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**RURAL HEALTH OFFICER
(RHO)
TRAINING MANUAL
(ENGLISH)**

RURAL HEALTH OFFICERS TRAINING PROGRAM TEACHING OUTLINE

AUG 03, 1991

I- Introduction to the Primary Health Care.

- 1.1 Health Care problems in Afghanistan
- 1.2 The concept of Health and Primary Health Care
- 1.3 PHC principles
- 1.4 PHC Strategy
- 1.5 PHC components
- 1.6 The concept of Health team
- 1.7 PHC Infrastructure in Afghanistan
- 1.8 The Health Pyramid and Afghanistan Health system.

II- Introduction to The Rural Health Officers (RHO) Training Program

- 2.1 Why RHO is needed for Afghanistan
- 2.2 RHOs Job description
- 2.3 RHO position in Health Team
 - a. PPHD
 - b. MCHO
 - c. BHW
 - d. DAI
 - e. CHW
 - f. Health Center Staff
- 2.4 Principles of Behavior
- 2.5 Working with the members of PHC team for planning and Organizing Health Activities.

III- Health Communication

- 3.1 What is meant by health communication?
- 3.2 RHOs are also Health Educators
- 3.3 Planning and carrying out H.C. session
- 3.4 Methods of Health Communication
- 3.5 Materials used in Health Communication
- 3.6 Identification of scope for Health Communication activities
- 3.7 Implementation and Evaluation of Health Communication activities.

IV- Health and Community

- 4.1 Why it is important to involvement community in the Health Care Program?
- 4.2 How to get to know the community
- 4.3 Mapping
- 4.4 What activities can be carried out with community involvement

- 4.5 How to gather information about health problems in the community
- 4.6 Guideline for working with Families
- 4.7 Home visiting and procedures for Home Visiting
- 4.8 Conducting Community Health survey
- 4.9 Choosing priorities and planning for community action
- 4.10 School Health

V- Supervision and Administration

- 5.1 What is supervision?
- 5.2 Why is supervision important?
- 5.3 What Skills do supervisors need?
- 5.4 Characteristic of an Effective supervisor.
- 5.5 Characteristic of an ineffective supervisor.
- 5.6 Authoritarian and participative approaches to supervision
- 5.7 Leadership styles
- 5.8 How leaders build teams?
- 5.9 What Makes a decision?
- 5.10 How you make decision
- 5.11 Steps in making decision
- 5.12 Planning and evaluation of supervision
- 5.13 Check list for supervision of BHWS, CHWS and Dai.

VI- Management of Health Activities

- 6.1 Data collection
- 6.2 BHW supplies management
- 6.3 Maintain and provide reports / weekly, monthly, annual
- 6.4 Coordination with other members of health system
- 6.5 Management of patient referral system
- 6.6 Channel of communication / Who, Where, When
- 6.7 Preparation of monthly work schedule
- 6.8 Preparation of schedule for BHWS supervision and monitoring
- 6.9 Supervision of BHWS and CHWS
- 6.10 Coordination and cooperation with the villages health teams
- 6.11 Establishing and managing of a health post
- 6.12 Reporting of reportable diseases
- 6.13 Coordinate, Assist and support Dais if possible
- 6.14 Planning of Priority Health Needs through community leaders
- 6.15 Maintenance of supply and Equipment
- 6.16 Logistics and supplies

VII- Environmental Health

- 7.1 Organisms that causes diseases
- 7.2 Water
 - a. sources of water
 - b. Safe water
 - c. Protection of water / Use of Florin
 - d. Storage of water
 - e. Purification / Boiling / Filtration / Chlorination
- 7.3 Refuse and excreta

- 7.4 Latrine
- 7.5 Protection and handling of food
- 7.6 Vectors and vectors control
- 7.7 Community Education
- 7.8 Personal Hygiene
- 7.9 Housing
- 7.10 Family Hygiene
- 7.11 Environmental Development

VIII- Maternal and Child Health

- 8.1 Pregnancy
- 8.2 Minor problems due to pregnancy
- 8.3 Nutritional needs during pregnancy
- 8.4 High risk pregnancy and referral
- 8.5 Antenatal and post natal care
- 8.6 Definition of Labor and stages of Labor
- 8.7 Normal physiological changes during stages of labor
- 8.8 Cord cutting and tetanus
- 8.9 Normal changes during postnatal
- 8.10 Birth spacing
- 8.11 Care of newborn baby and children
- 8.12 Child survival intervention
- 8.13 Child growth
- 8.14 The common problems of sick children
 - a. Malnutrition
 - b. Diarrhea and dehydration
 - c. Acute respiratory infection
 - d. Injuries and poisoning
 - e. Red eyes (Conductivities & Trachoma)
 - f. Discharging Ear
 - g. Symptoms in the mouth and throat
 - i. Worms
- 8.15 Dai Training
- 8.16 Recognition and referral of congenital problems of children
- 8.17 Care of Disabled Child.

IX- Nutrition

- 9.1 Basic Messages for community nutrition
- 9.2 Assisting community or nutritional status
- 9.3 Cultural factors effecting nutrition
- 9.4 Taking food history
- 9.5 Gardening
- 9.6 Screening / Use of U.A.C.M.T.
- 9.7 Nutritional deficiencies
 - a. Vitamin A
 - b. Pellagra (Nicotinamide)
 - c. Vitamin C
 - d. Vitamin D
 - e. Anemia
 - f. Goiter
 - g. Protein and energy

- 9.8 Nutritional education
 - a. Breast feeding
 - b. Weaning Food practice
 - c. Feeding during illness
 - d. Balance diet
- 9.9 Nutrition data collecting and reporting
- 9.10 Food and Food Components.

X- Immunization

- 10.1 Importance of Immunization
- 10.2 Target Group for vaccination
- 10.3 Motivate the community
- 10.4 Organizing immunization sessions
- 10.5 Vaccine storage and cold chain
- 10.6 How to give the vaccines.

XI- Review and adaptation of the following topics from the BHWS program

- 11.1 Structure of Human Body and their functions
- 11.2 Nursing skills
- 11.3 Common clinical problems
- 11.4 First aid
- 11.5 Guidelines for better using of relevant medicines, and
 - a. Medical dosage calculation
 - b. Wrong and right use of medicines
 - c. Miss use and over use of medicines
 - d. Definition and importance of Essential drugs
- 11.6 Communicable diseases
 - a. Six target diseases
 - b. Typhoid
 - c. Diarrhea
 - d. Mumps
 - e. Chekenfox
 - f. Rubella
- 11.7 Endemic diseases
 - a. Malaria
 - b. T.B.
 - c. Leishmaniasis
 - d. Leprosy
 - e. Trachoma

RURAL HEALTH OFFICER (RHO)

TASK ANALYSIS

JOB SUMMARY

The Rural Health Officer (usually male) will manage Primary Health Care activities at the Woleswali level by promoting and supervising implementation of village based programs through Basic Health Workers and other community health staff. He will generally be posted at the district (Woleswali) level to supervise 5 to 20 BHWS and to coordinate with the MCH Officer (female counterpart to RHO), and district Comprehensive Health Center (CHC). Under supervision of the Provincial Public Health Director, he will assist health facility staff at the Comprehensive Health Center and Basic Health Centers with planning and organizing preventive and promotive health activities.

REPORTS TO: PROVINCIAL PUBLIC HEALTH DIRECTOR (PPHD) OR HIS/HER DEPUTY FOR BASIC HEALTH SERVICES

TASKS

Within the overall framework of the Job Summary, the RHO will be responsible for directly or indirectly carrying out the following tasks, listed in order of priority. In some Woleswalis, his efforts may be supplemented by other primary health care staff, such as an MCH Officer or water and sanitation officer.

(It should be noted that many of the Duties listed below will be carried out by other field staff, such as the MCH Officer or . These duties however, will require coordination/support of the RHO or the RHO may be directly responsible for supervision of the field worker like a BHW. Therefore these duties must be covered in training and be listed as Duties under the "Tasks" heading).

TASK 1. PROVIDE TECHNICAL AND ADMINISTRATIVE SUPERVISION AND LOGISTICAL SUPPORT FOR BHWS and CHWS.

DUTIES:

1. Carry out direct and indirect monitoring of the management of specified common clinical problems by BHWS and CHWS, including on site visits to each BHW at specified intervals.
2. Provide technical information and guidance to BHWS and CHWS as required.
3. Facilitate the provision of required supplies.
4. Carry out administrative support functions for personnel matters, logistics and supplies.

TASK 2. PROMOTE AND SUPERVISE IN WOLESWALI

DUTIES:

1. Promote immunization of all children and tetanus toxoid immunization for pretend women.
2. Promote nutrition education programs.
3. Promote use of O.R.T. to prevent dehydration.
4. Organize programs to help disabled children.
5. Help community with organizing MCH preventive programs and referral system for obtaining treatment for infants and children.
6. Assist with Organizing screening and referral programs for high risk pregnancies.
7. Organize Iron and Folic Acid distribution programs.

TASK 3. WORK WITH COMMUNITY MEMBERS TO PLAN AND CARRY OUT COMMUNITY HEALTH ACTIVITIES.

DUTIES:

1. Prepare comprehensive map of service area.
2. Get to know the community through meetings with local leaders visiting homes, observing the environment, discussing health problems and services with patients, BHWs, CHWs and health facility staff.
3. Help BHW to educate village leaders about the role of BHWs in their communities. Assist village leaders to develop appropriate expectations for BHWs and to provide on-site non-technical monitoring of BHWs.
4. Work with community members to gather information about their health problems.
5. Carry out village level health survey.
6. Help community members to choose and prioritize health activities.
7. Help community members decide on how to carry out priority health activities.

TASK 4. PROMOTE AND ORGANIZE ENVIRONMENTAL HEALTH PROGRAM IN WOLESWALI

DUTIES:

1. Promote development of and utilization of safe water.
2. Promote safe disposal of human excreta.
3. Organize community educational programs to encourage households to safely dispose of waste water and other refuse.
4. Promote personal and family hygiene (healthful living practices).
5. Encourage families to have a well ventilated house with sufficient light and avoid over crowding.

TASK 5. MANAGE COMMUNICABLE AND ENDEMIC CONTROL PROGRAMS

DUTIES:

1. Inform community how to prevent and seek treatment for specified communicable and endemic diseases.
2. Assist with the implementation of national control programs such as malaria, T.B , trachoma, Leishmaniasis.
3. Assist with preparing and organizing community for immunization campaigns.

TASK 6. MANAGE IMPLEMENTATION OF P.H.C. SERVICES IN WOLESWALI

DUTIES:

1. Monitor and make recommendations to PPHD regarding improvement and implementation of PHC services in Woleswali.
2. Maintain data as required for management of PHC in Woleswali.
3. Monitor/Evaluate progress of implementation of PHC services.
4. Identify PHC implementation constraints, problems, needs and report findings to PPHD.
5. Assess PHC coverage in Woleswali and make recommendations for improving accessibility and or equitable distribution of available resources.
6. Promote inter-sectorial cooperation for developing and implementing PHC services in Woleswali.

TASK 7. ASSIST HEALTH FACILITIES STAFF WITH CARRYING OUT PREVENTIVE AND PROMOTIVE HEALTH SERVICES.

DUTIES:

1. Promote communication between community and health facility staff.
2. Work with health facility staff on delivering health messages.
3. Help organize special preventive programs within health facility (e.g. immunization and nutrition demonstration).
4. Assist with implementation and monitoring of patient referral system (i.e. BHW to health facility, emergency evacuation, clinic to hospital).

TASK 8. CARRY OUT EPIDEMIOLOGICAL SURVEILLANCE WITHIN WOLESWALI

DUTIES:

1. Report any unusual increase of illness in villages to PPHD.
2. Assist with carrying out special studies as directed by PPHD.
3. Maintain Woleswali mortality record.

TIME ALLOCATION OF CHAPTERS

No	Chapters	Theory	Practical	Field Work	Total
1.	Introduction to P.H.C. RHO's Training Program	12	6	-	18
2.	Health Communication	12	36	60	108
3.	Health Community	24	12	60	96
4.	Supervision and Administration	24	24	60	108
5.	Management of Health Activities	30	15	40	85
6.	Environmental Health	30	15	104	149
7.	Maternal and Child Health	60	45	-	105
8.	Child Survival and Diseases Children	60	30	40	130
9.	Nutrition	36	12	48	96
10.	Immunization	24	16	64	106
11.	First Aid and Nursing Skills	60	60	-	120
12.	Diseases and Treatment	60	30	-	90
13.	Anatomy, Physiology and Pharmacology	80	30	-	110
Total		512	331	476	1319

Duration of Course: 9 months = 39 weeks = 273 days.

Minus Fridays = 39 = 234 days = 1404 hours.

Minus 2 hours every Thursday = 78 hours = 1326 hours.

Total Teaching Time:- 1320 hours.

TESTING PROCEDURE:

1. Written Test

Three hours written test, pre-structured question paper should be given to students.

- Using short answer questions.
- Include questions from each

topics of the Chapter.

2. Practical Demonstration

- In the field or class room, watch his skills to follow steps and

guidelines for various activities.

- Allocate one topic at one time to one student.

- Time allocation to each student should be 30 minutes in the class and 60 minutes in the field.

- Use Check List for evaluation and rate.

3. Oral Examination
knowledge and skills for answering questions.

- Ask question to evaluate his

- Give 5 minutes to each student.

- Use Check List for evaluation and rate.

4. Use of Equipment and Instrument and health Education material

- Ask him to operate or use some equipment or instrument or health education material.

- Watch if he can operate equipment properly.

- Can use the instrument.

- Can utilize health education

material properly and in a an effective way.

- Give 10 minutes to each student.

- Use Check List for evaluation and rate.

5. Remarks of the Teachers

- About his conduct, behavior, Living habit, personal hygiene and interest in learning.
- Rate him accordingly.

INSTITUTE OF PUBLIC HEALTH
RURAL HEALTH OFFICERS TRAINING PROGRAM
TIME ALLOCATION OF CHAPTERS

No	Chapters	Theory	Practical Work	Field	Total	%
1.	Introduction to P.H.C. RHO's Training Program	33	0	0	33	3.6
2.	Health Communication	26	16	18	60	6.6
3.	Management of Health Activities	42	9	29	80	8.8
4.	Environmental Health	25	4	45	74	8.2
5.	Immunization	20	9	41	70	7.7
6.	Nutrition	29	9	30	68	7.5
7.	Maternal and Child Health	34	20	18	72	8.0
8.	Child Survival and Diseases Children	36	7	33	76	8.4
9.	Health and Community	20	7	35	62	6.9
10.	Supervision and Administration	44	8	21	73	8.1
11.	First Aid and Nursing Skills	18	9	12	39	4.3
12.	Anatomy, Physiology and Pharmacology	18	3	0	21	2.3
13.	Diseases and Treatment	18	0	18	36	4.0
14.	Field Practic	0	0	136	136	15.1
===== Total		363	101	436	900	100
Percentage		40.3%	11.2%	48.4%	99.9%	
=====						

- 1 - DURATION OF RHO TRAINING PROGRAM 26 WEEKS
2 - TEACHING HOURS 34 HOURS / WEEK AS FOLLOWS :
A - SATURDAY TO WEDNESDAY 6 HOURS / DAY
B - THURSDAY4 HOURS / DAY

CHAPTER-1 - INTRODUCTION TO PHC AND RHO TRAINING

Teaching Objectives:

On the completion of this Chapter the RHO will be able to supervise and feed-back the BHWS through the knowledge and skills and will be able to:-

- 1- Identify the health problems in Afghanistan.
- 2- Explain the causes of high morbidity and mortality in Afghanistan.
- 3- Define Primary Health Care, and its principles.
- 4- Explain the strategy of Primary Health Care.
- 5- Describe the acceptable way of Primary Health Care Service.
- 6- Describe the component of Primary Health Care. Explain each component and its importance.
- 7- Explain the Health Team, and his position in the Team.
- 8- Perform his duties as a member of the Health Team.
- 9- Describe how much team cooperation is important.
- 10- Explain the Health Pyramid.
- 11- Describe the Health System in Afghanistan.
- 12- Describe the importance of BHWS and CHWS in the Health System.
- 13- Explain the role of BHWS and CHWS.
- 14- Describe the importance of RHO, his job description and his positioning Health Team.

LESSON PLAN FOR THE CHAPTER-I

Time:

Teaching Time in the Class-room	=	12 hours
Practical	=	6 hours
Total	=	----- 18 hours -----

Teaching Method:

Lecture and Discussion	=	50 minutes
Misc Transparencies for Components of PHC and Health Pyramid		8 class-room of 90 minutes each.
Health Team and RHO position in health team etc.	=	40 minutes

Material Use:

Overhead projector for transparencies
Map of Afghanistan showing the health facilities.
Arrange for the overhead projector and map of
Afghanistan one day earlier.

- Divide the class into several groups.
- Groups read the text and discuss.
- Teacher will facilitate all the groups.

Class-room Exercise:

- List the components of Primary Health Care.
- List the principles of Primary Health Care.
- List the members of Health Team
- Draw the Health Pyramid
- List the principles of
- Write the job description of RHO. = 6 hours

CHAPTER -II - HEALTH COMMUNICATION

Teaching objectives:-

On the completion of this Chapter the RHOs will be able to supervise and improve the knowledge of BHWS, and will be able to:-

- 1- Define Health Communication.
- 2- Practice Health Education and help people in changing attitude.
- 3- Explain the principles of Health Education.
- 4- Describe the key Elements in Communication Process.
- 5- Describe the role of RHO as Health Educator.
- 6- Identify the components of Health Education in the area.
- 7- Supervise and help the Health Workers in the field.
- 8- Demonstrate proper ways of Preventive Measures before community.
- 9- List the twelve steps of Planning & Carrying out Health Education.
- 10- Design a Health Education Program.
- 11- Describe the Channels of Communication.
- 12- Tell what a good Communicator should know.
- 13- Describe a good message.
- 14- Describe the material used in Health Education.
- 15- Use the combination of materials.
- 16- Evaluate his health Education Program.
- 17- Tell Do's and Don'ts in Health Education.
- 18- Use the health Education material.
- 19- Give the best method of teaching.

LESSON PLAN FOR THE CHAPTER-II

Time:

Teaching Time in the Class-room	=	12 hours
Out-Reach Activities	=	60 hours.
Practical	=	36 hours
Total:-	=	108 hours

Teaching Methods:

Lecture and Discussion	=	50 minutes
Practical Demonstration, film, slides or transparencies	=	30 minutes
	-	8 classroom sessions of 90 minutes each

Review of Previous Lecture	=	10 minutes
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Material Use:

- Overhead Projector for slides and Transparencies, Health Education messages.
- Show film on the subject in spare time.
- Collect all the material one day earlier and set it accordingly.

- | | |
|--|---|
| - Divide the Class into several groups | - Class Exercise:- |
| - Groups read the text and discuss | - Develop a health education message. |
| - The Teacher will facilitate all the | - Do the role play to approach groups the community. |
| - Volunteer Group will present the Topic | - Hold discussion and speak on in the Class next morning. best teaching method. |
| | - List the health Education material = 36 hours. |

Field Visit:

- 1- Find out the health problems of a village.
- 2- Motivate the people for one health problem
- 3- Use the health message developed by you. = 60 hours
- 4- Conduct a health Education Session with people.
- 5- Carry-out the activity and thank the community.

The teacher will identify the village and make field visit possible by talking to the community leaders several days earlier and confirm it one day before the actual visit.

Transportation:- Divide the class into groups and arrange transportation accordingly. Accompany the trainees they may need your help in the field.

CHAPTER-III - HEALTH AND COMMUNITY

Teaching Objectives:

On the completion of this Chapter the RHO will be able to supervise and improve the knowledge and skills of BHWS. And will be able to:-

- 1- Explain the importance of Community involvement in the Health Care Programs.
- 2- Demonstrate how to involve community in health Programs.
- 3- Adopt the steps to approach the community.
- 4- Describe the sources of information in the community.
- 5- Demonstrate how to talk to another person to obtain information.
- 6- Draw a map, explain how to use a map.
- 7- Talk the principles of mapping and advantages of using map.
- 8- Describe the activities, which can be carried out with community involvement.
- 9- Plan an activity + carry out it by involving community
- 10- Describe the methods of collecting information about health problems of the community.
- 11- Demonstrate how to collect information related to health problems.
- 12- Explain the principle to work with family.
- 13- Describe the procedure of home visits.
- 14- Conduct home visit by Demonstration.
- 15- Give the guide-lines for home visit.
- 16- Conduct health survey of any community/area.
- 17- Explain prioritization.
- 18- Choose priorities.
- 19- Plan for community action.
- 20- Describe what is School Health.
- 21- Describe the advantages of School Health.

LESSON PLAN FOR THE CHAPTER-III

Time:

Teaching time in the Class-room	=	24 hours
Out-Reach Activities.....	=	60 hours
Practical	=	12 hours
Total:	=	96 hours

Teaching Methods:

Lecture and Discussion	=	50 minutes	
Practical Demonstration, or Film, Slides, Transparencies or Exercise Roleplay	=	30 minutes	16 class-room Sessions of 90 minutes each
Review of Previous Lectures	=	10 minutes.	

Material Use:

- Overhead Projector for Slides and Transparencies, Health Education messages.
- Show film on the subject in spare time.
- Collect all the material required one day earlier.

- Divide the Class into groups
- Groups read the text and discuss

- The teacher will facilitate all groups.
- Different groups will present different topics, in the class next day.

- Class room Exercise.
- Do the Role Play involving community in a health Program.

- List the steps to approach the community.
- List the sources of information in the community.

- List the principles of Mapping.
- List the methods of collecting information.
- Write the guidelines for home visit.

Field Activities:

- 1- Adopt the steps to approach community.
- 2- Involve the community leaders to Identify health need = 12 hours
- 3- Use the sources of information other than leaders.
- 4- Draw a map of the community using principles of mapping = 12 hours.
- 5- Involve the community for planning and carrying out a health activity, or
- 6- Do the Survey first = 12 hours.
- 7- Plan for community action and carry out
- 8- Start the School Health Service = 24 hours.

CHAPTER IV: SUPERVISION AND ADMINISTRATION

Teaching Objectives:

On the completion of this Chapter the trainer has trained the RHOs, who will be able to supervise the Health activities in the District, with the skills and knowledge he has and can:-

- 1- Describe the Supervision.
- 2- Explain the importance of Supervision.
- 3- List the Skills, a Supervisor need.
- 4- Demonstrate various skills of a Supervisor.
- 5- List the Characteristics of an effective Supervisor.
- 6- Explain all the Characteristics of effective Supervisor.
- 7- List the characteristics of an Ineffective Supervisor.
- 8- Explain all the characteristics of an Ineffective Supervisor.
- 9- Describe authoritarian approach to Supervision.
- 10- Describe participative approach to Supervision.
- 11- Explain effective authoritarian leadership.
- 12- Explain ineffective authoritarian leadership.
- 13- Explain effective and ineffective participative leadership.
- 14- Improve the knowledge of health worker, How to work in a group.
- 15- Demonstrate, how to build a team with a group of health workers.
- 16- Improve the understanding of Health Workers how decisions are made.
- 17- Demonstrate the ability to make a decision.
- 18- List the steps in making a decision.
- 19- Demonstrate, by Identifying the problem needing decision.
- 20- Improve the understanding of health workers for planning and evaluation process.
- 21- Demonstrate the ability to plan and evaluate supervisory work.
- 22- Prepare a check list for Supervision of BHW, CHW and Dai.

LESSON PLAN THE CHAPTER IV

Time:

Teaching Time in the Class Room	=	24 hours	
Out Reach Activities	=	60 hours	
Practical	=	24 hours	
Total:		108 hours	

Teaching Method:-

Lecture and Discussion	=	50 minutes	
Practical Demonstration			16 Class Room
Slides, Transparencies:-	=	30 minutes	Sessions of 90
Exercise, Roleplay			minutes each
Review of Previous Lecture	=	10 minutes	

Material:

Overhead projector for slides and transparencies.
Arrange the required material one day earlier.

- Divide the students into groups
 - Group read the text and discuss
 - The teacher will facilitate all groups.
 - Class Room Exercise.
 - List the Skills and Supervisor need.
 - List the Characteristics of an effective Supervisor.
 - List the Characteristics of an ineffective Supervisor.
 - List the Steps in making decision.
- 24 hours = - Do the Role Play of authoritarian approach.
- Do the Role play of Participative approach.
- Plan and evaluate supervisory work.

Field Activities:

Make one student responsible to performing Supervisory duty from each group, turn by turn. This activity will be carried out simultaneously when the field activities are carried out for other Chapters.

- The Supervisor will prepare the Supervisory report at the end of the day and will hand over to his teacher.
 - Arrange a visit to health center for students, students will look in the health center as a Supervisor, and prepare a Supervisory report.
- = 60 hours

CHAPTER V: MANAGEMENT OF HEALTH ACTIVITIES

Teaching Objectives:

On the completion of this Chapter the RHO will be able to supervise Health activities and help the BHWS in improving his knowledge and skills. And will be able to :-

1. Explain the purpose of Data Collection, Organizing Data, and Summarizing data when Data become information.
2. Manage Supplies for BHWS.
3. Explain the standard drug list, stocking and storing drugs, Issuing and controlling drugs.
4. Maintain and Provide Weekly/Monthly and Annual Reports.
5. Explain the Health Worker's activities in the management of Patient.
Referral, Individual or Family activities in referral.
6. Explain the Referral Methods and what is a chain of referral.
7. Prepare the weekly, monthly, schedule
8. Establish and manage a health post by identifying health needs, health activities to meet the needs, selecting best activity, and deciding how to carry out the activities.
9. Explain the positive attitude in managing health post.
10. Report of reportable Disease.

LESSON PLAN FOR THE CHAPTER V

Time:

Teaching time in the Class room	= 30 hours
Out Reach Activities	= 40 hours
Practical	= 15 hours
Total:-	= 85 hours

Teaching Method:

Lecture and Discussion	= 50 minutes	
Practical Demonstration:-		20 Class-room Sessions of
Slides, Transparencies;-	= 30 minutes	90 minutes each.
Exercise, Role Play:-		

Review of Previous Lecture ..= 10 minutes

Material:-

- Overhead Projector for slides and transparencies, data collection, report forms.
 - Arrange and collect material one day earlier.
 - Divide the students in groups
 - Group read the text and discuss
 - The teacher facilitates all groups
 - Presentation by groups next day
- Class room Exercise:-
 - Organize given data. summarize data.
 - Make a request for supplies.
 - Make a weekly report.
- List the points for individual referral case.
 - Prepare a monthly Schedule
 - Prepare a report of reportable disease.
 - Perform a Role Play in referring case.
 - Perform a Role Play in establishing a health post. = 15 hours

Field Activities:-

- Provide the students with data collecting forms.
- Students will collect data organize and summarized it.
- Arrange visit to a health center for the demonstration of stocking and storing drugs. And carry out one health activity in the center. = 40 hours

CHAPTER VI: ENVIRONMENTAL HEALTH

Teaching Objectives:

On the completion of this Chapter the RHO will be able to supervise and improve the knowledge and skills of BHWS by:-

1. Explaining the organisms that cause diseases. The types of organisms Bacteria, Fungus, Parasites, and Virus.
2. Describing the diseases caused by Bacteria. Typhoid and Cholera.
3. Describing the diseases caused by Parasites. Amoebic dysentery Guinea worm, Pin Worm, Round Worm, Hook Worm, Tape Worm and Malaria.
4. Explaining the importance of clean water. Source, protection of water purification of water. Chlorination.
5. Describing solid and wet refuse.
6. Explaining the importance of proper disposal of Excreta and the diseases caused due to improper disposal of Excreta.
7. Educating personal, family and community hygiene.
8. Describing how to protect and handle the food.
9. Observing and educating housing.
10. Explaining the Vector, its types, and protection from Vectors.
11. Explaining the advantages of latrine, the technology of VIP and Pour flush latrines.
12. Describing how the Diarrhoeal disease are controlled.

LESSON PLAN FOR THE CHAPTER VI

Time:

Teaching time in the Class Room	30 hours
Out Reach Activities.....	104 hours
Practical	15 hours
Total:-	149 hours

Teaching Method:-

Lecture and Discussion ...	= 50 minutes	
Practical Demonstration		20 Class Room Sessions of 90 minutes each.
Film, Slides		
Transparencies	= 30 minutes	
Exercise, Role Play		
Review of Previous Lecture	= 10 minutes	

Material:-

TV, VCR, Overhead Projector for films, slides and transparencies, H.E. messages. Show films on the subject in spare time. Arrange and collect all the material one day earlier.

- Divide the students into groups - Classroom Exercise
- Groups read the text and discuss - Writer names of two diseases each caused by Bacteria, Parasite, Fungus and Virus.
- The teacher will facilitate all groups.
- Presentation by groups next day. - Draw the cycle of water.
- List the sources of water.
- List the main points to protect food.
- Draw the Malaria cycle.
- List the advantages and disadvantages of VIP and Pour flush latrines.
= 15 hours

Field Activities

- Arrange the field visit for the students of a village to collect information about drinking water, surveying houses observing for storage of water, and habits related to use of water, common diseases in village water related.
- Observe the sanitation conditions, disposal of excreta and garbage, sanitation habits, personal hygiene. Food protection identify all health problems. Prepare health messages and carry out one plan in the village .
= 104 hours.

CHAPTER VII. MATERNAL AND CHILD HEALTH

Teaching Objectives

On completion of this Chapter the RHO will be able to supervise Health Workers and TBAs and also improve the knowledge of BHWs by:-

1. Explaining the reproductive Systems of male and female.
2. Explaining how a woman gets pregnant.
3. Calculating estimated date of delivery.
4. Describing minor problems during pregnancy and how to manage them.
 - 4(a) Describing clinical picture of pregnancy problems like, severe Anaemia, Diabetes, preeclampsia, eclampsia, Bleeding early in pregnancy, Bleeding late in pregnancy, malaria.
 - 4(b) Describing the preventive measure for such problems.
5. Explaining, why nutritional needs are more in pregnancy.
6. Describing high risk factors in pregnancy and proper referral.
7. Telling the importance of Ante-natal Care, advantages of regular check ups by home visits.
8. Describing the normal physiological changes during labor.
9. Defining labor and three stages of labor.
 - 9 (a) Explaining support and care to a woman in labor.
10. Advising for pregnant woman about the process of pregnancy and delivery, self-care during pregnancy, and preparation for delivery and care of a newborn.
11. Explaining the immediate care to a newborn and cutting the cord, and tetanus.
12. Describing the normal physical changes in postnatal woman.
13. Describing the important topics for postnatal woman, about Breast care and Breast feeding, Care of genitals, exercise, nutrition and child spacing.
14. Explaining the physical examination of newborn.
15. Explaining the importance of TBA Training, Criterion of selection, their role in identifying and managing high risk pregnancy and conducting delivery at home.

LESSON PLAN FOR THE CHAPTER VII

Time:-

Teaching time in the class room	= 60 hours
Out Reach Activities	= Nil
Practical	= 45 hours
Total:-	= 105 hours

Teaching Method:-

Lecture and Discussion.....	= 50 minutes	
Practical Demonstration.....		-40 Classroom Sessions of
Slides, Transparencies,	= 30 minutes	90 minutes each
Exercise, Role Play:-		
Review of Previous Lecture:-	= 10 minutes.	

Material:-

-Overhead Project, for slides and transparencies, Dummy and Baby. Dai Kit, Flip Chart, Posters with messages, Growth Charts, Anatomical Charts.

- Arrange and collect the material one day prior to lecture.

- Divide the students into groups
- Groups read the text and Discuss

-The teacher facilitates all the groups.

-Presentation by the group next day

- Classroom Exercise:-

- Calculate the estimated date of delivery.

- List the minor problems during pregnancy.

- List the high risk factor in pregnancy.

- Write the routine check up of Antenatal.

- List the Pregnancy problems.

- List the postnatal topic for mother

- Write down the selection criteria for TBA.

- Demonstrate normal position of the Baby in uterus(use Dummy)

- Conduct delivery on Dummy(normal)

- Do Role Play, Seeking advice for child spacing.

- Do the Role Play referring a high risk pregnant woman.

- Conduct a training session for TBAs
= 45 hours.

CHAPTER VIII. CHILD SURVIVAL INTERVENTION AND COMMON
PROBLEMS OF SICK CHILDREN

Teaching Objectives:-

On the completion of this Chapter the RHO will be able to improve the knowledge of BHWS and will be able to:-

1. Explain the child survival and its components.
2. Describe diarrhoea and dehydration. Its severity and rehydration Therapy.
3. Explain what is ARI and management of acute respiratory infection.
4. Describes malnutrition and its impact on child survival.
5. Explain child spacing impact on child survival.
6. Describe the common problems of sick children. Identify: Red eye due to conjunctivitis and trachoma.
7. Diagnose the Discharging Ear in Otitis Extera, otitis media, foreign body, Perforated drum.
8. Explain the symptoms in the mouth and throat due to sore mouth, Thrush, herpes stomatitis. Tonsillitis, Diphtheria, Tetanus.
9. Explain the different types of worms, pin worm, tape worm, round worm, and hook worm. How they go into the body.
10. Describe how to care the disabled child or person.
11. Describe Birth defects: Extra finger, birth mark, undescended testes, Hare Lip, Cleft Plate, Spinobifida, Congenital heart disease, club foot, Down's Syndrome.

LESSON PLAN FOR THE CHAPTER VIII

Time:-

Teaching time in the Classroom	= 60 hours
Out-Reach Activities	= 40 hours
Practical	= 30 hours
Total:-	= 130 hours

Teaching Method:-

Lecture and Discussion	50 minutes	
Practical Demonstration		40 Classroom Sessions of 90 minutes each
Slides, Transparencies:	30 minutes	
Exercise and Role Play		
Review of Previous Lecture	10 minutes	
Material:		

-Overhead Projector for slides and transparencies, different foods(samples), Pictures and different disabled persons. Health Education messages.

Arrange and collect the material one day prior to lecture.

- | | |
|---|--|
| - Divide the students into groups | Classroom Exercise:- |
| - Groups read the text and discuss. | List the components of child survival. |
| -The teacher facilitates all the groups | List the ARI infections. |
| -Presentation by the groups next day | -List the problems of the sick children |
| | - List the types of intestinal worms. |
| | - List the Birth defects. |
| | - Write down the six basic message for nutrition. |
| | - Prepare ORS. Demonstrate. |
| | - Prepare home made oral rehydration solution. = 30 hours. |

Field Activity:

Arrange field visit for students in a village to carry out the activity of teaching how to prepare ORS and home made salt and sugar solution for children with diarrhoea in as many houses as possible = 40 hours.

CHAPTER IX . NUTRITION

Teaching Objectives:-

On the completion of this Chapter the RHO will be able to help in improving the knowledge of RHW. And will be able to :-

1. Explain how to assist community for nutrition status.
2. Describe the cultural factors effecting nutrition.
3. Define screening and demonstrate the use of upper arm circumference measuring tape. How to make a tape.
4. Describe the nutritional deficiencies, of Vitamin A, Nicotinamide, Vitamin C, Vitamin D, Vitamin B complex, Iron, Iodine, and Protein. (Malnutrition 92).
5. Explain the nutritional Education about Breastfeeding, weaning food, feeding during illness, and Balance diet.
6. Describe food and food component. Energy giving foods growth promoting, protective foods.
7. Describe the six basic messages for community nutrition.
 - Breast milk for at least two years.
 - Add supplementary foods at 4 - 6 months of age.
 - Use cup and spoon. No bottle.
 - Continue feeding when child is ill.
 - Pregnant and lactating mothers should eat extra.
 - Breast feeding must be stopped slowly.

LESSON PLAN FOR THE CHAPTER IX

Time:-

Teaching times in the Class room	= 36 hours
Out Reach Activities	= 48 hours
Practical	= 12 hours
Total:-	= 96 hours

Teaching Method:

Lecture and Discussion	= 50 minutes	
Practical Demonstration		24 Class room sessions of 90 minutes each.
films, slides, transparencies.	= 30 minutes	
Exercise, Role Play.		
Review of Previous Lecture=	10 minutes.	

Material:

TV, VCR, Overhead Projector for slides and transparencies and films, upper arm circumference Band, growth chart, weighing machine, different foods (samples). Posters with health education messages, flip chart:

- Divide the students in the groups - Classroom Exercise:-
- Groups will read text and discuss - Write one cultural factor effecting nutrition.
- The teacher facilitates all groups. - Demonstrate the use of upper arm circumference band and prepare one band of your own.
- Presentation by the groups next day. -List the deficiencies caused by vitamins.
- List the food components.
- List the six basic messages for community nutrition. =12 hours.

Field Activity:

- Plan and arrange a field visit for the students in a village to screen out the malnourished children and advise through the health 8 messages that help community nutrition status. = 48 hours.

CHAPTER X. IMMUNIZATION

Teaching Objectives:-

On the completion of this Chapter the RHO will be able to supervise and help in improving the knowledge and skills of BHWs. And will be able to :-

1. Describe the importance of immunization.
2. Explain the proper age for vaccination and target group.
 - Children 0 to 23 months
 - Woman: 13 to 45 years.
3. Explain six preventable diseases.
4. Describe the Immunization Schedule.
5. Motivate the community and demonstrate.
6. Describe vaccines. How they are made.
7. Organize the immunization session and demonstrate.
8. Explain the cold chain for different vaccines. Demonstrate cold chain equipment and pack the vaccine in a vaccine carrier.
9. Describe and demonstrate how vaccines are given to children:-
 - Intradermal, Intramuscular, Subcutaneous and Oral.
10. Describe sterilization and its importance.
11. Demonstrate the advice to the mother.

LESSON PLAN FOR THE CHAPTER X

Time:

Teaching time in the Class Room	= 24 hours
Out-Reach Activities	= 64 hours
Practical	= 16 hours
Total:-	= 104 hours

Teaching Method:-

Lecture and Discussion	= 50 minutes	
Practical Demonstration	:	-16 Class Room Sessions of 90 minutes each.
Slides, Transparencies,	= 30 minutes	
Exercise, Role Play		
Review of Previous Lecture	= 10 minutes.	

Material:-

-Overhead Projector, slides, transparencies, vaccine carrier, Ice pack empty or spoiled vials of vaccines syringes 1cc, BCG and 2 cc with needles No 24-26. Vaccination kit, complete register, family cards. Reporting forms. Posters with messages

- Divide the students into groups
- Groups read the text and discuss diseases.
- The teacher facilitates all groups
- Presentation by the groups next day
- Class room exercise:
- List six preventable diseases
- Write the vaccination schedule
- Write down the temperature for vaccines at which they are stored.
- Draw a cold chain.
- Practice BCG Vaccination on each other. Use sterilized syringes, needles and distilled water = 16 hours.

Field Activities:-

1. Arrange a visit for students to a EPI Clinic for the demonstration of cold chain and getting an idea for conducting a vaccination session.
2. Plan vaccination activity in a village and carry out the activity. Immunizing children fully by repeating the activity for full course in the village. = 64 hours.

CHAPTER XI FIRST AID AND NURSING SKILLS

Teaching Objectives:-

On the completion of this Chapter the RHO will be able to supervise and help in improving the knowledge and skills of BHWS by:-

1. Defining First Aid.
2. Describing four points to be considered in assessing a person requiring first aid.
3. Explaining how burns are caused.
4. Classifying burns and management of burns.
5. Describing the types of bleeding and Management and use of tourniquet.
6. Describing Heat and Cold related problems and Management.
7. Demonstrating the pressure points mostly used to stop bleeding.
8. Describe shock and its management.
9. Describing how to manage common bone and joint injuries.
10. Describing different types of wounds.
11. Identifying different types of bites and management.
12. Describing poisoning and its management.
13. Describing drowning and Electric Shock.
14. Describing the procedures for:
Splinting, Bandaging, Cardio Pulmonary Resuscitation and Artificial Respiration.
15. Demonstrating hand washing, before starting any activity.
16. Explaining the radial pulse recording. Identifying the points where pulse can be recorded.
17. Explaining the procedure for taking body temperature.
Demonstrating oral temperature, Rectal and Axillary Temperature.
18. Describing and demonstrating measuring of Respiration
19. Describing the procedure for taking blood pressure.
20. Demonstrating giving bath to a patient.
21. Demonstrating how to use Bedpan, urinal and to give soap and water and enema.
22. Describing how to maintain intravenous therapy.
23. Describing the procedures of taking blood, stool and urine specimens for laboratory tests.
24. Explaining the use of oxygen cylinder.
25. Describing the procedure for using nasogastric tube.
26. Describing the pre-operative and post operative procedures.

LESSON PLAN FOR THE CHAPTER XI

Time:-

Teaching time in the Class Room = 60 hours
Out-Reach Activities: = - hours
Practical = 60 hours

Teaching Method:

Lecture and Discussion = 50 minutes.
Use Slides, Transparency = 40 Class room sessions of 90 minutes each.
Exercise and Role Play = 30 minutes
Review of previous lecture = 10 minutes

Material:

- Divide the students into groups
- Groups read the text and discuss
- Teacher facilitates all the groups.
- Presentation by the groups
- Class room Exercise.
- List four points, assessing a person for first aid.
- Identify pressure points and apply tourniquet
- List different types of wounds.
- Role Play on managing a burn case.
- Role play for cardio-pulmonary resuscitation and Artificial respiration.
- Demonstrate hand washing.
- Demonstrate, taking pulse, temperature, Respiration and record blood pressure of your class-fellow. = 60 hours

Out-reach Activities:

Plan, schedule for students visit to a health center to show them the management of different condition of nursing skills applied there.

AFGHANISTAN HEALTH SECTOR SUPPORT PROJECT
RURAL HEALTH OFFICER QUESTIONNAIRE
RHO

NAME OF RHO:

SESSION GRADUATED:

CODE NO.

PROVINCE:

DISTRICT:

INTERVIEW DATE:

NAME OF EVALUATOR:

PART A: GENERAL INFORMATION ABOUT RHO AND HIS WORK LOCATION:

The interviewer should ask the RHO, regarding the following:
--

1. Area covered by RHO:
2. RHO destination from the remotest BHW:
3. Number of Active or present BHWs in the district:
or number of BHWs existed in the district:
4. Number of the villages, population and map of the area covered by RHO:
5. Number of other health centers (health facilities) in the region:
6. Number of traditional healers in the area:
7. Other active sectors existed in the region:
8. Economical conditions, water sources and nutrition sources for the local people:

PART B: MANNERS AND BEHAVIORS OF RHO:

1. RHO attitude toward BHW:
2. Ways and practices of RHO regarding social issues:

3. RHO attitude toward the people, incase of health problem existence in the area:
4. Method of meeting and communication with their bosses and supervisors:

PART C: RHO WORK MEASUREMENT AND WORK CONDITIONS:

1. Knowledge and information of RHO about the active BHWS in the area:
2. Knowledge and awareness of RHO regarding health post and work location of BHWS:
3. after how long RHO contacted BHWS individually:
4. Is RHO established district health committee in cooperation with the BHWS in the region?
5. Is he cooperated and assisted the BHWS in developing of their workplans?
6. Is he supervised and assessed the BHWS regularly, if so, how many BHWS evaluated by him up to now?
7. Does he has cooperation with the BHWS in finding of health problems existed in the area:
8. Has he collected activity report of BHWS regularly or not?
9. How many BHWS are active in his working area and how many times he has supervised them?

10. Is he cooperating the BHWs, CHWs and MCHOs regarding the arrangement and preparing of supplies and equipment?
11. Did RHO dispatch the activity report of BHWs and other health organs of the district, including his own activity report to its respective department?
12. Did the RHO bring any modification and improvement regarding establishment of relation between health facilities and Referral system?

PART D: RHO INVOLVEMENT IN BHW CEP AND BHW ASSESSMENT:

1. Number of BHWs who followed the BHW CEP Training in the district?
2. From which method of teaching he has used in BHW CEP training?
3. Do the taught topics in BHW CEP were reasonable according to the health requirement of the region or not?
4. Prior to BHW CEP training, are BHWs evaluated and they arranged the time and place for BHW CEP or not?
5. Did the RHO practice BHW CEP training according to the strategy or not?
6. Did RHO perform his planned activities accurately or not?
7. For the solving of teaching materials problem in BHW CEP from which available sources in the community you used. And by which method?
8. Did you evaluate your held BHW CEP training and dispatched its report to its respective department or not?
9. Did you get the desired result from the BHW CEP training or not?

10. did he take any steps regarding the care of prenatal, natal, post natal and child health and did you advised to the mothers in this regard, as required or not?
11. Did you succeed to establish a referral system between MCH clinic and community?
12. what are the endemic diseases in the district, did the RHO take any steps for its control, in cooperation with the BHWS?
13. Did he cooperate and assist the BHWS in arranging of supplies and management of endemic diseases, whenever required or not?

PART E: COMMUNITY DEVELOPMENT:

1. Did RHO succeed to find the health problems of the community or not?
2. Did RHO take any step for the solving of drinking water problems in the community or not?
3. Did he put any step regarding improvement of community hygiene (pits, constructing of latrines and houses etc. if yes, what was the result?
4. Has he planned his activity according to the health problems of the community or not?
5. Has he given parts and opportunity to the BHWS in solving of health problems of the community or not?
6. Did he care about the priorities during his planning or not?
7. Did he work regarding intersectorial cooperation for the solving of problems in the community or not?
8. Has he participated in advisory meetings or councils of the district?

9. Are the RHO activity plan and his health services partially to all community members?
10. Are the BHWs and the community members satisfied from RHO activities?
11. Did he evaluate his plan after its implementation and sent its report to concern and competent authorities or not?

PART F: RHO ACTIVITY AND HIS RELATION WITH THE OTHER MEMBERS OF HEALTH TEAMS IN THE COMMUNITY:

1. Did RHO take initiative in cooperation with the BHWs regarding health education program in mosques, schools and people gathering areas, if so what was the result of the program?
2. Did RHO advise and explain to the people about the improvement of nutrition condition in the community or not? and what was its result?
3. Does RHO teach the people regarding importance of EPI and has he cooperation with the EPI team regarding vaccination?
4. did he succeed to create relation and links between MCHO, Dais and other community members or not?
5. How many Dais trained in the area covered by RHO up to now?
6. Did he cooperate MCHOs regarding solving their problems or not?
7. Did he advise the people regarding importance of birth spacing and its good effect on mothers and children health or not?

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Introduction to the Primary Health Care

The Concept of Health and Primary Health Care.

What is Health. Health has historically been viewed or defined in a variety of ways over the years.

- In earlier days, and still today health was viewed as an absence of illness.
- The World Health Organization (WHO) defines health as a "state" of complete physical, mental and social well being and not merely the absence of disease.

A recent and more popular definition of health is called "OLOF" or optimum level of functioning.

If these two definitions are combined the new definition will read like'-

"Health is a state of physical, mental and social well being and ability to function, not merely the absence of illness and infirmity."

This change in the way health has been viewed over the years shows that as we gain more knowledge, our concept of health also changes. As the treatment for various disease were discovered and applied, doctors realized that these treatments still could not treat many. Later they came to realize, that physical, mental and social diseases could not be treated independently, because an individual has biological, psychological and sociological components that are closely related.

An other point recently has been realized that there is no such thing as complete well-being. It means perfect and in health no perfect state has so far been identified or attained. This concept then gave way to the "Holistic" approach to health. According to the approach an individual abilities, resources and strengths are the focal points of attention and not their disabilities. We are all different and have strong points as well as weak points.

An Optimum level of Functioning:(OLOF)

It means good health. Each individual has his or her own OLOF. This OLOF is influenced by many factors in the environment.

Socio-economic Influence:

A person's status in the society means a special place in the group, which entitles him to certain privileges. Those privileges, along with income and education effect an individual's OLOF. A certain basic minimum of income and knowledge is required to meet

the basic needs of an individual Existing resources need to be utilized, to the maximum.

Physical environmental Influence:

Afghanistan still does not have safe water for drinking or adequate sanitation. Pollution from human and animals Effects water and sanitation. Dust, dirt and fumes pollute the air and affect the respiration. Increase in traffic accidents have resulted in more injuries and disabilities.

Health Care Delivery System Influence:

Traditionally the health care systems disease oriented. However now the emphasis is on health promotion and illness-prevention, which is more OLOF Health oriented.

Hereditary Influences:-

We cannot change what we are born with. But the knowledge gained from research has provided information on ways to reduce the likelihood of certain congenital abnormalities, e.g by avoiding cross-cousin marriages.

Cultural Influences:-

Culture and behavior shape our life style. What we eat, how we raise our children and what we do to take care of ourselves, are influenced by culture and habit e.g. high protein content diet, breast-feeding are health promotive behaviors. However drinking unboiled karez water or maintaining an inferior social position for females may negatively affect health status.

Political Influences:-

Political distribution of health resources do affect the health status, especially in the rural areas.

Primary Health Care:-

Primary health care is essential based on practical, scientifically sound and socially acceptable methods and technologies made accessible, to individuals and families in the community through their full participation. At the cost which community and country can afford, and maintain in the spirit of self reliance. It forms an integral part of health system and socio-economic development of the community. It is the first level of contact of individuals the family and the community, with the national health system.

Primary health care is the provision of necessary health services to every one in the country.

Components of Primary Health Care:-

There are eight components of primary health care:

1. Education concerning prevailing health problems and methods of prevailing and controlling them.
2. Promotion of food supply and proper nutrition.
3. An adequate supply of safe water and basic sanitation.
4. Maternal and child health care including family planning.
5. Immunization against the major infectious diseases.
6. Prevention and control of locally endemic injuries.
7. Appropriate treatment of common diseases and injuries.
8. Provision of essential drugs.

The principle of primary health care is to provide essential health and related services to people, where they live according to their needs and resources. To help them participate fully in their own care. The staff member from the health sector are also expected to coordinate their efforts with other departments. In order to meet individual, family, and community needs. The health personnel should also be aware of existing resources and actively participate in utilizing them.

Concept of Health Team:-

Health team in order for a health facility to function properly, each member of the team must be involved in carrying out a variety of tasks. For example the following staff may be working within a health facility:-

- Medical Officer
- Nurse
- Dispenser
- Vaccinator
- Ward Boy
- Dai or TBA
- Sweeper

The objective of any health program is to meet the health needs of the people, who come to utilize the health services. For example a patient with cough of one month's duration needs to have the medical officer for diagnosis before he can get a prescribed treatment. Let us see who is involved directly or indirectly in helping the patient for needed treatment.

Staff

Necessary Activities

Medical Officer	Has necessary instruments and supplies Examine the patients, sends for lab investigations, Makes diagnosis and prescribes treatment. also do the administration.
-----------------	--

- Nurse/Dispenser Nurse looks after the patients, by giving prescribed medicine, records Pulse, Temperature Chart, Blood Pressure etc. Dispenser dispense the medicines and advise instructions according to the prescription.
- Lab Technician Tests Bloods, Urine & Sputum etc.
 - X-Ray Technician Takes X-Ray of identified part of the body.
 - Vaccinator Registers the child, vaccinate the child according to the age and issues a card after making entries of vaccine given.
 - Ward Boy Assist the Nurse, Dispenser, and Medical Officer in out duties, or heavy works.
 - Sweeper Cleans the rooms, wards and overall cleaning of the health facility.

In order to help one person, with even one complaint, many persons are involved. The patient needs can be met only if each of the staff knows., what his job is, and carried it out. If one person does not perform his job adequately, then the patient may not get the proper needed care. Therefore all workers in a health facility must work together as members of a team to accomplish the objectives of the Service, which is to meet the needs of the patient.

All types of activities are seen as being important and so is every category of staff. Therefore one must take his job seriously and work in relation to the activities of others, with the overall aim of providing service to people.

Let us now focus on the BHU where BHWs are placed.

<u>Staff</u>	<u>Necessary Activities</u>
-Medical Officer	Diagnosis, treatment and referral coordinate activities of the team.
-BHW	Link between community and BHU. Refers people with symptoms to M.O. Assesses individual's needs and helps them to meet their needs.
- Nurse/Dai	Conducts antenatal care, delivery, postnatal care, infant care and training of Dai/TBA in case the nurse is there. To give injection to female patients.

In a BHU the medical officer waits for the patients to come to him. Patients either come on their own or are referred by BHW/TBA from the community. For example, during a visit to the community, the BHW notices a man, who is weak and having difficulty in walking uphill. The BHW may talk with him and suggest to see the medical officer, if any thing can be done to relieve his problem. In this manner people with other types of needs may be referred to medical officer.

The medical officer is the team leader. As a leader he is responsible for coordination of the team's activities. He should meet the staff regularly and:-

- Discuss problems identified by the staff and ways to solve them.
- Meet with higher authorities to discuss problems which may not be solved at the BHU level.
- Work out of schedule of leave, so that services of the BHU continue with little interruption.

If the BHU is unclean, messy and unorganized, the people referred to it may consider it an undesirable place to go. The sweeper must perform his duties well to make the BHU more appealing. The staff at the BHU needs to be pleasant and concerned when dealing with the people, so that they feel, that staff members are interested in them individually.

All the staff must work under the same principle of doing their job properly and showing interest in meeting the needs of the people. No one person is more important than another. All members of the staff are equally important. The main point to remember is that each team member must help the others, to be part of the team. If one does not do his job adequately, the performance of other team members is weakened. Team work is desirable, because together you can achieve more work of better quality, than you can alone. The concept of a health team, therefore is that each and every member makes a significant contribution in delivering critical and essential health Services to the community.

Principles of Behavior

Basic Health workers are living and working in the community, helping to meet the health and health related needs of the people. Therefore you are expected to follow certain principles of behavior in carrying out your responsibilities. These principles are:-

1. Know your job responsibilities and limitations. Certain limitations will be evident in specific tasks or activities related to each category of Service. Offer only those Services for which you are trained.
2. Establish and maintain a good relationship with other members of your team and cooperate with them.

3. Follow the rules and regulations of the health facility in which you are working.
4. Have respects for the rights and dignity of all people. Serve them without regard for sex, age or social status.
5. Repeat other people's customs and beliefs, and be polite and sympathetic.
6. Practice what you teach, about health, Be a good example for the community.
7. Help people within your limits and show interest and concern for their general welfare.
8. Be fair and honest since you are a paid employee. Acceptance of any type of payment from the people is not only a breach of discipline, but will also lower your status in the community.
9. Keep your confidence, do not criticize, make judgements or gossip.
10. Be cheerful and enthusiastic, neat and clean in your appearance.
11. Listen and remain open to community reactions and responses to health programs Do not feel offended when they refuse to accept a new Service or have many questions.
12. Evaluate the community's response to your programs, activities and determine other alternate approaches to be tried if necessary.
13. Be dutiful and loyal to the department/organization employing you and perform your duties accordingly.
14. Try and learn to language and behavior of the community.

Principles Underlying Primary Health Care

Primary Health Care is based on four principles:

1. Equitable distribution:

Health services should be accessible to all sections of the society with special attention to the needy and vulnerable groups. This is also known as social penetration or getting the health services dispersed into the farthest reaches of rural areas and into the fullest depths of urban slums. The failure to reach the majority of the people is usually due to inaccessibility. It is well known that rural populations, in most developed countries, are widely scattered and do not have adequate transportation facilities. City hospitals are often beyond the reach of most rural people and are usually patronized by those in their immediate vicinity Primary health care aims to correct this imbalance and bring health services as near people's homes as possible and is supported by a higher level of health care to which the patient can be referred.

