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# PRIMARY HEALTH CARE GUIDE LINES

*A Training Manual for Community Health*

*As Developed for*

*The Comprehensive Health Care Center,*

*Akampa, Calabar, Nigeria*

SECOND EDITION

Organised Under the Editorship of

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with an

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**PRIMARY HEALTH CARE GUIDE LINES  
A TRAINING MANUAL**

**FIELD TRAINING PROGRAMS AND EDUCATION FOR HEALTH  
UNDER THE DIRECTION OF I.C.H.S. STAFF**

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## INTRODUCTION

Meharry Medical College with a 110 year history of commitment and competence in community based health care, shares this perspective of medicine in this second edition of **Primary Health Care Guide Lines**. Our goal is to update the publication periodically, noting changes in technology and advances in community based health expertise. It is our hope that this work will provide a framework for producing comprehensive training programs not only for developing countries but also for appropriate locales in more developed nations. The application of the principles and practice presented in this manual is also found successfully utilized in health care settings in AMERICA today. American Communities are benefiting from these strategies originally developed for and found successful in locations abroad. International Health certainly begins at home.

It is with profound thanks that Meharry salutes the United States Agency for International Development (AID) in their providing the 122-D Grant funds that made producing this publication possible. In assessing the goals of AID in international health it is our purposeful intention that this book addresses many of their health program and project needs in the developing world. Meharry hopes that AID too finds the contents of this manual as useful as this institution has in developing successful health interventions.

Implementing effective community based programs for expertise in health care is not a new direction. It has been Meharry's practice for over 100 years. We look forward to sharing this expertise through this and other publications as well as collaborations between our institution, and others, as well as organizations and governments in producing truly effective community based health care training programs world wide.

**H. L. MAYS, M.D.**

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## I. INTRODUCTION

Good health means good communications. As communicators we must understand the context within which we communicate. The willingness to learn enhances ability to understand. We cannot communicate effectively without knowing the **total context** within which we are working.

### CONTEXT OF THE COURSE

What we call modern medicine is a mixture of innovation and tradition. There have been three formative stages in western medicine, each with its own set of valid problems, its own emphasis, and its own language:

1. Early in the nineteenth century, morphology and pathology became the pivotal axis of medicine, based on classical anatomy. Diseases received a locus in **space**: cell, tissues, organs.
2. After **space**, there entered into medicine the concept of **time**. A corollary of this idea was function. **Form and function** can be discerned on the basis of time, or the time scale used for assessing change.
3. Within recent time the **Age of the Person** has brought about a substantial change. **A truly human medicine deals with biological problems within a sociological paradigm**, (a definition of biopsychosocial medicine). Since man is a social and cultural animal, nobody escapes the fate of being member of a group, heir to a tradition, son or daughter of a father, member of a family, part of a community-friend or enemy.

### QUALITY OF LIFE:

The understanding in Community Health and Biopsychosocial Medicine attempts to integrate **different domains of practice and theory**. It includes all levels of analysis and extends to the social matrix in which individuals live, work, love and become ill. Generally speaking a **unified perspective of Community Health and Social Medicine is taught**. That is the direction of the Department under Professor Day. In these concepts, the teaching curriculum encompasses the following activities under the **interpretation** of Community Health.

### Simply Put, What is Community Health?

Community Health is a perception of health integrating knowledge and data from a plurality of disciplines including:

1. Health Communications, Health Education, and Cultural and Intercultural Communications.
2. The sociological understanding of the community, society, and nation.
3. Behavioral Medicine.
4. Epidemiology of Disease.
5. A complete understanding of Communicable Disease Control, and Control of non-Communicable disease.
6. Nutrition as it affects health in the community.
7. Maternal and Child Health.
8. Occupational Health.
9. The Planning, Organization, Comprehension and Management of Health.
10. Health Policy, including Access to Health, and Health Care Delivery Systems.
11. Health Psychology and Mental Health.
12. Biostatistics.
13. Health Care Evaluation Methodologies.
14. Social and Economic Development of the Society.
15. The Cultural Environment including Ritualistic (Traditional) Medicine, Humanism in the Social Order, and Bioethics.

16. **Legal Issues** in Health Care.
17. **International Health**.
18. **Family Medicine**
19. **Research** on original problems raised by questions of Community Health and Family Care.
20. The ability to **integrate** all the above concepts into an **interdependent** social, cultural, economic, and medical "Environment", or developing world context.

**If Community Health expresses such a broad integration of widely different fields, how can we discuss so much in a simple, uncomplicated way?**

This is a fair question, and deserves an answer, based on understanding of the **whole field**.  
**Answer:** Quality of life has become more and more a function of the biosocial development of the society. Good health is a function of good health communications, and we teach that good health is not only good clinical health but also good social health. Although unstructured as a science, social health makes implicit understanding of the social foundation of illness.

In our day, scientific specialisation has hindered simple concepts of good health care. Man is a cultural animal. He may become sick in body, in psyche, or in both. Disease may effect any or all of these configurations. Life force merges into the dynamics of all components. **Where the interface is made manifest the dynamics define the nature of human action of human behaviour**, (Day and Lolas. 1980)

From this viewpoint, concepts of Community Health and Biopsychosocial Health imply comprehension of problems translating biologic or life rules between levels, principally between **analyses** (scientific factorial approaches), and **syntheses**, (practical modes of action) — (Day and Lolas, 1979)

In Nature, sets of translation rules arise between different domains, and between different biologic levels in a given domain shaped by genetic and evolutionary forces. **Thus Man and his Environment are not to be understood in separation from each other**. They are to be evaluated as interdependent parts of a united whole. In the dynamics of the life force, change is the featured constant. Man is always situational, (Day, 1969).

In our discipline, we view Community Health as a component of biosocial development. **We believe that health care is not a matter solely to be evaluated by physicians alone, but as good health concerns all in society, laymen as well as physicians, each person is better taught to conserve his/herself own health (self health), as a fundamental direction of biopsychosocial care.**

### **SOME GOALS OF THE TEACHING PROGRAMME**

1. The programmes outlined in this training manual are aimed at **utilising** the community spirit of the people to provide Health Care Services for themselves at village level.
2. To teach that **people themselves**, through their Village Health Committees can provide Health Clinics
3. To demonstrate that **health is now a team fight**. The doctor functions as part of a health team, **primus inter pares**, (first among equals), but the other health professionals — nurses, midwives, paramedic staff, educators, councillors, welfare workers, are all critically important. **Others to be included** are the pharmacist, physiotherapist, radiographer, medical social worker, Health Educationist, Health Inspector, Community Attendant, and the Health Centre Attendant.
4. The student must understand that **success against a single disease means a clear alteration of the natural history of the disease in the community** — in incidence, prevalence, severity, morbidity and mortality types of individuals affected and so on, the whole spectrum of epidemiology is changed.

5. To assess the results of the struggle against disease in the community:
  - (i) Disappearance of some diseases.
  - (ii) Reduction in severity, (Sickle Cell, a very devastating genetic illness has not got the same degree of severity in the developed nations as it has in Africa).
  - (iii) Change from Endemicity to Epidemic Attacks and then Sporadic Attacks.
  - (iv) Epidemiological Shift.
  - (v) Lowered Infant and Preschool Mortality
  - (vi) Shift in Age Structure.
  - (vii) Life Expectancy.
6. Education, Enlightenment, Mobilisation — to enlarge the key to accessibility of development information to the individual and society.
7. To define the role of the Health Worker.
8. To interpret and interact with the role of Government in the area of the provision of Health Care. (Task analysis, filter knowledge/information, establish policy).

## ~~SOME BASIC DEFINITIONS NECESSARY TO UNDERSTANDING~~ THE CONTEXT OF THE COURSE OF STUDY

### I. What is the nature of Health?

In the English language the words **holy** and **health** are words similar in meaning, and have been derived from the same source. They express the concept of **wholeness** or **soundness** or **allness**, (a wide ambience currently known as **holistic**). The word **holy** in the scriptures means whole, and hale, and we can trace the word through Old English in the words **haelan** and **hal**, meaning whole or sound. In this curriculum we shall teach that good health is attained in a continually evolving setting of political, social, cultural, scientific, technological, biological, and psychological factors superimposed (integrated) in the environment (**the biosphere**). The health of the people becomes understood as the **quality of life** of the nation, and is affected by all these factors.

In all societies health has been a fundamental **cultural concern**. The laws of sanitary hygiene, of food and diet control, appear in the **Regimen Sanitatis of Salerno**, a poem on the laws of health, in the eleventh century.

People are "toasted" for their well being, happiness, freedom from disease. ("Your Good Health, Sir").

In every language this theme is apparent. The French word **Santé** expresses this approbation for health, happiness and soundness. The Latin word **Sanabilis** signifies that which can be healed (made whole); **sanatio** signifies a healing or curing, and **sanatus** is the prospect of soundness of body. You all are no doubt familiar with the latin tag **Mens Sana in Corpore Sano**, (Sound in Mind, Sound in Body — Healthy in Mind, Healthy in Body).

### II. W.H.O. Definition of Health

W.H.O. has defined health as "a **state** of complete physical, mental, and social well being and not merely **the absence** of disease or **infirmity**".

### III. Biopsychosocial Health

Study of the W.H.O. definition of health will reveal that the physical components (BIO), mental (PSYCHO), and social (SOCIAL) are comprehensible in the word BIOPSYCHOSOCIAL, (Day 1969). A practical working definition of this approach to health is "the study of biological paradigms within sociological parameters".

### IV. Is there a Scientific Background to understanding Health Communications

Yes. These studies may be too advanced for general students. **GENERAL SYSTEMS THEORY** is the frame of reference. These studies move us to a concept of **science of design**, and in technological societies, evolution of complex systems is inevitable. In health we view (for society and for man) a **meeting point** between an "inner" environment and the "outer" environment, the surrounding in which life operates. The component "parts" are all sub-systems. We derive good (natural) health from the intrinsic characteristics of the inner (thinking) environment of man, and his learned (artificial) problem-solving capacity and behaviour. Developing unity from diversity is the goal of general systems thinking. Goodness of fit is as much a biological composite of the molecular biology of man as it is a function of his **sources of good fit** (behaviour). That is the whole man is man biological and his unselfconscious process plus his selfconscious process.

### V. What is the Human Content of the Biopsychosocial Way

Study the explanatory **diagrams outlining the clinical application of the Biopsychosocial way**.

Theoretic details cannot be presented here, but include detailed study of the Bios, Logos, Biologos, Cartesian Duality, Mind-Body Monism, and the Parasympathetic (Survival) System, and their relationship to modern societies. (Day, Studies 1965-1980).

A simple way of understanding this holistic awareness in modern society is through Zen symbolism. The holistic awareness functions as a "horse and rider." The natural being (man) can be represented via his right cerebral hemisphere, as "the horse." The "Horse-rider" is the left hemisphere, steering the "horse" so well that **neither the horse nor its rider** is actually steering. This is the self control of Zen, (whose Key is Zazen), i.e. regulation by breathe (respiration) and psyche. (Ikemi, 1981)

Systems Hierarchy **should** help you to understand intra systems change, person behaviour, and why communication is the gateway to health.

### VI. What is the Definition of Primary Health Care

**Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and the country can afford to maintain at every stage of development in the spirit of self-reliance and self-determination. It forms an integral part of both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the National Health System bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.**

**You must understand** that the Primary Health Care approach stresses that health promotion involve a set of issues much wider than those which health services have conventionally tried to tackle. Medicine, preventative or curative, cannot hope to attack the cause of ill health that lie in the economic, social and political fields. This is why **Community Health and Biopsychosocial Medicine** have, in so brief a time, grown to such importance. In this integrated field, distribution of income wealth; credit control; changing land distribution; land tenure; productive employment; economic systems; policy planning;

organisation, decision-making, active involvement with people; health education; food supply and nutrition; water and basic sanitation; maternal and child health, including family planning; immunization; communicable disease control and prevention; basic curative care; essential drugs -- **all contribute to implementation of primary health care process as a whole.**

### VII. What is Sociology

What is a society? What are social phenomena?

Sociology is the study of Man in society. Inevitably one definition leads to another! We define sociology in terms of a society! By considering **social phenomena** (law, economics, history, psychology), we can understand the structure passing through groupness — social structure — role — role set — status, and consider all sociological perspectives as simply **different ways of trying to understand the social world**. Various social sciences inter-related gives us **particular perceptions**, ways of looking at the social world. In this way we are enabled to develop **CONCEPTS**, which are systematic and disciplined **WAYS** of trying to understand society. Our world is shaped by our perception of it.

In **Community Health**, **mental illness** is a good way of appreciating sociological perspectives in our curriculum.

### VIII. What is Family Practice

"Family Practice is Comprehensive Medical Care with particular emphasis on the family unit, in which the physician's continuing responsibility for health care is not limited by the patient's age or sex nor by a particular organ system or disease entity."

"Family practice. . . builds upon a core of knowledge derived from other disciplines. . . which establishes a cohesive unit, combining the behavioural sciences with the traditional biological and clinical sciences." (Definition adopted by the Congress of Delegates of the American Academy of Family Physicians, October 1975).

From this definition the **Family Physician** serves as the patient's or family's advocate in all health related matters, including the appropriate use of consultants and community resources. The Family Physician is a key member of the Community Health team.

### IX. Content of Good Health

The Health Education Cube is a simplified graphic representation of the activities that comprise the **content areas** of good health. Taken together these areas of study include evaluation of a number of parameters in the cognitive, motor, affective and environmental systems domain. At the level of the individual, family and community the cube emphasises:

- (i) Content of Good Health
- (ii) Biosocial Development
- (iii) The Person World and Modifying/Restructuring Forces.

**Of special note are:**

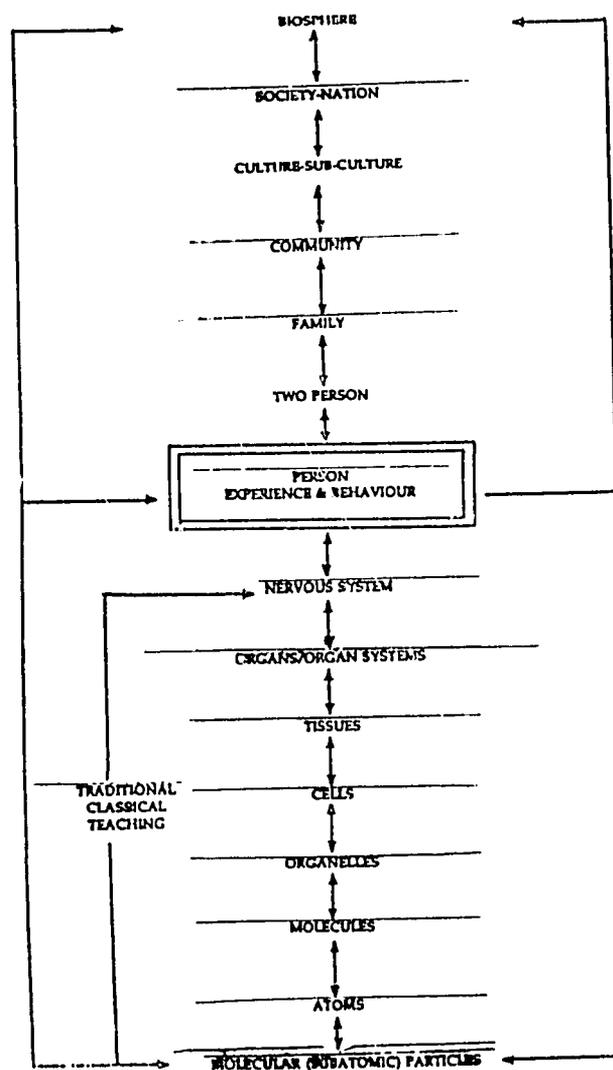
- (i) Health Information Knowledge available
- (ii) Preventive and Curative Services Available.
- (iii) Physician-Patient Relationships.
- (vi) Meeting the demands as well as the actual needs of the individual and community.

### X. Systems Hierarchy: Levels of Organisation

It is important to appreciate that the Biopsychosocial Model is a **clinical model**. A full understanding of the model is required. You may be examined on the basis and practicability of this model. How

physicians approach patients and the problems they present is much influenced by the conceptual models around which their knowledge is organised. In this department, (Professor Day), you are taught to consider the patient as a person. The dominant effort of our work is to train the **pastoral physician**.

### COMMUNITY HEALTH APPROACH SYSTEMS HIERACHY (LEVELS OF ORGANIZATION)



*Modern teaching the Biopsychosocial Clinical Model included every parameter from Molecular Order to Biosphere. It includes every level of organisation.*

## 2. PRIMARY HEALTH CARE

### Objectives of a Primary Health Care Service:

1. It should be **accessible** to the whole population.
2. It should be **acceptable** to the population.
3. It should identify those **medical needs** of the population which can be **prevented, modified, or treated**.
4. It should make maximum use of **manpower and resources** to meet needs of the population.

Good Primary Health Care (PHC) has therefore certain basic ingredients — apart from the professional qualities of training and resources:

PHC has to be:

- available
- accessible
- approachable
- acceptable
- affordable
- applicable
- attainable
- assessable

PHC as a series of "A's"

PHC has to be there. It has to be of a nature and a form that is understood, appreciated and relevant to the local community which has to be able to afford it and attain objectives set. It has to be measurable and assessable so that defects and deficiencies may be improved.

### Developed And Developing Countries:

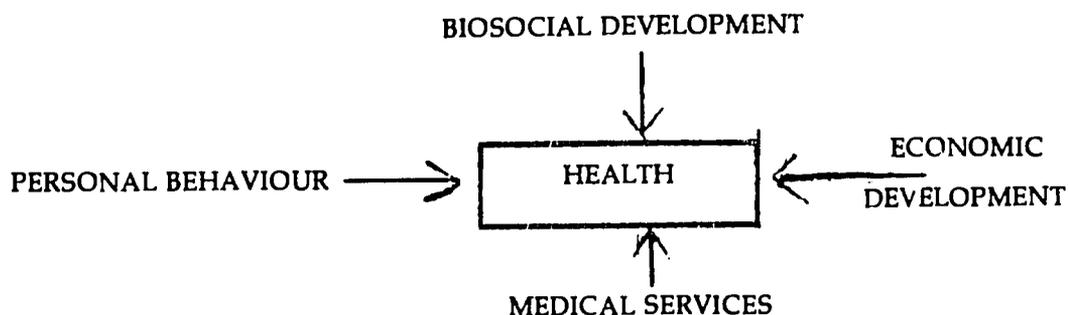
There are differences in detail of the problems faced, but there are few differences in common principle. I have emphasised upon you that PHC will vary locality to locality even in the same country. Note:

- (i) In **Developing Countries** there are shortages of all resources and those medical and health resources that are available often are misused and wasted.
- (ii) In **developed Countries** there may be too many medical and health resources. Wastage is common.

### III. Common Dilemmas:

1. The most urgent common dilemma is how best to use the resources that are available?
2. What are the best ways of organising health care?
3. What "system" is best and for what purposes?

There is no single "best buy" system of PHC that is applicable to all local and national situations and circumstances. Certain common "ingredients" can be adopted from the following figure:



A common dilemma has been the over-selling of modern medicine. The medical professional and the media have created false expectations and demands from a public partially educated and often **misinformed** about the true potentials of modern medicine.

It is necessary to stress that health is the outcome of many factors of which health services are but one. The individuals' own responsibilities must be noted — (Day's **SELF HEALTH** at Ikot Imo and Ikot Oku Ikono) - and health maintenance and disease prevention, promoted, encouraged and rewarded. Social and economic developments are even more important than provision of medical services.

#### IV. Evaluation:

Evaluation has to be carried out at all levels of care for all systems in order to assess whether the goals of health care are being achieved.

Among questions that have to be asked:

- (i) How **relevant** is the PHC to the needs of the local community?
- (ii) Are the right health **professionals** being used to achieve results?
- (iii) Are the methods **efficient**?
- (iv) Are the methods **effective**?

How can the **impact** on health be measured? What indicators, what criteria, what data, and what information are to be used?

#### V. Common Failings:

These include:

- (i) There has often been **little or no planning** and no strategies for good PHC in the community.
- (ii) There has often been no set of **objectives or goals for PHC**.
- (iii) There have been **too few effective controls** over standards of PHC.
- (iv) There has been little or no **evidence of sound professional leadership** of physicians.
- (v) There have been **no methods developed for continuing assessment of needs**.
- (vi) There has been **LITTLE OR NO RESEARCH** of new ways in which better PHC more relevant to personal, family, and community needs may be provided, by whom - where - when - and how?

