 - fracture of pelvis
- Extremity trauma
 - abrasion
 - contusion
 - sprain
 - dislocation
 - fracture
- Snake bite
- Animal bite
- Human bite
- Insect stings
- Drug allergy
- Nose trauma
 - fracture of nasal bones
 - contusion

DEFINITION OF HEALTH SERVICES

Population Base	1,000	5,000 - 20,000	100,000	500,000	
<u>Personnel</u>	CHW	1 MUHW/MW + 2-3 additional health workers	1-2 MDs + additional health workers	1- M.D. super mx	5+ MDs Ped, OB, Surg, Med, Dentist
<u>Supervision</u>	MUHW	Supervisory MUHW and Doctor at District Office			
<u>Facility & Equipment</u>	Room in home	Health Post with: - 2 to 4 rooms - 2 to 3 overnight beds - no lab - intermittent electricity - cold box - safe water supply - latrine	Hospital with: - 25 beds - lab & transfusion - minor surgery - 24 hour emergency - x-ray (chest & limbs) - electricity - refrigeration	District Health - supply distribution	Hospital with: - 100 beds - operating room - full x-ray +
<u>Drugs & Supplies</u>	<10 drugs and health education	approximately 100 drugs & supplies including IVs	Drugs and supplies for above	Drugs and supplies for health posts and CHWs	Drugs and supplies for above
<u>Referral and Transfer Time</u>	To MUHW: 1-2 hours	To Doctor: 6-12 hours			
<u>Clinic Schedule</u>	No Clinic	Clinic open 5 mornings 2 afternoons per week	Daily OPDs		Daily OPDs
<u>Community Work Schedule</u>	Part time	3 afternoons per week		Sr. Mx in field 15 days a month	
<u>Transportation</u>	- foot & bicycle	- bicycle or motor scooter - community means: taxi, bus, trucks, boats, animals	- 4-wheel vehicle - motor scooter - community means: taxi, bus, trucks, boats, animals, trains		- ambulance - truck - 4-wheel vehicle - community means: same as District
<u>Communications</u>	- messenger	- messenger - community means: telegraph, telephone, radio	- messenger - telephone or radio - community means: telegraph, telephone, radio		- messenger - telephone or radio - community means: same as District
<u>Health Information</u> (or Records & Reports)	Village diary maintained by MUHW CHW verbal report	- patient register - monthly activity report - return of notifiable diseases - notification of births and deaths - referral records	Medical records Various hospital forms Discharge summaries, etc.	Data for: - baseline report - health status - utilization - disease surveillance Special surveys Analysis of data for work planning & budgeting - categorical programs - MCH, NUT etc.	Medical records Various hospital forms Discharge summaries, etc.
<u>Finance</u>	None	Simple records & procedures for: - collect & bank money - local purchases - travel & subsistence allowances - imprest fund - reporting program needs for district budgeting	- budgeting - accounting for income & expense - control - analysis of performance against budget		

