

LECTURE NOTES

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Documentation

For Health Extension Workers



**Ethiopia Public Health
Training Initiative**

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In collaboration with the Ethiopia Public Health Training Initiative, The Carter Center,
the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education

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This material is intended for educational use only by practicing health care workers or students and faculty in a health care field.

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Essentially, it required the consolidation and merging of existing in depth training materials, examination of Health Extension Package manuals and the Curriculum.

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Table of contents

	Page
Acknowledgments	i
Table of contents	ii
List of tables	v
List of figures	vi
Abbreviations	vii
Introduction.....	1
DUTY ONE: Collecting primary data.....	5
Task 1. Dividing the total area in the map in to twenty day blocks.	6
Task 2. Designing Performa according to the data required.....	10
Task 3. Making house to house visit	17
Task 4. Interviewing house hold members	23
Task 5. Involving a consultative group for validation of information	27
DUTY TWO: Analysis of data for sending reports.	29
Task 1. Preparing a master chart with the data	30
Task 2. Analyzing and consolidating data from master chart	34

Task 3. Preparing periodic reports from the consolidated data for reporting.....	47
--	----

DUTY THREE: maintaining registers and records 52

Task 1. Entering data in to various registers and records.....	53
Task 2. Periodic updating of data in various registers and records.....	61

DUTY FOUR: Preparing plan of action71

Task 1. Prioritizing health problems and identifying high risk groups	72
Task 2. Estimating workload and resource requirements for each component of service	84
Task 3. Preparing a plan of action for providing day to day services.....	86

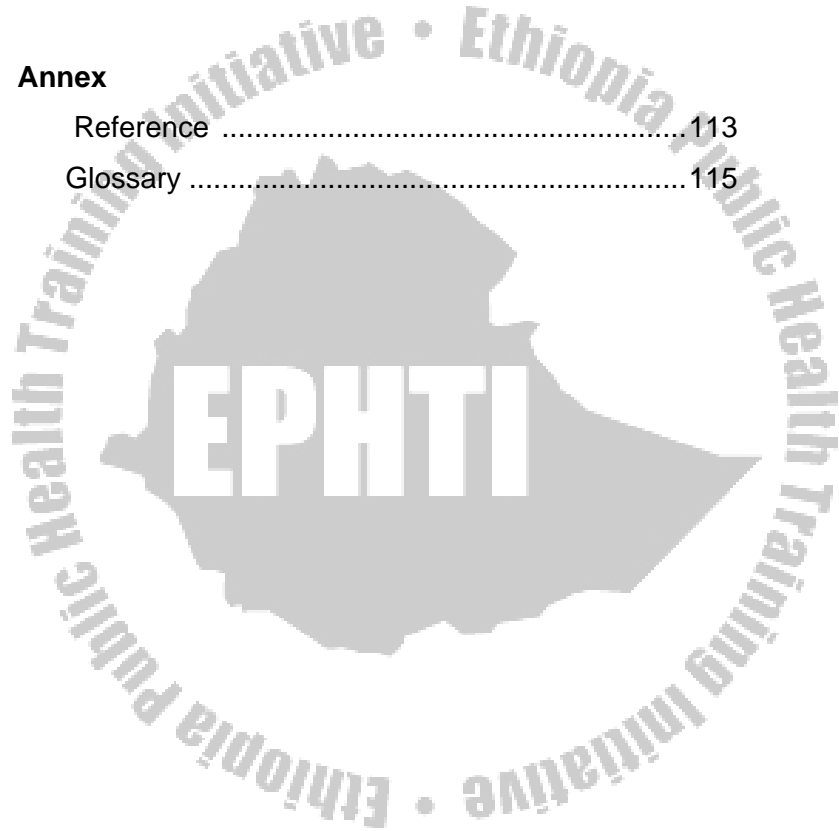
DUTY FIVE: Monitoring and evaluation of activities 188

Task 1. Monitoring implementation of health programs	89
Task 2. Review feed back from supervisors.....	92
Task 3. Periodic evaluation as per action plan	93

DUTY SIX: Maintaining stock97
Task 1. Maintaining stock register98
Task 2. Requesting required stock 103
Task 3. Issuing IEC materials, drugs, vaccines ORS
and contraceptives 106

Annex

Reference113
Glossary 115



List of Tables

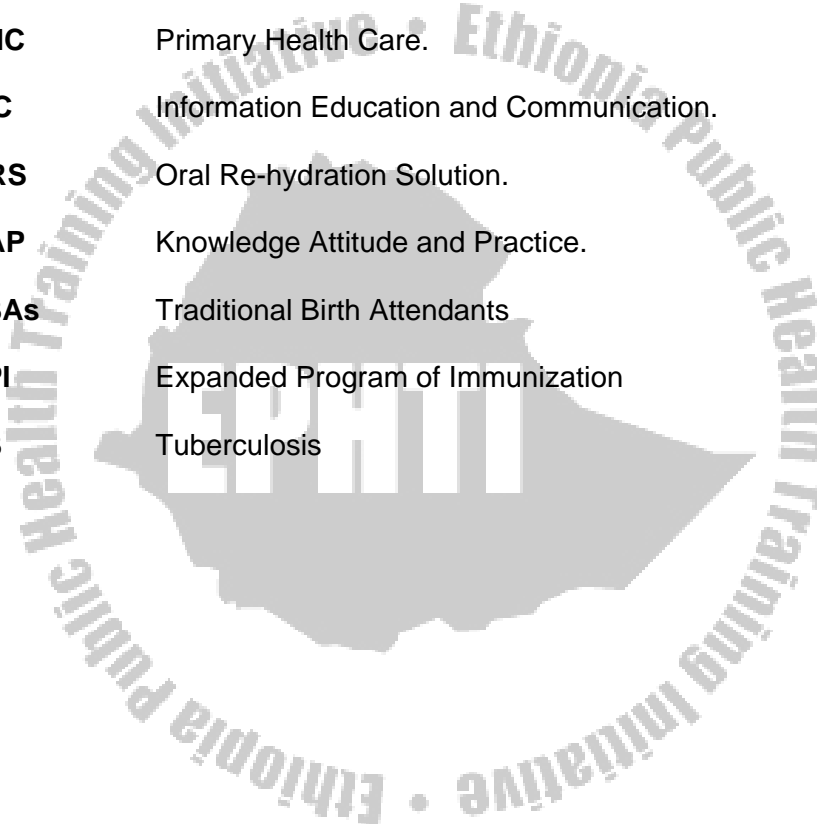
Page

Table 1. Example of patient diagnosis master chart used for recording.....	33
Table 2. Population size in each kebele of town x in 1980.	39
Table 3. Example of Health Extension Worker case report format	67
Table 4. An example of criteria ranking for different health issues.	76
Table 5. The sequence of activities, targets and time planned for accomplishment can be summarized as follows.	83
Table 6. Example of work plan table	87
Table 7. An example of registering during receiving of new item and issuing an item in order to maintain balance in stock.	102
Table 8. This table can be used for preparation of cost estimation of materials or equipments.	105

List of Figures

	Page
Fig.1 Village 'X' divided in to twenty day blocks.	9
Fig.2 Showing number of doctors in proportion to the number of people in different countries	37
Fig.3 The number of students present in each section of grade 9 in Bethlehem school in 1994 E.C.	38
Fig.4 Preference of delivery sites in village "A" among 80 pregnant mothers in 1995 E.C.	40
Fig.5 Shows weight of children who came for immunization service at Kaco clinic September 1996E.C.	41

Abbreviations



HEW	Health Extension Workers.
PHC	Primary Health Care.
IEC	Information Education and Communication.
ORS	Oral Re-hydration Solution.
KAP	Knowledge Attitude and Practice.
TBAs	Traditional Birth Attendants
EPI	Expanded Program of Immunization
TB	Tuberculosis



INTRODUCTION

The Ethiopian government has set preventive based health policy and specifies the general objectives of programs that have to be implemented at the middle and primary level. In many parts of Ethiopia, large numbers of families have still no access to health care or are not covered by the health system. Recently, strengthening the primary level of health care delivery is however given attention by designing a program of Health Extension Package for training Health Extension Workers who will be assigned at kebele level. This new program is believed to have importance in the efforts of extending services in a community. People will get services at their home as the Health Extension Workers assign in each kebele. This increases the health service coverage. The training of Health Extension Workers is therefore, valuable for the proper delivery of health services at the grass root level.

If we relay on recorded information of health workers who are working in health institutions (such as hospitals, health centers, etc) on risk factors, disease and change in the course of disease, we will probably fail to get complete and accurate information. The reason behind

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is that many health workers do not give due attention for accurate recording system.

In order to solve such problems, recording should start at community level where the root of the problem might also be identified for an appropriate solution. Therefore, recording at the community level by health extension workers give solution for some of the problems.

This lecture note is divided in to six duties, which are further classified in to different tasks. Duty one is dealing with methods of preparing a map of a locality and divided it in to twenty-day blocks. In this duty trainees will also learn on preparation of questionnaire and how to conduct interviews in their house-to-house visit. The focus of duty two is on analysis of data for the purpose of utilizing the available information in order to address the health needs of the community and sending reports to the next higher level. Trainees will also be acquainted with the basic principles of statistics and presentation of analyzed data. Duty three is dealing with maintaining registers and records. Here the different types and purpose of records are described in detail.