2. Community participation:

Not with standing the overall responsibility of the Central and State Governments, the involvement of individuals families and communities in promotion of their own health and welfare, including self-care, is an essential ingredient of primary health care. Community involvement also implies that the community should participate in the planning, implementation and maintenance of health services. This participation is not only desirable, but also a social economic and technical necessity.

3. Multi-sectorial approach:

One of the basic tenets of primary healthy care is that full health cannot be attained by the health sector alone. It requires the joint efforts of the health sector of which it is an integral part) and other health related sectors, viz education, food and agriculture, social welfare, animal husbandry, housing and public works, rural reconstruction, etc. To achieve coordination, countries may have to review their administrative system, reallocate their resources and introduce suitable legislation to ensure that coordination can take place.

4. Appropriate Technology:

Appropriate technology is not cheap primitive technology for the poor, primitive people. It calls instead for scientifically sound materials and methods that are socially acceptable, directed against relevant health problems. The examples are domiciliary treatment of tuberculosis as against sanatorium treatment: oral rehydration therapy in cholera and other diarrhoeal diseases bifurcated needle for vaccination, etc.

To give effect to the concept of primary health care, attempts are being made by Afghan Islamic Govt to revamp the existing health infrastructure. The WHO has published a training/learning manual entitled "The Primary Health Worker" for adaptation to conditions in different countries.(5) Afghan Islamic Govt have published their own versions of the guide for use by the Health Workers in Afghanistan.

Some Strategies of Primary Health Care

Below are listed some of the ways and means used in implementing PHC and achieving the goal of health for all.

Inter-sectoral co-operation. Primary Health Care programmer should be set in a context of integrated development - housing, transport, agriculture, communications, education and others.

The prevention of disease and the promotion of health are essential activities in PHC.

Basic infrastructure. Some basic health facility should be established within reach of every family. This distance will depend on terrain, roads and available transport, but an acceptable average walking distance is usually taken to be 5 kilometers.

Referral system. The health facilities need to be connected through a referral mechanism to the hospital service.

Auxiliary health workers need to be trained to work in the health facilities.

Village health workers need to be trained to work in the community.

Traditional medical systems. Research of traditional birth attendants is proving successful. Co-operation with and training of other traditional medical workers should be encouraged.

Health education is fundamental to PHC. Only through understanding the basis of a healthy life, can people make rational decisions concerning their needs and life style.

Community participation. Each community should be involved in the PHC service through the functioning of an active responsible health committee.

Health care should be relevant to the main health problems of each community.

Essential drugs for treating common conditions should be provided.

Cost effective and self-reliant. As a country and community develops, the provision of health care should grow. That is, the level of health care should reflect the total development and be within the means of the community.

Primary Health Care Infrastructure

Afghanistan's largely rural population is scattered among more than 20,000 villages and towns mostly ranging in size from a few hundred people to a few thousand people. Even before the war, the rugged terrain and harsh climate made routine travel to the large cities for health care impossible for most people. The primary health care infrastructure must reflect the geographic and demographic realities of Afghanistan. It must also balance the needs of the population against the constraints of health manpower availability and the need to build a system which is financially sustainable.

The foundation of the primary health care pyramid in rural Afghanistan is the community health worker or Basic Health Worker

(BHW)> Most of the health problems which cause death and disability in Afghanistan can be handled at the village level by BHWs working alone or in pairs at Basic Health Posts. Currently there are over 1432 BHWs active in rural Afghanistan. BHW training capacity is being built to train and support a ratio of at least one BHW for every 5000 people, though in less densely populated areas one BHW may serve as few as 500 people.

BHWs are taught to provide basic preventive community health education on topics such as water, sanitation and personal hygiene. They are also taught to provide essential care for common, potentially life-threatening conditions such as diarrheal disease, malaria, and acute respiratory infections (ARI). Finally, they are taught to play a supportive role in the immunization programs.

Until recently, supervision of BHWs has been provided primarily through refresher training and debriefing held during resupply visits to Peshawar. Currently, efforts are underway to recruit and orient BHW supervised

Rural Health Officers (RHOs) stationed at district health offices. Supervisory visits should occur every one to three months, depending on the geography, season, and number of BHWs in an area. Supervisory visits include review of patient treatment records, review of drug and supply management practices, and review of community-oriented preventive health activities.

The next level in PHC pyramid is the Basic Health Center. Basic Health Centers are staffed by one and two to four mid level health workers and serve a large community than that served by Basic Health Posts.

Basic Health Centers are the first line of referral for BHWs. Except in very isolated areas, Basic Health Centers do not have patient beds or laboratory services. They are expected to serve as centers for facility-based immunization campaigns.

Wherever female health workers are available and the need exists, MCH Health Centers will be established to provide prenatal and postnatal care, risk assessment, Dai training, immunization, and other MCH services. In some communities Basic Health Centers and MCH Centers may share facilities or be located in adjacent buildings. In other communities MCH Centers and Basic Health Centers will exist separately.

Above the Basic Health Center is the Comprehensive Health Center. Ideally, a Comprehensive Health Center will be staffed by a medical doctor, one or two advanced mid level health workers, and several mid level health workers. Under the present circumstances, however, many of these facilities will not have a fully qualified medical doctor. Comprehensive Health Centers will serve as the next line of

referral for Basic Health Posts and Basic Health Centers. In general, they should be equipped with three to five patient beds and a small field laboratory. The Comprehensive Health Center will be the major government health facility in less populated districts which cannot support a hospital.

Over time it is anticipated that Comprehensive Health Centers will develop certain specialized program such as MCH services, tuberculosis control, malaria control, and disability services. Programs will differ from one center to another, depending on local disease patterns, the health needs of the community, and the availability of trained personnel to staff the programs. Comprehensive Health Centers will also play an important role in supporting the cold chain and immunization activities.

The next level in the PHC pyramid is the Primary Care Hospital. Primary Care Hospitals are expected to serve one to four district, depending on population and geography. Primary Care Hospitals should be staffed by one to three medical doctors. Most PHC Hospitals can be expected to have ten to twenty patient beds, a field laboratory, and portable X-Ray capability, in the immediate future it is not expected that most PHC hospitals will have major surgery capability, though this may develop over time.

PHC hospitals will serve as the main referral point for patients from Comprehensive and Basic Health Centers. A Health Center Supervisor based at the PHC hospital or adjacent district health office should make regular visits to all health centers in the area. In addition, staff at these hospitals should provide support for MCH, TB, malaria, disability, or other special programs provided at Comprehensive and Basic Health Centers in the area.

Specialized medical service, most major surgical services, freeze point capability, health worker training (BHWs, female health workers, and mid level health workers), expanded laboratory services, prosthesis fabrication, other more specialized services will be provided by provincial hospitals and small number of regional referral hospitals located in major cities. Though provincial hospitals are expected to have up to 50 beds the provincial hospitals for some of the more remote, less populous provinces may have staffing and services according to the level primary hospitals.?

The foundation of the primary health care pyramid in the country at this time, is the primary health worker (PHW) or Basic Health Worker(BHW). Most of the health problems which cause death and disability in Afghanistan can be handled at the village level by BHWs working with a referral system which provides support and feedback.

The primary health workers or BHWs service as the level of entry to the "formal" health system. These workers are taught to provide

basic preventive community health education on topics for common, potentially life-threatening conditions such as diarrheal disease, malaria, and acute respiratory infections. Finally, they are taught to play a supportive role in immunization programs. These health workers are based within the villages in what are termed health posts. Often these consist of one room with the home of the health worker or the space is donated by the community authorities. Currently there are over 1432 BHW's active in rural Afghanistan. BHW training capacity is being built to train and support a ratio of at least one BHW for every 5000 people, though in less densely populated areas or in very difficult geographic areas, one BHW may serve as few as 500 people. The target area size is estimated at 3-5 kilometers.

The next level in PHC is the Basic Health Center. Basic Health Centers are staffed by one physician or two to four mid level health workers and serve a community base targeted at 5000 to 30,000 people. The mid level health worker is taught to diagnose and treat the most common health problems (70-80%) of patient visits. Within the rural areas there are estimated to be 2500 mid level workers supported by various sources. This level of worker is designed to extend the scarce physician resources. These Basic health centers are usually for the subdistricts or district level services. They are expected to serve as centers for immunization campaigns also.

The next level is the comprehensive Health center or the Basic Health Center with 5 inpatient beds. Ideally, a comprehensive health center is staffed by a medical doctor with the support of mid level workers. Under the present circumstances, however, many of these facilities will not have a fully qualified medical doctor. This type of facility is designed to serve a target population of 30,000 - 50,000 people.

The next level in the PHC pyramid is the Primary Care Hospitals which are expected to serve one to four districts, depending on population and geography. The target population is greater than 50,000. Primary Care Hospitals should be staffed by one to three medical doctors and be expected to have ten to twenty patient beds, a field laboratory, and portable X-ray capability. PHC hospitals will serve as the main referral point for patients from Comprehensive and Basic Health Centers.

The next level is the provincial hospital which will offer specialized medical services, most major surgical services, freeze point capacity, health worker training expanded laboratory services, prosthesis fabrication, and other more specialized services will be provided by provincial hospitals and small number of regional referral hospitals located in major cities. Though provincial hospitals are expected to have up to 50 - 100 beds. The facility is designed to cover at least 1 province.

The regional health hospital is designed to cover 3 - 6 provinces and has 150 - 200 beds. The services offered will include a more advanced technology with regards to laboratory and radiological services.

The National hospitals are designed to provide the higher medical education and referral services within the country.

AFGHANISTAN HEALTH SYSTEM

/RURAL HEALTH OFFICERS;

RURAL HEALTH OFFICERS

A STRATEGY FOR MANAGING PRIMARY HEALTH CARE AT THE DISTRICT LEVEL IN AFGHANISTAN

A. INTRODUCTION

Since the Soviet invasion of Afghanistan in 1987 the Kabul regime has been unable to provide health services outside of the major cities. Despite the outpouring of 5 million Afghan refugees to Pakistan and Iran, and despite the death of more than one million Afghan as a result of the War, there remain at least 8 million people in rural areas of Afghanistan in need of health services.

Since 1980 numerous PVOs have assisted in training Afghan health workers and in establishing "clinics", especially in those Afghan provinces which border on Pakistan.

Beginning in 1987 the 7-Party Alliance Health Committee (incorporated in 1989 into the Ministry of Public Health (MOPH) of the Afghan Interim Government, based in Peshawar) has also trained large numbers of Afghan health workers and sent them inside Afghanistan, with ample supplies of drugs and equipment. Despite, however, this massive 10 years effort to provide health care for Afghans living in the Mujahideen controlled rural areas, a number of major constraints have been identified which lessen the health impact that can be achieved. Among the most important of these obstacles are the following:-

(1) CLINICS PROVIDE MOSTLY CURATIVE RATHER THAN PREVENTIVE CARE

Most of the several hundred clinics or health centers that have been established in rural areas of Afghanistan provide little in the way of health education, preventive services, or any of the major components of primary health care (PHC) other than basic curative care. This is due in part to the fact that many of these clinics were originally established to provide emergency wartime relief services, including treatment of the war-wounded. They were not intended to be comprehensive health centers.

(2) LACK OF SUPERVISION OF BHWS

The MOPH has trained more than 1500 male Basic Health Workers (BHWS) for 3 months (in Pakistan) and has sent them into rural areas of Afghanistan to provide primary health care. Although their training includes a major emphasis on prevention, health education and PHC, the BHWS have not focused on these areas as much as they might have mainly because villagers demand curative care. A major problem has been the lack of supervision of BHWS by more highly trained health workers.

In theory clinic and health center staff are supposed to supervise BHWS but in practice this rarely happens. BHWS do, however, receive refresher training in Peshawar and are regularly resupplied.

(3) LACK OF FEMALE HEALTH WORKERS AND MCH SERVICES

MCH Services are sadly neglected throughout rural Afghanistan, largely due to the shortage of female health workers. The only female health workers in most districts are untrained TBAs (dais); health care for women (including pregnant women) therefore barely existing in most parts of Afghanistan. Contraceptive are virtually unobtainable. Because of Afghan cultural constraints, women are rarely if ever examined by male health workers.. Clinics and BHWS see few infants and almost never see babies less than 40 days old (nearly half of infant deaths occur in the first month of life).

B. WHY DOES RURAL AFGHANISTAN NEED RHOS?

The problems listed above give some indication of what is needed to increase the impact on morbidity and mortality of healthy services in rural Afghanistan. The proposed health service delivery model which is being implemented by the MOPH will be managed at the province level by a Provincial Public Health Director (PPHD). By 1991 a total of 10 provinces expected to have PHOs in place; five have already been assigned. The PHOs will not be able to manage health programs throughout a province without someone at the district (Woleswali) level who can supervise BHWS and implement preventive/health education/PHC interventions. In addition, it will also be necessary for someone at the district level to work closely with MOPH supported clinics to ensure good communications with the PPHD, a functional supply system, and timely reporting from all health facilities in the district. The clinics and health centers that exist at the district level are not in a position to do this. For this reason the MOPH is proposing to have Rural Health Officers (RHO) usually male and MCH Officers (female) at the Woleswali level (one male RHO and one MCH Officers per Woleswali). They will provide a critical link in the PHC chain that stretches from the PPHD to the village level BHW.

The RHO and MCH Officer will play a critical role in Afghanistan's rural health system until such a time when health centers are able to expand their activities from curative care to include prevention), (e.g immunization, water and sanitation, health education), MCH (with female health staff), and the supervision of village-level health workers.

C. RHO AND MCH OFFICERS --- WHAT IS THEIR JOB?

RHO

The basic job of the RHO (male) will be to manage primary health care at the Wolesswali level, under the supervision of the Provincial Public Health Directors. "Managing PHC at the Wolesswali level" has the following major components:-

- 1) Technical supervision of all BHWS in the Wolesswali.
- 2) Implementation of preventive and health education programs (such as immunization, environmental health, and so forth) in collaboration with health centers or clinics in the Wolesswali.
- 3) Making sure that public health policies of the PPHD are appropriately carried out in his Wolesswali.
- 4) Submitting reports on a regular basis to the PPHD from each MOPH-supported clinic or health center, as well as his own reports regarding health in the Wolesswali.
- 5) Support Primary Health Care (PHC) through more effective health education, MCH and prevention activities by BHWS and by clinics, health centers and hospitals in the district.
- 6) Support Logistics for BHWS and clinics and for prevention programs in the Wolesswali.
- 7) Close involvement with the community and with other (non-health) sectors, including organizing communities to become more involved in health.
- 8) Supervision of preventive and public health programs for clinics and health centers (but not curative care).

MCH OFFICERS (FEMALE)

The basic job of the MCH Officer will be to manage MCH Services at the Wolesswali level, under the supervision of the Provincial Public Health Director. "Managing MCH Services at the Wolesswali level" will have the following major components.

- 1) Training of village-level female Community Health Workers (CHWs).
- 2) Training of TBAs (dais).
- 3) Supervision of female CHWs and dais.
- 4) Prenatal care, deliveries, and postnatal care.
- 5) Diagnosis and treatment of common diseases/problems of women and children and the disabled.
- 6) Health education of mothers.
- 7) Child spacing.

- 8) PHC and prevention activities (including support of immunization and ORT).
9. Submitting reports on a regular basis to the PPHD concerning MCH activities in the Woleswali.

D. RECRUITMENT AND SELECTION

RHO

The RHOs will be recruited and selected from among the 1,500 BHWS who have already been trained. There are several reasons why BHWS will be chosen (rather than, say, mid-level health workers trained by PVOs for 6-18 months and working in clinics inside Afghanistan). These reasons include:

1. BHWS are part of the MOPH and Area Development System. If health workers outside of the MOPH/Area Development are selected to be RHOs, this will cause BHWS morale to suffer since many of them aspire to higher-level positions requiring additional training. Right now there is no "Career ladder" for them. The RHO position is a means for them to advance.
2. BHWS are only trained for 3 months and much of this training focuses on health education, prevention, and MCH. Most PVO-trained mid-level health worker service much more curative training than do BHWS as a result it will be more difficult to convert curative-oriented mid-level workers to a PHC approach than it will be to convert BHW to this approach.
3. BHWS having been trained, monitored, resupplied, and given refresher training by the MOPH, are well known to their trainers and monitors. Selection can be based on familiarity with their work record. For PVO's recommendation. Furthermore, a major component of the male RHO's job to supervise BHW's job before he can supervise him. This will not be necessary for the BHWS themselves.

Among the criteria for choosing male RHOs are the following:

- 1- Works in one of the 25 Woleswali selected to have RHOs these 25 Woleswali are located in the 10 provinces which will have PPHDs. These Woleswali will be those with the largest populations and the largest number of BHWS and will be part of provincial health system.
- 2- BHW with at least six months experience working as a BHW in rural Afghanistan (graduated of one of the first six BHW classes).
- 3- Resupplied at least once and has taken BHW refresher training at least once.
- 4- The BHW should if possible, have a wife or female relative who

is literate, wants to be a MCH Officer, and can accompany the BHW to Peshawar for one year's training (and return back to the Woleswali to begin work).

- 5- The BHW selected from the Woleswali should be based in a village or small clinic (not a hospital or large clinic), should have done an excellent job, be intelligent, eager to learn new skills, and overall be the best and most active BHW in his Woleswali (supported by his commander, community leaders, and the community itself).

Recruitment and selection of RHOs who have met the above criteria should be done by two different means. In those provinces which already have a PPHD in place, the PPHD and his staff should be responsible for visiting those woleswalis in their province which are included among the 25 woleswalis to have RHOs. When visiting these selected Woleswali they should interview all the BHWs who have met the selection criteria and choose the best one to be the RHO from that Woleswali. In addition to interviewing the BHWs, they should also interview commanders and members of the community before making their decision.

The second approach to recruiting and selecting RHOs will take place in those province which do not yet have PPHD in place. In these provinces all the Woleswalis chosen to have RHOs should be visited by 2-person teams from Peshawar. These teams will use the same process used by the PPHD and his staff to decide on which BHW in the Woleswali should be trained as an RHO. For both methods of selection, if a BHW has a wife or female relative who can be a MCH Officers, this would be a very strong recommendation for his selection, assuming he met the other criteria.

Health Communication

Health Education:

What is Health Education:

Health education is a process by which people learn and as a result, change their health habits and attitudes. Success in health education is achieved by providing necessary information and motivating people to change their behavior or attitudes leading to enjoy better health.

Objective of Health Education:

There are three main objective of Health Education.

1. Informing People:

The first step of Health Education is to inform people or disseminate scientific knowledge about prevention of disease and promotion of health, which will melt away the barriers of ignorance, prejudice and misconceptions, people may have about Health and disease. This creates an awareness of health needs and problems, and also of responsibilities on the part of people.

2. Motivating People:

This objective is more important, they must be motivated to change, their habits and way of living. Many problems of community health, need change in human behavior or change in health practices, which are detrimental to health, like pollution of water, out-door defecation, taking alcohol, cigarette smoking, drug addiction etc. Health Education must provide learning experiences, which influence habits. The stress should be on motivating the person to make his own decision about health matters.

3. Guiding into Action:

Health education should be conducted by a variety of health, education and communication personnel. People need help to adopt and maintain health practice and lifestyles, which may be totally new to them. It is the Government responsibility to provide the necessary infrastructure of health services, And people need to be encouraged to use these facilitation. Health education provides the cement that binds together the bricks of health program, due to the active participation of people in health program. Many Governments are realizing that the services provided for the improvement of socio-economic and health status can not be achieved unless the people not only make use of these services but also under take practical self-

help measures to improve their own health status and the communities in which they live.

Principles of Health Education:

1. Interest:

Health education should relate to the interests of the people. Health educators must find out the real health needs of the people, the needs people feel about themselves. If a program is based on felt needs people will gladly participate in the program, only then it will be a people's program. There are people who may have health needs of which they are not aware, the health educator will have to bring a recognition of the needs before he proceeds to tackle them.

2. Participation:

Participation is based on the principle of active learning. It is better than passive learning. Group discussion, Panel Discussion and workshops all provide opportunities for active learning. Personal involvement leads to personal acceptance.

3. Known to Unknown:

Start from where the people are and with what they understand and then proceed to new knowledge, In this way systematic knowledge is built up. It is a long process full of obstacles and resistance, and we must not expect quick results.

4. Comprehension:

In health education we must know the level of understanding education of people to whom the teaching is directed. In health education we should always communicate in the language people understand and never use words which are strange and new to the people. e.g. A doctor prescribed a medicine to a woman advising her one teaspoonful three times a day, the patient a village woman had never seen a teaspoon, and could not follow the doctor's direction. Teaching should be within the mental capacity of the audience.

5. Reinforcement:

Few people can learn all that is new in a single period, even then Repetition at intervals is very useful. It assists comprehension and understanding. Every campaign needs reinforcement.

6. Motivation:

In every person there is a desire to learn. A wakening of this desire is called motivation. In health education motivation is an important factor. Need for incentives is a first step in learning to change the incentives may be positive or negative. e. g. A lady faced with the problem of over weight is told to reduce her weight, otherwise she is going to get cardiovascular disease and life span will be reduced, this might have very little effect on her. But if she is told by reducing weight she will look more beautiful, This will have very good effect on her and she accept health advice.

7. Learning by doing:

Learning is an action process. There is a chances proverb. "If I hear," I forget. "If I see," I remember. "If I do," I know. This clears very mach the importance of learning by doing .

8. Soil, seed and sower:

The people are the soil, the health facts are seed and the transmitting media the Sower. Prior Knowledge of people customs, Habits taboos, beliefs and health needs is essential for successful health education. The health facts must be truthful and based on scientific knowledge. The transmitting media must be attractive, palatable and acceptable. Unless these three elements are carefully interrelated the massage will not have the desired effect.

9. Good Human Relations:

Good personal qualities of the health educator are more important then his technical qualifications. The health educator must be kind and sympathetic. People must accept him as their real friend.

10. Leaders:

In the work of health education, we try to penetrate the community through the local leaders. If the leaders are convinced first about a program, the rest of the task will be easy.

Communication in Health Education:

The key elements in the communication process are.

1. The Communicator, 2.The Message, 3.The Audience, 4.The Channels of Communication.

1. The Communication:

To be a good communicator he must know.

- a. His objectives clearly defined.
- b. His audience, their needs, interests and abilities.
- c. His message, its contents and usefulness and.
- d. Channel of communication.

2. Message:

Is the information a communicator wants to give to his audience to understand, accept and act upon? A good message must be.

- a. In the line with the objectives.
- b. Oriented to needs of the audience.
- c. Clear and understandable.
- d. Specific.
- e. Timely.
- f. Appealing.

3. Audience:

They are the users of the message, they may be the total population or a group within the population.

4. Channels of Communication:

The choice of the medium is an important factor in the effectiveness of communication. While selecting the medium one should be careful about its ability to deliver the message, its cost and availability, one should try to use variety of Channels to keep the teaching process interesting-entertaining. A 2-way communication is always better than one way communication. It should be adjusted to the local culture.

Following are the Channels mostly used for communication:

Lecture:

This is the oldest and most commonly used method for teaching. In this method the teacher usually speaks and students listen. In this method the communication is one way and is least effective, because there is no opportunity for the audience to participate. This method can be made effect if combined with other methods.

Discussions:

Means to talk over in this method the teacher and the students, every one takes part and give there opinion

questions are accepted and Answered either by the teacher or by the group. It is a very effective way of communication.

Demonstration:

A method of showing step by step how something is done. For example to demonstrate the preparation of supplementary food for a baby, parents must be shown the procedure step by step, After shown them ask them to repeat the procedure. This is practice. This is a very good method of communication because once a person looks then performs himself will not forget easily.

Role Play:

Role playing means that a person or a group takes the role or the position of some one else and tries to act as that person would or should. This method helps to develop skill in working with people. Role play is closer to real life.

Role play is useful for.

1. Developing practical Skills.
2. " social "
3. " teaching "
4. " observational "
5. " alternate solutions to different Problems.

Story telling:

Telling stories is the oldest method of teaching children about their culture. It is useful where people can not read. To be effective a story should be interesting, and relate well to the audience.

Counseling:

This means to give advice. In health it refers to talking to an individual or family, helping them to arrive at a decision on what to do and how to do it.

Material used in Health Education.

You now need to learn what materials can be used for health education. These are limitless and there is no rule about which is best. Any thing that helps to convey the message is considered appropriate from what ever is available. The choice of material is determined by the message to be conveyed. You are encouraged to use a combination of locally available materials along with what you can get from your office. What generally is used for health education is:

1. Flip Chart:

This is a result teaching aid showing sequence of drawings or Pictures.

2. Flannel Graphs:

These result aids are made of flannel only other fabric. Pictures, words or illustrations, having sticky back are placed on the board for demonstration.

3. Posters:

These are Pictures, or Messages or both, on paper or cloth, mostly posted or hanged on the walls. The posters should have the qualities like:

- a. Is instantly understood.
- b. an emotional appeal.
- c. A realistic picture or cartoons, which should not offend.
- d. Single and simple message.

4. Booklets:

These are printed material. Usually covering a single subject .i.e. Immunization or Nutrition etc.

5. Slides, Films and overhead Projector:

Slide is a single transparent picture, Projected on to a screen. Film, refers to a real of motion picture. Both require a separate kind of projector to produce the picture on a screen.

RHOs are also Health Educators:

Who, are the health educators? Each individual member of a health team is considered to be health educator. Health education can and should be given in every Hospital, Rural clinics at all levels, schools, home and community. It should be integrated into every activity of health service. As a RHO health education is one of your most important task, because:

1. To identify health problems needing health education.
2. Analyze the contributing factors that need to be changed.
3. Design and test messages for health education.
4. Select who is to be taught, where, when and how.
5. Prepare and carry out your health education Program.

Identification of Scope for Health Communication Activities:

Identify the components of health education in your area of responsibility in order to Plan a session. for example:

Overall duty	Health Education Component
1. Provide MCH care.	Advise about <ul style="list-style-type: none">- Prenatal, natal, and Postnatal care.- Nutrition for Pregnant women.- High risk Pregnancies.- Breast feeding from birth.- Supplementary food.- Wearing food.
2. Immunization	Educate parents about: <ul style="list-style-type: none">- Immunizable diseases.- Scheduling of Vaccination.- Value of Immunization.- Side effects of vaccination.
3. Diarrhoea Control.	Counsel mothers on: <ul style="list-style-type: none">- What Diarrhoea is.- Dangers of Diarrhoea Dehydration.- Use of ORT to prevent Dehydration.- Need to continue feeding.
4. Treatment of minor Ailments.	Instruct People about: <ul style="list-style-type: none">- ORS.- How, why, where the disease spreads and how to prevent.- Spread of skin infections=prevention.- When to seek referral.
5. care of Emergencies and referrals.	Conduct classes on: <ul style="list-style-type: none">- first aid.- Continued use of ORS on the way to hospital.- How to avoid accidents and fires.- Artificial resuscitation.- Burns.
6. Water.	Teach about: <ul style="list-style-type: none">- Sources of water supply.- Ways to make drinking water clean + safe.
7. Use of Toilets:	Discuss: <ul style="list-style-type: none">- Dangers of using open fields for defecation.- Advantages of using toilets.- Diseases spread through stool their prevention.

Planning and Carrying out a Health Education Program:

The steps to be considered in Planning and carrying out a health education Program:

1. Defining the Health Problems.
2. Identifying the reason for these problems.
3. Identifying the needs of the individual.
4. Identifying specific health behaviors, which contribute to the health problem.
5. Locating the area in which people need to be educated.
6. Selecting target groups.
7. Designing and testing proper health education Messages.
8. Clarifying and listing duties which you perform to educate people in health matters.
9. Making a health education program for your area.
10. Carrying health education activities designed to motivate people towards desired health action.
11. Proper recording reporting health education activities.
12. Evaluating the results and modifying the plan. If necessary.

The following example shows how to identify and design a health education Program:

Problem	Associated behavior	Cause	Design health education message relevant to .
High morbidity mortality due to communicable diseases.	People do not have their children vaccinated.	Not aware of what C.D and EPI is, not convinced of the value of Immunization Afraid of said effects.	Vaccination is safe. It saves children's lives.
High morbidity mortality rate in children due to diarrhoea.	Believe in giving food and drink in diarrhoea makes it worse.	Unaware that dehydration leads quickly to death. Unaware that ORT can be used for rehydration. Non availability of ORS.	Diarrhoea causes loss of fluids from the body. Dehydration can kill the child. ORS replaces the fluids in the body and saves the life of the child.
Poor sanitation resulting in diseases.	Do not dispose of body wastes in proper way.	Not convinced the value of using toilets.	Defecating in fields and streams, spreads diseases such as dysentery, Typhoid, cholera and Parasites. Use of a toilet in convenient and keeps some infections from spreading.

Evaluation of Health Communication Activities.

Evaluation should be done to see the progress of your work. It is a continuous process. You can evaluate your work at the end of each month or year.

How can you evaluate your health education program?
Analyze what you have done. so for.

- Number of talks given.
- Number of Material distributed.
- Number of home visits made.
- Number of demonstrations arranged.
- Number of field trips.

Find ORT whether the results you have observed or seen on your record show:

- A change in knowledge.
- A change in the attitudes on the people.
- A change in the health practices.
- An increase in attendance at health facilities.

Do's and Don'ts in Health Education.

While conducting health education Sessions there are few things you should do and there are few things which you should not do.

Do's

1. Listen what people say.
2. Understand people's problem.
3. Share ideas.
4. Give and receive information.
5. Learn the skills to work with people
6. Learn from mistakes.
7. Learn from each other.
8. Communicate well. Be sure.
9. Identify people in the community who can help you.
10. Explain your program to people.
11. Ask their advice how to motivate people.
12. Be polite and friendly with the people.
13. Teach in interesting way.
14. Use simple language.
15. Use teaching aids.
16. Plan what you want to teach.

Don'ts

1. Don't be frightened, Let people ask you question.
2. Don't be worried if you do not know the answers. Tell them you don't know. But will find out.
3. Don't give wrong information.
4. Don't use language which people do not understand.
5. Don't wear clothes that are unacceptable to the people.

Health and Community

Topics:

1. Why it is important to involve community in the Health Care Program.
2. How to get to know the community.
3. Mapping
4. What activities can be carried out with community involvement.
5. How to gether information about health problems in the communities.
6. Guide lines for working with families.
7. Home visiting and procedure.
8. Conducting community Health screy.
9. Choosig priorities and Planning for community action.
10. School Health.

1. Why it is important to involve Community in Health Care Program.

Primary Health Care is the provision of necessary health services to every-one in the country. There is need of utilize communities, with a view to secure people's participation in the care of their own health. This has been recognized due to many factors. Than main ones being:

- a. Majority of Papulation lives in rural areas, but the most of the health care facilities are consumed by the urban Population.
- b. The primary health centers have failed to provide basic health needs, and have also failed in involving the local communities for tackling their own problems of health.
- c. A wide range of illnesses can be prevented and treated at the village level by a person with simple preparation or training.

Therefore Primary health care is the first entry point into the national health system. It is very important for overall social and economic development, which requires full participation of the community.

The things in which community is involved and they have prepared or. designed it: They own it that is why community involvement/ Participation is must:

2. How To Get to Know The Community.

When you start your job as a health worker, you will most likely be with unfamiliar communities. Community will have it's own system to live and work, it's own beliefs and practices but the most important is it will have certain unique needs. Getting to know the community means understanding the community's need, or finding out the need which they feel is most important and are they willing to do some thing to take care of their need. Getting to know the community means looking at the whole community picture and determining, where you fit into that picture, to help them.

Approach To The Community.

When you enter a village or community your first step in approaching the community will be to talk to community Leaders and formal organization. You should take time to observe the people, listen to them and try to understand their feelings.

They have the important information as you have after training, but they have learned these from their experiences. This will establish trust , after that you explain the purpose of your visit. Then you work together to identify the problems and find the best way to deal with the problems. The most successful approach to know people is taking time to discover the problems and how they feel about it, shows that you care for them. People will trust you and be willing to work with you.

Talking to Community Leaders.

Every community has a leader. You should introduce yourself to the community leader first. Tell him your concern with the community for better working. Show him your plan. The leader will see the plan and can help, your ideas and plan will fit into the community system or not, Ask his advice.

Meeting The Formal Organization.

After you have talked to the community leader and gained his support, you should ask him for other leaders or formal organization. The formal organizations are, religious, social, education and political groups. Meet with these groups if possible to gain their support.

3. MAPPING.

A map is a presentation of all or a part of a particular location, It can represent the world, a country, a community or a group of houses. A map will help you to become familiar of the community. Wherever you go, you should prepare a map of the area yourself. Learn these five principles for understanding a map.

- a. Each symbol on a map has a meaning. A good map shows all the important features of the community like Street, Road, Paths, Rivers , Houses, Schools, Health Centers and Mosques.
- b. A map notes where each Road or Path goes. Usually an arrow points to the name of the village, town or city, where the road or path leads to Naming the roads helps a person himself, when he uses the map.
- c. Distances on a map relate to the distances in the community.
- d. Each house on a map is numbered.
- e. A map includes the following information at the top.

The name of the community or area mapped.
The District in which the community is located.
The Date the map was plotted.
The name of the person who drew the map.

Using a Map.

Once you have made a map, you must know how to use the map. Follow these steps to use a map.

- a. Be sure the map follows the five principles for understanding a maps.
- b. Choose a point in the community from which to start following the map. locate the point on the map.
- c. Stand at the chosen point in the community position the map to point in the direction you are moving. Follow the road, note that the position of the houses and other structures on your left and right match the symboles on the map.
- d. Turn the map each time you turn. Each time you turn in a particular direction, turn the map in opposite direction.

Drawing a Map.

Drawing a map of a community will help you in planing community health activities. Drawing a map may also give you the appreciation of the community follow these steps to draw a map.

- a. Use a blank sheet of paper, leave space at the top of the paper to record information about the map.
- b. Get to know the area in and around the community. Walk around the community, follow the boundaries of the community.
- c. Plot the four farthest points in the community to be mapped i.e. Top, Bottom, Left and Right.
- d. Draw a main rood or Path entering the community. indicate where the rood goes, when it leaves the community. Then add the all other roods + Paths, Rivers, Streams, ponds, houses, school, Mosques and health centers. Using the correct symboles. Add a key at the bottom of the map.
- e. Number all the houses in the community. Number the first house at the main entrance.
- f. Review your completed map. Make sure that you have

included all important feature of the community. Walk around the community with completed map making any necessary correction.

g. Record the identifying information at the top of the map.

4. What activities can be carried out with Community involvement.

Helping a community stay healthy is not a job that you can do alone. It requires help from community members and leaders. It some times require help from people out side the community as well. While you are getting to know a community you will learn about many skilled recourse people, who can help you to carry out community health activities. Following are the activities which can be carried out by involving community.

1. Getting to know the community.
2. Screening of Pregnant women.
3. Screening of children.
4. Immunizing children.
5. Carrying out school health activities.
6. Identifying environment health problems.
7. Digging and protecting wells.
8. Making Compost Pit.
9. Protecting springs.
10. Building and taking care of Pit Latrines.
11. Controlling mosquitoes, flies and rodents.
12. Controlling disease outbreaks.
13. Gardening.
14. Training and supporting community health workers.
15. Educating community members about health.
16. Identifying the common diseases in the community.
17. Carrying out other health activities.

5. How to gether information about health Problems.in the community.

By Identifying sources of information in the community:

Once you have gained the support and cooperation of the community leader and formal organization, you will be in a better position to talk to other community members, to get a complete picture of the community's needs, its willingness to deal with these needs. Each person has his own way of seeing the world. Getting to know the community involves many people. The more people you talk, the more complete picture you get of community.

Talking with people will also help you gather support for future, when you talk to someone and ask for his opinion and advice, you are saying that his opinion is important. People

are more likely to support and become involved in community health activities.

People in their homes:

You may not get a completely accurate picture of the community's need if you see only the leaders. Talking to people in their homes will add to your understanding of the communities health needs. You will observe, question, and listen to people in their homes. Find out their health need., their feeling about their needs, and their health beliefs and habits. Like this you can talk to other groups, informal Social groups, school workers, Health workers and other departmental workers.

Working together to gather information:

The most obvious way to gather information about a community is to talk to community members. You can talk to people on a one-to-one basis or in a group. By seeing the record in the health center, you will find out why some people in the community have visited Health center more, who seems to be sick most. You can talk to these people to find out more about their problems. Tell the people and be sure to improve the health of the community.

Talking to people one-to-one: Follow these suggestions for approaching people in the community.

1. Prepare some general question to ask.
2. Dress appropriately, your appearance sends people a message.
3. Learn and use the common greetings of the community.
4. Observe people's behavior. Notice how they react to you. People communicate without as well as with words. A nervous glance may be telling you, that you talk too much.
5. Understand that some people do not trust people whom they do not know.
6. Beware of any difference in age and sex between you and the other person, and plan accordingly.
7. Emphasize getting to know the person rather than getting answers to your questions.

When you begin your conversation follow these:

- a. Begin with a friendly chat. Encourage the person to talk about something that interests him.
- b. Show respect for the other person.
- c. Show enthusiasm for the idea of working together for community health.
- d. Be honest, show that you are concerned about the community's health.
- e. Keep your message simple. Speak the local language and use simple words.
- f. Praise any healthy habit that the person is practicing.
- g. Smile. A smile puts people at ease.
- h. Let other do most of the talking, Listen, do not interrupt, don't argue.
- i. If you do not have the correct information, say you do not know.
- j. Give others credit for their ideas.
- k. Make your notes brief. don't write too long. and don't look down too often.
- l. Leave the person as a friend, whom you will see again.
- m. Do not promise the person anything that you can not do.

Working through Respected people in the community:

You will usually learn about people in the community. who are well respected and have influence over others. They may be people who have helpful knowledge and skills, or a man who has good mechanical skills may be the person to see for advice on how to build something. People in a community usually respect religious leaders, and consult them for advice. Working with these respected people can make your community health work easier. They can also introduce you to people in the community. They can influence people to take part in community health activities.

Sampling:

In most cases it will be difficult for you to talk to all of the people in a community. The community is often too large and your time is limited. It is more realistic to choose and talk to only a selected number of community members. This is called choosing a sample.

You choose a sample to get accurate information.

Choose people for your sample who represent the variety of views and opinions in the community. For example in a village there are 280 households, you may take ten or twenty households. These households should represent, Big family, Small family, Poor family, and that are not very poor. Then the information you gather from these households will represent the total population of the community.

6. Guide lines for working with Families.

A family acts as a unit and a member's behavior is affected by others in the family. Therefore decisions on the care given to one member are often made by others. For Example:

To provide maternal and child health services to a young mother you have to work with and through the mother-in-law and her husband. The health of one person in the family affects the health of others.

In order to effectively work with family the following Principles and Guide lines need to be followed:

<u>Principles</u>	<u>Guidelines for RHO</u>
1. Establish a good working relationship with family members.	<ul style="list-style-type: none">- Greet them properly.- Speak to them with respect- Do not get involved in controversial family issues- Listen to them and their concerns Patiently and sympathetically.
2. Collect only necessary information on family size, occupation, Education, Customs and Tradition.	<ul style="list-style-type: none">- Collect information by inquiry and explain information collected.

3. Identify the health needs of the family.
 - List first the health needs and problem as given by the family, then add to this list your own observations.

4. Plan with the family actions to be taken to solve identified needs.
 - Discuss each need or problems with the family.
 - Suggest possible ways to meet these needs.
 - Give alternate suggestions, when possible.
 - Find out how they want to handle the situation.
 - Suggest necessary actions.
 - Give the family a time period in which to proceed with the planned activities.

5. Help the family to carry out their plan of action.
 - Determine with the family which activities they can handle themselves, and for which activities they need your assistance.
 - Provide assistance if needed.

6. Encourage the family to be self-reliant in meeting their needs.
 - Assist them by doing the procedure they are most uncomfortable with.
 - Provide necessary knowledge or skills so that family members begin to feel comfortable in assuming planned activities.
 - As members of the family give confidence and skill, give them more responsibility in meeting their need.
 - Evaluate the family's progress in their health maintenance activities.

7. Home Visiting and Procedure for Home Visiting.

When you have some basic information about your community characteristics and have the knowledge of various ways to communicate, you must begin to make contact with the people. One way for you to meet people is through home visits. The principle aim of health care service in the home is to help people, use their own resources to meet their needs. This will result in a healthier family.

Before a home visit you should look at your map of the community. and locate the health center Determine where the houses are located and how far away they are. you should know the names and titles of other Health workers. Home visit should start from the homes closest to health center or to

your own home. The distance for visiting other homes can be increased as you develop skills and as the community sees the benefit of your visit. Once you are confident, and the requests for home visits increase, you should make your first visit of the day or week at the home furthest away and work on your way back to the center.

Reasons for home visits:

As a health worker you are in the community to help people, and other health workers. You will be responsible for explaining the services available from other health workers and Health facilities.

Planning for the home visit:

You will need to plan the number of home visits you can make in a day, week, or month in order to be most effective in serving your villages. You will need to divide the area, and make plans for visiting within the time limits of your working hours. Make your home visits on priority basis. For example, If you need to visit ten houses, and you have 3-4 hours. Determine which visits can be postponed (A new Antipartam Case may be visited later, but a child with Diarrhoea should be visited immediately).

- Visit those you have promised to visit.
 - Visit those families who have come to you requesting you to assess their needs.
 - Visit those who have not returned to the clinic for follow up.
- keep the record of all visits in your diary.

Preparing for home visits:

Before making a home visit you should know, what you are going to do, and what you will be needing. Review your Records of the families to be visited. Review the procedures you will use, and make sure you have the necessary materials with you. Make sure you have the information with you about other valuable service which may be requested during your visit. Have the names and addresses of other resources, like W.F.P and other Health workers etc.

Procedure for home visits:

- Start with greeting, which you have already learned.
- Introduce yourself, tell your name, and the name of the health center from which you have come. Tell the purpose of your visit, (you may give the reference of her husband, who talked to you about her illness) etc.

- Ask if you can spend a few minutes with the family members in the house.
- If you are not asked to sit down, suggest, may I sit here and talk for a while.
- Explain the purpose of the visit for example you are conducting a baseline survey, to identify the health needs of this community. May I ask you few question? and complete your forms.
- Ask the family for cooperation and explain the role of other health workers, How they can get services from them. Tell them you are available at the health center or you may stop by again soon.
- End each visit with a discussion and what was done during the visit, and ask if they have any question.

Follow up visit:

Start the visit as usual with greeting, and explain the purpose of this visit. For example:

- Today I am here to see how your child with Diarrhoea is doing or I come to find out how you are doing with your treatment of Malaria. etc.
- Conduct visit by.
Review with the treatment of both, her child with Diarrhoea and herself with Malaria, what is the condition of the child and how she feels now. What are her observations and what are your's.
- Discuss your findings with her.
- Make plans for future follow up visit or end the visit with concluding remarks. For example.
You need to come to health center to be examined by our medical officer.
- conclude by saying if you need me, please let me know.
- Record the visit.

8. Conducting Community Health Survey.

A community health survey is a series of steps for putting together a picture of a community, talking to people in their homes, talking to other members of the community and observing the environment. Information from a community health survey will give you an idea of the most important areas to focus on for community health activities. This is an essential step in planing activities to meet community Health needs.

- Mapping: Has been explained already.

- Talking to people in their homes.

Select at least twenty-five households in the community in your survey. Be sure the household represents the variety of households, each household should include children under age five. The household members should be permanent residents of the community. Interview a female member of the household who is over age thirty. Explain what you are doing and why. Use the designed form for the survey. Obtain the information asked on the form, by asking questions suggested on the form. Use your skills in listening and observing during your household interviews. Observe the condition of homes, notice how family members dispose of garbage, human - animal wastes, does air flow in the home, notice if the household members are bothered by flies and mosquitoes. During your visit the household may ask your help for any ailment, consult your supervisor before giving any advice. In the end thank the household member.

- Observing the Environment:

Observe the community environment while you are mapping. Spend additional time looking closely at the environmental health conditions. Observe farming activities, waste disposal practices, water sources. Use the check list to determine the strengths and weaknesses in the community's environment.

- Talking to other community members.

Talk to community members outside their homes. Community leaders, school workers, health workers, these people have an important perspective on the health of the community.

- Preparing a written Report:

After you have completed the community health survey, compile your information in a written report. Present this report to your instructor as well as to the leader of the community.

9. Choosing priorities and Planning for community Action.

Your completed Health survey gives you a picture of the community's Health needs, resources, and willingness to work. The survey is the first step in Planning. The next step is to identify and plan activities. For example in a community 8% of children under five are vaccinated that community needs an Immunization campaign. or many children are dying of diarrhoea

+ vomiting in a community needs an health education Program to teach the dangers of Bottle feeding and early rehydration of children.

List the activities that can meet the needs of the community Health and list the resources which are needed, It may include your own time, knowledge + skills, and also of community. Additional resources may be required from other quarters.

Next Select the best health activity to carry out in the community. The best activity is that meets the community health needs with minimum resources. Selecting the best health activity is called choosing priorities.

A priority is, when something is considered more important then the other. People in a community have different priority. Each person has his own ideas. Never act on your ideas without listening the community. People take intrust and get involved in the activities , if they have been involved in identifying needs and choosing priorities.

Talk to community leaders about possible health activities. Ask their opinion on priorities and available resources, and organize a community meeting, present the findings of your survey. Also prepare a list of health activities that can meet the needs you have identified. Make your presentation of the strengths and weaknesses that you have discovered in the community. Explain why you see a particular activity as priority. Discuss with community and try to get all views on the matter. Community can be helped while choosing priorities, by asking

questions:

- What are our most important health needs?
- Which activities will meet these needs?
- Which of these activities can we carry out with available resources?
- How much time and support we can commit to carry out these activities?

Your Role:

Your role in choosing priorities is to give opinion and advice based on your training and experience. The interests of the entire community are your concern. Be sure that the chosen health activity priorities are related to the needs of all community members. You know which community members are at the great risk, keep their need in mind. You should observe, listen and express your views.

Get Commitment:

Have a clear commitment from the community. Be sure that the community have outlined the priorities and are willing to contribute to carry out the activities.

Preparing for Action:

The next step is to decide, how to carry out the health activities. This means deciding how, where, when, and by whom the activities will be carried out. Decide whether one or two people can carry out each activities or it requires community participation out line and clarify responsibilities based on the commitments and the available resources. Discuss and outline a time schedule, determining how long each activity should take and what should be accomplished.

Planning for community action.

Many activities can help a community stay healthy. Some you can do alone, like home visits, talking to mothers about breastfeeding etc.

Others like Immunization campaign require involvement of whole community.

One of the most important community health activities is sharing health messages, with patients, their families, and other community members. Sharing health messages requires few resources. It is a health activity that you can do alone or with few other people. Sharing health messages involves two-way communication, Your goal is to have people understand the messages you share with them through Discussions, and other methods of communication like Demonstrations, Stories, Group Discussions, lectures or presentations, community meetings and by using Audio visual aids, school lesson plans. It is always good to follow up with a person or a group of people with whom you have shared health message. You can find out if they are practicing what they learned. If people see that you are concerned - visit them again, they see that the information you shared must be important.

Finally, one of the most effective ways of sharing health message is being an example in the community. People will more readily believe what you say, if you do what you tell them to do. They are then more likely to practice good health habits themselves.

School Health.

Health activities in the schools in the community not only improve the health of the children but also help to improve the health of the community as a whole. School health

activities can reach children at an age, when their health status and practices can be improved significantly; Children can also share what they learn in school with their families. You and the other members of the health team can take part in many activities in the school. Contact school teachers and administrators, find out what activities they are already carrying out. Encourage, what they are doing to promote good health. Explore new possibilities. Discuss your plans with them and work together to carry out these plans.

Possible School health activities include:

- Screening school aged children for common diseases, Poor nutrition status, vision and hearing problems.
- Training school teachers to care for common infections and injuries.
- Screening school workers for common health problems.
- Developing health records that you can use to follow a child's health status through out his school years.
- Showing teachers ways to include health education in the school curriculum.
- Training school workers to recognize common health problems.
- Making sure that school has a clean water supply and clean latrines, and students understand the importance of these and use them.
- Helping school workers organize the students to clean up the community.
- Showing students and teachers how to grow and care for a simple school garden.
- Promoting safety in sports, work and the home.
- Promoting good working relationships among teachers, Parents, Students and health workers.
- Involving students in community Health surveys.
- Providing ideas for educating school-aged children about.

- a. Good health habits.
- b. Nutrition.
- c. First Aid.
- d. Home and community sanitation.
- e. Dangers of tobacco and alcohol.
- f. Family life.
- g. Simple home remedies for common health problems.
- h. Food Protection and storage.
- i. Exercise.

Chapter Supervision and Administration.

1. What is Supervision?

A supervisor is responsible for seeing that other's work is done correctly. However, a supervisor does not do the work himself, instead, he works with and through other people to get the work done. Therefore a supervisor is always dependent on other people for his own success. A supervisor has subordinates for whom he is responsible. But he also has supervisors. Supervisors frequently find themselves caught between the conflicting expectations of their subordinates and their supervisors. The health workers expect their supervisors to be honest, fair, easy to talk to, supportive and technically qualified. However the supervisor's at ministry of Health will expect him to enforce ministry of health rules and regulations, to motivate health workers, and to understand and support the national primary Health care Program. So this supervisor must balance the expectations of health workers and of your superiors. This will cause some stress. If you can not tolerate a certain amount of stress, you will probably not enjoy being a supervisor.

2. Why Supervision is Important?

The effectiveness of workers largely depends on the supervision they receive. Quality of work is directly related to the quality of supervision. High quality supervision leads to high quality of work. The importance of supervision is that simple. Even well trained, highly motivated workers eventually become discouraged and ineffective, when supervision is lacking.

There is no simple formula for providing high quality supervision. Much depends on the work situation and the strengths and weaknesses of individual B.health workers. The type of supervision required will also be changed. For example a newly trained B.H.W will need a supervisor, who is in frequent contact and who will serve as model and problem solver. However as the BHW settles into his job, his supervisory needs will change. Contact with his supervisor may be less frequent. His supervisor improves the quality of his supervision by adopting his supervisory activities to changing situations and to the needs of BHWs. Quality of supervision also depends on the attitude of the supervisor, to words BHWs and other health workers.

3. What Skills do Supervisors need?

A supervisor needs three kinds of skills.

1. Technical Skills.
2. Interpersonal skills.
3. Conceptual Skills.

Technical Skills:

A supervisor must have technical skills to understand the jobs performed by the B.H.Ws It means being competent in the skills prescribed for the BHW. You must know that clinical, maternal and child Health, community health and management procedures BHW are following. You may have to learn some of these procedures yourself. For Example if you have never worked with community health workers, You should get that experience before trying to supervise a B.H.W who is training and supporting community Health workers.

Technical skills are the foundation of a supervisor's leadership. Knowing well the jobs performed by the B.H.Ws will give you self confidence and

earn you respect from the B.H.Ws you supervise. Supervisors are promoted to their positions because of their outstanding technical skills. But as supervisors, they immediately face problems, that have nothing or little to do with their technical skills. supervising a job is not like doing a job. A supervisor needs the cooperation and support of other people to get the job done. Where as before he simply did his job himself. Since a supervisor works through other people to get a job done, he needs other skills in addition to technical skills.

Interpersonal Skills:

A supervisor works through other people, So he needs skills that make it possible for him to get along well with people. He needs interpersonal skills. These skills are simply the way you talk and act, when you deal with people. You must get along with B.H.Ws and their teams, as well as ministry of Health officials at all levels. Interpersonal skills help you get along with both groups. for example:

Some interpersonal skills you will need are an ability to:

- Listen carefully.
- Establish support with people easily and quickly.
- Encourage and motivate workers.

Interpersonal skills require maturity, sensitivity, a genuine interest in people, and a desire to work to gather with them. To improve your interpersonal skills. Do the given exercises.

Conceptual skills:

In addition to above skills a supervisor needs conceptual skills. Conceptual skills involve ways of thinking, for Example, to analyze problems you should be able to make a mental picture of each possible solution and actually think it, before selecting one. A supervisor need conceptual skills to know what work should be done, Technical skills to know how the work should be done, and interpersonal skills to develop the support and cooperation required to get the work done.

4. Characteristics of an effective Supervisor:

Effective supervisor have different background, personalities and work habits, However supervisor who succeed generally have certain characteristics.

a. Desire to Succeed:

An effective supervisor does not wait for someone else to plan and organize his work. He plans and organizes it himself. The desire to work hard and to succeed becomes form within. A successful supervisor likes challenging work, he wants to succeed, he is willing to work hard. He also has the maturity and self confidence to ask for support and advice when he needs it.

b. Understanding of the job:

An effective supervisor is technically competent. He understands the job, he is supervising and how this job fits into the ovreall ctivities of the organization. For supervisors of B.H.Ws technical competence means, having a thorough knowledge of the clinical, maternal and child health, community health and management skills of B.H.W as well as the goals and objectives of the ministry of Health.

c. Fairness:

An effective supervisor invariably has a reputation for being fair. He does not play favorites. The key to his success is consistency. A good supervisor treats B.H.W fairly and consistently, when applying rules and regulations. He guards against identifying too closely with either the P.H.W or with his superiors. As a supervisor he fairly represent both the B.H.W and the superiors in their dealings.

d. Willingness to Supervise and, to take Responsibility:

An effective supervisor enjoys with people and organizing people to carry out a job. He enjoys supervising a job rather than doing the job himself. He enjoys having responsibility for getting a job done. When a job is done well, he shares the credit with the people working under his supervision, when mistakes occur, he is willing to take the blame.

5. Characteristics of an ineffective Supervisors.

They also have different backgrounds, personalities, and work habits. However supervisor who fail generally have certain characteristics.

a. Inability to get along with people:

An ineffective supervisor usually lacks good interpersonal skills. For this reason he has poor relations with B.H.Ws or with his superiors or with both.

b. Lack of desire to lead:

An ineffective supervisor usually has to be told, what to do. He afraid of responsibility, even when he is capable of doing a job. He is not consistent and dependable.

c. Failure to Understand policy:

An ineffective supervisor often identifies too closely with B.H.W and loses sight of the ministry Policy. This is a problem for supervisors who were once B.H.Ws themselves. They are quick to see the B.H.Ws point of view in any situation and to forget the policy.

d. Failure to work hard:

An ineffective supervisor usually is unwilling to spend the time and effort required to improve his work. He is often lazy.

e. Lock of Skill in Planning and Organizing work:

An ineffective supervisor is usually disorganized. He may work long hours, but accomplish very little.

6. Authoritarian and Participative Approaches to Supervision.

You are a participative supervisor or an Authoritarian supervisor. You may have an Authoritarian style, because you learned about supervision by watching other supervisors. Look at the two lists of attitudes about people below. Which attitude do you agree with most, the Authoritarian or participative?