#### VI. Common Problems?

- (i) In **Developed Countries** the major problem facing PHC is resistance to change by the medical profession. This may be understandable in the context of fixity of rigid historical systems of medical care that have been created over the past 80 years.
- (ii) In **developing Countries** there have been wrong plans and priorities for health care. Too much stress has been placed on modern technological medicine, too much stress on **status medicine**, and too little emphasis on **LOCAL NEEDS**. The needs are much more basic and urgent.

#### VIII. A Note on Care on Management:

- (i) Definitions:

Physicians trained in the traditional medical education of Western medicine (Scientific Medicine of Flexner — 1910) expect to see the outcome of management as **CURE**. . .  
— successful medical treatment; restoration to health.

“Curing” has become the **outcome** of increasing technological evolution in medicine.

**The essence of PHC and the Community Health approach is CARE**. . . (Care — to feel concern and interest; a charge, oversight with view to protection. . .)

**Caring** entails basic principles which can be stated:

- (i) All problems which effect the human condition involve biological, behavioural and social elements;
- (ii) These three elements assume different levels of importance in individual conditions and each of them may be the major element in the condition.

The first principle incorporates the **HOLISTIC CONCEPT** of patient care. You have been taught this as the **BIOPSYCHOSOCIAL APPROACH TO MEDICINE**. This approach includes the person, his problem, and his total living environment. For **most individuals**, biologic disease is **NOT** the norm; the changes it produces effect life style (social organization), behaviour, and may induce physiologic **stress**.

Physicians trained in the "traditional way" do not generally recognise these associations easily. But in the USA, **patient behaviour** has become critical. In 1972, more than one-seventh of the total economic cost of illness (\$27 billion), was the result of accidents, poisonings, and violence, and \$40 billion, (about one-fifth of the cost), was due to diseases of the circulatory system (DHEW, 1978).

**Remember, in a structure of problem solving ask:**

1. What is the problem? Is it as presented by the patient?
2. Is the problem largely biologic, behavioural, or social, or a mixture of all of these?
3. Who is the real patient? (is the patient "presenting" someone else in the group or family?). Who is most at risk because of the problem?
4. What is possible?
5. How will it be achieved?
6. Who will help?
  - What are the family or group coping patterns?
  - What human and physical resources are available to help?
  - Who is the resource person within the family or group?
  - Does that person live within or without the group?

### 3 EDUCATION GUIDELINES FOR DISEASE-RELATED PROBLEMS: COGNITIVE GUIDELINES

#### A. Nature of illness

1. Clinical features/diagnostic indications
2. Pertinent normal anatomy, physiology
3. Pathophysiology
4. Natural history/prognosis
5. Myths, misconceptions, other beliefs of patients with given problem

#### B. Preparatory information about diagnostic tests or procedures

#### C. Modality of intervention

1. Medical
  - a. Indications/mode of action (i.e., How does the medicine work?)
  - b. Name, dosage, and mode of administration of medicines
  - c. Special instructions to patients
  - d. Complications/side effects
2. Surgical
  - a. Indications/mode of action
  - b. General description of procedure
  3. Physical therapy: Indications/mode of action
  4. Occupational therapy: Indications/mode of action
  5. Psychiatric/psychological therapy: Indications/mode of action
  6. Education/counseling: Indications/mode of action

#### D. Individual qualifying aspects

1. Nature of illness: contrast with classical textbook representation
2. Modality of intervention: possible combinations of items in Section C above.
3. Cost

#### E. Complications

1. Secondary to disease
2. Secondary to therapy (e.g., side effects of medication).

#### F. Long-term considerations

1. Preventive measures
2. Future utilization of health care system
3. Community resources
4. Long-term outcomes

### AFFECTIVE GUIDELINES

#### A. Life cycle "stage" of patient

1. What is the developmental status of the patient?
2. What "crises" or critical events are peculiar to this stage of development (e.g., identity vs. role confusion)?
3. "Where" is the patient with respect to these events (i.e., orientation, coping ability)?
4. What is the sex of the patient? Is this a relevant factor in the disease?

#### B. Self-image of patient

1. Does the patient have a positive self-image?

2. Does the patient feel controlled by luck or by the "fates", or does he believe his actions affect personal consequences (e.g., whether he is "cured" or not)?
  3. Does the patient feel a sense of self-blame or guilt?
  4. Does the patient feel a sense of dependence and helplessness?
  5. Are there any feelings of inferiority or inadequacy regarding educational achievement or physical endowment?
- C. Emotional stability of the patient
1. Does the patient demonstrate a sense of trust and security?
  2. Does the patient exhibit any of the mechanisms of defense (e.g., denial, repression)?
  3. Are there elements of depression in the patient's behavior?
  4. Is the patient hostile?
  5. Is the patient basically a fearful or anxious individual? Does the patient have any specific fears about his medical problem which might interfere with medical management?
  6. What are the support systems in addition to significant other(s) (See Section E) operating in the patient's life?
- D. Values of patient
1. What is the patient's general attitude toward physicians, medical intervention and the health care system?
  2. What is the patient's personal orientation to health maintenance?
- E. Significant people in the patient's life (support systems)
1. What is the patient's family structure at present?
  2. Are there significant others (living or deceased) in the patient's life who are emotionally important? Who are they?
  3. When the patient is distressed, to whom does he go for help?
- F. Critical events in the patient's life (marriage, separation, divorce, birth, death)
1. What are the critical events to date?
  2. Are there any of the three variables of change, loss or threat operating in the patient's life?
  3. In what ways is the patient able to cope with the prospect of his death or permanent disability?
- G. Willingness of patient to receive and respond to specific management directives (This section becomes more important and relevant in later ongoing assessment of the patient's status.)
1. Is the patient open?
  2. What is the nature and degree of emotional investment in the effort to successfully achieve management goals?
  3. What are the patient's feelings about the management effort?
  4. Is the patient attentive and objective during attempts to explain aspects of his condition?
  5. Does the patient ask questions freely?
  6. Does he pursue his uncertainties until clarification is attained?
  7. Does the patient have acquaintances, friends or relatives who have had a similar problem? What are the patient's feelings regarding the mode of treatment they have received?
- H. Predicted emotional problems known to occur in the course of this medical problem
- I. Willingness to seek medical help during the treatment course in the event of 1) designated complications, 2) unanticipated or unusual events which cause concern

### MOTOR SKILL GUIDELINES

- A. Are there abnormalities found from the screening neurological or musculoskeletal examinations? If so, will these physical limitations or handicaps (e.g. arthritis) need to be considered in the patient's care?

B. Are there any physical skills to be performed by the patient in the management plan? Do not overlook even the simplest skills (examples: 1) measuring liquids, 2) counting pills, 3) identifying colors). If there are physical skills to be performed, outline in detail the specific physical maneuvers required to initiate and to successfully complete the particular skill.

### ENVIRONMENTAL SYSTEMS GUIDELINES

- A. Are there aspects of the patient's home environment that can be modified to improve the patient's condition or health behavior?
- B. Are there aspects of the patient's work environment that can be modified to improve the patient's condition or health behavior?
- C. Are there other aspects of the patient's environment that can be modified to improve the patient's condition or health behavior (e.g. leisure activities)?
- D. What are the family dynamics that may affect the patient? Can the patient be taught to see the impact of these dynamics, to identify the implications of either changing or not changing these dynamics, and if the patient so desires, bring about the change?

### HEALTH PROMOTION GUIDELINES COGNITIVE GUIDELINES

- A. The impact of preventive practices upon disease prevention
- B. Why prevention practices work
- C. Economic and social rewards of prevention
- D. What aspects of diseases cannot be prevented

### MOTOR SKILLS GUIDELINES

- A. Are special exercises required due to physical limitations of the patient
- B. What motor skills are needed for prevention of
  1. Specific diseases (for which the patient is at risk)
  2. General diseases
  3. Health enhancement
  4. Accident prevention

### AFFECTIVE GUIDELINES

- A. Life cycle "stage" of the patient — limit to which they can accept responsibility for their own care
- B. Self-image of the patient — to what extent can patient learn to accept that he controls aspects of the illness process
- C. Emotional stability of the patient — is the patient so unstable that the logical link between behavior and outcome cannot mobilize and sustain behavior or that the probability of outcome produces excessive fear or other undesirable consequences
- D. Values of the patient — does the patient's value system preclude certain activities
- E. Significant people in the patient's life — can the patient's family and friends be utilized to support and maintain prevention behaviors

### ENVIRONMENTAL SYSTEMS GUIDELINES

- A. Home environment
- B. Work environment

- C. Other environment
- D. Family dynamics

### **ORGANIZATION OF WORK IN THE COMMUNITY HEALTH POSTING:**

Each medical student is urged:

- to teach and encourage the village people in the principles of environmental hygiene (health promotion, health education, and sanitation).
- to identify the sick and malnourished in his/her section, and if possible, while on location, to make daily or frequent visits to each house, and to encourage such people to seek appropriate **advanced** treatment, if necessary.
- to motivate the community to participate actively in health campaigns, such as immunization, refuse disposal, school health, and child care.
- to find those who are registered for but are not continuing participation in disease control programmes — TB, Leprosy, Feeding, and Health Control programmes — and to motivate them to attend regularly; to inform the professional Akamkpa staff of the status of defaulters and to assist in their rehabilitation in their appropriate programmes.
- to report births and deaths in their section of the projects.
- to treat minor conditions such as wounds and burns (first aid), diarrhoea (ORS/Rehydration Management) and body aches and pains.
- to treat ailments under physician's prescriptions in the CHC in their section.
- to attend deliveries, assisting the TBA where possible.

### **ESTABLISHMENT OF HEALTH EDUCATION AND HEALTH COMMUNICATION IN THE VILLAGE**

The medical student should provide health education to those attending him in the village, with particular care towards children and lactating mothers, and general MCH and ante-natal persons. The importance of preventing disease should be introduced through teaching children to wash their hands in the home before being given their food. Other health activities must be effectively initiated by village clean-up initiated by mass involvement. On clean up day the student should mobilize the whole village population for participation.

### **HEALTH ACTIVITIES IN THE SCHOOLS**

Medical students should request permission from school leaders to speak to the children on a regular basis on such topics as the importance of washing their hands before eating, not urinating or defecating near household areas, and washing the body to prevent diseases. The importance of preventing disease should be emphasized, and simple lectures on the importance of certain foods for maintaining healthy bodies should be given by the medical student.

### **ESTABLISHMENT OF FAMILY LIFE CENTRE PROGRAMMES**

Efforts should be made in the villages to set up a **Committee Of Women**, to encourage participation of the community in various activities of the project, and to obtain needed materials. They should be involved in similar ways in the promotion of health education and other health activities. These committees, when active, represent the **Family Life Center Programmes**.

## Health Education

**General Objective.** Promote individual and community self-reliance in health matter.

● **Objective 1. Demonstrate Proficiency in the Following Techniques of Communication**

1. Nonverbal communication especially by gesture and expression e.g.:
    - Sympathetic listening
    - Welcome
    - Concentrate attention
  2. Verbal communication especially voice techniques and structure of message for:
    - Face to face discussion
    - Small group informal discussion
    - Panel discussion
    - Address to an assembly of elders
  3. Audio-visual techniques, especially song and dance, integrated verbal, non-verbal messages for small groups:
    - Use of facial expression and body
- Role play
- Flanned graphs
  - Blackboard or posters
  - Slides
  - Puppets
  - Audio-tapes, radio and redifusion services
  - Story telling

● **Objective 2. Demonstrate Knowledge of "Facilitators" and "Barriers" to Communication**

1. Identify at least five facilitators and five barriers to effective communication that may occur among health members in the clinic/community setting.
2. Identify at least five facilitators and five barriers to effective communication that may occur interaction between health team members and patients/common members.
3. Identify in the clinic or community situation, a specific barrier to effective communication and make a plan of action to overcome or eliminate that barrier.
4. Identify at least three examples of cultural differences in behaviour and communication patterns that can be misunderstood by people of another cultural background.

● **Objective 3. Demonstrate Knowledge of Basic Learning Principles**

1. Identify techniques by which a teacher can help the learner to acquire:
  - New health knowledge
  - New health behaviours
2. Identify the following factors as influencing the learning and its translation into behaviour, using an observed teaching session.
  - Use of repetition and reinforcement
  - Active participation of the learner in the development of ideas
  - Reinforcement of the learner by peers
  - Simplicity of the message

- Use of role models (patients who have changed behaviours)
- Demonstration of new behaviours
- Money and time needed to practice

● **Objective 4. Demonstrate the Community Health Officer's/Supervisor's Teaching role in Helping Others Learn**

**Instructional Objectives.** At the completion of this unit, the Community Health Officer or medical student will be able to:

1. Describe the basic learning principles, e.g.
  - Adult learning differs from learning in children
  - Cultural and social conditions affect learning
2. Demonstrate the use of objectives in teaching, learning, and evaluation.

● **Objective 5. Maintains a Clear and Courteous Communication with Patients as Manifested by:**

1. Welcoming
2. Helpfulness
3. Explaining treatments, procedures, the nature of the disease, etc. to the patient in language easily understood by him/her
4. Checking the patients understanding (by some other way than asking, "do you understand")

● **Objective 6. Demonstrate the application of Communication and Teaching Techniques to Planning and Presentation of a Learning Session for a Selected Skill or Topic**

1. Identifying target group (specific learner group)
2. Defining objectives
3. Selecting relevant content
4. Selecting appropriate method of presentation (demonstration, discussion, lecture, etc.)
5. Organizing and presenting session
6. Selecting and applying evaluation tools

● **Objective 7. Identify the Teaching Opportunities in Contacts with Patient, Staff Members, Trainee and the community**

**Instructional Objectives.** At the completion of this unit, the medical student or Community Health Officer will be able to:

1. Identify and utilize the past experience which learners bring to the learning situation, for their own learning benefit and for the benefit of the total group.
2. Shares responsibility for teaching with other staff. Evidence of this sharing can be recognized by how the trainee:
  - Recognizes and makes use of particular staff and patients as role-models and persons from whom new behaviours may be learned.
  - During training programs, communicates to the clinic staff what learners are currently involved in learning.
  - Delegates teaching activities appropriately to other members of the health team such as the driver of the mobile team, the Village Health Worker, the Traditional Birth Attendant, etc. . .

● **Objective 8. Identify the Learning Needs in Students, Patients, Staff Members and the Community**

**Instructional Objectives.** At the completion of this unit, the Community Health Officer will be able to:

1. Identify the initial level of knowledge and skill which the learner brings to the learning process, in both formal and informal situations, with students, staff, patients and the community.

2. Identify the areas in which the learner must gain competence whenever a new service need is recognized in the Basic Health Service Scheme.

● **Objective 9. Help Staff Members Plan Their Health Education and Community Outreach Activities and Supervises them in these Efforts**

**Instructional Objectives.** At the completion of this unit, the medical student or Community Health Officer will be able to:

1. List and define the different stages in planning of health education activities, including:
  - Identifying the problem, educational need, and target groups.
  - Defining learning objectives.
  - Determining plan of action, including the content, methods, time schedule implementation and evaluation procedures.
2. Schedule/supervise the scheduling of routine and special health education activities, such as health talks, demonstrations, group learning activities, and home visiting for health education, scheduling includes choosing topics, times and places and assigning educational responsibilities to various staff members.

**Community Involvement in Health Care**

**General Objective.** Organize, mobilize and encourage community participation in health maintenance.

**Instructional Objectives.** At the completion of this unit the field health worker should be able to:

1. Contact the community through the help of the Project Managers, or the Secretary to the L.G. or Counselor for health or the Chief Health Officer in his/her area of operation.
2. Build rapport with the community solicit their co-operation.
3. Identify the main habits, cultural beliefs, practices and attitudes of the people in the community harmful or helpful to health.
4. Identify any political, environmental, social and economic factors which are affecting the health of the community and may prevent the successful implementation of the program.
5. Enlist support of the community leaders and organize community meeting to:
  - Explain findings
  - Hear their views, aspirations and goals
  - Determine if their needs, aspirations and goals are in accordance with what is perceived by you
  - Work out a **compromise** acceptable to the community
6. Organize a village Health Committee to provide total community involvement.
7. Organize with the Village Health Committee, village health subcommittees which will be responsible for, and will assist in:
  - The dissemination of information through discussion and/or teaching.
  - Fostering active participation of the community in health related activities.
  - The selection of volunteers as primary health workers, as well as organizing in-service training.
  - Enlisting the support of the community in making financial contributions towards relevant health clinic activities, upgrading existing health clinics and in the management of such clinics.
  - Understanding and dissemination of information on overall government health plans and what resources they themselves can invest in the health program for their own areas.

**Community Mental Health**

**General Objectives.** Recognize psychiatric emergencies, take appropriate action and supervise the management of patients under specialist care.

**Instructional Objectives.** At the completion of this unit the health worker should be able to:

1. Define Mental Health, i.e. "Mental" vs. "Physical" health.
2. List positive mental health habits, e.g. adequate sleep, holidays, recreations, and mature handling of stress situations.
3. Discuss changing concepts of psychiatric care in Africa and list existing facilities.
4. State the common symptoms and signs and treatment of:
  - Schizophrenia
  - Depression
  - Hypomania
  - Alcoholism
  - Drug addiction
  - Anxiety
  - Hysteria
  - Dementia
5. Describe sources of unusual stress and related problems upon individuals, e.g.:
  - Environmental stress
  - Psychological stress including loss of loved ones, retirement, etc.
  - Psychosomatic stress
6. Enumerate methods of improving the situation with individuals and families.
7. State the possible common symptoms and signs of:
  - Acute intoxication
  - Acute psychiatric excitement
  - Suicide threats and attempts
8. State the uses, dosage and side effects of common tranquillizers and anti-depressants.
9. Support patients and families with counselling and practical help to maintain clinical progress and retain the patient in the family, and use other facilities if available.

## Nutrition

● **General Objectives.** Assess the nutritional status of the individual and community and establish preventive and curative services.

● **Instructional Objectives.** At the end of this unit the health field worker should be able to:

1. Teach good food habits as a basic step to health maintenance.

Appropriate teaching includes:

- Encourage the mother for what she is doing correctly
  - Instruction regarding child's basic food requirements in terms of his age
  - Instruction regarding most satisfactory methods of preparing child's food
  - Value of food demonstration class for mother and her family
2. Teach **principles of food nutrition** including:
    - A good diet offers body building, energy and protective foods in the same meal.
    - Body building foods are most needed in pregnancy, lactation and during periods of intensive growth
    - Instruction on appropriate feeding schedules, e.g.
  - a) Exclusive breast-feeding until age 3-4 months
  - b) Supplemental foods of family diet being introduced gradually until child takes full family diet (without pepper)
  - c) Gradual stopping of breast-feeding only after 15-16 months
  - d) Discourage the use of feeding bottle
    - Emphasis on use of economic, locally available foods

- Stressing feeding practices that are appropriate to age of child, are hygienically sound and conform to local cultural patterns. Try to correct false traditional beliefs regarding the consumption of body building foods
3. Assess child's nutrition in the following ways: **indirectly** by inquiring about the following:
    - Pattern of breast-feeding
    - Other foods offered
    - Number of times each day child is fed and amount
    - Family's food budget, if indicated
    - Mother's knowledge of food sources and if indicated methods of preparation

Directly by:

- Inspecting child's weight chart for position and on following visit, for growth curve
  - Measuring arm circumference
  - Observing general physical appearance for body fat, condition of hair and skin, and presence of oedema
4. Identify frequency of nutrition problems among given children seen in the clinic and in the community and carry out further investigations as appropriate, e.g. sources of child feeding; foods prepared by the mother at home or by local food sellers, etc., local farming practices that do or do not favor child feeding.
  5. Explain the importance and purpose of the weight chart to a mother (or a group of mothers) speaking the same language. The explanation must be done in way that is understandable to her and which includes the following:
    - It is difficult to tell by "looking" at a child if he is growing well
    - To judge the child's growth, it is necessary to know his actual age
    - The weight chart, (with the child's weights correctly charted), is the easiest way to tell if a child is growing normally
    - Explanation of child's growth curve and comparison of this with desired growth curve
    - Rate of growth (velocity) is the surest sign of child's proper growth
    - Appropriate instruction in regard to foods that child requires
  6. Counsel the mother of a child who shows weight loss or poor weight gain, or a weight below the lower line on the weight chart. Before counselling, check carefully that the mother understands the meaning of the growth curve, by letting her explain it.
    - Explain the feeding the child should be receiving
    - Let the mother discuss what difficulties she experiences in following this feeding schedule
  7. Having identified problems of feeding and malnutrition, refer family for service counsel. Referral may be for food demonstration classes or for individual counsel with special problems
  8. Improve community nutrition as follows:
    - Identify families with nutrition problems
    - Organize or carry out follow up of cases of malnutrition in the community
    - Organize or carry out intensive nutrition education of families with mild to severe malnutrition problems
    - Organize regular nutrition education of mothers especially during the antenatal period, during crucial periods such as when diet changes are indicated (children 3-4 months, and 15-18 months old).
  9. During antenatal and postnatal periods and between pregnancies, provide for nutrition teaching and demonstration which will:
    - Correct faulty knowledge about the role of food in good health
    - Give positive knowledge of correct food raising, purchasing, preparation and eating patterns
  10. Screen all children for nutrition problems by weighing, taking the following steps:
    - Test a clinic scale with a known weight (e.g. 1 kilo standard weight) for accuracy as judged by senior team member
    - Balance a clinic scale accurately in preparation for weighing patients

- Chart child's present weight on the weight chart according to basic health unit procedure when given birth data or month and year of birth
- Given a series of charted weights on child's weight chart, determine that the child is or is not growing adequately
- Interpret the present weight as probably adequate or inadequate
- Take an appropriate history and do a physical examination according to pediatric standing orders on a child with an abnormal growth curve, (failure to gain adequately or actual weight loss). Including following questions:
  - a) Is the child breast-feeding? If not, when did it stop?
  - b) What supplementary feedings have been given? How often? How much?
  - c) Has there been any recent acute or chronic illness? e.g. diarrhoea, fever?
  - d) Child's approximate weight at birth. Was it a twin?
  - e) Did infant gain normally during first six months of life?
  - f) Numbers of pregnancies and spacing; number that have died.
  - g) Parental stature and mother's present health including possible pregnancy?
  - h) Marital condition of mother; married, divorced, widowed, polygamous.
  - i) Family situations: income, employment, any recent change?