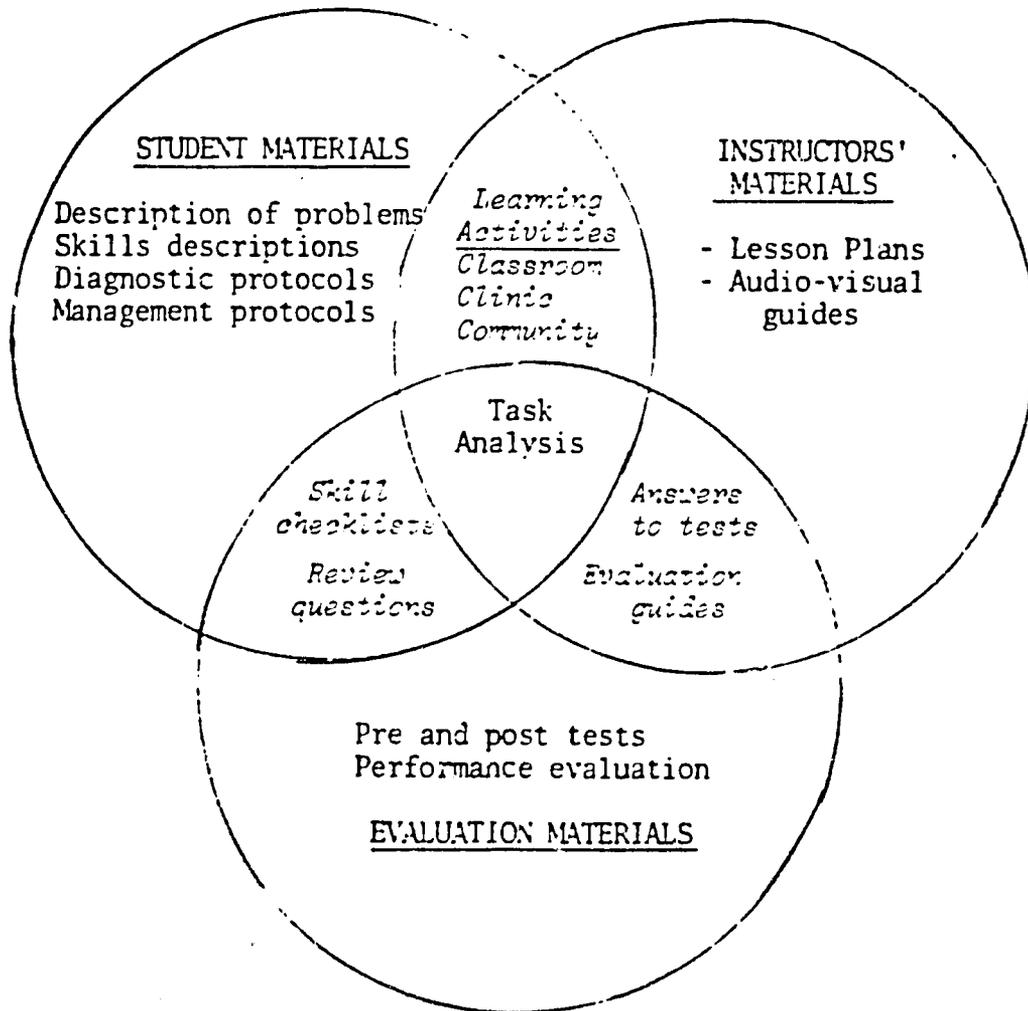
DRUG LIST FOR STEM AND CHW MODULES

Drugs

Aminophylline Tabs	Nystatin Vaginal Suppositories
Amobarbital IM	Oral Contraceptive
Ampicillin Syrup, Caps, IV	PAS
Antacid Tabs	PCN-V
Aspirin	Penicillin Eye Ointment
Atropine Sulfate	Penicillin Tabs
BCG Vaccine	Pethidine
Benzathine Penicillin	Phenobarbital IV, IM, Tabs
Benzyl Benzoate Lotion	Piperazine Citrate
Bephenium Granules	Pitocin lcc IM
Boric Acid Solution 3%	Polyvalent Antivenom
Chloral Hydrate	Probenecid Tabs
Chloramphenicol	Procaine 1%
Chloroquine HCL (IM)	Procaine Penicillin IM
Chloroquine Phosphate Tabs	Promethazine
Chlorothiazide	Pyrantel
Chlorpromazine Tabs and IM	Quinine Hydrochloride IV
Codeine Tabs	Rabies Prophylaxis
DDT	Reg. Insulin
DMPA (depo medoxy progesterone acetate) IM	Reserpine IM
DMW Electrolyte Packets	SSKI
DPT Vaccine	Saline Soaks
Dapsone (DDS) Tabs	Salt
Diazepam	Soap
Diethylcarbamazine Citrate Tabs (Hetrogen)	Soda
Diethylstilbesterol Vaginal Suppositories	Streptomycin IM
Diphenylhydantoin Tabs	Sulfadimidine Tabs
Epinephrine 1:1000	Syrup of Ipecac
Ergotamine Maleate, IM	Tetracycline Tabs
Ethynl Estradiol - Tabs	Tetracycline Eye Ointment
Ferrous Sulfate	Tetanus Toxoid
Folic Acid - Tabs	Thiacetazone
Gentian Violet 1%	Tolbutamide
Glucose	Triple Sulfa Vaginal Suppositories
Glycerol Guaiacolate	Typhus Vaccine
Hydrochlorothiazide	Vitamin A Tabs
Hydrogen Peroxide 3%	Vitamin B Complex
INH	Whitfield's Ointment
IV's - D/W	1% Hydrocortisone Skin Ointment
N/S	1% Silver Nitrate Solution or
Iodine Drops	1-2% Gentian Violet
Isoproteranol Hydrochloride	10% Glucose Solution
Lactated Ringers	50% Glucose Solution
Metronidazole	
Mineral Oil	Contraceptives:
Morphine	Condoms
NPH Insulin	Diaphragms
Niclosamide	Foam and Jellies
Nitroglycerin	Introducers
Normal Saline	Lippes Loops
	Contraceptive Pills

Ace bandage	Large syringe
Adhesive tape	Light source, flashlight
Antiseptic solution	Long, curved scissors
Aqueous solution of iodine	Long forceps
Artery forceps	Lubricant jelly
Bandages	Metal cotton carrier
Basin	Metric rule along a wall
Bifurcated needles	Nasal forceps
Blood pressure apparatus	Nasal speculum
Bowl	Nasogastric tube
Breast shield	Needle holder
Bulb nose syringe	Needles, 18-24 gauge, 15 gauge, 25 gauge
Butterfly tapes	Plastic syringe with end of barrel cut off
Catgut 0, 1	Razor blade for cord
Catheter - size 14 French	Round needle
Clamp	Rubber tourniquet
Clamp for tubing	Scale for children
Clean glass bottle	Scaling instrument
Clean wrap for baby	Scalpel blade and handle
Compress	Scissors
Container for boiling instruments	Set of fitting diaphragms
Container for placenta	Sheet or towels
Cotton	Soap
Cup and spoon	Speculum
Cutting needle	Spirit lamp
Drapes	Splints
Dry sterile dressing	Sponge holding forceps
Episiotomy scissors	Stethoscope
Examining table	Surgical gloves
Eye pad	Suture removal scissors
Eye wash cup	Syringe - 1-2 cc
Flashlight or lamp	Table or bed
Folded towel or pillow	Tape measure
Forceps	Tenaculum
Gauze, sterile	Thermometer
Glass	Tongue depressor
Gloves	Toothed dissecting forceps
Infant measuring band	Towels
Insecticide (DDT) - powder or spray	Tweezers or mosquito forceps
IV tubing	Uterine sound
Kelly clamp	Vaseline gauze
Kidney basin	Waste container
Knife blade	

MODULE COMPONENTS
and
RELATIONSHIPS



GENERAL GUIDE FOR MODULE ADAPTATION*

The Health Manpower Development Staff of the University of Hawaii have developed PROTOTYPE modules that cover the range of skills that are necessary to permit a mid-level health worker to fulfil his or her task. A "prototype" is a first model which can be changed or adapted to meet the needs of a particular country --- or in some cases a particular region of a country.

You will have found that the prototype TASK ANALYSIS TABLE did not exactly fit the special circumstances of your country and that you have had to change it slightly to meet special needs. Since the task analysis table has been changed, changes will have to be made throughout the module, to keep everything consistent.

It is best, when adapting modules, to work systematically. The best way of doing this, is to use a checklist and to organize the work so that with each module, it gets done in the same sequence or order. In this way, it is easier to be sure that important parts of the work of adaptation were not forgotten. If you use the sequence given in the next pages, you can be sure that the essential steps of adaptation will be accomplished.

Sequence of Activities in Module Adaptation

1. Finalize TASK ANALYSIS TABLE in its adapted form.
2. Modify a) STUDENT GUIDE OBJECTIVES and b) TEACHING PLAN OBJECTIVES as necessary to ensure compatibility with the adapted task analysis table.
3. Read the MODULE TEXT carefully:
 - identify sections that are irrelevant as a result of task analysis adaptation,
 - compare language level with the known reading and comprehension skills of students who will be using the text,
 - identify additions necessary to the module text as a result of task analysis adaptation,
4. Delete irrelevant portions of the text, simplify language where necessary and write additional material required.
5. Compare patient management procedures recommended in the module text with established medical practice so as to ensure consistency with:
 - standing orders
 - pharmaceutical products actually available

*Also see "A Guide to Community Health Worker Module Adaptation, Lesotho Curriculum Adaptation Workshop."

- skills described in the module text

and make necessary modifications.

6. Examine REVIEW QUESTIONS to determine whether or not they refer to essential knowledge to be gained by the student. Consider the development of additional questions to meet adapted task analysis table requirements. Delete review questions that are no longer relevant. Critically review the format of questions, with consideration of appropriateness.
7. Review DIAGNOSTIC and MANAGEMENT PROTOCOLS to ensure their conformity with information and instructions given in the module text and make any necessary modifications. (SEE details in "Adaptation of Diagnostic Protocols.")
8. Compare EVALUATION CHECKLISTS for skills and performance with a) the task analysis table b) Student Guide and Teaching Plan objectives and c) the module text, so as to identify any discrepancies and make modifications as necessary.
9. Examine the PRE-TEST and adapt questions as necessary to ensure their compatibility with entry-level skills and knowledge listed in the Student Guides.
10. Examine POST-TEST questions critically to determine whether or not they reflect essential knowledge and adequately cover all important sections of the module text. Modify questions as necessary.
11. Examine the TEACHING PLANS and make any changes necessitated by adaptations that have been made elsewhere in the modules. Identify and describe any additional learning activities that would be beneficial in the existing cultural context. Check that materials and supplies suggested in teaching plans are readily-available in-country.
12. Read the entire module critically and edit for:
 - accuracy of content
 - grammar, syntax and style
 - layout and format
13. Test the module by asking a small group of students to read the text and answer review questions.

ADAPTATION OF DIAGNOSTIC PROTOCOLS

Upon completing a revised disease list for each module, the prototype diagnostic protocols must be adapted to reflect those diseases which were added or deleted.

First delete all unnecessary diseases from the protocols. Next, for each disease to be added to the diagnostic protocols determine the common presenting complaint (chief complaint) associated with the disease. This will help you to identify in which protocol the disease must be added.

If you added acute iritis to your disease list, you might say that "red eye" is the most common patient presenting complaint. This would then only require a revision of the "red eye protocol". But if "red eye, eye pain, and loss of vision" were all common patient presenting complaints, then acute iritis would have to be added to all three protocols.

Besides the presenting complaint, those common symptoms or signs that will help the medex differentiate acute iritis from other disease in the protocol must be determined. For example, when following the "red eye protocol" the signs of

"only one eye affected with redness most marked around the pigment part of the eye (iris) AND pupil small OR irregular"

would differentiate acute iritis from all of the other eye problems in the "red eye protocol".

When one uses the word AND, this means that both symptoms (or signs) must be present for the medex to make the diagnosis of the disease. If either symptom was not found to be absent, then the diagnosis could not be made. When one uses the word OR, this means only one of the symptoms (or signs) must be present for the medex to make the diagnosis. If both symptoms were found to be absent, then the diagnosis could not be made.