Authoritarian	-	Participative
- People do not like to work	-	People are naturally active. They like to work, if they think the work is important.
- People work mostly for money.	-	People look for many things in work, a chance to learn new skills, to make money, to achieve personal goals, and to help others.
- People do their work, because they are afraid of losing their job.	-	People do their work, because they get satisfaction from doing a job well.
- Many adults remain child like they naturally depend on supervisors, the way a child depends on his father.	-	People want adult responsibility and a feeling of doing something important. They like to control their own work.
- People need direction, They do not want to think for themselves. They need detailed instructions on what to do and how to do it. They are not interested in the overall impact of their work.	-	People know what is needed and can direct their own work. They need advice and assistance, Plus feedback on how well they are doing. They want to know, how their work contributes to the improvement of health in the community.
- People need supervisors, Who will watch them closely, give them praise for good work, and punish them for poor work. moment.	-	People need to be respected by supervisors, most people are responsible workers and do not need to be watched every
- People think only about their own selfish interests	-	People think about community and ministry's interests, as well as their own interests.
- People do not like to change. They like to do the same work every day.	-	People get tired of the same work each day. they like new experiences. People want to learn new skills.
- People need to be pushed to do their work.	-	People work best, when they are encouraged and helped.,not pushed.

Your attitude will affect all your supervisory functions. Your attitude will determine whether you are authoritarian or participative leader.

7. Leadership Styles:

There is no single correct way to lead B.H.Ws each BHW and each health center situation is different. As A supervisor you must decide what leadership style should be used. You must know when to use an authoritarian approach and when to use a participative approach.

The Authoritarian Style of Leadership:

An authoritarian supervisor focuses only on the work to be done. He believes that he must make decisions alone. He must plan the work and watch his BHWS closely, while they are doing the work. he sets the objectives for the health workers. He supervises and pushes them to get the work done. The authoritarian supervisor believes should give orders and the health workers should obey them. He that his decisions are the best decisions.

He believes most people dislike work and will avoid it if possible. He believes that health workers want to be told what to do. He feels that he must plan the B.H.W's work in detail and tell them when to do it. He believes his own procedures and work methods are best and B.H.W should also use these methods. In many cases, The authoritarian supervisor is insecure, he tries to always be in firm control. Some authoritarian supervisors are effective, some are not. Here are examples of both an effective and an ineffective authoritarian supervisor.

Effective Authoritarian Supervisor:

Health workers know that the supervisor is committed to his work and works hard. Because of this the health workers cooperate with him.

He is effective because Health workers work. His weakness is that he does not know how to get the best out of his health workers. He does not use the interpersonal skills, That would motivate health workers to work hard and provide better health workers to work hard and provide better health services.

Ineffective Authoritarian Supervisor:

Health workers do not cooperate with the ineffective authoritarian supervisor. They feel the supervisor does not respect them. They feel they do not have an important role in planning and carrying out work at the health center. They do not take responsibility for work and they have little commitment to their work. The ineffective authoritarian supervisor does not listen to his health worker's opinion. This causes resentment. He ignores the resentment which grows and strains personal relations. He gets no cooperation, so little work is done.

The Participative style of Leadership:

The supervisor who uses the participative style of leadership wants health workers to participate in setting objectives for their work. He uses team decisions, team planning and team cooperation in getting work done. Consequently Health workers take responsibility for the work and are committed to it.

The participative supervisor trusts Health worker's abilities, he listens to their opinions and encourages them to contribute ideas about how to provide better health services. He always helps them to improve their skills. He gives them more responsibility as their skills improve. he spends much of his time with health workers. He works with

them to solve problems at a health center or in a community. An outsider especially who favors an authoritarian style to him the participative supervisor looks as he is not doing much work. He is always consulting with health workers and encouraging them in their work, but he does not do the work himself. He does not use firm control and authority to lead health workers. He wants health workers to speak up. He thinks

different opinion improve decisions. In most cases the participative supervisor has self confidence, that is why he is willing to share ideas and encourage involvement and participation by health workers. same participative supervisors are effective and some are not effective. Below is an example of both:

Effective Participative Supervisor:

This type of supervisor has the cooperation he needs to do his work. He is effective because health workers know, he respects them, and they in turn trust him. The supervisor and the health workers feel that they are members of a team, working together.

Ineffective Participative supervisor:

Supervisor thinks that participation means being nice to health workers or putting them to do, what they want. He frequently changes his mind to keep Health workers happy. He avoids arguments and never makes any firm decisions. He is not committed to getting the work done. He only wants to keep Health workers happy. Not much work is done.

Some times a supervisor must use an authoritarian style. For example emergency situations require immediate action. You will have no time to consult with anyone.

In most cases the health workers work best under a participative style of leadership. It has got three advantages.

- a. Health workers will tell, they belong to a team, they will work harder.
- b. Health workers will be more motivated. They will accept decisions and carry out work with more commitment and enthusiasm. They will have self confidence.
- c. The quality of decisions will be improved, because the ideas and experiences of several people will go into making them confident.

The participative style is more effective for supervising health workers in rural areas. With direct contact limited to once a month, the supervisor's goal is to develop independent, self reliant, and confident health workers, who can work without close supervision. In rural area the direct contact between Health workers and supervisor is not much, the authoritarian style is not possible. Supervisors tend to copy the leadership style of their superiors, often unconsciously when dealing with health workers in the field. Make a conscious effort to use a participative style, even if your own superiors may continue to use an authoritarian style with you.

8. How Leaders build teams:

A team leader is one who organizes and coordinates the work of a group of people who share a common goal. Your goal and the goal of health workers in your team is to promote better health in a District.

A group of people does not automatically cooperate and work towards a common goal, and can not function as a team. Someone must make the group into a team. Leaders are responsible for building teams. As a supervisor, one of your first activities will be to build a team with the health workers in your district. follow the guide lines, when building your team.

a. Participate:

Use a participative style of leadership. Listen to health workers, and show sympathy and understanding of their viewpoints. Involve health workers in discussions and decisions.

b. Know your workers:

Establish a friendly working relationship with each health worker. Introduce yourself. Describe your background and experience. Explain the team concept and your leadership style. Encourage the health workers to give feedback and become involved.

c. Use Meetings:

Bring all the health workers together to work as a group. Use these meetings to build your team and gain acceptance as the group's leader.

d. Set Goals:

Set goals with the team. An example of your team's goal might be to promote O.R.S in the district. Involve the team in defining goals. Make sure that all team members understand and agree with the goals, that are finally selected. Once goals are selected, encourage cooperation and team spirit in achieving them.

e. Organize the Team:

Organize the team to achieve the goals. Assign roles and responsibilities to team members. Make a firm commitment to assist health workers in carrying out their roles and responsibilities. Make sure that all team members understand each other's roles and responsibilities.

f. Explain the Rules:

Explain that the team is governed by ministry of health's rules and regulations. Involve the team in identifying rules they do not understand or do not agree with. Lead a discussion of these rules. Explain the rationale for these rules.

Team building is not something you do once or twice. To transform a group into a team, team building must be continued. Bring health workers together frequently, at regular monthly meetings, to work as a team. A supervisor who builds a good team is well on the way to being a successful supervisor.

9. What Makes a Decision?

Making decisions involves selecting one alternative over other, among competing alternatives. Supervisors make decisions every day. They are able to pass their decisions for many ordinary problems on ministry of health's policies and procedures. These types of decisions are relatively easy. But policies and procedures, no matter how complete, can never anticipate all types of problems. Therefore supervisors are always faced with problems, which require original decisions. In such situations a supervisor needs to follow a sound decision making process that maximizes his chances of making a good decision.

10. How You Make Decisions:

You make decisions every day. For example, every morning you decide what clothes you are going to wear. To make this decision, you consider the weather out side and the activities you have planned for the day. Selecting what clothes to wear is an easy decision. You have done it every morning for many years. The consequences of the decision are not great. This example illustrates two general principles of decision making.

- Decisions become easier with practice and experience.
- Decision become more difficult as the consequences of the decision increase.

In situations such as selecting clothes to wear, decisions become almost automatic and require very little conscious effort. Like wise an experienced supervisor makes routine decisions without consciously following a decision making process. But for more complex problems or problems with serious consequences, even an experienced supervisor will use a formol decision making process. Supervisors are in a position of responsibility. Their decision affect many people. Therefore they need to be systematic in the way they make decisions. they need to follow a formal decision making process.

11. Steps in Making decision:

Making decisions involves four steps:

- Identifying the Problem.
- Identifying the Possible Solutions.
- Selecting a Solution.
- Carrying out and following up the Decision.

These four steps, no matter how abbreviated, are followed in almost all decision making situations. The more complex the problem, the more time and effort you will need to spend on each step. Good decisions require judgment that comes only with experience. By following these steps you can begin now to make yourself a better decision.

Identify the Problem:

The first step in making a decision is to clearly identify the situation that is causing the problem. You will begin by gathering information. You should discuss the problem with those involved in it. Observe the problem or its consequences. Review any reports or records that relates to the problem. some problems that come to a supervisor for a decision are only symptoms of a larger, more fundamental problem. For example, a health worker requests to be transfered with the reason that the local commintiy is uncooperative, but the real cause may be his feeling of loneliness and isolation. He may want to be transfered to a health center near the district capital, where he will have more frequent contact with his supervisor or health workers. Unless the supervisor identifies the real reason for the transfer request, he may have to spend months trying to motivate the community, when he is going to give extra attention to H.W.

When identifying a problem, a supervisor must always look beyond symptoms and try to discover its underlying cause. When gathering information you should try to collect all the facts that relate to the problem. However a supervisor rarely has all the facts before he makes a decision. some facts may be unavoidable. You do not really need all the facts to make a decision. You need only the important facts, so that you feel reasonably

certain that you are making a good decision. Making decisions always involves some uncertainty. The general rule is to go on gathering information, until you feel comfortable, that you can make a good decision. You are capable of identifying problems and making good decisions, but you must be willing to accept a certain amount of risk. There is no certainty in making decisions.

In addition to facts, you should gather subjective information, like opinions. It is valuable and may help you in identifying the problem, but always give priority to facts. People enjoy giving their opinions. The supervisor should be careful not to get many opinions and few facts. One simple way to avoid this, is not to ask questions, (why) leads to opinions. You want to know the facts. Focus on the who, what, where, when and how in the end you may ask why.

Identify all Possible Solutions:

The second step in making decisions is to draw up a list of solutions to the problem. If you can not carry out a solution because of, lack of money, expertise, time etc eliminate it from your list. Always try to find out three to four good solutions to the problem. Many supervisors accept the first solution that comes to mind, or they favour one solution from the start and develop it more fully, so that it appears for better than the other alternative. Avoid both these mistakes.

Identify as many solutions as possible and develop each fully, before making any decisions. The review of all the gathered information may lead you to discover a solution. Be creative in thinking of possible solutions. As a supervisor learn to develop alternatives without help. Try to see new points of view. Use your imagination.

Select one Solution:

Once you have identified a problem and have listed the possible solutions you are ready to make your decision, you want to select the best possible solution, but even experienced supervisors often can not agree on which solution is best for example one supervisor may decide that the best solution is the one that uses the fewest resources. An other supervisor faced with the same problem may decide that the best solution is the one that uses more resources, but solves the problem in less time. The first supervisor wants to save the resources. The second supervisor wants to save the time. It means that the supervisor concerned determine his best solution.

Use your judgment to select a solution. Think about what would happen if you carried it out. Would it solve your problem? What resources would you need? Who would be affected? How? How much time and effort would you require? Knowledge and experience improves your judgment and decisions. With practice and experience you will improve your ability to select the best solutions to problems.

Not all problems have solutions. For example you may find the possible solutions are unacceptable. In such a case you may decide to do nothing. To do nothing is also an alternative, and you should consider its consequences. If doing nothing is the best alternative, then select it.

Carry out followup the decision:

The last step in making decisions. First announce your decision, and then make plans to carry it out. Assign responsibility and work out a timetable. Every one affected by the decision should be informed.

If the decision has the effect of establishing a policy, it should be written down and circulated. Be prepared to explain to B.H.W to community and others.

Following up your decisions is important for two reasons. First you want to know if the problem has been solved by the decision you made. Second you want feedback on how well your decision worked out. This feedback will help you to improve your decision making skills, and make you a better decision maker in the future.

Almost all decisions of any consequence will generate some resistance. Listen to suggestions from those affected by your decision. If the decision was wrong, do not be afraid to admit your mistake. Reverse the decision and try other alternative. As long as you feel that the decision was the best possible under the circumstances and that there is still no better alternative, stick with it.

Planning and Evaluation of Supervision:

Planning in deciding where you want to go and what you want to do. Evaluation in determining where you are, and what you are doing or ought to be doing planning in thinking before acting planning determines.

- What action is needed.
- Why need to be done.
- Who should do it.
 - Where it should be done.
 - How it should be done.
 - When it should be done.

Evaluation is judging how well a planning action was carried out planning and evaluation actually are two parts of the same process. They complement each other Evaluation is examining and analyzing how a plan is being carried-out you can not do one without doing the other.

planning and Evaluation are the foundations of effective Supervision you plan evaluate your work to make the most efficient use of your resources especially your own time. More importantly you plan and evaluate your work to make certain that you are meeting the needs of B.H.W and ministry of health.

Define Needs:

As a supervisor, your first task is to define the needs that you are expected to satisfy you must meet the needs of health workers include guidance regarding policies, plan technical advice and support, and continuing Education the needs of ministry of health include carrying out policies and plan and providing information feedback you think is to define the needs in both categories By defining need you will know, what is expected of you as a supervisor.

Set Work Objectives:

After you have defined and listed the needs of BHW and the ministry you are ready to set work objectives and short statements of what you must do to satisfy the need you have listed, your work objective should be in specific terms, the more exactly you can state your objectives, the easier it will be to work when an objective is vague, you are never sure if you have reached it or not, you set your own objectives but these objectives are determined by the need of Health workers and the ministry of Health. It's own objectives, the officials will describe their needs you and permit you to set objectives some times Health officials set objectives

for you this is true with the officials who has an authoritarian style. After you list all your work objectives, put them in some logical order. Review them with your supervisor you may have overlooked some important needs, or they may suggest other objectives for meeting the needs. After this you call a meeting of health workers to discuss your work objectives it ensure that you will be working towards meeting the needs of two groups you are expected to satisfy

Make Work Plans:

Now you are ready to make work plan. A work plan lists activities to intend to carry out to meet the objectives, you will make a separate work plan for each objectives or for each group of related objectives supervisors should not waste time in drawing up elaborate work plan. A work plan should be simple and straight forward. It should list the activities, the resources and a timetable. A work plan is an outline you need not describe in detail. By planning you avoid wasting time on activities that are not leading towards your objectives. Time is most valuable resource with supervisor, To make the best use of time supervisors organize their work plan into a single work schedule. Activities can be scheduled weekly, monthly or yearly basis. Arrange your activities in a systematic way. If enough time is not there for all activities, you have to set priorities and arrange them accordingly careful analysis followed by hard decision using your best judgment. You should not overload your schedule by crowding in too many activities. The low priority objectives may not be included in schedule. But perhaps you will get a chance to carry them out at later date. So keep them in your files.

Carrying out The Work:

Now you are ready to do your work. This is called implementation. By following work plans you hope to ensure that supervisory activities are carried out effectively and efficiently. Your work plans are only guide to action. They should not be rigid. You must follow your plan but at the same time remain flexible to adjust to changed conditions and to meet unusual and unexpected situations. An important part of carrying out your work will be regular visits to health workers maintain a profile of each health worker, this is a written record.

Evaluation :-

After you have carried out your plans you should evaluate how well you are meeting your objectives. Evaluation is measuring what you have done and, comparing it to what you had planned, and what you actually accomplished, you must explain why and then take action. You will be doing informal evaluation daily, as you carry out your work you will have a general idea of how the work is done. Your general idea is based on informal evaluation of your performance during the activities. Your feeling about how much a health worker has successfully used the skills which you gave him. In addition to informal evaluation you should make regular formal evaluation once every year. Formal evaluations are more thorough and systematic. Always record the results in writing. The purpose of a formal evaluation is:

- a. To make sure you are on track in meeting your work objectives.
- b. It allows you to keep a brief written record of progress.

Discuss your evaluation notes with your superiors. They will be pleased, that you are systematically evaluating your own work, and trying to improve your supervisory skills.

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Chapter V:

Management of Health Activities.

1. Data Collection:

Means to collect information in Numbers.

There are many ways to collect data. You can get this information by surveys or asking people (interviews) or through relevant Reports, Records. Whatever the method is used, the data should be collected on a form and then put it into a register.

Purpose:

The data is collected to get the information, and measure the changes in the health status over a period of time. To plan activities well in advance. To check the weaknesses of health facilities and improve them in time.

Data about the health of people can help you to decide what you must do. Collecting such data in the form of numbers helps you to see the problem clearly (objectively) and makes it easier to compare changes over time and among people or communities. Honest and accurate numbers can give a real picture of various needs. Dishonest or inaccurate numbers can confuse or mislead you into doing the wrong things for people. The following are numbers that can be used as indicators for Health status.

- Pulse rate
- Number of Diarrhoeal Episodes
- Blood Pressure.
- Number of (Disease Name T.b etc) in the village.
- Height.
- Weight.
- Temperature.
- Dates of visits or Numbers of visits.

In addition to collecting patient or community information in the form of numbers, The R.H.O will be expected to record data regularly in the register. Some times this data will need to be summarized.

In order to understand how data can be summarized and presented in different ways. Let us use the activity of measuring the height and weight of 20, Eight years-old boys. as an example and follow the procedure of the data.

Collection:

You have measured and recorded the height and the weight of 20 boys as shown below:

<u>Name</u>	<u>Weight in Pounds</u>	<u>Height in inches</u>
Rashid	51	48
Qamar	55	51
Asif	48	47
Zafar	51	55
Azhar	48	50
Tariq	46	50
Naseem	51	52
Younas	44	47
Waqar	44	46

Matloob	51	54
Babar	39	45
Abbas	62	58
Tippu	51	49
Hamid	42	44
Nazeer	48	45
Arshad	53	51
Majeed	57	52
Riaz	53	50
Umar	39	43
Zaheer	43	45

How do we make this data more useful? The first thing to do is give numbers to each boy and list his height and weight as shown.

<u>Child</u>	<u>Weight</u>	<u>Height</u>
1	51	48
2	55	51
3	48	47
4	51	55
5	48	50
6	46	50
7	51	52
8	44	47
9	44	46
10	51	54
11	39	45
12	62	58
13	51	49
14	42	44
15	48	45
16	53	51
17	57	52
18	53	50
19	39	43
20	43	45

This new list does not provide any more information than it did before. To know if making this list was a useful step, we must know what the purpose of the data is. Do we want to know something about each boy individually or everyone in general.

Let us say that information is needed on the lowest and the highest measurements in each category without regard to which child it is. We need to look only at the list of measurements. The spread between the low and high is called the range. The range in height of the twenty boys is from 43 inches to 58 inches and the range of weight is from 39 lbs to 62 lbs. This information can also be stated as the difference between the low and high values. Such as 15 inches for height and 23 pounds for weight. If we now want to see how the heights and weights are distributed among the 20 boys. It will be necessary to organize the data.

Organization:

The data is organized into a frequency table. Frequency means how often certain things occur. In this case how many of the boys have the same height or weight. Following table is the presentation of the data in same grouped or combined form for more specific purpose than just listing of the data.

<u>Weight in Pounds</u>	<u>Height in inches</u>
39	43
39	44
42	45
43	45
44	45
44	46
47	47
48	47
48	48
48	49
51	50
51	50
51	50
51	51
53	51
53	52
53	53
57	54
59	58

We can organize the data into a table, which helps to assess the frequency.

Frequency Distribution of Weights of 20 Boys.

Frequency Distribution of Heights of 20 Boys.

<u>Weights (in pounds)</u>	<u>No of Boys</u>
39.....	2
42.....	1
43.....	1
44.....	2
46.....	1
48.....	3
51.....	4
53.....	3
57.....	1
59.....	1
62.....	1
<hr/>	
	20
<hr/>	

<u>Heights (in inches)</u>	<u>No of Boys</u>
43.....	1
44.....	1
45.....	2
46.....	1
47.....	2
48.....	1
49.....	1
50.....	3
51.....	2
52.....	2
53.....	1
54.....	1
55.....	1
58.....	1
<hr/>	
	20
<hr/>	

Organizing the number in this form allows us to get more information from the data. From these two tables, the following statements can now be made concerning the weight and height of 20 children.

- The Highest weight is 62 Pounds.
- The lowest weight is 39 Pounds.
- The range of weights is from 39 to 62 Pounds or 23 Pounds.
- The Tallest boy is 58 Inches.
- The shortest boy is 43 Inches.
- The range of heights is from 43 to 58 Inches or 15 Inches.

If we want to organize the data even further, we can do it by putting the boys into groups of equal weight and height intervals. Each group must be equal in interval length and each boy put in only one group. In order to group these boys correctly, we must decide how many group we want, and

divide that into the interval. This will tell us the data interval per group. For example if we want to put the boys into 4 group. The data will be organized in the following way.

For Weight

- The total data interval is 24 Pounds.
- Dividing the total interval (24) by the number of groups (4) would give us an average interval (6) A table based on this information would look like this:

<u>Weight in Pounds</u>	<u>No of Boys</u>
39-to-44	6
45-to-50	4
51-to-56	7
57-to-62	3
<hr/>	<hr/>
39-to-62	20

For Height

- The total data interval is 16 Inches.
- Dividing the total interval (16) by the number of groups (4) would give us an average (4) and the table would look like this:

<u>Height in Inches</u>	<u>No of Boys</u>
43-to-46	6
47-to-50	7
51-to-54	6
55-to-58	1
<hr/>	<hr/>
43-to-58	20

We have further simplified our data with these steps and have grouped it in such a way that we can see trends that were not clear before. What trends can you see?

Summarization of Data:

Data can also be managed in an other way. It can be summarized through Math manipulation. Some examples of this are:

- An Average.
- A Ratio.
- A Preparation.
- A Percentage.
- A Rate.

Average:

An average is the most commonly used statistic for summarizing a list of numbers. It is obtained by adding all the numbers in a group and dividing by the total number in the group.

$$\text{Average} = \frac{\text{Sum of all the numbers in the group}}{\text{Total number in the group}}$$

$$\text{Average} = \frac{43+44+45+45+46+47+47+48+49+50+50+50+51+51+52+52+53+54+58}{20}$$

$$= \frac{980}{20} = 49 \text{ Inches.}$$

To express this result in words, we would say, that the average height of the 20 boys measured is 49 inches, means half of the boys are above 49 and half the boys are under 49 inches.

Ratio:

A ratio compares any two numbers. For example, the ratio is the number of eyes to head is 2 to 1 a ratio can be expressed in these ways.

$$2 \text{ to } 1 \text{ or } 2:1 \text{ or } 2/1$$

Proportion:

Using the above example, there are two eyes for one head, four eyes for two heads and six eyes for three heads to put it into number form, it would be like this:

$$2/1 = 4/2 = 6/3$$

Remember, that even though the numbers increase but the ratio remains the same i.e. 2:1

Such an equation showing two or more ratios, which are equal is called a proportion.

Percentage:

Percentage means a part of a hundredth. You can think of a percent as being a kind of ratio one that always has a denominator of 100. For example 5/100 is read as 5% (expressed as five percent.) for percentage symbol % is used. Percentage is used in making comparisons. If percentage is given, you can determine the number it represents.

Rate:

A rate is a ratio with a commonly agreed up on or specified denominator. A percentage is a rate other examples are:

- 1 The school vehicle travels at a rate of 40 km/per hour.
- 2 The school vehicle travels at a rate 20 km/per gallon.

Some commonly used rates in primary Health care:

$$\text{Birth Rate: } \frac{\text{Number live births reported during the year}}{\text{Mid year Population}} \times 1000$$

$$\text{Death Rate: } \frac{\text{Number of deaths Reported during the year.}}{\text{Mid Year Population}} \times 1000$$

$$\text{Population increase: } \frac{\text{Number of live births minus number of Deaths}}{\text{Mid Year Population}} \times 1000$$

Rate

Drugs are Expensive:

Wasting or misusing drugs may cause a shortage of supply, with the result that some patients can not be treated properly.

Purpose of Drug Management:

The purpose of management of drugs is to use drugs wisely and avoid wasting drugs, and therefore have enough for patients need. The drugs are wasted commonly by using too many drugs at one time on one patient, using expensive brands, using drugs without diagnosis, ordering more drugs than are needed, which expire on the shelf. Using a large dose than necessary exposing drugs to damp, heat or light.

Educating Staff in the use of Drugs:

Drugs are important, Powerful, and expensive. For these reasons, all health workers using drugs should be well informed about them and should develop a mature and responsible attitude towards their use. Educate the patients also, the health worker should explain very carefully to patients how to take their drugs.

Preparing a Standard drug list:

The standard list is usually prepared by the supervisor or a medical officer, and as far as possible should be selected from a list of essential drugs established at the national level. Health workers' knowledge are constantly changing and new drugs appear often. As a result the standard drug list may need change in it. To modify a standard drug list, go through the list of conditions treated during the last six months. Find out the condition for which no drug is available with you. Add that drug in the list, which is recommended for the condition. There should not be any duplications in the drug list. If there are many drugs, used for the same purpose e.g. Aspirin, Aspro, Disprin etc. Choose one drug of your choice or recommended by the supervisor.

Demand of drugs:

Estimate approximately how much drugs are needed, This may be done either on the basis of previous expenditure or by calculation. While demanding drugs always ask by non-brand drugs, mention the required quantity, with a cost estimate, and with in the budget allocated to you.

Stocking and Storing Drugs:

When you receive the drugs they have to be recorded in a stock register orderly. This is done in any kind of supply you receive. Most of the drugs must be kept dry, cool and away from the light, for this they must be stored in a cupboard. Put the drugs in an order. Keep dangerous drugs in a locked cupboard. Make the entries immediately after issuing the drugs etc.

Issuing and Controlling the Drugs:

Drugs are issued from the store by the person incharge, to the section using the drugs. Drugs are issued regularly and in known quantities. This is to permit monitoring and control of Drug usage. Monitoring drug issues enables the health worker to:

- When stock needs reordering.
- Check drug use against patient treatment.
- Check the expiry date of the drugs.

3. Maintain and Provide Reports/Weekly, Monthly and Annual.

Records are the information kept in the health unit on the work on the health conditions in the community. on individual patients as well as information of administrative matter. Staff, equipment, supplies and reports etc. Usually records are written information kept in notebooks or in folders, they may be kept on tapes or be computerized. Records are the administration memory. Records are an important tool in controlling and assessing work, they are kept to help the supervisor:

1. To know what is taking place.
2. To make effective decisions.
3. To assess progress towards goals.

Records should be accurate, accessible and useful. They must be true, available when needed. Before asking the health worker to make any record, the supervisor should be sure about:

- Will this information be used?
- What useful part will it play in decision making?
- Can this information be collected accurately?
- Will the information be accessible?
- Will it be available at the place and time, it is to be used?
- Can the records be stored at reasonable cost?
- Does the records have to be made only because it is part of Routine instructions?

Accurate records help supervisor to follow the activities of a program continuously according to need.

Special forms which may differ from country to country, are often prepared and adapted to local conditions. These forms will help the health staff to record the information requested, facilitates the standardization of the information collected and save time.

Reports are the information communicated to the other levels of the health services. They are also an important management tool to influence future actions. the reports can be in different ways. It can be oral, by telephone, radio in emergencies and written in normal circumstances. It contains statistical information, on births, Deaths, morbidity or comments on program developments etc.

It is often found convenient to have reporting forms printed and distributed in advance to the health units and to the health workers, to standardize information. the forms could be prepared for weekly, monthly and annually reporting system.

Develop the forms
for
weekly, monthly and annually reports.

4. Management of Patient Referral System:

When members of the health team, including health worker, refer an individual or a family to a person or place they must make sure that the referral is appropriate. What this means is that one has to be sure that the identified resource will meet some of the identified needs. In order to be sure of this, the needs and the resources should be quite specific.

It is not enough to match the need with the resource. The next step is to use the resource appropriately. To do this health worker should outline their activities as well as those of the individual or family going to the source of help. These activities are as under.

Health workers activities:

The health worker should go over the following points with the person or family being referred.

- Identify all needs.
- Identify the possible resources.
- Provide locating information and directions on how to get there.
- Provide information on who to see. Give the name and title of the person.
- Explain what to say and how to say it. e.g (I have been sent here by Mr. Ali for the purpose of Blood test and I have a letter with me.)
- Provide the letter or note. This is the referral form.
- Explain what to take, Such as money for transport, lodging, food and medicines.

- Explain the transportation. (The health unit should have the schedule of Buses, trains to major hospitals and health centers, which are frequently used for referrals.
- ask the person to repeat and explain the above points to make sure, he has understood every thing.

Individual or Family Activities.

The family or individual must be able to:

- Take directions from the health workers.
- Understand all instructions
- Take the required money reports, specimens and referral slip. (letter or note).
- Get to the place and seek out the appropriate person.
- Communicate relevant information to the person and hand over the report, referral slip etc.
- Cooperate with the person, helping him. Interact well by answering all questions to the best of his ability, consent to being examined and participate in the testing procedures.
- Ask any question if he wants to get clear picture.
- Understand the explanation of the problem or situation, what needs to be done and how, and when to do it.
- Thank the person, leave the center and return home.

Joint Activities:

The individual or family and the health worker need to meet to gather and go over the following points:

- Determine if your help is required, Provide it.
- Check and evaluate the progress of the agreed method and schedule.
- When existing needs or problems are met or solved satisfactorily. Tell the person to contact you if your services are required further.
- Use your findings for your future activities.

Referral Methods:

Most people are not able to transmit information properly. Therefore it is best if the person who makes the referral, communicates directly with the person who receives the referral. This can be done over the telephone, but in other cases a written note which conveys essential information may be necessary.

Four kinds of information are required on all referrals.

1. Who started or initiated the referral.
2. Who is to receive the referral.
3. Who is the person being referred.
4. The reason for the referral

If this information is organized in a formate it will look like this:

From: Name and title, _____
address _____

To: Name and title _____
address _____

Person being referred:
Reason for referral:

Name and age: _____

Chain of Referral:

The purpose of a referral system is to help people, get the needed care as close to home, and as soon as possible. Generally health worker is to refer all those cases, which he can not manage, to the medical officer to the nearest health facility. If by chance the medical officer is not there, he can refer the case direct to a big hospital if it is closer. The chain of the referral goes from the health worker (B.H.W) to health post, and from here upwards, follow the Health Pyramid.

5. Preparation of Monthly Schedule:

A schedule is required when a different activity or the same activity in a different place is spaced at intervals over time. e.g.

Home visits may be made daily or several times a week, but they may cover different villages. Similarly a supervisor may travel on the some day of week, but visits a different area.

To make a schedule, each different activity or each different place is listed and passed through the dates in turn. If the whole cycle is repeated, it is called weekly schedule and if it is spread through whole month and is repeated every month, then it is called monthly schedule. To do this a calendar is needed showing the dates of the chosen days in the following months.

Schedule for a supervisor needs a map showing routes, distances and travel time. The travel time depends upon the condition of the road, distance, terrain and the availability of the type of transport. Following the schedule for a supervisor.

MONTHLY SCHEDULE of DISTRICT-NO-10				
Dates	Sub. District-A	Sub. District-B	Sub. District-C	Sub. District-e
2nd to "	Supervision of	-	-	-
7th Nov "	C.H.Ws, Dais, CHV	-	-	-
10th to "	-	Supervision of	-	-
14th Nov "	-	C.H.Ws, Dais, CHVs	-	-
17th to "	-	-	Supervision of	-
21st Nov "	-	-	C.H.Ws, Dais, CHVs	-
24th to "	-	-	-	Supervision of
28th No "	-	-	-	C.H.Ws, Dais C.H.Vs RHO Mr. XYZ
The 6th day of every week is at head quarter for compilation of the reports.				

6. Establishing and Managing of a Health Post.

Managing the work at a health post involves three essential skills.

- Planning the work.
- Carrying out the work.
- Evaluating the work.

A health worker who is incharge of a health post must plan. One can not manage a health post well without planning its work carefully. Planning means, thinking before acting. Planning means deciding:

- What work needs to be done.
- Who should do the work.
- How the work should be done.
- When the work should be done.

Planning should be based on facts. However a lack of facts is no excuse for not planning. You must rely on your experience and judgement, when planning without facts. Your experience can be especially helpful in these situations. But remember good planning can never be based on guess work, wishful thinking or emotion. Base your plan on facts, Experience and good judgement. Planning involves four steps:

- Identify health needs.
- Identify health activities to meet the health needs.
- Select the best activities.
- Decide how to carry out the activities.

a. Identify Health needs:

The first step in planning is to identify the health needs in a community. As a trained health worker, you will see many health needs. But for you to see health needs is not enough. People in the community must also see their own health needs.

b. Identify Health Activities to meet Health needs:

This is the second step in planning. Consider all possible activities, list the resources, required for each activity. Resources are people and materials available to do a task.

Your time, Knowledge and skills are your most important resources. The other resources are, health center team, the health center, equipment, supplies community volunteers etc.

c. Select the best Activities:

This is the third step in planning. The best activities are those, that use the fewest resources to meet the community's health needs. Consider all the possible health activities before you decide, which one are the best, for a community. The health needs and the resources in each community are different. Therefore health activity in each community will be different. Resources are limited and health needs are always great. Never waste resources. select the health activity that use the least amount of resources, but still meet the community's health needs.

d. Decide how to Carry out the Activities:

The fourth step in planning is deciding how, where, and when the health activities are going to be carried out and who is going to do them, work

with your team and people in the community. You are responsible for making sure that every one follows the work plan and the work schedule.

Carrying out the Work:

Patients, community members and your health team will judge you on how well you carry out your work. They will see only the result of your work. You manage both human resources and materials, whenever you work. When you manage an activity remember:

- Assemble your resources.
- Protect and conserve your resources.
- Use your resources.

Evaluating the Work:

You must continually assess what you and your health team are doing and how well you are doing. This helps you if you are making progress. It will identify your mistakes. This should be a positive and helpful activity. By this way you improve the team work. There are four steps for evaluation.

- a. Gather information.
- b. Analyze information.
- c. Identify needed improvements.
- d. Take corrective action.

Positive Attitude in Managing Health Post:

A positive attitude is an essential part of managing a health post. Positive thought and positive action are essential for your success. You must maintain a positive attitude, because this influences the attitude of your patients and health workers. This is a managing skill.

Managing the Work of Health Post:

The health worker manages the work place to provide the best possible services to the community. To do this a health worker:

- Organizes the staff, facilities, and the equipment.
- Organizes and maintains the records of health post.
- Arranges protection for the health post.

Organizing the Staff, Facilities and Equipment:

Staff location and Patients flow:

Set up work stations in the health post, so you have a smooth and even flow of patients, with no long waiting lines. In addition to these patients, you may have patients group for health education or some patients on bed for observation if necessary. To reduce waiting time, provide several services at one station. Prepackage drugs which you dispense frequently.

Hours of Operation and clinic Schedule:

Keep the health post open to the public for patients care from and to the times given by the Government. Normally it is from 8:00 AM to 3:00 PM use the time after 3:00 PM to complete the records. Organize the supplies and clean the center. To be on call twenty four hours a day, distribute the days of the week among whole staff of the post. If a health worker lives away from the post and village, arrange for to notify the health worker in case of emergencies. Schedule clinics and special programs like health

education, demonstration and visits to the community so that the work of health post does not suffer or the community activities are also not neglected.

Organizing and Maintaining Health post Record:

Keep the health post record current. Keep the record where they are used. Keep the patient register on the table, where patients are registered. Keep all the record under lock and key. Place loose records in file folders at the end of every day, So that they can be found, when needed. Clear table file folders always keep different types of forms with you in the health post like. Order forms, weekly, monthly and annual report forms. Make a master list of all records and files. Which will make easy your job, when you want to find the relevant record or file. clean out health center files regularly and periodically to avoid cluttering them with useless and out dated material. Mark all incoming correspondence and reports with the date when they are received and reply to all requests and inquiries, as early as possible.

Protecting the Health Post:

You have full and final responsibility for the protection of the health post, and all the equipment, supplies and record. You can delegate this responsibility to any member of the health team, when you are on leave or on tour to some other place. Keep the health post locked during non-duty hours. Give the key to the person who is on call for emergency duty. Make sure the health post is cleaned, supplies and records put away, equipment cleaned and put in it's proper place before the health post is closed.

7. Reporting of Reportable Diseases:

A health worker is bound to report to his supervisor, immediately about the Disease spreading in community. The spreading of disease is of two types.

- a. Endemic which is locally spread among a group of people in a limited area like a community or village.
- b. Epidemic a disease is spread all over the area, it may involve several villages or whole province, even whole country can be involved in the same disease. Notification to higher authorities becomes very much necessary in such cases. This type of reporting is done by telephone, telegrams, or by wireless message.

Such condition can occur due to many communicable diseases, and preventable diseases. The common disease which break out in these two shapes are:

- | | | |
|----------------|-------------------|---------------------|
| - Cholera. | - Gastroenteitis. | - Amoebio Dysentery |
| - Typhoid. | - Hepatitis. | |
| - Measles. | - Malaria. | |
| - Chicken Pox. | - Influenza. | |

The spread of these disease is mostly through water, food, poor sanitation, unhygienic conditions and air. When these diseases spread a number of deaths occur it is therefore very important to report for these diseases immediately as soon as you come to know.

It is the duty of a health worker to start with protective measure, mean while you should ask for external help from the higher authorities for the

control of the situation. Before the aid reaches you should call a meeting of the community and advice them to drink water after boiling. Wash the eatables better boil every thing used for cooking.

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ENVIRONMENTAL HEALTH:

Environment is a word used to describe all living and non living things and conditions in and around a person, which influence on the well-being of health of a person. Our surroundings can effect our well-being in either a negative or positive way. Experience with various environmental factors and scientific advancements leads us to believe that we can alter some of these factors to improve our health status. Environmental health deals with these factors in the environment and how they effect our health.

As a health worker you should be familiar with those environmental factors with in and around us, which cause disease and ways to prevent those diseases.

1. Organisms That Cause disease:

The human body harbors many living organisms, Such as bacteria, viruses, Parasites and fungus. Some parasites are large enough to be seen by the eye. However other Parasites as well as bacteria, viruses and fungus can only be seen though a microscope, and so are called micro-organisms.

Although many organisms are capable of producing disease, As the harmful or diseases causing organism are called pathogenic but those who do not harmful called non pathogenic organism .There are four types of organism such as Bacteria, Fungus, Parasites, Virus that can cause disease. Micro-organisms, whether they are non-pathogenic or pathogenic, are present everywhere in our environment. They are present in our body. In the air, in refuse, in water and in some foods.

If food and water become contaminated by pathogenic micro-organisms, they become sources of infections. When a person eats or drinks contaminated food or water, he ingests organisms, which develop and multiply and cause disease. The most common diseases caused by micro-organisms and parasites are described below. Viral and fungal diseases are discussed in common diseases chapter.

Diseases Caused By Bacteria:

Typhoid Fever:

This systemic disease is caused by the typhoid bacillus. which is ingested via water or food, often contaminated by flies. The symptoms include fever, loss of appetite, a general feeling of tiredness, a slow pulse, rose spots on the trunk and constipation rather than diarrhoea. The diagnosis of typhoid fever is made by a blood, faeces or urine test. Typhoid bacilli are found in the blood early in the disease, and in the faeces and urine after the first week of infection.

Cholera:

This is a serious acute intestinal disease characterized by the sudden onset of vomiting, profuse watery stool, rapid dehydration and collapse. The disease can become very serious and may even result in death within a short period. The source of infection is water or food, that is contaminated, often via flies. The diagnosis is made by the identification of cholera vibrios bacteria in a stool examination.

Diseases Caused By Parasites:

Amoebic Dysentery:

This parasitic infection may take many form. There may be no symptoms, mild abdominal discomfort and diarrhoea alternating with constipation. chronic diarrhoea with mucous and some blood or acute dysentery with blood, mucous and pus in the faeces. The diagnosis is made by identifying the organism or cysts in the stool.

Guinea Worm:

Disease is caused by a worm, which may be as long as one meter, and very thin. This worm usually migrates from the stomach or intestines to the subcutaneous tissue, usually of the leg. The source of infection is contaminated water. Young larva of the guinea worm are discharged into water from skin lesions, usually of the leg or foot of an infected person. In the water these larva are not visible to the eye. They are swallowed by tiny gray fish known as eye lops. Larva are liberated in the stomach or intestine. where they mature into an adult stage and reach the subcutaneous tissue to release the eggs. the diagnosis is made by identifying larva under the microscope or by identification of the worm it self.

Pin Worms:

Pin worms are very small, thin, round worms, that enter the intestine and cause mild symptoms. they usually affect children of three years of age and older. The main symptom of this disease is itching around the anus at night. the eggs of the pin worm usually enter a persons body by mouth via contaminated food or hands and leave the body via the anus. Pregnant female worms migrate down to the anus during the night to release eggs. This is what causes itching during sleeping hours.

Round Worms:

(Ascariasis) These are large round worms about 8 to 12 inches long, when these worms are present in the body, a person usually has vague symptoms of abdominal pain, vomiting, restlessness, disturbed digestion and sleep. The first definite sign of this disease is the presence of worms in the stool, or vomitus.

Hookworm:

A person suffering from hookworm is chronically ill with a variety of vague symptoms. Hookworm attach themselves to the intestinal walls and suck the blood, causing anaemia. Hookworm eggs usually enter the body through the skin of the foot via contaminated soil and are excreted in the faeces.

Tapeworms:

They are long flat worms that attach to the intestine. Segments of the worm are passed in the stool. If the head is passed, this assures the elimination of the rest of the worm. Tape worms are very difficult to treat. the source of infection is usually soil, contaminated with eggs. The eggs are ingested and the tape worm matures in the body.

Malaria:

This is also caused by a parasite. Malaria is a very common infectious disease, transmitted by mosquitoes. There are different kinds of

mosquitoes, but not all of them transmit malaria. Only the female Anopheles mosquito can transmit malaria, and this mosquito breeds in collections of clear water. Anopheles mosquitoes transmit the malaria parasite from an infected person to a non-infected person. There are two stages of parasitic development. The first stage occurs in the mosquito and second stage in a human being. The details are discussed in the chapter communicable Diseases.

How to Get Rid of These Organisms:

Certain steps can be taken to inhibit or destroy these disease causing micro-organisms, which contaminate food and water. Bacteria are destroyed by high temperature, therefore boiling for 10 minutes will kill most of these heat sensitive organisms. Cold will slow down their growth. So food should be stored in a cold area. Most organisms grow best in a neutral or slightly alkaline medium, an acid medium will prevent their growth. Bacteria also like darkness and most are destroyed by sunlight.

2. Water:

A necessary element of life as well as source of infection. Water is basic to life no one can live without it. More than half of our body weight consists of water. A village or community can not survive without a water supply.

Water is needed for:

- Drinking and cooking
- Washing and cleaning.
- Growing food.
- Fire-fighting. Industrial use and for generating Electricity.

Sources of Water:

From where do we get our water. There are three main sources of water.

1. Rain water:- In the form of rains and snow.
2. Surface water:- Any water on the surface of the ground, Such as streams, rivers, canals, Ponds or lakes.
3. Ground water:- Water that comes from beneath the ground such as under ground springs and wells, tube-wells and in certain part of Afghanistan, there are artisan or karaz (following under ground streams, tapped by a dug well).

These three sources of water are part of water cycle, a continuous circle of water from the sky to the surface to the ground. As rain falls from the clouds, part of the water remains on the surface of the ground and part becomes ground water. Eventually the ground water reaches the earth's surface again. Heat from the Sun causes this water to evaporate and again forms clouds. In this way the water continues its cycle. This cycle determines the quality and quantity of water available for our use. During this cycle, water can become contaminated. Rain water is of high purity. However, as it falls down it picks up some dust in the air. The contamination of water by dust is still minimal, when water comes into contact with the surface of the ground, it can become very contaminated, especially in highly populated areas, where excreta is disposed of in the streets or fields.

People take their drinking water from moving surface water (streams, rivers, canals), However the best water system is piped water going directly from ground water into or near to the home.

The quantity of fresh water, the quality of fresh water determines it's availability for personal and food hygiene purposes. the definition of water for personal and food hygiene purposes is that water, which a person uses in washing himself and his clothes, in flushing a water sealed privy, in washing food, cooking utensils, and carry enough drinking and cooking water to meet the needs of the family.

No matter how long it takes, or how difficult the journey to and from the water source, but this is not necessarily so when it comes to drawing water for personal hygiene purposes. When there is a decrease in the quantity of water available or if it is too difficult to obtain, there is an ecrease in disease rate, Since less water is used for hygiene purposes.

Safe Water:

The quality of fresh water supply, when we think of water quality, we are primarily concerned with the quality of drinking water, which directly affects our health. In reviewing the cycle of water, rain water is initially of high quality. But it gets contaminated on the surface. The taste, appearance and smell of water are factors we all use to determine, whether or not to use a water source. Some minerals in water can cause an unpleasant taste or appearance and people will not like using this water for drinking. Similarly certain types of salts render water unfit for washing clothes and for cooking purposes. This is called hard water.

Piped water is the best type of water to use for drinking cooking and other uses. This is because the water in a pipe does not come into contact with the surface of the ground and therefore does not become contaminated. If the pipe water is unavailable families need to be instructed to boil drinking water for 10 minutes to destroy disease causing organisms.

It is clear that there must be a sufficient quantity of fresh water of good quality (uncontaminated) if the health status of a community is to be improved. Therefore the community should be educated about this and encouraged to get a piped water supply, or a well fitted hand pump in or near the house.

Protection of Water:

There are two main problems which you may confront with wells/ Pumps in the community. The well may be too close to or downhill from a privy, animal excreta pit or refuse pit, or the water may not be chlorinated. The following table describes the problems and activities of health worker.

	<u>Problems</u>		<u>Health Workers Activities</u>
	<u>Hand Pump/Drilled Well.</u>		
1.	The Distance from the privy, animal excreta pit, or refuse pit is less than 35 feet on flat ground or less than 25 feet downhill. (Bacteria in the excreta travel through the soil to the ground water and contaminate it).	-	Advise closure of well and tell community to get water from a safe source, until a new well is constructed.
		-	chlorinate all sources of drinking water .
		-	Advise sealing of privy.

- | | | | |
|----|---|---|--|
| 2. | Water from the well has not been chlorinated after it's construction. | - | chlorinate the well according to the procedure. |
| 3. | Platform is not constructed with a slope to wards a drain. | - | Advise construction of a Platform with a water tight material like cement concrete, which slopas to wards a drain. |
| 4. | Final disposal of waste water from the platform is nonexisting. | - | Advise the construction of a drain running 100 feet from to connect with a street drain |
| 5. | Pump fittings on the elevated Platform are not adequate and contaminated water enters the well. | - | advise replacement with proper pump fitting so that leaks or holes are not present. |

Dug Well

Problems 1 and 2 of hand pump /drilled wells are applicable for dug wells.

- | | | | |
|----|--|---|---|
| 1. | Accessible to animals, Presance of floating material on water. | - | Advise cleaning of well and Provision of parapet wall. |
| 2. | Water-tight lining of the well is inadequate. | - | Advise provision of an adequate water-tight lining. |
| 3. | Improper sloping of platform and no parapet wall. | - | advise sloping the platform for drainage and building a parapet wall 3 feet above the ground level. |
| 4. | No drainage ditch for final disposal. | - | Advise the construction of 100 feet drain for final disposal. |
| 5. | In adequate water-tight cover. Handpump or generator not present. | - | Providewater-tight cover with provision for chlorination. |
| 6. | Improperly fitted cover with leaks and holes, allowing contaminated water to enter the well. | - | Advise replacement of proper fitting. so that leaks and holes are not present. |

Rivers, Streams and Canals:

- | | | | |
|----|---|---|---|
| 1. | Water is not clear, transparent and odour less. | - | Clear water does not necessarily mean safe water. It may be contaminated due to washing and bathing, animal excrement or use of insecticides upstream. Therefore advise boiling of all water. |
|----|---|---|---|

- | | | | |
|----|--|---|--|
| 2. | contamination upstream or near the point of drawing water. | - | Health education by Health worker should focus on relocating the point of drawing water. |
| | | - | Advise removal of contamination. |
| 3. | Absence of filtration system. | - | Begin a health education campaign for the provision of filtration system. |
| 4. | No chlorination or boiling of water. | - | Advise about the need for chlorination and boiling. |

Springs:

- | | | | |
|----|---|---|--|
| 1. | Absence of chlorination and boiling. | - | Educate on the need of chlorination and boiling. |
| 2. | Absence of trench around spring. | - | Advise the building of a trench 45 feet uphill and around the spring to divert water. |
| | | - | Ensure commitment by the community. |
| | | - | Supervise maintenance. |
| 5. | Absence of collection structure (reservoir) with overflow pipe. | - | Health education about the need for the construction of collection structure. |
| | | - | Motivate Community to provide funds for construction. |
| | | - | Seek technical assistance from Public health engineer. |
| | | - | Monitor Construction. |
| | | - | Advise Community to protect water Source from rodents and animals by the use of a fence. |

Chlorination of Water:

Chlorine is a chemical that kills bacteria and the eggs of parasites and thereby makes water safe for drinking. A common source of chlorine is Bleaching Powder, when added in small amounts to drinking water, it will kill bacteria and parasite eggs without being harmful to man. Chlorination with bleaching Powder is a cheap and reasonable temporary step for making dug-well water safe for drinking purposes.

Bleaching powder is an unstable compound of chlorine gas passed through lime. It contains 25% to 35% of free chlorine. The percentage of chlorine will decrease if the bleaching powder is exposed to air, therefore the container of powder must be kept tight, when not in use.

Chlorination of a Dug Well:

As the common source of drinking water in most villages is a dug-well, Health water should be familiar with the procedure for its chlorination and teach the community to practice the same. Before chlorination you must

determine the amount of water in the well to know how much bleaching powder is needed for it.

To Calculate The Amount of Water:

Tie the well rope to a bucket and lower the bucket until it touches the bottom of the well. Mark the rope at edge of the well parapet wall, This is point 'A'. Fill up the bucket, so it breaks the surface of the water, stop here and mark the rope again at the same level. This is point 'B'. Now pull the rope and measure the distance between 'A' and 'B'. This is the depth of the well water for example it is ten feet deep. Now measure the diameter of the well, for example this is five feet.

Formula: Diameter x Diameter x Depth x 5 = amount of water.
5 x 5 x 10 x 5 = 1,250 gallons,

To maintain the amount of chlorine in the well at a minimum of One/PPM (1 part chlorine per 1 million parts of water)
Three PPM (2 oz of 25% chlorine Bleaching powder) is added to the well for every 1000 gallons of water.

Example:
2 oz x 1250/1000 gallons = 2.50 oz.

The well containing 1218 gallons of water will require 2.50 oz of bleaching Powder. Index the bleaching Powder with some water in a bucket, lower the bucket into the well and shake the rope to empty the contents. always chlorinate the well in the evening after the community have drawn their water for the day. This should be done periodically

3. Refuse and Excreta:

Water and soil become contaminated with disease-causing organisms, if there is no proper system for the disposal or treatment of refuse and excreta. Refuse means any kind of waste material, wet or dry. Excreta means urine and faeces. Some Examples are given below.

Dry and Solid Refuse:

1. Garbage:- Kitchen waste, Left-over food.
2. Rubbish:- Plastic and rags, broken glasses, bottles and tins, waste papers.
3. Animal Dung.
4. Weeds:- Grass and Leaves.
5. Ashes from burning of wood, cow dung and charcoal.
6. Dirt from Sweeping.
7. Dead animals.

Wet or Liquid Refuse:

1. Waste water from the house from bathing and washing clothes, foods and other things.
2. Waste from Public wells or washing places.
3. Waste from eattle sheds and market places.
4. Waste from small industries.

If not disposed of or managed properly, refuse becomes a nuisance and results in:

- A breeding place for insects and rates.
- The growth of disease-causing organisms. (contamination).

- Unpleasant sights and smells.
- Falls and other accidents, due to wet things like fruit skins on the path e.g. (Banana Skin)

Excreta:

In developing countries, excreta is not disposed of or treated properly. Excreta is usually disposed of in two ways:

1. People defecate on the ground and leave it uncovered.
2. People defecate in one place and the faeces is then carried elsewhere and used as fertilizer. This is called the carriage system.

Urban areas use a water carrying system. Excreta and wet refuse are collected in large sewer pipes and transported to a central location as untreated sewage.

People need to be shown how to properly treat or dispose of excreta and refuse. If excreta is not treated or disposed of properly, it will contribute to the following conditions:

- Diarrhoea.
- Typhoid.
- Cholera.
- Dysentery.
- Pinworm, Roundworms, hook worms, and tape worms.

4. Vectors of Diseases:

Vector is an animal that passes a disease from one animal or person to another animal or person. Many serious illness are passed on to humans by victors such as:

- Insect (e .g mosquitoes, flies.)
- Animals that live in water (e.g. snails)
- Land Animals (e.g. rates and dogs)

You should learn which vectors are common in your area A health worker should collect information on disease spread by vectors and pass it on to community leaders. So that they can decide what to do to prevent as many of these diseases as possible .

In many parts of the world, many insects and animals e . g mosquitoes flies, snails, rats and dogs can carry diseases, which they may pass on to people.

Insects:

Mosquitoes can carry malaria. House-flies can carry the germ of diarrhoea.

Water Animal:

Snails that live in water can carry small worms(Blood flukes). These worms cause Blood in the urine (schistosomiasis).

Land Animal:

Rats carry diseases. They may bite humans and other animals, and contaminate food. In this way they pass on fevers and other severe diseases. Bites of sick dogs can be very dangerous, As they may pass on rabies.

Fighting against vectors:

Destroying or limiting the breeding places of vectors. Mosquitoes breed and multiply in standing water. They can breed even in small holes in the ground, or trees ect.

Always remember that , where there are mosquitoes, any water collected is a danger to health. Flies breed on all kinds of waste and rubbish and in animal and human excreta. Black flies breed in running water .

If you know where vectors breed, You can destroy their breeding places, and there by destroy the vectors. You should work together with the people and continuously the breeding -Places of the vectors in your community and prevent new ones from being made. Give the people the following advice .

- Remind every body in the community including children and old people that mosquitoes breed in rain water that collects in things such as old cans, jars, jars, broken bottles, old tyres and holes in the ground, ponds, open wells and swamps. Ask the people to look for such places and get rid of them. For example they can burn things, in which water can collect. If there are many old cans and bottles in the rubbish, ask the people to bury such rubbish.
- People should make sure that their latrines are kept clean and the pits are kept covered then not in use.
- wells and springs should be kept covered.
- Advice the people to fill in or treat ponds, pools or ditches where mosquitoes and snails can breed.

Keeping Vectors Away From People .

- People should kill mosquitoes and flies in every possible way, including by the use of insecticides.
- People should protect themselves against insect bites by putting nets or screens on windows and doors and by sleeping under mosquito nets.