### Maternal and Child Health

- **Pre-School Child.** Assess the health of a child with respect to growth, development, nutrition and immunization and take appropriate action.
- **Instructional Objectives.** At the completion of this instruction the field worker should be able to:
  1. Establish a relationship with the child and his family adequate to meet the child's health needs at the time of the visit. The relationship will be judged by how the trainee:
    - Introduces herself
    - Speaks to mother and child by name
    - Listens attentively to what the mother is trying to tell her
    - Talks "with" the mother rather than "at" her
    - Explains clinic goals and procedure including one for this particular visit
    - Looks for signs that show the mother has understood her
    - Reviews previous and special problems with the mother on the return visit
    - Elicits child's co-operation
  2. Take the child's history at the first interaction with the mother. This history should include information on?
    - Antenatal and birth history
    - Developmental history (mental and physically)
    - Immunization history
    - Nutrition history
    - Family and social history
    - Past medical history
    - Any present illness or complaint
  3. Conduct a physical examination of the child. This includes being able to: Observe the child's general appearance for signs of:
    - Normal Alertness or irritability
    - Pallor, yellowness, cyanosis
    - Good or poor nutrition
    - Normal motor development

- Good health or acute or chronic illness
  - Size of child (height and weight) as defined in the child health care standing orders
4. Do a systematic inspection, palpation, and examination and state the significance of negative and positive findings:
    - Head: for size, shape condition of fontanelle, texture, and color of hair, condition of scalp (presence of ringworm, sores or lice)
    - Eyes: for redness, tearing, sunkenness, paleness, or yellowness; for sticking of the eye lids, bleeding into the white part of the eye
    - Pupils: for normal and equal size, and for reaction to light
    - Nose: for any visible swelling or abnormal shape; for watery, bloody or mucoid discharge, for flaring of nostrils
    - Ears: for signs of tenderness, discharge, crusting or swelling behind ear. Test for hearing loss (inspection with otoscope below)
    - Mouth & Tongue: for any cracks, sores, coating, or spots
    - Teeth & Gum: for caries and any missing teeth, for bleeding, pus or sores, sponginess
    - Throat: for redness, enlargement of tonsils and pus
    - Chest: for movement and shape
    - Neck: for any swelling, nodes, soreness, or stiffness
    - Abdomen: for swelling, tenderness or any enlargement of spleen
    - Genitalia: for normal structure, redness, swelling or discharge; anus for redness or fissures
    - Back: for normal curvature and any bulging
    - Limbs: for deformities or sores; arms for thinness; legs for oedema or loss of function; for equal length
  5. Use the **stethoscope** correctly to listen to heart and breath sounds. Correct usage includes:
    - Checking the stethoscope to see that it functions properly
    - Correct placement of stethoscope into ears
    - Correct choice of diaphragm or bell depending upon type of sound to be heard
    - Systematic examination of chest sounds comparing left side with right side from top to bottom, front and back.
  6. Examine the child's chest and recognize the following sounds:
    - Normal or decreased breath sounds
    - Any creps, rhonchi, or rales
    - Heart rate and rhythm
    - Any heart murmurs
  7. Position child correctly and with a properly functioning **otoscope** inspect the ear canal and eardrum for the following:
    - Normal pearly gray appearance
    - Any redness, bulging, or holes
    - Any crusts, blood, water, or purulent drainage
    - Any foreign bodies, wax
  8. She will be able to use **spatula** and torch if these are available. If not available, she will know how to make maximum use of daylight and a substitute instrument.
  9. Test eyes for visual acuity with eye chart or other method.
  10. Determine and interpret the child's temperature, pulse and respiration as normal, mildly, moderately or severely abnormal, according to standing orders.

11. Assess the child's normal motor and social development by asking mother appropriate questions and, by observing child's behavior.
12. Assess child's nutrition (details under Nutrition Unit)
13. Assess child's immunization (details under Communicable Diseases)
14. **Management:** On each visit, having determined the child's present condition, act appropriately to maintain health status or to treat any abnormal condition. Appropriate action always includes:
  - Explanation of immunization needs
  - Immunization as required and indicated
  - Review and explanation of weight chart and growth curve, and importance of regular growth surveillance up to the age of 3 years
  - Advice on feeding appropriate for child's age

**It may also include:**

- Other counselling regarding child's health care and personal hygiene
  - Discussion and guidance regarding mother's plans for child-spacing
  - Treatment of any abnormal conditions according to standing orders
  - Referral to doctor or other health service
  - Counselling to mother regarding needs of other family members
15. Select those children who are emergencies and need priority attention according to standing orders.
  16. Identify the conditions in children which put the child in **grave danger** and take appropriate action. These conditions include children:
    - Who are unconscious
    - With severe dehydration or who have signs of shock
    - With severe respiratory distress (with flaring of nostrils or retraction)
    - With signs of severe local injury: profuse bleeding, deep lacerations, displaced fractures and severe burns
    - With barking cough or croup or wheezing
    - With profuse or prolonged diarrhoea or vomiting and signs of moderate or severe dehydration
    - With hemoglobin below 7 gm% or newborns with hemoglobin below 15gm%
    - With stiff neck and/or bulging fontanelle
    - Abdominal pain with rigidity or marked tenderness
    - Jaundice in the newborn
    - Oedema
  17. Recognize the following as needing close follow-up over a long period and develop the **reminder system** to do so herself or through health aides.
    - Low birth-weights infants
    - Children whose weights are below the lower line on weight chart (Road-to-Health-Chart)
    - Children who are losing weight, or who have not gained weight over 2 months
    - Children under age 6 years with primary tuberculosis or in households where others have T.B.
    - Children under 6 years having leprosy or other members of household having leprosy
    - Children with hemoglobin below 7 gm%
    - Closely spaced siblings or multiple births
    - The child who is repeatedly ill, e.g. fever, gastroenteritis
    - Motherless infants
    - Infants born to mothers below 15 years of age
    - Infants born to women whose parity is seven or above
  18. Recognize that the following require close follow-up for acute conditions:
    - Diarrhea

- Pneumonia
  - High fevers
  - Measles
19. Use the opportunity of treatment and every available opportunity, whether in the clinic or community to do health teaching on those matters that are most directly related to the child's present health needs, e.g.
- Diet
  - Immunization needs
  - Child-spacing
  - Hygiene
20. Search constantly for more effective measures to educate mothers concerning the effects of the local health practices
21. Identify child health problems and their sources in the community.  
Such problems include:
- Child caring and feeding customs
  - Environmental conditions which pose dangers and epidemics
  - Nutritional problems
  - Other frequently occurring health problems/conditions
22. Identify in the community, those child caring and feeding customs that are commonly practiced in order to encourage those that are helpful and to discourage those that are dangerous to the child's health.
23. Identify, in the target areas as a whole, those persons or groups who affect child health care in various ways. Such persons include:
- Fathers of children who are cared for at the clinic
  - School teachers/headmistresses who can help to communicate information and health teaching
  - Traditional Birth Attendants whose practices have a major effect on the newborn infant, such as Traditional healers and Medicine sellers
  - Businessmen, market women and other citizens who can contribute to the works of the Basic Health Clinic
  - Untrained community members, an untapped pool of workers who may be able to assist in clinic's work, given appropriate training.
24. Identify all health care resources in the community such as:
- Traditional healing
  - Spiritualist
  - Religious healers
  - TBA and accept referral from them
25. Investigate problems of the mothers access to health care in order to explore possible solutions.  
Common problems include:
- Transportation of mother and possible use of mobile clinics
  - Family economic problems, use of welfare services, etc.
  - Traditional customs/belief and their effect on child health and possible use of health education
26. Describe the normal milestones of development such as when able to:
- Control head
  - Sit
  - Crawl
  - Talk
  - Stand with support

- Stand without support
- Walk

27. Report to clinic when there is six months delay at any stage of the above

### The School Child

● **General Objective.** Assess child health needs and resources in the community in order to assist in planning, implementing, maintaining and evaluating school health services.

● **Introduction.** With the Universal Primary Education Scheme underway, a large increase in the population of school-going children is inevitable. Since school health service is preventive public health, it is hoped that teachers, nurses and doctors including other health personnel will be actively engaged in the promotion of health among this group.

For many children, school is the first time they come in contact with people outside of their families. During this period, their mental and physical growth will be affected by their exposure to various infectious diseases, accidents, emotional strain, and competition of school life. The school offers opportunities for development of desirable habits which have far-reaching effects and whose importance cannot be over-emphasized.

- **Instructional Objectives.** At the completion of this unit, the health worker should be able to:
  1. Establish a working relationship with school health personnel
  2. Conduct routine appraisal of the health status of school children at regular intervals
  3. Collaborate with the teachers to carry out daily inspection of children and report abnormal findings to health personnel. Daily inspection includes:
    - General body and clothes cleanliness
    - Examination of the skin
    - Appearance (nutritional status)
    - Any physical defects
  4. Demonstrate to teachers how to select relevant and high priority content for health teaching or school children
  5. Teach school personnel to maintain own health and therefore act as "role-models"
  6. Do home visits to assess family and follow-up school health instructions
  7. Explain the immunization needs of the school child to parents and school personnel
  8. Give immunization to those school children in need
  9. Use the arm circumference strip and the weight chart to teach parents and school personnel the importance of good nutrition
  10. Provide school health inspection for the school food vendors twice a year which includes:
    - Medical examination of food vendors
    - Home assessment of food vendors (store, kitchen, water supply, toilet facilities)
    - Proper training in cooking school meals
    - Issuing of identification cards and certificate of attendance to vendors after training.
  11. Conduct health education classes for school personnel, Parent Teachers Association and children. Discuss such topics as:
    - Personal and environmental hygiene
    - Accident prevention
    - Sex Education
    - Nutrition

- Dental health
  - Immunization
12. Advise the School Authority to provide an up-to-date first aid box, which must be accessible at all times.
  13. Provide emergency care to school children.
  14. Organize Seminars/Workshops for teachers/parents to enable them to screen for disabilities and refer to the clinic. This includes:
    - Testing for visual acuity
    - Testing for hearing
    - Management of the epileptic child
  15. Involve the school child in the responsibility of maintaining the health of younger siblings, and to co-operate with activities designed to improve the school environment.
  16. Keep accurate statistical records useful for evaluation of School Health Programs. This includes:
    - Record number and type of schools in the area
    - Collect school attendance statistics
    - Keep accurate records of morbidity and mortality among the school children and analyse them
    - Prepare questionnaires for both children and parents
    - Undertake interviews as an alternative to written questionnaires
    - Encourage the co-operation of the children in carrying out simple surveys of health and hygiene within the community

### Maternal Health Services

- **Objective.** Assess maternal health needs and resources in the community in order to assist in planning, implementing, maintaining and evaluating maternal health services.
- **Instructional Objectives.** After the completion of this unit, the health officer or medical student should be able to:
  1. Create and maintain a helpful relationship with the mother.
 

This will include:

    - Introducing herself and addressing the mother appropriately
    - Clear explanation of the purpose of the basic health clinic
      - a) To provide for the primary health needs of the family
      - b) To provide antenatal, postnatal, and child-spacing services as required
    - Emphasizing that the clinic and its staff are there to serve her and her family. **Never** boss a mother or threaten to withhold services.
  2. Take a clear and adequate history in order to assess the mother's present condition of health. An adequate history includes:
    - **Personal information:** Age, birthdate, number of years married, previous marriage, and if only or other wife.
    - **Past medical-surgical history:** Any fever, cough, yellowness, and blood transfusions or operation, or any other health problems.
    - **Family medical history:** Husband's health; children's health or whether anyone else is sick in the compound.
    - **Menstrual history:** Age of onset of menses. Frequency and length of periods. Any problems related to menses.
    - **Obstetric history:** (Probe and accurately record)
      - a) Pregnant now? When due?
      - b) Where planning to deliver
      - c) Any antenatal care and if given tetanus toxoid
      - d) Number of children ever born?

- e) Still alive? Living away from home?
  - f) Born alive, since died, state cause
  - g) Number pregnancy losses (miscarriages, stillbirths), any problems with previous pregnancies, antenatal and postnatal.
3. Perform **physical examination** including:
- Observation of general appearance for thinness, tiredness, or paleness
  - Determine that vital signs: temperature, pulse, respiration and blood pressure, are within normal limits as set down in policies for the basic health unit
  - Check weight
  - Inspection of the head including:
    - a) **Face** for puffiness, pallor or yellowness, cyanosis
    - b) **Eyes** for pallor or yellowness, or sunken appearance
    - c) **Nose** for any discharge or irritation
    - d) **Mouth & tongue** for paleness or soreness
    - e) **Gums** for bleeding or infection
  - **Neck** for masses or enlargement of thyroid, and for stiffness
  - **Arms** for normal structure and muscle tone, for thinness
  - **Fingers** for any pallor and clubbing
  - **Breasts** for any masses or dimples
  - **Nipples** for any abnormalities or discharge
  - **Chest** for symmetry and normal breathing. Anterior and posterior chest is listened to for normal and abnormal breath sounds.
  - **Heart** for normal rate rhythm and any murmurs
  - **Abdomen** for scars, striae. Palpated for enlargement of spleen or liver, tenderness or masses.
  - **Legs** for abnormal structure, varicosities or oedema
  - **Skin** for sores or rashes and for cleanliness
  - **Pelvic Examinations:** (when indicated)
    - a) Inspects external genitalis for ulcers, discharge, signs of cystocele, rectocele or prolapse and muscle tone
    - b) Palpation for position and size of uterus and tenderness or masses; adnexae for tenderness and masses
    - c) Speculum is correctly inserted for inspection of cervix for:
      - color (pink or purple)
      - smoothness, erosion or masses
      - lacerations, discharges, or bleeding and amount, presence of IUD string
4. **Hemoglobin determination** - Using an acceptable hemoglobin testing method, to detect presence of anemia. Anemia is defined as hemoglobin below 10gm%.
5. Examination for presence of protein and sugar on freshly voided specimen according to one acceptable method of urine testing.
6. Appropriately assess mother's nutritional status, **directly** by:
- Comparing present weight by standards for other African women of comparable age, height and body structure
  - Inspecting condition of hair, skin and mucus membranes, **indirectly** by taking nutrition history of foods mother usually eats and, if indicated, complete history of diet for previous day. This is compared to optimal recommendations for use of local diet whether for nonpregnant, pregnant, or lactating women.
7. Perform/teach mother to perform periodical breast examination for masses, dimpling of skin or any unusual signs according to standard clinic procedure.

8. When indicated, do a pelvic examination for position of pelvic organs and for signs of acute or chronic pelvic diseases.
9. Identify the pregnant patient as early in pregnancy as possible for purposes of beginning appropriate antenatal care.
10. Perform a pelvic assessment on a pre-natal patient at 36th week to identify any pelvic abnormalities likely to interfere with labor.
11. Estimate expected date of delivery when given the date of the onset of the last menstrual period.
12. Regularly check the mother's condition in pregnancy for evidence of normal progress. Normal progress is recognized by:
  - Mother feels well; has good appetite and normal body functions
  - Weight increase of approximately 0.5 to 1 kg/week
  - Maintains normal blood pressure as defined in standing orders
  - Normal increase in foetal size as determined by measurement of fundal height
  - Absence of signs of illness - fever, bleeding, diarrhea, or emotional distress
13. Given the history of the previous immunizations the pregnant woman has received, determine number of tetanus toxoid immunizations she is to receive, in order to have adequate immunity.
14. Recognize and take appropriate action at the earliest possible moment for signs of obstetric risk or emergency situations. High risk factors includes:
  - Age below 16, above 35
  - Height below 145 cm
  - Low hemoglobin level (9gms% or less) or sickle cell disease
  - Presence of hypertension (BP of 140 systolic or 90 diastolic or above)
  - Parity of more than four
  - Poor obstetric history - complications in previous pregnancies, previous stillbirths, prolonged labor, caesarean section
15. Assess the basic needs of a postnatal mother and her newborn infant. Assessment includes:
  - Involution
  - lactation
  - Plans for acceptable child-spacing method
  - Emotional adjustment to new or expanded maternal role
16. Given knowledge of the normal physiological changes of the puerperium, identify the physiological and psychologically stressful conditions that the woman may show.
17. Screen for new postnatal problems and follow-up on health problems previously identified in the prenatal or intrapartal periods.
18. Utilize those cultural beliefs and practices of the community in regard to the puerperium which are helpful to the mother's well-being and try to diminish those that are harmful to herself or her family.
19. Assist a mother who has recently experienced stillbirth or neonatal death:
  - Identification of the usual signs of grieving (grief process may be culturally determined)
  - Encourage mother to describe circumstances of the death, allay her anxieties or guilt feelings and, where appropriate, discuss probable cause of death. If preventable, discuss with the mother how she can prevent recurrence in future
  - Supportive understanding
  - Counsel on restoration of mother's health, and if necessary, assist to safely suppress lactation
20. Describe the three stages of labor
21. Recognize the signs of onset of labor such as:
  - Show
  - Uterine contractions
  - Backache