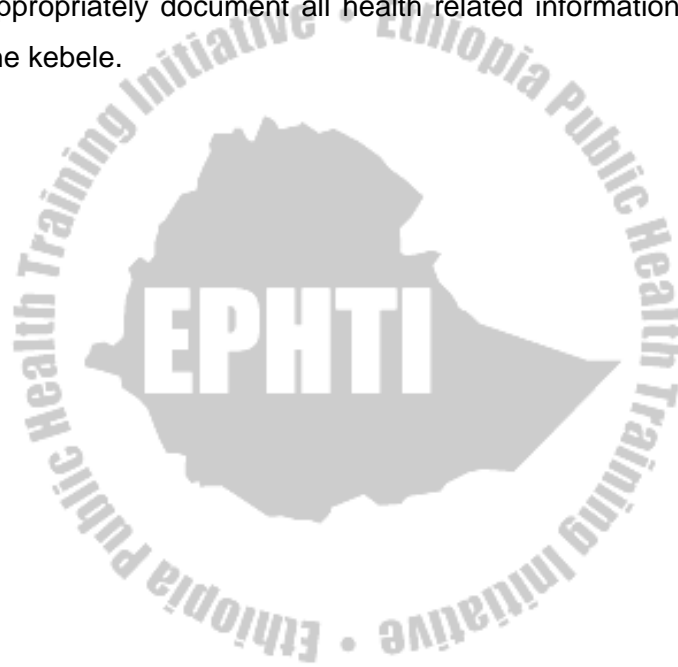
Trainees will have basic concepts on how to prepare plan of action in duty four. The five steps in planning are presented in detail which will enable the trainee to appreciate priority setting as one step and an important part of planning. In duty five, trainees will learn monitoring and evaluation of activities based on their action plan. The last duty (duty 6) focuses on maintaining stock. Here trainee will practice on how to register stocks and periodically updating stock and also they will develop skills of requesting adequate stock both annually and periodically.

While giving this course, much time should be allotted for practical aspects than the theory part in each topic. Based on this, the material is prepared in a way that theoretical backgrounds are presented first and followed by exercises which will be done during the practical hours.

Delivering of this course is important for the Health Extension Worker to familiarize her/him self to the locality where she/he is assigned. The new program of Health Extension Package avoids the traditional approach of health service delivery system by which the service will take place at community level with full

Documentation

participation and involvement of the community. This condition gives an opportunity for the community to participate on issues of their health or plays a major role on the planning, implementation and evaluation concerning their own health. The main objective of giving this course is to enable the trainees to appropriately document all health related information in the kebele.



DUTY ONE

Collecting Primary Data

Learning Objectives At the end of duty one trainees will be able to:

- Divide the total area of the village/kebele in to twenty-day blocks.
- Prepare questionnaire to assess the health problem and the socio-economic status of the community.
- Collect data from the community
- Conduct house to house health services

Task1: Dividing the total area in the map in to twenty-day blocks

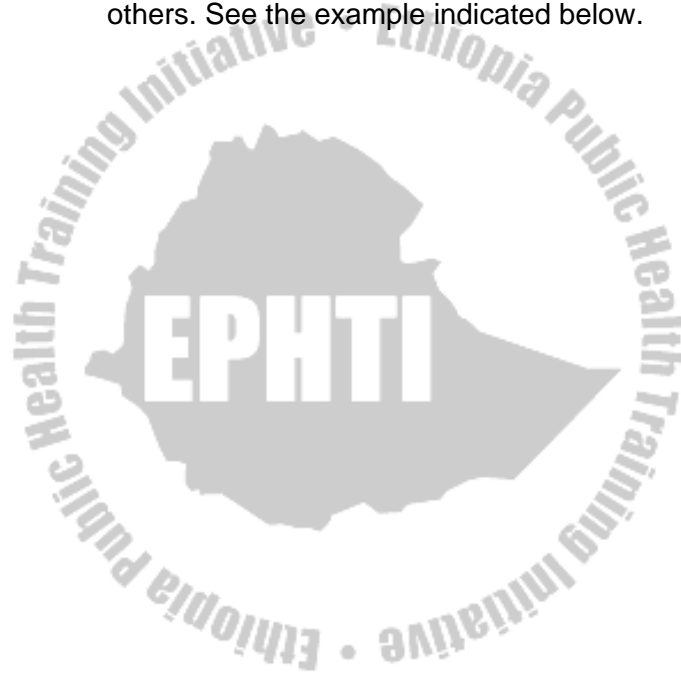
Mapping the village or Kebele is the first step in carrying out community based health activities. Community often is defined by its geographic boundaries and thus is called a geographic community. Geographic maps include large areas and consequently must be to small scale they show important land marks, such as river, swampy areas, schools, mosques, churches, etc.

In community health, it is useful to identify a geographic area as a community. A community becomes a clear target for analysis of health needs and easily mobilized for action. Groups can be formed to carry out intervention and prevention efforts that address needs specific to that community. And thus, all health extension workers should be familiar with the methods and technique used in map and topographic drawing.

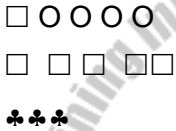
On mapping a village or kebele, the Health Extension Workers (HEWs) should know the following three points:

1. Identify a defined area (village) limited by convenient natural boundaries from which data can be collected.

2. Mark out this defined area (village or Kebele) on a map with a marker, fasten it to a piece of board and hang this up on the wall.
3. Show basic data on the map, such as population of the village, houses, roads, streams, organizations, religious sites and others. See the example indicated below.



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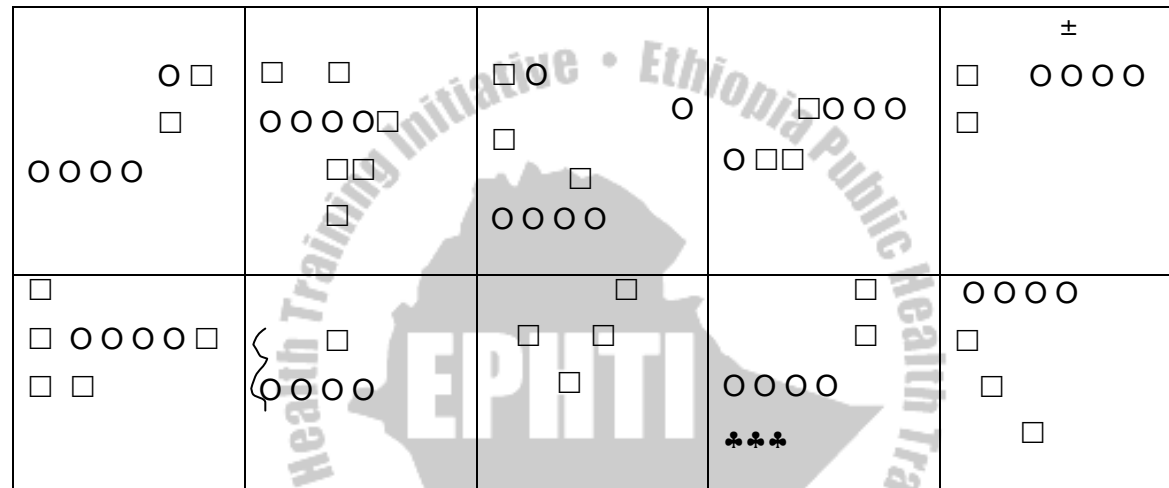


Fig. 1 Village `X` divided into twenty-day blocks.

Key

□ . Residence Church	±.
○. Residence (thatched roof) School	◇.
Ç. Mosque Green area	♣.
‡. Health post River	{.

Exercise

Draw the sketch map of your kebele and divide in to twenty working days.

Task 2: Designing Performa according to the data required

Preparing questionnaires for collecting data

Questionnaire is used to collect data. Before examining the steps in designing a questionnaire, we need to review the type of questions used in questionnaires. Depending on how questions are asked and recorded, we can distinguish two major possibilities; open ended questions and closed questions.

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Open-ended questions permit free responses that should be recorded in the respondent's own words. The respondent is not given any possible answers to choose from. For example, can you describe exactly what the traditional birth attendant did when your labor started?

Closed questions offer a list of possible options or answers from which the respondents must choose. When designing closed questions one should try to:

- Offer a list of options that are exhaustive and mutually exclusive, and
- Keep the number of options as few as possible.

Closed questions are useful if the range of possible responses is known.

For example

1. What is your marital status?

- A. Single
- B. Married
- C. Divorced
- D. Widowed
- E. Others

2. Have you ever gone to the local village health

worker for treatment?