Treating the people who have the disease

Disease carried by vectors can also be controlled by treating sick people quickly. e.g. If a person has malaria he should be treated as soon as possible, so that he does not pass on the disease to any mosquitoes that bite him.

Schistosomiasis(Blood In Urine).

Snails are the vectors of this disease. People get this disease when they wash or swim in water that has snails. Little worms come out of the snails and enter the body through the skin. Inside the body they breed and produce schistosomiasis, in which there is blood in the urine. A person who has this disease has eggs of the worms in his urine and feces. when such a person urinates or defecates in a pond or lake, where these worms can then cause the disease in other people, who wash or swim in that water. You should ask people not to urinate or defecate in ponds and lakes.

Other vectors living in the water may carry guinea-worm. In countries where guinea-worms are common, the people should drink water only from the safe source, where there are no vectors. If the water is not safe, they should always filter it through cloth or through a filter of fine sand to remove the larvae of guinea-worms.

5. Personal and family Hygiene, Community Education, Protection and handling of Food:

An R.H.O or B.H.W can effect and improve environmental health at three different levels. The individual family and community level. Improving the environmental health status of an individual and family will contribute to the improvement of the environmental health of the community. In working with individual, and families you need to emphasize some or all the following points according to whether they are relevant and appropriate to the situation.

- Washing hands with soap and water after rising in the morning, after defecating and before handling or eating food.
- Bathing at least once a day in hot climates or after working hard. This will prevent from skin infections.
- Brushing or Miswak the teeth every day.
- Wearing shoes, protects from hookworm.
- Not allowing chickens, ducks and other animals into the house.
- Cleaning up atance if children or animals defecate near the house. Teach children to use latrine or to go further from the house.
- Hanging of blankets, sheets and clothes often in the sun, will help to control bed bugs. Pour bailing water on the cot and wash clothes on the some day.
- Delousing of the whole family if one member has lice.
- Covering the mouth when coughing or sneezing and not spitting.
- Cleaning, Sweeping and washing the house often. Filling in the holes and cracks in the floor or walls, will keep cockroaches, bed bugs and scorpions out.
- Boiling of all drinking water will kill most of the organisms.
- Protecting food by keeping it in cabinets with wire screens or covering it to prevent flies and other insects form contaminating it.
- Washing fruits before eating.
- Eating only well cooked meat.
- Not eating food that loods or smells bad.
- Keeping separate dishes for those who are sick.
- Having sick people sleep apart from other family members.
- Vaccinating all children for the six preventable diseases.
- Cutting the fingernails frequently.
- Treating persons with communicable diseases as soon as possible.
- Keeping wells and public water places clean.
- Not letting animals go near water that people use for drinking.
- Not defecating, washing clothes, or throwing garbage into the drinking water source.
- Burning all garbage that can be burned.
- Using latrines for defecation.

The community should be Educated and motivated to:

- Assess their environmental health needs.
- Identify resources to meet these needs.
- Implement an agreed-upon plan.
- continue the newly initiated activities.
- Evaluate existing environmental health activities.

You are a link between the community and health care delivery services. Facilitate their working together to improve the overall condition of environmental health. Your biggest contribution is in working with individuals and families in making available water safe to drink, teaching the proper disposal method for excreta and in the control of insects. Improving the environmental health behavior of the individual and family will lead to a healthier community.

In developing the environment one should observe and take measures like:

- Dumps of refuse, people do not dispose the refuse in a proper way but throw in the streets or around the village. This can be disposed off by involving the community through health education and burning the refuse after collecting this at one place.
- The waste water, which flows in the streets and collected in the ditches, and provides breeding place for the insects. The drains should be directed to wards slope and ditches should be filled up with earth.
- Wells for drinking purposes should be protected, by covering them and making platform around the well, raising it from one to two feet from the ground level. This will prevent the rain water and over flow from the utensils, while filling them to go inside the well.
- The latrines should not be constructed near the wells, there should be 25 - 30 feet distance between latrine and well.
- Encourage the construction of latrines for the proper disposal of excreta. And should be constructed down stream of the well.

6. Housing:

The first step in this approach is to gather information, on possible needs and resources and then evaluate environment in and around the home, for safety and cleanliness. You need to make certain observations to assess the needs.

For simplicity, areas to be assessed and suggested activities are listed in the table below

Observation Area	Suggested Activities
General appearance of cleanliness and order.	<ul style="list-style-type: none">- Observe outside and inside the house to see if things commonly used are orderly or haphazardly placed.- Look for signs of routine care of the courtyard and rooms. e.g. Plastering of cracked walls and floors.- Look for presence or absence of stains and stickiness on floor, walls and furniture surface.- Observe for where and how dishes are washed and stored.- Look for flies and other insects in excess.
Light and Ventilation. adequate light, natural or artificial.	<ul style="list-style-type: none">- Observe the working and living area for- Note the number of doors and windows, and whether. They are open or shut.
Cooking Area.	<ul style="list-style-type: none">- Note the kind of fuel used. Identify the location or the stove in relation to the entrance.- Observe for adequate ventilation.- Note if children are allowed in the cooking area.

- Observe if utensils are protected from flies and pests.
- Food Preparation:
 - Determine if Fruits and vegetables are washed adequately.
 - Determine if the hands of food handler are washed before the preparation and the serving of food.
 - Determine if foods, especially meats are well cooked.
- Food Storage.
 - Determine if foods are stored in Pest-Proof containers.
 - Determine if foods are covered to protect from flies.
 - Determine if milk and other food that can spall are stored in cool places or placed in water.
- Drinking Water.
 - Determine from where the drinking water is obtained, river or well.
- Refuse Deposal.
 - Determine what happens to water used for washing and cleaning. Is there an open drain or a pool of stagnant dirty water.
- Poultry and Animal
 - Determine the condition of the shed.
 - Determine if it is cleaned regularly.
 - Determine the distance from residential area.
- Safety Hazards.
 - Identify safety hazards areas such as an open well, a broken or unstable stairway, children playing near the stove.

Once you have gathered information on the family environment and resources, identify positive and negative factors. Compliment the family on the positive ones and encourage them to maintain them. Provide assistance in correcting the negative factors by:

1. Providing information on ways to change the negative ones.
2. Demonstrate the preparation and storage of food and water.

SOCIOLOGY OF LATRINE

Pan Performance:

Some of the sociological aspects of latrine use and behavior have been referred to in the earlier paper on the VIP Latrine. This section deals with aspects either peculiar to the pour-flush latrine, or which were omitted earlier. It was noted that a pan, per se, is probably necessary if children are not to feel threatened by a dark hole through which they may fall. Sociological research 1/ in Bangladesh confirmed this. For the pour-flush latrine where a pan is obligatory, it has been noted that the present design requires less water to flush satisfactorily than other

somewhat similar pans. This is an important factor related to behavior patterns in Baluchistan and elsewhere. Where water is not easy to secure or inaccessible in large quantities, if a pan is introduced which requires more water than can be comfortably arranged, the likelihood of obtaining a clean latrine is slight. As the objective of the use of the latrine is improved cleanliness and hygiene, a dirty latrine is a waste of everyone's time and money. Thus, on introduction of a pour-flush latrine, the intended recipients must have it made abundantly clear what the water requirements are, and what the role of the user is. This has been done very successfully so far in a number of areas already where BIAD (The Baluchistan Integrated Area Development Project) is promoting the new model of latrines such as is described here.

VIP versus Pour Flush:

Experience has shown that the pour flush latrine, in general, performs better from a health view point. Fly nuisance, so frequently associated with VIPs because of no roof, poor orientation, a shout or broken vent, etc., is rarely a factor with correctly flushed pour flush (PF) latrines. Mosquitos cannot breed in a PF Latrine since it is flushed too frequently; but they can breed in a VIP where slow leaching takes place, or where the water table is high such as in Naseerabad. VIP latrines cannot be swept in their present configuration, while PF Latrines are designed to be swept. Even if the VIP were so designed, the sweeping would include a layer of fresh and smelly - and hazardous - excreta. Because water is associated with the PF type, there is often a greater chance that water for hand washing can be obtained; while the stress in the VIP is on a minimal amount of water. This is not to say that VIP latrines cannot be constructed successfully - but the technical requirements of this type are far greater, it is believed, than the PF type. To date, in Baluchistan, far more successful PF latrines have been seen than VIPs.

Composting in Pits:

Several earlier sections have referred to this matter. Some concern must be expressed here about the composting process in VIP latrines. Because it cannot be handled as in the PF latrine, the VIP must be abandoned when full, and the slab - if it is to be reused, must be removed. The sight and odour in the pit will not be pleasant unless the latrine is left for about six months. If this is done, what will users do in the interim? Another issue which has been raised concerning both VIP and PF Latrines, is the possibility of cross contamination between pits and nearby water sources. This is dealt with in considerable detail in a recent publication 2/. Suffice it to say that in tight clays, contamination is not a problem, for pathogens are very quickly filtered out. In sandy soils, contamination can be a real hazard. Generally, however, in Baluchistan, soils are of clay except in river courses. Each site should be assessed on this count. As a general rule, latrines should be sited (hydraulically) downstream of water sources wherever possible. Alternatively, latrines should be sited as far from wells as practically possible, and commensurate with the social needs of the users. For instance, it is not feasible to suggest that women leave the home to use the latrine. Where a well exists in a compound, then, the latrine should not generally be sited near to it.

Ways to "Sell" Latrines:

Most public health extension workers when encouraging intended recipients to build a latrine, will stress the health aspects associated with it. Experience tends to suggest that this may not be the best way to go about encouraging people to participate in the program. While the health aspects are the reason for the program originally, people value latrines for

reason other than this. Thus it is probably better to "sell" participation based on what they value in the latrines. This will include;

- Absence of smell,
- Safety for children,
- Privacy,
- Convenience,
- Durability/safety of construction.
- Absence of flies (?)

Siting of the Latrine:

Some groups require that men and women do not use the same toilet facilities. For men, the latrine may be sited outside the compound to provide for guests. For women and children, the latrine would be sited inside the compound. For the pour-flush latrine, orientation is not a technical problem; but correct siting is normally crucial if the latrine is to provide the privacy which women require and the "defensible space" needed for children. Children require, until they are fully independent - somewhat before or at puberty - security. In some societies, this security is being able to see or touch the mother or siblings. Unless the latrine can be sited to provide this security - possibly with a view of a familiar part of the compound - then it is unlikely that small children will use the latrine alone on a regular basis.

Sweeping of Pits:

Section 2.7 briefly noted that pits have to be emptied periodically. An average person will produce some 38-40 liters of dry compacted material in a pit per year. This material does not compost to a fluid - it remains solid and must be removed. In a Muslim society there is some reluctance to handle excreta from humans. The task of sweeping was, in earlier days, normally left to lower castes of other groups. Now that the area is substantially only Muslim, the opportunity to obtain the services of a sweeper is limited, and may be non-existent in many rural areas. Each user must arrange his own sweeping. This must be made known to intended recipients before encouraging them to accept a latrine. As the technique of composting the contents of a pit for six months or more is used in this type of latrine; and as the material is odourless after such a period, this sweeping becomes feasible. Perhaps it would be useful to suggest that extension workers promoting latrines should, themselves, participate in emptying a composted pit early in the program as a means of desensitizing the community. The excavated material should be used as a fertilizer. In parts of India, a thriving business has been developed buying affluent from pits for fertilizer. As the six month composting period results in the decay and destruction of all pathogens in the excreta there are no public health problems associated with such a business.

TECHNOLOGY OF THE POUR FLUSH LATRINE

Introduction:

The immediate reaction to a suggestion that a water seal (pour flush) latrine should be used in a semi desert area is that there is inadequate water to allow it to function properly. In fact, this is rarely the case. The pour-flush latrine requires water for flushing. Depending on the design of the pan, one flush may require between 1 and 4 liters of water. Obviously, in a arid area, the lower amount is appropriate; which is why the pan design is crucial. If it is correct, there is every chance the latrine will work satisfactorily - and if it requires a large amount of water for flushing each time, people will not be inclined to use it

properly. assuming that only one liter is required per flush; and that one liter is required for ablution per latrine visit, then some six to eight liters per person per day is required. When this is placed against water requirements for other activities (drinking, cooking, washing and the like), it may constitute an increase of 20% to 33% over what is used already. Where water haul distances are reasonable, this latrine type may thus be appropriate.

Against the VIP type, this latrine suffers far fewer disadvantages. The latrine can be oriented in any direction. The superstructure does not require a roof, if a roof is not wanted. No problems exist with PVC vent pipes degrading in the sun. There is no smell nuisance if it is flushed. Flies very rarely are a nuisance. And, it costs just as little. Providing users know about, accept and use the water required (which is little enough), then it should provide a very much more satisfactory arrangement than the VIP. It also is unlikely ever to collapse. for the pan is not sited over the pit.

The Superstructure can be made from a variety of materials. Generally, it is made from clay - either built up gradually or using unbaked bricks which are finished with a clay and straw mortar. A roof is desirable (but not absolutely necessary as is the case with the VIP). The roof can be made from corrugated iron, wood and clay, or simply domed brick/clay. The *superstructure should be large enough so that one can defecate/urinate in comfort*; Yet should also provide privacy during the process. A sample of the whole latrine including the superstructure may be seen on Annex II.

The Slab is usually made from a lean mortar mix, and is so arranged that water poured onto nay part of it flows into the pan to allow for easy washing down of the area surrounding the pan. This slab may (or may not) have raised foot pieces cast into it at the appropriate places, depending on the wishes os the user. The slab/pan arrangement is usually raised slightly above natural ground level to avoid any flooding during rain. The slab is only ever laid after proper compaction of the underlying clay/sand, to avoid cracking later.

The S-bend is fixed onto the exit pipe from the pan; and provides a water seal which excludes flies and odours. Usually, 4" dia pvc pipe laid at a slope of 1:50 to 1:20 is led away from the S-bend towards the Y-piece. Concrete pipes must not be used, for they are expensive, heavy to handle, and are rough inside. Flow is poor in such pipes.

The Y-piece is the place there the pipe bifurcates (splits into two 4" dia pipes). The top os the Y-piece is covered by a small, purpose built slab which can be removed and replaced when one of the pits is full, and switching of the direction of flow must take place. The leg of the Y-piece not being used is usually plugged with clay or a weak cement mortar.

The Pits and Leaching:

Two small pits are used for storing the latrine effluent. They are used alternatively; when one pit is full, it is closed and left to compost for six months or more; after which it is emptied. Because of an understandable reluctance for latrine owners to enter the pits to "sweep" them, they are so designed that they can be emptied by a person standing at ground level using a long handled spade such as is widely available in Baluchistan. It is noted that the composted excreta is odourless after six months, and has the appearance of peat.

Objectives:

In planning a latrine program, the objectives should be clearly defined. If the objective is promotion of sanitation, then it is probably best to construct a few latrines, but make them well and ensure that they are used and kept clean. In the case of refugees where they are not permanently resident, it may be appropriate to suggest that one of the objectives should be that the knowledge of effective and inexpensive methods of excreta disposal should become known, so that when they return, the refugees will be able to perform the construction of their own latrines successfully; and use them. Promoting latrines that don't work is unlikely to achieve the objective; and is likely to put people off the idea. Thus, methods to make latrines function effectively must be considered, even if such methods contravene "policy". If it can be shown that the latrine program cannot be made to work except by contravening "policy"; and that the "policy" cannot be changed; then staff may have to consider closing down the program, for further investment may be entirely wasteful. The United Nations has a moral responsibility to assure the most prudent and effective use of the funds provided.

THE SOCIOLOGY OF LATRINES.

The Importance of Latrine Behavior:

We perhaps too often ensure that a design or machine works and expect people to adapt to the quirks of the particular design. Unfortunately, people "count" ---- a fact bitterly remembered by car manufacturers who have gone out of business because they were unable to provide machines which satisfied users. Latrine programs, surprisingly, work in a very similar manner. Success is usually associated with designs which provide an environment which is provide or safe or pleasant ---- or whatever it is that people need when performing their routine bodily functions. However, all too frequently, planners have assumed that adequate technology suffices, and are dismayed when latrines are rejected. Worse still, communities are rated as "ill educated", "stupid" or the like when they do not adopt the behavior patterns which planners would wish. It may be best to start with people, and make the technology fit them, rather than the other way around. What, then, do people want from latrines? a latrine program to succeed, the latrine should:

- Provide privacy, particularly to women.;
- Provide convenience;
- Provide "security" (defensible space) to children;
- Be odour-free;
- Be made of durable material; and
- Should not splash (urine splash or back splash).

Also, the children had some difficulty with certain pan designs, and were frightened of large, smelly black holes.

IF THE OBJECTIVE IS THAT LATRINES BE USED, THESE FACTORS ARE PARAMOUNT

SOME HEALTH ASPECTS OF THE V.I.P. LATRINE

The Excreta of Children:

The excreta of children is highly dangerous. The contamination of the stools of adults and children suffering the same infection is substantially different. childrens' stomachs are not well developed, and are, as a result, less able to destroy infective organisms as compared to adults. Which, in laymens' terms, means that the excreta of infants and children suffering an infection, should be treated with great respect. The

excreta should be disposed of with great care. This also means that children should be encouraged to use latrines at the earliest possible opportunity. And that latrines be designed so that children find them easy to use. (see the earlier notes about "defensible space" and pan design).

Insects and the VIP Latrine:

Much has been said about flies and how they can be carriers of disease. The design of the VIP latrine takes this into account by providing a highly effective fly-trap. Tests have shown that, providing that the stainless steel screen is intact, some 90% of the flies entering the latrine pit, are caught under the mesh and die. The same is not true for mosquitos. Mosquitos have this nasty habit of being active at night when no light is visible at the top of the vent pipe. Tests have shown that only 30% or less of the mosquitos entering a pit will be caught. However, this in itself does not provide a health hazard. the Anopheline group of mosquitos which transmit malaria (and sometimes filariasis) prefer clean water in which to breed. However, the mosquito Culex pipiens fatigans which transmits both filariasis and Bancroftian filariasis normally breeds in polluted water, and has been recorded frequently with latrines 7. Thus, where the water table is high, or where leaching takes place so slowly as to leave standing water in the pit for a sufficient length of time for breeding of this mosquito, this must be considered. It may even be necessary to discard the VIP latrine as being inappropriate in such areas; and replace it with a simple pour-flush type which uses little water, but which does not allow for passage of the mosquito between latrine and pit.

Diarrhoeal disease Control:

The frequency with which diarrhoea occurs after a latrine has been placed in a community will be identical to the frequency before. The latrine appears to play no individual part in the reduction of diarrhoeal morbidity nor mortality, unless hygiene behavior of the users changes substantially at the same time. Thus, if the objective is to reduce diarrhoeal morbidity and/or diarrhoeal mortality, a latrine program by itself will be useless. Indeed, it will be a waste of money, and lead to frustration. Paying lip-service to "health education" will not do it. The whole gamut of control measures must be applied together. These will include:

- Water, sanitation and hygiene education;
- Soap for handwashing;
- Nutrition for the mother to avoid low birth-weight;
- Nutrition for children, particularly females;
- Food hygiene;
- Breastfeeding;
- Vaccines (particularly measles);
- Oral rehydration therapy; and
- Chemotherapy with IV as necessary.

Unless connections are made between these various inputs, their cumulative effect is unlikely to be measurable. Thus health workers from different disciplines need to make those connections for the community they serve. Engineers and sanitarians need to talk with LHVs. Dais must be briefed and monitored. Doctors need to talk to peripheral health workers; and common problems solved. Development (or Emergency) planners need to monitor progress and adapt to changing conditions.

It may be useful to note that if the latrine program is an end in itself --- or if it is intended purely to reduce the smell in the environment --- then there might be cheaper ways to do it.

Summary Check List of Important Parameters which make the VIP Work:

So far, technical functions have been noted which possibly may best be reinforced by a check list of "dos" and don'ts" for the vent, the most important single element in the VIP.

THE VENT PIPE

IMPORTANCE

DO

- Put it outside the superstructure *
- Put it facing the sun (south facing)
- Make it 4" dia or greater *
- Make it as high as possible **
- Place it directly over the pit *
- Cover it with stainless steel gauze .

DON'T

- Put it inside; it gets in the way of the pan.
- Keep it cool; convection can't work.
- Have holes/cracks in it; it's like trying to smoke a cigarette with holes.
- Cut it short; turbulence will ensure that the latrine smells foul. **
- Cover it with anything other than the mesh; it excludes light and stops the air flow. **
- Use too small a diameter of pipe; it reduces airflow, and does not admit enough light to attract flies.

{If you can't meet the desirable criteria for the vent which, after all, is the mechanism which makes it work; then, have you selected the light latrine type? }

TECHNOLOGY OF THE V.I.P.

Introduction:

To start, it may be useful to examine the mechanisms which make the VIP, they will be dealt with individually:

The Vent:

The vent is supposed to remove air upwards from the pit, so dispelling odours and trapping flies. The principle upon which it does this is TWO-Fold.

First.

Because the vent pipe is placed outside the latrine superstructure, is often dark in color and faces the sun (for preference), it warms up, so warming the air in the pipe, reducing its density. Slightly cooler air from the latrine superstructure which faces away from the sun, displaces the lighter air in the vent, so creating a gentle draft. The superstructure should be relatively dark to maintain a temperature difference between the "hot" vent and air in the pit. Usually a small temperature difference of +,- 2C should suffice to obtain an air current.

Secondly.

Secondly, and far more importantly, the vent acts like a pitot tube. This mechanism "sucks" the air from a pipe then air flows over the top of the

pipe. Tests in Zimbabwe have shown that this mechanism is far more powerful than the convection from heating the vent pipe. However, the vent pipe must project into the air stream for this mechanism to operate. If the vent is too short, turbulence may (and does) force air down the vent. The light at the top of the vent attracts flies, which then die because they cannot get out through the screen at the top of the pipe.

The Superstructure:

In Zimbabwe, this is typically in spiral form. This has been found advantageous in that no door is required in the configuration; but it is NOT necessary to the functioning of the latrine. What is necessary, is that the latrine should provide an environment which remains cooler and darker than the vent pipe. If it does not, then convection cannot take place nor will flies be attracted to the top of the pipe and be trapped; and money invested in the vent will have been wasted. To keep the pit cooler and darker, the superstructure must have roof.

Perhaps as important - if not more so - is that it provides an environment suitable to the user (see later sections).

The Slab:

This provides a number of functions. It covers the pit, so excluding smells (except those expelled through the vent). It - hopefully - supports the superstructure/pan/vent pipe from collapsing into the pit. It provides a place for the pan, and for the vent pipe hole; both directly over the pit. This is important for excreta and urine must pass easily into the pit without eroding the side of the pit; and the pipe must have its top (and thus the light) visible to flies which enter the pit. They, after feeding on the excreta, always fly towards the nearest light source. This may explain the need for mesh on the top of the vent pipe - to trap the flies.

The Pan:

The design of the pan is crucial. It must provide a conduit for excreta and urine - naturally; it must not splash urine on the user, particularly in a Muslim society where a person so splashed is enjoined to wash self and clothes before "Namaz" (prayers). As prayers occur five times per day, a splashing pan can prove very tiresome. The pan must not present any threat to children - and must be so designed that it can be used without a child "doing the splits"; or the child will defecate directly on the slab --- a common sight in S-E Asia. It must be easily cleaned, or excreta stuck on the pan will attract flies which can escape easily. A simple hole in the slab is rarely successful for it not only threatens children, but is difficult to aim at, particularly for women. The satisfactory functioning of an otherwise well designed latrine may be entirely destroyed for want of a simple, cheap and well designed pan.

The Pit:

This is no more nor less than a hole in the ground. It should not crumble nor collapse; which mechanism is sometimes referred to as a "pitfall"! It should be big enough to store effluent from a family for sufficiently long to avoid having to rebuild or dislodge too often. It should not be so big as to require major effort to make.

Pit Walls:

Depending on the soil type, some stabilization may be required on the walls, best done with ferro cement. (This technique may also be useful for

the slab, to reduce the weight. of BIAD) Stabilization should not go too far down in the pit, since the pit is a leach pit. Fluids "leach" into the ground; and this is difficult if concrete backs the way. In soft ground, honeycombed brick is a useful alternative, providing both support to the slab and a water path for fluids.

MATERNAL AND CHILD HEALTH

PREGNANCY

Anatomy

The External Genitalia

Labia Majora: This is formed from two folds of tissue and fat and covered with skin and hair.

Labia Minora: Two thin folds of skin lying between the inner surfaces of Labia Majora.

Clitoris: In front, the Labia Minora unites and encloses the Clitoris which is very sensitive.

Internal Organs

Uterus is a pear shaped organ about the size of a woman's fist. Located behind the bladder just above the vagina. For learning purposes we divide the uterus into 3 parts. Lower part of the uterus that opens in the vagina called cervix. Middle portion body and top most part is called fundus. This is the place from where monthly bleeding occur and baby grows here during pregnancy.

Fallopian Tubes: These are two muscular canals attached to uterus at both sides and ends of tube open near ovaries. Egg from ovaries sucked by ends of the tube and brought inside the uterus.

Ovaries: They are small organ lying in both side of the uterus. They produce eggs that are usually called ova. They also produce hormones which help in preparation of lining of the uterus, pregnancy, and responsible for female characteristics.

Bony Pelvis: Shape and size of the pelvis are important factors during delivery because baby has to pass through this canal. This is basin like in structure which protects female reproductive organs and other organs lying in it: uterus, Fallopian tubes, and ovaries, bladder, urethra, rectum and anal canal. The foetus passes through this bony structure during labor.

The pelvis consists of 4 bones. Two hip bones, sacrum and coccyx.

Hip Bones:- divided into 3 portions. Ilium, ischium, sacrum, and the symphysis pubic.

Sacrum: bone forms the back of pelvis. Made up of five sacral vertebrae joined together.

Coccyx:- consists of 4 vertebrae and it bends backwards during the delivery to provide more space for the coming baby.

During pregnancy, especially near delivery time there is relaxation of ligaments of the joints resulting in some movement and little widening of joints during labor and delivery which makes the head pass through symphysis pubis, movement may cause some difficulty in walking or backache.

A.2 Male Reproductive Organs

Male reproductive system consists of following:

Testes which produce sperm and a hormone called testosterone. These are two in number and lying in a sac of skin called scrotum which hangs behind the penis in the groin.

Vas Deferens: Coiled tube runs through testis to the pelvis and enters abdomen as part of spermatic cord and then enters prostate glands.

Seminal Vesicles: These vesicles secrete a fluid which forms part of the semen.

Prostate Glands: These glands secrete a fluid which becomes part of the semen.

Urethra: This is a canal from where urine and sperm pass through in the penis and opens at its tip.

The Penis: This is long shaft of spongy tissues which contain many blood vessels. Foreskin covers the end of penis which is removed by circumcision in early childhood.

Functions: Millions of sperms are produced in the small tubes in the testes and remain there till male becomes sexually excited, penis enlarges hardens then sperms from vas deferens, mucus from seminal vesicles and milky fluid from prostate gland comes out from the penis. A mixture of all these things are called semen. Among million sperms ejaculated during intercourse only one active may be to reach the ovum to fertilize it, the rest of the sperms die after 48 - 72 hours.

A-3 Menstrual Cycle: Every woman has two ovaries which contain many follicles which produce ova or egg. Every month one follicle in an ovary ripens and ruptures to produce ovum. This process is carried out alternatively by the ovaries, that means each ovary produces egg in a month and rests for the next month and the second produces egg.

When follicles are ripe they produce female sex hormones called oestrogen which cause proliferation of lining of the uterus. After the rupture of follicles released ovum is picked up by the fimbriated ends of Fallopian tubes. The remaining portion of the follicle is converted into corpus luteum. This produces two hormones: oestrogen and progesterone. As a result endometrial glands grow more and ready for the fertilized ovum. In case ovum is not fertilized the corpus luteum degenerates and sheds in the form of menstrual bleeding. Regeneration of lining takes place from next month. Menstrual period usually lasts for 4 to 5 days, menstrual cycle last 28 days on average but on individual basis 30 - 32 day cycle is also normal.

Menstrual cycle continues till the age of 40 - 50 years. Then menses become irregular due to hormonal changes and bleeding stops permanently. This is called menopause and women can't become pregnant.

How Conception Takes Place: When a man's sperm enters into woman's body and meets woman's egg pregnancy takes place.

What is Conception?

Conception occurs when a sperm and ovum join together. This is also called fertilization. The fertilized ovum is carried to the uterus through the fallopian tubes. It enters into the uterus after 3 - 5 days. The uterus supports the fertilized ovum attaches itself to the uterine wall develops into foetus. The foetus receives oxygen and nutrients from the mother through placenta

A.5. METHOD OF CALCULATION OF ESTIMATED PERIOD OF GESTATION AND ESTIMATED DATE FOR DELIVERY

After pregnancy is confirmed you need to assess the duration of pregnancy. Duration of pregnancy is 10 lunar months from the date of last menstrual period till delivery for 280 days or 9 months. Normally women deliver within two weeks before the expected date of delivery. A very few number of women deliver on expected date. Multigravidaes usually take longer gestation period.

After identifying the day of last menstrual period add 7 days and subtract 3 months from the date e.g:

LMP was : - Jan 17 - 1990
EDD shall be : - Oct 24 - 1990

LMP was - April 4 - 1990
EDD shall be : - Jan 11 - 1991

This estimated date is for women having 28 days cycles. Starting from first day of last menstrual cycle add 7 days and 9 months it will bring the expected date of delivery.

A.6. CHANGES TAKE PLACE IN A WOMAN'S BODY DURING PREGNANCY: Certain changes occur in a woman's body as foetus grows inside her uterus. As foetus grows the womb also grows and rises out of her pelvis and can easily be palpated with hand at 12 - 15 weeks of pregnancy. Stoppage of menses is when fertilized ovum attaches to the walls of the uterus, the ovaries produce oestrogen and progesterone which convert the endometeriun into deciduing of pregnancy and in result menses stop. Pregnant women may notice some fullness of breast and discomfort. Other signs and symptoms occur at different stages of pregnancy as shown below.

4 - 8 Weeks

1. Menstrual cycle stops.
2. Morning sickness or nausea may occur in some women.
3. Frequent urination because of pressure of uterus over the bladder in the abdomen.
4. Breast enlarges, nipple become darker and areola more prominent.

8 - 12 Weeks

1. Bluish discoloration of vagina due to venous engorgement is often present.
2. Morning sickness may disappear.
3. Increased pulsation is felt in lateral vaginal fornices and softening of the cervix.

12 - 16 Weeks

1. Morning sickness ceases.
2. Frequent micturition stops.
3. Pressure of growing uterus is relieved and now enlarged abdomen can be seen.
4. Uterus is palpable, height is midway between fundas and symphysis pubic.
5. Internal ballotment may be elicited.

Internal Ballotment consists of pushing the examining finger sharply towards anterial vaginal forms. The foetus is pushed up towards the fundas of uterus again will touch back to fingers. Signs can be elicited 14 weeks onward.

16 - 20 Weeks

1. Women feel foetal movement, foetal movements (quickenings) are felt by 18 - 20 weeks.
2. Secondary areola may be seen in some mothers.
3. During this period painless uterine contractions become palpable.
4. Foetus starts moving in the fluid and can be possibly with external ballotment.

20 - 24 Weeks

1. Fundas at umbilical level.
2. Foetal heart sound may be heard.
3. Foetal parts and movements are felt at examination.

24 - 28 Weeks

1. Continue same with more ballotment of the foetus.

30 - 36 Weeks

1. Fundal height grows up to sternum.
2. Shortness of breath, stretch lines on abdomen, ankles may swell.

36 - 40 Weeks

1. FH at xiphisternum till 38 weeks after engagement of head. Con to 36 week level.
2. Difficulty in sitting and walking, lightening.
3. Mother can breathe easily but due to descending head, pressure develops on the bladder and causes frequent micturition.

Minor Discomforts during Pregnancy

Minor discomfort refer to the minor ailments due to pregnancy which are experienced by most of the pregnant women. They may not be dangerous but cause mother to feel sick. NCHO's role is not to ignore them but reassure and advise patient on simple remedy to manage her symptom.

Symptoms	Management
<p><u>Morning Sickness</u> Earliest symptom of pregnancy. However some women don't have this. Patient feels nauseated on rising in the morning. She may vomit or have nausea with excessive salivation. Some times this condition impairs the appetite of pregnant mother. This condition subsides after 12 weeks.</p>	<p>(1) Explain to pregnant women that this is normal condition during pregnancy. (2) Advise her to take frequent small meals and avoid those things which tend to nauseate her. Avoid greasy and fried foods. Plenty of sweet milk before going to bed and slowly rising in the morning and eat dry sweet biscuits, suck cloves or cardamom. (3) Take history and examination to find out what needs to be done for her. (4) No medicine should be given for morning sickness.</p>
<p><u>Heart Burn</u> Is a burning sensation in the mediasternum due to effect</p>	<p>(1) Advise pregnant mothers to sit up for some time after meals and</p>

of gastric juices on the oesophagus especially when patient is in recumbent position.

Constipation.

Common due to relaxing effect of progesterone on intestinal muscles.

Varicose Veins

This is also due to effect of progesterone. Prolonged standing also worsens this. In this condition superficial veins of the legs, vulva, anus are engorged. Some time it gives much discomfort.

Frequency of Micturition

Due to slight increase in the pressure of growing uterus on the bladder resulting in frequent urination. This causes discomfort and sleep disturbance.

Backache

It is more common in multiparous with bad posture. In the late pregnancy when uterus is heavy and joints are relaxed it may be more troublesome. Sometimes backache may be a sign of other problems.

Leg Cramps

Due to nutrition deficiency, vitamin B, Calcium.

Weakness & Giddiness

Due to anaemia giddiness may occur. Sometimes women may experience simple fainting after even change of posture from lying to sitting down or standing long time in the sun.

sleep with extra pillows.

(2) Sucking of peppermint and sips of milk may give relief. (3) Take frequent small meals. Avoid greasy and spicy foods, also don't over eat. (4) No medicines for this condition

(1) Advise pregnant mothers to take fruits and vegetables, salads, drink plenty of water and walk after meals. (2) No purgatives/medicines should be given.

Advise pregnant women to avoid long standing, leg should be elevated and free movement of ankle to encourage good circulation of blood. Some cases refer pregnant women to seek special medical help.

Explain to mother this is normal. Conditions subside after 12 weeks. Also it will reappear in the late pregnancy. Advise her to take rest in the morning to make up for poor sleep at night. Reassure her no medicine is required.

Advise for rest and good posture and use of flat sole shoes. Recognize if women have other problems along with backache refer her to the doctor.

Advise her to eat balanced diet including fruits, drink a glass of milk daily. Provide multivitamin tablets, one tab two times a day.

Advise pregnant woman to take ample mixed diet. Take sufficient rest and avoid working in the sun for long time. Provide Ferrous Folic Acid tablets 3 times a day. Check urine for albumin and sugar, take blood pressure. If any of these tests show abnormal results, advise her to go to doctor for special advice.

Itching

Due to poor personal hygiene, heat rash and minor skin disease may occur. Sometimes women have itching at private parts.

Test urine for sugar, check vaginal discharge. Advise mother for regular bath and special care of private parts. Give Calamine lotion for local use. Explain proper procedure for lotion application. Use cotton slacks, avoid nylon dress.

COMMON PROBLEMS OF PREGNANCY AND ITS MANAGEMENT

EXCESSIVE VOMITING

Almost every pregnant woman gets morning sickness or vomits in the morning, afternoon or evening during the early stage of pregnancy.

Some vomit when they have empty stomach and some immediately after eating.

Some women will vomit each time after taking food or drink. This could become serious for the mother and foetus because this is the period when a pregnant woman needs extra nutrition. If vomiting continues she will become weak and dehydrated, usually blood pressure is low.

Management of Anaemia

- Advise bed rest.
- Explain to the mother that this is a normal occurrence. Suggest the eating of frequent small meals and eating something dry before getting out of bed and before sleeping at night.
- Suggest sucking on a clove or cardamom skin. This may help some women.
- Give small amounts of food frequently.
- Provide psychological support and try to divert her attention away from her condition.
- Advise her to eat anything she can tolerate.
- Make frequent home visits to assess her condition take blood pressure and measure urine to give her suggestion and to provide her with as much nutrition as possible.
- If dehydrated, encourage fluid intake even if she continues to vomit.
- In severe cases refer to the medical officer.

Anaemia

Anaemia is a condition of reduced the haemoglobin in the blood. In pregnancy, anaemia is caused by lack of sufficient iron and folic acid in foods eaten by the woman. Because of the growing foetus, the amount of iron and folic acid needed is increased above the woman's usual requirements. Frequent pregnancies or bleeding related to abortions or the delivery process to an even greater need for iron and folic acid

Anaemia in pregnancy is a very common condition. Some culturally related food taboos may keep the pregnant or lactating woman from eating foods with high iron and folic. Anaemia causes a woman to tire easily and feel weak. She may be unable to do her regular work. She looks pale and the conjunctival and buccal mucosa as well as the nail beds are pale.

Anaemia may result in breathing difficulty, shortness of breath ankle oedema or prominent neck veins.

Management of Anaemia

MCHO need to make sure that the mother's diet is adequate in iron. Iron supplements should be;-

- Advise her to rest more often. Determine her haemoglobin level each visit.
- Suggest eating green leafy vegetables and foods containing iron.

A stool examination for parasites as well as a blood smear for malaria parasites should be done to rule out these condition as the cause of anaemia. If parasites are found, she should consult a Medical Officer for proper treatment.

- Give Ferrous Sulphate tablets t.i.d and Folic Acid 5 mg daily. Continue until 2 months after delivery. In severe cases refer to Medical Officer.

PRE-ECLAMPSIA (TOXAEMIA)

Preeclampsia is one of the serious high risk condition of pregnancy. It is more common in young and in a first pregnancy. It occurs after 30 weeks of pregnancy. MCHO should watch for the following signs and symptoms.

- Blood pressure above 140/90
- Swelling
- Protein in the urine
- Dizziness
- Headache
- Vision problems
- Epigastric Pain

Management of Preeclampsia

- Advise bed rest
- Take and record the blood pressure on each visit. Assess the degree of swelling, test the urine for protein and sugar. Give paracetamol for headache and advise rest for dizziness if related to the headache. Reduce salt and spice intake. Refer if the condition is getting worse and/or conclusions occur.

ECLAMPSIA

If the above symptoms worsen or are accompanied by convulsions, the condition is known as eclampsia. This is very serious for both the mother and foetus. BP is 160/110 or more. Woman have severe headache urine is full with albumin. Patient may go in Comma.

MANAGEMENT

- This condition should be treated immediately by the Medical Officer. Until medical aid arrives, try to prevent the mother from harming herself. Remove any dentures, place her head on the side, and keep something handy to place between her teeth during the fits. (A wooden spoon with a towel wrapped around the handle will do) . Give nothing by mouth. Note if urine is passed. Watch for signs of labor. Be prepared for a premature baby if eclampsia occurs before full-term.
- Among the drugs used are morphine 1/4 gr by injection.

VAGINAL BLEEDING DURING PREGNANCY

Bleeding in pregnancy is never normal and must be considered a danger sign for the well-being of the mother as well as the foetus. Causes of bleeding during pregnancy may be due to one of the following conditions:-

- Abnormalities of the cervix
- Abortion/miscarriage
- Ectopic Pregnancy
- Early separation of the placenta
- Vascular mole
- Other

Bleeding in the 3rd to 5th month may stop spontaneously. If the bleeding continues, and there is abdominal pain the foetus may not be saved but the mother's welfare needs to be considered.

MANAGEMENT:

- Have mother rest in bed
- Discuss her fears and feelings
- Explain to her what is happening
- Watch her condition. Check BP pulse
- Assess the amount of blood loss and observe for clots on stained clothes.
- Keep cloth for inspection
- Arrange with the family for admission to the hospital as necessary.
- Check clots for foetus. If abortion occurs provide postpartum care.
- Follow her for three months to assure that she recovers well, her concerns are responded to and her needs are met.

DO NOT DO A VAGINAL EXAMINATION

Abnormalities of the cervix

Abnormalities may be seen in the form of ulcers, growths or cancer. In these conditions there is slight irregular bleeding with no pain.

MANAGEMENT

- Refer mother to District Hospital for a diagnosis
- Follow-up to make sure that a diagnosis is made and proper treatment completed.
- Provide treatment or supportive care based on the diagnosis
- Provide psychological support to the mother and the family

ABORTION/MISCARRIAGE

Bleeding in the first two months of pregnancy with mild symptoms may indicate a threatened abortion.

Advise for Balanced Diet.

- Advise mother not to do heavy work or go on a journey
- Advise bed rest for up to three days after the bleeding stops.
- Avoid sexual intercourse until the 24th week of pregnancy.

Septic Miscarriage of Abortion

A woman who is bleeding from the vagina and has a fever of 101 or more may be having a septic abortion. What this means is that, in addition to bleeding, she also has an infection which may cause her to abort. She may have a rapid pulse and low blood pressure if a large amount of blood is lost.

- Take the temperature every two to three hours.
- Give paracetamol
- Take the blood pressure to assess the possibility of shock. Encourage fluid and food intake.
- Recommend rest.

- If the odor is foul then this is a sign of infection and you need to start her on antibiotics.
- Watch the progress, make appropriate recommendation and refer her to the Medical Officer.

ANTENAL CARE

What is ante-natal care;- A special care given to pregnant women from the time of conception till delivery to ensure healthy mother and baby.

IMPORTANCE OF ANC

1. Provision of early diagnosis and treatment during pregnancy to avoid any serious condition that may lead to maternal and foetal death.
2. Provision of health education to prepare woman about care of her self and growing baby in her womb.
3. Prepare woman for normal safe delivery and normal post-natal period.
4. Instruction woman about care of newborn baby after delivery.
5. Provide referral at appropriate place and proper time.

A. 10 Pre-Natal Examination

For health of the mother and baby it is important for MCHO to contact and register all pregnant mothers and encourage all registered pregnant mothers to attend pre-natal clinic or visit them at home.

Number of contact MCHO required to make;

Minimum of 3 contacts mother needs to make:

First Visit: Any time she is diagnosed pregnant.

Second Visit: 7th month of pregnancy.

Third Visit: 9th month of pregnancy.

At first visit MCHO should take complete:

1. Health and obstetrical history.
2. Carry out complete physical examination.
3. Carry out routine blood and urine examination.
4. Maintain record for first and then subsequent visits and compare at next visit.
5. Identify high risk factors, manage and discuss with family for referral facility.

A. 11. History taken"-

First important step towards AN care is that MCHO is to know the mother and her health.

Explain to mother that purpose of taking history is to know whether pregnancy is progressing normally and to identify any problem.

Guidelines for taking history

- Be respectful.
- Explain purpose for taking history.
- Be tactful in asking personal questions.
- Allow time to answer questions, avoid putting answers in her mouth.

- Pay full attention to what she is saying, show no hesitation to ask again if you have not understood what was explained by her.
- Use patients name for subsequent questions, avoid medical terminology.

A.12. FORMAT FOR TAKING HISTORY

IDENTIFICATION	REASON FOR COLLECTING INFORMATION
Date of visit	Useful as you need to know when Was the first time patient came.
Name	You can identify particular women. Write clearly so when you visit home she can easily be located.
Occupation of husband Women work status	Know the socio-economic status of family. Who supports the family before talking about food.
Address	To visit home. Write down any famous place near home that make location of home easier.
Type of work women plan do to plan her rest.	
Age or date of birth	Age is important for pregnant mother, early 18 and over 40 years of age may have many problems.
Number of years married	To determine number of years married and number of living children or number of pregnancies.
Number of previous pregnancies and live births	To know the high risk mothers, prime need is to know more about process and care about delivery.
Experience with previous pregnancies	Whether delivered normal or have problem labor and delivery. Who was consulted and what was done.
Place of delivery for previous children.	Where mother delivered and by whom.
<u>PRESENT PREGNANCY</u>	
Last Menstrual period	To calculate estimated date of delivery.
Chief complaints	How she feels about problem and how bothersome it is to mother. Parent's symptoms give clue to look for signs for making provisional diagnosis.
Cause of problem in her opinion	Attitude of women towards health problems.
What makes the symptoms better or worse	You may judge before you advise things which may aggravate or relieve the factors.
Location of symptoms	To find out relationship of sign and symptom to diagnose.

Past Medical History

To know about TT vaccines in earlier pregnancy. Any treatment for serious illness. Any allergic condition to medicine.

Family History

Some diseases are common among family members, diabetes, high blood pressure heart diseases.

WEIGHT AND HEIGHT

Weighing is an important part of each pre-natal examination. The height is recorded on the first visit as height and weight are closely related.

WEIGHT GAINS AND LOSSES IN PREGNANCY

Normal Weight Gains

The amount of weight gained during pregnancy varies from one woman to another, but as a general guide, the total gain should not be more than 25 pound (11.34 kg).

During the first three months, the gain is upto 3 pounds (1.4 kg); during the second three months about 6 pounds (2.72 kg), or 1/2 pound (226 Gm) per week; and during the third three months, about 12 pounds (5.4 kg) or 1 pound (454 Gm) per week.

The increase in weight is accounted for as follows'

Fetus	7 lb or 3.2 kg
placenta.....	1 lb or 454 Gm
amniotic fluid.....	1 1/2 lb or 680 Gm
uterus.....	2 1/2 lb or 1134 Gm
breast.....	2 lb or 907 Gm
blood volume.....	4 lb or 1.8 kg
extra fluid etc.....	7 lb or 3.2 kg

Maintenance of Weight

Women who are about the right weight for their height and build at the start of pregnancy, usually will make normal weight gains by eating a good diet and having enough exercise (see Chapter 11 and 15)

If a woman is much too heavy or too light at the start of pregnancy, the cause should be investigated and help given to bring her within normal limits.

Possible Causes of Overweight during Pregnancy

If a woman is gaining too much weight, examine her as follows:-

1. Investigate any gain over 2 pounds in 2 weeks.
2. As about the diet. Too much food, or too many starchy foods may be the cause.
3. Suspect pre-eclampsia if the weight gain is between the 5th and 7th months. This complication is an example of the extreme importance of regular, accurate weighing because sometimes an excessive gain will lead the examiner to suspect pre-eclampsia even though there are no visible signs of swelling.
4. Look for signs of hydramnios excessive fluid in the abdomen
5. Suspect that there may be more than one fetus.

Possible Causes of Underweight.

If a woman does not make the expected weight gain, or if she actually loses weight, examine as follows:-

1. Ask about her diet. She may not be having enough food or may not be having the right foods.
2. Ask if she has diarrhea and try to find the cause.
3. Suspect dysentery or worm infestation if prevalent in the area. If suspicious, collect stool specimen for examination. (In some areas, hookworm treatment is a routine part of pre-natal care).
4. Try to find out if any other illness is present and refer to a doctor.
5. If the weight gain throughout pregnancy is much less than normal, be prepared for the possibility of the baby being premature.

PROCEDURE FOR WEIGHING AND MEASURING

Procedure for Weighing:-

Weight should be taken as accurately as possible. Some helpful points follow:-

1. An upright machine, with measuring rod, is preferable, but a portable one may be used.
2. The machine should be kept in one spot. If moving is necessary it should be done with great care to avoid upsetting the balance.
3. The machine should be checked periodically for accuracy.
4. If the scale is different from the system used locally MCHO should know how to convert the weight from one system to another e.g. from pounds to kilograms.
5. The mother should wear the same clothes each time, preferably a hospital gown.
6. Be sure the machine is correctly balanced before the mother steps on.
7. The weight should be recorded promptly on record card.

MEASURING HEIGHT

Height is measured on first visit, if there is no measuring rod attached to the weighing machine, a part of the wall or a door may be marked in inches or centimeters (see Figure 15), or a tape measure may be nailed to the wall.

The mother should remove her shoes and stand erect with her back to the wall. Place a ruler on top of her head and note the height on the scale. Record.

Weight Gain in Pregnancy

A woman should gain at least 24 lbs (11 kg) during pregnancy. The baby accounts for only part of the weight gain. Her own body must make the blood, muscle, fluids and tissues which are needed for the baby's development.

A mother-to-be needs to gain weight during pregnancy to nourish her growing baby. Women who do not gain enough weight often have babies that weigh too little. A baby that weighs less than 2 kg may not grow well. It may suffer more from illnesses like diarrhoea.

Amount of Weight a Pregnant Woman Should Gain

<u>Amount of Weight</u>	<u>Where the Weight Goes</u>
7.1/2 lbs (about 1.1/3 kg)	Baby
1.1/2 lb (about 2/3 kg)	Placenta(After birth)
2 lb (about 1 kg)	Uterus (Womb)
8.1/2 lbs (about 4 kg)	Blood and Fluids
4.1/2 lbs (about 2 kg)	Body changes for Breast-feeding
Total 24 lbs	

When Should the Woman Gain Weight

When and how fast the woman gains weight is just as important as the amount which she gains. A pregnant woman should gain weight smoothly and steadily. If her weight jumps suddenly, this needs special attention.

During the first three months, she should expect to gain about 2 to 4 lbs (approximately 1-2 kg). During the last six months, she needs to gain about 1 lb (almost 1/2 kg) each week.

If she has already gained 24 lbs after six or seven months of pregnancy she should continue to gain moderately until delivery. The baby puts on most of its weight during those last few months.

NEEDS DURING PREGNANCY

Once you have completed the physical examination and initial interview, it will be possible to identify the needs of the pregnant woman. Because of pregnancy, certain basic needs of the woman have changed and each will be discussed separately;-

- Nutrition
- Activity (rest and exercise)
- Personal hygiene
- Health Services
- Discomforts.

The nutritional requirements of pregnant and lactating woman are greatly increased from those of other females because of the growing foetus and the production of milk. The following table shows the difference in nutritional requirements for a non-pregnant woman, a pregnant woman and one who is breast feeding. This information will make it easier for you to you a pregnant woman meet her nutritional needs.

NUTRITIONAL REQUIREMENTS OF A WOMAN

Nutrient	Non-Pregnant	Pregnant	Lactating
Calories	2100	2500	2700-3000
Protein (Gm)	62	70	80
Iron (mg)	14	18	18
Calcium (mg)	500	1150	1150

To help a pregnant or lactating woman meet her nutritional needs, ask her what she has eaten during the last four days. Write down the type, when and how much food was eaten. Then compare her intake with the chart and determine the woman's nutritional status. It is not only what the woman eats that is important but how many calories she gets. Her requirement for liquids is also increased, especially during lactation.

What a mother eats during pregnancy is usually determined by:-

- What the family eats and how much the family knows about the nutritional requirements of pregnancy.
- What foods are mainly prescribed or tabooed during pregnancy.
- What the mother likes and dislikes.

It is important to consider all these points in order to get adequate information on the woman's nutritional status.

Activity, rest and exercise:- Activity here refers to the serious tasks a woman routinely engages in. Rest refers to being free of activity as well as getting sleep. Most pregnant women are able to carry out their routine activities throughout their pregnancy in the same way as usual or with some modification. By resting between activities or by changing activities, rest is obtained. For some women however, it becomes very difficult to cook or to clean or to wash.

Some women seem to require more rest while others are full of energy during pregnancy. This variation is normal within moderation. If the need for extra rest increases greatly or if the woman is so full of energy that she does not get her usual amount of sleep and rest she may need to be referred to a Medical Officer. It is important for a woman to maintain her usual activity for a healthy pregnancy. Activity also means a certain amount of exercise. Exercise is important during pregnancy because it makes labor and delivery less painful and risky.

In different groups, certain activities are tabooed while other activities are followed. You need to find out which activities are taboo and which are customary. From the list you obtain, evaluate the nature of the activities and how they affect the pregnancy. You can then encourage or discourage those practices.

Personal hygiene:- During pregnancy physiological changes of all kinds occur in almost all body systems resulting in the need to pay more attention to personal hygiene. For instance the pregnant woman may experience an increase in perspiration, vaginal discharge or secretion of fluid from the breast. Some women develop a vaginal yeast infection during pregnancy. Because of these changes, it is important to bathe daily, paying special attention during washing to the breasts and perineal area.

Regular washing, bathing and, if possible, frequent change of clothing will not only make the pregnant woman feel good, but will also reduce the chance of infection. Washing the feet before going to bed may also be soothing and relaxing.

In every community there are rules for bathing and washing during pregnancy. You need to find out about these local customs so that you can help develop adequate personal hygiene habits in women.

Health Services:- There are many changes taking place in a woman and the developing baby during pregnancy which cannot be seen. If these changes are normal, there is no reason to worry. If abnormal or undesirable changes occur, they could result in complications for the mother and/or the baby. In order to minimize or prevent any complications, abnormal changes should be identified early. It is important to provide continuous health service throughout the pregnancy labor and delivery periods.

The female MCHO therefore, should monitor the health status of all pregnant women. She handles all cases which seem to be progressing normally and refers all cases presenting abnormal signs to the Medical Officer. Record keeping helps the MCHO keep track of each woman's health status. These records identify women who are likely to develop complications. Those women need to be followed more closely and referred to a Medical Officer so they can be managed early in the pregnancy. The complications of pregnancy are covered in Chapter 4. The curriculum emphasizes the need for MCHO to know what normal health is so that they can help people attain good health providing knowledge, skills and strengths. It is within the MCHO's domain to help individuals to proceed on a normal course. When problems are detected, their main responsibility lies in referring that person for a medical diagnosis.

Minor discomforts experienced during pregnancy:- All women experience some kind of discomfort during pregnancy. Discomforts in moderation are normal and expected. Expectant women should learn to adjust to them. These discomforts are usually temporary. If the discomforts become intolerable, last longer than expected or show signs of adversely affecting the mother's health, a referral to the Medical Officer must be made. Abnormal discomforts may develop into complications.

The minor discomforts experienced during pregnancy and way the MCHO can help the expectant mother deal with them are listed in the next chapter.

NUTRITION

Food is required by the human body for a variety of purposes. Eating the right kinds of food in adequate amounts is important for individuals to maintain their well-being. When inadequate food is eaten, an individual may suffer from :-

1. Hunger
2. Malnutrition.
3. Illness
4. Complications of Illness
5. Delayed recovery from illness or childbirth
6. Stunted growth.
7. Psychological disturbances

As MCHO you need to gain some knowledge of nutrition so that you may help individuals and families meet their nutritional needs. To give you this knowledge let us start with some of the nutritional information you need to know. In this chapter, general nutrition needs and nutritional needs of pregnant and lactating women will be described. Nutrition of infants and children will be discussed in respective chapters.

What is Nutrition? Nutrition is the study of food and the way our bodies use it for the production of energy, and growth and maintenance of organs and tissues. The study of nutrition requires an understanding of the physiological value of food, that is its value in the functioning and vital processes of the organs and tissues. Food also has socio-cultural values and as Health Technicians you must

be aware of this aspect of nutrition and use your awareness to help individuals and families meet their food requirements.