22. Monitor the first stage of labor. Monitoring includes:
  - Abdominal examinations
  - Timing of contractions
  - Use of fetal stethoscope
23. Recognize abnormalities of the first stage and refer e.g. bleeding, severe pain, fetal distress, prolonged labor, prolapse of cord, malpresentations.
24. Deliver any baby presenting normally by the vertex.
25. Clear the infant's airway and initiate respirations by simple methods if necessary.
26. Ligate and cut the umbilical cord correctly.
27. Recognize and deliver an infant presenting by the breech in cases of emergency only (unless the trainee is a Certified Midwife).
28. Recognize abnormalities of the second stage and refer e.g. Failure to progress in labor.
29. Supervise the completion of the third stage of labor and administer Ergometrine correctly.
30. Recognize abnormalities of the third stage: e.g. post partum hemorrhage, retained placenta, shock, etc.
31. Recognize abnormalities of the infant, e.g. Respiratory difficulty, pallor, cyanosis, congenital defects, jaundice.
32. Demonstrate an accurate knowledge of the local spacing as shown by support for those elements which are beneficial and correction of those which are harmful.
33. Teach in words understood and accepted by the woman, the mechanism of conception, and the methods of contraception so that each woman is aware of her ability to control her fertility. The specifics to include:
  - An understanding of the fertile period in the menstrual cycle with its relationship to conception/contraception
  - The action of the various contraceptive methods and their advantages and disadvantages
34. Initiate discussion of contraception when indicated by the family's social condition, the mother or child's physical condition, the mother's contraceptive history and when requested by the family. Specific indications for such counseling include:
  - Past birth interval of less than 24-30 months
  - Mother's poor health or high reproductive risk
  - Poor health of the older child
  - Family, or social or economic difficulties
  - Wish of the parents to prolong the birth interval or limit their family size to the present number
  - Resumption of menstrual period
  - Cessation of breast feeding
35. Take into consideration when helping a family select a method of child-spacing: (1) availability of the method, (2) family preference, (3) the woman's physical condition, (4) desired duration of spacing, (5) known side effects and risks of the methods:  
To this end, the medical health worker must:
  - Make the family aware of the methods available at the clinic
  - Discuss the demands that their method of choice will make on them
  - When indicated, discuss contra-indications to their use of a particular method
  - Assess woman's physical condition
36. Carry out the safe prescription of oral tablets and the safe insertion of the IUD to include:
  - Performance of a pelvic examination to rule out any pelvic contra-indications to the use of either of these contraceptives.
  - Prescribe the oral tablets only to women whose physical findings are within the limits set
  - Insert the IUD according to the approved procedure
  - Educate the women using these methods of conception control as to their responsibilities, (checking the IUD strings weekly, taking the oral tablets daily), remedial actions to take in case a pill is forgotten or

the strings cannot be felt, and the consequences of their compliance

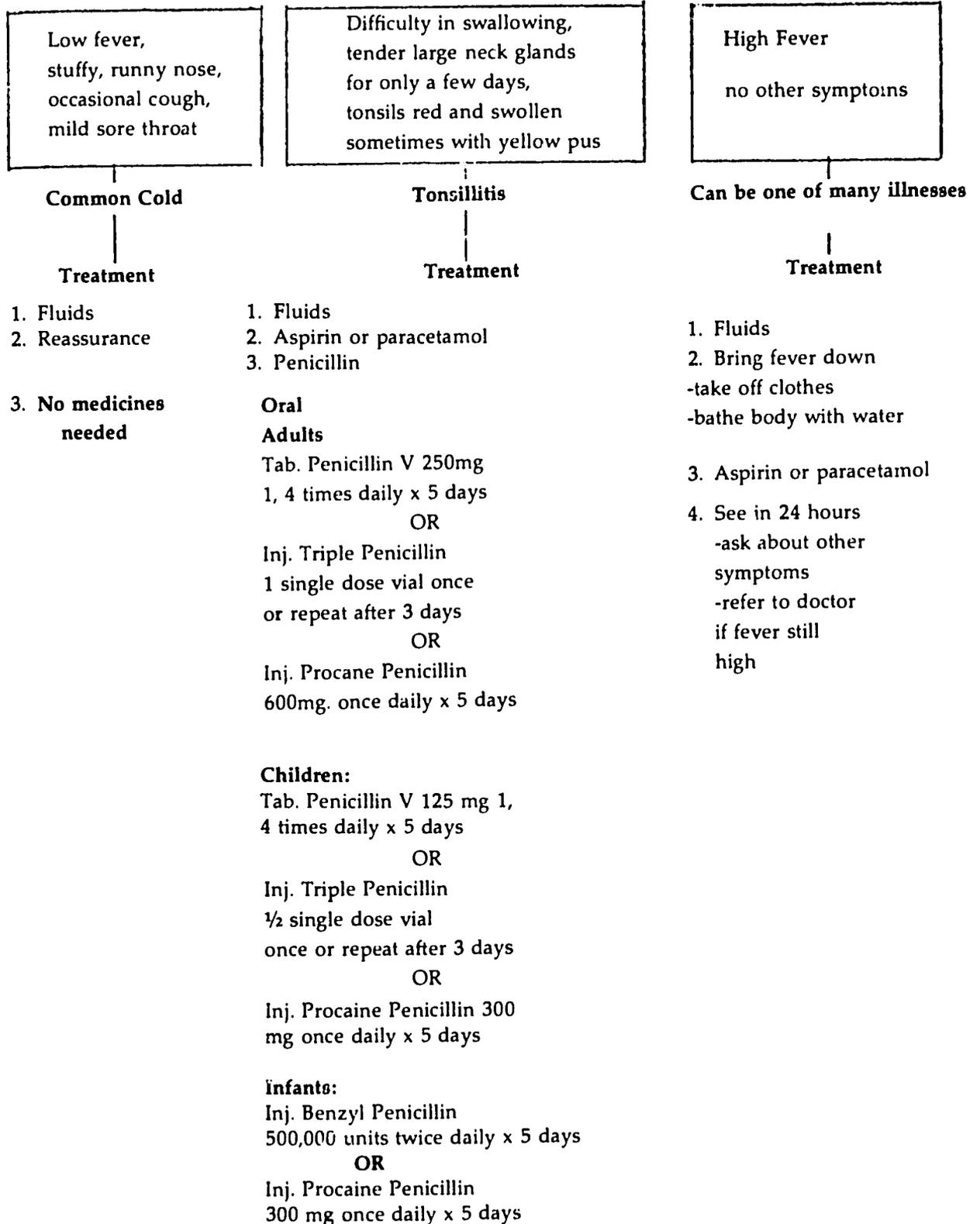
Treat the side effects and complications of contraceptive use according to the standing orders. Recognize her/his limitations in helping overfertile and subfertile women, referring them to the physician or Senior Community Health Officer for more specific care.

The area for referral include:

- Women who wish to use a contraceptive method considered inappropriate for them according to the guidelines.
- A woman whose side effects or complications of contraception are beyond their practice as determined by the standing orders.
- A woman who needs further evaluation and treatment for infertility.

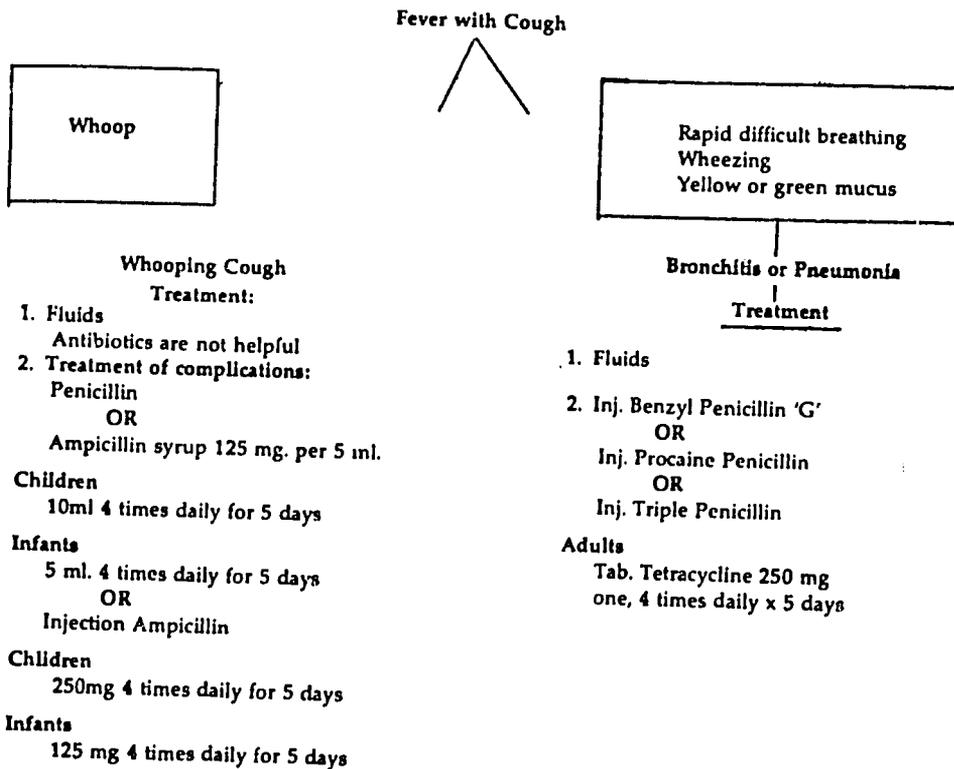
### 1. FEVER WITHOUT COUGH

1. Many diseases can cause fever. The commonest is cold.
2. The symptoms of a cold are:
  - a stuffy nose
  - watery eyes and
  - a mild sore throat with
  - a low fever (take the temperature)
3. Ask about other symptoms:
  - fast breathing
  - rattle in the chest
  - stomach pains
  - difficulty in swallowing
4. Examine the patient  
The following signs observed in a patient are important; if seen, the patient should be referred to a doctor straight away:
  - convulsions
  - drowsiness
  - irritability in an infant
  - tender abdomen
5. Study the following differential diagnosis carefully



## 2. FEVER WITH COUGH

1. The symptoms of fever with cough can represent many illnesses. Some of these are:
  - Whooping cough
  - Bronchitis
  - Pneumonia
2. In children it can be difficult to tell the difference between them except that in whooping cough the 'whoop', if heard, gives the answer. And in any case the treatment for bronchitis and pneumonia can be the same.
3. Diseases of the respiratory tract are spread by coughing or breathing close to other people.
4. Ask:
  - Is there fever and for how long? (take the temperature)
  - Is there cough?
  - Is there mucus with cough and if so what colour is it?
5. Under treatment of whooping cough it is said that antibiotics are not helpful and this is true, but it is also true that pneumonia can occur as a complication and if it does then Penicillin or Ampicillin should be given.



(Note: No Tetracycline for children under 8 years old. Tetracycline should not be given within half an hour of drinking milk.)

### 3. FEVER AND CHILLS

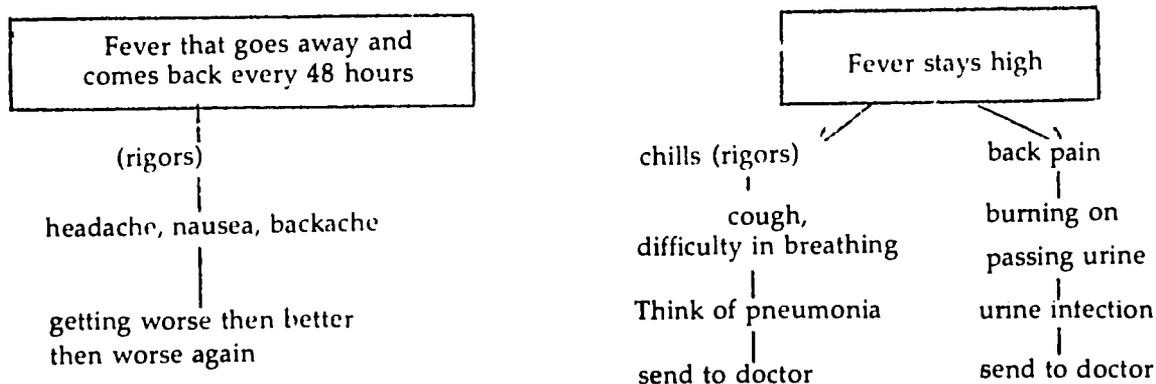
1. Many illnesses can cause fever and chills (rigors) including influenza and infections of the urine.
2. Suspect MALARIA if there are repeated shaking chills (rigors), fever rises fast, headache, and sweating followed by a period without fever.
3. MALARIA is caused when a mosquito which bites someone with the active disease, then goes on to bite another person carrying to him the organism *Plasmodium Falciparum* (occasional *P. Vivax*). Much of malaria in Africa is *Plasm. Falciparum*. There are two seasonal peaks in incidence between May and July- and-between October and December.
4. If you suspect MALARIA ask:
  - Has he been having fever and chills? (rigors) for a long time?
  - Does it go away and then come back?
  - How many days between the fevers?
  - Are there headaches?

Malaria should be suspected whenever an unexplained fever occurs during the peak seasons.

5. Also ask:-

- Does he have a cough? (He may have pneumonia)
- Does the urine burn? (He may have infection of the urinary tract)

#### Fever and Chills



**Malaria****Treatment****Chloroquine**

Adult: 600mg base at first (4 tablets of 150mg base), then 300mg base after 6 hours, 24 hours and 48 hours from first dose.

**Children: (4 - 12 years old)**

300mg. base at first (2 tablets of 150mg base), then 150mg. base (1 tablet) after 6 hours, 24 hours and 48 hours from first dose

**Children under 4 years of age:**

Use chloroquine syrup (50mg/5mls)

Initial dose is 150mg (15mls) then 75 mg (7½mls) 6 hours later, then 7½mls daily for 2 days.

**Note:**

1. Do not use Chloroquine just because someone has fever. Chloroquine is only for Malaria so do everything you can to make sure the person has MALARIA before you give it. Blood examination is best.
2. It used to be said that pregnant women should not have Chloroquine, but if a pregnant woman has MALARIA she should have Chloroquine since MALARIA will be likely to do more harm than Chloroquine.

**VIVAX MALARIA**

When confirmed by laboratory, Plasm. Vivax should be treated with Chloroquine as outlined above, followed by Primaquine Phosphate (adults 15mg base daily for 14 days) 1 tablet = 7.5 mg. base.

**Children:**

5-10 years ½ tablet daily. Do not give children under 5 years, rather give weekly chloroquine as a suppressive measure. 10 - 15 years - 1 tablet daily.

**COMPLICATED MALARIA (FOR PHYSICIANS AND NURSES)****Cerebral Malaria.**

Drowsiness, convulsions, localised neurological signs, coma.

- (2) Renal failure - oliguria, anuria
- (3) Algid malaria - diarrhoea, dehydration
- (4) Hyperthermia

**Treatment**

- (1) Provide adequate fluids, with intravenous infusion if necessary. Beware of giving too much fluid - observe that the patient is passing urine.
- (2) Give parenteral treatment - IM or IV.  
IM Chloroquine 200mg 6 or 8 hourly, do not exceed 800mg in 24 hours. In children, do not exceed 5mg/kg in one dose, repeat once only, after 6 hours.  
In cerebral malaria, intravenous quinine gives fast results - start with 10 mg/kg in a Dextrose infusion over 3-4 hours. Repeat after 12 hours. Do not exceed 30mg/kg/day in adults, 20mg/kg/day in children under 10.
- (3) Intravenous Hydrocortisone may be of value in cerebral malaria, though this has not been proved.

### CONTROL OF MALARIA

1. Control of mosquitoes — try to drain areas of stagnant water in or near the village.  
Discourage the leaving of uncovered water inside or near houses. Whenever possible organise residual spraying of aqals with DDT, and the placing of larva-eating fish in pools of water.
2. Wherever possible, protection from mosquitoes — nets, clothing.
3. Prophylaxis, especially in vulnerable groups, namely children under 5 years of age and pregnant women, should be instituted in all villages during the peak seasons.  
CHLOROQUINE 300mg base weekly in adults.  
Children: 6 months — 2 years ½ tablet  
2 - 5 years - 1 tablet  
5 - 10 years - 1½ tablets  
(7½mls syrup equals ½ tablets)

### 4. ACHES AND PAINS

Many people, especially old people, often complain of generalised aches and pains. Carrying heavy loads of wood and water would cause anyone to have aches and pains. Generally, these are minor problems that go away by themselves. It is not a problem that needs antibiotics or other medicines. Treat everyone politely, but do not give everyone medicine. Examine the patient carefully, this helps reassure a ill age person.

### 5-6-7 DIARRHOEA

1. Diarrhoea is an important disease which can be very dangerous, especially in children, by causing loss of water and salt from the body and therefore DEHYDRATION. Any child who has four or more loose stools a day should be given treatment. The treatment of diarrhoea is to prevent DEHYDRATION.
2. There are many causes of diarrhoea, among them viruses and bacteria. Many kinds of diarrhoea get better without antibiotic treatment and in any case antibiotics are useless in virus infections. Some kinds of diarrhoea produce blood in the stool for which special treatment is advised (see later), BUT ALL KINDS OF DIARRHOEA CAN CAUSE DEHYDRATION.
3. Diarrhoea comes from dirty food, dirty water and dirty hands.
4. To find out if someone really has diarrhoea ask these questions:
  - How many loose stools each day?
  - For how many days?
  - Is there blood and mucus in the stool?
  - Is there fever?
  - Is there abdominal pain?
 (If someone has four or more loose stools a day he has diarrhoea)

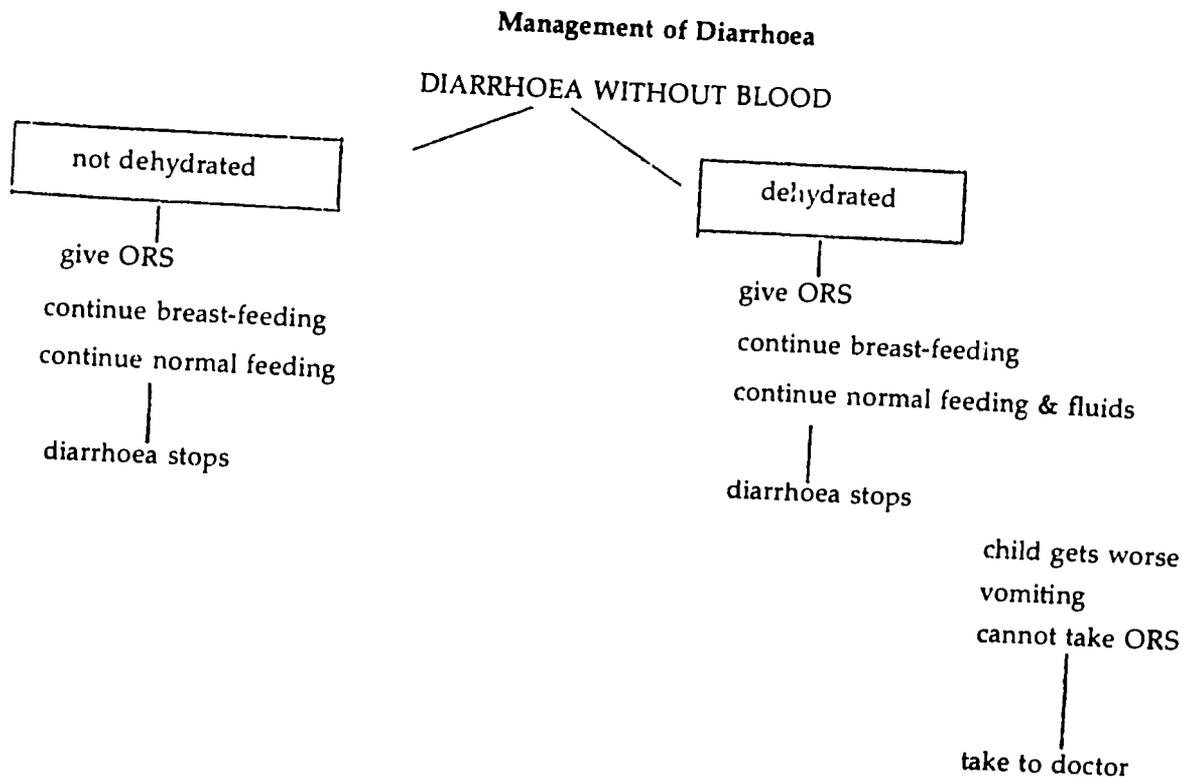
### 5. DEHYDRATION

The most important thing about diarrhoea is that it can cause DEHYDRATION which can cause death, especially of a child already weak because of malnutrition.

Look for these signs of dehydration:

- If a child is crying, are there tears? If no tears, there is DEHYDRATION.

- Are there circles under the eyes? If there are, this is a sign of DEHYDRATION.
  - Is the child very thirsty? If yes, DEHYDRATION
  - Are the lips and tongue dry? If yes, DEHYDRATION.
  - Gently pinch the skin of the stomach. if it stays wrinkled instead of immediately going flat, there is DEHYDRATION (or serious malnutrition)
  - Is the Fontanelle depressed? If yes, DEHYDRATION.
6. **Treatment is to prevent DEHYDRATION**, not to cure the infection. All children with diarrhoea should be given treatment. This is good preventive medicine. The infection will go away by itself in a few days. To prevent DEHYDRATION, the treatment is with Oral Rehydration Salts (ORS). To prepare ORS, dissolve one package of ORS in one (1) litre of clean water (if no clean water, boil and cool it before adding ORS). ORS are supplied by the Federal Ministry of Health, Lagos. If water can't be boiled, then give any water — this is better than no water.
- Normal feeding, or breast feeding, must continue, even when a child has diarrhoea. ORS is usually the only medicine needed for diarrhoea. Do NOT GIVE ANY OTHER MEDICINE UNLESS THERE IS BLOOD IN THE STOOL. It can do more harm than good. As well as ORS, the child should continue to receive **other fluids** such as breast milk and water. If a child is so ill that it cannot take ORS, or if it is getting worse after treatment with ORS, it **must** be taken to a doctor.