A. Yes

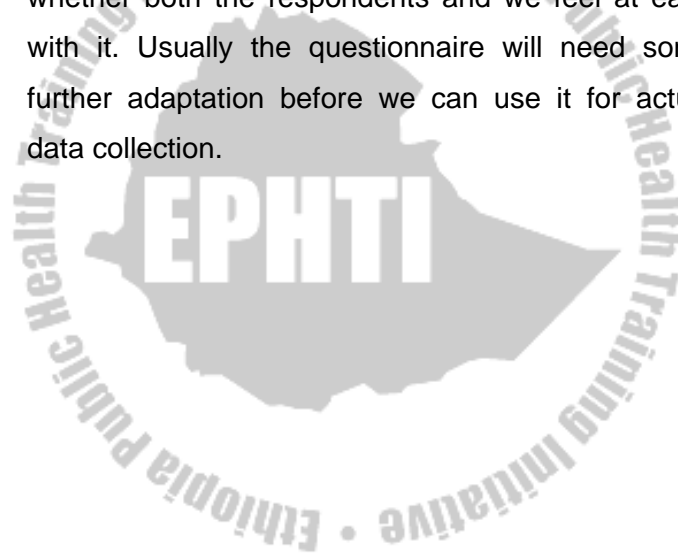
B. No

Requirement of questions:

- 1 Must have face validity that the question that we design should be one that give an obviously valid and relevant measurement for the variable.
- 2 Questions must be clear and unambiguous- They must be phrased in language that it is believed the respondent will understand, and that all respondents will understand in the same way. To ensure clarity, each question should contain only one idea.
- 3 Questions must not be offensive- when ever possible it is wise to avoid questions that may offend the respondent.
- 4 Sensitive questions it may not be possible to avoid asking 'sensitive' questions that may offend respondents, in such situations the interviewer should do it very carefully and wisely.

Steps in designing a questionnaire

Designing a good questionnaire always takes several drafts. In the first draft we should concentrate on the content. In the second, we should look critically at the formulation and sequencing of the questions. Then we should scrutinize the format of the questionnaire. Finally, we should do a test-run to check whether the questionnaire gives the information we require and whether both the respondents and we feel at ease with it. Usually the questionnaire will need some further adaptation before we can use it for actual data collection.



Step 1: Content

Take your objectives and variables as your starting point

Decide what questions will be needed to measure or to define your variables and reach your objectives. When developing the questionnaire, you should reconsider the variables you have chosen, and if, necessary, add, drop or change some of your objectives at this stages.

Example, the objective of designing the questionnaire is to assess the socioeconomic status of the community. Therefore, some of the variables are ethnicity, income, educational status housing conditions etc.

Step 2: Formulating questions

Formulate one or more questions that will provide the information needed for each variable.

Take care that questions are specific and precise enough that different respondents do not interpret them differently.

- Check whether each question measures one thing at a time
- Avoid leading questions.

A question is leading if it suggests a certain answer.

Example, what is your monthly income?

Step 3: Sequencing of questions

Design your interview schedule or questionnaire to be “consumer friendly”.

- The sequence of questions must be logical for the respondent and allow as much as possible for a ‘natural ‘ discussion, even in more structured interviews.
- At the beginning of the interview, keep questions concerning “background variables” (e.g. age, religion, education, marital status, occupation) to a minimum.
- Start with an interesting but non-controversial question (preferably open) that is directly related to the subject of the study.
- Pose more sensitive questions as last as possible in the interview. (example question pertaining to income, sexual behavior etc).
- Use simple every day language.
- Make the questions as short as possible. Conduct the interview in two parts if the nature of the topic requires a long questionnaire (more than one hour).

2. What is your family size? _____
3. What is your educational status?

Task 3: Making house to house Visit

Families are the main unit of health service in the community and have been for over a century. Working in the community and being able to visit families in their homes is a privilege. In this unique setting you are permitted in to the most intimate of spaces we, as human beings, have. A home visit is conducted to visit clients where they live in order to assist them to achieve as high a level of wellness as possible.

Sampling method

Sample-may be defined simply as a part of a population. Suppose our population consists of the weight of all the elementary school children enrolled in a certain village. If we collect the weights of only a fraction of these children, we have only a part of our population of weights, that is, we have a sample.

Sampling involves the selection of a number of study units from a defined population. The population is too large for us to consider collecting information from all its

members. If the whole population is taken there is no need of statistical inference (generalizing of sample data to the total population). Usually, a representative subgroup of the population (sample) is included in the assessment. A representative sample has all the important characteristics of the population from which it is drawn.

Advantage of sampling:

- Cost- sampling save time, labour and money
- Quality of data- more time and the effort can be spent on getting reliable data on each individual sampled.

If we have to draw a sample, we will be confronted with the following questions:

1. What is the group of people (population) from which we want to draw a sample?
2. How many people do we need in our sample?
3. How these people will be selected?

Types of sampling methods

1. Non – probability sampling methods. This method can not claim to be representative of the entire population.

2. Probability sampling methods: it involves random selection procedures. All units of the population should have an equal or at least known chance of being included in the sample. Generalization is possible (from sample to population).

Types of probability sampling methods

1. Simple random sampling (SRS)

This is the most basic scheme of random sampling. Each unit in the sample frame has an equal chance of being selected. Representativeness of the sample is ensured. However, it is costly to conduct SRS. Moreover, minority subgroups of interest in the population may not be present in the sample in sufficient numbers for study.

To select a simple random sample you need to:

- Make a numbered list of all the units in the population from which you want to draw a sample.
- Each unit on the list should be numbered in sequence from 1 to N, where N is the size of the population.
- Decide on the size of the sample.
- Select the required number of study units,

using a 'lottery' method or a table of random numbers.

2. Systematic sampling

Individuals are chosen at regular intervals (for example, every k) from the sampling frame. The first unit to be selected is taken at random from among the first k units. For example, a systematic sample is to be selected from 1200 students of a school. The sample size is decided to be 100. The sampling fraction is; $100/1200=1/12$. Hence the sample interval is 12. The number of the first student to be included in the sample is chosen randomly, for example by blindly picking one out of twelve pieces of paper, number 1 to 12. If number 6 is picked, every twelfth students will be included in the sample, starting with student number 6 until 100 students are selected. The numbers selected will be 6,18,30,42 etc.

Systematic sampling is usually less time consuming and easier to perform than simple random sampling. It provides a good approximation to simple random sampling.

Demerits of this sampling method are, if there is any sort of cyclic pattern in the ordering of the subjects which

coincides with the sampling interval, the sample will not be representative of the population.

3. Stratified sampling

It is appropriate when the distribution of the characteristic to be studied is strongly affected by certain variables (heterogeneous population). The population is first divided into groups (strata) according to a characteristic of interest (example, sex, geographic area, prevalence of disease, etc). A separate sample is taken independently from each stratum, by simple random or systematic sampling.

- **Proportional allocation:** if the same sampling fraction is used for each stratum.
- **Non probability allocation:** if a different sampling fraction is used for each stratum or if the strata are unequal in size and a fixed number of units is selected from each stratum.

In this sampling technique the representativeness of the sample is improved. But, sampling frame for the entire population has to be prepared separately for each stratum.

4. Cluster sampling

In this sampling scheme, selection of the required sample is done on groups of study units (clusters) instead of each study unit individually. The sampling unit is a cluster, and the sampling frame is a list of these clusters.

Procedures

- The reference population (homogenous) is divided in to clusters. These clusters can be districts, villages, etc.
- A sample of such clusters is selected.
- All the units in the selected clusters are studied.

It is preferable to select a large number small clusters rather than a small number of large clusters.

Preparing plan of action

The greatest barrier to a successful family health visit is a lack of planning and preparing. A visit is not success just because the health professionals enter a home or other setting where clients are present. A successful family health visit takes much planning and preparation, involves many aspects while with the family, and requires accurate documentation and follow-up. In addition, safety measures must be followed, not only while traveling in the neighborhood but also in the home.

Task 4: Interviewing household members

Methods of interviewing

Before any statistical work can be done data must be collected. Depending on the type of variable and objective of the study different data collection methods can be employed.

Data collection techniques allow us to systematically collect data about our objects of study (people, objects and phenomena) and about the setting in which they occur. In the collection of data we have to be systematic. If data collected haphazardly, it will be difficult to answer our community health problem questions in a conclusive way.

Face to face interviewing is one of the commonest data collection techniques. Therefore, designing good “questioning tools” forms an important and time consuming phase in community diagnosis or research. Once the decision has been made to use these techniques, the following questions should be considered before design our tools.

1. What exactly we want to know, according to the objectives and variables we identified earlier? Is

questioning the right technique to obtain all answers, or do we need additional techniques, such as observation.

2. Of whom will we ask questions and what techniques will we use?
3. Are our informants mainly literate or illiterate?
4. How large is the sample that will be interviewed?
Studies with many respondents often use shorter, highly structured questionnaires, where as smaller studies allow more flexibility and may use questionnaires with a number of open-ended questions.

In interviewing using questionnaire, the investigator appoints agents known as enumerators or data collectors, who go to the respondents personally with the questionnaire, ask them the questions given there in, and record their replies. They can be face-to-face or telephone interviews.

Face-to-face and telephone interviews have many advantages. A good interviewer can stimulate and maintain the respondent's interest, and can create understanding and conducive atmosphere to answer the questions. If anxiety aroused, the interviewer can allow

it; if a question is not understood, an interviewer can repeat it and if necessary provide an explanation or alternative wording. In face-to-face interviews, observations can be made as well.

Observation

Observation is a technique that involves systematically selecting, watching and reading behaviors of people or other phenomena and aspects of the setting in which they occur, for the purpose of getting (gaining) specified information. It includes all methods from simple visual observations to the use of high level machines and measurements. It is important to outline the guidelines for the observation prior to actual data collection.