What are Nutrition? Nutrients are the substances in food that are responsible for the functioning of the body and protect it from disorder. Foods contain six main groups of nutrients. These are:-

- 1- Water
- 2- Carbohydrates
- 3- Proteins
- 4- Fats and Oils
- 5- Minerals
- 6- Vitamins

First consideration is the quantity of food necessary. Energy production from food is essential for the maintenance of life. Energy is produced from food for respiration, circulation of the blood, digestion, absorption and excretion of waste products. In addition, energy is produced from food to move parts of the body and maintain daily activities. The quality of food should be such that all of the individual's nutrient requirements

will also be met. The less food eaten, the more critical is the quality of the food supply to avoid nutritional deficiencies. The importance of each nutrient group and its major food source are now discussed.

Water:- Water makes up two-thirds or almost 70 percent of our total body weight. Man can survive for only a few days without it. Water serves the following functions:-

- Regulates body temperature
- Transports food and waste products
- Holds nutrients and allows chemical reactions to take place
- Aids in digestion

Water is consumed in the form of drinking water and liquid drinks and is found in prepared foods, fruits and vegetables. The daily intake of water should be a little more than the body output of waste products, sweat and evaporation. Approximately 6 to 8 glasses/day of liquid is essential for an adult.

Carbohydrates(energy foods). A motor car needs diesel or petrol to do its work. When the engine is turned off, it does not need any fuel because it has stopped working. Our body is similar to the motor car in that it needs fuel in the form of food to move and work. It is different from a motor car in that the engine of a motor car can be turned off, but our body must keep working to stay alive. For example, when you keep breathing. Even in the sleep state a certain amount of energy is required. The total energy requirement of a person is given in calories and is determined by the following:-

- Level of physical activity. Energy requirements increase with an increase in activity level.
- Body size and composition. Energy requirements increase with an increase in body surface area.
- Physiological condition. Energy requirements increase during peak growing periods, pregnancy, lactation, and illness.
- Age. Energy requirements decrease with age starting from middle age to old age.

Food groups supplying energy are called carbohydrates. The principle carbohydrates in foods are sugar, starches and cellulose. The sugars are the monosaccharides found in refined sugars, jams, honey, fruits and soft drinks. The starches are the cereal grains such as wheat, maize, "bajra" rice, bananas and sweet potatoes. Carbohydrates are converted into glucose by the digestive

enzymes. Glucose is carried to the body cells through the blood and used for fuel.

A calorie is a unit of energy and food is measured by the amount of energy it supplies. Most foods are energy producing. For example, carbohydrates supply 4 calories per gram of food, proteins supply 4 calories and fats supply 9 calories. An individual's energy requirement is calculated in terms of the number of calories required per person per day based on his/her condition. The WHO/FAO table in this chapter gives the necessary levels of nutrients required for an individual.

If the amount of energy in the food that is eaten is greater than required, then the body will store the excess carbohydrates as fat. But if the amount of energy in the food is eaten is less than required, then the body uses fat or body protein for energy.

Fibre is the undigestible component of carbohydrates and includes cellulose, gums and pectin. These nondigestible fibers have no nutritional value but they do provide bulk in the diet and aid elimination.

Dietary fibre, by slowing the absorption of food in the stomach and intestinal tract, may play preventive role in diabetes and cardiovascular disease, and by providing bulk may help reduce the risk of intestinal diseases. The consumption of fresh fruits and vegetables and whole grain cereal products is desirable since they contain dietary fibre.

In order to maintain health, well over half the caloric intake should be derived from carbohydrates, particularly the complex carbohydrates or starches. Carbohydrates are fortunately the most economic energy sources when compared to meat or dairy products (necessary for protein but not energy) and fats and oils.

Fats and Oils:- Fats and oils are just as important as proteins and carbohydrates for the proper functioning of the body. Fats serve the following purposes:-

- Provide heat and energy and cushion the delicate organs in the body.
- Help with absorption of vitamin D, vitamin A and other fat solvable vitamins.
- Help make calcium and phosphorous available to the bones, teeth and tissues.

Fats are consumed as butter, oil and ghee and are found in meat, milk and various dietary products.

Fat itself is relatively tasteless, but it absorbs and retains flavors. In combination with other nutrients it provides a texture that improves the taste of food. It also delays gastric emptying and contributes to a feeling of being full. Because fats provide 9 calories of energy per gram, they produce twice as much energy as carbohydrate foods eaten in the same quantity. Fats and oils are essential dietary components for infants and small children, who cannot eat large amount of bulky cereal grains to meet their energy requirements because of their small stomach capacity.

Any extra calories in the body, whether derived from dietary carbohydrates, fats or proteins are stored as fat and serve to insulate the body and protect against mechanical stresses.

WEIGHTS AND MEASURES OF INDIVIDUAL NUTRITIONAL
REQUIREMENTS FOR AFGHANS

1. Serving meat	=	100 gms cooked meat (roasted/boiled)	=	3.37 oz
1 cup atta	=	110 gms	=	394 calories
1 cup rice (uncooked)	=	191 gms	=	675 calories
1 glass milk	=	244 gms	=	159 calories
1 cup cooked mixed vegetables,= (potatoes, greeds etc).	=	234 gms	=	150 calories
1 egg fried	=	50 gms	=	108 calories

A QUICK GUIDE TO SOURCES OF NUTRIENTS

This is a rough guide to the nutrient content of foods. However, all foods are mixtures of nutrients and only foods providing significant amount of a nutrient are listed:

Foods providing energy	Foods providing calcium	Foods providing Vitamin A
Maize Bread Biscuits Rice, Wheat Flour, Cassava Potatoes, Yams, Breadfruit Bananas, plantains Avocado(pear), Groundnuts. Beans, Cowpeas, Coconuts, Sugar and sugar products	Milk, Cheeses, Yogurt, Groundnuts Dark green leafy vegetables, Beans, Cowpeas, Small fish eaten whole	Dark green leafy vegetables, Mango, Guava, Carrots, Avocado (pear) Butter, Margarine, Eggs, whole milk
Foods providing Iron	SOURCE OF NUTRIENTS	Foods providing Vitamin C
Liver, Kidney, Heart Groundnuts, Beans, cowpeas, meat, dark green leafy vegetables Dried fruit, Fortified cereals	Foods providing Vitamin B Dark green leafy vegetables Groundnuts, cowpeas Cereals (especially wholemeal) Meat, fish Eggs, Milk	Fresh fruits and vegetables ----- Foods Rich in Protein Meat, all types Groundnuts Beans, cowpeas Eggs Milk, all types Cheese, Yoghurt Poultry (chicken,

IDENTIFYING HIGH RISK FACTORS
IN PREGNANCY

Pregnancy and delivery are normal processes. Most pregnancies and deliveries take place without problems or complications. The prenatal medical history and physical examination helps identifying any problems with delivery. These

problems are called High Risk Factors. A high risk factor requires special care to assure the health of the woman and the fetus. The most serious high risk conditions require immediate referral to the hospital. Early detection of high risk factors is the main reason for prenatal visits. Refer a woman to the hospital for prenatal care if you detect any of the high risk factors listed below. Check pregnant woman for these risks at each prenatal visit.

INFORMATION FROM THE MEDICAL HISTORY

- | | |
|---------------------------------------|---|
| 1. Age under 16 years- | Woman younger than 16 years often have premature deliveries and give birth to babies. |
| Age over 30 years first pregnancy | Woman over 30 years who are having a first child often have long labors and difficult deliveries. The Pelvis of an older woman does not expand as much or as easily as a younger woman's pelvis |
| Age over 35 years. | Woman older than 35 years have an increased tendency to bleed during and after labor. An older woman also is at risk of giving birth to an abnormal baby. |
|
 | |
| 2. <u>Previous Pregnancies</u> | |
| More than five | Woman with a history of more than five pregnancies are likely to bleed immediately after delivery. They can also deliver so fast as to injure the newborn. |
| Two or more miscarriages | A disease such as tuberculosis or Syphilis may have caused the previous miscarriages. Special care may prevent another miscarriage from occurring. |
| Stillbirth | A woman who has had a stillbirth is at risk of having another. |
| Cesarean Section delivery | A woman who has delivered by cesarean section has a weak area in her uterus. The uterus may rupture during labor. |
| Forceps or Vacuum extraction delivery | Instruments may be needed again if they were needed for the previous delivery. |
| Retained Placenta or severe bleeding | Complications of pregnancy, such as a retained placenta or severe bleeding, that occurred once may occur again. |
| Prolonged Labor | Prolonged labor that occurred in a previous pregnancy may occur again. |
| Preeclampsia or eclampsia | Pre-eclampsia or eclampsia that occurred in a previous pregnancy, may occur again. |
| Infant died within one week of birth | During or a disease such as diabetes or tetanus may have caused this death. Special care may prevent another infant's death. |
|
 | |
| 3. <u>Present Pregnancy</u> | |
| Heart Disease or shortness of breath | The heart must work harder during pregnancy Heart disease puts more strain on the |

heart. Heart disease may lead to heart failure during pregnancy or delivery.

Kidney Disease

The kidneys must work harder during pregnancy. Kidney disease puts more strain on the kidneys. Kidneys disease during pregnancy may lead to high blood pressure and eclampsia.

Diabetes

Pregnancy makes diabetes worse. Diabetes affects the development of the fetus. Large puffy babies are born to diabetic mothers, often needing hospital care after delivery.

Tuberculosis

Pregnancy can cause tuberculosis to flare up . Pregnant woman with tuberculosis needs prompt treatment and improved nutrition.

Malaria

Untreated malaria may cause severe anaemia and heart failure during pregnancy. Miscarriages are also common in malaria patients.

Sickle Cell Disease

Pregnancy makes sickle cell disease worse. Crisis are more frequent and severe. Miscarriages are also common.

INFORMATION FROM THE PHYSICAL EXAMINATION

1. Height

Under 152.5 cm

A woman who is less than 152.5 cm tall or who is much shorter than others in her ethnic group, may have a long difficult labor.

2. Pelvis

Small or deformed

A small or deformed pelvis may be a sign of an abnormal pelvic opening vaginal delivery may be difficult or impossible.

3. Present Pregnancy

Bleeding from the Vagina

Bleeding during pregnancy is always a serious sign. Bleeding early in the pregnancy is a sign of a possible miscarriage. Bleeding late in pregnancy is a sign of problems with the placenta. Never do a vaginal examination on a woman who is bleeding in late pregnancy.. The placenta may rupture and cause severe uncontrollable bleeding.

Blood Pressure
above 140/90

High blood pressure during pregnancy may be a sign of a hypertensive disease, that can lead to convulsions as pregnancy progresses. High blood pressure occurring with edema is an even more serious sign.

Excess Fluid in the Uterus.

A large soft uterus may be a sign of excess fluid surrounding the fetus, indicating a serious illness of the woman or an abnormality of the fetus.

Large Uterus for fetal age

A uterus that is larger than expected for expected date of delivery may indicate Twins.

No Fetal Heart Sounds or movement after the 24th Week

An absence of fetal heart sounds or movement after the twenty four weeks may be a sign of fetal death.

Abnormal Presentation after 28th Week

The fetus should be in the vertex, or head first, position after the 28th week. Breech and transverse presentations after the 28th week are abnormal. A breech presentation means that the buttocks or legs are presenting. A transverse presentation means that the fetus is lying sideways, a shoulder or arm is presenting. These two conditions usually require cesarean section deliveries.

Early Rupture of the Bag of Waters

The rupturing of the bag of waters several days before delivery can cause infection of the uterus.

Malnutrition

A woman with a poor diet and no weight gain during pregnancy may have a difficult delivery with risk to herself and the fetus.

Severe Anemia

Severe anemia may lead to heart failure during pregnancy or delivery.

Heart Disease or Sign of

Woman with signs of heart disease, such as heart murmur, require frequent assessment during pregnancy. Heart disease may lead to heart failure during pregnancy or delivery.

Diabetes

Sugar in the urine may be a sign of diabetes. Pregnancy makes diabetes worse. It is dangerous for the health of pregnant woman and her fetus.

Tuberculosis

Tuberculosis can flare up during pregnancy which needs prompt treatment.

Sickle Cell Disease

Pregnancy make Sickle Cell disease worse. Crisis are more frequent and severe. Miscarriages are also common.

LABOR AND DELIVERY

Delivery in Home

Most of the babies in the world are delivered at home. Most of these deliveries are attended by traditional Birth attendants.

TBAs have years of practical experience. Some may have formal training. They also enjoy the confidence of the woman and her family. The TBA may have the skills to assist a delivery, but may not have the knowledge, how and why cleanliness prevents infection. Working with a TBA during a home delivery you can tell her the importance of sterility and cleanliness. You should encourage the TBA to come with you on home visits and for the delivery. Prepare for the birth. And discuss the method with TBA TBA may assist you or you may assist a TBA in conducting a delivery. Both ways ensure a safe delivery for the mother and baby.

Early Preparation:- The family should decide who will be present during the birth to make the delivery smooth and pleasant one. They should also decide the place of birth, which is clean, well lit and well-aired. The supplies for the delivery be ready.

Labor:- Labor is a natural process in which a fetus, placenta and membranes are expelled from the uterus. Labor demands a woman's total physical and emotional effort. You will find woman in various stages of labor.

Emotional Support

The birth of a baby affects the whole family. Let them watch, listen, and help when they can. A woman will suffer increased discomfort and pain if she worries about the delivery or if she is mishandled before you see her. Act calmly and reassure the woman and her family.

Cleanliness

Infections that occur during child-birth may cause the death of the mother or baby. A woman should bath and wear clean clothes during labor. You should wash your hands frequently and sterile instruments.

Passing Stool

A woman should pass stool before she starts labor. A full rectum will obstruct the descent of fetus. A low enema is the best method for emptying the lower bowel, if the woman cannot pass the stool. Give the enema early in labor. Never give enema to a woman in late labor, when the woman is bleeding or when she has high blood pressure. After enema wash the woman's perineal area with soap and water.

Passing Urine

A woman in labor should pass urine at least one every three hours. A full bladder will slow the fetus descent.

The Progress of Labor

Advise the woman in labor to remain in any position she finds most comfortable. She may walk, sit, squat, or lie down. Walking and sitting helps the fetus drop lower in the pelvis. Ask the woman to drink nourishing fluids or water during early labor. Fluids will prevent dehydration. Do not give fluids during the late labor. Because her digestion slows down during that time. Labor has three stages. The first stage begins with the first urine contraction and continues until the cervix is completely dilated. This stage takes the longest time. The second stage starts with the complete dilation of the cervix continues until the baby is delivered. This stage may take one hour in a woman giving birth for the first time. But only a few minutes in a woman also has given birth before. The third stage is the time between the delivery of the baby to the delivery of the placenta. This stage usually takes less than thirty minutes. The total time of a labor should be less than 24 hours.

The First Stage

During the first stage of labor, the uterus contracts and the cervix dilates and becomes thin. The contractions occur every fifteen minutes at first and then gradually come more often. Each contraction lasts about one minute. Contractions begin at the top of the uterus and spread downwards. A woman's contractions increase the pressure of the fetus and the bag of waters on the lower end of the uterus. The uterus stretches thin, membranes of water bag start to separate from the urine walls. The bag of waters bulges towards the cervix. The cervix now expands under pressure, of bag and fetus. As the cervix expands it shortens, effaces and starts to open.

Second Stage

The second stage of labor begins when the cervix is fully dilated. The woman's contractions become stronger. She begins to bear down almost without stop. The woman's rectum begins to open and remain open. The woman's vulva begins to open. You can see the presenting part. Late in the second stage, the woman's perineum begins to bulge, what is so the baby will deliver soon. This is a shorter stage. It should last less than thirty minutes if the woman has delivered a child before, and less than an hour if the woman is having her first child. If second stage of labor last longer than one hour there is danger to the mother and to the fetus. The second stage of labor is divided into two phases. A descent phase and a perineal phase. In the phase the presenting part drops to the vaginal opening in few minutes if the woman has had a child before. It takes thirty minutes in case woman is having the first child. In the perineal phase the fetus through the vaginal opening within forty five minutes. If there is no advance in fifteen minutes, with good contractions, then there is a sign of possible problem.

Check the fetal heart after every contraction during this stage. Also check the woman's pulse every ten minutes. You should only give the woman sips of water during this stage. When the presenting part appears at the vaginal opening, the woman can help its progress by bearing down. Help her into a comfortable position. Place a pillow behind her to support her head and upper back. The woman can bend her knees and grasp her legs. Tell the mother to take a deep breath and push down as if she was trying to pass stool. She should do this as long as she can with force. Tell her to relax for a minute, to take an other deep breath and do the same. Press for delivery.

Movements of Delivery

The fetus moves in a predictable way as it is pushed through the birth canal. Knowing the usual movements for a vertex presentation will enable you to recognize any signs of problems or complications. The uterus pushes the fetus.

- (a) Flexion:- Flexion of the head may be two weeks before the labor flexion allows the smallest diameter of the head to pass through the birth canal.
- (b) Internal Rotation of the Head: Internal rotation is turning of the head forward by moving against the pelvic floor.
- (c) Crowning: Crowning means, what you can see. The crown of the fetal head as it passes under the symphysis pubis. Note the position of the fontanelle. These are soft spots found in a line along the top of head. The soft spot at the back of the head usually is much smaller than the soft spot at the front of the head.
- (d) Extension:- It describes the movement of the fetus, as the back of the fetal neck rotates against the lower border of the symphysis pubis. As the neck extends, the face and chin pass the perineum.

Here are other movements like Restitution, Internal rotation of the shoulder, external rotation of the head, lateral flexion of the body.

Episiotomy:-

This is a surgical incision into the perineum, to enlarge the opening, through which the fetus is coming out. This is needed when there is large fetal head. It is done when the head is crowning. It is repaired after the delivery.

Perineal Lacerations:-

The perineum will tear in some normal deliveries. It usually happens in a woman, who is having her first child; which has to be repaired after delivery.

The Third Stage:-

During the third stage of labor, you must care for two people the mother and the newborn. Give the newborn to the mother to Suckle. The baby will remain warm by being close to the mother and the mother's uterus will contract because of the suckling. You should check the woman's heart rate and blood pressure every fifteen minutes during this stage and watch for bleeding.

Breathing

The newborn must be breathing as soon as it is born. At birth the placenta separates and no longer provides oxygen through the cord. Normally the newborn's first action is a gasp for breath. If the newborn's mouth and nose are full of mucus, he will suck it into his lungs, with his first gasp for breath. Suck out the mucus from the nose and mouth with a bulb syringe, when the head is delivered. Usually this is enough to start breathing. If not hold the newborn with his head lower than legs. The fluid will drain out. Newborn are slippery, hold carefully.

Assess the Condition of the Newborn:-

A healthy newborn is pink. He has a strong heart, that beats more than one hundred times per minute. He coughs, sneezes or cries when you clear the mucus from his nose and mouth. He waves his arms and legs, and his cry is strong.

Some newborns will not look pink, they will look blue or pale. Their heart beat may be slow or weak. They may not cry or they may cry weakly. Their breathing may be labored. These newborns need help. A simple test allows you to determine whether a newborn needs help. Observe the newborn one minute after his birth and again after five minutes of his birth. You note his:-

- A- Appearance = Look the color - Pink
- B- Pulse = Listen the heart beat and count =100 beats p/m
- C- Grimace = Rub his back and soles of feet see reaction on his face.
- D- Activity = Movement of arms and legs.
- E- Respiration = Look at chest and abdomen watch beating.

Any newborn who has breathing or heart problem will need immediate attention. Transfer him to a hospital.

Cutting the Cord:-

The umbilical cord connects the fetus to the placenta. Blood carrying oxygen to the fetus flows through a vein in the cord. It must be protected as long as possible, if it is torn during delivery the fetus will lose blood. For a fetus 30 ml of blood is equal to 600 ml in an adult. Cut the cord only with sterile

instrument. In proper cutting of cord often causes septicemia or tetanus and can lead to death.

Keeping the Newborn Warm:

After the birth of newborn, the uterus continues to contract. The placenta begins to bulk and separate from the wall of the uterus. Then the placenta is pushed downwards and is expelled. Dispose of the placenta according to acceptable customs and traditions. Before doing so one must examine the placenta for its completeness. Missing parts may cause bleeding.

Cord Cutting:-

The umbilical cord connects the fetus to the placenta. Blood carrying oxygen to the fetus flows through a vein in the Cord; Waste products from the fetus flow through two arteries to the placenta. Since the cord carries oxygen to the fetus, it must be protected as long as possible. If it is torn during delivery, the fetus will lose blood. For a fetus 30 ml of blood is as much as 600 ml in an adult. Cut the cord only with sterile instruments. Improper cutting of the cord often causes septicemia or tetanus and can lead to death.

When cutting a cord:

1. Make sure a sterile razor or scissors and three sterile cord ties are ready. The cord ties should be strong, broad and soft. If sewing thread is used many strands should be placed together and then twisted to make one thick strand. Tape and strong yarn may be used, but it must be boiled first.
2. Wait until the Cord stops pulsating, before cutting it, unless the cord is wrapped so tightly around the baby's neck, that it will not slip off or unless it is very short, and may tear the umbilicus if it is not cut.
3. Tie the Cord three times with three different pieces of thread. Tie the first two pieces close to the newborn's abdomen. Then leave a little space and tie a third knot. Use a double square knot.
4. Cut between the two outer ties, leave two ties on the newborn side of the umbilicus.
5. Ask the woman or family member if they want to discard the placenta in a traditional way. If not discard the placenta and the cord.
6. Keep the newborn's side of the cord clean and dry.
7. Follow up the procedure by checking the cord for bleeding during the first twenty-four hours. Check for moisture, redness or other signs of infection during the next week.
8. The umbilical cord begins to dry on the first day after delivery. It completely dries and falls off by the first or second week.

TETANUS

This is a very serious disease occurring in all ages from newborn babies to old age. The disease develops, when dirt or cow-dung or animal dung enters into a sore or open wound. Tetanus causes tightness of the muscles of the neck and jaw. Later the muscles become so tight, there is difficulty with swallowing and breathing. Usually this disease cause death.

A baby's umbilical cord can become infected with tetanus bacteria. They cause tetanus of the newborn. This dangerous disease kills many babies. Tetanus bacteria come from animal faces and live in the soil and dust. They can grow on baby's cord and make a toxin. This toxin goes into his body through nerve route and makes his muscles contract too strongly. Tetanus usually present as "not sucking". His cord is sticky and smells. First his muscles are only stiff and painful. Later he has strong painful contractions. It usually starts from the jaw and a child cannot eat or suck, because he cannot open his mouth. As the stiffness becomes worse his mouth stays shut. The stiffness soon spreads to other muscles, his back and neck bend backward, the muscle of his face contract,

so that the outer ends of his mouth and eyebrows move upwards. Later all the muscles contract in spasma. This makes him so exhausted (tired) that he dies.

Postnatal Care:-

Find a time to talk with a new mother. Explain the process of involution of the uterus, the changes in the lochia that will occur. Her responsibilities in caring for a new baby, breast-feeding techniques, and how she may return to a healthy state most quickly. A woman with her first pregnancy may not know any thing, and she may not ask any question. Ask the help from her husband, mother-in-law and other relatives.

Breast Feeding and Breast Care:-

A woman's breast will begin to feel slightly full and tight the first day after delivery. A thick yellow fluid will come from her breasts for the first two to three days, as the newborn sucks. After 2 to 3 days white milk will come. When the milk begins to flow, the breasts may become large and firm and feel very tight. Breast feeding will relieve the tightness and firmness. Breast-feeding should begin as soon as possible after the delivery. A mother should breast-feed her newborn frequently during the first few days after birth. She should use her both breasts. A new born will take about 80 minutes to empty one breast. She should alternate the breast for the start of breast-feeding.

If the breasts are not well cared, they will become sore. Her nipples may become cracked and infected. Tell her; (1) to keep the breasts clean by washing her hands with soap and water, before touching her breasts for each breast feeding. She should wash her breasts with water only. (2) Support the Breasts. She should wear a bra, this way the breasts do not become sore, which also prevents rubbing and irritating of nipples with clothes. (3) Expose the breasts to the air. They should be exposed to air or sun after every breast-feeding. This will keep the skin tough and nipples will not crack.

Care of the Genitals:-

Lochia, the postnatal discharge, begins the day after delivery. Tell her how lochia changes color. If her lochia remains red or smells foul, tell her to visit the clinic and keep her genital area clean, which prevents uterus from infection. Because of the reproductive system is recovering from child birth, infection can easily occur during this time. To keep her genitals clean, she should wash her genital area with soap and water once a day.

Exercise:-

Exercise helps stretched abdominal and pelvic muscles to return to their normal size. A woman can begin exercise on the second or third day after delivery. Suggest these exercises:-

- Deep Breathing:- Woman lies on her back and breaths slowly and deeply using her abdomen to draw in and push out the air.
- Single Leg Raises:- She lies on her back, keeping her legs straight, raises on leg, then slowly lowers it. Then the other leg. This is done for five times. This can be increased when she gets strength.
- Double Leg Raises: In this case both the legs are raised and slowly lowered at once. Same way as one leg raise.
- Abdominal Exercise:- While standing she draws her abdomen in as far as she can and holds it there for some time. And then she relaxes a moment and repeats the exercise.
- Pelvic Exercise: She stands with her thighs together, she tightens her buttocks and holds them for some time and then she releases, this is repeated for several times.

Nutrition:

A new mother needs the same healthful foods, which were needed during pregnancy. She is breast-feeding her child. She needs body building foods. Extra iron and folic acid in her diet.

Intercourse:-

The postnatal woman should avoid intercourse until the lochia ends, for four to six weeks after the delivery. If a woman on intercourse has discomfort, she should be examined.

Normal Postnatal Changes:-

A woman body changes, after she has delivered a child. The postnatal period is of six to eight weeks. During this period the body of a woman returns to its non-pregnant state. There are some changes, which do not return exactly like before pregnancy.

Changes in the size of uterus:-

Woman's uterus begins to shrink immediately after her fetus is delivered and the placenta is expelled. Within hours it swells slightly, you can feel it at umbilicus. Each day therefore, the uterus shrinks. It becomes firmer, after sixth week it returns to its normal state. A woman has slightly larger uterus, who has children than who does not have children.

Change in the Cervix:-

A woman cervix is soft, swollen, and does not have usual form during the first hours after delivery. The opening of the cervix admits two to three fingers at this time. Cervix begins to regain its form and is less soft within the first day. By the fourth week the cervix has completely closed,, it will not admit even one finger, without difficulty. The form of cervix depends upon the number of deliveries she had.

Shedding of the Lining of the Uterus:-

As the uterus shrinks, it sheds and discharges its lining. The discharge is called lochia. Throughout the postnatal period the lochia changes its color. Immediately after delivery it is red, and remains red for three days. Four to seven days its color is pink. Eight to ten days it is a combination of pink and yellow. From eleven to eighteen days it is creamy-white.

Menstruation also is shedding of the lining of the uterus. If the woman breast-feeds her baby, menstruation may not resume for several months. But if the woman does not breast-feed, her normal menstruation may begin after twelve weeks after delivery.

Change in the Vagina:-

Woman Vagina is stretched and swollen and has very little muscle tone after delivery. Within one to two days the swelling decreases and Vagina starts to return to its normal shape. The walls of the Vagina are very smooth, when they are swollen, but they show ridges by the third week. Usually vagina remains larger than it was before.

Lactation:-

Through out a woman's pregnancy, her breasts prepare for lactation, the milk. Her breasts become larger and fuller. Colostrum, a thick sticky fluid comes out

first. It contains antibodies, which provides protection for the baby. This goes on upto third day, when milk starts to come. The breasts are now harder, fuller, and heavier. The skin on of the breasts is tense and veins become swollen. After the milk begins to flow, the breasts become softer. Milk is white and rich in sugar.

The daily milk secreted is about one half pint during the first week. In the second week it becomes one pint, and one to two pints daily in the weeks afterwards. A calm, relaxed woman, who drinks plenty of fluids, produces milk most easily.

Human milk is best for newborn, because it contains antibodies, that protect the baby from infections. It contains every kind of nourishing food which baby or a growing child needs.

Child Spacing:-

A woman who has recently delivered a child, will normally not be fertile, while her reproductive system is returning to its normal state. A woman body needs time to adjust and rebuild its strength. This is a natural rebuilding period, it is not always certain. Some woman become pregnant again in a very short time. The stress of repeated pregnancy and lactation drains their strength and energy. It means that the first child will lose his best source of food, when the second child is born.

A postnatal woman who wants to avoid early pregnancy should use some form of contraception. Tell her about available methods of contraception. Advise her that oral contraceptives may lessen the amount of milk she is able to produce for her child.

Also tell her that even though she is not menstruating, yet she may still become pregnant. Normal menstruation does not begin until three to four months after delivery.

A woman should have the second baby, giving gape between the births at least two to three years. Because during this period both the mother and the child become healthy.

There are several different procedures that may be used by couples in order to delay pregnancy. These are called child spacing techniques, and are used, when couples do not want to have a child immediately.

Methods

Abstinence:- One of the oldest method of child spacing. This means that the couple refrains from intercourse. Some times mother and father live apart for a year after the birth of the child. Other couple plans to live apart due to work or study. If a man and woman do not have intercourse, the woman will not get pregnant.

Withdrawal: (Coitus interrupt). An other old and still common method of child spacing. The penis is withdrawn from the Vagina at the end of the intercourse before the sperms and fluid of ejaculation is released. Even if the timing is correct, there is still a risk of pregnancy.

Lactation Amenorrhoea:- This occurs when woman who are breast feeding, do not get their period, therefore, pregnancy does not occur. But not a safe method.

Save Period (Rhythm Method):- There are certain days of moth, cycle, when the female egg (OVUM) is not in the fallopian tubes. It means either the ovum has not been released from the overy or has already moved out of the tubes. Normally an egg is released once a month 14 days before the menstrual period The sperm must

attach itself to the egg within two to three days for a woman to become pregnant. Sperm can live three days inside a woman. The pregnancy can be prevented by:-
Avoiding sexual relation three days before ovulation and two days after.

Condom:- This is also called a prophylactic 'rubber' or 'sheath'. It is a narrow rubber bag, which man wears on his penis while having intercourse. It does not allow the sperm to get in the body of woman.

Suppositories, Foams and Jellies:- Various kinds of foams and jellies are available for uses inside the Vagina. All of these are effective, because they kill the sperms without damaging the vaginal tissues. Some are in the form of tablets which are placed inside the Vagina others are jellies or cream in the tubes with applicator. These are inserted 5 minutes before the intercourse.

Diaphragm:- This is a thin and shallow cup-like structure made of soft rubber. The edge has a flexible circular coiled spring. It is in different sizes. It has to be fixed by an experienced family planning worker. It should be used together with a spermicidal jelly or foam.

Intrauterine Device(IUD):- This is an object which is placed inside the womb of a woman by a trained medical officer, Nurse etc. They are usually made of plastic and have a piece of thread hanging from the end. This is for the woman to check the string to make sure that the IUD is still in place.

A healthy worker must tell the woman interested in IUD.

- (a) The use of an IUD requires, that woman has to go to a clinic.
- (b) The doctor will perform this job after examination.
- (c) Woman should come to the clinic during her menstrual period.
- (d) If the woman is breast-feeding then the best time for IUD insertion is two to three months after delivery.
- (e) There may be some bleeding after IUD insertion. There may be heavy menstrual bleeding.
- (f) Mild to severe cramps and back ache may occur during IUD insertion.
- (g) The woman should feel for the string in her Vagina to know that IUD is in place.
- (h) The woman needs to come to the clinic for follow up visit after few months.
- (i) If she develops any problem over a period of time, she should visit the clinic.

Oral Contraceptives(The Pill):-

These tablets are consisting of hormones. If taken regularly over a period of time, raise the hormonal level and does not allow production of egg when no egg no pregnancy is there.

Injectable Contraceptives:- They are also harmonies, but have a long term effect> If pills and injectable are taken regularly they are 99% effective.

CARE OF THE NEW BORN

A newborn needs food, warmth, and sleep.

1. Breast-feeding:- The best food for a newborn is breast-milk. A new mother must know how to breast-feed. The following techniques may help a woman, when breast-feeding her newborn. These are nine facts :-
 - (a) Give the newborn to the another to nurse in the first hour after birth. The newborn will suckle.
 - (b) Breast-feed newborns when they are hungry or at least every two

hours during the first few days of life. Allow the newborn to feed for at least ten minutes on each breast, increasing the time to twenty minutes by the third day. The more the baby suckles, the more milk will come.

- (c) Hold the newborn half way between lying flat and sitting up. The mother may hold the newborn in the crook of her arm. So one hand supports the babies back and the other is free to move about. The mother should hold the newborn close to her breast. The newborn's chin should touch the breast. The nipple should reach the top of his mouth. If the nipple only lies on the newborn's tongue and lower jaw, little milk will come from the breast.
- (d) Some newborns need help before they start to suckle. A mother can rub her nipple against the newborn's cheek, causing a rooting reflex. She may also squeeze a little colostrum into the baby's mouth. The baby will learn how to feed. Be patient. Do not give when teaching a mother how to breast-feed her newborn.
- (e) Some newborns have trouble taking the nipple. Show the mother how to hold her nipple between her fingers and direct it into newborn mouth. The newborn nostrils must be open while suckling or he won't be able to breathe. Some-times the mother's nipple and breasts are so large, that they press against the newborn's nose. Show the mother how to keep her breast from covering the newborn's nose, so he can breathe freely.
- (f) Tell the mother, that for her own comfort, she should always alternate the breast on which she starts her newborn suckling. Tell her to start feeding with the breast, which was not the breast last time she started. This will help the flow of milk and prevent discomfort for the mother.
- (g) Newborns need to be suckled more frequently than older babies/ Newborns tire quickly. They need frequent, short feedings.
- (h) Breast-feeding twins takes special care. Not only should a mother alternate breasts, when she begins feeding, she should also alternate the babies. If one newborn is much smaller than the other, the smaller one should be fed more often for shorter times. Since the mother is feeding two infants, she should take special care to eat enough good foods.
- (i) If a newborn or the mother have to go to hospital during the postnatal time, they should go together. If the newborn is hospitalized, the mother should be there to provide breast-milk directly or by expressing it, and giving it with a nasogastric tube or cup and spoon.
If the mother is hospitalized, the newborn should go with her and be given to her to breast-feed regularly. Without breast milk the newborn probably will not live.
- (j) A newborn should not feed on milk and foods other than breast milk. Other milk and foods can cause diarrhoea and affect the newborn's appetite for breast milk. Also a good supply of breast milk depends on regular suckling, so decreased suckling may reduce the amount of breast milk, the mother produces.

2. Warmth:- Keep newborns warm. However, infants who are a few weeks old, who weigh about eight or nine pounds do not need to wear too many clothes. They need fresh air. Take infants outside every day the weather permits. Sunlight prevents rickets
3. Sleep:- For two weeks after birth, a newborn sleeps most of the time. Gradually he starts to stay awake between feedings. Place the baby on his stomach to sleep. He will not choke if he spits up in his position. He should sleep out of drafts, but with some fresh air.
4. Burping:- Babies swallow air, while they are suckling. Gently patting or rubbing a baby's back will help him burp, releasing the air he has

swallowed. A mother should help her baby burp at the middle and end of each feeding. She may place her baby on its abdomen over her thigh and gently pat or rub his upper back until he burps.

5. Spitting Up:- All babies spit up some milk. The milk slowly drools from the baby's mouth. Spitting up is not like vomiting, vomit comes up with force. Spitting up is normal, but can be decreased by burping. A mother should clean her baby after he spits up or the baby will begin to smell very sour.
6. Circumcision: Traditional circumcision can cause as much tetanus of the newborn, as unsterile cord cutting techniques. Little medical reason has been found to support circumcision. If no traditional reasons call for the operation, do not encourage it. The procedure has risks including tetanus, infection and bleeding.
7. Crying:- A new mother may need help, when a baby cries. A newborn needs a lot of holding. If the newborn cries, the mother should see, what is wrong. She should pick up the baby and hold it. Newborns have meaningful cries. The newborn will have a cry for when he awakens, another for when he is wet. A mother should learn to understand her newborn's cries. A baby who cries all the time or whose cry is shrill and high pitched should be examined.
8. Bathing:- Give information to new mothers about bathing their babies. Explain that newborns should not be put in water for a bath, until after their umbilical cord heals. The after birth, blood and vernix are gently wiped off the newborns at birth. Twelve to thirty-six hours later he may have a sponge bath. But he should not have a full bath, until his umbilical cord has dried and the stump has healed.

Suggest, that the mother should use a small basin or a tub, when her newborn is ready for a full bath. She should use water luke warm water for the purpose. Show the mother how to hold her newborn, with one arm supporting both his head and buttocks, so his head will not slip under the water. She should gently lower her baby into the water and gently wash him with soft cloth and soap. She should be sure to wash in all the creases and folds of the newborn's skin.

A newborn should stay in the water only about five minutes. When he is removed from the water, he should immediately be dried and wrapped in a dry blanket. The baby's face and head can be washed separately.

A newborn should be bathed every other day. Each time a baby urinates or passes stool, his dirty diapers should be removed. The baby's perineal area should be washed with soap and water and then dried after each change of diaper.
9. Care of Umbilical Cord:- The area around the umbilical cord should be kept clean and dry until the umbilical cord dries and falls off. It can be a site of infection. Dirty diaper can cause irritation and infection. Herbs, drugs or any other traditionally used materials may cause tetanus. Tell mothers to prevent irritation and infection of the umbilical stump by changing diapers, when ever they are soiled. The mother should also wash the newborn with soap and water. Nothing should be put against the umbilical cord.
10. Immunization and Well Baby Care:- A postnatal visit is a good time to tell mother the importance of immunization, and care necessary to keep the baby well. Give a BCG immunization to newborn. Also give polio oral vaccine the bonus dose. These both vaccines should be given to newborn as early as possible after birth. When the baby is of 6 weeks give him the first

dose of DPT and oral polio vaccines. The details of immunization is discussed in the Chapter for immunization.

Weigh the baby and maintain the growth chart.

CHILD GROWTH

Fetal Development:-

When a child is born it is already nine months old. It is worth remembering that the fetus develops in 40 weeks from the two cells joined at conception into an independent infant with a functioning nervous system, lungs, a heart, stomach and kidneys. To support this rapid growth and development major changes take place in the mother's body. Under normal conditions the mother's weight increases by about 20% during pregnancy.

Birth Weight:-

The birth weight in infant is important, because it determines his ability to adapt to a new environment and develop normally. Many factors cause variation in the weight at birth, but in developing countries the mother's health and nutritional status, and her diet during pregnancy are probably most important. Among the upper socio-economic group in any developing country corresponding birth weights are reported slightly lower. This is because even if the mother is in good health, birth weight is related to some extent, to the height of the mother. A taller mother usually delivers a longer infant.

Low Birth Weight:-

In the international classification the term "Low Birth Weight" is defined as being below 2.5 kg. There are two main reasons for low birth weight. One is premature or early delivery, and the other related fetal growth. Frequently in the poor sectors of society, the diet available to pregnant mothers is inadequate. Also there are limited opportunities for proper antenatal care,, which should include the prevention and treatment of anaemia, malaria, and other infections, the poor diet is usually caused by poverty, but can be due to ignorance or food taboos. These are imposed most commonly during the first pregnancy. Low birth weight infants may be small and wrinkled at birth. Many infants with low birth weight may not show any sign of malnutrition, exception for being small or dwarfed.

To ensure the best fetal growth, it is important to supervise the pregnancy as closely as possible.

Development after Births:

The normal well fed infant, who is protected from infections grows quickly.

Weight:-

This increases rapidly in the first few months, but the rate slows down by the end of the first year. During the first year by about 7 kg. During the second year about 2.5 to 3 kg and then until puberty it continues increasing about 2 to 2.5 kg each year.

Length:-

At birth the average infant is about 50 cm long. length increases by about 25 cm during the first year but less rapidly after that.

Risks for the Young Child:-

Most diseases and deaths of children in developing countries are unnecessary and could be prevented by better nutrition, better hygiene, better housing and better health care. Only few diseases cause most of deaths i.e. protein energy malnutrition. PEM kills 57% and diarrhoeal diseases kill 30% of the children deaths. Other common diseases of early childhood are skin infections, intestinal worms, malaria, tuberculosis, anaemia and vitamins deficiencies. A sick child does not want to eat, so he become malnourished. Infections makes malnutrition worse and malnutrition makes infections worse. That is why it is important to treat all childhood diseases as quickly as possible.

The Weight Chart:

A child's weight is good indication of his nutritional status and growth if he is under five years of age. It requires considerable skill to decide from a single weight, or a series of weight, if the child's growth is satisfactory or not.

However this can be done quite easily if the weights are compared to normal. The best and simplest way to do this is to mark the weight on a growth Chart, on which the reference (normal) weights are already down.

Instruction for using the Weight Chart:-

Before any weights are entered in the weight chart the birth month and year must be filled in, in the space at the bottom of the chart. If a mother does not know the birth date, this can be found by using local calendar, that relates the birth to a known local event. This could be seasonably, religious. Plot the weight above the correct month of the chart.

The upper line on the chart corresponds approximately to the reference or average weight of health children, and the lower line to approximately 80% of this. The space between the two lines has been called the "Road to Health". In order to help illiterate mothers, the plotting of the child weights. The road to health can be explained, the space where the child walks and should walk. The weight curve should increase at the same rate as the reference curves. If the child is not gaining weight or is losing weight in curve will be flat or go downward. Such a child needs special care. The weight chart can also indicate when food in addition to breast milk should be introduced or already introduced.

ROLE OF TBA IN AFGHANISTAN RURAL COMMUNITIES

A: Ante-natal Care

TBA's responsibilities during pregnancy are as follows:-

- 1) Identify pregnant mothers in the village and get them register at MCHO post.
- 2) Provide information to pregnant women about ante-natal services available at MCH post and to use them.
- 3) Provide information about:-
 - Personal and domestic hygiene
 - Importance of diet-rest and sleep during pregnancy
 - Importance of periodic examination during pregnancy
 - Importance of T T vaccination during pregnancy
- 4) Identify common problems during pregnancy labor, delivery and post natal and manage.

- 5) Identify high risk mothers, occupancy or refer them to MCHO.
- 6) Carry out routine ante-natal check up to home.
- 7) Take the woman to MCHO Post for special examination
- 8) Inspect articles needed for home delivery

B: Labor and Post Natal Care:-

- Conduct normal delivery using safe delivery method and Dai, kit.
- Inform MCHO immediately any abnormal condition occur during pregnancy.
- Provide immediate care to newborn.
- Instruct, family to give good food and adequate rest to a other.
- Provide iron and folic acid tablets to pregnant and lactating mothers.
- Instruct mother for breast feeding to the baby as soon as possible after delivery
- Pay post natal visits and carry out necessary care procedure and health education.
- Inspect lochia, involution of uterus, general health and hygiene and diet.
- Attend baby card.
- Provide information how to delay pregnancy.
- Report birth and death to MCHO and local office

: Infant Care

- Provide immediate care to new born baby.
- Carry out first physical examination of baby.
- Weigh the baby using.
- Advice mothers for breast feeding and solid introduction from age 4 - 6 months.
- Advise mothers for vaccination of children and complete series.
- Advise mothers to take sick children to MCHO for proper check up.
- Provide ORS packet to mothers whose child got diarrhoea.
- Monitor health status of children using arm measurement hand and refer to MCHO who fall and yellow or blue color

How to Motivate community for TBAS/CHW Training

MCHO role is to train and supervise TBA/CHW in the community. For this purpose you need motivate local women working since years in the community to attend training program organized for her/them. This is not an easy task. For this purpose you need to meet with village commander/Malik/village leader to identify women who are involved in providing any kind of help during Labor and delivery to attend training course. Also ask them to identify place in the village where you can import training because in rural Afghan it may not be acceptable for f female to come to MCHO Post for training.

You can explain community leaders that:-

The Dai occupies a vital position in the indigenous health organization of Afghanistan statistics shows that between 33% and 75% of births in Afghanistan are attended by the traditional birth attendant (Dai) while looking at high infant mortality rate in Afghanistan and specially number of death occurring in the first week of life. To reduce the maternal deaths, upgrading the skills and knowledge of Dai is very important. We all know, in rural Afghanistan professional medical care is scarce , therefore, it is required that we:-

- 1) Improve her skills in conducting normal safe delivery.

- 2) Involve her in health promoting activities in the community beside domiciliary midwifery service.
- 3) Link her activities to formal Afghan health care delivery system to some extent. Explain them that you as a trainer of TBAS/CHWS are an Afghan Muslim woman and respect traditions/customs and observe pardah
- 4) The work of TBAS/CHW is like carrying out "JIHAD" against diseases as she will be properly looking after women in need while men are away fighting.
- 5) Life of the mothers and baby can be saved by recognizing high risk will before time.
- 6) Most of the doctors are male and cannot attend deliveries then training of TBAS is most needed.
- 7) In case of women have problem she is near by and always is available to attend emergency call.
- 8) Training is free of cost and at the end of training TBA will get kit and replenishment.

Selection Criteria for TBA/CHWS

TBA/CHW can be any woman who is providing some care to families communities or working for her own extended family. Number of women for TBA/CHW may be as many who volunteer themselves. But not more than 5-6 in one session to make training effective. Choice of women may be:-

- 1- Strongly recommended by community.
- 2- Active women regularly attends deliveries.
- 3- The woman in the family who advises the woman or child and maternal
- 4- A middle aged woman who easily move around in the village.
- 5- Healthy, not deaf or dumb.
- 6- Interested in the training. Do not take some body who is by the family.
- 7- Friendly, polite, willing to help others.
- 8- Good communicator and willing to learn new ideas.
- 9- No heavy domestic responsibilities and able to attend deliveries.
- 10- Understands that who is working voluntarily.

HOW TO IMPART TRAINING TO THE TBAS

Once village leaders are agreed, TBAS/CHW are nominated by the community and site for training is identified in the village you start conducting sessions.

- 1- For TBAS training, various topics are given in the book. However, you can start training from any topic according to the need of the community/wishes of the learner.
- 2- Conduct most of the training in the village. However, these TBAS need to know about services, location of the MCHO Post so few sessions can be conducted at the post.
- 3- As MCHO remember that TBAS/CHW are volunteer and they have other responsibilities therefore training time should be scheduled according to their availability.
- 4- Training session should not be longer than 2 - 3 hours as they are illiterate and need to learn and communicate accurate information so restrict yourself to only one or two topics at one time

- 5- Use various methods of teaching discussion role play, demonstration story telling + visual aid to train them. Encourage TBAS trainers to be active participants in the learning.
- 6- Remember that each TBA/CHW will have different level of understanding. Some of them may quickly pick up the subject, some may need more time to practice the skill.

THE NORMAL PREGNANCY.

As a CHW your role is to identify each pregnant woman in your village and help her throughout her pregnancy so that she has a safe delivery of a healthy baby. Most women have no major problem during pregnancy, but some do. The women who experience signs of possible trouble are said to be "at risk". This section will discuss the care needed for the normal pregnancy. The next section will discuss women who are at the risk of developing.

Keep a record of all pregnant women you are attending so that this can be reported to the MCHO.

It is important that each woman be encouraged to visit the prenatal clinic at the MCHO Post at least three times during her pregnancy. She should visit the early in her pregnancy, at 7 months and during the last month.

In the clinic she will be weighed, her blood pressure checked, the baby's position checked, the foetal heart checked and certain very important questions asked.

Try to accompany her to the MCHO Post for at least one of the visits so that you can discuss with the MCHO the woman's health, her baby and any potential problems.

If any special problems are found during the examination they will be managed by the MCHO.

At the end of the prenatal exam she will be given iron and folic acid tablets. All pregnant and lactating women should receive these tablets.

This is because when a fetus is growing in the uterus, extra iron and folic acid are required. The iron and folic acid are important for blood production. If too little iron and folic acid is eaten in her food, her blood will become thin (anemic) and the woman will become weak. Iron folic acid, taken every day throughout pregnancy and lactation, will improve the woman's strength and allow her to go through her delivery in the best possible condition. Also her baby will be as healthy as possible.

EIGHT ; MATERNAL CARE

The pregnant woman needs more food than other women and more food than men, for her own body and for the growing baby inside her.

Good balanced food intake: especially legumes and vegetables is very important.

During your visits to the pregnant woman, check on her food intake. Is she eating plenty of green leafy vegetables?

- * Plenty of legume, milk, eggs and meat, if available?
- * Usual amount of grains?

There may be many foods.

NB that are being neglected. If entire food groups are being neglected it is best to find appropriate alternatives rather than giving recommendations the woman probably will not accept.

PREPARING FOR THE BIRTH

Now we are going to talk about preparations made with the pregnant woman and her family before the delivery time begins. These early arrangements are very helpful at the time of the delivery.

What kinds of materials - clothing, razors, soap, food should be prepared by the family?

Several weeks before the delivery, visit the family to discuss the home preparations.

The mother should have ready two clean sets of clothing for herself. When the contractions begin, she should take a shower and put on one of the clean sets of clothing. The second set of clothing is to be put on after the delivery. Also, she should have 2 at least five clean rags for the delivery. These should be folded into perineal pads.

After Delivery . the baby will need clean clothes, a clean small blanket and some clean cloths for nappies.

The room should be airy and light so that you are able to see clearly. Since the delivery may occur at night, be certain an electric light or a kerosene lamp will be available. The bed should be clean, and two clean sheets and a plastic sheet should be prepared. One should be used before and during the delivery, and the other after the delivery. The family should have ready a new razor blade or scissors, a spool of thread, firewood, a cooking pot and a pan. Soap and clean water must be available so that you can wash your hands. Cloths must be prepared for washing the mother.

The week before the by is expected, will the home to check that everything is ready.

THE MOTHER NEEDS:

- * 2 sets of clean clothing
- * 5 perineal pads

THE BABY NEEDS

- * clean clothes and a clean small blanket
- * clean nappies. THE ROOM SHOULD HAVE
- * fresh air
- * a good light
- * 2 clean sheets for the bed
- * a plastic sheet

FOR THE DELIVERY

- * Soap and water
- * Clean washing cloths
- * A razor or scissors
- * Thread
- * Pan and fire
- * Oil

HOW THE BABY IS BORN:

The baby and the placental are in a bag of water inside the mother's womb. The baby is connected to the placental by the umbilical cord. When the womb starts to open, the mother will have regular pains which come faster and faster as the opening gets wider. This opening is inside the mother and you cannot see it. Opening of the womb takes about 12 hours in the first pregnancy but usually a much shorter time in later pregnancies. Give the mother small drinks of a water and sugar mixture during Labor.

When the womb is fully open, the bag of water will burst and the baby will slide down inside the mother. When this happens, the mother will want to push the baby out. When she starts to push, the delivery is near and she should be in the clean place prepared for the delivery.

You will soon be able to see the baby at the vulva. With every push, the baby will come out a bit more. Tell the mother not to hurry. She will need to rest after each push.

The baby's head will come out slowly, and then the shoulders and the rest of the baby will follow quickly. The baby will still be attached to the placenta by the cord. You will have to tie and then cut the cord. About 10 minutes after the baby is born, the womb will become small and push out the placenta and the bag that held the water. At this time the mother may bleed about a cupful of blood; this is normal.

Within one or two minutes of being born, the baby will take his first breath and may cry. After that you should put the baby to the mother's breast and let the baby suck. This feed is very good for the baby, and the baby's sucking causes the womb to become hard and this stops the bleeding.

When the baby has had the feed, the mother will be hungry and thirsty. Give her sweet food and drink. Then let her and the baby rest.

CHAPTER. CHILD SURVIVAL AND COMMON
PROBLEMS OF SICK CHILDREN

Child Survival Intervention

Why do so many children die? There is no simple answer. Disease and malnutrition cause death of millions of children. Bringing the death rate down by preventing disease, and malnutrition, many people agree to this approach. But many do not agree to this and say that these diseases and malnutrition are the symptoms of a single disease, and that is poverty. They suggest the lasting solution to the problem is to alleviate the poverty in which these children live.

Both the arguments are valid. There is a biological cause for every death. A child drinks water from a contaminated well and dies of severe dehydrating diarrhoea. Bacteria cause the dehydration, which precipitates death. But poverty plays a major role. This tragic result might have been avoided, had the community been able to provide the clean water or had the mother been able to read the directions on an oral rehydration salt's packet.

Bringing about the child survival revolution therefore requires systematic understanding of both aspects of child mortality i.e. social and biological. If child survival is to be improved, which is possible. It is essential to take action on the model, which takes care of both the factors.

This includes the general categories of nutrition, infection and maternal factors that put children at risk. Also the health attitudes and resources that influence child mortality, through preventive and curative actions.

The most important aspect is political and social will, to improve childhood survival.

The Major Impediments to Child Survival are:-

1. Diarrhoeal Disease.
2. Vaccine - Preventable Diseases.
3. Acute Respiratory Infection.
4. Malnutrition.
5. Malaria.
6. High-Risk Fertility Behavior.

1. Diarrhoeal Disease

Diarrhoeal disease is the leading cause of infant and child death in the world today. It is also one of the most frequent causes of childhood illness. And a major factor causing malnutrition 60% death are due to dehydration among the deaths due to diarrhoeal disease.

Diarrhoea is only the common symptom of intestinal disease. The source of infection may be a virus, a bacteria or a parasite. They all alter intestinal function, which cause loss of fluid from the body, With this the nutrients are also lost. The severity of the episode varies, depending upon the type of diarrhoea and infection. Diarrhoea kills primarily through dehydration. It is responsible for 60 to 70 percent of all diarrhoea deaths. Without treatment, severe episodes literally take out fluids from the victim faster than they can be replaced. Rehydration, given orally or intravenously is the only effective therapy.

Transmission

Diarrhoeal disease is transmitted from person to person via soiled hands and via food and water, which has been contaminated by human waste. It is endemic in areas where sanitation and hygiene habits are poor. Seasonal cycles play

important role, occur more in hot and rainy seasons. Because at high temperature, bacteria multiply quickly in food and standing water. Diarrhoea can occur at any age. But when diarrhoea kills, its victims are always children. During the first 4 - 6 months of life, a child completely breast-fed is safe from diarrhoea, due to complete diet and disease protection from breast-feeding. Highest rate of diarrhoea among children from 6 months to one year is due to weaning food.

Diarrhoea causes malnutrition. During diarrhoea a child eats less, due to loss of appetite or due to withholding of food by the mother. Poorly fed children suffer longer and severe episodes of diarrhoea.

Increasing attention has been given to Diarrhoea since the development of a simple technique to combat dehydration, which is the principle cause of death. The technique is oral rehydration therapy ORT.

ORAL REHYDRATION THERAPY (ORT)

This is a three-tiered strategy: (a) administration of a simple solution of sugar and salts with (b) continued feeding through a diarrhoeal episode and (c) referral when appropriate.

(ORT) acts to replenish water and electrolytes lost from the body during Diarrhoea. The bacteria reduces the absorption of fluids and nutrients. Rehydration is the only effective treatment. Administration of this fluid does not cure diarrhoea, but it can maintain the body's critical fluid balance. Until the infection subsides, continuous feeding during the illness, lessens the risk of malnutrition. (ORT) can be used against all cases of diarrhoea. Only in severe cases intravenous therapy is still required. (ORT) stands as a model of existing child survival measures that are simple, effective and low cost. The solution itself is simple to prepare once the technique has been learned. It can be prepared either from a pre-mixed packet of ORS or from common home ingredients i.e. sugar and salt solution. This simple yet powerful life saving technique can be practical in the home in the areas beyond the reach of a hospital or clinic. (ORT) is the most significant medical advance in child survival since the development of vaccines. Making this lifesaving potential of (ORT) available in the hands of those who need it.