**DIARRHOEA WITH BLOOD = DYSENTERY**

There are two kinds of dysentery: One is caused by bacteria **and** the other by amoeba, It is not always easy to tell the difference (except by using a microscope to look at a stool specimen) **but usually:**

**BACTERIAL**

Sudden onset  
Fever  
Very frequent, watery stools  
Patient very unwell

**AMOEBIC**

Gradual onset  
Little or no fever  
Foul-smelling stool  
Not severely ill

**TREATMENT OF DYSENTERY****BACTERIAL**

Give ORS **or** refer to doctor (if dehydrated)  
Continue breast-feeding  
Continue normal feeding

Give Ampicillin

**Adults** — 250 mg. cap.

2 x 4 times daily x 5 days

**Children:** Syrup 125mg per 5 ml

5ml 4 times daily x 5 days

**OR**

Tetracycline

**Adults** - 250 mg

1 tab. 4 times daily x 5 days

**AMOEBIC**

Give ORS

Continue breast-feeding

Continue normal feeding

Give Metronidazole for 5 days

**Adults** — 3 tabs 3 times daily

**Children:**

8-10 years: 2 tabs 3 times daily

4-7 years: ½ tabs 3 times daily

2-3 years: 1 tab 3 times daily

Less than 2: ½ tab 3 times daily

**IF VOMITING SEE DOCTOR  
DO NOT GIVE TETRACYCLINE TO CHILDREN LESS THAN  
8 YEARS**

**AMOUNT OF ORS**

Mix 1 Sachet with 1 litre of water then give as follows:

AGE (WEIGHT)	NUMBER OF CUPS OF ORS IN 24 HOURS (200ml cup)	
	(1) IF HYDRATED	(2) IF DEHYDRATED
0-6 months (0-5kgs)	4 cups	6 cups
6 months - 2 yrs (6 - 12kgs)	6 cups	8 cups
2 - 5 years (over 12 kgs)	8 cups	12 cups
Older child	10 cups	16 cups

When dehydrated, give one quarter of the day's fluid in the first hour.  
1 sachet of ORS salts has to be given for every 5 cups of water.

**NOTE: GIVING ORS CAN PREVENT DEATH FROM DEHYDRATION!!!**  
**THE PATIENT SHOULD STAY AT THE DISPENSARY AS LONG AS POSSIBLE. DRINKING SHOULD BE SUPERVISED!!!**  
**CAREFUL INSTRUCTIONS MUST BE GIVEN TO THE MOTHER ON HOW TO CONTINUE WITH THE TREATMENT. SHE MUST ALSO BE SHOWN HOW TO PREPARE ORS AT HOME.**  
**CAUTION: ORS SALTS MIXED IN TOO LITTLE WATER CAN BE DANGEROUS.**

## PREVENTION OF DIARRHOEA

Many children die from diarrhoea; it is a dangerous condition for young children, and above all for the malnourished.

Preventive measures against diarrhoea:

- Drink boiled water
- Keep water in a closed container
- Keep the house clean
- Keep food away from flies
- Wash hands before preparing food
- Avoid dehydration by giving fluids promptly.

A mother should recognise **dehydration** in her child:

- dry and loose skin
- dry mouth
- sunken eyes
- little urine
- weak cry

The baby must go to the clinic if he's dehydrated.

A child with diarrhoea is like a leaking bucket, which has to be constantly filled with water.

The child must drink a lot of fluids - teach mothers how to make a solution with a pinch of salt, a fistful of sugar to a cup of boiled water, to give to their children when ORS is unavailable.

## 8. MEASLES

1. Measles is a very contagious disease caused by a **virus**. It is very common in children and can be very serious and cause death, especially in the malnourished, and in the tropics.

Measles can cause severe dehydration and precipitate acute malnutrition - most children lose weight after an episode of measles.

2. Measles starts with a high fever, watery pink eyes, a runny nose and a cough. You may see white spots in the mouth - called **KOPLICK'S SPOTS**. On the 3rd or 4th day a rash appears on the face first, and then on the rest of the body. The rash lasts for 4-5 days, it does not feel raised. Mothers usually recognise the illness themselves.

### TREATMENT:

Because measles is caused by a virus, antibiotics do no good. Supportive therapy is the basis of treatment. Local customs and beliefs about Measles lead to harmful practices such as keeping the child wrapped up, withholding food and fluids, and not washing the child. These should be discouraged, and their harm carefully explained to parents.

Keep the child cool and clean, and give plenty of fluids.

As Keratomalacia has been observed to be precipitated by Measles, advise a routine dose of Vitamin A 200,000 U. in all cases.

Complications are common after the 4th or 5th day.

- (1) Diarrhoea and dehydration need fluids and ORS.
- (2) Bronchitis, pneumonia and ear infections need appropriate antibiotics.

The child is infective up to the 6th day after the rash appears - after that there is no need to isolate the child.

**PREVENTION:** Measles can be prevented by vaccination and every child between the age of 9 months and 5 years should be vaccinated.

## 9. EYE INFECTIONS

1. There are many kinds of infections of the eyes. Some get better by themselves. Others can lead to blindness. The most common kind of infection is conjunctivitis, which is usually caused by bacteria or viruses. It is frequently epidemic.
2. Most conjunctivitis comes from swimming or washing in polluted water, or from close contact with people who have it.
3. Conjunctivitis commonly affects young children. It does not affect the ability to see.

Trachoma is an important eye infection caused by organisms half-way between virus and bacteria. It is common where people are poor, where there is much dust, little water and many flies, as in the Sahel regions.

### 4. CONJUNCTIVITIS:

- a lot of tears coming from the eyes
- redness of the white part of the eye
- swelling of the eyelids
- no loss of sight

### TREATMENT:

Wash the eyes with clean water - show the mother how to do it. Eye ointment (tetracycline) four times a day for one week. Put the ointment in both eyes even if only one is infected. If the infection is severe, with swollen eyelids, it may be gonococcal and needs penicillin.

The infection should be better on treatment after 2 days, certainly within a week. If not, there is probably a foreign body in the eye. Take the patient to the doctor.

### 5. TRACHOMA:

The signs as for conjunctivitis plus:

- (1) follicles (pink-grey swellings in the upper lids)
- (2) pannus (grey edge of cornea)

These are not easy signs to see, the lids have to be **everted** — this needs careful practice.

### TREATMENT:

Wash the eyes. 3% Tetracycline eye ointment once a day for 1 month (or 1% three times a day)

Community Health Workers must be taught how to give the ointment.

## FACE WASHING PREVENTS TRACHOMA

6. Other diseases which can cause eye problems are:
  - Measles (look for the characteristic rash)
  - Leprosy (there will be other symptoms and signs)
7. Sometimes, children who are sick with diarrhoea or pneumonia sleep with their eyes open. This can dry the eyes and lead to blindness. To prevent this, the eyes should be taped closed when the child is asleep.
8. **PREVENTION:** Much eye disease can be treated in children by washing the face with clean water at least twice a day.
9. Individual patients may also be treated with systemic tetracycline but this is unsuitable for a mass campaign.
10. Contacts (e.g. household, classroom) of known cases of trachoma should be treated with tetracycline ointment (3% once daily for 1 week, if no signs of active disease prevent).

### 10. ANAEMIA

1. A person with anaemia has thin blood.
2. This happens when blood is lost or destroyed faster than the body can replace it, or if the diet is poor.
3. Many people with malnutrition will have anaemia.
4. Anaemia is also found with infections like malaria, hookworm, and TB. Look for anaemia in small infants and pregnant mothers.

#### HOW TO RECOGNISE ANAEMIA:

1. Recognition of anaemia is difficult unless it is severe.
2. Look for paleness of the skin, nails, skin creases in palms of the hands, and insides of the eyelids.
3. People complain of tiredness and fatigue.

#### TREATMENT:

1. Treat the cause e.g. hookworm, malaria.
2. **Children:** Ferrous sulphate medicine, 5 ml three times a day for two months.
3. **Adults:** Ferrous sulphate, 1 tablet three times a day for two months.

#### PREVENTION OF ANAEMIA:

- If available, it is very important to eat food containing iron, like meat, dark green vegetables (e.g. the leaves of the sweet potato plant), fish and eggs.
- Give supplements of iron to **all high risk groups** — children in feeding centres, pregnant and lactating women.

**N.B.** Ferrous sulphate powder is available in large quantities, and is suitable for mixing with milk. It has been shown to be quite acceptable if 100gms is mixed with 100 litres of milk — this provides 300mg ferrous sulphate in a 300 cc serving of milk.

### 11. EAR INFECTIONS

1. Ear infections occur frequently in children. They can cause damage and result in loss of hearing, so proper treatment is important.
2. The most important cause of ear infections is bacteria which get to the ear from infections of the sinuses, nose, throat, and tonsils.
3. To recognise ear infections:
  - the patient will complain of pain in the ear.
  - sometimes, pus can be seen coming from the ear (this means the infection is more advanced).
  - there is often fever.

It is best to begin treatment at the stage when there is only pain in the ear: that is to say before pus starts to come from the ear.

**4. TREATMENT:**

Ampicillin as for Bronchitis and Pneumonia

OR

Penicillin injection or tablets

**5. CHRONIC OTITIS MEDIA**

This is a common problem, with a chronic discharge from one or both ears. The basic management is local treatment of the ears. Tell the mother to bring the child to the clinic once a week. Swab the ear with cotton wool, and very gently syringe the ear with warm water.

A nurse must carefully train a CHW in the technique. Teach the mother how to swab the ear daily at home — stress that the ear must be kept dry.

Give an antibiotic, as for acute otitis media, for 10 days if he has one or more of these four things:

- (1) Discharge for less than a month
- (2) Redness of the drum
- (3) Pain in or near the ear
- (4) Fever

If he has none of these things, antibiotics will probably not help. Tell the mother not to put any local medicines or foreign objects in the ear, and tell her the child must not go swimming.

**6. OTITIS EXTERNA** is an inflammation (eczema) of the skin of the outer ear passage which can become secondarily infected with bacteria or a fungus or yeast. The commonest symptom is irritation. The treatment is to use drops of Locorten Vioform three times daily for 14 days.

**7. FOREIGN BODIES**

These are commonly found in children's ears — beads, peas or often maggots.

Do not try to remove them with forceps — this will push them in further and damage the drum.

Syringe the ear, often this removes the object. If not, refer the person to a doctor or nurse for help.

**12. SKIN DISEASES**

1. Skin diseases are common and there are many different kinds. Many of them can be prevented by washing thoroughly and often with ordinary soap and water. Many skin diseases come from the ground or from dirty surroundings and so are likely to come back again after treatment.

**2. SCABIES**

This disease is caused by a small insect which burrows into the skin leaving small tracks which itch. If the person scratches the skin can also become infected by bacteria. The common places to see Scabies tracks are where the skin ends — between fingers and toes, and at the wrists and elbows for example. Scabies is passed from one person to another when they are in close contact, for example when they share the same bedding.

**TREATMENT:**

— Use Benzyl Benzoate liquid. This can be rather hot on the tender skin of a child. For him, add twice as much water as of the Benzyl Benzoate. No need to add water for adults.

- Wet a piece of cloth in the Benzyl Benzoate liquid and wipe it all over the body except face and head. Leave the body unwashed until the next day, then wash well with soap and water and repeat the treatment, AND on this second occasion wash or boil the family clothes and bedding. Usually many members of the family will have Scabies if one has it, so it is best to treat them all.

- Itching may continue for some days after treatment. This does not mean that the treatment has failed.

**3. IMPETIGO**

This is common. It is commonest on the face where there will be painful sores with yellow pus and crusts.

**TREATMENT:**

Wash the affected area twice a day with soap and water and apply Gentian Violet paint. If it is not better in five days give Penicillin by injection or by mouth as for Tonsillitis.

**RINGWORM**

This is a common skin lesion in children, it occurs on the body, and on the scalp, and is caused by a fungus. The lesions are like this:

<b>HEAD</b>	<b>BODY</b>
chronic	chronic
painless	painless
round	round
bald	- thickened edges
pale	- scales in middle
	- pale

The treatment is to wash the skin with soap and water, dry and then apply Whitfield's ointment. You may have to treat for several months.

**LEPROSY**

Leprosy is a chronic skin condition, which occurs in Africa. It should be suspected in older children and adults with chronic skin lesions.

Leprosy lesions are always chronic, more than 1 cm in diameter, painless, not itchy, have no pus. Sometimes they are pale and anaesthetic (Numb). If suspected, a doctor should see the patient. If diagnosed, drugs are available in all provinces — the case should be registered, and the University Hospital notified — drugs can then be made available.

**13. TYPHOID FEVER**

1. Typhoid fever is caused by bacteria.
2. Typhoid fever comes from drinking dirty water, dirty milk, or other food which contain the bacteria which cause it.
3. Typhoid fever affects the whole body, and causes fever, headache, sometimes a rash, and either diarrhoea or constipation.
4. Typhoid is not a common diarrhoeal disease — fever and severe illness are much more usual than diarrhoea.
5. Blood in the stools does not mean Typhoid Fever — blood in the stools rarely occurs with Typhoid fever, and is a complication, not a part of the usual illness.

**Typhoid Fever:**

- steadily rising high fever
- headache
- belly pain
- diarrhoea or constipation
- rash
- confusion

If you suspect Typhoid, you should inform a doctor. Cases where typhoid is strongly suspected should be **reported** to the University Hospital.

**TREATMENT:**

**Adults:** Tab. or Caps. Chloramphenicol 500mg 1 every four hours for 3 days, then 1 every 6 hours for 7 more days (also available in injections)

**Children:** Suspension Chloramphenicol in a dose of 100mg per kilo of body weight per day divided into 4 doses per day for 10 days.

**14. WORMS - INTESTINAL PARASITES**

1. Parasites can be harmful, particularly in malnourished children, because they use some of the nutrients which are intended for the child.
2. The two most important parasites are roundworms and hookworms.
3. The best way to diagnose these conditions is by microscopic examination of the faeces.

**ROUNDWORMS (ASCARIS)**

1. Adult worms live in the intestine and are sometimes passed in the stool — they are white and several centimetres long. In children they use much of the food and so the child may not gain weight.
2. There may be no symptoms of roundworms, sometimes there is belly discomfort and bloating. A child may develop a big, soft abdomen. Round worms can cause asthma or even blood in the sputum.

**3. TREATMENT:**

One dose of **Mebendazole** (2 tablets) is enough to kill roundworms, but they may not be passed in the stool until several days later. The total dose is 200 mg, and is the same for adults and children.

**4. PREVENTION**

The eggs of roundworms are in soil which is contaminated by faeces so when children play in the dirt the eggs get under their nails and then into their mouths.

To prevent them:—

- keep the nails short and clean
- tell children not to defaecate in or near the house. Cover the child's faeces with dirt when possible.

**HOOKWORM (ANCYLOSTOMA)**

1. This is a small worm which is not visible to the naked eye. It lives in the intestine, and in large numbers causes anaemia and weakness.
2. Although the only sure diagnosis is made by microscope, cases of anaemia which are not obviously due to other conditions (e.g. malnutrition, malaria, T.B.) should be treated for hookworm.

**3. TREATMENT**

When hookworm is diagnosed give Mebendazole 100mg (one tablet) twice a day for **3 days** to both adults and children.

**4. PREVENTION:**

The eggs are passed in the stool, and the larvae which hatch in the soil can enter another person through his bare feet. From there they pass through the lungs and then to the intestine.

To prevent them: —

- All persons should defaecate far from the houses in a separate area from the part of the village where children play.
- If possible, try to provide sandals for all family members to wear.
- If a child is weak and pale, take him to the clinic to see the doctor.

**PINWORM or THREADWORM (ENTEROBIUS)**

1. These are small worms which lay many eggs just outside the anus. This causes itching, mainly at night, the child scratches and so the eggs stick under his nails and are carried to his mouth. This causes repeated infection by the worms.
2. **DIAGNOSIS** can be made by placing a piece of sellotape onto the anal area, then transferring it to a slide. The eggs can be seen under a microscope.
3. **TREATMENT:**  
Mebendazole in the same dose as for Hookworm.
4. **PREVENTION:**
  - Wash a child's hands and anal area when he wakes up, and after a bowel movement.
  - Cut his fingernails very short.
  - If he has pinworms, wrap some cloth tightly around his buttocks to keep him from scratching, and take him to the clinic for some medicine. Threadworms are not dangerous, but disturb the child's sleep.

**15. TUBERCULOSIS**

1. Tuberculosis is a chronic infectious disease which affects all ages and both sexes.
2. People with TB of the lungs spread the disease by coughing, sneezing and spitting.
3. TB can take a long time to develop — from 1 to 3 months.
4. A person is more likely to get TB if he lives with a person who has it.
5. Some common signs of TB are:
  - a cough for longer than 4 weeks
  - tired feeling
  - weight loss
  - sweating at night and
  - bloody sputum
6. TB in children is very difficult to diagnose. Children usually do not cough — but they do lose weight, get tired easily, have pneumonia that doesn't go away. They can also have very big glands in the neck or a painful knee or hip or back which makes them limp.

**WHAT A TB PROGRAM TRIES TO DO**

1. To identify people with TB, because it is an infectious disease.
2. The best way to identify people is by examining their sputum.
3. If there is no laboratory in the area, do not start treating people for TB unless they have certain signs of symptoms. This is very important.
4. Before treating someone for TB, a register should be made, because the treatment is very long, their location (section, village) should be written down. You must be able to find the patients if they do not come for treatment.
5. Patient education is extremely important, and must be given at the start of treatment. Tell the patient that TB is treatable, that he has to be treated for 1 year and to take the tablets every day. Tell him that he can infect his own family if he is not treated. If the patient stops treatment he is likely to relapse.
6. A system of house visits must be established, using the CHO in the patient's section. All defaulters from the TB treatment program should be contacted by this CHO.

**WHEN TO SUSPECT TB**

1. When an adult complains of a cough for more than 4 weeks, or when there is blood in the sputum. There can also be loss of weight and sweating at night.
2. If a child does not get better after a full treatment with antibiotics for pneumonia.
3. When a malnourished child does not gain weight in a well-supervised Supplementary Feeding Programme.
4. When a child who has recently had measles does not gain weight.
5. When a child with big neck glands does not get better with usual antibiotics.

**WHEN TO START TREATMENT IF THERE IS NO LABORATORY**

- The diagnosis of TB should be made cautiously, as it commits the patient to a 1 year course of drugs with potential side effects.
- Only the designated physician or nurse in charge of the TB clinic should start treatment.
- Community Health Workers and nurses in other clinics, feeding centres or sections should refer all suspected TB cases to this clinic, which should be held at a regular time and place each week.
- As well as looking for the following specific signs and symptoms, look at the patient's **general condition**. Does he **look** chronically sick? If uncertain, reserve your decision and observe the patient at weekly intervals for another month. Ask if there is a **family history** of TB.
- If a person has at least 2 of the following, **AND** is still sick after a full treatment with other antibiotics for 14 days:

**ADULTS**

- Cough for 8 weeks with sputum
- Weight loss
- Night sweats/fever more than 2 weeks
- Blood in sputum

**CHILDREN**

- Weight loss in SFP
- Fever/tiredness for more than 2 weeks
- Less activity than usual
- Big glands in the neck
- Swollen painful knee or hip which makes him limp or pain in the back

**WHEN TO START TREATMENT IF THERE IS A LABORATORY**

1. When TB bacilli are seen in the sputum.
2. Always collect 2 sputum specimens - one when the patient is seen, the other early in the morning.
3. If TB bacilli are not seen, use the same criteria for when there is no laboratory.

**TREATMENT:**

The intensive phase is given for 2 months (3 drugs)

The maintenance phase is continued for another 10 months (2 drugs)

However, if attendance is irregular the intensive phase should be extended.

▲ total of 50Gms of Streptomycin should be given in the intensive phase.

**INTENSIVE PHASE:**

**ADULTS:** Streptomycin 0.75gm IM daily  
(0.5gm if over 50 years of age)

TB-1 (THIACETAZONE 150mg + ISONAZID 300mg) - 1 tab. every day.

This should be taken after meals, and can be divided into a twice or three times daily dose.

**N.B.** (1) If nausea and vomiting occurs, **STOP** for 2 - 3 days, then re-start using a low dose of Thiacetazone. Give after meals. Do this by giving ¼ tab. of TB-1, and 2 tabs. of 100mg ISONIAZID daily for 7 days.

If vomiting persists, change to ISONIAZID 300mg. daily, **plus** ETHAMBUTOL 800mg daily.

**DO NOT START TREATMENT WITH ETHAMBUTOL.**

(2) If loss of hearing or ringing in the ears occur, refer to doctor, decrease the dose of STREPTOMYCIN, or stop if necessary.