Importance of getting correct information

Before looking at any type of information, it is important to recognize that information is rarely, if ever, completely accurate. Information provides a means of presenting a view about the real world. Such views can differ not only in terms of distortions or Inaccuracy but also, more fundamentally, as a result of genuinely different perceptions.

Much information collected depends heavily on both the skills of the collector and how she/he 'views' or

interprets reality.

Example of factors affecting accuracy of information

In carrying out a survey of a village population, one might imagine that to obtain the number and age-distribution of inhabitants was fairly straight forward. However various factors could affect the number recorded, such as:

- The definition of resident' (If a normal resident was not present at the time of the survey, should she/he be counted?)
- The level of motivation of the enumerator or data collector (would s/he bother to visit a home some distance from the main village?)
- Enumerator training (do they ask the right questions to elicit accurate ages?)
- There may also be reasons why it is in the interest of the village or indeed of the enumerator to inflate or deflate figures - for example, if a farmer suspects that the socioeconomic question has a relation with the tax.

Information in health service organization should full fill the following characteristics.

1. **Appropriateness:** does the information relate to the work and objectives of the organization?

2. **Quality:** Is the information complete, accurate and clear? Does it represent a true picture of what is happening with in the organization?
3. **Timeliness:** Is the information recent and represent what is occurring now with in the organization or is it out of date and of little use?
4. **Quantity:** Is there sufficient information available that will lead to accurate conclusions?

The technical accuracy of data depends largely on the skills and motivation of the data collectors. Many information systems suffer through insufficient attention being paid to these important aspects of information systems, on the automatic presumption that data are being collected accurately.

Task 5: Involving a consultative group for validation of information

There is a variety of methods of collecting information. The choice of method for any type of information will depend inter alias, on the level of accuracy required. Methods of collecting information are frequently biased. Information can be collected by different methods such as survey, vital registration, treatment records, notifiable

disease returns, informed opinion, and information from other ministries, agencies and other sources.

`Soft` information may be obtained through meetings with individuals or groups (for example, in a community meeting). While such meetings can be an important source of information, their value is, of course, dependent on the representative credentials of the informants. In addition to this, one of the importances of meetings is to validate the information collected by other techniques like face-to-face interview.

Meetings are necessary of health work, especially when the work is with rural communities. Meetings are of many kinds and can have many different purposes. Small meetings may be held with community leaders to try to identify health problems and needs. There may be meetings with special groups such as patients, community leaders or mothers for community based health activities.

Exercise

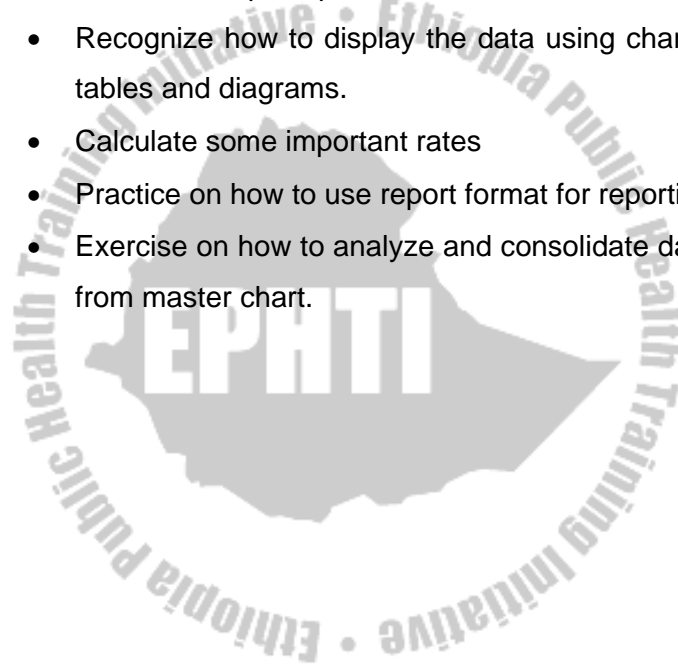
Form small groups and prepare questionnaire (based on defined objectives of your assessment, its use and the variables) and conduct face – to –face interview.

DUTY TWO

Analyzing Data For Sending Reports

Learning objectives: At the end of duty two trainees will be able to:

- Describe the principles of statistics
- Recognize how to display the data using charts, tables and diagrams.
- Calculate some important rates
- Practice on how to use report format for reporting
- Exercise on how to analyze and consolidate data from master chart.



Task 1: Preparing a master chart with the data

Basic principles of statistics

Statistics is either statistical data or statistical methods. Statistical data means numerical descriptions of things. These descriptions may take the form of counts or measurements. Even though the statistical data always denotes figures (numerical descriptions) it must be remembered that all numerical description are not statistical data.

Statistical activities must be prepared to be able to interpret or communicate the results to some one else as situation demands. The numbers in statistics contains information. Thus the purpose of statistics is to investigate and evaluate the nature and meaning of this information.

Principle of statistics

- Concerned with the scientific method for collecting, organizing, summarizing, presenting and analyzing data.
- Data and conclusions used to make reasonable decision on the bases of analysis
- Present the facts in a definite form
- Simplify the complex data so as to make them

understandable

- Correlate the data and make comparisons
- Formulating and testing hypothesis

Types of data

There are two major types of data.

1. Qualitative (categorical) data: is a type of data which cannot be described in numerical expression, but can only be identified by name or categories, for example, sex, place of birth, ethnic group, degree of pain, etc. Qualitative data is further classified into two. Namely:

i) Nominal data: consists of two or more different categories of data values.

Example, sex (M and F)

Sex is a variable, where as “M” and “F” are data values.

ii) Ordinal data: groups into categories and there is some predetermined order.

Example, the progress of a certain disease over time can be categorized by ordinal data as follows.

- High improvement
- Moderate improvement
- No change
- Moderate deterioration

- High deterioration
- Death

2. Quantitative (numerical) data: a type of data that has numerical values either from count or measurement. There are also two types of quantitative data.

i) Discrete data: data occur when the observations are described in integral value counts.

Example, number of live births/1000 mother/year, the number of pregnancies (gravity), number of family, etc.

ii) Continuous data: observations are characterized by continuous scale.

Example, weight, height or age of a child. The weight may be between 1 and 2, say 1.55Kg.

Presentation of Data

Data collected from survey or other method is called raw data. This raw data can not convey clear and precise information. So that this unsorted data must be arranged purposively in order to bring out important points clearly. This organized data displayed in different techniques like order array (serial arrangement of numerical values in ascending or descending orders), tables, diagrams and figures, etc. which help to present in compactable and understandable way.

Preparing a master chart

This is a record of primary data, which is written as it is observed before the data is analyzed and consolidated. The charts prepared in the way that the chart can accommodate information needed. It can be vary according to the data and the organization.

Table 1. This is an example of patient diagnosis master chart used for recording.

Seri No.	Name	Age	Sex	Village /kebele	Diagnosis	Treatment	Remark
1							
2							
3							
4							
5							
6							

Task 2: Analyzing and consolidating data from master chart

In most cases, useful information is not immediately evident from the mass of unsorted data. Collected data need to be organized in such a way as to condense the information they contain in a way that will show patterns of variation clearly. Precise methods of analysis can be decided up on only when the characteristics of data understood.

Once the data is collected must be analyzed so that the meaningful interpretation can be made. Statistical procedures simply reduce a great amount of information to smaller one that can be easily interpreted when deciding an appropriate analysis. It is important to know statistical analysis.

1. Descriptive statistics: describe in mathematical or numerical terms of the data collected. Such as, mean (average), deviation, percentage, etc which are reported in written or graphic forms, rate and ratio.

2. Inferential statistics: which enable one to determine the extent to which change of differences observed.

Average implies a value in the distribution around which the other values are distributed. It gives a mental picture of central value. There are several kinds of averages

1. Arithmetic mean
2. Median
3. Mode.

1. The mean (\bar{x}): Arithmetic mean is by far widely used in statistical calculations. It is obtained by dividing total number of observation by the number of observations.

$$\bar{X} = \frac{1}{n} \sum_{i=1}^n x_i \quad i=1, 2, \dots, n. \quad \text{Where, } \bar{x}.$$

mean

total number of population

It is influenced by both extreme values found in the data and some times the result obtained seems unreal (ridiculous).

Example, Average number of students found in a class is 48.5.

2. The Median: To obtain the median the data is first assigned in ascending or descending order then the middle value is taken. If the data number is even it is calculated by taking the average of the two middle values. It is not influenced by extreme values and more representatives than the mean and nearer to

the truth.

Example 1. The income of seven persons per day in Birr is as follows.

10,15,15,5,20,102,25, then, it is

ordered as

5, 10, 15,15,20,25,102

Then the median is 15.

Example 2. Diastolic blood pressure of 10 patients is:

83, 75, 81, 79, 71, 95, 75, 77, 84, 90

Date arranged in ascending order as:

71, 75, 75, 77, 79, 81, 83, 84, 90, and 95

Then, the median is $\frac{79+81}{2} = 80$

2

2. Mode: is commonly occurring value in a distribution of data. Its advantage is easy to understand and unaffected by extreme items or values. The exact location is uncertain and is often not clearly defined. Therefore, it is not more commonly used in medical statistics.