People in community, especially mothers need to learn how and when to give (ORT) when their children get diarrhoea. It should be prepared carefully, because over diluted solution is less effective, and too much concentrated can be dangerous. The importance of using cleanest possible water must be stressed.

The Importance of Continued Feeding:

The solution of sugar and salts may prevent dehydration, but does not solve the problem of malnutrition, which is the result of diarrhoea. For the normal growth and development of child continued feeding during diarrhoea and extra intake during the recovery period are essential even if the diarrhoea does not stop or the intensity is increased the feed has to be continued, because still 50% of its is absorbed through the gut. Feeding is better alternative than fasting in diarrhoea.

Prevention of Diarrhoea:-

The ultimate aim of diarrhoea control programme is to prevent the disease itself. Improvement in sanitation and water supply will certainly play an important role. Simple preventive measure can have an immediate impact on the diarrhoeal disease. The promotion of simple hygiene practices like hand washing with in the house hold is good example. This practice should be encouraged among children before and after eating meals washing hands with soap and water especially after defecation. Also the Breast-feeding provides a level of protection of from diarrhoea and discouraging the feeding through bottles. Similarly immunization

of children help preventing diarrhoea, which is common and fatal complication of measles.

3. Acute Respiratory Infection:

A host of other infections and parasites disease can strike children. Some are universal disease of childhood. Some are determined by climatic conditions, others by crowding and poor hygienic practices. Their impact is magnified by malnutrition on child survival.

With the exception of diarrhoea, no single group of diseases claims as many lives of children, as acute respiratory infections.

Acute respiratory infections are caused by a wide variety of disease agents. These infections range in severity from the common cold to bacterial pneumonia. Acute respiratory infections are divided into two groups: (a) upper respiratory infections and (b) lower respiratory tract infections. The first group is more responsible in causing death, and that is why is the focus of current health strategies. The lower respiratory tract infections are dangerous, but are rare than upper respiratory tract infections. And also they are difficult to diagnose. The upper respiratory infections have the tendency to lead to secondary, complicating illness.

Transmission:—Acute respiratory infections are spread from person to person through the air. Their main transmission factors are high population density, crowded living conditions, and seasonal changes. Within household, crowded living, primitive traditional and poor housing, it is common for the entire family who sleep in same room. Infants and children are exposed at early ages to diseases, brought into the home by parents. Intimate living conditions can increase the intensity of transmission.

Host Factors:—The principle risk factors are child mortality from acute respiratory infection are, young age, low birth weight, and poor nutritional status. Death rates are higher during the first year of life. In most of the cases pneumonia is the cause of death. Vitamin A deficiency cause night-blindness in childhood, has risk factor for respiratory and digestive tract by physical changes, which favor bacteria.

Treatment and Prevention:— Acute respiratory infections are now given great attention by international health community. With the exception of those for which vaccines exist. Growing awareness about acute respiratory infections and growing number up possibilities for their prevention and cure have stimulated new interests. It has become apparent that the child survival revolution will not take place without handling this major cause of childhood mortality.

Existing technologies include immunization, drug therapy and variety of measures to reduce the risk from this disease group. Four major diseases like measles, diphtheria, pertussis and tuberculosis are targeted by Expanded Program on immunization. Drug therapy provides a potent defence against respiratory infections.

Additional measures to control acute respiratory infections include promoting good nutrition, improving housing conditions, and expanding health facilities and health education.

Teaching mothers to recognize the early stages of lower respiratory infection in areas where medical help is available could be lifesaving for many children.

2. Vaccine - Preventable Diseases:-

Immunization is the most powerful weapon in the existing child survival technologies. The world health organizations Expanded Program on Immunization,

with the support of UNICEF and other major groups are doing efforts against six common childhood diseases. They are measles, diphtheria, polio, pertussis, tetanus and tuberculosis. The vaccines against these diseases are safe, effective and easily available.

Measles:

Measles is a viral infection that causes more child deaths than all of the other target diseases. The disease is characterized by high fever, cough runny nose, and a blotchy rash that appears over the body 3 to 7 days after the onset of symptoms. The virus is highly contagious and easily spread from person to person. With immunization, virtually all children will contract measles. The power of this disease to cause death is to effect nutritional and immune status of its victims. The fever can quickly deplete the body's reserves of both protein and Vitamin 'A even in children who are well nourished. The danger is more in malnourished children. Measles do not kill alone, it is always accompanied by either diarrhoea or pneumonia. Children who recover are often left with a severe malnutrition.

Tetanus:

Tetanus is a highly lethal infection caused by the toxin of tetanus bacillus. This organism exists harmlessly in the gut of many animals and humans. It is only when the bacillus enters through the skin or an open wound then it becomes fatal. The usual mode of transmission is through exposure to the soil, where tetanus spores can remain intact for years. People of all ages can get this disease. It is common in rural area, where unsanitary conditions prevail.

Neonatal Tetanus:

Tetanus that occurs during the first month of life or Neonatal Tetanus causes great number of deaths. It results from unsanitary practices surrounding birth. The newly cut umbilical stump provides an easy entry for the tetanus bacillus which can be introduced by contaminated cutting instrument, or by traditional dressing. The first sign of neonatal tetanus is inability to feed. In few days the disease proceeds to general muscular stiffness with spasms and convulsions. Death follows rapidly. Most deaths occur between 4 and 14 days of birth. Without treatment neonatal tetanus is almost fatal. Mortality is high, because babies are brought rarely to the hospital before severe symptoms have set in.

Prevention is the only strategy against this disease. Tetanus is not contagious it can be prevented by immunization and improved sanitary conditions, especially those surrounding maternity care. When a pregnant woman is immunized, her fetus also receives immunity. Following birth, the child enjoys this passive immunity for up to 5 months and safely pass the high risk period. Basic improvements in maternity care also helps the child survival. It can further be improved by safe delivery by trained birth attendants. Immunization against neonatal tetanus gives complete protection to infants of immunized mothers.

Pertussis:- (Whooping Cough)

It is an acute bacterial infection of the respiratory tract claims many deaths of children every year. It is characterized by a violent cough and whooping sound with inhaled breath. It is a prolonged exhausting illness. The severest symptoms occur over a period of 2 to 4 weeks. A residual cough may last for months. It is highly contagious. In an unimmunized population 80% children will get pertussis. 1.5 to 2 percent of infected children die from pertussis and its complications, especially from pneumonia. Children who recover are often left with malnutrition, which weakens their resistance.

Polio:

Polio is more of acrippler than of a killer. It is a viral disease, spread indirectly from person to person, via contaminated food and water. One in ten tendencies of this infection and remaining who survive become crippled to some degree. Polio was once thought to be a relatively rare disease that occurred frequently in developed countries. The disease seemed rare because most polio infections are silent. Only one of every 200 children infected goes on to develop paralysis. In poor health conditions, frequent exposure to polio virus begins at birth. It is preventable now by getting the children immunized through Polio vaccine.

Diphtheria:

It is caused by bacteria and is a severe infection, killing 10 to 15 percent of its victims. Many children in endemic areas develop an early natural immunity as a result of constant exposure to the bacteria through the skin. As health and sanitary conditions improve, such exposure decreases, and depriving children of this natural immunity, making them susceptible to the severe respiratory form of diphtheria later in life. Immunization thus becomes a critical factor in preventing the rise in morbidity and mortality from diphtheria.

Tuberculosis:- (TB)

The disease is associated with the poverty and crowded living conditions, which spread this disease. In developing countries it is a major cause of illness and death. 30,000 children die from T.B. each year.

It is a chronic disease, that usually starts in the lungs and may spread to other organs. Most deaths in children result from a severe form of the disease known as TB meningitis, which develops when infection spreads to the layers surrounding the brain. Like Polio most tuberculosis infections are silent. Without treatment the bacillus may persist any time in the life. There are four factors which have impact on child survival. (a) Low level of immunization. (b) Young age infection. (c) the presence of malnutrition and complicating diseases. (d) Lack of available health care.

Age at infection can have a strong influence on the severity of the disease. Childhood diseases tend to strike at much earlier ages.

Prevention:

It is no longer a question of the ability to control these diseases, it is a question of the will to take the necessary steps.

Immunization Coverage:

The world health organization's expanded programme on immunization (EPI) faces significant challenges. Because the targeted diseases strike in infancy in developing countries, effective immunization must occur before first birthday. Vaccination must not be given too early, because they can be neutralized by the passive immunity inherited from the mother. Additional problems include the need to keep potent vaccines through refrigeration, until they can be vaccinated. Especially the Polio and Measles vaccines, if there are too much breaks in the supply of these vaccines, they become useless before they reach the child. Public awareness may be the most important factor in the success of this program. If local communities are not informed about the availability of services or motivated to use them. Dropouts is the major problem of this program. Parents bring in their children for the first dose of DPT or oral Polio vaccine fail to return for second dose or third dose.

Vigorous communication activities are required to get the messages across to the community. This will serve three purposes:-

1. They educate the people about the importance of immunization.
2. To overcome misconceptions that discourage its wide spread use.
3. And explain where and when immunization services are available.

Despite the logistical difficulties, there is widespread agreement that the goal of universal immunization of children can be achieved before the end of the century.

5. Malaria:-

Malaria has been called the king of diseases. The hundred of pathogens that cause diarrhoea and respiratory infections may claim more lives, but no single agent of disease can match the power of the malaria parasite to inflict suffering and death. More than half of the world's population continues to live at some risk of malaria. Malaria plays a critical role in child survival. Pregnant women, infants and young children are at great risk of severe infection. In areas where transmission is heavy, malaria may cause 10 percent of all deaths before age 5. This also contributes to high rates of spontaneous abortion, low birth weight, and malnutrition in affected areas.

Agent:-

The parasite responsible for malaria, a plasmodium requires the interaction of human and mosquito to complete its life cycle. Plasmodia which reproduce inside the mosquito, are passed into the human blood stream, when the mosquito bites. Inside human plasmodium passes through several stages, infecting first the liver, and then the red blood cells, causing the classic pattern of chills, fever and sweating. Some times with delirium, that can result in death. Some forms of the malarial parasites lodge in the liver, where they remain and can cause recurrence of the disease through out the lifetime of the victim. When an infected human is bitten by a mosquito, the gametocytes of the plasmodium in the blood pass to the insect and the cycle begins again.

Transmission:-

Depending on its prevalence in an area, malaria is considered to be either epidemic or endemic. Epidemic malaria occurs sporadically in areas, where the disease is unstable. It is endemic to an area, if the parasite is always present in the population at some level. The level of malarial in a community is determined by environmental factors and the interactive behavior of human and mosquito. The continuous transmission requires both humans and sufficient numbers of malaria-carrying Anopheles mosquitoes.

The risk of disease fluctuates with seasonal patterns of temperature, humidity and the availability of breeding sites. Warm and humid climates favor the production of both the mosquito host and parasite, it also increases the life span of mosquito which increases the spread of disease. The transmission and control of malaria also depends upon the behavioral patterns of insect. There are many different species of Anopheles mosquito, having different breeding and feeding behavior. Some breed in shaded areas, some in bright sunlight, some rest on the inside walls of the house before biting, others feed and rest outside. Malaria transmission is increased by human activities like irrigation and farming, which provide new breeding sites. Migration of people can introduce parasite into uninfected populations.

Host Factor:-

There is no complete natural immunity to malaria. Following repeated infectious the adults may develop limited resistance to malarial illness. The extent to which malaria is common in an area will determine its effect on child survival.

Pregnant women are at high risk from malaria. Women lose the immunity they have against the parasite during early pregnancy. Severe malarial infection can cause, stillbirth, fetal growth retardation, or premature delivery.

The current achievements are being challenged by the appearance of new drug resistant strains of malaria. Malarial infections that do not respond to the standard chloroquine treatment are becoming increasingly wide spread. Even the second line defence drugs like fansidar has been reported resistance.

Prevention:-

The key to controlling malaria lies in interrupting the interaction between human and mosquito. The two principal strategies of malaria control are :-

- (1) To target the mosquito Vector of malaria and
- (2) To arrest the parasite cycle with in humans. Vector Control programs represents development of powerful insecticides, such as DDT. They have infect reduced the deaths due to malaria. It is now clear that reliance on this method of control have limited results and at the same time resistance has also developed for these insecticides.

The experience has demonstrated the effectiveness of combine chemical control with environmental measures to limit breeding sites and reduce human exposure. Simple education for malaria prevention can become a powerful resources. People's ability to take care of themselves.

The other strategy against malaria consists of fighting parasitic infections. Anti-malarial drugs, provision of these drugs for curative and preventive measure have shown a low level of malaria control. There are new drugs coming in the market which may give a good result.

A new weapon against malaria may soon be added to the existing arsenal. A vaccine against the first the first stage of malaria infection may be available within few years.

4. Malnutrition:-

Malnutrition is in many respects the common cause of disease and deprivation process that reduces child survival. Under nutrition affects nearly 40 percent of all children in developing countries. It is responsible directly or indirectly for 60 percent of all child death. Disease itself is a principal agent of child malnutrition. Another major factor in malnutrition is ;human behavior. Feeding practices, especially during illness, can make the difference between normal growth and malnutrition, or even between life and death.

The malnutrition in detail is discussed in the chapter Nutrition:-

High-Risk Fertility Behavior

Three aspects of childbearing have an important effect on child survival beyond the risks posed by malnutrition, infection, and lack of health care. They are the (a) mother's age at birth, (b) the number of children she has previously borne, (c) and the length of time between births. Of these factors, the birth interval have the greatest impact on child survival. A child who is born soon after another child, or whose birth is rapidly followed by an other birth, has

a much greater chance of dying. Short interval are 2 years or less time period between two births. A mother has to breast-feed for more than one year to recover from the physical and nutritional strains of pregnancy and breast-feeding and to prepare for the next child. Shorter the interval, greater the risk to the child.

Time between two birth

Short birth intervals are a universal health risk. Children born in quick succession are at greater risk of dying. Close birth spacing increases mortality in families at all socioeconomic levels. Sustaining a longer interval between births provides a simple preventive measure against a major hazard.

Short intervals between births affect many children. By not spacing births a woman reduces the survival chances of both her young infant and her next child. Where fertility is high most children will have both an older and younger sibling. In many cases the children do not even reach the first birthday and their mothers become pregnant again.

Maternal depletion

The effect of inadequate intervals between births has a number of causes. Because woman who bear children rapidly do not have adequate time to recover from the demands of a prior pregnancy and breast-feeding. They become nutritionally and physical exhausted. "Maternal Depletion Syndrome" may cause the birth of premature, underweight infants and result in inadequate breast milk, both are major health risks.

Premature and abrupt cessation of breast-feeding

The onset of another pregnancy soon after the birth of a child is likely to cause him to be weaned long before he should. Abrupt and premature cessation of breast-feeding is a major risk to the health of young children.

Competition

Children close in age are placed in competition with each other for the same maternal and familial resources. Individual parental time and attention are lessened and family resources, including food must be stretched further. Competition for family resources are more critical among 2-3 and 4 years old than among children under 2 years.

Maternal mortality

Woman who bear children in close succession are deprived of time needed to recover from the demands of pregnancy, labor, and breast-feeding. Exhaustion and higher rates of complications increase their risk of death and the survival chances of their children.

Related risks

A number of factors intervene to prevent, shy a short interval between births is such an impediment to survival. Some house holds may have conditions that affect all children being common cause that reduces their survival chances. The death of a child may be the reason of early new pregnancy to replace the lost child. The newly born child, after a short interval is then likely be exposed to the same factors that killed the first child. Woman who breast-feed all of her children briefly, place each child at a disadvantage. Brief breast-feeding decreases survival chances and shortens the interval to the next pregnancy. Death rates are higher for children of teenage mothers.

Magnitude of the risk

The mortality of children born at least two years apart is compared with that of children born in more rapid succession, mortality rates are higher for children with a close prior birth. When a child's birth is quickly followed by another birth, the risk of death during age 1 often increases by 50 percent.

Age of mother at birth

Children born to mothers in either very young or very old reproductive age groups are less likely to survive. Teenage mothers are often biologically, emotionally, socially and economically ill-prepared for child bearing. Mothers in their late 30s and 40s especially those who began childbearing at an early age, may be less able to with stand the stresses of pregnancy, delivery, and breast-feeding. The effect of mother's age is most important during the first year of life.

Number of children a woman has borne previously

First born children and those who follow many brothers and sisters exhibit high mortality. These children may suffer from competition from siblings, are more likely to be cared by some one other than their mother. Their births more likely are considered unwanted.

Prevention

Fertility behavior is deeply rooted in the cultural economic, and political fabric of a nation. Changes in the number of children parents desire, and in the belief that birth cannot or should not be planned. Imply major changes in family relations, the status of woman, expectation of life for children and certain aspects of life are predetermined.

Contraceptive technology exists, that can enable couples to effectively plan births. Information and education program can encourage family planning with out contraceptives.

Common Problems Of Children

1. Injuries and poisoning

An accident causes death or injury by mistake. Children have accidents because they are finding out about the world around them - the touch things, pull things, or try to eat or drink them. They have not yet learned which things are dangerous. A baby can crawl into a fire, or turn over a lighted lamp. He can fall off a bed or a chair, or his older sister may drop him. When he start to walk, he can pull a pot of hot food over him or fall into water or into a latrine. When he is older he can fall from a tree and break his bones, or hit his head and becomes unconscious. He can be hurt by a buffalo, or bitten by a dog, a snake or a scorpion. He can drown, or injure himself on the road.

Accidents to a young child happen in or near his home. Accidents to older children happen further away. We can prevent accidents. We can take danger away or teach children to prevent themselves being harmed. Both ways are important. For example - when you give a mother some tablets tell her to lock them up, or keep in a safe place, where it is out of childrens reach. Older children must learn how to cross a road. They must learn to swim, so that they do not drown. Before we can prevent accidents, we must find out what kinds of accidents happen in the community e.g. kerosine is a danger wherever it is used for cooking. Children may be burnt with hot water, If we see a child who has an accident, we must try to prevent the same kind of accident happening to another child. When you visit a child's home, look for the things, and show his mother how dangerous it is.

Is a child's home safe? See

- Has his mother made her stove as safe as she can?
- Can he reach the lamp?
- Are there any disinfectants or bottles of kerosine in place where he can reach them?
- Are there any pills or medicines, that he could eat or drink?
- Is the hole in the latrine so large that he might fall through?
- Is there any broken glass on the ground?
- Is there a cover on the well?
- Are there any other signs of danger?

Shock

Sometimes a child suddenly becomes white and cold, and his skin becomes damp (wet). This can happen either because he has fainted, which is not serious, or because he is shocked, which is very serious. Diagnosis is easy.

Fainting- An abnormality in the way in which blood is pumped round the body, causes fainting. A child only faints when he is old enough to stand. He feels dizzy, but as soon as he lies down, he feels better.

Shock - Any serious harm to the body can cause shock. It can last for many hours, and can cause death. A severely shocked child has a fast, weak pulse, and does not move. Some times he breathes deeply. If he is severely shocked he becomes unconscious. Any serious accident can cause shock, especially if there is much bleeding. Any severe disease such as pneumonia, diarrhoea or cerebral malaria can also cause shock.

Caring a child with shock

Treatment- lie him flat without a pillow in a quiet place. Put a blanket over him. If he has bleeding a lot, give him intravenous drips; with Darrow's Solution. Give him a intravenous drip if he might be bleeding from an injury inside his body. Treat the disease, which is causing shock, such as a burn or an injury. Explain to the mother, what has happened to him, he will be very frightened, so make sure, someone is with him to comfort him.

Burns

Burns differ in three important ways. 1. How big they are, 2. how deep they are, 3. and where they are:

1. How big a burn is - A large burn is much more dangerous than a small burn. A large burn causes more pain, and more shock, and more easily becomes infected. A burn becomes wet with fluid containing protein. So a child with a large burn loses much protein and fluid. Children with large burns become very ill and die from infection and loss of fluid. The size of a burn is important; measuring the size of a burn is useful. If a burn is equal to palm of a hand the child, it is 1% of his body. If the burn is equal to five palms of the child, it will be 5% of his body.

2. How deep is the burn - The skin has two layers. (a) The thin outer layer is the epidermis, (b) the thicker inner layer is the dermis. The parts of the epidermis, which make hair (hair follicles) and sweat (sweat glands) are deep in the dermis. Full thickness burns destroy all the epidermis and dermis. Less severe burns harm only part of the epidermis.

3. Superficial burns - Means outer or on the surface. These burns are least serious. The epidermis is harmed, but it is still alive. The burnt skin is red, but soon heals. There are no blisters.

4. Superficial partial thickness burn - These burns destroy only the outer part of epidermis. The part which is still alive, grows quickly to replace the dead part. Blisters are formed after a day or two.

5. Deep partial thickness burns - These burns destroy the epidermis but the hair follicles and sweat glands are still alive, heal quickly.

6. Full thickness burns - These burns are serious. They completely destroy the epidermis, hair follicles, and sweat glands. Health epidermis from the edge of the burn grows slowly over the burn to heal it. This takes a long time if the burn is big, and it leaves a bad scar. If the burn is bigger than the size of a child's hand, he will probably need a skin graft. In this operation, small pieces of health skin are cut from some other part of his body and put on the burn. Burns are not always the same all over. At some place the burn may be superficial and on the other part of the body it may be full thickness burn.

Where is the burn?

Burns on a child's face are serious, because they leave scars and deformities. If his eyes are burnt, he may become blind. If his hands are burnt he may get contracture, so that he cannot straighten his fingers. If he has inhaled hot smoke, his respiratory tract may be burnt and he may get pneumonia.

Treatment

If a child comes to you within 30 minutes of a burn, put the burnt part in cold water. This prevents the burn going deep. Treat the shock. If he has a large burn, leave his clothes on until he reaches the hospital. Work out the percentage of burn. Try to find out what kind of burn it is. Decide early whether or not to send a child to the hospital. Don't wait for him to get complications. Superficial burns of any size will cure itself. Partial thickness burn of less than 5% seldom needs intravenous fluid.

If possible send him to the hospital when has:

- 2 % or more full thickness burns.
- More than 15% partial thickness burns.
- Severe burns of his hands and face, or he is very young.
- Inhaled hot smoke.

If the burn is dirty or there is ointment or local medicine on it, wash the burn. Use soap and clean water. If hair round the burn, cut it short. If there are vesicles on the burn, do not break them, they help protect the burn from infection. Dress the burn with sterile Vaseline gauze, cotton wool and bandage. If the burn is over the joint put on a splint, this keeps the joint straight and prevents contracture. Change the dressing every two or three days.

- Give him anti tetanus serum after test dose.
- Give him penicillin for several days.
- Give plenty of food and fluids.
- Let him sleep under mosquito net, so that flies are kept away.

Cuts

Children often cut themselves. Small cuts heal well if we clean them carefully, and cover them with iodine and a dry dressing. Sometimes the edges of a cut are pulled apart, these cuts heal slowly because new skin takes time to grow in from edges. The edges of a cut can be brought together by stitches or by pulling edges with strapping of adhesive. Some times nerves and tendons are cut also. These only heal if you sew them up. This is a difficult job, so send the patient to the hospital. Some times a foreign body, such as a needle or a piece of bamboo, goes into a child's skin. If this is not taken out, send the child to the hospital.

Caring a child with a cut

When was he cut? If he was cut yesterday or earlier, his cut is probably infected, so do not stitch it.

How bad is the cut? And where is it? Large cuts and cuts on the face should be sent to the hospital.

Are any nerve or tendons cut? This is important in the hand. As the child to touch his own thumb with each finger of the same hand if touches, there is no serious cut to tendons.

Ask him to shut his eyes, and touch his skin below the cut with a piece of cloth. Can he feel it, if he feels his nerves are not cut. If no feeling then the nerve is cut.

If there is dirt clean it; rather wash the wound and then do the dressing. Antibiotics are not needed for every cut. Give the child penicillin if the cut is deep. Protect the child from tetanus.

Bruises, sprains and fractures

if he is able to walk after the accident, pain and swelling came later, there may be no fracture. If there is a cut in the skin over the injury, he may have a compound fracture. Do not move his injured arm or leg if this hurts him. If there is a deformity or compound fracture send him to the hospital. If necessary treat the child for shock and prevent tetanus.

Poisoning

Children swallow poisons of many kinds. These may be things in the house, such as kerosine, petrol, detergents, etc. There may be poisonous leaves, drugs. Tablets are especially dangerous if they are covered with sugar and look like sweets. Any of these things may make a child very ill. They can also cause coma, fits and death. Find out what poison he has taken. Some poisons need special treatment. We can wash out some poisons out of a child's stomach. But washing out kerosine is dangerous. If even a little kerosine gets into his lungs by mistake, it may cause serious pneumonia. A corrosive chemical such as a strong acid or alkali may injure his esophagus, if you make him vomit his esophagus may tear.

When did the child eat the poison.

If he took the poison a few minutes ago, we can remove it before it causes much harm. If he took the poison many hours ago and he has no symptoms, we need not worry, if he has no symptoms 36 hours after, he is safe.

Remove the poison

Some poisons cause diarrhoea and vomiting, which helps to remove them from the body. If this does not happen, make the child vomit, by putting a spatula down his throat. Do this as soon as possible. Don't make him vomit if he is comatose, because vomit may go into his lungs and kill him.

Kerosine and corrosive poisoning. Treatment

Do not make him vomit, and don't wash his stomach out. If he has taken kerosine, give him penicillin for five days. If he has any symptoms send him to the hospital. In all poisons, treat any dehydration, fits, pneumonia, or coma.

Drowsiness and coma: Any severe illness can make a child drowsy, as the disease becomes worse he goes into a coma. We cannot wake a child who is drowsy or in a coma. A child in a coma is in great danger, and may die. Drowsiness and coma can be caused by malaria, meningitis, dehydration, a head injury or poisons. Heat injuries and fits are easy to diagnose, but we can forget that a child might have cerebral malaria. If this is the case give him chloroquine by injection. An unconscious child cannot cough. If some vomit or saliva goes into his lungs, it will stay there and he may drown or it may cause pneumonia. We can prevent this, lie him on his side, so that vomit and saliva falls out of his mouth, and do not go into his lungs. If an unconscious child lie on his back, his tongue may fall back into his throat and obstruct his breathing.

Red Eye

Red eyes are painful eyes, there are many conditions which cause redness and pain in the eyes. Such as, acute conjunctivitis, trachoma, measles, foreign body, burns, harmful liquids and corneal ulcer etc.

Acute Conjunctivitis

This is common and very infectious. It can quickly spread through a family or a school, especially if several use the same towel. Bacteria or viruses can cause conjunctivitis. It is more common where there is a lack of soap and water, and where many people live close together.

Conjunctivitis usually attack both eyes, but one eye may be inflamed more than the other. A child's conjunctive becomes red and painful if his disease is severe. His conjunctive wells in folds that push out his eye lids. Sticky pus forms which dries and makes crusts. Pus slicks his eye lids together while he sleeps. When he wakes, he may not be able to open his eyes until the crusted pus has been washed away.

The bacterial conjunctivitis is much more serious and can harm the cornea, so treat it. newborns some times get a serious conjunctivitis from their mothers. Gonococcal conjunctivitis is very severe with much swelling of the eye lid, antibiotics do not work unless an eye is cleaned first.

Management treatment

If a child's conjunctivitis is severe, ask his mother to bring him to you, if he is not much recovered in two days send him to the hospital.

If the conjunctivitis is very severe with much swelling of the eye lids, treat it as gonococcal conjunctivitis. If it is less severe put chlortetracycline eye ointment into his eyes four times a day. Do this after his eyes have been cleaned. If you put ointment at night, his eyes will not stick together. If his eye lids are swollen give him penicillin, and do not cover his eyes with pads or bandage. If a child's eyes are very sticky with pus, show his mother how to clean the eyes. She can use a soft clean cloth or cotton wool, which she can throw away after use. Wipe the eyes from the middle to the outer side of the eyes. Clean the eyes three times a day and put ointment in the eyes.

Trachoma

Trachoma is a chronic infection. The organisms causing it are half way between virus and bacteria. Trachoma spreads by contact from the eye of one person to the eye of another person. Flies also spread it. Trachoma is common in areas where people are poor and there is much dust, little water and many flies. The

trachoma organism causes chronic inflammation of the conjunctiva, which heals after some months or years. But it causes much scarring and deformity of the eye lid. Eyes which have been deformed by trachoma easily become secondarily infected by bacteria. Even if a child's trachoma infection has stopped. Bacterial conjunctivitis can make him blind.

Trachoma is a much more serious disease. It goes through four stages. By the time a child reaches the last stage, he may have become an adult. You can treat the first two stages and kill the organism. But when scarring has deformed the eye in the third and fourth stages, treatment will not make it normal again. There is no strong immunity to trachoma.

First Stage - The child has mildly red watery eyes for a month or two. There are other signs, but they are not easy to see. Trachoma is difficult to diagnose at this stage. Many children recover completely, but some go on to the second stage.

Second Stage - Turn over the child's upper eye lid and look at the conjunctiva under it. You will see very small blood vessels and also some small pinkish grey swellings called follicles. Use a magnifying glass to look at the place where his cornea joins his sclera. The edge of his cornea looks mildly grey and small blood vessels go beyond the grey part into the cornea. This greyness of cornea is called pannus. It slowly grows over the cornea.

Third Stage - Healing trachoma. After several years, the follicles slowly go, and a scar forms, but the pannus remains.

Fourth Stage - The stage of healing and scarring. This happens after several more years. By this time the child is probably an adult. The pannus slowly goes. His cornea are grey and scarred. So he cannot see through them normally. His eye lids are now so deformed that they don't close normally over his eyes. Tears fall from his eyes. Scarring and deformity turn his eyelashes inwards, so that they scratch his cornea. His eye lids no longer protect his eyes. The bacteria can infect them and cause more conjunctivitis. This makes his blindness worse.

Management and treatment

Try to see the child at least once a month, until his trachoma is healed. Put chlortetracycline eye ointment into his eyes twice a day for five days, each month for six months. Teach the mother to prevent trachoma by washing their children's eyes every day.

Discharging Ear

Many children have discharging ears, mothers sometimes think this is normal. But a child with a discharging ear can become deaf and some times dies. You can prevent these deafness and deaths. Examine children carefully and treat them early.

Ear - There are three parts of the ear. The outer, middle and inner ear. The outer ear is the part of the ear on the outside of the head. This is called meatus. The opening of the meatus is wide and the next part is narrow, at the end of the meatus is the ear drum. It is made of tight skin with air on both sides. Inflammation of the outer ear is called otitis externa. Middle ear - is a small space filled with air in the bone of the skull. The walls of the middle ear covered with thin mucosa. Inflammation of the middle ear is called otitis media. The inner ear is deeper inside the skull. It is seldom diseased in children.

There are three small bones in the drum, which receive and send the sound through a nerve to the brain. A tube called eustachian tube links the middle ear with

pharynx, which takes air to the middle ear. There is a bony swelling behind the ear, called mastoid.

Examining the ear - There is an instrument called an auriscope and is used for the examination of the ear. It is normally present in every clinic.

How to examine a child's ear - Do the ear examination at the end of a general examination. The child may not like it; and may fight; then it becomes difficult. Examine him in the dark room and choose the speculum according to the size of the meatus, which may not hurt him. Sit the child sideways on his mother's knees, with his head against her body and ask the mother to hold his head firmly. Before you put in the speculum examine his outer ear. The skin behind the ear, look for inflammation and discharge. Pull the ear of the child gently backwards and upwards, because the meatus is slightly bent. You see something pink-grey, this is the drum.

Acute otitis media - Discharge and pain are the most common presenting symptoms of ear disease in children. If a child has a sudden ear pain and fever, he probably has acute otitis media. Some times caries teeth causes ear pain, but there is no fever and the ear is normal.

Acute otitis media is an acute septic infection in the middle ear. Organisms go up through the eustachian tube to the middle ear. This is a common complication of upper respiratory infection. The mucous of the middle ear becomes inflamed and thickened and space is filled up with pus. If pus cannot get out through the eustachian tube, the drum swells and softens. A hole is formed and pus comes out. The hole is called perforated. Otitis media usually starts suddenly. The child wakes up in the night, crying with pain, he has fever and he may have a cough and nasal discharge. His ear drum becomes red. If you do not treat a child with an acute red drum, his middle ear fills with pus and he becomes deaf. His drum perforates and discharge comes out. You can prevent his otitis from becoming chronic. If his ear is still discharging in three weeks, he has chronic otitis media.

Treatment - Give him penicillin or ampicillin or tetracycline or chloramphenicol for five days. Don't give antibiotics more than ten days. Give him paracetamol for fever and pain. If he is very restless give him promethazine. In severe pain, when his drum is normal put one or two drops of warm oil or liquid paraffin.

Chronic otitis media - Sometimes a child comes to you more than three weeks after his ear drum has perforated. There is pus and dirt, and sometimes flies in his meatus. Syringe these away and look at his drum. You will see a perforation. Chronic otitis media is difficult to treat. Antibiotics some times help a child. But if his discharge has not stopped in ten days, more antibiotics will not cure him. The best way to help him is show and teach his mother how to clean his ear. The infection will get less. the discharge will stop and the perforation may heal. A clean ear is also less likely to be infected with tetanus.

Treatment - Ask the child's mother to bring him to the clinic once a week. Swab or syringe and dry his ear each time. Give him an antibiotic for ten days, if he has one or more of these things:

- Discharge for less than a month.
- Redness of the drum.
- Pain in the ear.
- Fever.

Foreign body in the ear - Children sometimes put foreign bodies, such as beads or peas into their ears. These cause pain, secondary infection and discharge. Do not try to take them out with forceps. This will push them further in and you may harm the drum.

DO NOT HARM THE DRUM

Syringe his ear. This removes most of the foreign bodies. If it is not workable send the child to a hospital. If you can't send the child to the hospital, they try the following:

- Take a paper clip or any other kind of thin wire (strong)
- Straighten it out.
- Bend an end downwards, so as to make a very small hook.
- Carefully put the hook into the ear flat against the wall of the meatus.
- Turn the hook back onto the meatus.
- Gently pull the foreign body out of the ear.

Symptoms in mouth and throat - A child can have lesions in his mouth or throat. This makes them sore, and eating hurts them. A younger child cannot tell us anything. When his mouth or throat are sore he stops eating. Often his mother can see his lesions in the front of his mouth, but she cannot see into the back of his throat. To diagnose a sore throat in younger children is difficult. They often present as fever, coughing, vomiting, fits or abdominal pain so one must examine the throat of every ill child.

Examination of the mouth and throat - Feel for enlarged or tender lymph nodes under the angles of his jaw. Use both hands to feel on both sides. Use touch for the examination of mouth and throat. Sit him on his mother's knees with his back against her body. Tell her to try to stop him from turning his face away. Sit in front of him, so you can see into his mouth. Use a spatula for opening the mouth. First look at his tongue, teeth and gums. Examine his cheeks for Koplik spots. See the color of his palate, pharynx and tonsils, are they red? The size of his tonsils, are they enlarged, is there any pus or membrane.

Caries - These are holes in a child's teeth.

Sore mouth fever - When a child has had a severe fever for several days his mouth becomes dry and sore, the fever might be malaria, measles, typhoid, etc. The lips are cracked and covered with crusts. His tongue and roof of mouth is covered with dirty mucus.

Wash his mouth several times a day with saline water. Give him lots of fluids to drink.

Thrush - Thrush is caused by a fungus. The fungus grows on the mucosa of the mouth and causes white lesions. If it is severe, it forms a white membrane. Some times the whole tongue becomes white. Thrush is seldom serious. But it may stop a child sucking from the breast or eating. This can also cause mild diarrhoea. Thrush is common in newborns. It is also common in children who have been given antibiotics.

Treatments - Put gentian violet on the lesion. Show his mother how to do it. Use cotton wool and a stick. Use this three times a day. Do not give him antibiotics.

Herpes stomatitis - The herpes simple virus can cause cold sores in a mother. Some times it infects her baby. It causes small painful vesicles, that burst to leave round yellow-grey ulcers on the mucosa of his mouth. The child's lips may swell. The infection spreads to the lymph nodes under his jaw, and make them swollen and tender. He may have fever, become irritable and stop eating. There is no drug to kill the herpes virus. It becomes alright after a few days. Some times they become secondary infected, then they need treatment of antibiotics.

Angular stomatitis - Any kind of fever which lasts more than a few days, makes a child lip sore. Lack of vitamin B also causes angular stomatitis. Give him vitamin B.

Tonsillitis - Treatment - If a child has pus on his tonsils, give him penicillin. If possible he may need procaine penicillin for ten days.

Diphtheria - This is dangerous disease is caused by bacteria, which grow in the pharynx and tonsils. It is spread by droplet infection. Diphtheria starts slowly and makes a child ill for a few days with fever and a cough. His fever is usually mild, but he is more ill than you would expect. His throat is sore and he has difficulty in swallowing. Some times the infection makes his neck swell like the neck of a bull. His mouth smells bad, and grey lesions called diphtheria membrane cover his tonsils. This membrane looks like pieces of dirty grey cloth stuck to the mucosa. Causes obstruction and the child has difficulty in breathing and speaking.

A child with diphtheria can die from the local lesion in his throat. He can also die because the bacteria in his throat have made a toxin, which harms his heart. If his heart stops working, he dies suddenly. Sometimes the toxin paralyses the palate, and he cannot swallow.

Treatment - If he is ill and might have diphtheria send him to a hospital.

Worms

Worms are so common that many children get infected. Most worms live in the gut and lay ova (eggs) which one can see in the feces with a microscope. Worms can cause loss of weight, abdominal pain and sometimes dysentery. Hook worm causes anemia. Thread worms make a child's anus itch. Strongyloides cause skin lesions. Some schistosome live in the bladder and cause hematuria. Worms seldom cause fever. Antibiotics do not kill them. Many worms in number cause symptoms. Less number of worms do not cause symptom. We cannot remove all the worms from a child's body, but we can remove most of his worms and cure his symptoms. Worms are different from viruses and bacteria. One virus or bacteria can multiply into millions inside the child; child's body. Worms cannot do this. Most worms multiply outside the body on the ground into another animal. The worm then go back into the body of the child. This is called the life cycle of a worm.

Outworm - This worm lives in the gut and stays there by biting into its wall. Each hookworm lays many thousands of ova, which are passed in the child's feces. When ova get onto the ground they hatch and become larvae, these larvae then change into a second kind of larvae. The second larvae must go back into a child through the skin. If this larvae cannot go into a child, they die in a few days. They wait until a child walks on them with no shoes on, or sits on them with bare buttocks. Then the larvae bite through his skin and go round his body, until they find his gut. In the gut the larvae grow into adult worms. Lay more ova and go round their cycle again. They spread by feces to skin infection. Feces can infect the children. The child can reinfect himself, and increase his worm load. One larva grows into one adult worm. So the child's worm load depends on how many larvae get into him.

We can break the life cycle of worms by putting all feces into latrines. Teaching people to use latrines is a must. We must teach mothers not to let their children play in a place where feces are passed. If the ground near the house is already infected he should play on a mat, if he is older, he must wear shoes.

Each kind of worm has a different cycle. Strongyloides spreads from feces to skin. But its larvae live on the ground for much longer than the larvae of hookworm. The ovas of Ascaris spread from feces to mouth. A child becomes infected with these worms by eating infected earth. Worms can also infect him, if he puts his food, or toys on the infected earth and then to his mouth. Worms are easy to diagnose. Use the microscope to look for their ova or larvae in feces.

Ascaris (roundworm) - These are round smooth worms about 20 cm long with pointed ends. They are very common. Ascaris swims. If there are few ascaris they usually swim quietly, and cause no symptoms. Some times they swim weakly and are passed in the feces. Sometimes they swim so strongly, that they come out of his mouth. They often do this when a child has diarrhoea or vomiting. Some times ascaris go into a child's larynx or block his bile duct and cause jaundice. Some times they go to his liver and help bacteria to cause sepsis there. Some times a child has so many ascaris, that they make a ball of worms which obstructs his gut. You can some times feel this ball through his abdominal wall. A heavy load of ascaris may eat so much of his food, that they make him malnourished, with swollen abdomen. Ascaris can also cause chronic abdominal pain and child stops eating. There are three common drugs for treating children with ascaris. (a) Piperazine, (b) Bephenium, (C) Pyrantel pamoates. These drugs stop ascaris swimming, so they are passed in the feces. Bephenium and Pyantel are given to those children, who have both ascaris and hookworms, because they also kill hookworm.

Tapeworms - Several kinds of tapeworms can live in a child's gut. There are two big tapeworms, several meters long, the beef tapeworm (Taenia Saginate) and the pig tapeworm (Taenia Solium). Tapeworms are flat; and are made of many short segments joined together. Each tapeworm has a narrow head which holds on to the wall of the gut. The segments grow out from a narrow neck behind the head. As the segments grow towards the end of a worm they become bags full of ova, which break off and are passed in the feces. Some times whole of it comes out or you may see few segments coming out of child's anus, while he sleeps. Taenia ova is passed in feces on to the ground, some of the ova are eaten by cows. The ova hatch into larvae, which go to the animal muscles. When the meat is eaten, which is not well cooked, the larvae infect the children. Usually a child has on one or two Taenia and they cause no symptoms. Some times they cause abdominal pain and loss of weight.

Treat all kinds of tapeworms with Niclosamide.

Enterobius (Threadworm) - These worms live in the gut. They look like pieces of thin white thread. They live only in humans. At night the female worm comes out of the anus and lays ova on the skin around it. This ova make itch and the child keeps scratching, and the child may suck his fingers, eat the ova and reinfect himself. Often whole families are infected. They are difficult to cure, because of reinfection. Ova is seldom seen in feces. They go away with age.

Recognition and referral of congenital problems of children

Birth defects are physical problems which develop while a fetus grows in the uterus. Some birth defects can be prevented. Other birth defects can be treated and the child suffers no lasting effects.

Extra finger or toe - An extra finger or toe presents no serious problem. If the base of the extra finger or toe is narrow, tightly tie a string around it. The extra part will fall off in about the same time as the umbilical cord. If the base of the extra finger or tow is large, refer the newborn to a hospital.

Birth marks - Birth marks are large dark or red spots on the skin. Some will fade away by themselves. Others will need spacial treatment. Refer the newborn with large birth marks to a hospital.

Umbilical hernia - A baby may be born with a large pouch protruding from the middle of his abdomen at the umbilicus. The pouch holds the middle of his abdomen at the umbilicus. The pouch holds part of his intestines, which have

slipped between his abdominal muscles. The umbilical hernia usually corrects itself within a few years as the baby's abdominal muscles grow stronger.

Undescended testes - Most newborns testes are in the scrotum or can be palpated in the groin. Testes that cannot be palpated usually come down in the first few weeks after birth. Check for testes each time you examine a newborn. If the testes are not descended within one year, refer the child to a hospital. Surgery is necessary to bring the testes out of the abdomen into the scrotum.

Hare lip and cleft palate - Incomplete closure of the upper lip is called hare lip. Incomplete closure of the center of the palate is called cleft palate. These should be closed by an operation after the infant is three months old, if he is growing well. Refer the infant to a hospital. Babies with hare lip or cleft palate may not be able to suckle. Show the mother how to express her milk and feed her baby with a small spoon. Weight the baby every week to be sure he is getting enough milk.

Hydrocephalus - Fluid normally drains from a persons brain to his spinal cord. However, some birth defects block the fluid from draining. In these cases the fluid collects inside the newborns skull. The skull grows abnormally large. The condition hydrocephalus, can prolong labor. If it affects a fetus, it can threaten the life of a newborn. Refer the newborn to a hospital, whose head is larger than normal or whose head grows abnormally fast. Surgery can correct the problem in some cases.

Spina Bifida - Spina Bifida, an open spine, is a birth defect in which the bones around the spinal cord fail to close. Spina Bifida leaves a part of the spinal cord exposed. The problem can be so minor that it will cause no symptoms or so severe that it will paralyze the child's legs. Refer the newborn to a hospital with an open spine, cover it with sterile dressings.

Congenital Heart Disease - Congenital heart disease is present at birth. Five signs of congenital heart disease are:

- An abnormally fast heart rate.
- An abnormally fast respiration rate.
- An enlarged liver.
- A loud heart murmur.
- Cyanosis.

Refer all babies you suspect have congenital heart disease to a hospital.

Club Foot - A newborn with one or both feet turned inward and downward is called club foot. Untreated, a child with club foot may remain crippled. Treated with massage, exercise and splinting, the child may not have problems. Refer a child with club foot to a hospital in the first week after birth, so treatment can begin.

Dislocated Hips - Some times a newborn's femur slips out of its joint in the pelvis, causing a dislocated hip. Examine all newborns for this condition. Refer newborns who you suspect having dislocated hips. Keep the newborn's knee high and wide apart, using many thicknesses of diapers. The mother may carry the baby on her hip, or back, so his legs remain wide apart. Untreated babies with dislocated hips will be crippled. Treated properly, the baby may have no trouble, when he begins to walk.

Down's Syndrome - Is a common form of mental retardation. These babies look alike. They have low set ears, marked inner eye lid folds and very flexible joints. They also may have serious congenital heart defects. Down's Syndrome babies are usually calm and pleasant. With special help they can learn to care for themselves. Down's Syndrome children are born to women older than thirty five years.

Hypertrophic Pyloric Stenosis This occurs when the end of the stomach closes off because of a swelling of the pylorus muscle. Poor weight gain, constipation and vomiting are signs of hypertrophic pyloric stenosis. Refer all such newborns to a hospital.

Imperforate Anus - Rarely the anus of the newborn does not properly open. Taking a rectal temperature during the physical examination of a newborn will help you to determine whether the anus is open. If the anus is closed, refer the baby to a hospital for surgery.

Preventing Birth Defects

Parents should know why birth defects happen and what they can do to prevent them.

1. Seek prenatal care - prenatal care will uncover possible problems early in a woman's pregnancy and help in preventing birth defects.
2. Do not marry close relations - birth defects occur frequently in babies whose parents are closely related.
3. Do not drink alcohol or smoke tobacco - pregnant woman should not drink alcohol or smoke tobacco. These both travel through the mother's blood to the fetus, and affect it.
4. Do not take drugs or medicines - pregnant woman should not take drugs or medicines without asking a doctor or health worker. They can affect a fetus more severely.
5. Avoid infection - some illnesses may have little effect on a pregnant woman, can cause severe birth defects in a fetus.
6. Eat well - a pregnant woman's health affects her fetus growth, pregnant woman should eat well to stay strong. They should eat vegetables, fruits, eggs, beans and meat.
7. Plan your family - women older than thirty five bear babies with birth defects more often than younger woman.

Care of Disabled People

Disabled people are persons who:

- are deaf or cannot hear well.
- are blind or cannot see well.
- are paralysed or cannot move easily.
- cannot speak or speak poorly.
- cannot learn easily.
- cannot feel heat or cold or pain or touch in their hands or feet.

Disabled people often depend on their families or other people for feeding, dressing, using a latrine, and getting from one place to another. Such people can be trained to reduce or overcome their disabilities and to take an active part in the community.

Identifying and helping disabled people - Some disabled people live fairly normal lives in their families and can make a living. They will not need any special treatment. Others may need training to overcome or reduce their disability. In some cases the disability can be cured or very much improved, for example:

- a person who has poor sight may be able to see well with proper glasses or may be cured by a small operation.
- a person who is deaf or cannot hear well may be cured by an operation or may be able to hear with an ear trumpet, or a hearing aid, or may learn to lip read.
- a person who cannot move at all or cannot move easily can some times be trained to walk with crutches or to move around in a wheel chair.
- a person who cannot eat or drink without help may be able to use special spoons, cups or plates.

- a person who cannot look after himself or herself may be trained by an other family member to eat, drink, wash, use the latrine, and do other tasks of daily living
- a person who cannot speak may be trained with the help of other family members to communicate by use of sign language.

If you community is in a town or city, you should find out where disabled people can be trained and arrange for disabled persons in your area to follow such training if possible.

A disabled mother can be trained to wash her hands and breasts and to feed her baby and care for it. She can be trained to cook food for her children and wash them. Also in some places a family member can be trained to help a disabled person, to care for himself or to do certain kinds of work.

A family member can be trained to help a child who cannot see well, or hear well, or speak well, to use a spoon or cup or a pencil or learn easily to keep himself clean.

If you cannot send disabled people for training in your area, try to contact an institution or a center that train disabled people in an other area, and ask for its advice.

Whenever possible, disabled persons shall be examined in a health center or hospital see whether they can be trained or helped, to do things so that they can lead a more normal life.

Ask your supervisor's advice on how to help disabled persons in your community. Discuss with the community or women's group how to help disabled people to live a normal life.

A child who is late walking or talking - There is a right or normal age for a child to begin smiling and holding things. There is a right age for him to smile, sit, stand, walk and talk. Growing up and doing these things are the right time is called development. The age for doing things is called milestones. A child who does not pass his milestones at the normal age is backward. He is going along the road too slowly. He may grow up disabled, due to mental deficient.

Milestones - The age at which most (97 percent) children pass their milestones. Smiling at 6 weeks, sitting with help at 9 weeks, walking without help at 18 months, saying single words at 21 months, talking in sentences at 36 months.

NUTRITION

Good nutrition is a basic component of health. It is of prime importance in the attainment of normal growth, and development and in the maintenance of health throughout life. Nutritional surveillance, nutritional rehabilitation and nutritional Education are relatively new concepts in community medicine.

Despite these advances, malnutrition is widely prevalent in many parts of the world. It is one of the greatest international health problems of the day. It's association with infection, it's complex links with fertility, and immunity mechanism of the body are certainly new dimensions. There is a growing realization that adequate nutrition as obstacles to social and economic development has brought nutrition to the forefront of national and international concern.

1. Cultural factors effecting Nutrition:

Lack of food is not the only cause of malnutrition often there is starvation even having plenty of food. People choose poor diets, when good ones are available, because of cultural influences which vary widely from country to country and from region to region. These may be stated as food habits, customs, beliefs, traditions and attitudes.

a. Food Habits:

Are the oldest and most deeply involved with the culture. They have deep roots and are associated with love, affection, warmth, self image and social prestige. The family play an important role in shaping the food habits, and these habits are passed from one generation to other. Rice is the staple food in many countries and what is also a staple food for many countries. The crux of the problem is that many customs and beliefs apply most often to vulnerable group i.e. infants, toddlers, expectant mothers and lactating women. There is a wide spread belief, that if a pregnant woman eats more, her baby will be big and delivery will be difficult. Than there are certain beliefs about hot and cold foods, light and heavy foods.

b. Religion :

This has a powerful influence on the food habits of people. Hindus do not eat beaf, and Muslims do not eat pork. There are people who do not eat meat, fish, eggs and certain vegetables. These are known as food tabroos, which prevent people from having nutritious foods, even when these are easily available.

c. Food Fads:

In the selection of foods personal likes and dislikes play an important part. These are called food fads. The food fads may stand in the way of correcting nutritional deficiencies.

d. Cooking Practices:

Draining away the rice water at the end of cooking, prolonged boiling in open pans. Peeling of vegetables, all influence the nutritive value of foods.

e. Child Rearing Practices:

These vary widely from region to region and influence the nutritional status of infants and children. Example of this situation are premature

curtailment of breastfeeding, the adaption of bottle feeding and adoption of commercially produced refined foods.

f. Miscellaneous :

In some communities men eat first and women eat at last and poorly. Consequently the health of women in these societies may be adversely affected. Chronic Alcoholism is another factor, which may lead to serious malnutrition.

2. Assisting Community for Nutritional Status :

The health workers are expected to convey suitable messages to the people in the community in an appropriate manner so that the people adopt correct Practices, regarding feeding, immunization cleanliness etc. It is an important task for health worker, to assist community for their nutrition status.

It should be remembered that mothers are always keen to improve the health of their children. Unfortunately many of them do not know, how to do this. Moreover in poor communities there are other problems, such as an unhygienic (dirty) environment, lack of clean water and shortage of food at some periods of the year. Health worker should understand and should teach community the ways of overcoming these problems.

In all cultures there are some beliefs and superstitions about foods and food habits, especially with regards to the feeding of young children, and foods during pregnancy and lactation. The health worker should know what beliefs and superstitions are common in his community. It is his responsibility to convince people to give up wrong beliefs. At the sometime he should teach people good health and nutrition practices.

In all communities there will be individuals and groups who will require special nutrition and health care. Find out who these people are make an extra effort to convey appropriate nutrition messages to such persons.

Motivated People in the Community:

These are the people who can help in nutrition education. A health worker can not improve the nutrition of a community by himself he needs all the help he can get in every community, there are persons and groups, try to know them and establish good relationship with them, before getting help from them. When a health worker makes an effort to change the dietary habits of the people through a suitable message, it will be very easy if he is supported by the community resource person.

Conveying Health and Nutrition Messages :

Nutrition education is not so easy as many people think. This is because it is not easy to change people's eating habits. If a health-worker tells a mother to feed her child in a certain way and the mother listens to the advice. It does not mean that the mother will actually start doing, what a health-worker has told her. To convince mothers to adopt better nutritional practices, the health worker must understand why people follow particular feeding practices. Often the reason for the feeding habits of the families will be linked to factors such as :

Poverty, cost of food, availability of food, beliefs and superstitions about foods, and time available to the mother for preparing the food.

Once the health worker has understood the reasons for people's feeding habits, he can start nutrition Education. The following simple rules will help in getting good results.

Person to Person Discussion :

- a. Talking with one mother at a time is an effective way of conveying a message.
- b. Talking to a mother, when her child is not well and she needs help, is a good time to convey message.
- c. Not more than one or two messages at a time should be discussed.
- d. The message being conveyed should not go against the mothers culture or religion.
- e. While conveying a new message, it is always useful to mention some common beliefs and practices prevailing in the community.
- f. Do not give any message that mothers can not follow for other reasons. (Poverty, religion, illiteracy lack of knowledge, etc.)

Group Education :

Health worker will get many opportunities to talk to a number of mothers together. In such occasions, he should try to convey nutrition and health messages to them. For that he can use, posters, flip charts and photographs.

A child who has recovered from malnutrition as a result of good diet composed of cheap locally available foods can be a very convincing example to show. Growth chart can also be used for this purpose.

Some other useful hints about nutrition education :

Every culture has some form of gathering, where people discuss matters of common interest. Some times all important decisions are made at such meetings. Various aspects of nutrition could be discussed at these meetings.

If there is no such meeting, Health worker has to start. It should be informal, but invite every notable from the community. Health worker should take active part in it, he can ask question and make comments, that will keep the meeting going in the right direction. Purpose of such meetings is to keep Nutrition health in the mind of people.

Solving Nutritional Problems of the Community :

Task to be done to solve nutritional problem :

The health worker must have a broad understanding of the cause of nutritional problems. When a health worker visits a family and finds a badly nourished child, who has not been gaining weight for 2-3 months. He must find out the causes for the malnourished state. To do this he must immediately remember all the important causes of growth failure and should not simply think of defects in feeding. You know diarrhoea and infections can cause malnutrition. If the child has diarrhoea the health worker will advise parents, how to prevent dehydration, how to feed the child during diarrhoea.