(3) If burning or numbness in the hands or feet occur, refer to doctor — it may be a side-effect of ISONIAZID — give Vitamin B6 50mg daily.

#### **CHILDREN:**

Children tolerate a smaller dose of thiacetazone than adults, but need a high dose of ISONIAZID. The following is a recommended schedule. Children need 3 drugs for TB, the same as adults:

STREPTOMYCIN — 15mg/kg/day daily for 2 months - Plus:

**NEONATE:** Thiacetazone should not be given

Isoniazid - 100mg.

6 months - 1 year: Thiacetazone 25 mg + Isoniazid 150mg  
(5 - 8 Kgs) (1/6 tab TB-1 + 1 tab. Isoniazid)

1 - 2 years: Thiacetazone 37.5mg + Isoniazid 175 mg  
(8 - 15 Kgs) ¼ tab TB-1 + 1 tab. INH)

2 - 8 years: Thiacetazone 75mg + Isoniazid 200mg  
(15 - 30Kgs) (½ tab TB-1 + ½ tab. INH)

If vomiting occurs - as for adults - the dose of Ethambutol is 20mg/kg/day.

#### **MAINTENANCE PHASE:**

**ADULT:** Omit Streptomycin. Continue TB-1 (or INH and Ethambutol)

**CHILDREN:** Same

In the maintenance phase, give the patient a daily supply of drugs. The most important factor in successful TB treatment is that it should be continuous and uninterrupted.

Defaulters must be sought out.

#### **SUPPLEMENTARY FOOD**

In the intensive phase, assess the patient's nutritional status

Is he malnourished?

Does he need extra food?

A diagnosis of TB alone should not be an automatic criterion for supplementary food. In the maintenance phase, supplementary food could be given as an incentive. This should be wet rations so that tablets can be given at the same time.

#### **What to do for Contacts of TB patients**

1. Children less than 5 years old who are living with a TB patient should get INH 10mg/kg - every day for 6 months. They should start this treatment one week after getting a BCG vaccination.
2. Check adult contacts to see if they have symptoms. Use the laboratory when possible to examine their sputum.

**N.B.** There is no advantage in treating TB as an inpatient - the results are just as good when the treatment is taken regularly at home.

## **16. OBSTETRICS AND GYNAECOLOGY**

The greater part of maternity care in small villages is well provided by Traditional Birth Attendants (T.B.A.) many of whom, as well as possessing their traditionally acquired skill, will have been taught the special module in the Community Health Worker training scheme. From time to time, however, Senior Staff will be asked to assist in cases of difficulty. The special problem in this branch of medical care is that the diagnosis will usually be simple but the means of treatment will not be available in the village. The following advice therefore emphasizes the importance of making use of whatever facilities exist in the nearest district or regional hospital of the National Health Service. It is strongly advised that obstetric manoeuvres or operations such as internal version or Caesarian Section, should not be attempted outside of specialist hospitals.

### **A. ANTENATAL CARE**

Ensure that pregnant women receive Supplementary food, iron and folic acid tablets and anti-tetanus immunization and support the T.B.A. by advice when it is requested. A serious abnormality such as antepartum haemorrhage should be sent to hospital.

### **B. LABOUR**

In the event of a T.B.A. asking advice about a long or abnormal labour it should usually be sufficient for Senior Staff to determine whether the woman can spontaneously be delivered vaginally and, if not, assist in arranging her move to hospital. Whether forceps delivery is attempted must be a matter of professional judgement in each individual case.

After delivery it would be correct to assist by giving parenteral Ergometrine to control bleeding or to remove a placenta by Brandt-Andrews manoeuvre. But a truly retained placenta or a third degree laceration of the perineum should be treated in hospital.

### **GYNAECOLOGY**

The commonest gynaecological problem is spontaneous incomplete abortion accompanied by excessive bleeding. This sometimes will require the uterus to be emptied surgically. Whether this procedure is to be done in the CHC Centre or whether the patient is to be moved to hospital will be a matter for judgement in each individual case.

## 17. VENEREAL DISEASES

1. Venereal diseases (V.D.) are passed from an infected to an uninfected person when they have sexual intercourse. They can be serious both for men and women and for babies which the woman may bear.

There are two main kinds of V.D., namely Gonorrhoea and Syphilis.

### 2. GONORRHOEA

The symptoms of Gonorrhoea in men are:

- thick yellow pus coming from the penis
- painful and frequent urination

3. In women there are often no symptoms for a long time after infection but when present they are:

- clear or pus-like fluid coming from the birth opening without itching or unpleasant smell
- \*- painful urination
- pain in lower part of belly

\*Distinguish from urinary tract infection

### 4. TREATMENT (Adults only)

Inj. Procaine Penicillin 2.4 million units into each buttock intramuscularly

OR

Tab. Tetracycline 500mg seven (7) tablets at first dose followed by one (1) tablet 4 times daily x 10 days.

### 5. SYPHILIS

There are three stages in this disease. The first stage is the appearance of a spot or small ulcer on the penis or vulva which is painless and goes away without treatment in a few days or weeks. The second stages a few weeks or months without treatment.

The patient does not usually feel ill during these two stages. The third stage does not occur usually for some years and need not be considered here.

### 6. TREATMENT:

The treatment of syphilis is:

Benzathine Penicillin, 2.4 million units IM at 1 visit

OR

Aqueous Procaine Penicillin 600,000 Units IM daily for 8 days.

The former treatment is probably more practical in the village, and assures that the patient does not further spread the disease.

### 7. VERY IMPORTANT

Whenever a diagnosis of V.D. is made it is essential to see that the sexual partner(s) of the patient are informed since it is probable that they also will be infected.

This is best done by giving a note to the patient to give to his partner(s) which may read as follows: "I have been exposed to a serious disease and I need treatment for Gonorrhoea or Syphilis."

It is helpful to write on the note the number which corresponds with the patient's number in the Health Centre Register.

It is advisable that anyone presenting at a Health Centre with such a note should be treated regardless of symptoms.

## 18. CARE OF THE CHILD - MCH CLINICS

It is hoped that, in the near future, all village dispensaries shall attempt to commence regular Under 5 clinics, otherwise known as M.C.H. Clinics. These could be conducted by CHOs under the supervision of a nurse - TBA's should especially be involved, as their role in **health education** of mothers is vital.

The following components should exist:

- Try to enrolle all Under 5's including well children
- Issue a Road to Health card (these should be available from Professor Day soon)
  - the mother should keep the card.
- Assess the general health of the child, as well as development.
- Monitor weight monthly.
- Provide deworming treatment, Vitamin A and iron supplements.
- When necessary, refer sick children to the general clinic.
- Conduct **health education** classes.

The following points should be covered in health education:

- (i) Recognition of malnutrition in the child, and how to obtain supplementary food.
- (ii) Recognition of **dehydration** in children with diarrhoea, and the treatment with fluids. If ORS is unavailable, the mother can make a solution with a pinch of salt and a fistful of sugar to a cup of boiled water.
- (iii) What to do when a child has a **fever**. Uncover him, give him a cool bath, give lots of water to drink and observe his other symptoms (chills, diarrhoea, cough, rash, vomiting, fits).
- (iv) Separate children with rashes, sores, lice, respiratory diseases from other children whenever possible.
- (v) Protect children from adults or other children with chronic cough.
- (vi) Bathe children, change their clothes and wash them often, cut fingernails often.
- (vii) Whenever there is a campaign of **immunization** in the area, make sure the child gets the vaccines which are relevant.
- (viii) If any money is available for buying extra food, spend it on food which will build a child's body and protect it from disease (fruit, vegetables, meat).
- (ix) Some foods are available in or near CHC's, but are not traditional foods. Give them to children as they accept new foods more easily (fish, chicken, eggs, beans).
- (x) If only a small amount of money is available, buy extra food for the children, not sweets or cigarettes.
- (xi) Before cooking, wash your hands. Keep all utensils clean, don't leave leftover food in plates. Wash fruits and vegetables before eating them.
- (xii) Infants need to be fed often - at least 3 or 4 times a day. Infants over the age of 6 months need extra food, **as well as** breast milk. At the age of 12 months they should be eating what the other family members eat, in addition to breast milk.
- (xiii) The children in the family should get most of their food at home, if they go to supplementary feeding centres - this is to provide **extra** food, to **catch up** on weight they have lost.

## 19. CARE OF PREGNANT AND LACTATING WOMEN — MCH CLINICS

Ante-natal care of pregnant women ensures their health and the health of their unborn children. An ante-natal clinic should be in existence in all dispensaries, with the aim of seeing all pregnant women regularly, at least during the last trimester.

TBA's should be actively involved in these clinics, as they will usually be attending most births. The following should be performed at the ante-natal clinic:

- (i) Weight and B.P. checked.
- (ii) Urine examination, and haemoglobin if indicated, and the facilities available.
- (iii) Abdominal examination.
- (iv) TBA's advised of any anticipated complications.
- (v) Check for oedema.
- (vi) Recommend and arrange for supplementary food. Iron supplements should also be given to all women.
- (vii) If a cold chain in existence, a course of Tetanus Toxoid (3 doses at monthly intervals) should be given.
- (viii) Arrange for a post-natal home visit, the TBA should inform the midwife after all deliveries.
- (ix) **Health Education** should cover the following points:
  - (a) The importance of regular visits to the ante-natal clinic.
  - (b) Personal hygiene.
  - (c) Extra food should be eaten during pregnancy + lactation. Should include meat, fruit and vegetables when available.
  - (d) **Rest**, when feeling tired.
  - (e) No medicine unless ordered by a doctor (who must know she is pregnant).
  - (f) Should know what is normal, what is abnormal in pregnancy.

Examples:

**Normal:**

- Feeling sick - eat small, frequent meals.
- Indigestion - sleep with head raised
- Feet swelling - rest with feet raised, if fingers and face swell - go to the clinic
- Low back pain
- Constipation

**Abnormal:**

- Bleeding from the birth canal, at any time during the pregnancy - go to bed and send for the midwife.
- Severe anaemia
- High blood pressure (she may have headaches, blurred vision, dizziness or oedema all over the body)
- (g) She should know what is normal after delivery, what is abnormal
  - e.g. bleeding
  - discharge
  - severe weakness or dizziness
  - fever
  - swollen, sore, hot breast
- (h) She should know what to observe in the new baby:
  - Colour
  - How the baby feeds
  - How the baby breathes
  - The cord
  - That the baby is passing urine and faeces
- (i) Four important points to remember, to ensure a healthy mother and child:
  1. The mother should keep her body clean.
  2. The mother should keep her baby clean.

3. The mother should eat well.
4. The mother should feed her baby well.

## 20. HOME ACCIDENTS

Home accidents are common in the village — parents should be aware of them and try to prevent them.

### (1) BURNS

- Do not let children play near a fire.
- Keep matches out of reach.
- A burn must be kept very clean, wash gently with boiled water and do not cover it.
- If the burn is deep or large, the child must drink a lot of fluids, and take him to the clinic for treatment.

### (2) POISONING

- Keep all kerosene or gasoline away from children
- Never keep poisons in other bottles.
- If he swallows kerosene or gasoline, do not make the child vomit. — take him to see the doctor immediately. Give him a glass of milk if you have any.

### (3) DROWNING

Wells must be very carefully covered, so that children don't fall into them. Keep the young children away from the river. If a child is drowned, put his head down and try to push the water from his mouth and lungs.

### (4) FIRE

Do not put the fire near the wall of the house, especially when the wind is blowing strong.

### (5) CUTS

Keep cuts clean, with boiled water. If there is pus in the wound after a while, take him to the clinic.

### (6) CAR ACCIDENTS

Teach the children that cars are very dangerous, and they should not play near roads, nor chase cars.

## GUIDELINES FOR SUPPLEMENTARY AND INTENSIVE FEEDING PROGRAMMES

### 1. Introduction

The following guidelines have been revised with the object of standardising and improving the Supplementary and Intensive Feeding Programmes in the developing rural areas. They are flexible and may change from time to time by the Ministry of Health's consultant to Health Unit in order to meet changing circumstances.

The guidelines have been developed and evaluated by consensus during technical planning sessions, 3 day seminars, and in the course of field work. This has been achieved with the help of the Ministry of Health, the National Refugee Commission, Centre for Disease Control of ESDHEW, UNHCR, WHO, UNICEF, WFP, Red Crescent Society and League of Red Cross Societies and all the other Voluntary Agencies working in the health sector in most developing countries.

### 2. Feeding Programmes Objectives

2. The objectives of the Supplementary Feeding Programmes (SFPs) are:
  - To prevent and in some cases treat malnutrition amongst those particularly "vulnerable" or "at high risk" in the region, through the provision of additional appropriate foods.

- To involve the community in the day to day management of the programmes.
  - To facilitate the coverage and nutritional surveillance both of individuals and of the community.
3. The objective of Intensive Feeding Programmes (IFPs) is to:
- Improve the chances of recovery and thereby reduce mortality among the severely malnourished who could not be rehabilitated by general or supplementary feeding.

#### 4. The Management of SFPs

##### (i) Introduction

The following technical procedures have been designed through a process of compromise between a nutritionally ideal situation and what has been demonstrated to be feasible given the resources such as food, fuel, equipment and manpower and factors such as culture and traditional feeding habits.

One major factor in the success or failure of a SFP is the understanding by the whole community that the additional food is a supplement and not a substitute for the general feeding ration.

##### (ii) Criteria for entry into a SFP

Selection for admission to a SFP will depend on the resources available e.g. manpower, equipment, food, fuel, etc. Where very limited resources exist a SFP will have to give highly selective feeding in the following order of priority:

(iii) Infants and young children up to and including 115cm in height (115cm in height is assumed to be synonymous with 5 years of age) who are 71% to 80% of the reference median weight for height using the WHO/NCHS reference tables.

(iv) Children with mild oedema (Kwashiorkor).

(v) Women in the last trimester of pregnancy and for the first year of lactation

(vi) Selected TB patients judged medically to be undernourished.

(vii) Medical referrals including children discharged from therapeutic feeding programmes.

(viii) Undernourished children over 115cm in height (6-10 years of age), the elderly and the adults of a poor nutritional status and/or with a complicating disease.

As supplies and other resources improve, the aim should be to enroll all those who fall within the above 6 categories.

##### Criteria for Discharge from a SFP

The following criteria should be used to determine when a person is to be discharged from a SFP:

- Infants and young children attaining 85% of reference weight for height and are active, free from obvious illness and have gained weight without oedema.
- The opinion of the Senior Doctor or Nurse will determine the discharge of medical referrals, T.B. cases, older children, the elderly and other special cases. Such patients should be reviewed for discharge on a monthly or bimonthly basis.
- The opinion of the Senior Doctor or Nurse will determine the discharge of those medical referrals, older children, the elderly and other special cases.

##### Supplementary Feeding Centre Procedures

All people will be registered and issued with identifiable bracelets or some other non-transferable means of identification and admission. Particular attention must be paid to regular attendance and good coverage of the programme to ensure that those most in need shall benefit.

- All supplementary food must be supplied as cooked rations. People are required to sit and eat the food "on the spot" using locally purchased equipment, Oxfam Feeding Kits, or other equipment as approved by the Ministry of Health.
- Supervision and the day to day management of the programme should be done by selected formally trained personnel.
- The foods most frequently supplied for use in the SFP are dried skimmed milk (DSM) dried whole milk (DWM) and/or corn-soya milk porridge (CSM), vegetable or butter oil and/or sugar. Various diet combinations can be found in Annex 1. Dried fruit should be distributed when available.

- The daily SFP ration for each person is **at least** -
  - 350 calories and
  - 15gm protein
 in one or two sittings depending on stomach volume and appetite i.e. for adults and older children one sitting only is usually required, whereas young children may require two sittings. The meal should be held at a regular time each day and should not interfere with meal times at home or other major events. The serving procedure should be rapid and efficient. Special attention should be paid to the cultural factors that may deter some people from attending e.g. pregnant women sometimes may be reluctant to be seen eating in public especially where males are also congregating.
- When making up supplementary foods, river water should always be boiled for 5 minutes. Well, spring and purified water should only be boiled if fuel supplies are adequate.
- To avoid chaos the maximum capacity for a feeding centre is 400 people after which another feeding centre should be opened.
- All infants and children enrolled in the SFP should receive on admission Vitamin A. The dosage for infants 6 - 12 months is 100,000 IU and for all others 200,000 IU. All children 2 years of age and older should receive single dose Mebandazole treatment for roundworm (see section on Worms Intestinal Parasites).
- The Community Health Workers should be responsible for the follow up at home of those people who have not attended for two consecutive days.
- The S.F. centre is an ideal place to offer preventive health care such as health education and every effort should therefore be made to make constructive use of the time, facilities and personnel.

#### Assessment

- Frequent Visual assessments of the people in a SFP and of the total community is of help in attempting to determine the effect or impact of the SFP.
- Infants and young children of 115cm. and less in height registered in the SFP should be assessed individually as follows:
  - a frequent visual assessment of each child when eating the supplement "on the spot"
  - the child should be weighed every four weeks at least.
 Every two weeks is better.
- the child should receive a rapid clinical assessment at two weekly intervals. The information on weight should be recorded in the register and compared with the previous weight. Those children losing weight or not gaining weight should be marked in the register with an asterisk and referred within 24 hours to the senior health personnel. for a clinical assessment.
- enquiries should also be made about the child's diet at home and his frequency of attendance at the S.F. centre.

#### Surveillance

Although many malnourished children are presented to the SF centre, others for various reasons languish in the village. Only by active searches section by section can the majority of malnourished children be identified and entered into the SF programme. Children less than 3 years of age and 85 cm or less in height are at greatest risk of malnutrition. Particular efforts should be made to routinely screen this vulnerable group.

- In order to ensure good coverage of the SFP and to identify new people, all children less than 115cms in height should be weighed and measured as soon as possible section by section, and where feasible every 3 months afterwards. New arrivals to an established centre should be assessed nutritionally and clinically within 72 hours of arrival. The anthropometric measurements should be performed by the team of Community Health Worker (CHO's) specifically trained and supervised for this purpose.

#### The Management of an Intensive Feeding Programme

- **Criteria for Admission to an IFP** are as follows:

- Infants and young children up to and including 115cms in heights who are 70% or less of the reference weight for height.
- Children with oedema (kwashiorkor)
- Medical referrals e.g. older children or very rarely adults, of very poor nutritional status and a serious complicating disease.

**-Criteria for discharge from an IFP are as follows:**

The child must:

- a) be at least 80% standard weight for height
- b) be gaining weight without oedema.
- c) be active
- d) be free from obvious illness
- e) have a good appetite

With the exception of a), the same criteria apply to older children and adult.

### **Intensive Feeding Centre Procedures**

- All food used for intensive feeding will be supplied cooked in the form of "on the spot" feeding.
- The food used is similar to that used in the S.F.P. Diet formula for High Energy Milk (HEM)
- The daily IF ration will take the form of specially formulated food calculated to supply at least - 150 calories per kg. body weight per person per day. Small feeds frequently are required and so at least four, preferably five or six feeds per day should be given.
- A senior nurse or doctor should closely supervise the care of those patients requiring intensive feeding and the Community Health Workers responsible for the follow-up of those patients who do not attend for two consecutive feeds.
- Medical care is secondary to feeding but students should be aware of the possibility of the following medical complications of Marasmus:
  - failure to gain weight
  - dehydration
  - infection(s)
  - hypothermia
  - hypoglycaemia
  - severe anemia

Individual assessment is done as follows:

- weigh every 7 days to monitor progress and ensure the child is neither losing weight nor failing to gain weight.
- regular clinical assessment at least every 2-3 days.

The information gained should be recorded on a register and on individual progress cards.

### **Surveillance**

- A regular visual assessment of the community to include searching in individual huts to ensure that those too weak to move are not lying in the huts.
- Where feasible regular nutritional surveys of a sample of the child population should be undertaken.

## **22. GUIDELINES FOR IMMUNIZATION**

By the time a child becomes 1 year of age he should have completed a full immunization course against diphtheria, whooping cough, tetanus, polio, tuberculosis and measles.

### **1. Vaccines, number of doses, dosage size, route of giving**

DPT (diphtheria, pertussis and tetanus), 3 doses, 0.5 cc, IM (intramuscular)

OPV (oral polio), 3 doses, 2 drops, PO (into the mouth)

MEASLES, 1 dose, 0.5 cc, SQ (injection into fat; subcutaneously)

BCG (tuberculosis), 1 dose, 0.1cc, ID (intra-dermal, into the skin — left upper deltoid)

A disposable syringe and needle is used for each dose of DPT and of measles. BCG vaccine is given using a 1 cc non disposable special glass syringe and a 1 cm non disposable special needle — the very end tip of the needle is sterilized by a flame between each intradermal shot.