Example, score in physics for eight students is as follow:

70, 65, 70, 87, 95, 71, 70, 87

Then the mode is 70

Presentation of data

1. Preparing a pictogram: small pictures are used to represent the data. Here the fraction of the pictures can be used to represent smaller values of the whole symbol otherwise, it is similar to bar chart.

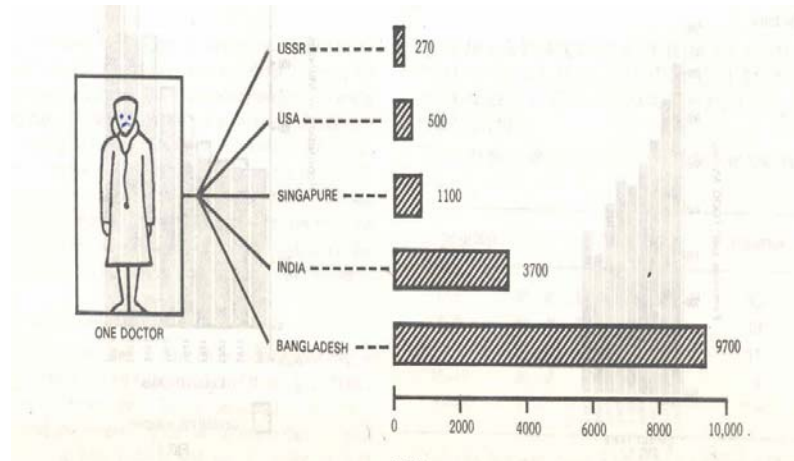


Fig 2. Showing number of doctors in proportion to the number of people in different countries.

2. Preparing bar chart: It is a proper type of graph for nominal or ordinal scales. The graph has vertical (y direction) and horizontal (x directions.). The category labels (values) usually are put in some systematic way. The vertical bars are drawing to represent the frequency or percent in each category. There should be a space between the bars. Here the spacing and the width of the

bar must be equal for all categories. In addition the title of the figure which is placed under the figure should answer questions what, when, where, how. The following is an example of bar chart showing the number of students in each section of grade 9.

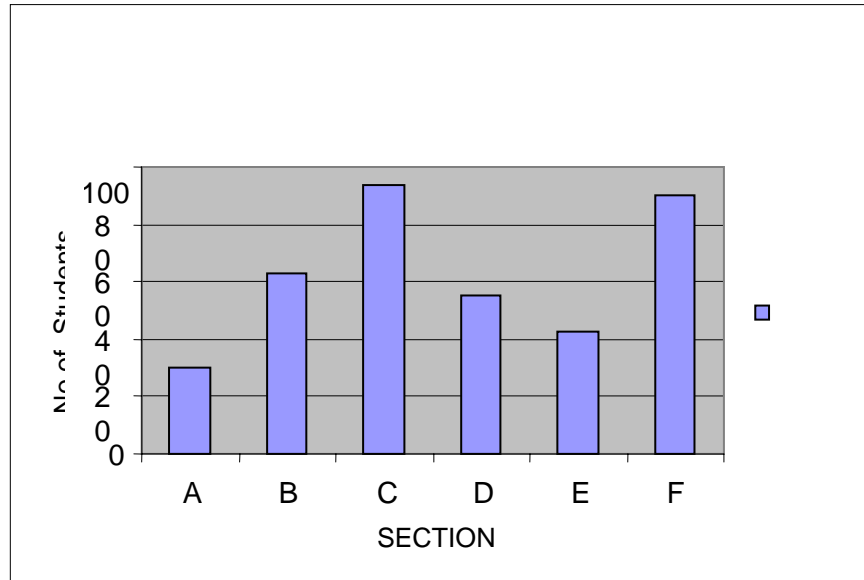


Fig 3. The number of students present in each section of Grade 9 in `X` School 1994 E, C.

3. Preparing tables: It is a systematic presentation of numerical data in to rows and columns. Rows are horizontal and columns are vertical assessments. It is constructed first by assigning (tabulating) data into

Documentation

frequency distributions and inserts the values in each column and rows. Numerical entities of zero should be explicitly written rather than indicated by a dash. Dashed are reserved for missing for an observed data.

The table should be as simple as possible and self explanatory and the title written above the table answers questions like, what, when, where, how. The total should be shown either in the top row last column or in the last row first column. The following table presented as an example.

Table 2. The population size in each Kebele of town 'x' in 1980 E, C.

Kebele	Population by sex		Total
	male	female	
01	550	500	1050
02	500	560	1060
03	600	590	1190
94	9,00	890	1790
05	1,000	990	1990
Total	3550	3530	7080

4. Pie Chart: it is a circle which divided into sectors. Each sector is proportional to the frequency. The full circle (360 degree) represents 100%. The titles of the figure are written under it and the numbers needed. The following pie chart presented as an example.

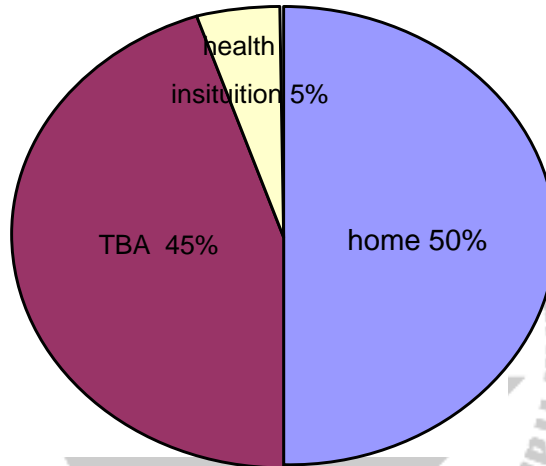


Fig 4. Preference of delivery sites in village "A" among 80 pregnant mothers in 1995 E.C.

5. Preparing histogram: A graph of frequency distribution of continuous measurement variables. Its construction is the same as bar chart. But, what makes it different is, between the bars there is no space, it is continuous to show the continuity of the variables. Figure 5 shows an example of histogram.

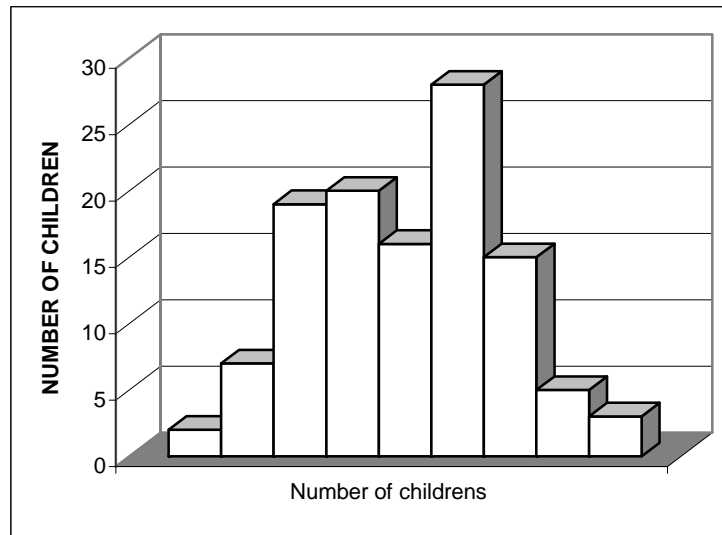


Fig 5. Shows weight of children who came for immunization services at kaco clinic September 1996 E.C.

Calculating rates

A rate is a ration in which there is a distinct relationship between the numerator and denominator and, most essentially, a measure of time in an intrinsic part of the denominator. Rate is a proportion of an event at a time element, i.e. in which occurrences are quantified over a period of time.

1. Mortality Rate

1.1 Crude Death Rate (CDR): determined as the total number of deaths due to all causes occurs in a determined area during a determined period per 1000 mid year population in the same area during the same period.

$$\text{CDR} = \frac{\text{Total number of death in an area in a given year}}{\text{Mid year population in the same area in the given period}} \times 1000$$

1.2 Age Specific Death Rate (ASDR): The total number of deaths occurring in a specified age group.

$$\text{ASDR} = \frac{\text{Total number of death at age group}}{\text{Mid year population at that age or group}} \times 1000$$

1.3 Cause Specific Death Rate (CSDR): Death due to specific cause per 1000 population at risk.

$$\text{CSDR} = \frac{\text{Total death from a given cause in a year}}{\text{Population at risk in the same area at the same time}} \times 1000$$

1.4 Infant Mortality Rate (IMR): defined as the probabilities of dying between birth and one year per 1000 live births.

$$\text{IMR} = \frac{\text{Death of children} < 1 \text{ year of age}}{\text{Total live births in a year at the same area}} \times 1000$$

1.5 Neonatal Mortality Rates (NMR): It indicates risk of dying within 28 days of birth.

$$\text{NMR} = \frac{\text{Total death of children under 28 days of age}}{\text{Total live births in a year in the same area}} \times 1000$$

1.6 Post-Neonatal Mortality Rate (PMR): Defined as the probability of dying between 28 days of birth to one year of age per 1000 live births in a year at the same area.

$$\text{PNMR} = \frac{\text{Death of children between 28 days and one year}}{\text{Live births the same area in a year}} \times 1000$$

1.7 Child Mortality Rate (CMR): Mortality rate between age 1-4 years.

$$\text{CMR} = \frac{\text{Death of children 1-4 years of age in a year}}{\text{Live births the same area in a year}} \times 100$$

Mid year population of the same age in the
same area in a year

1.8 Maternal Mortality Rate (MMR): The number of deaths of mother due to maternal causes (such as complication of pregnancy, child birth and puerperium) per 100,000 live births.

$$\text{MMR} = \frac{\text{Total death of mother due to maternal cause in a year}}{\text{Total live births at the same area in the same year}} \times 100,000$$

1.9 Under Five Mortality Rate: the probability of dying between birth and age five per 1000 live births.

$$\text{Under 5 MR} = \frac{\text{Total death of under five children}}{\text{Total number of children under 5 in the same area in a year}} \times 1000.$$

2. Morbidity Rates:

Morbidity refers to the community status respect to disease. The two most frequently used rates in the study of morbidity in the community are the incidence rate & prevalence rate.