Also if the child is not immunized, the health worker will persuade the parents to get the child immunized. On the other hand if the child does not have the diarrhoea or any other infection the reason for his growth failure may be in-adequate care and feeding. In such cases you should find out, why the child is not being properly fed. The reasons can be many. It may be that the mother is pregnant again and feels too tired to look after the child properly. She may be working outside and may be leaving the child in the care of an older brother or sister.

Thus in solving nutritional problems, the health worker has to remember that each nutritional problem has several causes. You therefore must understand the problem and identify the possible causes. Then you must decide, what has to be done so you must remember.

- a. The major causes of nutritional problems are often ignorance on the part of mothers. Diarrhoea and other infections and inadequate care of child is a result of ill health or malnutrition of the mother.
- b. The health worker should carry out all the tasks that seem appropriate in his attempts to solve nutritional problems.

Health workers will not be able to solve all the problems in a community e.g. It will be difficult for him to help an orphan child or children of very poor parents. In such cases they are advised to get in touch with community leaders or other workers, to see what can be done for such children.

Tasks to be Done When There are no Problems :

Regular weighing of all children is essential even when they are gaining weight normally. In the case of children who are growing well the health worker should:

- a. Tell mothers that as children grow older they need more food, and by one year of age they should start eating from the family food.
- b. Teach mothers how to avoid diarrhoea and other infections by washing their hands often, boiling water for children, giving children cooked food, and using clean utensils.
- c. Convince parents to get their children immunized to prevent the occurrence of diseases and malnutrition.

Growth Monitoring for Establishing Contact with the Community:

A child with main problem of not growing properly. This problem can be identified only by regular weighing the child and maintaining a growth chart, which remains with the parents. Normally parents take interest in the growth of their child for which they have to bring the child regularly every month to you for checkup. These regular visits help in establishing contact with the family and community.

Screening of Malnourished Children,

Using Arm Circumference Measuring Tape

This is a usual quick way to diagnose, if a child is malnourished. A child's arm circumference is the distance round the mid of his upper arm. During his first year his arm circumference increases rapidly as he grows. But it stays the same from his first birthday until his fifth birthday. If he becomes malnourished, his muscles waste, his arm become thin, due to disappearance of fat under the skin. His arm circumference becomes smaller. If his arm circumference is less than 14 cm during this time, he

is malnourished. The arm circumferences is useful and quick screening method for finding malnourished children in the 1-5 years age group. Especially if ages are not accurately known or weighing scales are not available, because we do not need to know a child's exact age. We only need to know that he is some where between one year old and five year old.

The arm circumference does not show small changes in a child's nutrition, but the weight does. So the arm circumference shows less clearly if a child is growing.

How To Use a Arm Circumference Tape :

This is done with a non stretch tape having two marks on it one measuring 12.5 cm. and the other measuring at 14 cm

1. Use the measuring tape. Measure the child's left arm. Let it hang by his side with his elbow straight, measure his arm circumference half way between the point of his shoulder and his elbow.

Put the tape gently, but firmly, round his arm. Don't pull so tight that fold come in his skin.

2. You can also measure a child's arm circumference with a 1 cm strip of old X-Ray film.

Soak the film in hot soda for a day. Wash off the picture, with hot water, make a scratch down the film at 0 cm make two more scratches at 12.5 cm, and 14 cm.

Color the film below 12.5 cm, red with a spirit pen. Color the film yellow between 12.5 and 14 cm. Color it green above the 14 cm. Put the red Color close to the scratches, but don't let it touch them. Cut the film into 1 cm strips.

A child with an arm circumference below 12.5 cm is severely malnourished. If his arm circumference is between 12.5 cm and 14 cm, he is moderately malnourished. If it is above 14 cm, he is normal.

You can also use a piece colored string to measure the arm circumference. It is not so good because it stretches.

The arm circumference is not helpful in children under one year or over five years.

A child with an arm circumference of less than 14 cm between the ages one and five is malnourished

4. Nutritional Deficiencies:

Nutritional Deficiency diseases occur when energy and nutrients are not provided in sufficient amount for the body to grow and function normally.

a. Protein Energy Malnutrition (PEM)

PEM is the most common deficiency disease in the world. Majority of them become undernourished during the weaning or transitional period. PEM is caused by a deficient intake of energy and usually protein, but the condition is almost always aggravated by repeated episodes of diarrhoea and other infections. Poverty and poor living conditions are the most important underlying causes of PEM. Weeks or even months before any

obvious clinical signs appear, the child stops growing or grows more slowly.

During the first few months of life most infants grow well, provided there is enough breast milk. Usually at some time between the fourth and sixth months, the breastfed infants growth may begin to slowdown and the flattening of the weight curve can be seen on the weight chart. This is the time when additional food is needed to complement breast milk. If weaning food are not started, or if an infant has repeated infections, there is no gain in weight and with in weeks there may be clinical signs of PEM.

The first signs of clinical PEM are associated with wasting. The fat tissues start to feel too soft and the muscles underneath are flabby. Muscle wasting is also seen and felt on the upper arm and shoulder. The belly may look prominent. The infant becomes listless and makes little response when his mother smiles or plays with him. He may or may not be hungry, he reaches the development milestones latter than normal. Early PEM may develop into the more severe forms, which are marasmus, kwashiorkor, or a combination of the two called marasmic-kwashiorkor.

Signs and Symptoms of Severe PEM.

The marasmic child is often less than one year old. He has severely retarded growth and a low weight for age. There is little or no subcutaneous fat, so the skin is loose and seems to be too big for the body. Nearly always the infant looks like an old man, or has a monkey face. The muscles are markedly wasted. They are flabby, and this can easily be felt on the thighs and buttocks, where the muscles should be tuck and strong. There is no oedema, and there may be no changes in hair color, there may be associated signs of specific vitamins and mineral deficiencies. The child with marasmus is usually hungry.

The Kwashiorkor:

This condition occurs most often in children aged from one to three years. Growth is retarded and although the muscles are wasted and flabby, there is usually more subcutaneous fat than in marasmic child. There is always oedema, mainly on the feet and lower legs, and the child appears moon faced. The child may look fat because of oedema. Their hair often turn red brown or grey and is easily pulled out. Curly hair grow straight. The skin may be pale and usually the child is anaemic. In severe cases a flaky paint rash may be seen particularly round the large joints. Children with kwashiorkor are miserable and apathetic. They have no appetite and are difficult to feed.

In Marasmus-Kwashiorkor:

Children have a combination of symptoms and signs from both the diseases.

Management of PEM:

Mild and moderate PEM:- Increase the concentration of energy and protein in the child's meals. Feeding more frequently of foods offered, including oil and some animal foods in the diet if possible, giving supplementary foods, (either donated or provided by the government, or community) if they are available and if the family is poor. The child's weight and health should be monitored regularly.

Sever PEM:- Children with severe PEM, especially if associated with acute infection, diarrhoea and dehydration, xerophthalmia or sever anaemia should be treated in hospital or a health center. A child with severe PEM

is a emergency. The first six of the following procedures should be done on the first day.

- 1 Take a history and examine the patient, check the early signs of xerophthalmia.
- 2 Assess the degree of dehydration and treat.
- 3 Examine for associated infections and treat.
- 4 In endemic malaria areas give a suppressive dose of chloroquine on admission as a routine.
- 5 Give one I/m injection of 100,000 iu water misible vit. A. or 200,000 iu orally and give a second dose orally on the second day. Give half doses to children under one year.
- 6 If the haemoglobin is below 3g par 100 ml, give a blood transfusion.
- 7 Start dietary treatment as soon as the child is no longer dehydrated. Some suitable milk feeds be given. The daily dosage should be 150 ml of fluid diet/kg body weight. At the beginning of treatment, the full strength milk may have to be diluted and fed very frequently. If the child does not take feeds by cup and spoon, feed by nasogastric tube. From about the third week on wards start introducing local foods, which are available in the home
- 8 Give vitamin and mineral supplements.
 - I. One gram potassium chloride daily.
 - II. Iron.
 - III. 5 mg of foic acid daily.
 - IV. Multivitamin tablets or drops daily.
- 9 Severely malnourished children are prone to hypothermia (abnormally low body temperature) and hypoglycemia (abnormally low blood sugar) They often die as a result of either of these complications. It is important to check the temperature regularly, during both the day and night. To wrap the child in a blanket and not to give bath. Frequent feeds during the day and night are necessary to prevent low blood sugar.
- 10 Encourage family support and comfort for the child. It is essential that the mother or father stays with the child and during the recovery period they receive intensive nutrition education.
- 11 When the child is eating well, has lost his oedema and is starting to gain weight, transfer him to some rehabilitation center. A child who has recovered from PEM should be followed-up regularly for at least one year.

b. ANAEMIA:

Anaemia may occur for a number of reasons, such as blood loss due to hook worms, malaria, infections, PEM, or a lack of dietary iron or folic acid.

The only reliable way to diagnose anaemia is to measure the haemoglobin level. If the haemoglobin is below 11g per 100 ml, a child is said to be anaemic. Paleness of the lips, tongue, inside the eye lid, and the hands are useful indicators of anaemia. The child with severe anaemia becomes tired and listless, and has a rapid pulse. He may be short of breath, lose his appetite and have swollen feet.

Iron Deficiency Anaemia:

Iron deficiency anaemia is the most common type of anaemia some of the causes are:

- A shortage of available iron in the foods eaten.
- Loss of blood.
- Hook worms in the gut sucking the blood.
- Inadequate iron stores from birth, Because the mother was anaemic, The birth was premature, or the cord was cut was cut too quickly after delivery.

The stores of the normal newborn infant are usually sufficient for the first six months of life. Although the iron content of breast-milk is low, it is very well absorbed. for this reason breast-fed infants below six months are rarely anaemic.

Treatment of Iron-Deficiency Anaemia:

- 1 Treat any non-dietary cause of anaemia, such as bleeding or if there is hook worm, give the specific treatment.
- 2 Give iron treatment

If the child is under three years or will not swallow tablets give ferrous sulphate solution. 60mg ferrous sulphate per 5mg, give 1-2 ml per kg. Body weight per day in divided doses.

Give older children half to one tablet of ferrous sulphate twice daily. Oral treatment usually needs to continue for at least two months. If treatment by mouth is impractical, because the child refuses or the parents will not continue giving it for long. Then give iron intramuscular injection. Iron Dextran containing 50 mg iron per ml can be given:-

Child's weight (kg) * 2/3 = ml of Dextran. is the dose one ml test dose should be given on the first day.

A dose of iron larger than indicated could be dangerous whether given by mouth or by injection. Any dose must be checked exactly and very careful instructions must be given to the mother.

- 3 Advise the mother, how to improve the child's diet using information given.

Increase the consumption of vit. C rich foods at meals. vit. C increases the absorption of iron from other foods in the diet, if it is taken at the same time.

Increase the consumption of meat and fish if possible.

Folic Acid Deficiency Anaemia:

Folic acid like iron, is necessary for Blood formation. It is found as folate in many foods, such as green vegetables. Anaemia results when there is not enough folic acid in the diet, to meet requirements. In conditions where there is a rapid blood cell destruction, and new cells must be produced, there is an increased need for folic acid. This happens in Malaria, sickle cell disease, or in recovery from PEM. Pregnant mothers often have folic acid deficiencies because of their increased requirement at this time. Folic Acid Deficiency is often associated with an iron deficiency.

Treatment of Folic Acid Deficiency.

Since it is not usually possible to diagnose whether the anaemia is due to iron or folic acid deficiency. It is wise to give folic acid to all anaemic children and their mothers. This can be done conveniently and cheaply by using tablets containing 30 gm iron and 0.2 mg. folic acid.

Prevention of Anaemia:

In areas where anaemia is highly prevalent give supplemental iron and folic acid to women from the fourth month of pregnancy. Give 125 mg iron and 0.2 mg folic acid per day for the remaining months of pregnancy.

If the mother is unlikely to take these tablets fairly regularly, an alternative treatment is to give iron I/m.

The diet during the weaning period should contain iron rich foods such as dark green leaves, or meat. Absorption of iron is increased by giving vitamin C rich foods and some meat or fish whenever possible. Hook worm and malaria should be controlled and treated.

C. Vitamin 'A' Deficiency.

Vitamin A deficiency is one of the most serious nutritional diseases among young children in developing countries. It is usually associated with PEM. It most commonly affects the eye when the condition is called xerophthalmia. Many thousands of children go blind every year, due to lack of vitamin A.

The most common symptoms of vitamin A deficiency are:

Night-Blindness:

The child can not see in the dusk or half darkness. History of night blindness is a useful way of finding children with early xerophthalmia photophobia, a dislike of bright light, may be an early sign of eye involvement.

Conjunctival Xerosis:

The conjunctiva covering the white surface of the eyeball looks dry and slightly rough instead of being moist, smooth and shining.

Bitot's Spots:

Foamy whitish - grey patches which appear at the sides of the eye. These may remain after treatment.

Corneal Xerosis:

The surface of the cornea, which is the central transparent part of the eye, becomes cloudy. Upto this stage xerophthalmia can still be cured. But the disease may now progress to the irreversible stage extremely rapidly with in hours or days.

Corneal Ulceration:

An ulcer on the cornea which involves all or part of the cornea. The ulcer may leave a corneal scar, which can affect vision.

Keratomalacia:

The cornea becomes opaque and soft, like jelly and there is very rapid destruction of the eyeball. The cornea may burst and part of the eye will protrude through the opening. Such a child is blind.

It is extremely important, that all health workers know how to identify the early signs of xerophthalmia. At this stage the disease can be cured by giving high doses of vitamin A. Certain groups of children are in special danger of xerophthalmia. These are children with PEM, measles or Diarrhoea, especially if they live in areas where vitamin A deficiency is common.

Treatment:

Treatment of obvious xerophthalmia is URGENT.

Immediately on diagnosis. 200,000 iu vit.A orally OR
100,000 iu watermisable vit.A I/m
injection

Following day 200,000 iu vit.A orally.

2-4 weeks later 200,000 iu vit.A orally

Prevention:

A diet containing plenty of vitamin a is the best method of preventing vitamin A deficiency and Blindness. Breast-feed infants for at least one year. Do not discard the vitamin A rich colostrum, the first breast milk. At 4-6 months start to feed dark green leafy vegetables, yellow and orange fruits and if possible, some finely chopped and well cooked liver. In clude some fat in the child's diet every day to help the absorption of vitamin A from the leafy vegetables and fruits. Children with diarrhoea measles, respiratory and other serious infections need extra vitamin A.

Pregnant and lactating woman should eat foods rich in vitamin A every day. Tell families that for night blindness in younger children.

Infants less then six months of age 100,000 iu oral vit.A may be given at any one time during the first six months.

Infants aged 10-12 months 100,000 iu vit.A orally every 4-6 months.

Children aged over one year 200,000 iu orally every 4-6 months.

Pregnant woman large doses should not be given at any time during pregnancy. Should not exceed 100,000 iu daily.

d. Vitamin 'D' Deficiency (RICKETS).

Because vit.D is formed in the skin through the action of the sun's ultraviolet rays, there should be no deficiency in tropical countries. Even so the rickets does occur it also occurs in the centers of cities, where children have nowhere to play outside. Mothers who avoid sunlight may develop osteomalacia, which can cause deformities of the pelvis, tetany, pain and sudden fractures.

From about four months of age, deficiency of vit.D affects the growing bones. the ribs become misshapen and the ends of the long bones enlarge near the wrist and ankles. The pelvic bones are deformed, which may cause difficulty and complications during child birth. The deficiency is best prevented by exposing the skin of any part of the body to sun light every

day. some times it may be necessary to give vit.D 1000-5000 iu per day by mouth for two weeks and follow with 400 iu per day for two months.

e. Iodine Deficiency "Goiter".

Iodine is an important trace element. If a woman is deficient in iodine, when she becomes pregnant, there is a danger that the infant will be mentally subnormal to some degree. Cretinism (deaf-mutism, mental retardation, abnormal motor development) is only found in communities, which are iodine deficient. The best way of preventing cretinism, is to make sure that all women of child bearing age are consuming sufficient iodine before they become pregnant. the most practical way of doing this is to encourage the consumption of iodized salt. If this is not feasible an infection of 1 ml of iodized oil every 3-5 years will protect woman against iodine deficiency. Iodine deficiency causes goiter in adolescents and adults, but rarely seen in children

f. Nicotinamide Deficiency:

Niacin or Nicotinic acid is rapidly converted in the body to nicotinamide, which is a component of coenzyme, which are essential for the metabolism of carbohydrates, fats and proteins. It is also essential for the normal functioning of the skin, intestinal tract and the nervous system.

Nicotinamide deficiency results in Pellagra. The disease is characterized by three D's (i) Dermatitis, (ii) Diarrhoea and (iii) Dementia.

The dermatitis is symmetrical in distribution and appears over areas of skin exposed to sun, such as the back of hands, lower legs, face and neck. Mental changes include depression, irritability and delirium.

Once a wide spread disease among poor and malnourished population subsisting mainly on maize diets. pellagra has declined in all parts of the world. Isolated cases are often reported from many areas.

Extensive studies have shown that amino- acid imbalance caused by excess of leucine is the cause of pellagra in both jowar and maize eaters.

Treatment:

The specific therapy of pellagra is administration of niacin 300Mg daily for considerable time. Administration of 5g of D,L __ isoleucine daily for 15 days was found to cure pellagra.

Prevention:

Pellagra is a preventable disease, adequate intake of Niacin or Niacin rich foods and avoidance of total dependence on maize are important preventive measures.

g. Vitamin (C) Deficiency.

Ascorbic acid or vit(C) is a white crystalline substance, highly soluble in water, but rapidly destroyed by oxidation and high temperatures, such as those involved in cooking. Man Monkey and guinea pig are the only species known to require vitamin (C) in their diets.

Functions:

The functions of ascorbic acid are:

1. Enzymatic role: It is concerned with the metabolism of connective tissues.
2. Wound healing: When intake is inadequate there may be delayed wound healing. Massive doses, however don't hasten wound healing.
3. Hemorrhages: Haemorrhagic phenomena appears an deficiency of ascorbic acid.
4. Iron absorption: Ascorbic acid reduces ferric iron to ferrous iron and thus helps in the absorption of iron.
5. Infection and stress: There is no reliable evidence that large doses of ascorbic acid protect against infections.

Deficiency:

Deficiency of ascorbic acid results in scurvy, a disease characterized by swelling of the gums. Multiple hemorrhage, anaemia and weakness. Infants bottle-fed or weaned to diets poor in ascorbic acid are prone to infantile scurvy. It is used in the prevention of common cold and Atherosclerosis.

Requirements:

The recommended daily intake of ascorbic acid is 40 Mg for adults. The normal human body when fully saturated contains about 5g of vitamin (C).

Recommended daily intake of vitamin (C)

Adults =40 mg per day.

Pregnancy =40 // //

Lactation =80 // //

Infants =20 // //

Children =40 // //

h. Vitamin B-Complex Deficiency:

Thiamine: or Vitamin B₁ is water soluble.

It is relatively stable to heat in the dry room, but is liable to oxidation and is rapidly destroyed in alkaline solution. It is essential for the utilization of carbohydrates in the body, It maintains good appetite and normal digestion. Thiamine deficiency causes neurological and mental disturbances. The clinical manifestation of thiamine deficiency or beriberi. This exists in three forms. Dry-beri-beri, wet beriberi and infantile beri-beri. This affects Breast-fed infants aged 3-5 months. This is due to very low contents of thiamine in breast milk. This is a fatal condition if not treated. Thiamine deficiency can be eliminated through the use of parboiled or undermilled rice or by addition of thiamine rich foods to the diet. Thiamine daily allowance is 0.5 Mg/1000 kcal.

Riboflavin:

It is a yellow crystalline substance. Riboflavin functions as a coenzyme in tissue oxidation and respiration, and is involved in protein, fat and carbohydrate metabolism. The deficiency of riboflavin causes.

- a. Angular Stomatitis.
- b. Cheilosis.
- c. Soreness of the tongue.
- d. Redness and burning sensation of the eyes.
- e. Scrotal or vulval dermatitis.

Pyridoxine:

Pyridoxine or vitamin B6 exists in three forms.

- a. Pyridoxine.
- b. Pyridoxal.
- c. Pyridoxamine.

It plays an important part in the metabolism of amino acids, fats and carbohydrates. The deficiency of pyridoxine results in convulsions. The other conditions are cheilosis, dizziness and vomiting. Foods rich in pyridoxine are liver, meat, fish and cereals. Ordinary diets consumed by man generally contain enough pyridoxine, but deficiency may arise during treatment with certain drugs. e.g. INH, hydralazine and oral contraceptives. The patients on these drugs must be given pyridoxine.

Pantothenic Acid:

Pantothenic acid is widely distributed in animal and vegetable foods. No deficiency symptoms have been reported in man.

Cyanocobalamin: Vitamin B12.

It is a red crystalline substance containing the metal cobalt. It is necessary for the synthesis of DNA. In addition vit. B12 is involved in unknown reactions in carbohydrates, fat and protein metabolism.

The manifestation associated with vit. B12 deficiency are Megaloblastic anaemia (Pernicious anaemia). Even in vegetarians the symptoms of vit. B12 depletion appear after periods varying from 2 to 20 years. Simple dietary deficiency are rare.

Sources of Vitamins and Proteins:

1. Proteins :- Animal Sources: Eggs, Milk, Meat, Fish etc. Plant Sources : Pulses, Cereals, Nuts, Beans, Oilseeds, Cakes etc.
2. Vitamin 'A':- Cod liver oil, Liver, Butter, Ghee, Eggs, Carrot, Green leafy Vegetables, Mango, Milk etc.
3. Vitamin 'D':- a. Sunlight
b. Foods:- Butter, Eggs, Milk, Fish fat.
4. Vitamin 'C':- Fruits:- Amia, Guava, Lime, Orange, Tomato, Pulses etc.
5. Thiamine :- Wheat, Rice, Cereals, Milk, Almonds, Ground nuts, Meat, Fish Eggs.
6. Pantothenic Acid:- Milk, Meat, Eggs and vegetables.
7. Folic Acid :- Liver, Eggs, Leafy vegetables.
8. Vitamin B12:- Liver, Meat, Eggs and Milk.

9. Riboflavin :- Liver, Meat Eggs, milk, Kindney, Leafy vegetables, cereals, Pulses.
10. Nicotinamide:- Liver, Meat, Fish, Milk, Eggs, Ground nut, Wheat, Maize.
11. Pyridoxine :- Liver, Meat, Fish.
12. Iron :- Animal sources:- Liver, Meat, Fish, Eggs.
Plant sources :- Cereals, Pulses and green leafy vegetables.

5. FOOD and FOOD COMPONENTS.

What is Food:

Every thing normally we eat and drink can be called food. Things consumed as food differ from country to country and some times even with in different regions of one country. The things people regard as food in different parts of the world have been selected by trial and error over hundreds of years. The nutritional value of any meal or diet depends on the individual foods used to prepare it. The value of any food depends on how much of it is eaten, whether it is eaten regularly or not, and how it has been prepared. It also depends on, what other foods are eaten at the same time. Meals consist of more than one food.

A good diet for infants and young children provides sufficient energy and other nutrients for normal growth in an amount of food, that can easily be eaten. At the same time enough water should be drunk, so that kidneys can function normally and body temperature is controlled. The health worker must know what types of food are consumed in his area, what items of food people like, and what food people do not eat, even they are cheap and abundant in quantity.

Why Do We Eat:

We eat when ever we are hungry. Satisfying hunger is just one function of food. There are other important functions of food also. Basically foods have three functions for the human body.

To provide energy for all types of activities.

To help the body to grow in size.

To protect the body from diseases.

Food Components:

Foods contain chemical substances known as Nutrients. These can be divided into three categories according to their functions.

- a. Energy giving nutrients.
- b. Body building nutrients.
- c. Protective nutrients.

Most foods contain mixture of these three categories, but usually in one type of food, one of the categories is present in larger amount than the other two, and the function of that nutrient becomes the main function of that food. Commonly eaten foods can be broadly divided into three groups:

1. Energy Giving Foods:

- Cereals:- rice, wheat, corn or millets.
- Fats and oils. concentrated sources of energy.
- Starchy vegetables:- Potatoes, sweet potato, etc.
- Sugar, molasses and honey.

2. Growth promoting foods:

- Most foods are from animal origin. e.g. milk, eggs, fish and meat.
- Some foods of from vegetable origin. e.g. pulses, peas, beans and nuts.

3. Protective Foods:

- Vegetables:- especially the green leafy type.
- Yellow and orange colored fruits and vegetables. Like carrot, papaya, mango, tomato and orange.
- Fruits with sour juice like, orange, lime, lemon, grape fruit.

6. NUTRITIONAL EDUCATION

If the nutrition of infants and young children were improved, especially during the first two years of life, death rates could be reduced. However raising the standards of child nutrition can not be done in isolation. Food problems are closely related to over-all health problems, and neither can be separated from the environment of the home and community.

Nutrition diseases usually have multiple causes which include, poverty, food habits, infections and lack of knowledge. Therefore nutrition education alone will rarely prevent malnutrition.

The purpose of nutrition education is to encourage people to modify a few of their attitudes and practices regarding food production, preparation, and distribution, So they and their children are better nourished. These modified practices may be

- To continue breast feeding for at least one year, instead of stopping, when the child is about six months.
 - To introduce complementary / weaning foods at an appropriate age.
 - To start to add one spoonful of oil to a child's porridge.
- Nutrition education is most likely to be successful when:
- The community is involved, with planning, running and evaluating the program.
 - The change needed does not alter any deeply ingrained beliefs, and is very specific, simple and practical.
 - The message is repeated frequently in different situations.
 - The same messages are given by every one, who teaches or gives nutrition advice in the community.
 - There are many opportunities for discussion of the messages in the groups of mothers and other members of the community. Decision taken by group is more likely be carried out.
 - There is active support for the mother from her husband, friends, relatives, when she puts a message into practice.

a. Basic Messages for Community Nutrition.

There are six basic messages for Nutrition, which every Health worker should know:

1. Breast Milk for at Least Two Years.

In Holy Quran it is mentioned:- Mothers should suckle their babies for complete two years. Breast milk is best food for a baby for the first 4-6 months of life. After that the baby needs additional foods to keep growing. Breast milk is best because it contains the right kind and amounts of nutrients the infant needs for the first 4 to 6 months of life. The first milk (colostrum) is very important and should always be given to the new born, because it contains a special nutrient which promotes growth and a special substance that help in protecting the infant from infections. Breast feeding on the first day after delivery has two very beneficial effects. It help to start the production of breast milk and it helps the uterus to return to it's normal size. Some other good reasons for breast feeding are, the breast milk is always available, when the infant is hungry. It is cheaper and easier than preparing artificial feeds and it is clean, which prevents infant from diarrhoea. The temperature of the breast milk is constant, where as other prepared milks will not have a constant temperature some times it is too hot. Some times it cold and infant may refuse to take it.

Remember:

Breast milk is best and encourage mothers to:

- Put the newborn infant to the breast as soon as possible after delivery.
- Gave colostrum (First milk) to baby.
- Go on breast feeding as long as possible or for two years at least.

2. Add Supplementary foods at 4 to 6 months of age.

Mothers milk usually gives a baby all the foods needed until 4 to 6 months of age. But after 4 to 6 months breast milk only can not fulfil the growth requirements and the baby should be given other mixed foods. When you start giving new foods, the baby may not accept it easily until the taste is developed. Give the new foods like cereal, mashed potatoes, banana, spinach, etc In small quantities. You can just pick from family diet and mash the food thoroughly before giving it to the baby. Give new food before breast feeding until the baby develops a taste for it, Then give it after breast feeding. Encourage mothers to use local foods, because they are readily available and cheaper. Gradually by age of one year, the child should start eating solid food from the regular family meal. A small child needs to be fed many times during a day, four feedings of food in addition to breast milk each day. A child's stomach is small and he needs to eat more often than on adult.

Remember:

To ask the mother how much her child actually eats at each feeding.

3. Use Cup and Spoon, No Bottle:

Some times breast feeding is not possible. For example:

- Not enough milk.
- Mother is sick.
- Mother has to work outside the home.
- Maternal death.

When breast feeding is not possible, the infant should be fed with a cup and spoon. This is a clean and safe method, for feeding infants and young children. Bottles should never be used, because they can not be kept

absolutely clean. Dirty bottles cause serious diarrhoea. When mother give their young children supplementary juice or other semisolid the baby may be reluctant to take the food with a spoon at first, simply because he is not used to taking food with a spoon. Mothers should be patient and continue to offer food with a spoon.

4. Continue to Feed a Child when he is ill.

Some parents feel that a child should not be fed when he is sick with fever, a cold or with Diarrhoea. But this is when the child needs more food because he is burning up more food, when he is ill. The sick child must be offered food in small quantities several times a day, and the parent must gently encourage the child to eat. Because he feels sick, he is often too tired to eat. So special favorite foods can be helpful. Food is necessary to ensure that he will get well. If the mother is feeding her sick baby. Please encourage.

5. Pregnant and Lactating Mothers Should Eat Extra Protein-Rich Foods.

A pregnant women is building in her body a new human being, That draws his requirements for growth from the mother's body. Mother needs extra food for the baby to develop and for maintaining her health. Lack of protein-rich foods increase the risk of spontaneous abortions, mis carriages, and still births. The death of the newborn depends upon mother's diet.

Lactating mothers need extra protein-rich foods so that they will have enough milk for their infant when lactating mothers are not eating enough food, the result is a reduced quantity of milk for the infant. This can be avoided if mothers are encouraged to have milk, green vegetables, pulses, soyabeans, eggs, fish and meat if possible.

6. Breast Feeding Must be Stopped Slowly.

Breast feeding must be stopped slowly for the health of the mother and her child. When breast feeding is stopped abruptly, the mother's breasts may swell with milk, and become painful and sore. The infant or young child may become unhappy and not eat any food. This could result in serious undernutrition. Advise mothers to introduce supplemental foods and gradually reduce the number of breast feeds, So that after one month breast feeding can be completely stopped. By the time mother stops breast feeding her young child should have developed a taste for different foods. Some mothers start bottle feeding as soon as they stop breast feeding. This is not necessary if the child is taking a mixed diet. Milk should be given with cup and spoon.

1. Importance of Immunization:

Many children die of many diseases, and most of them die of those diseases, which can be prevented. A large number of children die before one year of age, little less number die before completing two years of life.

There are six important infectious diseases that are very serious and can kill or cripple children, even though some children survive and become immune. The special thing about these diseases is that we can prevent them by immunization. To save the children from dying or becoming crippled Immunization of children is very important. To save the new born from Neonatal tetanus and mothers from tetanus. It is very necessary to vaccinate the mother before the child is born.

The Six preventable diseases are.

1. Poliomyelitis.
2. Measles.
3. Diphtheria.
4. Pertussis (whooping cough)
5. Tetanus.
6. Tuberculosis (TB)

We have got vaccines for these diseases, if given to the children according to the schedule recommended for each vaccine, the children are safe from these diseases. When these vaccines are given, in response the child's body produces antibodies without getting the disease. The child becomes protected against the disease without becoming ill.

Vaccines used for these diseases are:

1. BCG Vaccine:- for Tuberculosis
2. Polio Vaccine:- for Poliomyelitis.
3. D.P.T Vaccine:- for Diphtheria, Pertussis and Tetanus.
4. Measles Vaccine:- for Measles.
5. Tetanus Toxoid. T.T Vaccine:- for Tetanus.

To prevent neonatal tetanus women must be immunized with tetanus toxoid (T.T) before their baby is born.

Immunization schedule:

When to give vaccines to children and women is given in the following immunization schedule. An immunization schedule contains the following information:

- What vaccines are to be given.
- The desirable age at which to administer the first dose of each vaccine.
- The number of doses, which should be given of each vaccine.
- The minimum time interval between successive doses of vaccines. There is no maximum time interval.

Immunization Schedule

Vaccine	Age At First dose	Dose and Rout	Number of doses	Minimum interval between successive doses.
1. BCG	Birth	0.05 ml I/D	1	One month
2. Polio	Birth (do not count this dose)	according to the instruction of the manufacturer (oral)	3	
3. DPT	1 1/2 month	0.5 ml I/m	3	One month
4. Measles	9 months	0.5 ml s/c	1	
5. Tetanus Toxoid (TT)	15 years and child bearing Age women.	0.5 ml I/m	5	See the schedule below.

TT-1.....at first contact
 TT-2 after one month of TT-1
 TT-3 at least 6 months after TT-2
 TT-4.....at least one year after T T-2
 TT-5.....at least one year after T T-4

How to Give Vaccines:

Vaccines are given either orally (by mouth) or by Injections. Polio is given by mouth. DPT and T.T are given intramuscularly, Measles subcutaneously and BCG is given intradermally.

2. Target Group for Vaccination:

This mostly depends upon the policy of the government or the Health ministry. When the immunization program was launched in 1974. It included all children under five years of age, with less emphasis on T.T vaccination to women. Rather was only for pregnant women. To give coverage to all children under five needs more of trained personal and much resources, which a third world country can not afford. Therefore the target group among the children is under two years of age with more emphasis on under one year age group. Children, with equal emphasis on immunization of all the child bearing age women. A child must get fully vaccinated before he reaches one year of age. Against the six common and lethal diseases. All the child bearing age women must get immunized with five doses of T.T to eliminate Neonatal Tetanus.

3. Motivation of The Community:

Motivation means the desire to do something. Unless a person feels the need himself, he will not be motivated to fulfill that need, even if the resources to meet the need are available. In other words desire to do something makes a person reach out to existing resources to meet the felt need. The people are not well informed about how to protect children from the six communicable diseases. In order to convince the community or to make them feel the need to immunize children, they need to know:

- The amount and degree of suffering and death that can result from the six diseases.
- Protective agents (Vaccines) against these six diseases are available.
- If a complete series of vaccines is given children are protected against these diseases for life.

- Vaccines are safe.
- the deaths of many young children can be prevented by immunizing them.

Need		Existing Resources
- Young children are Exposed to six Communicable diseases.		- Trained man power to conduct immunization sessions. - Vaccines are available for six communicable diseases.
	MOTIVATION	

To motivate and involve the community in immunization sessions the following skills will help.

- Identify those people who are either given the responsibility or have assumed the responsibility for the welfare of the community such as the chief of the tribe, religious, Political or other leaders, school teachers and parents whose children have been vaccinated.
- demonstrate by using real cases, films, slides, by these diseases. For example distress with whooping cough, Paralysis from Polio.
- Convince people that prevention is better than cure, through health education sessions at health facility or community.

4. Organizing Immunization sessions:

An immunization session may be held any-where as long as three requests are met:

- There must be children who need to be immunized.
- There must be trained health workers to conduct the sessions.
- The required vaccines and other materials must be in safe and useable condition.

Immunization sessions may be held at Health center or any sites in the community. Health facility being your territory. Organizing the session will be easy, than the out-reach sessions. You need to involve community in Planning and conducting an out-reach session. You can involve the leaders and jointly agreeing on the date and place for your session. Give importance to their assistance and make sure that children are there on the agreed date. You must return on that day without fail with all the necessary staff and materials.

collect and pack every thing you need except vaccines, which should be packed before leaving for session.

Items needed for immunization session:

- Sterile syringes:- 5 ml, 2 ml, 1 ml and tuberculin.
- Sterile needles:- Intradermal, Intramuscular etc. 24+26 gauge.
- 2 Pairs sterilized forceps (with string loop)
- Sterilized container for forceps.
- 2 Sterilized dishes for syringes.
- 2 Dishes for swabs (1 dry, 1 wet)
- Small metal file to cut ampoules.
- Insulated container (Thermos) for Ice.

- Silver foil to protect vaccines from sunlight.
- Cotton wool in a container
- Kerosene stove
- Matches.
- Gauze or cotton cloth to hold ampoules + other things.

Cleaning Material:

- A box or paper to collect rubbish.
- A bag to take rubbish away.
- Soap in a plastic container and a towel.
- A bowl or bucket for water.

Records:

- Immunization Schedule.
- Immunization Cards.
- Immunization register.
- Immunization Report forms.
- Date stamp, and stamp Pad.

Health Education Material:

Posters and pamphlets to distribute to people.

The immunization kit should contain all the above materials. Take the material according to the need children expected to come for vaccination.

Vaccines:

The quantity of vaccines can be determined by the expected number of children to come for vaccination. most vaccine vials contain 20-Twenty doses except Measles which contains 10 doses. Vaccines may be carried in insulated vaccine carriers or cold boxes, that have very thick walls and lids. These containers are made of material which does not allow heat to pass through and keeps the vaccines cool if:

- Enough ice is placed inside the container.
- The lid is put on tightly.
- The lid and the container do not have any cracks.

Vaccine carriers do not make things cold. They can only keep them cold. Vaccines are considered damaged if during journey

- The ice melts.
- The temperature inside is warm.
- The lid is off or loose.
- The vaccine carrier is exposed to sunlight for long time.

How to Pack Vaccines:

Take the ice packs or ice cubes from the freezer and leave them on the table for 5-10 minutes to warm them a bit. If the ice packs are too cold, it may freeze DPT & TT vaccines. When the outside of the packs is wet and not frosty. Arrange the packs in the vaccine carrier. In case you use ice cubes, these must be put in some bags. (Plastic)

- Put a bag of cubes at the bottom of the carrier.
- Put the vaccines on it .
- Put a bag of cubes on top of the vaccines.

While packing vaccines you must consider the following points:

- Pack first the vaccines, that you took to your last immunization session, but you did not use.
- Take the oldest vaccines that have been in your refrigerator for the longest time.
- Look at the label of each vial and check the expiration date. If the expiration has passed, do not use the vaccine. Take it out of the refrigerator and waste it.
- close the refrigerator door.
- Put a thermometer in the vaccine carrier if possible.
- Put News paper all round the DPT + TT vaccines. These vaccine should not have direct contact with ice or ice packs.

Once the vaccines are packed in vaccine carrier it keeps vaccines cold or up to desired temperature for 36 hours, if you:

- Keep the lid on tightly.
- Leave all the ice packs and ice cubes inside.
- Keep the vaccine carrier always in the shade.

How to Keep the Vaccines cold on the immunization table:

You must put opened vaccines in a cup or insulated pot of ice, or on a ice pack while you immunize.

Going to the immunization session take care of:

- Keep the vaccine carrier shaded if possible.
- Go straight to the place for session.
- Do not stop or delay on the way, the vaccines may become warm.
- Do not go dangerously fast.

Conducting an Immunization Session:

In addition to selecting the sites and the dates for the immunization sessions, the community should also provide people to help during the session. It is good to have at least two people from the community, one at the entrance and one at the exit point. Introduce yourself and your team members. Assign each person a task and make sure they know what to do.

In setting up the immunization area arrangements should be made, in such a way, that all the people enter from one side and exit from the other. Health education sessions may be conducted in the waiting area. Two tables are required for the session, which community should provide.

Registration:

One person is required for this purpose, who should greet the parents in a friendly manner. and fill out the immunization card of the child. Each child should be checked for BCG scars and the need for any further immunization should be determined at this time.

The mothers should also be asked if she has had tetanus toxoid injection, and how many and advice her for TT vaccination. She then wait for her turn of vaccination when while the health worker gives health education and information, advice about children, vaccination etc. Answering their questions. O.R.S Packets should be kept there, and O.R.S Demonstration of preparation should be conducted. Mothers should be given O.R.S Packet to take home for use in case of Diarrhoea.

Immunization:

Wash your hands and unpack the immunization kit, and place all the required items within easy reach on the tables. Other things go under the table. Put vaccines, syringes and cotton in the left corner, Forms, stamping pad, pens on the right side. Reconstitute the Measles and BCG vaccines, write the Name of the place where this session is being held on the Top of the page of your Register. Date in one corner of the register. After making the necessary entries in the register, vaccinate the children, women according to the card, which indicates the vaccines to be injected. Making the entry on the card for next due date for vaccination. When the mother and the child are leaving, the person at the exit should check the card, to make sure that the child has received the immunization needed, and:

- Inform the mother of what the child received.
- Make sure the mother knows, when the next immunization is needed.
- Advise the mother to keep the card safely and to bring the card next time.
- Ask the mother if she has any questions.

In the end when there is no child or women left for vaccination, collect your material, clean it, and pack it back into immunization kit. Destroy all those vaccines remaining in the vials in use. The unused vaccines, before putting back in the refrigerator should be marked and placed in front row of the refrigerator, so that you should not miss it for the second day. Transfer the activities from register on to the report form and send it to the main office.

5. Vaccines Storage and cold Chain:

The vaccines are manufactured from the organisms that cause the disease, they are made in such a way, that they can not harm people. they do this by:

- Using killed micro-organisms as in the pertussis vaccine.
- Using live micro-organisms that are weakened (attenuated) as in measles, Polio and BCG. vaccines.
- Using Toxins (Poisons) that the micro-organisms produce and changing them into harmless toxoid as in tetanus toxoid and Diphtheria Toxoid.

Vaccines can be damaged and lose effectiveness if they are not maintained according to the recommendations. A vaccine is potent (able to make the child immune). If it is damaged, it loses its potency and an expiry date is printed on the vaccine container, after which they are of no use. Heat, sunlight and freezing can also damage vaccines. Heat and sunlight damage the live vaccines and freezing damages the killed vaccines and Toxoids. The safest thing to do is to keep all vaccines at the recommended temperature. Other things that damage the vaccines are disinfectants, antiseptics, spirits and detergents. If syringes and needles have been in contact with disinfectants etc. They should be washed thoroughly before sterilization 30 minutes in boiling water.

How to Store Vaccines:

Vaccines are stored in refrigerators at the correct temperature of between 0C to 8C. This temperature should be maintained throughout the period the vaccine remains in the store.

Polio Vaccine:

The micro-organism that cause polio is a virus. The vaccine is a clear pink or pale orange liquid it comes in a small bottle with a dropper cap. Oral polio comes frozen and should be kept frozen, when not in use. In large stores like provincial store it is kept at -20C. Oral polio is quickly damaged by heat. So this vaccine should carefully be stored in the recommended range of temperature.

Measles Vaccine:

The micro-organism that causes measles is a virus. The vaccine comes as a lump of dry material at the bottom of the container. This is called freeze-dried, because this vaccine first is frozen and then dried. This vaccine stays potent if kept frozen. Before injecting this vaccine is mixed with special Diluent solution. This kind of vaccine is then called reconstituted vaccine. This should be used quickly otherwise it loses it's potency. This vaccine is also kept in large stores at - 20C. The vaccine is also easily damaged by heat. (injected subcutaneously).

BCG Vaccine:

This vaccine is made from a special weak but living microbacterium called Bacillus calmette guerin, which gives it the name BCG. This vaccine protects against (TB) Tuberculoses. It is a live bacterial vaccine, which is injected intradermal, in between the two layers of the skin. This is freeze-dried vaccine, as a powder in the container. It is reconstituted before injecting. and should be used quickly, otherwise it loses patency. This vaccine is most easily damaged by sunlight, therefore the containers are made of dark glass. Heat also damages BCG. The store temperature for this vaccine is from 4C to 8C.

Diphtheria Toxoid:

Diphtheria is caused by bacteria, which produce a Toxin. The vaccine is a Toxoid, that is a weakened, Diphtheria Toxin. It comes in triple vaccine, which includes Tetanus Toxoid-Pertussis. As D.

Pertussis Vaccine:

The micro-organism that causes pertussis or whooping cough is a bacteria. Vaccine contains killed form of bacteria in triple vaccine. As-P.

Tetanus Toxoid:

Tetanus is caused by bacteria, which produce a Toxin, the vaccine is a Toxoid, means weakened tetanus toxin are there in triple vaccine as third conapenent. As-"T"

Tetanus Toxoid: (TT)

Tetanus Toxoid and D.P.T vaccines are damaged both by heat and freezing.

Both D.P.T and TT come in liquid form, and are given through intramuscular injection and are kept cold without freezing. The storage temperature at large stores for these vaccines is +4C to -8C.

How to check DPT and TT vaccine whether it was frozen or not:

Vaccine Never Frozen.

Vaccine Frozen.

Immediately after shaking

- Smooth and cloudy

- Not smooth, You can see granular particles.

30 minutes after shaking

- Starting to clear.
No Sediments

- Almost clear
Thick sediment

Use this Vaccine.

Do not use This Vaccine.

Cold Chain:

The cold chain is name given to maintaining the recommended temperature of the vaccines, right from the manufacturing company to the child to whom it is going to be given. The logistics used in transportation, storage of vaccines is called cold chain.

The manufacturers of vaccines when deliver vaccines to a country use Air, Sea, Roads and railway for transportation of vaccines. Considering the distance, to deliver the goods in shortest possible time, using the packing material, which protects the vaccines from damaging and losing potency till it reaches its destny.

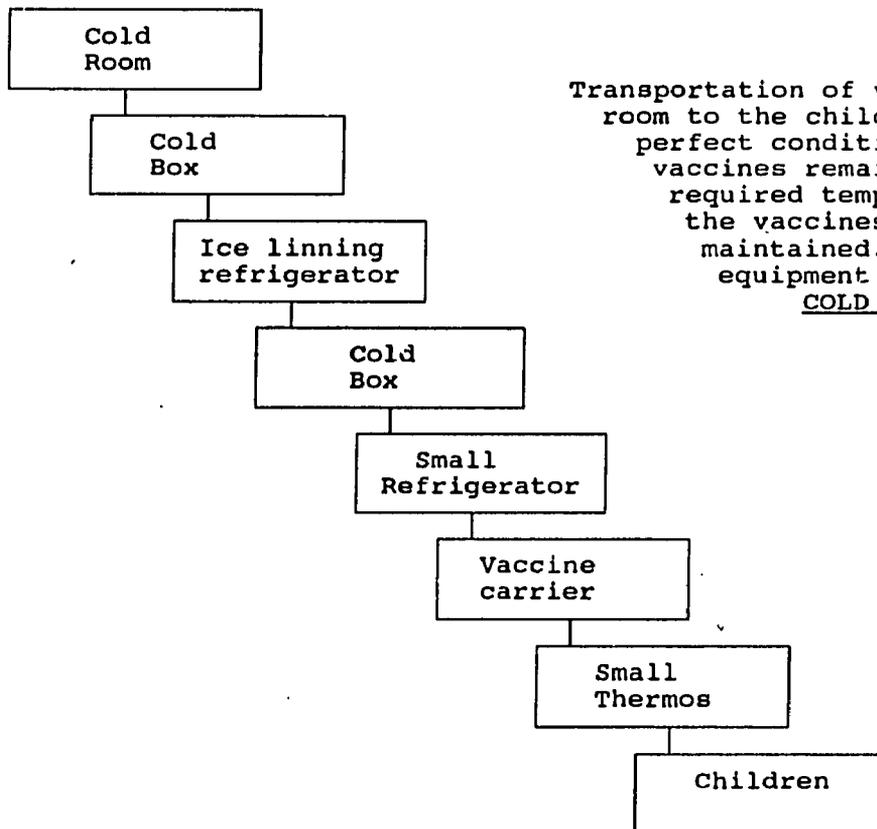
The manufacturers usually use thick insulating material for packing vaccines in large cartons, the moment they send the consignment to a country, they inform the authorities of that country to collect the consignment at the arrival place e.g. Airport. From airport the vaccines are brought to the National store, and then further distribution of vaccines is done according to the provincial needs. which again is responsible to deliver the vaccines to districts, and from Districts to the Health facilities in the rural areas.

The logistics used as vaccine stores and carriers are:

1. Central Store Cold rooms | Big rooms, where the temperature of the room is kept -20C for polio and Measles vaccines the other room for BCG, DPT, and TT vaccines with temperature from +4C to +8C. In addition deep freezers are there for Ice Packs preparation.
2. Provincial Store cold rooms | Same type of cold rooms but smaller in size, and same temperatures are maintained the additional equipment at this level will be deep freezers, which are used to get Ice/Ice Packs for packing the vaccine for further delivery.
3. Divisional district store
-Cold Room
-Deep freezer
-Ice linning Refrigerator. | Small size cold rooms (Portable type) maintain the same temperature as above Ice and Ice Packs are made by deep freezer and up to one month stock can be kept in Ice linning refrigerator which maintains vaccines at +4C.
4. EPI Centre/
Health Centre
Refrigerator. | Small refrigerators, where the vaccines are kept for daily use. The freezing chamber is used for Ice/Ice packs preparation.

5. Vaccinator
Vaccine carrier

Vaccinators collect vaccines in vaccine carrier.



Transportation of vaccines from cold room to the children at the end in perfect condition, means the vaccines remain potent and the required temperature at which the vaccines remain potent is maintained. This linkage of equipment is called COLD CHAIN

How to Give the Vaccines:

Vaccines are given either orally (by mouth) or by injection. Polio is given by mouth, DPT and TT are given intra muscularly, Measles subcutaneously and BCG intradermally.

Oral Polio Vaccine:

- Let the mother hold the child firmly.
- Open the child's mouth. Squeeze his cheeks gently between your fingers to make his lips point forward. Put three drops of vaccine straight from the dropper on to the child's tongue, to avoid contamination, do not allow the dropper to touch the child's mouth.

Injectable Vaccine:

Different vaccines are injected into different tissues. These tissues are: Intradermal (into the top layer of skin) for BCG. Subcutaneous (just below the skin) for measles and intramuscular (deep into the muscle) for DPT and TT. The position of the needle, when it is inserted into the body, determines the layer into which the vaccine will reach. (Practical Demonstration be done). Before injection, clean the area with soap and water. After injection press gently the site with cotton wool, so that there is no bleeding.

Filling the Syringe:

- Check the label for the correct vaccine, making sure the vaccine has not expired.
- Shake the vial, so that the sediment mixes completely into the solution.
- Remove the center of the metal cap using an ampoule file.
- Stand the vaccine vial in a cup of ice or on an ice pack on the table.
- Take a sterile syringe.
- Fit a needle on the syringe with forceps.
- Use needles gauge 26 for BCG 24 for DPT, TT, and measles.
- Clean the exposed rubber cap of the vial of reconstituted vaccine with spirit.
- Withdraw vaccine into the syringe.
- Put the vial back into the cup of ice.
- Expel any air, bubbles from the syringe.
- Check that the dose drawn up is correct.
- Give the vaccine to the child immediately.

Intramuscular Injection:

The best place to inject is the outer part of the child's mid-thigh. Do not inject into the buttocks. And for the woman is the outer side of the left upper arm.

- Put your finger and thumb on each side of the injection site.
- Stretch the skin flat between your finger and thumb.
- Quickly push the needle straight down, between your fingers go deep into the muscle.
- Withdraw the plunger a little to make sure that you are not in a vein.
- Press the top of the plunger with your thumb to inject the vaccine.
- Withdraw the needle.

How to Position the Baby:

This description is for the left arm.

- Sit the baby on his mother's lap.
- Tuck his right arm away around her body.
- Mother's left arm goes around the baby to support his head.
- Her left hand holds his left shoulder.
- Her right arm holds his legs out of the way.
- Her right hand holds his left hand.

Subcutaneous Injection:

Giving the measles vaccine.

- Gently pinch the skin of the outer part of the child's upper arm with your fingers.
- Push the needle into the pinched up skin at an angle.
- Do not push the needle in deep.
- To control the needle, support the top of the syringe with your thumb and finger while you push the needle.
- Withdraw the plunger to check for blood.
- Press the plunger with your thumb to inject the vaccine and withdraw the needle.

Intradermal Injection:

FRACTURE IMMOBILIZATION & JOINT'S TRAUMA

Fractures:

Definition: When a bone is broken it is called fracture.

Causes:

It causes by direct trauma, indirect trauma (falling down from a high attitude.) & traction of muscles.

There are usually two kinds of fracture:

- a- Close fracture: It occurs when the skin is not cut, (no wound) the area is not exposed to the air.
- b- Open fracture: Occurs when skin is cut & bone is broken, and because of being exposed to air chance of infection is higher in Such Fractures.

Fig P.155

Try to fix all doubtful events & trauma of the joints. In each event if the natural movement is limited to one side it shows the probability of fracture.

Movement of an extremity for its fixation should be performed very slowly and carefully. Fixation should be done very carefully with the assessment of a co-worker.

In order to make the bone motionless, the near Joint (upper & lower joint) of the fractured bone should be fixed by bandages and splint. Method of fracture immobilization:

see practical manual

Joint dislocation:

Definition:

Bone that have come out of its place at a Joint is called Joint dislocation.

Three important points of treatment:

- Try to put the bone back into place. The sooner the better !
- Keep it bandaged firmly in place so it does not slip out again (within a month).

- Avoid forceful use of the limb long enough for the joint to heal completely (2 or 3 months).

Fig P.157

Strain & Sprains:

In most of trauma cases to the extrinities it is difficult to know whether a hand or foot is bruised, sprained, or broken. It helps to have an X-ray taken.

But usually, breaks & sprains are treated more or less the same. Keep the joint motionless. Wrap it with some thing that gives firm support. Serious sprains need at least 3 or 4 weeks to heal. Broken bones take longer. You can keep the twisted joint in the correct position for healing by using a home made cast or an elastic bandage.

Fig P.158

Caution:

If foot seems very loose or 'floppy' or if the person has trouble moving his toes, look for medical help. surgery may be needed.

To relieve pain and swelling, keep the sprained part raised high. During the first 24 hours, put ice wrapped in cloth or plastic, or cold, wet cloths over the swollen joint. This helps reduce swelling and pain. After 24 hours soak the sprain in hot water several times a day.

Never rub or massage a sprain or broken bone. It does no good and can do more harm. It usually occurs in wrist or Ankle joint.

Fig P.159

In the first 24 hours put sprained foot in the cool water.

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In the second 24 hours put the sprained in hot water.

Method of fastening bandages in sprains should be studied in practical manual.

CHOKING

Causes:

- A- In children
Foreign bodies such as grain (seed) coin bite of food in
- B- Adults: Piece of meat or something else will cause choking.

In case airways are completely obstructed signs are as follow:

- 1- Casualty can not talk (speak)
- 2- He worries immediately and hold his throat.
- 3- He tries to cough.

If it is closed partially he has these signs:

- casualty always coughs
- produce wheezing sounds, (voice)
- casualty is fearful and worry.

Any way in both cases he cannot inspired enough amount of air his face become dark, his nails and outer surface of his lips become bluish, and he goes to unconsciousness fast.

DROWNING

A person who has stopped breathing has only 4 minutes to live!
You must **act fast!**

Start mouth-to-mouth breathing at once if possible, even before the drowning person is out of the water, as soon as it is shallow enough to stand.

If you cannot blow air into his lungs, when you reach the shore, quickly put him on his side with his head lower than his feet and push his belly as described above. then continue mouth-to mouth breathing at once.

ALWAYS START MOUTH-TO-MOUTH

BREATHING AT ONCE before trying to get water out of the drowning person's chest.

Fig P.161

Foreign Bodies:

- 1- To remove Foreign body from the eye:

You can remove Foreign body from the eye by pouring clean water on the eye, point of wet cloth handkerchief and cotton.