A GUIDE TO CHW MODULE ADAPTATION

LESOTHO
CURRICULUM ADAPTATION WORKSHOP

See the general guide to Module Adaptation. Module for teaching CHWs have most of the same components of the other modules.

1. Task Analysis Tables
2. Behavioral Objectives (as in the Student Guides)
3. Teaching Text (includes teaching methodologies and approaches)
4. CHW Reminders (some similarities to the management protocols)
5. Pretest
6. Posttest
7. Performance Evaluation
8. Teaching Plans

Differences in Adaptation Process include:

1. CHW Reminders - Since these reminders include the key points a CHW is to learn and use, uniformity and agreement among health professionals regarding the points is necessary. Using the rule that short and simple is a virtue, agreement regarding these points develop from the adapted task analysis tables (T.A.T.).
2. Teaching Text - The teaching text must reflect the T.A.T. and CHW reminders. The text is reviewed as well as the content of the teaching techniques. Do the demonstrations and role plays reflect the adaptation made in the T.A.T. and reminders?
3. Picture Adaptation - Are the pictures drawn to reflect the ethnic/cultural context of the country or region? Are they drawn for easy visual literacy? Can pictures used in existing country health materials be used?
4. Consideration of development of further community health materials based on the CHW reminders should be given.
5. Translation - Translation into local language should begin early in the adaptation process. Is the translated language understandable to village level people? Do "medical words" still remain in the text? Can they be removed or substituted?

5.1

5.1 Introduction to Systems Development Materials

The prototype systems development materials being developed and field-tested by the Health Manpower Development Staff for adaptation and use in country-specific situations have three basic purposes:

- a. To facilitate obtaining true government commitments to systems development efforts from often apprehensive and reluctant officials, by using exemplary materials to show what is intended to be achieved, the process to be followed, and the resources required.
- b. To provide exemplary field-tested systems development materials and related training materials, all of which can be rapidly adapted to country-specific situations, thus providing a catalytic effect for the overall development process in the early stages of project implementation.
- c. To facilitate systems development efforts, through training system analysts and providing a structured process by which systems may be analyzed and redesigned, improvements implemented, and a systems renewal capability developed.

Systems development for primary health care is classified into the following systems categories:

- a. Organizational structure of the PHC delivery system.

b. PHC planning and evaluation system.

c. PHC management control and support systems:

Finance

Personnel

Drugs and Medical Supply

General Supply

Transportation

communications

Information

Facilities and Equipment Maintenance

Experiences have demonstrated that systems strengthening is most effectively achieved in the developing world through application of three distinctly different types of interventions:

a. Systems analysis, redesign, and implementation.

b. Management training of specialist systems officials, technicians, health care providers, and generalist administrators.

c. Donor contributions of selected initial and non-recurring systems improvement costs (construction, commodities, etc.).

Prototype systems development materials, of which sample excerpts are included herein, consist of:

- a. Management Analysis Training Module: To equip host country analysts with management analysis knowledge and skills sufficient to conduct studies of the various management systems.
- b. Systems Analysis Workbooks: To provide a structured process for the management analyst when conducting a systems study. A workbook is available for each system listed above.
- c. Operations Reference Manual: A set of exemplary policies, procedures and forms, covering the various systems listed above and including operations of peripheral health facilities.
- d. National Planning/Management Workshop Manual: Guidelines for planning and conducting national level workshops. The workshops provide a group process forum for reviewing management studies, deciding upon improvement actions which should be taken, and periodically reviewing the overall systems development effort.
- e. Area Planning/Management Workshop Manual: Same as (d) above, except focusing on district (or regional) planning and management development needs.

Prototype management training materials, of which sample excerpts are included herein, consist of:

- a. The following Management Training Modules for MLHWs: (Additional MLHW management training materials are also incorporated in

other modules of the System for Teaching Essentials to Mid-Level Health Workers, excerpts from which are presented in Section 3.2).

- 1) Working With the Health Team: This covers basic management practices including communications, inter-personal relations, problem solving skills, team leadership, performance evaluation, work planning, etc.
 - 2) Working With Support Systems: This covers the policies and procedures required of the various management systems, such as ordering, maintaining and protecting drugs and other supplies, maintenance and repair of equipment, etc.
 - 3) Supervisory Mid-Level Health Worker: This training module is designed for MLHW's who are assigned to supervise other MLHWs. It builds upon the knowledge and skills developed by the MLHW training modules described above. This module further develops supervisory, performance evaluation, counseling and continuing education skills.
- b. Orientation Materials: Basic informational and skills development materials for area (district) and higher level administrators. These may be adapted and used in conjunction with national and area level workshops described above, as well as in other contexts for training of higher level officials.

Development and field-testing of the above prototype materials has adhered to the following premises:

- a. Western management technology must often be revised, modified, adapted, and sometimes discarded.
- b. Existing management systems, regardless of their deficiencies, should usually be strengthened rather than replaced by new and different systems.
- c. Resistance to change in existing systems, by systems personnel and others with vested interests, is minimized when the need for change is focused specifically on the functional requirements of peripheral PHC workers.
- d. Also to minimize resistance to change, systems officials, technicians, and others having vested interests in a system and who will have responsibility for, or influence over, maintaining a system, should be intimately involved in its review and in determining both what changes are to be made, and how these should be implemented and maintained.
- e. Effective systems review should include a detailed analytical study utilizing basic industrial engineering methods to ensure that mis-information and false assumptions do not become the basis for decisions on how the system should be changed and maintained in the future.
- f. There are usually a variety of alternatives to consider for strengthening an existing system. A group process approach to identifying alternatives is usually most effective. Such a

process will often result in selection of improvement actions least difficult to implement.

- g. A decentralization of authorities, responsibilities, and functions is usually recommended when lower echelon officials participate in the process of deciding how to strengthen a system.
- h. The permanence of system strengthening efforts is directly correlated with the extent to which changes in system design are formalized by government decree or ministerial directives and are incorporated in the training or orientation curricula for management specialists, generalists, and health care providers who will influence how the system functions.
- i. The lead-time required to achieve sound system strengthening is usually seriously underestimated because of failure to recognize the length of time required to establish and carry out an effective group process strategy pursuant to the principles described above. Underestimates are also due to failure to anticipate delays in obtaining formal approval of system changes, particularly if they must be approved and directives issued by central levels of government. In some cases even laws must be revised.
- j. By following the above principles in system strengthening efforts, it should be possible not only to improve the system, but also to institutionalize an on-going process of

systems review and renewal to protect the system against obsolescence and deficient design and functioning.

Utilizing prototype materials and following the above principles, a typical systems development process might occur as follows:

- a. The orientation of central administrative officials, including non-Ministry of Health officials (e.g. finance, personnel) and Ministry of Health officials from the various echelons of the national system, to the PHC development objectives generally and to the strategy for strengthening management systems specifically.
- b. Country-specific adaptation of the prototype management analysis training module, the related systems workbooks, and the workshop manuals.
- c. In-service short-courses for host country officials and technicians utilizing the adapted modules and workbooks described above.
- d. Initiation of full, detailed management systems analyses. In collaboration with technical advisors, and under the direction of their counterparts, each major system would be analyzed, beginning at the most peripheral level and reaching to the highest level, and a staff report prepared on existing deficiencies relative to the needs of peripheral PHC workers.