2.1 Incidence Rate (IR): Defined as the number of new cases of a disease that occurs during a specified period of time in a population at risk for developing the disease.

$$IR = \frac{\text{Total number of new cases of a specific disease during a year}}{\text{Total population at risk in a year}} \times K$$

$$K = 100, 1000, 10,000$$

2.2 Prevalence Rate (PR): measures the number of people in a population who have a disease at a given time.

$$PR = \frac{\text{total number of cases existing at a point}}{\text{Total population at a point in time.}} \times K$$
$$K = 100, 1000, 10,000$$

3. Fertility Rate

3.1 Crude Birth Rate (CBR): is the number of live births in a year per thousand mid year population in the same year.

$$CBR = \frac{\text{Total number of live birth during a year}}{\text{Total mid year population (1st July)}} \times K$$

$$K = 1000.$$

3.2 General Fertility Rate (GFR): is the number of births in a specified period per 1000 women aged 15

– 49 year.

$$\text{GFR} = \frac{\text{Total number of live births during a year}}{\text{Mid year total number of female population (15-49 age) in the same area}} \times K$$

3.3 Age Specific Fertility Rate (ASFR): Number of live birth in a specified period in time per 1000 women in a given age or age group.

$$\text{ASFR} = \frac{\text{Number of birth with the specified age of women}}{\text{Mid year population of women at the same age with in the same period of time.}} \times 1000$$

3.4 Total Fertility Rate (TFR): is the sum of all age specific fertility rates for each year of age from 15-49 years.

4. Other Demographic Rates

4.1 Population Growth Rate (r): this rate is sometimes called crude rate of natural increase.

$$r = \text{Crude Birth Rate} - \text{Crude Death Rate}$$

Task 3: Standard report format

Reports are the information communicated to other levels of health services. They are an important tool to monitor an activity. The reports can be oral, written or given by Medias. The report consists statistical information on birth, death and morbidity, or comments or problems on programs.

A standard report format printed and distributed in advance to the health units or village health workers with the aim of keeping the uniformity and quality of data to have the same information from the reporters. The report, which is filled using a standard report format is easy to analyses and compare by higher officials. The report form printed in different color and distributed to different units accordingly.

Exercises

1. Discuss the following rates briefly and write the corresponding abbreviation for each.
 - Crude birth rate
 - Crude death rate
 - General fertility rate
 - Maternal mortality rate

Documentation

- Infant mortality rate
- Neonatal mortality rate
- Post neonatal mortality rate
- Age specific and cause specific mortality rate
- Prevalence and incidence rate

2. In rural village, which is found around Harrar town, there are a total of 120 cases of tuberculosis in 1992. After one year 40 cases were recovered and 26 new cases were found.

- A. What is the prevalence of tuberculosis in this village?
- B. What is the incidence rate of tuberculosis in this village?

Documentation

The data in the following table are a report from a certain country.

Age	Total number of women	Total number of births in age group
15 – 19	225,2000	21,834
20 - 24	217,6000	35,997
25 – 29	173,400	21,670
30 – 34	143,300	8,935
35 – 39	134,100	3,464
40 – 49	267,800	925

3. Compute the following rates for this country
- Total fertility rate
 - General fertility rate
 - Age specific fertility rate for each category.

Documentation

The following table shows a report from village “X” in 2000.

Events	Total
• Total number of population (1 st July)	25,000
• Live Births	1500
• Mothers (15- 49 years of age)	9,000
• Children under 5 (0 – 4 year of age)	4000
• Deaths	5000
o All deaths	950
o Maternal death	150
o Under 1 year	200
o Under 28 days	250
o Children (1-4) years	
▪ Death due to malaria	

4. Calculate the following rates for village “X” based on the data given above.

- A. Infant mortality rate
- B. Maternal mortality rate
- C. Crude birth rate
- D. General fertility rate
- E. Crude death rate

- F. Neonatal mortality rate
- G. Child death rate
- H. Specific death rate due to malaria.



DUTY THREE

Maintaining Records And Registers

Learning objectives: At the end of duty three the trainees will be able to:

- Describe a method of record keeping or design a record form for use for different activities at health post level.
- List the principle of deigning survey records.
- Maintain registers and records properly and correctly.
- Enter data into the respective registers and records
- Update data in the respective registers and records.

Task 1: Entering data into various records and registers

Records consists of the information kept in the health unit about the work of the unit, health conditions in the community and individual patients, as well as information on administrative matters such as staff, equipment and supplies. Records are usually written information kept in notebooks or fills; they may also be kept on to be computerized.

Records should be accurate, accessible, and available when needed, and contain information that is useful to management. Information should not be recorded unless it is known to be accurate and unless there is a use for it .Accurate records help Health Extension Worker to follow the activities of a program continuously, according to need (plan).

Forms which differ from region to region, are often prepared and can be adapted to local circumstances. These forms will help the health staff recording the information required, make it easier to standardize the information collected, and save time for all concerned. There are different formats prepared by the regional

health bureau for recording the activities of Health Extension Workers.

Activity recording formats at Primary Health Care Unit (PHCU) include:

1. Registering daily attendance
2. Registering births and deaths (information about every baby borne in the locality and every death in the locality).
3. Growth monitoring charts (for recording children's weight gain or loss)
4. Monthly reports on all work done at the kebele health services
5. TB and leprosy patient follow up records
6. Environmental health activity recording formats
7. EPI services recording formats
8. Family planning follow up records
9. Others

These all recording formats are used to retain information which is collected in the form of process data and stored for the next used. The storage of these formats needs to be in a way to make them accessible when ever one needs to use them. Following this different filing systems will be described.

Setting up a filing system

A filing system is an arrangement by which different types of papers are placed in separate files so that any paper can be found again rapidly.

Performances of a community health activity, based on collection, analysis and interpretation of data finally prepared to be reported and documented. Activity performances and all types of pieces of papers; including letters, receipts, invoices, reports, patients' record cards, minutes of meetings, pamphlets, leaflets, and drug prescriptions needs be kept in a filing system.

Sometimes documents are piled on desks so that it is difficult to find anything. Important documents are often placed in unknown files and are therefore lost. To make sure that any paper can be found whenever it is needed, a filing system must be set up.

A good filing system should have the following qualities:

- There must be a place for every type of paper normally found in the health unit (an inclusive system).
- It must be simple, so that staff members can maintain it (a simple system).

- It must be possible to find papers rapidly when needed (irretrievability).

Filing arrangements (filing categories)

There are several methods of filing used so far. These are:

- Alphabetical
- Numerical
- By subject
- Geographical

These methods can be used in health units in the ways described below. Often two or more systems may be used together.

Alphabetical filing

The files are arranged in alphabetical order, according to the first letters of the main name of the file. This system is used when there are large numbers of papers on similar subject. In health services it is the most useful for staff files.

Each staff member has an individual file. It includes personal particulars, employment and salary details, increment dates, and any correspondence relating to personal problems.

Numerical filling

Each file is given a number and the files or record cards are then filed accordingly. However, a cross-reference file is needed in case, for example, patients lose their number cards.

Filing by subject

Filing by subject is the most useful system for general purposes in small health units. All papers, documents, letters, etc. that do not belong to any existing file should be listed. A file should then be established for each subject category.

An example of such a list follows:

Correspondence

Correspondence about patients (copies of referral letters)

Correspondence with supervisor or administrator (e.g. district or regional office at a higher level than the health unit)

All other correspondence (staff correspondence, in staff members' files)

Funds and finance

Requisition forms

Receipts

Issue vouchers

Petty-cash vouchers

Inventories

Geographical filing

There should be a file for each village, containing information such as names of leaders, dates of markets, special problems, traveling times and distances, types of transportation, etc. This is particularly useful for supervising district work, such as mobile clinics or home visiting.

Arranging and indexing a filing system

Filing does not always achieve its main objective, which is to allow any paper to be found any time it is needed, because papers are often placed in the wrong file, or files are not arranged in any order, or files are not indexed.

An index is a list (usually alphabetical) that refers to the place where an item or article may be found. For example, a book has an index at the back, which refers

to a page in the text where a particular subject is found.