**II. Vaccine side effects**

Mothers should be told:

- (1) DPT vaccine can cause a fever 12 or more hours after injection for approximately 1 day. Aspirin controls the fever.
- (2) As in any fever, a very occasional child will have a seizure. This child should be taken to the doctor or nurse.
- (3) Measles vaccine on occasion causes a fever and/or a measles-like rash 12-16 days after the injection. A child with this rash cannot infect others and the rash will clear in 3 days.
- (4) BCG vaccine will normally produce a 1-2cm sore or ulcer at the injection site. The sore should be kept clean but not bandaged. As result of this ulcer a small scar is expected. In up to 10% of children given BCG tender swollen nodes in the arm-pit will occur lasting several days.

**III. Vaccine schedule — a suggested schedule**

	Age in months			
	3 mths	5 mths	7mths	9mths
DPT	x	x	x	
OPV	x	x	x	
MEASLES				x
BCG				x

- (1) Two or more vaccines can be given at any one time.
- (2) DPT and OPV cannot be given at less than 6 week intervals. The interval between doses can be a few to several months and protection against disease achieved.
- (3) BCG is best given earlier than 3 months of age and, in fact, can be given at birth. Because BCG produces a temporary ulcer we suggest in the above schedule giving BCG as the last vaccine of the series. Secondly, the scar from BCG can then be used as an indicator that the child has completed all immunizations. In villages where adequate birth registers are maintained and MCH clinics function, the decision to given BCG before 3 months of age can be made.
- (4) Completion of all immunizations as per this schedule insures high levels of protection against the diseases at the earliest age possible for the child.
- (5) Any child less than 5 years of age should receive the complete series of immunization.
- (6) Any person less than 15 years of age should receive BCG.

#### IV. Vaccine handling

- (1) All the vaccines are destroyed by temperatures greater than 8°C. Use cold boxes, vaccine carriers, ice packs.
- (2) Measles and OPV must be stored frozen at - 20°C. When defrosted and held at 4-8°C both can be used for 30 days. Measles and OPV should not be refrozen.
- (3) Measles and MCG are destroyed by sunlight. Use cold box, vaccine carrier, cloth or paper cover.
- (4) Measles and BCG vaccines must be reconstituted with a diluent just prior to giving the injection. The diluent must be cold (4-8°) when added to the dried vaccine. A warm diluent will destroy the vaccine.
- (5) Reconstituted BCG is viable for 1 hour at environmental temperature and 3-4 hours at 4°C. After these times discard the vaccine.
- (6) Only 1 day's expected vaccine requirements should be taken from the regional vaccine store to the immunization clinic. Use cold boxes and ice packs.
- (7) Cold boxes should be opened infrequently. Vaccines expected to be used in a two hour period should be transferred to a vaccine carrier when possible.
- (8) Vaccine to be used in the next 10-15 minutes can be drawn into syringes and placed on a covered ice pack.
- (9) Cleaning of the site for injection with water is sufficient.
- (10) OPV droppers should not touch the child's mouth. OPV droppers can be removed, washed with soap and water and re-used.
- (11) Any partially used vials of vaccine must be destroyed after each vaccine session.
- (12) Unopened vials of vaccine are to be returned to cold boxes, and, if possible, the cold boxes returned to the regional vaccine store where the vaccine is returned to the refrigerators and freezers.

#### V. Other points

- (1) Ideally, immunization clinics should be held monthly. Alternatively, bi-monthly or every 3 months, depending upon the capability of the individual health unit.
- (2) Measles is a major cause of death and other complications. All children should receive measles vaccine as close to 9 months of age as possible. Whooping cough is an important cause of mortality during outbreaks and attacks the very young. The three doses of DPT should be given as close to the ideal schedule as possible.
- (3) Malnutrition rather than a contraindication to measles vaccine is a major indication to give vaccine. The malnourished, younger child is at the greatest risk of mortality and complications from measles.
- (4) A fever and/or other illness is not a contraindication to receiving any of the vaccines.
- (5) New borns and new entrants to each project continue to provide new susceptible children requiring immunization. All should be identified as soon as possible and directed to a scheduled immunization clinic.

## Tropical Parasitology

A considerable number of tropical parasites are helminth forms. These organisms live inside the body of men and other animals. The digestive system of these parasites is consequently poorly developed or is altogether missing. These worms possess flattened ribbonlike bodies as in the tapeworm or a cylindrical structure as with the round worm. These parasites have two hosts, a primary host in which they develop into adults and a secondary host in which they pass through some of the early stages of their life cycle.

### CURRENT CLINICAL MANAGEMENT

The plan of construction of the body in these parasites provides maximum spacing facilities for the reproductive organs while considerably reducing other systems in order to produce the largest number of eggs to ensure an easy propagation of their species. Formerly parasites were localized to different parts of the world constituting definite "endemic regions," but today we observe that barriers are shattered; boundaries are dissolved because of free mixing and intercommunication, with easy and quick transport between the most remote parts of the earth resulting in the delivery of unwanted gifts to other doors!

### THE PORK TAPEWORM (*TAENIA SOLIUM*)

The adult pork tapeworm is a ribbonlike flat worm found in the intestine of pork-eating people. It may grow to a length of 15 to 18 feet. The body is composed of a large number of segments (800 to 900). The head is about the size of a pinhead, bearing a double row of hooklets with which the worm attaches to the wall of the intestine. The posterior segments, called "gravid segments," contain a large number of eggs. These segments get detached from the worm and are expelled passively along with the feces. The life cycle of the worm is completed in two hosts. The final host is man, harboring the adult worm. The intermediate host is a pig, possessing the larval form. The pig must eat food contaminated with human feces along with the gravid segments. The eggs find easy access to the intestine of pig. The eggs liberate small embryos that finally reach the muscles and develop into circular vesicles possessing a head, popularly known as bladder worm. The head is deeply penetrated in between the muscle fibers. Pork infected with these vesicles is known as "measly pork." When a person eats improperly cooked measly pork, the head is released from the pork muscle fibers and sticks to the inner lining of the person's intestine where it grows gradually to be a fully developed adult. *Geographical distribution* is world-wide. Conditions have improved owing to strict inspection and hygienic control of pork, in many pork-eating countries.

*Prophylaxis.* Individual caution is required to avoid eating improperly cooked pork, and adequate pork inspection at the slaughter house is mandatory.

*Pathogenicity.* Stomach pain with gastrointestinal disturbances and anemia are the usual complaints of the infected persons.

### THE BEEF TAPEWORM (*TAENIA SAGINATA*)

This parasite resembles the pork tapeworm. It is longer and differs in absence of hooklets from its head. The life cycle is the same as described for the pork tapeworm. In this case the intermediate host is cattle (cow or buffalo). Human beings suffer the infection by eating undercooked beef.

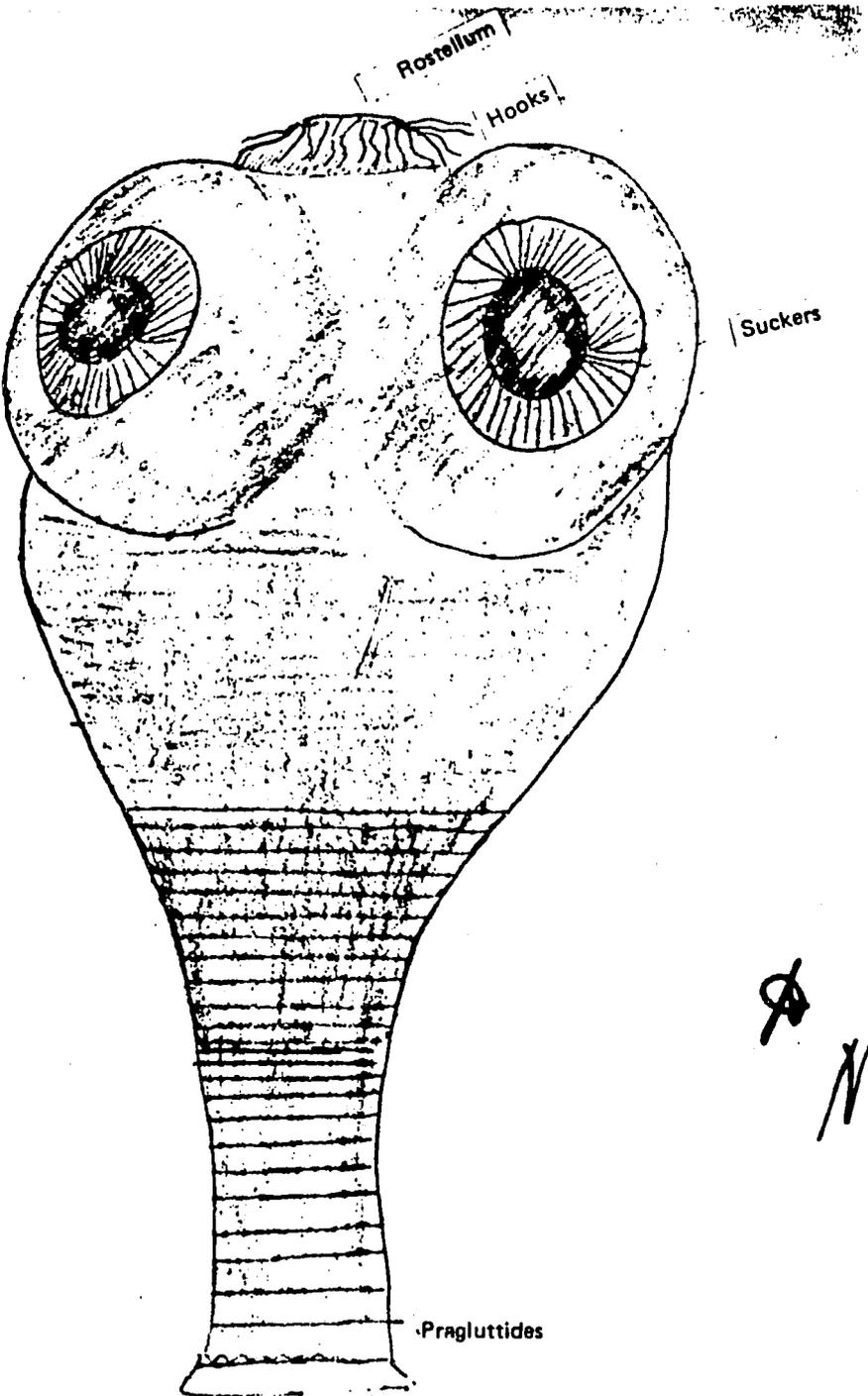


FIG. 1. Scolex of taenia solium. (Illustration courtesy of Prof. Stacey B. Day. Drawn from a high powered microscopic study by Dr. Day in 1945.)

## CURRENT CLINICAL MANAGEMENT

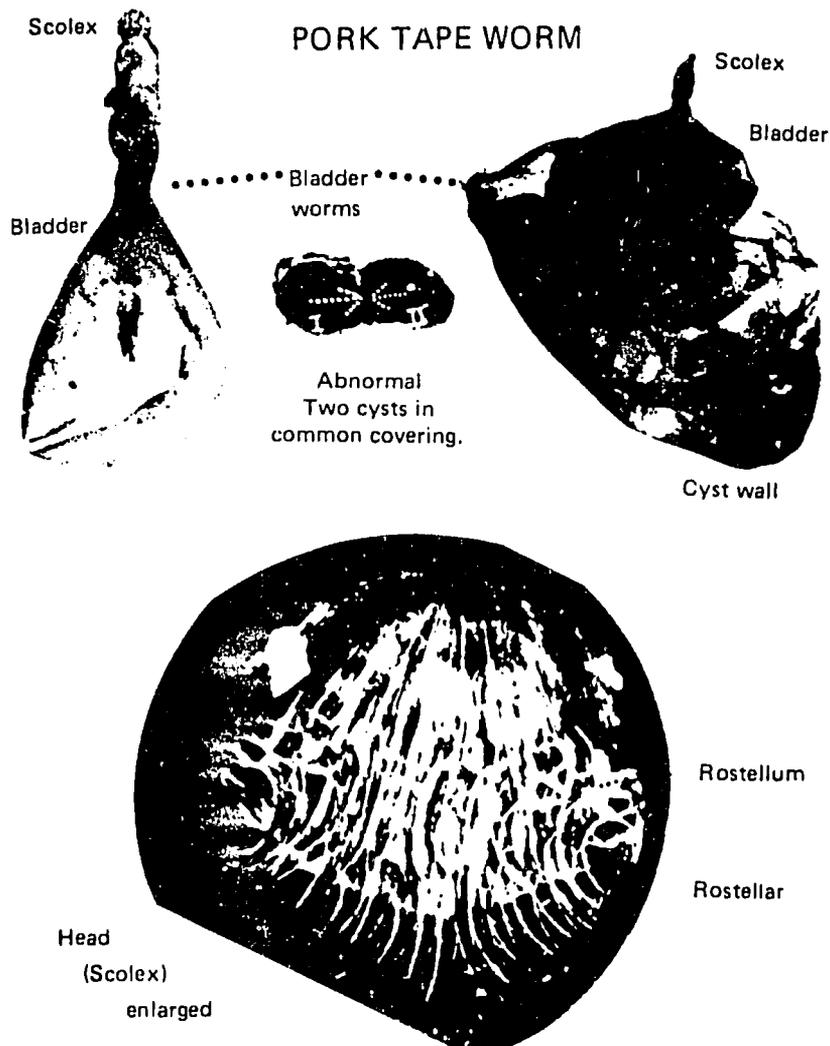
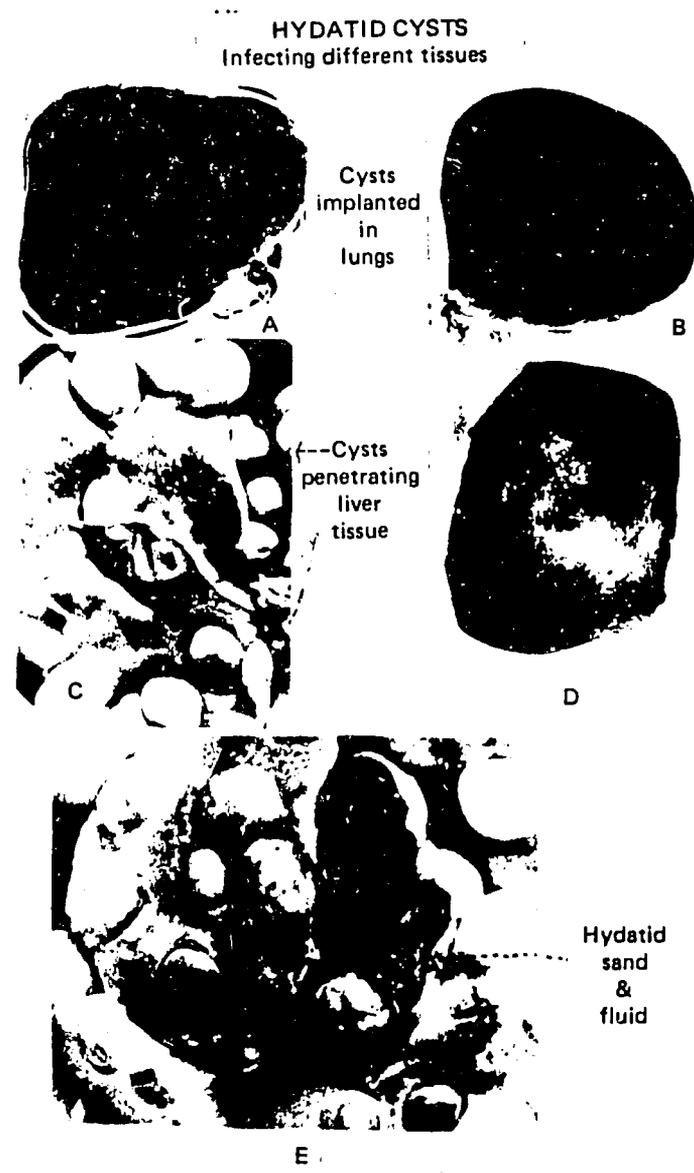


FIG. 2. Pork tapeworm.

*Geographical Distribution.* It is of world wide occurrence. It is fairly common in countries where beef is consumed as food, especially if adequate meat inspection facilities are not available.

*Prophylaxis and Pathogenicity.* These parasites require the same caution and care as noted for the pork tapeworm.



**FIG. 3.** Hydatid cysts. A and B: cysts implanted in lungs. C, D and E: Cysts in liver tissue. E. Further details in the cyst.

## CURRENT CLINICAL MANAGEMENT

### THE DWARF TAPEWORM OF DOG (*ECHINOCOCCUS GRANULOSUS*)

The adult is a tiny worm 3 to 6 mm long occurring in the intestine of the dog in large numbers. The eggs are infective to man, cattle, sheep, and other herbivorous animals and are swallowed by man through food and drink. The eggs hatch into minute embryos that bore their way through blood vessels, finally reaching the liver and lungs and later invading other organs where they develop into vesiclelike structures popularly called "hydatid cysts." Hydatid cysts develop in size depending on the organ invaded, the diameter varying proportionately (1-2 inches to basketball size). The larval form is most dangerous and even may be fatal to man.

*Geographical Distribution.* Occurrence is worldwide. Man is a victim because of his intimate association with the dog.

*Prophylaxis.* Hygienic control is essential. It is essential for adults and children to keep dogs at a distance, and thorough washing of hands before eating should be matter of habit.

### THE BROAD FISH TAPEWORM (*DIPHYLLOBOTHRIUM LATUM*)

The adult worm lives in the small intestine of man; it is also reported in fish-eating animals, cat, dog, and fox. It is a ribbonlike tapeworm measuring 8 to 10 meters in length, containing 3000 to 4000 segments. It completes its lifecycle in three different animals. The terminal segments enclosing large number of eggs are shed along with the fecal matter. The eggs are dropped in water and must be eaten by a water flea (cyclops), giving rise first to larval forms. The water flea along with the larval form must be eaten by a fresh-water fish. The second larval form develops in fish muscles. The infected fish is finally eaten by man. The infective larvae are not destroyed by ordinary salting or smoking, or if the fish is insufficiently cooked. The larvae, therefore, successfully reach the intestine of man. The worm requires 6 to 8 weeks to attain maturity.

*Geographical Distribution.* It is common in Central Europe, Central Africa, Japan, and the northern United States, and was also reported recently in India.

*Prophylaxis.* Fish should be cooked thoroughly before eating. Dogs and cats should not be fed on offals of fish.

*Pathogenicity.* It provokes gastrointestinal disturbances and anemia.

### THE BLOOD FLUKE (*SCHISTOMA* *HAEMATOBIIUM*)

This worm lives in the blood vessels of man, particularly in the veins of the urinary tract. The male is 7 to 25 mm long and lodges safely in the body of the

## TROPICAL PARASITOLOGY

female (15 to 25 mm long) on its ventral side. The female discharges the eggs into the blood. The eggs gradually find their way into the urinary bladder and escape along with the urine. The eggs penetrate the soft parts of the snail (small-shelled animals in ponds and rivers). Later they develop into larvae, which are released into the water. Infection results when human beings swim, bathe, or wade in such water. Young larval forms very quickly burrow through the skin and gradually reach the blood vessels where they develop into adult males and females.

*Geographical Distribution.* It occurs in the Mediterranean region, Madagascar, Southwest Asia, Egypt, Africa (tropical and southern), South America, the West Indies, the Philippines, and Celebes, and is also reported in India.

*Prophylaxis.* Prevention of pollution of water with human excreta is the primary item of concern. It is most important to avoid swimming, bathing, wading, or washing in infected water. Destruction of the snail vector at the government level by appropriate sanitary ordinances should be mandatory.

## THE DWARF TAPEWORM (OF MAN) (*HYMENOLEPIS NANA*)

This worm is commonly available from the intestine of man; also a slightly different form occurs in the intestine of rat. It measures 10 to 53 mm in length. No intermediate host is required to complete its life cycle. Development is continued in the infected host.

Infection first occurs through the ingestion of food contaminated with the eggs of the worm (from the fecal matter of an infected man or rat). Later auto-infection increases the number of parasites in the intestine of the individual.

*Geographical Distribution.* It is cosmopolitan, being fairly common in the South in the United States, different parts of Europe, Asia, and the Pacific islands.

*Prophylaxis.* Good personal hygiene must be very carefully observed. Crowded living conditions should be avoided.