- e. The planning and conduct of first annual Area Planning/Management Workshops. The purposes of these workshops might include:
- 1) Management training in group process work and team building.
 - 2) Training in planning how to plan for PHC.
 - 3) Planning how to plan for PHC.
 - 4) Beginning the operational planning of PHC, including how to organize, orient and train in the service area.
 - 5) Review of management study reports prepared by analysts, to confirm and/or revise findings and to identify, select, and recommend alternative solutions for improving management systems.
 - 6) Preparation of action plans and documents required for systems improvements, for action within the scopes of authority of those preparing them, and in other cases as recommendations for action by higher levels of authority.
- f. Carrying out additional special management studies identified as needed by the workshops.
- g. The planning and conduct of the first annual National Planning/Management Workshop, to be attended by selected administrative officials representing all echelons of the national PHC system, including management systems officials of the central government. The purposes of this workshop might include:
- 1) Review Area (and Provincial) Planning/Management Workshop input and output documents and reports, and any reports

from special studies undertaken following decisions made at these previous workshops; and confirm and/or revise findings and recommendations related to management systems strengthening.

- 2) Prepare detailed action plans and justifications, and initiate approval and request documents for submission to appropriate authorities for review and approval.
 - 3) Provide further orientation and training on planning and management systems analysis needs.
- h. The process of implementing improvements in systems should continue throughout the period of the project; however, special attention is usually given to developing at least a minimally adequate support infrastructure in time to accommodate the first graduating classes of MLHW's. While some systems improvements are often relatively easy to implement, other improvements require years of continuing effort, including periodic formal reviews and evaluations, leading to further adjustments in strengthening efforts.
- i. Second and subsequent annual Planning/Management Workshops may be planned and conducted for the following purposes:
- 1) To provide further orientation and training in planning and management.
 - 2) To review and evaluate the performance of the national and area PHC delivery system with respect to:

- the adequacy of program planning, budgeting, and program management practices;
 - the adequacy of management systems strengthening and renewal actions and practices and of systems maintenance;
and
 - the adequacy of management training policy and practices.
- 3) To prepare action plans, justifications, and recommendations for submission to appropriate authorities.
 - 4) To provide continuing orientation on management planning and operations management principles and practices.

5.2.1

STUDENT GUIDE

MANAGEMENT ANALYSIS TRAINING MODULE

Health Manpower Development Staff
John A. Burns School of Medicine
University of Hawaii

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MANAGEMENT ANALYSIS TRAINING MODULE

STUDENT GUIDE

I. Entry Level Knowledge and Skills:

Before starting this training program, you should be able to:

1. Accurately follow written instructions.
2. Use simple mathematics including addition, subtraction, multiplication and division.
3. Perform simple analytical exercises in organizing and analyzing information.
4. Understand and explain basic principles of management and public administration.

II. Objectives

Using the information and experiences provided by the instructor and the module text, you will be able to:

1. Explain the management development process to individuals and small groups;
2. Select appropriate (representative) information sources for a management system study;
3. Adapt and use a management system workbook;
4. Arrange interview appointments according to institutional rules and protocol;
5. Conduct information gathering interviews;
6. Conduct information gathering observational inspections;
7. Screen records for the gathering of appropriate information;
8. Prepare process flow charts;
9. Summarize management system study data and develop findings and conclusions;
10. Identify, assess and select alternative recommendations for system improvements;
11. Prepare formal written report of study findings, conclusions and recommendations;
12. Present oral report of study findings, conclusions, and recommendations.

III. Evaluation

Upon completion of this module, you will be assessed on your attainment of the above objectives:

Knowledge: Written test -- acceptable performance 80%

- Skills:
1. Quality of classroom performance as judged by instructor and peers;
 2. Quality of formal written report on or management system, as judged by instructor and system representatives;
 3. Quality of oral presentation on one management system, as judged by instructor and the group to which presentation was made.

IV. Activities

In order to accomplish the training objectives, you will participate in the following activities:

1. Take a pre-test to determine your entrance level knowledge and skills;
2. Read student text and answer review questions;
3. Participate in group discussion;
4. Perform individual and group skills development exercises;
5. Make one orientation observational field visit;
6. Utilizing the Management System Workbook, plan, organize, and conduct one comprehensive study of a management system;
7. Write a formal report of study findings, conclusions, and recommendations;
8. Assist with planning and conducting a Management Workshop to consider and act upon Management System Reports; and
9. Orally present findings, conclusions and recommendations of your Management System Study, to participants of the Management Workshop.
10. Record Management Workshop decisions made about the management system covered in your written and oral report, and assist with preparing implementation action papers.

MODULE TEXT

MANAGEMENT ANALYSIS TRAINING MODULE

Module Text
Management Analysis Training Module

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	Page No.
1. Introduction	_____
2. The Management Development Process	_____
3. Gathering Information: Selecting Representative Sources . .	_____
4. Gathering Information: Adapting and Using System Study Workbook	_____
5. Gathering Information: Arranging and Conducting Interviews	_____
6. Gathering Information: Conducting Inspections	_____
7. Gathering Information: Screening Records	_____
8. Summarizing and Analyzing Information	_____
9. Creative Problem Solving: Developing Recommendations . . .	_____
10. Preparing the Formal Written Report	_____
11. Preparing and Presenting Oral Reports	_____

MANAGEMENT ANALYSIS TRAINING MODULE
TASK ANALYSIS TABLE

TASK: To plan, conduct and report on, an analytical study of a PHC management support system.		
Program Objectives	S K I L L S	K N O W L E D G E
DUTIES		
1.0 Orienting others on the management development process.	1.1 Explaining the management development process.	1.1.1 Concept, objectives and content of the management development process.
2.0 Gathering information.	2.1 Selecting representative information sources.	2.1.1 Information sources 2.1.2 Criteria for determining representatives
	2.2 Adapting and utilizing the Management System Workbook	2.2.1 Adaptation guidelines. 2.2.2 Concept and content of Management System Workbook
	2.3 Arranging appointments and visits	2.3.1 Institutional rules and protocol 2.3.2 Transportation and communications
	2.4 Conducting interviews	2.4.1 Interviewing methods
	2.5 Conducting observational inspections	2.5.1 Observational methods
	2.6 Screening records	2.6.1 Record screening methods
3.0 Analyzing information	3.1 Summarizing data on findings, and formulating conclusions	3.1.1 Criteria for determining relevance, validity and reliability of data.

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Program Objectives		
DUTIES	S K I L L S	K N O W L E D G E
<p>4.0 Preparing and presenting information.</p>	<p>3.2 Identifying and selecting alternative recommendations</p> <p>4.1 Writing report of study findings, conclusions and recommendations</p> <p>4.2 Preparing and presenting oral report with and without visual aids</p>	<p>3.1.2 Methods of organizing data for analysis</p> <p>3.1.3 Inductive and deductive methods of analyzing data</p> <p>3.2.1 Sources of innovative ideas</p> <p>3.2.2 Methods of creating (and adapting) innovative ideas</p> <p>4.1.1 Format and content of written report</p> <p>4.1.2 Writing clearly and simply</p> <p>4.1.3 Data display and methods</p> <p>4.2.1 Format and content of oral report</p> <p>4.2.2 Public speaking</p> <p>4.2.3 Preparation and use of visual aids</p>

REFERENCES USED IN THE DEVELOPMENT
OF THE MANAGEMENT SYSTEMS ANALYSIS MODULE

1. Kubr, M. (editor). Management Consulting, A Guide to the Profession, International Labour Office, Geneva, Switzerland, 1978, 369p.
2. Petrich, Ernest E. Administrative Analysis Manual, U.S. Public Health Service, Washington, D.C., 1961, 83p.
3. Petrich, Ernest E. Management Systems Improvement Plan (Annex L to MEDCAM I Project Paper), U.S. Agency for International Development, Yaounde, Cameroon, May 1980, 26p.
4. Eaton, John H. and Sabiha Hussain, Amjad Hussain. Management System Studies for the Establishment and Operation of Integrated Rural Health Complexes, National Basic Health Services Cell, Islamabad, Pakistan, December 1980.
5. Instruction Manual, Hospital Work Simplification Workshop, Management Engineering Services to Hospitals, Virginia Hospital Association, Richmond, Virginia, 1971, 47p.