A filing index refers to the name or number of the file or register where certain topics are recorded. Such a list can be typed and placed on a wall, board in an office. An example of a health-unit office index is shown below;

Information	Location
Administrative and other letter	Files, top shelf
Cash book	Right-hand drawer of desk
Clinical records	Box in outpatient department
Discharge forms	Ward table
Inventories	Store cupboard
Issue vouchers	Store cupboard
Leprosy cards	Box in outpatient department
Monthly reports	File, second shelf
Petty-cash vouchers	Right-hand drawer of desk
Receipts	Store cupboard
Requisition forms	Store cupboard
Stock ledger	Store cupboard
Tuberculosis cards	Box in outpatient department
Village information	By name, third shelf

Registers or ledgers

Not all records in a health unit consist of loose papers. A number of items are recorded in large books usually called registers or ledgers.

Where to find files, registers and ledgers

Files, registers and ledgers are best kept where they are used; for example, the laboratory register is kept in the laboratory, the admissions register in the ward, the stock ledger and receipts file in the storeroom or cupboard, correspondence in the office, and patients' files in the outpatient department. Wherever they are kept, they need a definite place on a shelf or in a cupboard where they can be found easily.

Where a number of files are kept in an office the shelves should be clearly labeled. The place where each document is kept is recorded in the office index.

Office accessories

In addition to documents there are office accessories, for which space must be provided on a shelf or in a cupboard. These accessories include stationery and envelopes, official forms, glue, scissors, adhesive tape, wrapping paper and string, pens, pencils and ink, stencils and duplicators.

Task 2: Periodic updating of data

Data once registered needs frequent updating during the different time trends. Updating registered data can be done in two ways.

1. continuous registering , separated by date of recording

For example, a patient has one card (registration card), and for the second time the patient coming to the health institution the health professional will register the diagnosis on the same card, next to the first diagnosis, separated by dates examined.

2. Separate registration of different events or cases on the same registration book.

For example, monthly epidemic reports of different cases can be registered in different places of a registration book, separated by months.

Records in health delivery system are divided in to three broad groups

1. Patient care records, for management of individual patient.
2. Health facility records, for the panning, organization and evaluation of services.

3. Special survey records, for investigating special occasions in the community.

Importance of periodic recording

Periodic updating of records has the following importance for improving the health care delivery system.

1. Improving quality through patient records

Sometimes health workers may not properly record after diagnosing patients. He/She may simply make notes on a slip of paper of the treatment he/she is prescribing for the patient which the patient takes to the pharmacy. In other situations, the clinic or dispensary may try to keep records, filed perhaps by the patients name or by sequential card number. The information in these records varies with how busy the health worker is and how sick the patient is. One may find recorded symptoms (such as fever, diarrhea, etc) or a diagnosis (malaria, hookworm, etc), or simply the treatment prescribed. In some cases the writing is so bad that it is almost impossible to understand what was written. Patient records are used as a way to help a health extension worker to carry out primary, secondary and tertiary prevention.

Patient records and primary prevention

When you see a child attending an under-5 clinic, your mind find out whether that child is at risk for malnutrition by recording the child's pattern of weight gain or loss on growth monitoring chart and by finding out about certain events, such as; weaning, recent measles or whooping cough, and others.

The presence of any risk factors requires special care, careful supervision and health education. In addition, every child attending under-5 clinics must receive a full course of immunization (unless there are certain contraindications). Each child must have a record of what immunization have already been given so that you can decide what is still required.

Patient Records and secondary prevention

A woman attending antenatal clinics who is short (146 cm or under) must be scheduled for hospital delivery. A Woman who has bleeding during her pregnancy must be referred to a doctor immediately.

Patient record and tertiary prevention

A patient with leprosy need to be followed over a long period of time, usually for many years, to be maintained

on treatment and to assess whether his/her disease is progressing or improving.

In general, patient records help the health worker to carry out primary, secondary, and tertiary prevention in individual patient's by:

1. Recording information of the patient's risk factors, disease(s) and change in the course of disease.
2. Indicating when action should be taken.

Patient records should:

1. Record problems.
2. Indicate action

The other major requirement of records is that they indicate the appropriate action to be taken. So often we see health workers routinely collecting and recording information but not doing anything about any abnormal findings. We must be sure that, for example, all women 146cm and under in height are scheduled for hospital delivery, and that all women with antenatal bleeding are immediately referred to health center. If the records tell what action must be taken, then we make it easier for health workers to make the correct decision.

Records which tell what action must be taken are called action-oriented records. Action-oriented records improve the quality of services.

A good way of making sure our records are “action-oriented” is to mark each part of the history or examination where action is required. For example, in one antenatal card, asterisks are used to indicate action.

* Means hospital delivery

** Means immediate referral to a doctor

2. Detection of Epidemics

Another important function of records is the early detection of epidemics of disease. It is important to know how to keep records in a locality where the health extension worker is assigned which helps to detect early epidemics of important and dangerous diseases. For example, an epidemic of measles may be hard to detect in the early stages if records are not kept. A health worker who sees an average of five cases of measles a week would probably miss an increase to 10 or 15 cases in on a week unless he/she had been keeping routine records.

3. Planning and Organizing Health Services

If the most frequent types of diseases and symptoms are known in communities and localities, this will help the health extension worker to plan the services, which are required. This may also help to save time.

For example, many school children with minor cuts and ulcer or scabies in a local school can be quickly examined and treated and also arrange a special health education program on how to prevent such problems. The health extension worker could use the record format showed on duty two and task one.

The sex of each patient would be recorded as M or F. The age of each patient could be coded into the following categories.

C = Child (under 5)

S = School-age child (6-18)

A = Adult (greater than 19)

The other way, which is quicker but leaves out age and sex of each patient, is to simply make a count of certain conditions of interest, as shown below:

Table 3. Example of Health Extension Worker case report format

Disease	Mo n	Tu e	We d	Thu s	Fi r	Sa t	Weekly Summar y
Symptom							
Scabies							
Malaria							

NB: other diseases/symptoms could be added to this list.

This record could be used if the health extension worker wanted to investigate time trend in certain conditions. e.g. to see whether cases of child malnutrition is larger or smaller in number or percentage in this week or month than in previous weeks or months.

4. Survey records

Survey is a way of collecting information. There are different types of survey or special investigation which includes prevalence surveys, demographic surveys, KAP surveys and surveys of users of health services. In each of these types of survey, there is a need to design and use a record form. If the information collected is fairly simple, then one piece of paper or a book may be used to record the required information on all the

individuals in the survey.

If the survey information is more complicated than this or if one need to do any special analysis, e.g. examining the children for the presence of various parasites and to relate this information to methods of excreta disposal at the child's home, then it is necessary to keep a separate record form for each individual in the survey.

It is important to clearly indicate on the record what information is to be collected and how it should be recorded. Whenever possible, responses to a given item should be listed so that the person filling out the record form has only to tick the appropriate box. It is also helpful to number the boxes for each possible response.

Documentation

Example: marital status (tick one):

1	<input type="checkbox"/>	Married
2	<input type="checkbox"/>	Single
3	<input type="checkbox"/>	Divorced
4	<input type="checkbox"/>	Separated
5	<input type="checkbox"/>	Widowed
6	<input type="checkbox"/>	Unknown

Another example, using age divided into convenient groups.

Age in years (tick one)

1	<input type="checkbox"/>	0-4
2	<input type="checkbox"/>	5-14
3	<input type="checkbox"/>	15-44
4	<input type="checkbox"/>	>45
5	<input type="checkbox"/>	Unknown

This type of procedure is known as pre coding. All the responses or results of interest to the item in the survey are given a code. It is easier to pre code the information before the survey is carried out than to try to code the information after words.

Records should be:

- Simple
- Clear and
- Standardized

Exercise

Go to the nearest health institution in group and ask permission to look at the different records and registers of the institute, then:

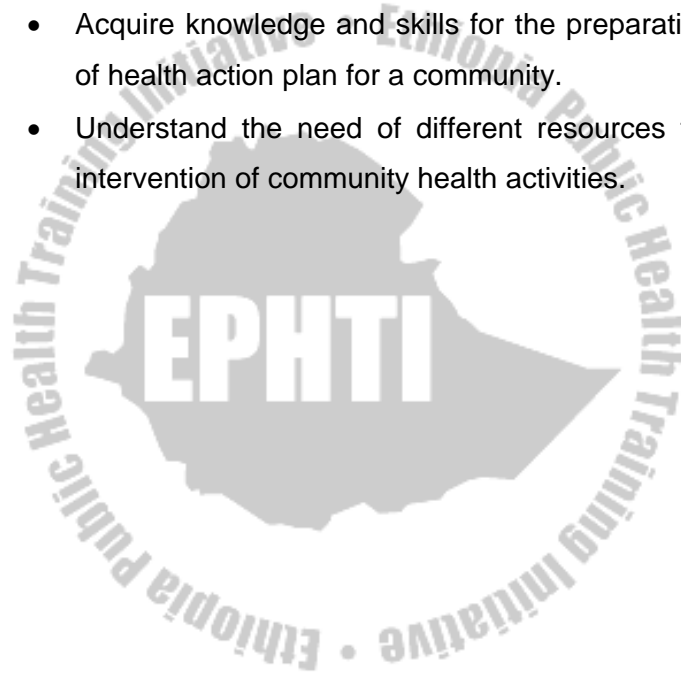
- a) Differentiate patient cards that enable the health worker to carry out primary, secondary and tertiary prevention in individual patient.
- b) Which of those records indicate action that should be taken?
- c) Try also to observe how register are filed and made a comment about the filing system which finally be reported to your trainer.