## THE GUINEA WORM (SERPENT WORM OR DRAGON WORM) (*DRACUNUCULUS MEDINENSIS*)

These worms live under the skin of legs, arms, and back of man. The female measures 12 to 30 mm in length, while the male is much smaller. The life cycle is completed by two hosts. Man is the primary host, while the water flea is the secondary host. Water fleas containing the infective larvae are swallowed by men with raw drinking water. The young forms (larvae) are set free in the intestine; later they pierce the intestinal wall and reach the lower surface of the skin, especially of the lower body extremities where the skin is liable to come into

## CURRENT CLINICAL MANAGEMENT

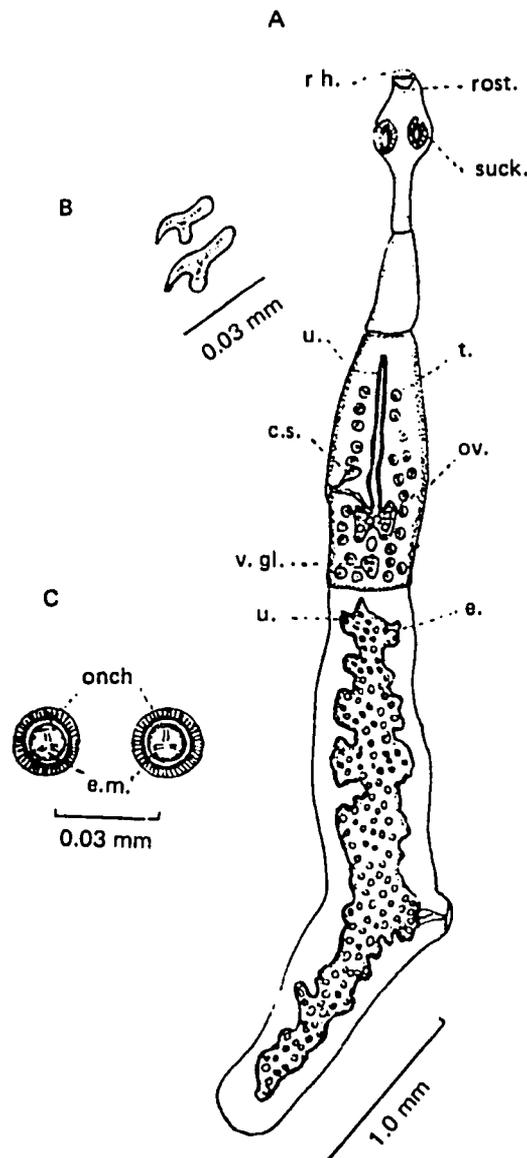


FIG. 4. Dwarf tapeworm of dog. A. Complete worm. B. Hooklets—large and small. C. Eggs.

contact with water, and there they give rise to ulcers. The gravid females migrate to those parts of the skin liable to come in contact with water, particularly the legs of washer men and water carriers. Upon rupture of the ulcer, the young forms are discharged into the water, and water fleas are easily reinfected.

*Geographical Distribution.* It is found in India, Burma, Arabia, Persia, Turkestan, Africa (East, West, and Central), the West Indies, and South America.

## TROPICAL PARASITOLOGY

*Prophylaxis.* The best way advisable is to break the link of waterflea-man-waterflea. Control pollution of drinking water. Careful filtering and boiling of drinking water is most essential.

*Pathogenic Effects.* Female worms produce toxic substances, causing allergic manifestations.

### THE ROUND WORM (*ASCARIS LUMBRICOIDES*)

This is a cylindrical worm living in the intestine of man. The males grow to 25 cm in length. The females are longer, growing to 40 cm. The male is further distinguished by the possession of a curved tail. Normally they are evacuated along with the feces, but under rare conditions they reach the stomach and are vomited out. The worm passes its life cycle only in man. The eggs are swallowed with food, drink, or raw vegetables. Tiny young forms released from the eggs are drained by blood capillaries, and reach the lungs, trachea, and esophagus. Finally they enter the digestive tract where they grow into male and female worms.

*Geographical Distribution.* Distribution is worldwide, occurring chiefly in the tropics. People suffer because of unhygienic habits. Children are the first victims.

*Prophylaxis.* There are three essentials: proper disposal of human feces, education of children in proper hygiene, and care and proper treatment of infected persons.

*Pathogenicity.* Young forms in the lungs cause serious coughing, fever, and pneumonia. Toxic action is responsible for some physical manifestations. Adult forms rob man of nourishment from the intestine.

### THE FILARIA WORM (*WUCHEREIRIA BANCROFTI*)

Adult worms are available in the lymphatic vessels of man only, being long and hairlike (round worm type). The male measures 2 to 4 mm in length, while the female is 7 to 10 mm long. Females lay eggs containing well-developed embryos into the blood. Man is the principal host harboring the adult worms. Embryos (microfilariae) are transmitted to female mosquitoes (*Culex*-type) during their blood meal. They possess a sheath and undergo further development within a fortnight. While the infective mosquito bites the human being, these microgerms are primarily deposited under the skin. Later they migrate to other regions (inguinal, scrotal, and abdominal), and grow to the adult form. Fertilized females keep on producing microfilariae, swarming in the peripheral blood vessels of the patient. The disease is popularly called "elephantiasis." It results in enormous enlargement of the organ affected (foot, arm, scrotum, breast, or vagina). The skin in these parts gets hardened, tough, and fissured. Urine indicates an abnormal condition, showing a milk-white coloration.

*Pathogenicity.* Morbid changes are produced in the patient by the infection.

## CURRENT CLINICAL MANAGEMENT



**FIG. 5.** Peripheral blood smear demonstrating *Wucheria Bancrofti*. Courtesy Drs. Randall D. Bloomfield and Jorge R. Suarez, The Brooklyn Hospital, New York.

### THE HOOK WORM (*ANCYLOSTOMA DUODENALE*)

The hook worm is also known as "Old World hook worm." It resides in the small intestine of man. The male worm is nearly 8 mm in length, while the female worm is a little longer. It attaches to the lumen of the intestine, causing hemorrhage and wounds. It resides in the small intestine but does not absorb the digesting food at all. It bites the intestinal wall and sucks blood, resulting in extensive damage to the intestine with profuse bleeding. The excretory waste of these worms cause a general physical *shiftlessness*. Many people throughout the world move bare-footed or with open shoes. In this way the larvae get an excellent opportunity to stick to the skin; once they bore their way inside the body, they are easily carried by blood vessels to the lungs and the trachea. At this stage they are coughed up and maybe swallowed, finally reaching the intestine and alimentary tract.

*Geographical Distribution.* It is widely distributed in all tropical and subtropical countries.

*Prophylaxis.* Special attention should be given to treatment of infected persons, prevention of soil pollution with proper control of sewage disposal, and proper use of boots.

*Pathogenicity.* The worms cause severe anemic conditions.

## TROPICAL PARASITOLOGY

### THE PINWORM OR SEATWORM (*ENTEROBIUS VERMICULARIS*)

These are very small cylindrical worms. The male grows to 4 mm in length, while the female attains a length up to 12 mm. They live in the cecum or vermiform appendix of man. Mature females wander down the rectum and even work their way out of the anus; this is most convenient for them to do when the patient retires to bed at night and the rectal muscles become relaxed. The worms become fairly active owing to aeration. The patient becomes alarmed and puts the fingers near the anus, contaminating the nails with the eggs. These eggs, which are of very small size (5-60  $\mu$ ) are heavily embedded in the perianal skin, are swallowed by that same individual and reach the intestine. Another person or other members of the house are infected through food, or linen, or even via a shared bed. In the case of a female patient the worms enter the vagina, causing inflammation and irritation.

*Geographical Distribution.* The distribution is cosmopolitan, with these worms found all over the world.

*Pathogenesis.* Irritation is caused by fully grown female pinworms. Inflammation and uneasiness are developed in the human female genital tract as and when worms invade the area.

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**CURRENT CLINICAL MANAGEMENT**

## Hygiene in the Tropics

The tropics include those portions of the earth's surface that lie between the tropics of Cancer and Capricorn,  $23\frac{1}{2}^{\circ}$  north and south of the equator respectively. In the present context, however, it would be more useful to include in "tropics" all such regions of the world that show a typical tropical climate irrespective of geographical location.

Contrary to common belief, tropical climates are not very hot. The temperature rarely exceeds  $35^{\circ}\text{C}$  and often ranges between  $26$  and  $32^{\circ}\text{C}$ . The main feature of the tropical climate is the remarkable uniformity of temperature over a 24-hour period as well as throughout the year. The seasons are, therefore, classified not on the basis of temperature but according to rainfall, which is usually heavy and, in some parts, virtually incessant. As a consequence, humidity is very high almost throughout the year and, coupled with remarkably uniform high temperature, creates an oppressive hot-house atmosphere that is highly conducive to growth of vegetation and lower forms of animal life such as insects in general, and flies and mosquitoes in particular. This generalized description of the tropical climate obviously does not apply to the tropical deserts (between  $20$  and  $30^{\circ}$  north and south of the equator) where rainfall and humidity are negligible and diurnal fluctuations in temperature are considerable.

By a curious coincidence, a vast majority of the countries that lie in the tropical belt are poor and densely populated, their inhabitants are undernourished, and civic amenities are poorly developed or, in places, nonexistent. Consequently, many of the problems of health and hygiene in the tropics are due more to *socioeconomic* conditions than to geographical factors. Lack of safe and sufficient drinking water, inefficient sanitary systems, primitive methods of disposal of industrial, agricultural, and sewage wastes, and inadequate medical care, especially in rural areas, have often resulted in massive epidemics of diseases which should otherwise be preventable. Many of the diseases that were once prevalent in Europe and America, have now been virtually eradicated everywhere except in tropical countries where some have now become endemic. With concerted effort involving international cooperation, many of the tropical diseases can be abolished. This is best demonstrated with smallpox, which has now been totally eradicated.

## HYGIENE IN THE TROPICS

Tropical diseases can be divided into four principal categories. The first comprises diseases that originate as a direct consequence of the hot-humid tropical climate. The second category includes diseases that are transmitted by the bite of insects (malaria, filaria, dengue, yaws, yellow fever), which form the single largest and the most important category of tropical illnesses.

In the third category are diseases whose causative organisms are spread by consumption of unwashed fruits and/or uncooked/improperly cooked vegetables, or by contact with bodily discharges of infected persons. Lastly, there are nutritional diseases like beriberi or general malnutrition, which may occur at any place in the world but are more prevalent in tropical regions.

## DIRECT EFFECTS OF TROPICAL CLIMATE ON THE HUMAN BODY

The effects of heat on the human body are influenced by two factors, first, the ability of the body to produce sweat, and second, the ability of the atmosphere to evaporate it. While the severe effects of heat such as heat strokes and heat exhaustion are uncommon in the tropics, milder effects are frequently encountered and are primarily due to excessive production of sweat and the inability of the humid atmosphere to evaporate it.

It is generally accepted that a person doing moderate physical work in the tropics may lose up to 10 liters of water and nearly 28 g salt per day in sweat and urine. These losses may result, over a period of time, in cramps, giddiness, and severe dehydration. Provision of ample supplies of potable water and intake of about 30 g salt per day are a *sine qua non* for survival in the tropics. Adequate rest and sleep and avoiding overexertion, especially in the sun, are also important. Perhaps the most effective defense against the tropical climate is a daily bath with fresh cool water. A dirty skin, covered with residual products of evaporated sweat, invites bacterial growth, skin eruptions, and prickly heat, which, by mechanically constricting or blocking the sweat pores, interfere with efficient sweating. Clothing should be light, loose, and preferably made of non-synthetic fibers such as cotton. Moderation in food intake, qualitative and quantitative, is advisable. Easily digestible protein-rich food with plenty of fresh fruits and vegetables is recommended. Excessive consumption of alcohol and high-calorie items such as fats and carbohydrates raises the internal heat and compounds the ill effects of climate.

While physical effects of heat and humidity are important hazards in the tropics, they pale into insignificance in comparison with the formidable array of diseases that occur exclusively, or almost so, in tropical countries with hot climates, both wet and dry.

## CURRENT CLINICAL MANAGEMENT

## INSECT-BORNE DISEASES

The most important of the tropical diseases is *malaria*. It is caused by infection with protozoan parasites of the genus *Plasmodium* transmitted by the bite of infected anopheline mosquitoes and characterized clinically by recurrent paroxysms of chills, fever, and sweating. In man, malaria is produced by four specific parasites which do not infect lower animals. Every year, about a quarter of all adults in Africa and every tenth person in India suffer from malaria, and every year nearly one million children die of the disease.

In addition to malaria, mosquitoes act as vectors for a number of other tropical diseases which are nearly as deadly as malaria, though less widespread. *Yellow fever*, a virulent virus disease, is carried by the mosquito *Aedes aegypti*. This disease has been eradicated from the United States, but a reservoir of yellow fever virus persists in the wild animals of Central and South America.

Another viral disease transmitted by the bites of certain mosquitoes is *dengue*. Appropriately called "break-bone fever," dengue is marked by severe pain in bones and joints, skin eruptions, and rapid high fever.

Another very common insect-borne disease is *elephantiasis* or *filariasis*, which starts by blockage of lymph channels by threadlike worms (*Filaria*: nematodes) conveyed to man by the bite of mosquitoes. The disease is characterized by persistent and chronic swelling of the arms, legs, or scrotum, until they assume gigantic proportions. In Central Africa, there is a species of *Filaria*, carried by the mango fly, that particularly attacks the eye. This disease is called *loa-loa*.

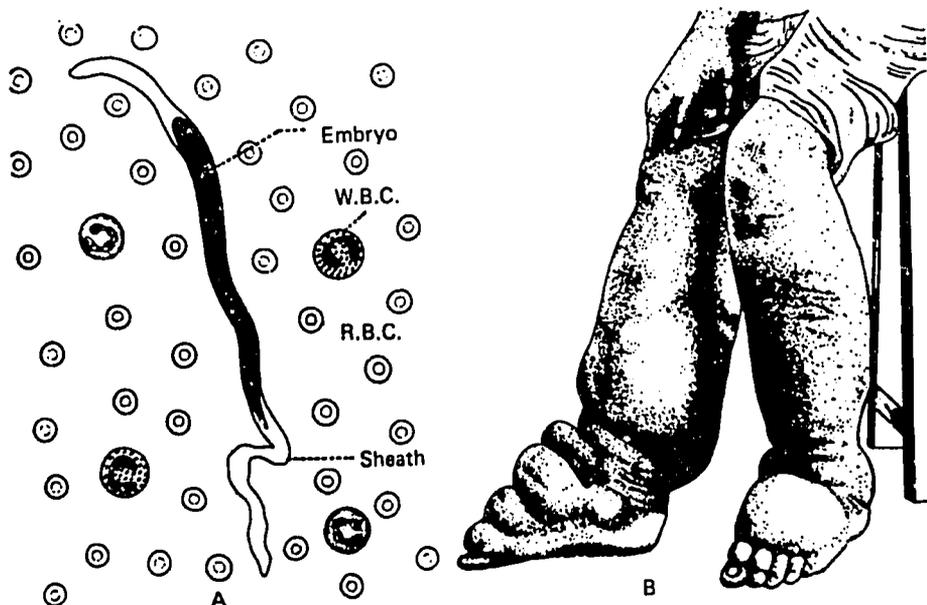


FIG. 1. A. Blood film with embryo. B. Elephantiasis of legs and hands.

## HYGIENE IN THE TROPICS

Sleeping sickness or *trypanosomiasis* is a tropical disease spread by the bite of the tsetse fly, which transmits the causative organism, a protozoan, into the blood of man. After a long latent period, which may last up to three years, the patient may suffer from periodic high temperature, swelling of spleen and lymph glands, and edema of the legs. The next stage of the disease is marked by tremors, a vacant expression, and slow speech. In the final stages the patient becomes sluggish and sleeps or dozes during the day. A condition like the African sleeping sickness also occurs in tropical America, where it is called *Chagas disease*.

*Plague*, a bacillary disease, is now restricted to Asia though at one time it was equally prevalent in Europe. The plague bacilli are carried by the bite of rat fleas, but once people get infected, spread may occur by droplet infection such as coughing and sneezing. The disease runs a rapid, severe, and often fatal course. It begins with fever and chills and is soon followed by headache, vomiting and prostration. Bleeding into the lungs or under the skin and enlargement and rupture of glands, especially in the groin, armpits, and neck, are common symptoms.

Asiatic or Indian *cholera* is endemic to the Far East and is almost absent in the Western hemisphere. The primary source of infection is the blood discharge from infected victims which may be spread by flies or carried by raw food and water. Thirst, vomiting, pain, abdominal cramps, and diarrhea leading to severe dehydration and prostration are important symptoms.

*Dysentery* is a form of diarrhea marked by frequent loose movements and the presence of blood and mucus in the stools. Of the two types of dysentery, *Amoebic* and *bacillary*, the former is confined largely to tropical countries and is caused by a parasitic protozoan (*Entamoeba histolytica*) which is introduced into the human body with contaminated water and uncooked or improperly washed fruits and vegetables. In chronic cases, abscesses may develop in the liver, lungs, or brain, which may lead to *serious complications*.

Conditions of poverty that exist in many of the tropical countries often lead to diseases that are nutritional in origin. *Tropical sprue*, characterized by frequent, soapy stools, sore mouth, raw tongue, weakness, loss of weight and anemia, is often suspected to be due to nutritional causes, although the basic cause is the inability of the stomach and intestine to absorb fats and carbohydrates. Similarly, *beriberi* is a deficiency disease caused by lack of vitamin B<sub>1</sub>, which is quite prevalent in regions where people live on diets of polished rice or where the food is cooked in such a way that the heat destroys the vitamins. It is also a disease of alcoholics in which inflammation of the stomach interferes with absorption of vitamins.

Among the most troublesome diseases of the tropics are those caused by parasitic worms. For instance *ancylostomiasis*, an infestation of the small intestine of man by the blood-sucking round worm of the genus *Ancylostoma*, occurs in practically all tropical countries. Man is the sole reservoir of this parasite and is,

### CURRENT CLINICAL MANAGEMENT

therefore, himself a source of infection. From the infected host, the eggs of the worm pass out along with stools, and if they reach moist soil, they hatch into hooked larvae (young forms) within about 24 hours. They enter man's body through the skin, especially of the foot, and drain through the blood vessels, finally reaching the stomach and intestine.

Another round worm, *Ascaris lumbricoides*, is worldwide in distribution but is most common in the tropics and subtropics. Infestation of man is due to ingestion of the eggs carried by infected raw vegetables, other eatables, and drinks that are contaminated with human fecal matter. Normally the worm robs the host's food and causes alarming symptoms to man.

Other worm infestations are either too local or too universal (tapeworms) in occurrence and thus need not be described here.

Since many of the insect vectors lay their eggs in standing and stagnant waters or in human and animal excreta, cleanliness of the immediate surroundings is an important prophylactic measure. Uncovered drains and ditches, pools, and puddles should be regularly sprayed with oils or insecticides. Important breeding sites, often overlooked, are overhead storage tanks, room coolers, and air conditioners. It is important to drain out the water completely from these resources.

Unfortunately, man has no natural immunity against the organisms of diarrhea and dysentery, especially when more than one strain of these organisms are present in a certain locality. While water itself is a relatively unimportant carrier of such organisms, it might carry cysts of *Entamoeba* and the eggs of helminth parasites. This necessitates very careful filtration and chlorination of the water at the government level. Human excreta should never be used as manure in fields where vegetables are grown.

Every year there are massive epidemics in several tropical areas whose cause can be traced directly to infection of drinking water. It is therefore essential to avoid such accidents by drinking *boiled and filtered water*.

The practice of defecation in open fields, by the roadside, is very prevalent in the tropics. It is due to the absence of public latrines. The government should take sanitary measures to discourage such practices.

### HYGIENE FOR THE TRAVELER

Tourists to tropical countries must realize that conditions in which the natives can remain healthy and disease-free may not be equally healthful for a stranger. Overexertion, lack of adequate rest, and poor sleep predispose a traveler to disease. Similarly a wise traveler should never overindulge in food and drink. A most important precaution is not to drink water from unknown or doubtful sources. It is best to use water treated with purification tablets or by adding 2 to 4 drops of bleach solution per quart of water. It is most advisable to drink

boiled or aerated water or freshly prepared tea and coffee. Another needed precaution is to avoid food from open unhygienic stalls. It is also essential not to eat salads, cut fruits, raw berries, or fruits and vegetables that cannot be peeled.

Travelers to most tropical countries are required to take great precautions against a number of communicable diseases. It is very important that travelers safeguard their own health.

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