Fig P.162

If it locates under the upper lid over turn the lid and remove it

Fig P.162

If you cannot take it out easily use antibiotic eye ointment, cover with the eye bandage and send the patient to the hospital.

- 2- Foreign bodies in the ear:

Sometimes children put bean and other grains inside their ears. Sometimes insects also enter the ear. In such conditions follow these instructions:

- Foreign body shouldn't force to move further.
- If insect enters the ear, pour a little warm water in the ear, and bend his head to one side it may come out.

If the mentioned instructions failed send the patient to health center immediately.

- 3- Foreign body in the nose:

Children sometimes put beans and peas in the nose. In such conditions, follow these instructions:

- Don't enter the Foreign body furthermore.

- Don't push the nose.
- Sneezing may be helpful.
(To produce sneeze put small piece of paper or feather into the other nostril carefully).
- Advice him to breath by mouth .
- If the Foreign body is not removed send the patient to the hospital (health center).

Note:

Be very careful not to try a lot when Foreign body is in the eye, ear or nose, it may creates more problems. In case its removal is failed send the patient to hospital (health Center).

Bites

Rabies:

Rabies comes from the bite of a rabid or 'mad' animal. usually a rabid dog, cat, fox, wolf, skunk, or jackal. Bats and other animals may also spread rabies.

Signs of rabies:

In the animal:

- Acts strangely-sometimes sad, restless, or irritable.
- Foaming at the month, cannot eat or drink.
- Sometimes the animals goes wild (mad) and may bite anyone or anything nearby.
- The animals dies within 5 to 7 days.

Signs in people:

- Pain & tingling in the area of the bite.'
- Irregular breathing, as if the person has just been crying.
- Pain and difficulty swallowing. A lot of thick sticky saliva.
- The person is alert, but very nervous or excitable. Anxious
ress anger can occur between the two exitable slogs.
- As death nears, fits (convulsions) and paralysis.

Fig P.166

If you have any reason to believe an animal that has bitten someone has rabies do as follow:

- Tie or cage the animal for a week.

- Clean the bite well with soap, water, & hydrogen peroxide. Do not close the wound; leave it open.
- If the animal dies before a week is up (or if it was killed or cannot be caught), take the bitten person at once to a health center where he can be given a series of anti-rabies injection.

The first symptoms of rabies appear from 10 days up to 2 years after the bite (usually within 3 to 7 weeks).

Treatment must begins, earlier before symptom began treatment known to medical science can save the person's life.

Fig P.167

Prevention:

- Kill & bury (or cage for one week) any animal suspected of having rabies.
- Cooperate with programs to vaccinate dogs.
- Keep children far away from any animal that seems sick or acts strangely.

2- Scorpion Sting:

Some scorpions are more poisonous than others. Scorpion stings are rarely dangerous. Take paracetamol for pain.

Fig P.168

If possible put ice on the sting.

Fig P.168

For the numbness & pain that sometimes last weeks or months, hot compresses may be helpful.

Fig P.169

To children under 5 years old, scorpion stings can be dangerous, especially if the sting is on the head or body. Give paracetamol for the pain, if the child stops breathing, use mouth-to-mouth breathing. If the child who was stung is very young or has been stung on the main part of the body, or if you know the scorpion was of a deadly type seek medical help soon.

Snakebite

When someone has been bitten by a snake, try to find out if the snake was poisonous or harmless. their bite marks are different

Fig P.170

The bite of most poisonous snakes leaves marks of the 2 fangs (and sometimes, little marks made by the other teeth). The bite of snake that is not poisonous leaves only 2 rows of teeth marks, but no fang marks.

Fig P.170

Unfortunately most of snake bites occur by poisonous snake therefore, snake bites should be treated as a dangerous and emergency event. After biting usually 2 points will be left in stung area, pain, swelling, redness or dark blue.

Sink bites usually cause photophobia. dizziness, nausea, vomiting sweating, headache & pain in the chest or stomach. And due to fear the shock may become sever.

First Aids for snake bite:

The main point in snake bite's aid is to decrease absorption of poison and prevention of shock.

1. Stay quiet, Do not move the bitten part. The more it is moved, the fast the poison will spread through the body. If the bite is on the foot, the person should not walk at all. Send for medical help.
2. Wrap the bitten area with a wide elastic bandage or clean cloth to slow the spread of poison. It should be too tight and each minutes loosen the bandage a little.

3. Cut each fang mark 1cm wide and 1/2 cm deep by clean knife or razor.
4. Suck the poison for 5-10 minutes and thrown away, one who sucks should not have mouth ulceration.
5. Open the piece of cloth which was put above the bitten part and dress the wound .

Note:- Do not cut or suck the bitten part after 30 minute of the event.

Fig P.172

6. If microbial signs are present, advice antibiotic. Bite of poisonous snake is dangerous so, the mentioned points should be performed urgently and consult the doctor.

Poisoning

Mostly children go to death due to eating poisonous materials. To prevent your children follow these points:

- Avoid using of common containers, such as popular soft-drink bottle, for storing poisonous liquids such as kerosene, because children will drink them.

Fig P.173

- Keep dangerous substances out of reach of children.

Some common poisons are:

Rat poison, D.D.T. powder, insecticides, poisonous berries, and medicine especially iron tablets (Ferrous Sulfate) Tenture Iodin.

Fig P.174

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- Materials used for removing colors, cloth powder, soap, etc.
- Cigarettes
- Alcohol
- Colors (dyes)
- Top of matches stick
- Patrol

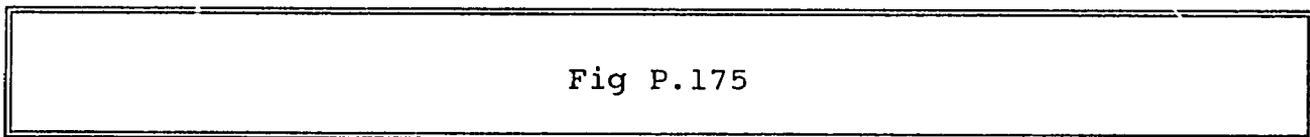
Treatment:

If you think of poisoning, try to carry the following points urgently:

- 1- Try at once to make the patient vomit. Touch or ask him to touch, the back of his throat with a finger or force him to drink soap water or water salt.
- 2- Force the patient to eat scrambled egg, milk, & flour mixed, in order to cause vomiting.

Cautions:

Don't make the patient vomit, who has taken kerosene, petrol, or other strong acidic material. If feels, cold cover him, but avoid excessive heating.



If it is sever ask for medical help.

Emergencies caused by Heat

A - Heat cramps:

In hot weather people who work hard & sweat a lot sometimes get painful cramps in their legs, arms, or stomach. These occur because the body lack salt.

Treatment: Put a teaspoon of salt in a liter of boiled water & drink it.

B - Heat Exhaustion:

Signs: A person who works & sweats a lot in hot weather may become very pale, weak, and nauseous and perhaps feel faint. The skin is cool & moist. The puls is rapid & weak. The temperature of the body is usually normal.

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Treatment: Have the person lie down in a cool place, raise his feet, and rub his legs. Give salt water to drink: 1. teaspoon of salt in a liter of water (Give nothing while the person is unconscious.)

C - Heat stroke:

Heat stroke is not common, but is very dangerous. It occurs especially in older people during hot weather.

Signs: The skin is red, very hot, and dry. Not even the armpits are moist. The person has a very high fever, sometimes more than 42°C, often he is unconscious.

Treatment: The body temperature must be lowered immediately. Put the person in the shade. Soak him with cold water (ice water if possible) and fan him. Continue until the fever drops. Seek medical help. For prevention of such emergency cases drink plenty of salted water in hot weather.

Fig P.177

How to stop nosebleeds:

- 1- Sit quietly
- 2- Pinch the nose firmly for 10 minutes or until the bleeding has stopped. If this does not control the bleeding pack the nostril with a wad of cotton, leaving part of it outside the nose. If possible, first wet the cotton with Vaseline. Leave the cotton in place for a few hours after the bleeding stops, then take out very carefully. Don't enter your finger to remove the clotted blood it may cause bleeding again. If someone more often has nose-bleeding, should rub Vaseline inside the nose two times daily eating oranges, tomatoes and other fruits may help to strengthen the veins so that the nose bleeds less. In older persons especially, bleeding may come from the back part of the nose and cannot be stopped by pinching it. In this case have the person hold a cork, corn cob, or other similar object between his teeth and, leaning forward, sit quietly and try not to swallow until the bleeding stops. (The cork helps keep him from swallowing, and that gives the blood a chance to clot).

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Emergency caused by Cold:

Those who are sent to cold and rainy places, will suffer from the followings due to face with cold weather.

- Decrease mental and physical activities of the body.
- Abnormal behavior.
- A low or unclear speech & problems of vision.
- Uncontrolled shivering.

Decrease of body activities is very dangerous and increase rapidly.

First Aid:

- 1- Keep the patient from getting cold and advice him to rest.
- 2- Avoid losing any more temperature & wrap him in a dry blanket as soon as possible, quickly get the persons to a dry place protected from the wind. Do all you can to keep the person warm.
- 3- Give him sweet liquids to drink like tea or milk.
In such case preferable the first aid of emergency caused be cold should be applied before frostbit treatment.
- 4- The patient should be seriously controlled and resocitation should be applied.
- 5- Consult with rescue groups after covering the patient, and should be carried to health center.
- 6- Get medical help soon.

Frozen skin (Frostbite)

In freezing weather, if a person is not dressed warmly enough, her hands, feet, ears, and sometime, face may begin to freeze. It has two types:

- Superficial frostbite (mild)
- Deep frostbite (sever)

In superficial type only skin is damaged while in it's deep form in addition to skin, tissues are also damaged, In early stages, the difference between two type is hardly identified, In addition to the frostbite part of the body or the whole body may exposed to the cold.

Sign & Symptoms:

The following sings is seen in both types. Patient cannot move the damaged part & complain from numbness and often sharp pain, then the part gets more frozen. the part get pale in color and feels hard when touched.

Treatment of mild frostbite: If the skin still feels soft when touched, the person probably has 'milk frostbite' Wrap the part with dry cloth and warm it against another part of the person's own body or someone else's. Try to keep moving and get out of the cold as fast as possible.

Treatment of severa frostbite: CAUTION: Do not start treatment for severe frostbite until you are in a place where the person's whole body can be kept warm during and after treatment. It is better to let a hand or foot stay frozen for several hours than to let it get warm and then freeze again. When you get to a warm, protected place:

- Fill a large container with warm water (not hot) the feels comfortable when you hold your hand in it.
- Soak the person's frozen part in the water until it gets warm.
- If the water cools, add more warm water. But take out the person's hand or foot while you do this. Remember, she cannot feel how hot the water is and you can easily burn her.
- As it gets warm, the frozen part will become very painful. Give Asprain or codeine.
- When it is not longer frozen, the person must stay warm and est.
- Be very gentle with the part that was frozen. Treat as severe wound or burn. Seek medical help. Sometimes dead parts of the body must be removed through surgery.

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CHAPTER 7

COMMON CLINICAL PROBLEMS

(DIAGNOSE, TREATMENT, PREVENTION)

How to examine a sick person

To find out the needs of a sick person, first you must ask important questions, and then examine him carefully. You should look for signs and symptoms that help you tell how ill the person is and what kind of sickness he may have.

Always examine the person where there is good light, preferably in the sunlight never in a dark room. there are certain basic things to ask and to look for in anyone who is sick. these include things the sick person feels or reports (symptoms), as well as things you notice on examining him (signs). These signs can be especially important in babies and persons unable to talk.

When you examine a sick person, write down your findings and keep them for the health worker in case he is needed.

Questions:

Start by asking the person about her sickness. Be sure to ask the following:

What bothers you most right now?

What makes you feel better or worse?

How and when did your sickness begin?

Have you had this same trouble before, or has anyone else in your family or neighborhood had it?

Fig P.186

Continue with other questions in order to learn the details of the illness. For example, if the sick person has a pain, ask her: where does it hurt? (Ask her to point to the exact place with one finger.)

Does it hurt all the time, or off and on?

What is the pain like? (Sharp? dull? burning?)

Can you sleep with the pain?

If the sick person is a baby who still does not talk, look for signs of pain. Notice his movements and how he cries. (for example, a child with an earache sometimes rubs the side of his head or pulls at his ear.)

General condition of health:

Before touching the sick person, look at him carefully. observe how ill or weak he looks, the way he moves, how he breaths, and how clear his mind seems, Look for sign of dehydration and of shock. Notice whether the person looks well nourished or poorly nourished. Has he been losing weight? when a person has lost weight slowly over a long period of time, he may have a chronic illness (one that lasts a long time). Also note the color of the skin and eyes.

- Paleness, especially of the lips and inside the eyelids, is a sign of anemia.
- Bluish skin especially blueness or darkness of the lips and fingernails, may mean serious problem with breathing.
- Yellow color (jaundice of the skin and eyes may result from disease in the liver (hepatitis, amoeba abscess).

Temperature:

It is often wise to take a sick person's temperature, even if he does not seem to have a fever. If the person is very sick, take the temperature at least 4 times each day & write it down.

Breathing (Respiration):

Pay special attention to the way the sick person breath- the dept (deep or shallow), rate (how often breaths are taken), and difficulty. Notice if both sides of the chest move equally when she breath . Count the number of breath per minute. People with a high fever or serious respiratory illness (like pneumonia) breath more quickly than normal.

Pulse:

Count pulse of the patient and when the patient has seriously illness count pulse 4 times daily and note it down.

Fig P.190

Mouth (tong & throat)

Exam the mouth, tongue and throat carefully. Sore of the lip's angles indicates the lack of vitamin. See tongues color and condition examine the throat under enough light.

- If it is pale and smooth (anemia)
- If it looks bluish (breathlessness)
- Dry tongue is due to dehydration.
- White patches over the tongue is sign of fungal infections.

Use a teaspoon to press the tongue, in-order to see the inner part of throat. When the tonsils got infections it's called tonsillitis. Tonsils get bigger and child have fever. Tonsillitis, is the common cause of fever in children. White or gray plaques on the tonsils may be because of Dephteria.

Skin

It is important to examine the sick person's whole body, no matter how mild the sickness may be. Babies and children should be undressed completely. Look carefully for anything that is not normal, including:

- Sore wounds
- Rashes or welts
- Spots, patche,
- Tearing due to bone fracture.
- Inflammation (signs of infection with redness, heat, pain & swelling)
- Swollen Lymph nodes (little lumps in the neck, the armpit or the groin)
- Abnormal lumps or masses.
- Swelling or puffiness.

Fig P.191

Always examine little children between the buttocks in the genital area, between the fingers, toes behind the ears and hair (for lice, scabies rashes & sores).

The belly (Abdomen)

If a person has pain in the belly, try to find out exactly where it hurts. Learn whether the pain is steady or whether it suddenly comes and goes like cramps or colic.

When you examine the belly, first look at it for any unusual swelling or lumps.

The location of the pain often gives a clue to the cause. First, ask the person to point with one finger where it hurts.

Fig P.192

Then beginning on the opposite side from the spot where he has pointed, press gently on different parts of the belly to see where it hurts most.

Fig P.193

See if the belly is soft or hard and whether the person can relax his stomach muscles. A very hard belly could mean an acute abdomen perhaps appendicitis or peritonitis. In order to decrease pressure relaying abdominal muscles, ask the patient to contract his legs as it is shown in the figure.

Fig P.193

Signs of dangerous illness.

A person who has one or more of the following signs is probably too sick to be treated at home without skilled medical help. His life maybe in danger. Seek medical help as soon as possible. until help comes, follow the instructions given in this book:

- 1:- Loss of large amounts of blood from anywhere in the body.
- 2:- Coughing up blood.
- 3:- Marked blueness of lips and nails (if it is new)
- 4:- Great difficulty in breathing: does not improve with rest.
- 5:- The person cannot be wakened (coma)
- 6:- The person is so weak he faints when he stands up.
- 7:- A day or more without being able to urinate.
- 8:- A day or more without being able to drink.
- 9:- Heavy vomiting or severe diarrhea that lasts for more than one day or a few hours in babies.

- 10: Black stools like tar or vomit with blood or feces.
- 11: Strong, continuous stomach pains with vomiting in a persons who does not have diarrhea or cannot have a bowel movement.
- 12: Any strong continuous pain that lasts for more than 3 days.
- 13: Stiff neck with arched back with or without a stiffjaw.
- 14: More than one fit (convulsions) in someone with fever or serious illness
- 15: High fever (above 39°c that cannot be brought down or that lasts more than 4 or 5 days.
- 16: Weight loss over an extended time.
- 17: Blood in the urine.
- 18: Sores that keep growing and do not go away with treatment.
- 19: A lump in any part of the body that keeps getting bigger.
- 20: Problems with pregnancy and children:
- 21: Any bleeding during pregnancy.
 - a- Swollen face and trouble seeing in the last months.
 - b- Long delay once the waters have broken and labor has begun.
 - c- Sever bleeding.

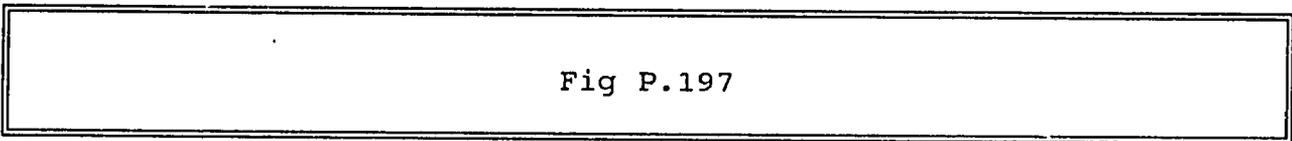
When and how to look for medical help, Seek medical help at the first sign of a dangerous illness. Do not wait until the person is so sick that it becomes difficult or impossible to take him to a health center or hospital. When you send someone for medical help, always, send a completed information form with him.

FEVER

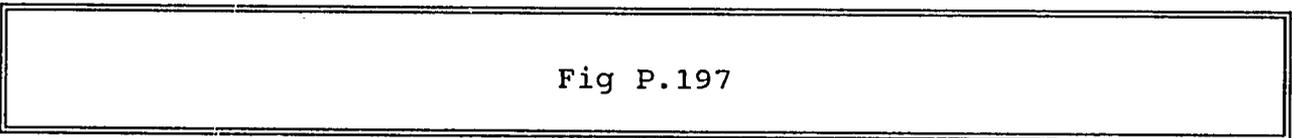
When a person's body temperature is too hot, we say he has a fever. Fever itself is not a sickness, but a sign of many different sicknesses. However, high fever can be dangerous, especially in a small child.

When a person has a fever:

- 1- Uncover him completely. Small children should be undressed completely and left naked until the fever goes down.



Never wrap the child in clothing in blankets.



To wrap up a child with fever is dangerous. Fresh air or a breeze will not harm a person with fever. On the contrary, a fresh breeze helps lower the fever.

- 2- Also take paracetamol to lower fever.
- 3- Any one who has a fever should drink lots of water juices or other liquids. For small children, especially babies, drinking water should be boiled first (& then cooled).
- 4- When possible find and treat the cause of fever.

VERY HIGH FEVER

A very high fever can be dangerous, if is not brought down soon. It can cause fits (convulsion) or even permanent brain damage (Paralysis, mental slowness, epilepsy e.t.c) High fever is most dangerous for small children. When a fever goes very high (over 40⁰C), It must be lowered at once:

- 1- Put the person in a cool place.
- 2- Remove all clothing.
- 3- Fan him.
- 4- Pour cool (not cold) water over him, or put clothes soaked in cool water on his chest and forehead. Fan the cloths and change them often to keep them cool. Continue to do this until the fever goes down (below 38^oc)

Fig P.199

5. Give him plenty of cool (not cold) water to drink.
6. Give a medicine to bring down fever. Paracetamol works well. If a high fever does not go down soon, or if fits (convulsion) begin, continue cooling with water & seek medical help at once.

HEADACHES

Simple headache can be helped by rest and paracetamol. It often helps to put a cloth soaked in hot water on the back of the neck to massage (rub) the neck and shoulders gently. Some other home remedies also seem to help. Headache is common with any sickness that causes fever. If headache is sever with fever consult a doctor.

Fig P.200

Headache that keep coming back may be a sign of chronic illness or poor nutrition. It is important to eat well & get enough sleep. If the headache do not go away, see medical help.

BACK PAIN

Back Pain has many causes. Here are some:

- Chronic upper back pain with cough & weight loss may be TB of the lungs.
- Standing or sitting wrong, with the shoulder drooped, is a common cause of backache.
- In older people, chronic back pain is often arthritis.
- Lower back pain that is worse the day after heavy lifting or straining may be a sprain, especially if one leg or foot becomes painful or numb & weak. This can result from a pinched nerve. Mid pain in a child may be T.B of the spine especially if the backbone has a hump or lump.

Fig P.201

- Sever low back pain that is worse the day after heavy lifting or straining may be a sprain.
- Very low back pain sometimes comes from problems in the uterus, ovaries, or rectum.
- Low backache is normal for some woman during menstrual periods or pregnancy.

Treatment & prevention of back pain:

- If back pain has a cause like TB, a urinary infection or gall bladder disease, treat the cause. Seek medical help if you suspect a serious disease.
- Simple backache, including that of pregnancy, often be prevented or made better by: always standing straight, sleeping on a firm flat surface back- bending exercises.

Fig P.202

- Paracetamol & hot soake help calm most kinds of back pain.
- If back pain from lifting or twisting is sudden and sever with knife- like pain when you bend over, if the pain goes into the leg(s), or if a foot becomes numb or weak, this is serious. A

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nerve coming from the back may be pinched' by a slipped disc. It is better to consult a doctor.

Arthritis (Painful, Inflamed joints):

Mostly chronic joint pain, or arthritis, is seen in older people. cannot be cured completely. However, the following offer some relief.

- Rest: If possible avoid hard work and heavy exercise that bother the painful joints. It helps to take naps during the day.
- Hot compress:
- Place cloths soaked in hot water on painful joints.
- It is important to do simple exercises or help maintain or increase the range of motion in the painful joints. If joint is swollen & feels hot, It may be infected especially if there is fever. Use an antibiotic such as penicillin.

Painful joints in young people and children may be a sign of other serious illness, such as rheumatic fever and tuberculosis, so in these conditions send the patient to the health center.

VOMITING

Many people, especially children, have an occasional stomach upset, with vomiting. Often no cause can be found. There may be mild stomach or gut ache or fever. This kind of simple vomiting usually is not serious and clears up by itself.

Vomiting is one of the signs of many different problems, some minor & some quite serious, so it is important to examine the person carefully, vomiting often comes from a problem in the stomach or guts, such as: an infection, poisoning from spoiled food, or acute abdomen (for example, appendicitis or something blocking the gut). Also almost any sickness with high fever or sever pain may cause vomiting, especially malaria, hepatitis, tonsillitis, earache, meningitis urinary infection, gallbladder pain or headache.

Fig P.205

Danger signs with vomiting:

- Dehydration that increases and that you cannot control.
- Sever vomiting that lasts more than 24 hours.

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- Violent vomiting, especially if vomit is dark green, brown, or

- Violent vomiting, especially if vomit is dark green, brown, or smells like shit. (signs of obstruction).
- Constant pain in the gut, especially if the person cannot defecate or if you cannot hear gurgles when you put your ear to the belly (see acute abdomen: abstraction, appendicitis).
- Vomiting of blood (peptic ulcer etc.).

Fig P.206

In all above conditions seek medical help quickly.

TO HELP CONTROL SIMPLE VOMITING

- Eat nothing while vomiting is severe.
- Slip a cola drink or ginger ale. Some herbal teas, like camomile, may also help.
- For dehydration give small frequent sips of cola, tea, or rehydration drink.
- If vomiting does not stop soon, send the patient to the health center.

Colds and the Flu

Cold and flu are common virus infections that may cause runny nose, cough, sore throat, & some times fever or pain in the joints.

Fig P.207

There may be mild diarrhea, especially in young children colds & the flu almost always go away without medicine. Do not use antibiotics, as they will not help at all and may cause harm.

- 1- Drink plenty of water and get enough rest.
- 2- Paracetamol helps lower fever and relieve body aches and headaches.
- 3- No special diet is needed. However fruit juices, especially orange juice or lemonade, are helpful.

To prevent a cold from leading to earache, try not to blow your nose-just wipe it. Teach children to do the same older children in adults can put small amount of salt water into their hand and sniff it, into the nose. This helps to loosen the mucus.

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Fig P.208

Breathing hot water vapor helps clear a stuffy nose.

Fig P.208

If a cold or the flu lasts more than a week, or if the person has fever, cough up a lot of phlegm (mucus with pus), has shallow fast breathing or chest pain, he could be developing bronchitis or pneumonia. An antibiotic may be called for. The danger of a cold turning into pneumonia is greater in old people, in those who have lung problem, like chronic bronchitis, and in people who cannot move much.

Sore throat is often part of a cold. No special medicine is needed, but it may help to gargle with warm water. However, if the sore throat begins suddenly, with high fever, it could be a strep throat. Special treatment is needed.

Prevention of Colds:

- Getting enough sleep and eating well will help prevent colds, eating oranges, tomatoes, and other fruit containing vitamin C may also help.
- Contrary to popular belief, colds do not come from getting cold or wet. A cold is 'caught' from others who have the infection and sneeze the virus into the air.
- To keep from giving his cold to others, the sick person should eat and sleep separately and take special care to keep far away from small babies. He should cover his nose and mouth when he coughs, or sneezes.
- To prevent a cold from leading to earache try not to blow your nose—just wipe it. Teach children to do the same.

Sore Throat and Inflamed Tonsils

These problems often begin with the common cold. The throat may be red & hurt when the child swallows.

Fig P.210

The tonsils (two lymph nodes seen as lumps on each side at the back of the throat) may become large and painful or drain pus. Fever may reach 40⁰c.

Treatment:

- 1- Gargle with warm salt water (1 teaspoon of salt in a glass of water)
- 2- Take paracetamol for pain.
 - If pain and fever come on suddenly or continue for more than 3 days, see the following topic.

Sore throat and the danger of rheumatic Fever:

For the sore throat that often comes with the common cold or flu, antibiotics should usually not be used and will do no good. Treat with gargles and paracetamol .

However, one kind of sore throat-called strep throat should be treated with penicillin. It is most common in children and young adults. It usually begins suddenly with severe sore throat and high fever, often without signs of a cold or cough. The back of the mouth and tonsils become very red, and the lymph nodes under the jaw or in the neck may swollen and tender.

Give penicillin for 10 days. If penicillin is given early and continued for 10 days there is less danger of getting rheumatic fever. A child with strep throat should eat and sleep far apart from others, to prevent their getting it also.

Respiratory tract diseases

1- Acute bronchitic:

Bronchitis is an infection of the bronchi or tubes that carry air to the lungs. It causes a noisy cough, often with mucus or phlegm. Bronchitis is usually caused by a virus, so antibiotics do not generally help.

Use antibiotics:

- If the bronchitis lasts more than a week and is not getting better.
- If the person shows signs of pneumonia (respiration rate is more than 50 in one minute).
- If he already has a chronic lung problem.

2- Chronic Bronchitis:

Signs:

- A cough with mucus that lasts for months or years. Sometimes the cough gets worse, and there may be fever. A person who has this kind of cough, but does not have another long term illness such as tuberculosis or asthma, probably has chronic bronchitis.
- It occurs most frequently in older persons who is heavy smoker.
- It can lead to emphysema, a very serious and incurable condition in which the tiny air pockets of the lungs break down. A person with emphysema has a hard time breathing, especially with exercise, and his chest becomes big like a barrel.

Fig P.214

Treatment:

- Stop smoking
- Persons with chronic bronchitis should use ampicillin, or cotrimaxazole every time they have a cold or 'flu' with a fever.
- If the person has trouble coughing up sticky phlegm, have him breath hot water vapors and then help him with postural drainage.
If the patient's condition doesn't get better send him to health center.

If you have a chronic cough (or want to prevent one), do not smoke!

3- Pneumonia:

Pneumonia is an acute infection of the lung. It often occurs after another respiratory illness such as measles, whooping cough, flu, bronchitis, asthma or any very serious illness, especially in babies and old people.

Signs:

- Sudden chills and then high fever.
- Rapid shallow breathing, with little grunts or sometimes wheezing. The nostrils may spread with each breath. (very sick child who takes more than 50 shallow breaths a minutes probably has pneumonia). If breathing is rapid and deep check for dehydration.
- Fever (sometimes newborns and old or very weak persons have severe pneumonia with little or no fever).
- Pulling of intercostal space towards internal chest cavity.
- Cough (often with yellow, greenish, rust-colored, or slightly bloody mucus).
- Chest pain (sometimes).
- Cold sores often appear on the face or lips.

Treatment:

- For pneumonia, treatment with antibiotics can make the difference between life and death. Give penicillin, ampicillin and co-trimoxazole (dosage should be studied in the chapter of medicines).
- Give paracetamol for fever and pain.
- Give plenty of liquids. If the person will not eat, give him liquid foods or rehydration drink.
- Ease the cough and loosen the mucus by giving the person plenty of water and having him breath hot water vapors. Postural drainage may also help.

If respiration rate is more then 50 in a minute synchronous with cough, and the patient cannot eat or drink send him to the health center as soon as possible.

How to drain mucus from the lungs

(Postural drainage)

When a person who has a bad cough is very old or weak and cannot get rid of the sticky mucus or phlegm in his chest, it will help if he drinks a lot of water. Also do the following:

- First have him breath hot water vapors to loosen the mucus.
- Then have him lie partly on the bed, with his head and chest hanging over the edge. Pound him lightly on the back. This will help to bring out the mucus.

Fig P.218

4- Asthma:

A person with asthma has fits or attacks of difficult breathing. Listen for wheezing sound, especially when breathing out. When he breaths in, the skin behind his collar bones and between his ribs may suck in as he tries to get air. If the person cannot get enough air, his nails and lips may turn blue, and his neck veins may swell. Usually there is no fever.

Fig P.219

Asthma often begins in childhood and may be a problem for life. It is not contagious, but is more common in children with relatives who have asthma. It is generally worse during certain month, of the year or at night. Persons who have had asthma for years may develop emphysema.

An asthma attack may be caused by eating or breathing things to which the person is allergic. In children asthma often starts with a common cold. In some persons nervousness or worry also plays, a part in bringing on an asthma attack.

Treatment:

- 1- If asthma gets worse inside the house, the person should go outside to a place where the air is cleanest. Remain calm and be gentle with the person. Reassure him.

- 2- Give a lot of liquids. This loosens mucus and makes breathing easier. Breathing water vapor may also help.
- 3- If a person has a fever, or if the attack lasts more than 3 days, give ampicillin or co-trimoxazole .
- 4- In rare cases roundworms cause asthma. Try giving vermoz to a child who starts having asthma if you think she has roundworms.
- 5- If the person does not get better, seek medical help.

Prevention:

A person with asthma should avoid eating or breathing things that bring on attacks. The house or work-place should be kept clean. Do not let chickens or other animals inside. Put bedding out to air in the sunshine, sometimes it helps to sleep outside in the open air, drink at least 8 glasses of water each day to keep the mucus loose. Persons with asthma may improve when they move to a different area where the air is cleaner. If you have asthma do not smoke, smoking damages your lungs even more.

5- Tuberculssis:

Tuberculosis of the lungs is chronic (long-lasting) contagious (easily spread) disease that any one can get. But it often strikes persons between 15 and 35 years of age especially those who are weak, poorly nourished, or live with someone who has T.B. Tuberculosis is curable. Yet thousands die needlessly from this disease every year. Both for prevention and cure, it is very important to treat tuberculosis early.

Fig P.222

Most frequent signs of TB:

- 1- Chronic cough, often worse just after waking up.
- 2- Mild fever in the afternoon and sweating at night.
- 3- There may be pain in the chest or upper back.
- 4- Chronic loss of weight and increasing weakness.

In serious or advanced cases:

- 1- Coughing up blood (usually a little, but in some cases a lot.)
- 2- Pale, waxy skin.
- 3- Voice hoarseness (very serious).
- 4- Tuberculosis is usually in the lungs, but it can affect any part of the body. At first sign of tuberculosis send the

patient to a health center to see if he has TB or not. Most anti TB drugs are earned free. Ask the nearest health center. It is important to take the medicines as directed. To cure tuberculosis completely usually takes from 1 to 2 years. Plenty of energy food also foods rich in proteins and vitamins should be advice. Rest is important. If possible, stop working and take it easy until you begin to get better. From then on, try not to work so hard that you become tired or breath with difficulty. Try always get to enough rest and sleep.

Tuberculosis in any part of the body is treated the same as TB of the lungs. A child with severe TB of the backbone may also need surgery to prevent paralysis.

Tuberculosis is very contagious. Persons (especially children) who live with someone who has TB, run a great risk of catching the disease.

If someone at the home has TB:

- 1- If possible, see that the whole family is tested for TB (Tuberculin test).
 - 2- Every one, especially the children, should eat plenty of nutritious food.
 - 3- The person with TB should eat and sleep separately from the children, if possible in a different room, as long as he has any cough at all.
 - 4- Also ask him to cover his mouth when coughing and not spit on the floor. Try to store the sputum in a container and then burn or bury it some where far from the home.
 - 5- A child if has cough more then 2 weeks and you think of T.B send him to the health center.
 - 6- If anyone in the family shows signs of TB, have tests done and begin treatment at once.
- (Early and full treatment is a key part of Prevention).

**(Disease of G.I.T.)
or
G.I. Disorders**

Amebic Dysentery:

Amebas: These are not worms, but tiny parasites, that can be seen only with a microscope (an instrument that makes things look much bigger).

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How they are transmitted:

The stools of infected people contain millions of these tiny parasites. Because of poor sanitation, they get into the source of drinking water or into food and other people become infected. Many healthy people have amebas without becoming sick. However, amebas are a common cause of severe diarrhea or dysentery (diarrhea with blood) especially in persons already weakened by other sickness or poor nutrition. Less commonly, amebas cause painful, dangerous abscesses in the liver.

Signs:

- Diarrhea that comes and goes-sometimes alternating with constipation.
- Cramps in the belly and a need to have frequent bowel movement, even when little or nothing or just mucus comes out.
- Many loose (but usually not watery) stools with lots of mucus, sometimes stained with blood.
- In severe cases, much blood, the person may be very weak and ill.
- Usually there is no fever.
- Diarrhea with blood may be caused by either amebas or bacteria. However, bacterial dysentery begins more suddenly, the stools are more watery and then is almost always fever.

As a general rule:

Diarrhea + blood + fever = bacterial infection.
Diarrhea + blood + no fever = amebas.

Treatment:

Amebic dysentery can be treated with metronidazole and for bacterial dysentery use ampicillin or co-trimoxazol (refer to medicines chapter).

Prevention:

Make and use latrines, protect the source of drinking water, and follow the guidelines of cleanliness. Eating well and avoiding fatigue are also important in preventing amebic dysentery.

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2- Constipation:

A person who had hard stools and has not had a bowl movement for 3 or more days is said to be constipated. Constipation is often caused by a poor diet (especially not eating enough fruits, green vegetables, or food with natural fiber like whole grain bread) or by lack of exercise.

Drinking more water and eating more fruits vegetables and food with natural fiber is better than using laxatives. It also helps to add a little vegetable oil to eat food day. Older people especially may need to walk or exercise more in order to have regular bowel movements.

Never use strong laxatives or purgatives especially if there is stomach pain.

3- Roundworm (Ascaris)

20 to 30 cm. long. color. pink or white.

How they are spread:

Feces-to mouth: Through lack of cleanliness, the roundworm eggs pass from one person's stools to another person's mouth.

Effect on health:

Once the eggs are swallowed, young worm hatch and enter the blood stream; this may cause general itching.

The young worms then travel to the lungs, sometimes causing a dry cough or, at worst, pneumonia with coughing of blood.

The young worms are coughed up, swallowed, and reach the intestines, where they grow to full size.

Many roundworms in the intestines may cause discomfort, indigestion, and weakness. Children with many roundworms often have very large, swollen bellis. Rarely roundworms may cause asthma, fits or a dangerous obstruction or blockage in the gut.

Especially when the child has a fever, the worms sometimes come out in the stools or crawl out through the mouth or nose. Occasionally they crawl into the airways and cause gagging.

Prevention:

Use latrines, wash hands before eating or handling food, protect food from flies, and follow the guidelines of cleanliness.

Treatment:

Treatment:

- Vermox (Mebendazole) is useful (see chapter of medicine section).
- Some home remedies work fairly well.

4- Hook Worm:

1 cm, Color, red.

Hookworm cannot usually be seen in the faces. A stool analysis is needed to prove that they are there. In order to prove if there is hookworm in the skull, so it should be examined.

Fig P.232

Hookworm infection can be one of the most damaging disease of childhood. Any child who is anemic, very pale, or eats dirt may have hookworms. If possible his stools should be analyzed.

Treatment:

- Use tablet of Vermox.
- Personal hygiene is very important.
- Do not let children go barefoot.

5- Heartburn, and stomach ulcers:

Heartburns often come from eating too much heavy or greasy food or from drinking too much alcohol or coffee. These make the stomach produce extra acid, which causes discomfort or a 'burning' feeling in the stomach or wid-chest. Frequent or lasting Heartburn is a warning sign of an ulcer.

An ulcer is a chronic sore in the stomach or small intestine, caused by too much acid. It may cause a chronic, dull (sometimes sharp) pain in the pit of the stomach. As with heartburn, often the pain lessens when the person eats food or drinks milk. The pain usually gets worse 2-3 hours after eating, if the person misses a meal, or after he drinks alcohol or eats fatty or spicy foods. Pain is often worse at night. If the ulcer is severe, it can cause vomiting with blood. Stools with blood from an ulcer are usually black, like tar.

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Prevention & treatment:

- 1- Eat mainly foods that seem to calm and not to cause the pain.
 - Notice what foods or drinks make the pain (ulcer) better.
 - Boiled milk.
 - Cheese
 - Corn, Barley
 - Banana

- Foods make the pain worse:
 - Salty cookies
 - Soap
 - Boiled potatoes
 - Squash
 - Simple cookies.
 - Fried or boiled egg.

- Dangerous foods:
 - Tea
 - Spices
 - Carbonated drinks (coca-colo)
 - Greasy foods
 - Tobacco

- 2- Milk is the best antacid for stomach ulcer and indigestion if it is sever ulcer in early days drink a glass of milk every hour. Only medicines which better the ulcer should be advised. Just after relieving of the pain safe foods should be advice.

- 3- Antacid is also useful in the treatment of acid, and stomach ulcer.

- 4- Even after getting well, foods which damage shouldn't be advice. If possible every nigh before going to bed take antacid and milk. It is important to treat an ulcer. Otherwise it may lead to dangerous bleeding or peritonitis. Ulcers usually get better if the person is careful with what he eats and drinks. Anger, tension and nervousness increase acid in the stomach and make ulcer worse. Learning to relax and keep calm will help. Continued care is necessary to prevent the ulcer from returning. Better still, avoid problems caused by stomach acid by not eating harmful foods and eat useful foods.

Hepatitis (Jaundice):

Hepatitis is a virus infection that harms the liver. Even though in some places people call it the fever, hepatitis often causes little or no rise in temperature. The disease is usually mild in small children and more serous in older persons and in women who are pregnant.

Signs:

- May have a fever
- After a few days, the eyes turn yellow
- Sight or smell of food may cause vomiting.
- The urine turns the color of coca-cola and the stools become whitish.
- Does not want to eat or smoke. Often goes days without eating any thing.
- Sometimes there is a pain on the right side near the liver.

In general the patient is very sick for 2 weeks and he looks very week 1-3 months after getting well.

Treatment:

- Antibiotics do not work against hepatitis. In fact some medicines will cause added damage to the sick liver. Do not use medicines.
- The sick person should rest and drinks lots of liquids. If he refuses most foods give him orange juice and other fruit, plus vegetable soup.
- It may help to take vitamins.
- Control vomiting
- When the sick person can eat, give a balanced meal vegetable and fruit are good, with some protein like, bean, chicken and boiled egg. Avoid Oil and fatty foods.

Prevention:

- The hepatitis virus passes from the stool of one person to the mouth of another by contaminated water or food. To prevent others from getting sick, bury or burn the sick person's stool and keep him very clean. The person providing care should wash his hands well after each time he goes near the sick person.
- Small children often have hepatitis without any signs of sickness, but they can spread the disease to others. It is very important that everyone in the house follow all the guidelines of cleanliness with great care.

Warning:- Hepatitis can also be transmitted by giving injections with unsterile needles. Always boil needles and syringes before use.

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7- ACUTE ABDOMEN

Acute abdomen is a name given to a number of sudden, severe conditions of the gut for which prompt surgery is often needed to prevent death. Appendicitis, peritonitis, and obstruction are examples study under this heading, often the exact cause of acute abdomen. Will be uncertain until a surgeon cuts open the belly and looks inside.

If a person has continuous server gut pain with vomiting, but does not have diarrhea, suspect an acute abdomen.

ACUTE ABDOMEN:	LESS SERIOUS ILLNESS:
Take to a hospital surgery may be needed	Probably can be treated in the home or health center
* continuous severe pain that keeps getting worse	* pain that comes and goes (cramps)
* constipation and vomiting	* moderate or severe diarrhea
* belly swollen, hard, person protects it	* sometimes signs of an infection, perhaps a cold or sore throat
* severely ill	* he has had pains like this before
	* only moderately ill

If a person shows signs of acute abdomen, get him to a hospital as fast as you can.

8- TYPHOID FEVER

Typhoid is an infection of the gut that affects the whole body. It is spread from feces to mouth by eating contaminated food and water. Typhoid often comes in epidemics (many people sick at once). Of the different infections sometimes called "the fever" typhoid is one of the most dangerous.

Signs of typhoid:

First week:

- * It begins like a cold or flu.
- * Headache, sore throat, and often a dry cough.
- * Patient temperature rises every day and sometimes reach to 40°C or more.
- * Pulse is often relatively slow for the degree of fever. Take the pulse and temperature every half hour. If the pulse gets slower when the fever goes up, the person probably has typhoid.
- * Sometimes there is vomiting, diarrhea, or constipation.

Second week:

- * High fever, pulse relatively slow.
- * A few pink spots may appear on the body.
- * Trembling.
- * Delirium (person does not think clearly or make sense).
- * Weakness, weight loss, dehydration.

Third week:

- * If there are no complications the fever and other symptoms slowly go away.

Typhoid Treatment:

- 1- Seek medical help (send the patient to the health center).
- 2- If health center is far advise Ampicillin first and send the patient to the health center.
- 3- If it is not possible to send the patient to health center continue treatment with Ampicilline fo 14 days, if patient is sensitive to Ampicilline give cotrimoxazol (for dosage please refer to drug section).
- 4- Lower the feve with cold compress and advising paracetamol.
- 5- Give plenty of liquids, so up, juice, nutritious food in liquid for to prevent dehydration.
- 6- Patient should stay in bed until complete abseree of fever.
- 7- If there is blood in patient's feces or patient develop sign and symptom of peritonities or pneumonia immediately take the patient to the hospital.

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Prevention:

- To prevent typhoid care must be taken to avoid contamination of water and food by human feces. Follow the guidelines of personal and public hygiene. Make and use latrines. Be sure latrines are a safe distance from where people get drinking water.
- Cases of typhoid often appear after a flood or other disaster, and special care must be taken with cleanliness at these times. Be sure drinking water is clean. If there are cases of typhoid in your village, all drinking water should be boiled. Look for the cause of contaminated water or food.
- To avoid the spread of typhoid, a person who has the disease should stay in a separate room. No one else should eat or drink from the dishes he uses. His stools should be burned or buried in deep holes. Persons who care for him should wash their hands right afterwards.
- After recovering from typhoid some persons still carry the disease and can spread it to others. So anyone who has had typhoid should be extra careful with personal cleanliness and should not work in restaurants or where food is handled.

MALARIA

Malaria is an infection of the blood that causes chills and high fever. Malaria is spread by mosquitos. The mosquito sucks up the malaria parasites in the blood of an infected person and injects them into the next person it bites.

Signs of malaria

1. The typical attack has 3 stages:
 - 1- It begins with chills and often headache. The person shivers or shakes for 15 minutes to an hour.
 - 2- Chills are followed by fever often 40⁰ or more. The person is weak. Hushed (red skin), and at times delirious (no in his right mind). The fever lasts several hours or days.
 - 3- Finally the person begins to sweat and his temperature goes down. After an attack, the person feels weak but may feel more or less OK that bites will not pass malaria.
2. Usually malaria causes fevers every 2 or 3 days (depending on the kind of malaria), but in the beginning it may cause fever daily. Also, the fever pattern may not be regular or typical. For this reason anyone who suffers from unexplained fevers should have his blood tested for malaria.

Chronic malaria often causes a large spleen and anemia.

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Treatment:

- 1- Advice tab. Chloroquine (see medicine chapter)
- 2- If Chloroquine is not useful send. The patient to the hospital.

HOW TO AVOID MALARIA

Malaria occurs more often during hot, rainy seasons if everyone cooperates, it can be controlled. All these control measures should be practiced at once.

- 1- Avoid mosquitos. Sleep where there are no mosquitos or under neath a sheet. Cover the baby's cradle with a mosquito netting or a thin cloth.
- 2- Cooperate with the malaria control workers when they come to your village.
- 3- If you suspect malaria, get treatment quickly. After you have been treated, mosquitos that bite you will not pass malaria on to others.
- 4- Destroy mosquitos and their young . Mosquitos breed in water that is not flowing. Drain or put a little oil on pools or marshes where mosquitos breed.
- 5- Malaria can also be prevented, or its effects greatly reduced, by taking anti-malaria medicines on regular schedule.

PROBLEMS OF THE URINARY TRACT.

- 1- **Urinary tract infections.** These are most common in women are suffered from mild infections while such infections are less common in men.

Urinary Tract Infections.

Signs

- 1- Sometimes pain in the side. Sometimes the pain seems to go down the legs.
- 2- In serious cases (kidney disease) the feet and face may swell.
- 3- Sometimes fever and chills or headache.
- 4- Painful urination and need to urinate very often.
- 5- Urine may be cloudy or reddish(bloody).
- 6- Unable to hold in urine (especially true for children).
- 7- Sometimes there is pain in the lower back (kidneys).

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Treatment:

- **Drink a lot of water.** Many minor urinary infections can be cured by simply drinking a lot of water, without the need for medicine (But if the person cannot urinate or has swelling of the hands and face, she should not drink much water)
- If the person does not get better by drinking a lot of water, or if she has a fever, she should take pills of co-trimoxazole or ampicillin. It is very important to continue to drink a lot of water while taking these medicines, especially co-trimoxazole.

If the person does not get better quickly, seek medical advice.

ANEMIA

A person with anemia has thin blood. This happens when blood is lost or destroyed faster than the body can replace it. Blood loss from large wounds, bleeding ulcers, or dysentery can cause anemia. So can malaria, which destroys red blood cells. Not eating enough foods rich in iron can cause anemia or make it worse.

Women can become anemic from blood loss during monthly bleeding (menstrual periods) or childbirth if they do not eat the foods their bodies need. Pregnant women are at risk of becoming severely anemic, because they need to make extra blood for their growing babies.

In children anemia can come from not eating foods rich in iron. It can also come from not starting to give some foods in addition to breast milk, after the baby is 4 months old. Common causes of severe anemia in children are hookworm infection, chronic diarrhea, and dysentery.

The signs of anemia are:

- * Pale or transparent skin.
- * Pale insides of eyelids
- * Pale gums
- * White fingernails
- * Weakness and fatigue
- * If the anemia is very severe, face and feet may be swollen, the heartbeat rapid, and the person may have shortness of breath.

Treatment and Prevention of Anemia:

- **Eat foods rich in iron.** Meat, fish, and chicken are high in iron, Liver is especially high. Dark green leafy vegetables, peas, and lentils also have some iron.
- If the anemia is moderate or severe. the person should take iron (ferrous sulfate pills). This is especially important for pregnant women who are anemic. For nearly all cases of anemia. ferrous sulfate tablets are much better than liver extract or vitamin B. As a general rule iron should be given by mouth, not injected, because iron injections can be dangerous and are not better than pills.
- If the anemia is caused by dysentery (diarrhea with blood), hookworm, malaria, or another disease, this should also be treated.
- If the anemia is severe or does not get better, seek medical help this is especially important for a pregnant woman.

Many women are anemic. Anemic women run a greater risk of miscarriage and of dangerous bleeding in child birth. It is **very important and women eat as much of the foods high in iron as possible,** especially during pregnancy. Allowing 2 to 3 years between pregnancies lets the women regain strength and make new blood therefore its important for women to eat beans, dark green leafy vegetable, not liver chicken and egg every time especially during pregnancy.

'PINK EYE' (CONJUNCTIVITIS)

This infection causes redness, pus, and mild 'burning' in one or both eyes. Lids often stick together after sleep.

Treatment:

First clean pus from the eyes with a clean cloth moistened with boiled water. Then put in tetracycline eye ointment. Pull down the lower lid and put a little bit of ointment inside, like this. Putting ointment outside the eye does no good.
Caution: Do not touch the tube against the eye.

Prevention:

Most conjunctivitis is very contagious. The infection is easily from one person to another. Do not let a child with pink eye play or sleep with others, or use the same towel. Wash after touching eyes.

TRACHOMA

Trachoma is a chronic infection that slowly gets worse. It may last for months or many years. If not treated early, It sometimes causes blindness. It is spread by touch or by flies, and is most common where people live in poor, crowded conditions.

Signs:

1. Trachoma begins with red, watery eyes, like ordinary conjunctivitis.
2. After a month or more, small, pinkish gray lumps, called follicles, form inside the upper eyelids. To see these, turn back the lid.
3. The white of the eye is a little red.
4. After a few months, if you look very carefully, or with a magnifying glass, you may see that the top edge of the cornea looks grayish.

After several years, the follicles begin to disappear, leaving whitish scars.

These scars make the eyelids thick and may keep them from opening or closing all the way. Or the scarring may pull the eyelashes down into the eye, scratching the cornea and causing blindness.

Treatment of trachoma:

Put tetracycline eye ointment inside the eye 3 times each day or for a complete cure, also take tetracycline by mouth for 2 to 3 weeks with co-trimoxazole.

Prevention:

Early and complete treatment of trachoma helps prevent its spread to others. All persons living with someone who has trachoma, especially children, should have their eyes examined often and if signs appear they should be treated early. Washing the face every day can help prevent trachoma. Also it is very important to follow the Guidelines of Cleanliness

Cleanliness helps prevent trachoma

1- SMALL SORES WITH PUS

Skin infections in the form of small sores with pus often result from scratching insect bites, scabies, or other irritations with dirty fingernails.

Treatment and Prevention.

- Wash the sores well with soap and cooled, boiled water, gently soaking off the crust. Do this daily as long as there is pus.
- Leave small sores open to the air, Bandage large sores and change the bandage frequently.
- If the skin around a sore is red and hot, or if the person has a fever, or swollen lymph nodes, use an antibiotic.
- Do not scratch. This makes the sores worse and can spread infection to other parts of the body. Cut the fingernails of small children very short. Or have them wear gloves they cannot scratch.
- Never let a child with sores or any skin infection play or sleep with other children. These infections are easily spread.

2- IMPETIGO

This is a bacterial infection that causes rapidly spreading sores with shiny, yellow crusts. It often occurs on children's faces especially around the mouth impetigo can spread easily to other people from the sores or contaminated fingers.

Treatment:

- Wash the affected part with soap and cooled, boiled water 3 to 4 times each day gently soaking off the crusts.
- After each washing paint the sores with Gentian Violet or applied on an antibiotic cream.
- If the infection is spread over a large area or causes fever, give Ampicillin or co-trimoxazol tablets.

Prevention:

- Follow the Guidelines of Personal Cleanliness. Bathe children daily and protect them from bedbugs and biting flies. If a child gets scabies, treat him as soon as possible.
- Do not let a child with impetigo sleep or play with other children. Begin treatment at the first sign.

3- BOILS AND ABSCESES.

A boil, or abscess, is an infection that forms a sac of pus under the skin. This can happen when the root of a hair gets infected. Or it can result from a puncture wound or an injection given with a contaminated needle.

Signs:

A boil is painful and the skin around it becomes red and hot. It can cause swollen lymph nodes and fever.

Treatment:

- Put hot compresses over the boil several times a day
- Let the boil break open by itself. After it opens, keep using hot compresses. Allow the pus to drain, but never press or squeeze the boil, since this can cause the infection to spread to other parts of the body.
- If the boil causes swollen nodes or fever, take penicillin tablets or Ampicillin.

**4- ITCHING RASH, OR HIVES
(ALLERGIC REACTIONS IN THE SKIN)**

Touching, eating, injecting, or breathing certain things can cause an itching rash or hives in allergic persons.

Hives are thick, raised spots or patches that look like bee stings and itch like mad. They may come and go rapidly or move one spot to another.

Treatment of itching

- Bathe in cool water or use cool compresses cloths soaked in cold water or ice water.
- Compresses of cool oats water also calm itching. Boil the oats in water, strain it, and use the water when cool. (Starch can be instead of oats).
- If itching is severe, take an antihistamine like chlorpheniramine.
- To protect a baby from scratching himself. Cut his fingernails very short, or put gloves or socks over his hands.

5- SCABIES (SEVEN YEAR ITCH)

Scabies is especially common in children. It causes very itchy little bumps that can appear all over the body, but are most common between the fingers on the wrists around the waist on the genitals between the toes.

Usually does not appear on head and face except in babies. Small itchy sores on the penis and scrotum of young boys are almost always scabies.

Scabies is caused by little animals-similar to tiny ticks or chiggers-which make tunnels under the skin. It is spread by

touching the affected skin or by clothes and bedding. Scratching can cause infection, producing sores with pus, and sometimes swollen lymph nodes or fever.

Treatment:

- If one person has scabies, everyone in his family should be treated.
- Personal cleanliness is of first importance. Bathe and change clothes daily.
- Cut fingernails very short to reduce spreading and infection.
- Wash all clothes and bedding or, better still, boil them and hang them in the sun.
- Use benzylbenzoate solution (see medicine chapter).
- Wash the whole body vigorously with soap and hot water.

6- LICE

Lice cause itching, and sometimes skin infections and swollen lymph nodes. To avoid lice, take great care with personal cleanliness. Wash clothing and bedding often and hang them in the sun. Bathe and wash hair often. Check children's hair if they have lice, treat them at once. Do not let a child with lice sleep with others.

Treatment:

For head and public lice: You can often get rid of lice without medicines by scrubbing the hair well with regular soap or shampoo for 10 minutes. Rinse well and comb thoroughly with a fine-tooth comb. Repeat every day for 10 days.

If necessary, make a shampoo of lindane water, and soap (1 part lindane to 10 parts water). Wash hair, being careful not to get lindane in the eyes. Leave the shampoo for 10 minutes, then rinse well with clean water. Repeat a week later.

To get rid of lice eggs, soak hair with warm vinegar water (1 part vinegar to 1 part water) for half an hour, then comb it thoroughly with a fine-tooth comb.