5.2.2
MANAGEMENT ANALYSIS WORKBOOK

WORKBOOK
FOR ANALYSES OF
GENERAL SUPPLY SYSTEM

Prepared for: _____

Prepared by: _____

Management Analyst

Advisor/s: _____

Date Completed: _____

Health Manpower Development Staff
John A. Burns School of Medicine
University of Hawaii

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7.2 Sample Forms and Related Flow Charts	—

LIST OF FORMS

- GS-1 LIST OF PERSONS CONTACTED
- GS-2 LIST OF DOCUMENTS REVIEWED
- GS-3 SURVEY OF SUPPLY SYSTEM
- GS-4 SURVEY OF SUPPLY RESOURCES
- GS-5 SUPPLY SYSTEM POLICIES AND ORGANIZATION
- GS-6 PROCUREMENT OF SUPPLIES
- GS-7 ASSESSMENT OF LOGISTICS CHAIN
- GS-8 SUMMARY OF SUPPLY SYSTEM PROBLEMS
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- GS-12 MANDATED PROVISIONS VS. PERCEIVED NEEDS VS. FUTURE NEEDS
- GS-13 IDENTIFICATION OF PROBLEMS BY LEVEL
- GS-14 IDENTIFICATION OF ROOT CAUSES OF PROBLEMS
- GS-15 SUMMARY LIST OF FINDINGS AND CONCLUSIONS
- GS-16 ALTERNATIVE RECOMMENDATIONS

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1. INTRODUCTION

1.1 Purpose of Workbook

This Workbook is designed to assist the Management Analyst in conducting a comprehensive study of the General Supply System. This is an essential early step in supply system strengthening to support improved delivery of primary health care. The General Supply System to be studied includes the policies, procedures and practices for procuring, storing, ordering, distributing, maintaining, and utilizing general and administrative supplies, and the personnel, facilities, and other resources needed to develop and sustain an efficient and effective General Supply System.

Instructions for adapting and utilizing this Workbook are contained in the Management Systems Analysis Module. The Module provides instructional materials on planning and conducting management systems studies including how to select appropriate information sources, how to gather and analyze information, and how to prepare written and oral reports on study findings, conclusions and recommendations. Also guidelines covering the overall management development strategy being implemented, including the utilization of Management Workshops for group process review and refinement of system study findings, conclusions and recommendations.

This Prototype Workbook contains only one copy of each survey or questionnaire form. The Management Analyst will add additional copies of forms as needed, to cover all persons to be interviewed and all facilities to be surveyed.

3. INFORMATION COLLECTION

3.1 Survey of Supply System

Introduction

Form GS-3 (consisting of 7 pages) has been designed to survey the general supply system at all levels of the primary health care delivery system, from rural village to national level. Additional copies of Form GS-3 are to be used for the additional facilities to be surveyed. The survey data to be collected, covers the following functional areas of supply management:

Question 1: Inventory of Supplies

The person-in-charge of each unit or facility surveyed should physically accompany the analyst to inventory supplies. (Question 1 of Form GS-3). As each supply item is inventoried, the person in charge should indicate whether there are any problems, and make suggestions for improvements. Question 1 assumes there will be a stock card, or "bin card", which may not be the case at peripheral facilities such as health posts. The column labelled "max./min. standards" is for the person in charge to indicate if specific maximum and minimum quantities have been set, i.e., when a stock level reaches a specified minimum quantity (which should not be zero), more should be ordered and the amount to order (maximum quantity) to bring the stock level up to what is needed until the next order is received.

For health posts, the source of supply items might be government supply or local purchase. For a national supply depot, it will be useful to identify sources in terms of in-country or foreign purchase or manufacture or donation, and name of source.

Form GS-6 provides columns for review and comment, including problem identification suggested action, etc., by persons at next higher organizational levels.

Question 2: Procedure for Requisitioning and Receiving Supplies

Question 2 on Form GS-3 is intended primarily for peripheral health facilities, (health posts, health centers, etc.) and district supply depots. Through this question, variations in procedures for requisitioning and receiving should become apparent, with merits and weaknesses of each variation emerging. The analyst should complete a flow chart form, showing each step. The flow chart should show who is responsible for each step and supervisory responsibility should be identified.

Question 3: Delivery of Supplies

This question covers the method of delivery of supplies for the facility being surveyed.

Question 4: Storage Arrangements

This question covers storage methods and arrangements at the facility. The analyst should describe shelving, cabinets, security for narcotics, the general condition of storage facilities, i.e., are they clean and dry? Also, if the facility has a refrigerator, what size and type is it, i.e., electric kerosene, etc.

Question 5: Stock Control Procedures

This question covers stock control procedures including receiving, storage, issuing and annual audit. If a bin card system is in use or other method of inventory control, the analyst should obtain samples of forms that are used. Also, complete a flow chart form covering the step-by-step procedure.

Question 6: Issuing Supplies

This question covers the sections or departments within the facility, and the outside facilities or posts, that obtain their general supplies from the facility being surveyed.

Question 7: Local Purchase of Supplies

This question covers the items that are purchased in the local market. On a separate sheet, describe step-by-step the procedure for making purchases locally including how payment is made.

5.2 Identification of Problems by Level

Utilizing Form GS-13, the analyst should identify functional problems by organizational level. These problems should emerge from information recorded on Forms GS-3 through GS-7, by considering the frequency with which a particular problem is found as well as the consequences of the problem to the proper functioning of the primary health care delivery system.

5.3 Identification of Root Causes of Problems by Level

Utilizing Form GS-14, the analyst should identify and describe the root causes of problems by each organizational level of the system. Recognizing that conflicting opinions will have been given about the root causes of problems, the analyst must sift through these and must apply judgment in identifying and describing root causes. In doing so, conflicting perspectives should be stated on Form GS-14. As indicated earlier, valuable insights can be obtained by discerning any significant differences in perspectives between lower levels (village, health post, health center, and district) as against perspectives held at higher levels (regional, provincial, central); when differences are identified, additional information gathering on the issues should be undertaken to better define root causes.

It will also become apparent that a problem may have several root causes, and at other times several problems may have the same root cause.

6. ALTERNATIVES FOR IMPROVEMENT

6.1 Summary List of Findings and Conclusions

Utilizing Form GS-15, the analyst should identify and briefly describe the system problems discovered during the study. Specific system problems are to be summarized under the "Findings" column. The analysts' final conclusions about underlying root causes of a specific problem (or a related group of problems) are to be summarized under the "Conclusions" column. Entries in each column are to be assigned a sequential reference number for purposes of linking them with alternative recommendations to be identified and described on Form GS-16. Use as many additional pages of Form GS-15 as may be required.

6.2 Alternative Recommendations

Utilizing Form GS-16, the analyst should identify, describe, justify and prioritize alternative recommendations for solving system problems. A minimum of at least 2 alternative recommendations, (preferably 3), should be developed for each "study conclusion" described on Form GS-15.

PROCESS:		SUMMARY							
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CHARTED BY:		DATE:		<input type="radio"/> TRANSPORTATIONS					
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				<input type="radio"/> DELAYS					
				<input type="radio"/> STORAGES					

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PROTOTYPE OPERATIONS REFERENCE MANUAL

for

_____ HEALTH CENTRE/POST

MINISTRY OF HEALTH

GOVERNMENT OF _____

(SELECTED SECTIONS)

Draft: December 1979
Revised: October 1980
Revised: January 1981

Control Number: _____

Date Issued: _____

Revised Preproduction
Sample Version, May 1981

Health Manpower Development Staff
John A. Burns School of Medicine
University of Hawaii

JAS

PROTOTYPE OPERATIONS REFERENCE MANUAL

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5. Communication System.
6. Transportation System
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- 4.2 Procedures and forms for inventorying and ordering
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- 4.3 Procedures for receiving and inspecting shipments,
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- 4.4 Procedures for obtaining drugs and medical
supplies from alternative sources
- 4.5 Procedures for safe storage, transportation and
security of drugs and medical supplies.
- 4.6 Procedures for disposal of expired/damaged drugs
and/or transfer of stock accountability

5.2.4

AREA PLANNING/MANAGEMENT

WORKSHOP MANUAL

Health Manpower Development Staff
John A. Burns School of Medicine
University of Hawaii

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c. Participants	_____
d. Central MOH Participants	_____
e. Site of Workshops.	_____
f. Evaluation of Workshops.	_____
g. Completed Staff Work	_____
4. Workshop Objectives	
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b. For Series II Workshops (Subsequent Years)	_____
5. Prototype Agenda for:	
a. For Series I Workshops (First Year).	_____
b. For Series II Workshops (Subsequent Years)	_____
6. The Workshop Planning Team	_____
7. Workshop Participants.	_____
8. Pre-Workshop Preparation for Participants.	_____
9. Group Proces	_____
10. Workshop Outputs	_____
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 - Worksheet No. 2: Area health priorities, coverage and access, and strategy for resource allocation
 - Worksheet No. 3 Identification and ranking of problems/issues of management support for PHC for each of eight management sub-systems
 - b. For Workshop Series II
 - Worksheet No. 4: Identification and ranking of problems/issues in implementing previous workshop action plans, with recommended solutions
 - Worksheet No. 5: Revised action plans with the identification and ranking of problems/issues, proposed solutions; and specification of action steps with responsibilities and timing for each
3. Exemplary Presentation: The Doctrine of Completed Staff Work
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(To be used at the end of each workshop, for Series I and II)
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(To be used six months after each workshop at a meeting of district representatives, for Series I and II)
7. Exemplary Planning Guidelines for Workshop
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5.2.5

SYSTEM FOR TEACHING ESSENTIALS TO MID-LEVEL HEALTH WORKERS

MID-LEVEL HEALTH WORKER MANAGEMENT TRAINING MODULE

PROTOTYPE TRAINING MODULE TEXT
WORKING WITH SUPPORT SYSTEMS
(SELECTED SECTIONS)

DRAFT: DEC 1979
REVISED: JUN 1980
REVISED: NOV 1980

REVISED PREPRODUCTION SAMPLE
VERSION, MAY 1981

Health Manpower Development Staff
John A. Burns School of Medicine
University of Hawaii
Honolulu, Hawaii U.S.A.

WORKING WITH SUPPORT SYSTEMS

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STUDENT GUIDE

Unit I - Information System

I. Entry Level Skills and Knowledge

Before starting this unit, you should have successfully completed Training Modules on Introduction to Primary Health Care, Working with the Health Team, Core Clinical and MCH; and be able to:

1. Explain the organization and structure of the health care delivery system.
2. Demonstrate basic skills in arithmetic.

II. Objectives

Given available information on the population served, health status and health activities; and using the information and experiences provided by this unit text, your instructor, fellow students and resource persons, you will be able to:

1. Explain to your Health Team members the importance of collecting information for records and reports and how to use them to help the Team perform its work.
2. Set up and maintain basic records.
3. Complete and turn in reports based on these records.
4. Explain the need and use of report forms at the district, regional/provincial, national and international levels.

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WORKING WITH SUPPORT SYSTEMS
UNIT 1 - Information System

5. Use the information you collect and record at your level to improve the performance of yourself and your health team.

III. Evaluation

Upon completion of this unit, you will be assessed on:

1. Knowledge: Written text based on contents of Student Guide and information policies and procedures contained in the Operations Reference Manual. Acceptable performance, 80%.
2. Skills:
 - a. Using data* provided, prepare basic records and enter data.
 - b. Collect data from records and fill out report forms with 90% accuracy.
 - c. Interpret* the data on the forms.
 - d. Do a review of data about your health service area with your Health Team. Use the information to evaluate Team performance, to help the Team do a better job.

*Definitions:

data - pieces of information

interpret - to explain what it means

WORKING WITH SUPPORT SYSTEMS
UNIT 1 Information System

IV. You will participate in these activities in order to accomplish the unit objectives.

1. Read Student Guide and Operations Reference Manual section on Information System and answer review questions.
2. Orientation by instructor.
3. Practice filling out records and report forms.
4. Small group exercises and discussion.
5. Participate in role play to interpret data and to use data for planning and supervisory purposes.

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STUDENT GUIDE

UNIT 7 - Finance System

I. Entry Level Skills and Knowledge

Before starting this unit, you should have successfully completed the Module on Introduction to Primary Health Care, and be able to:

1. Explain the organization and structure of the health care delivery system.
2. Keep simple financial records.
3. Demonstrate basic skills in arithmetic.

II. Objectives

Using the information and experiences provided by this unit text; by the financial policies, regulations, procedures and forms in the Operations Reference Manual; and by your instructor and fellow students, you will be able to:

1. Describe the organization and basic functions of the finance system of the Ministry of Health.
2. Describe the structure and use of the health budget.
3. Describe the system for collecting and accounting for patient fees and other revenues, and demonstrate the use of forms and procedures for this purpose.

WORKING WITH SUPPORT SYSTEMS
UNIT 7 - Finance System
Student Guide

4. Explain the policies and procedures for:
 - a. Obtaining timely paychecks.
 - b. Reimbursement of travel, subsistence allowances and other official personal expenses.
 - c. Local purchases and use of imprest fund.
 - d. Inventory control and accountability.
 - e. Reporting losses, thefts and damage to government property.
 - f. Handing-over duties and government property to a new person in charge.

III. Evaluation

Upon completion of this unit, you will be assessed on:

1. Knowledge: Written test based on contents of Student Guide and finance policies and procedures contained in the Operations Reference Manual. Acceptable performance, 80%.
2. Skills:
 - a. Ability to draw an organization chart and to explain the structure and functioning of the finance system of the Ministry.

WORKING WITH SUPPORT SYSTEMS
UNIT 7 - Finance System
Student Guide

- b. Ability to explain the budgeting system in general terms.
- c. Ability to fill out forms and follow procedures involving:
 - Receiving paychecks
 - Reimbursement of travel, subsistence allowances and other personal expenses
 - Local purchases and use of the imprest fund
 - Inventory control and accountability
 - Reporting losses, thefts and damage to government property
 - Handing-over accountability

IV. You will participate in these activities in order to accomplish the unit objectives:

1. Read Student Guide and the Operations Reference Manual section on Finance, and answer review questions.
2. Orientation by instructor
3. Practice maintaining financial records and filling out report forms.
4. Participate in group exercises and discussions, including critiques and role play exercises.

EXERCISE 3-A

SURVEYING TRANSPORTATION RESOURCES IN THE COMMUNITY

Drawing on community resources can help the MLHW meet his/her transportation needs. In every health service area there are local transportation means which may be available to support health work. This exercise will help train the MLHW to identify these resources and evaluate their use in addition to the transportation which is normally available through the Ministry of Health. In the brief amount of time available this exercise can only serve to sensitize the MLHW to what may be available through the community. Later, in the community phase of training, a more detailed survey can be undertaken in the actual communities that are a part of the MLHW's health service area.

Preparation

Prepare for field trips to nearby villages. Advance preparations will be required to contact the village leaders and arrange for the student visits. Three hours should be scheduled for the field trips, including travel time. For a class of 25 students arrange for 3 to 5 villages, and divide the students into groups of 5 to 8 each. Select villages which as much as possible are representative of the conditions which the MLHWs will find in their assigned health center locations.

Assignment

Step 1

Instruct the student teams to visit the village and to make a survey of transportation resources which may be available for rural health

WORKING WITH SUPPORT SYSTEMS
UNIT 3 - Transportation Systems
Instructors Manual

center use, for routine health staff work, village supervisory visits and for emergencies.

Following introductions and explanations of their visit, and with appropriate community guides, the student teams should make observations and conduct interviews to make a list of transportation means and sources used by the community. They should note the means of transportation, (bus, taxi, market vehicle, etc.), the agency or owner, destinations, travel time, frequency of trips and cost. The most common destinations should be identified (such as the nearby market town, district capital, hospital, schools, etc.). All forms and sources of transportation should be investigated, both public and private.

The student teams should refer to the Guidelines for Identifying Transportation Alternatives, and use the attached Community Transportation Resources Worksheet in conducting their surveys.

In addition to completing the worksheet the student teams should draw a sketch map showing the major transportation routes and means of transportation leading from the community.

Time required for field surveys, including travel to and from villages: 3 hours.

Step 2

After completion of field visits, the teams will report back to the full class. Each team will give a short spoken report followed by discussion and critique by the instructor and fellow students. Each team report should emphasize the resources that are different from,

WORKING WITH SUPPORT SYSTEMS
UNIT 3 - Transportation Systems
Instructors Manual

and in addition to, those presented by the other teams.

Time required for reports and discussion: 1 hour.

Outputs from Exercise

- Individual team visit Worksheets (3 to 5 for typical class).
- Appropriate transportation map for each community surveyed.

GUIDELINES FOR IDENTIFYING
TRANSPORTATION ALTERNATIVES

For use in analyzing community transportation resources . . .

1. Check all public and private means of transportation. List the type, availability, usual destinations, cost, who to contact, method of payment. Look for buses, trains, taxis, boats, trucks, animals, animal carts, motorcycles, and bicycles. Owners of some of these vehicles may be available to carry messages for you in addition to providing transportation.
2. People who live in villages seem to have a way of getting out. As you stop to look at it, villagers usually can arrange to get out of the village to travel to a market town, the regional/provincial capital, or to another village to visit friends or relatives. Check into the means which they use and it may suggest more alternatives for you.
3. Study the distribution system for agricultural products and other businesses in your area. Usually, this is fairly reliable as farmers and businesses must get their products to market in timely fashion. You may be able to make arrangements for the use of vehicles going to market for some of your routine transportation needs.
4. Study the transportation used by other government agencies -- agriculture, education, public works, etc. Find out what is

WORKING WITH SUPPORT SYSTEMS
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working best for them, it may also work best for you. (For example, if mopeds are being used successfully by agricultural extension workers, you may be able to make the case for purchasing the same for your Health Team. You might even be able to share common repair facilities with the Ministry of Agriculture).

5. Also, when studying other agencies you may be able to make sharing arrangements with them, so field teams and supervisors can travel together to the same village.
6. Check out the military and police and see if you can make arrangements for their help in case of emergency or disaster. Always check and make arrangements in advance. Make this a part of your emergency transportation plan. Don't wait for a crisis to arise and then ask for the first time.
7. Don't overlook the missions, industrial, mining, agricultural and military medical facilities that may be in your area. Discuss your transportation needs with them to see what they can provide.

5.2.6

PROTOTYPE TRAINING MODULE FOR
SUPERVISORY MID-LEVEL HEALTH WORKERS

(SELECTED SECTIONS OF UNITS ON
WORKING WITH THE HEALTH TEAM
AND
WORKING WITH THE COMMUNITY)

DRAFT (SECTIONS): 1979-1980

PREPRODUCTION SAMPLE VERSION: MAY 1981

Health Manpower Development Staff
John A. Burns School of Medicine
University of Hawaii

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SUPERVISORY MEDEX TRAINING MODULE

UNIT: WORKING WITH THE HEALTH TEAM

Student Text

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 The Patient Encounter

 Guidelines for Field Work

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SUPERVISOR'S HEALTH SERVICES AREA

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 The Concept of Baseline Data

 Purposes for Collection of Baseline Data

 The Baseline Health Survey

 Primary Health Care Data: Present Status

 Planning a Health Survey

 Developing and Implementing Work Schedules

 Scheduling: Self-assessment and Discussion

 Development of Prototype Schedule

 Guidelines for Field Work

 Preparing and Submitting Required Reports

 The Monthly Activity Report

 Guidelines for Field Work

 Collecting and Analyzing Data About Health Facility
 Functioning

 The Management Audit

 Guidelines for Conducting Management Audit

 Giving Feedback on Audit Results

 Evaluating and Planning Health Facility Activities

 Planning: Self-Assessment and Discussion

 Giving Feedback on Planning Activities

 Guidelines for Field Work

ASSISTING THE MID-LEVEL HEALTH WORKER IN MANAGEMENT OF PERSONNEL
PROBLEMS: CONFLICT RESOLUTION; MOTIVATION AND DISCIPLINE;
PROMOTING GOOD WORKING RELATIONSHIPS

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SUPERVISORY MEDEX TRAINING MODULE

UNIT: WORKING WITH THE HEALTH TEAM

Instructor's Manual

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 Session 2 - The Patient Encounter

 Session 3 - Baseline Data

 Session 4 - Purposes for Collection of Baseline Data

 Session 5 - Primary Health Care Data: Present Status

 Session 6 - Planning a Health Survey

 Session 7 - Scheduling

 Session 8 - Development of Prototype Schedule

 Session 9 - The Monthly Activity Report

 Session 10- The Management Audit

 Session 11- Guidelines for Conducting an Audit

 Session 12- Giving Feedback on Audit Results

 Session 13- Planning: Self-Assessment and Discussion

 Session 14- Giving Feedback on Planning Activities

II. WORKING WITH THE HEALTH TEAM: FIELD PHASE GUIDELINES

 1. Supervising Mid-Level Health Worker Clinical
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 2. Collection of Baseline Data

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UNIT: WORKING WITH THE COMMUNITY

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* Excerpts from these sections are included in this set of sample materials

SUPERVISORY MEDEX TRAINING MODULE

UNIT: WORKING WITH THE COMMUNITY

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* Excerpts from these sections are included in this set of sample materials.

SUPERVISORY MEDEX TRAINING MODULE
STUDENT GUIDE
IMPLEMENTING COMMUNITY HEALTH ACTIVITIES

I. Entry Level Skills and Knowledge

Trainee will have assisted a community to establish at least one kind of ongoing community health activity.

II. Objectives

Using the information and experiences provided by the instructor(s) and the module text, you will be able to:

1. Describe the process and the outcomes of your previous community health activity;
2. Describe the types of problems in implementation of health activities at the community level which you and your classmates have had and propose solutions to these problems.

III. Evaluation:

1. The content of your self-assessment:* The extent to which you have been able to recall and evaluate the process and the outcome of your community health experiences will be evaluated by your instructor.
2. The quality of your class discussion participation and notes.

IV. Activities in which you will participate to complete the above objectives:

1. Read module text and answer the review questions.
2. During first session, complete the self-assessment.
3. Participate in class discussion during second session.

* The Self-Assessment is included in this set of sample prototype materials.

STUDENT TEXT: IMPLEMENTING COMMUNITY HEALTH ACTIVITIES
Classroom Phase

Introduction:

During the training program, you have had an opportunity to review your own experience in working with communities.

The objective of this final unit of the Working With The Community Module is to assist you to learn how to help the mid-level health worker at the community level.

As in previous units, your first task will be to complete the self-assessment: Implementing Community Health Activities. Do this in the first class session of this unit.

The self-assessments will provide the basis for several class discussions. Read over the Discussion Guide in your reference manual. This lists the issues which will be discussed in class.

For each discussion one student will be requested to take very careful notes.

REFERENCE BOOK

SELF ASSESSMENT: IMPLEMENTING COMMUNITY HEALTH ACTIVITIES

1. The purpose of this self assessment exercise is to provide you, the Supervisory Mid-Level Health Worker trainee, with an opportunity to review your own personal experience in working with a community. Earlier self assessment exercises have focused on your experience in initiating contact with a community, assisting the community to assess its health needs and resources, and planning for a health activity. It would be ideal if you could utilize the same community for this exercise which you used for the earlier self-assessments. However, we recommend that you choose a past experience which is clearest in your memory and/or which represented the greatest problems for you.
2. Begin by listing the communities in which you have actually carried out some type of organized activity, in addition to helping the community assess its health needs.

COMMUNITY ACTIVITY	INDICATE THE TYPE OF ACTIVITY IMPLEMENTED
(1) _____	_____
(2) _____	_____
(3) _____	_____
(4) _____	_____
(5) _____	_____

3. Indicate which community and activity you will utilize for this exercise:

4. Briefly describe the activity:

4.1 OBJECTIVE(S): _____

4.2 METHODS: (Who was to do what?) _____

(continue on next page if
necessary)

5. What commitments to the health activity were obtained from each individual who was to participate? Describe your understanding of each participant's contribution:

6. What were the SPECIFIC TASKS which each participant was to perform? Did any of these tasks require additional training? If so, who was to provide it?

7. What RESOURCES (equipment, supplies, technical expertise) were required? Were adequate arrangements made to obtain them?

8. What was your role? Did you have any responsibility for training? For obtaining resources? For contacting and obtaining support from other government agencies? Describe each of these activities:

9. How much of YOUR TIME was supposed to be required? How much time did it ACTUALLY require? Did you put the amount of time and effort into it that it required? If not, why not?

10. How fully did the COMMUNITY SUPPORT the activity? The leaders? The participants? The individual community members who were to benefit from the activity?

11. If support was less than expected, what were the most like reasons for this?

12. Was the activity supposed to be evaluated? Was this planned originally? How was it to be evaluated? Has it been? What were the results?

INSTRUCTOR'S MANUAL: IMPLEMENTING COMMUNITY HEALTH ACTIVITIES

Classroom Phase

Introduction:

This is the final unit in the SUPERVISORY MID-LEVEL HEALTH WORKER MODULE.

The focus is on: how the supervisor can monitor Mid-level Health Worker performance related to implementing community health activities, and

how the supervisor can assist the mid-level health worker in his attempt to help the community.

The teaching strategy is identical to the previous units in this module: The trainee will recall his own previous experiences by completing a self-assessment questionnaire. Even a very small amount of experience can be examined and learned from.

Review the instructional objectives for this unit. Note that each trainee is expected to have had at least one experience in working with the community. Any of the following, for example, would qualify:

1. participating in an immunization
2. participating in nutritional surveillance
3. midwifery experience
4. family planning services
5. communicable disease control
6. sanitation or water supply improvement

During the preliminary planning for this training course, you will have determined what experiences each trainee has had. You will also have arranged for any students without adequate prior experience to spend some time working at the community level before entering this training program.

Review the Self-Assessment on Implementing Community Health activities* and the accompanying discussion guide. The students can complete the self-assessment during class time, so that you can assist them by answering questions.

Plan to hold the class discussion after completion of the assessments. Apoint one student as official note taker. He must accurately record student comments and provide a summary of the important points in the discussion. This is an important learning activity which all students should participate in at least once during the Supervisory Mid-Level Health Worker training program.

After the class discussion, schedule a follow-up period for review and approval of the class notes. The quality of the notes serves a useful role in your evaluation of the students.

*The Self Assessment is included in this set of sample prototype materials.

TEACHING PLAN

Sessions 10 and 11

Topic: Implementing Community Health Activities

Objectives: I. Required Baseline Competency

Trainee will have assisted a community to establish at least one kind of ongoing community health activity.

II. Classroom Phase

- 2.1 Trainee will be able to describe the process and the outcome of his/her selected previous community health activity;
- 2.2 Trainee will be able to describe the types of problems in implementation of health activities at the community level which he and his classmates have had and propose solutions to those problems.

III. Preceptorship/Field Phase

- 3.1 Trainee will assist a Mid-Level Health Worker in implementing a community health activity by working with a Mid-Level Health Worker who is involved in such an operation;
- 3.2 Trainee will maintain concise, accurate notes on supervisory tasks performed.

Methods: Self-instruction, self-assessment, classroom discussion, field activities.

Materials: Workbooks

Preparation: Review module text and instructor's manual.

Learning Activities:

1. Students read module text.
2. Students complete self-assessment during first session unit.
3. Based on self-assessments, instructor will conduct class discussion.

DISCUSSION GUIDE: ISSUES IN COMMUNITY HEALTH ACTIVITY IMPLEMENTATION

1. This discussion guide has been prepared to assist the instructor in reviewing the Supervisory Mid-Level Health Worker trainees' self assessment exercises for the unit on health activity implementation at the community level.
2. In working with the community to carry out a health activity of almost any kind, there are a number of issues which must be addressed. The more complicated the activity, the more attention must be paid. But even the most simple project will probably fail without due attention to necessary details. The objective of this class discussion exercise is to critically review the community health activity experience of each trainee in order to identify as many of the issues as we can so that we can assess how important they are to success and failure.
3. First of all, prepare a list of the various types of activities which the Supervisory Mid-Level Health Worker trainees have identified for analysis.
4. Note the objective(s) which each Supervisory Mid-Level Health Worker trainee describes. Discuss these objectives in class. Ask questions such as:
 - 4.1 Are the objectives limited enough and specific enough to evaluate?
 - 4.2 Does the group feel that their previous training and experience adequately prepared them for planning these activities?
 - 4.3 Is it possible to estimate the time and cost of the activity from the stated objectives?
5. How much involvement of the community itself was required for each activity? Did the Supervisory Mid-Level Health Worker's understanding of the contribution of each participant agree with the community's understanding (paragraph 10 of self assessment form)?
6. Were there any needs for trained personnel which were not adequately anticipated and provided for? Describe these.
7. Were there any needs for external resources (equipment, supplies, technical expertise) which were not anticipated and provided for? Describe these.
8. Did the Supervisory Mid-Level Health Worker trainee anticipate the nature and extent of his/her involvement in the community health activity? Was he/she able to follow through on the commitment of time and energy which this required?
9. Did the activity demand skills or resources which the Supervisory Mid-Level Health Worker was to provide but did not have? Be specific about these.

10. In analyzing any failures, what were the critical problems which account for them? Think especially of the possible roles of each of the following:
 - 10.1 Communication problems - community not involved enough in the planning or implementation; health department not involved enough; false expectations on the part of the community or the government.
 - 10.2 Resource problems - not adequately planned for; requested but not provided.
 - 10.3 Commitment problems - community leaders/members promised commitment of time and/or resources, but then didn't provide them.
 - 10.4 Health Services problems - health personnel did not provide the required technical expertise, training, or personnel or other resources for the activity.
11. Was the activity evaluated sufficiently well to make it possible to develop or carry on the activity in the future? Was some kind of plan for evaluation a part of the original plan for the activity?