DUTY FOUR

Preparing Plan Of Action

Learning objectives: At the end of duty four, trainees will be able to:

- Explain the importance of planning.
- Acquire knowledge and skills for the preparation of health action plan for a community.
- Understand the need of different resources for intervention of community health activities.



Task 1: Prioritizing health problems and identifying high- risk groups

Health planning is the process of defining community health problems, identifying needs and resources, establishing priority goals and setting out of the administrative action needed to reach those goals.

A good plan should give:

- Clear goal and objectives.
- A clear picture of tasks to be accomplished.
- The resource needed to accomplish the tasks in terms of human, materials, financial and time resources.

Planning takes place at any level in health system. Planning takes place continually and it is a cyclic process. Planning can apply for large program at national level (example, malaria control program) and at small one – at village level (example, construction of latrines). Planning requires the participation of different professionals, community, governmental or non governmental organizations, party, etc.

There are two types of planning:

1. Strategic planning – often referred as allocative planning, it is long term plan. i.e. normally five

years or more.

2. Tactical or operational planning - referred as activity planning. It covers a short period of time. i.e. one year or less.

Steps in planning

The aim of presenting the planning process in steps is to provide a general frame work of action to be performed to ensure a systematic approach. However, many activities may be carried out at the same time providing a mutually supportive flow back and forth among stage of the process. In the process of planning, one has to consider several steps at the same time.

In the health planning process, there are six steps.

1. Situational analysis
2. Selecting priority health problems
3. Setting objectives and targets
4. Identifying potential obstacles and limitations
5. Designing the strategies
6. Writing the action plan

1. Situational analysis: is the first stage in the development of a plan. It improves the understanding of the current situation of the community or village. The

purpose of situational analysis is to provide a broad basis of understanding on population characteristics, area characteristics and infrastructure, analysis health needs and national health policy, analysis resources and others.

2. Selecting priority health problems: this is the second stage in planning; it prioritizes in the light of competing needs and limited resources. There are always discrepancies between the health needs (problems that need to be solved) and available resources. Hence, the planner is obliged to take certain problems (prioritize problems) first.

Different persons have different perceptions of what the priority problems of the community and how the decisions should be made. To decrease such personal biases planners agree to take list of criteria, which will determine whether a given problem is to be included or excluded in the priority selection process.

The following criteria are commonly used in identifying the main health problems to be tackled.

1. **Magnitude of the problem:** size or extent of the health problem in the community
2. **Degree of the severity:** urgency, seriousness of the health problem, and severity of economic loss.
3. **Feasibility:** in terms of cost effectiveness and social acceptability of intervention i.e. effectiveness of intervention.
4. **Community concern:** felt need of the community.
5. **Government concern:** priority health problem of the country, national health policy, regional health objectives.

During prioritizing of health problems people give ranks according to their importance. This can be done by using the criteria on five point scale.

- 5 points – very high
- 4 points – high
- 3 points – moderate
- 2 points – low
- 1 point – very low

Documentation

Disease conditions	Magnitude of the problem	Degree of severity	Feasibility	Community concern	Government concern	Total	Rank
Child with malaria	3	3	3	2	4	15	1
Unvaccinated child	3	3	3	2	2	13	2
Child with kwashiorkor	3	3	3	1	1	11	4
Child with polio	2	4	2	2	1	11	4
Adult with TB	3	3	2	2	2	12	3
Elder person with cancer	1	5	1	1	1	9	5

Table 4. An example of criteria ranking for different health issues.

Concept of high risk

High-risk groups are those groups exhibiting the symptoms of potentially abusive or neglectful behavior or under the types of stress associated with abuse or neglect. High-risk groups are more susceptible to developing health problems. For example all individuals have a “potential for infection” but infants are at high risk for infection.

Under a high-risk strategy, risk factor information about each individual is used to identify persons with the greatest chance of developing a preventable condition, and prevention efforts are then focused on those high risk individuals.

Exercise

Divide yourselves in to small groups and based on the information from the health institutions and community perception described below, exercise on criteria of priority problems selection in a MCH program. Your group is in charge of prioritizing the health problems in an on going maternal and child health program (including family planning), started six years ago in the imaginary province. The following data are available from the health institutions.

	1980	1982	1984	1986
Total population	810,000	870,000	910,000	950,000
Birth per 1000	38	32	29	21
Neonatal death (per 1000 live birth)	29	27	30	26
IMR (per 1000 live birth)	120	100	90	84

You would like also to know how the community sees its own problems. Assume that you have spent a considerable amount of time discussing the matter with the people in several villages. Their views can be summarized as follows. "Ours is a happy society, but too many babies die before they are born and many others only live a few days. Many children have diarrhea and become weak, some die. Our women are tired and weak and can not look after our children and some die during child birth. We are most grateful to the health professionals who work hard to give the vaccines to our children. But we do not understand why they want us to grow sorghum and cook it for our children".

3. Setting objectives and targets: Objectives must be 'SMART'

S - Specific

M - Measurable

A - Achievable

R - Realistic

T - Time framed

Example, by the end of 2002, 90% of eligible children will be vaccinated against six target diseases in Babile Woreda.

4. Identifying obstacles and limitations: After setting objectives and targets the planner should ask himself/herself about the presence of any situation (obstacles and limitations) that may prevent the achievement of each objective and target. Such as resources like people, equipment, money, time.

5. Designing the strategies: Once objectives and targets are set, the planner assesses the different ways (strategies) for achieving them. Choosing the best strategy again entails analyzing resources available and needed for each strategy.

For each chosen strategy, the corresponding activities to be undertaken and the resources needed should be detailed, including who will do the activities(job description of all involved personnel) which things would be needed (equipment, money) , where the work will be done (village, school etc.) and the methods of monitoring and evaluation.

6. Writing the action plan

Out line of writing the plan may include:

1. **Summary-** (of the main points raised in the document) – it gives a clear idea of what is going to be done with out going through the plan document.
2. **A problem statement-** (explanation of the back ground , the problem to be dealt with, the reason for understanding the plan)
3. **Objectives and targets** – to be clearly stated.
4. **Strategies and activities-** (responsibility should be allocated for each activities)
5. **Resource** needed and how they are going to be utilized, specify budget required.
6. **Monitoring and evaluation** (periodic and end of the program, assessment how, by whom, when indicators of effectiveness)

Example, outline Program in maternal care.

The problem:

An isolated mountainous community has no antenatal care and a high rate of maternal and neonatal deaths. Because of poor infrastructure, there is no well constructed road to reach the community.

Objectives:

To give both antenatal and delivery care for about 60% of pregnant women with in the next year.

Strategies and Activities:

The work is to be done by traditional birth attendants. The strategy is to train a nurse-midwife who will then train the TBAs. She will visit the village once a week for this purpose. Activities in detail should show on the table form.

Resources:

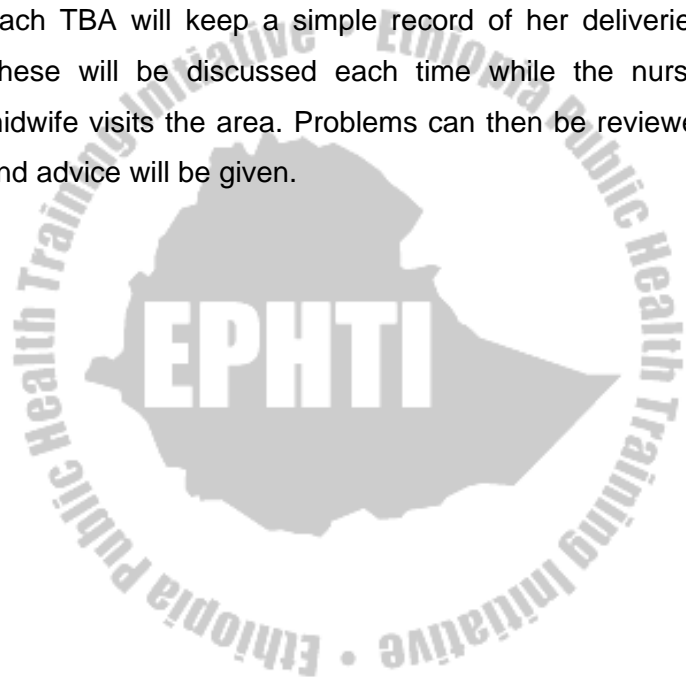
Nurse-midwife 'X' has been chosen for a short course in the training of TBAs. Her Job description can be shown in detailed. The community will voluntarily select the TBAs for training. Equipment lists and budget can be shown on table form.

Organization:

The training of TBAs will take place in health center and the village hall. And the schedule of work plan can also be shown on the table.

Monitoring and Evaluation:

Each TBA will keep a simple record of her deliveries. These will be discussed each time while the nurse-midwife visits the area. Problems can then be reviewed and advice will be given.



Documentation

Table 5. The sequence of activities, the targets and the time planned for accomplishment can be summarized as follows.

S. No	Activities	Time and target					
		Total target	Week1	Week2	Week3	Week4	Week n
1	Vaccinating children	600	50	50	50	50	50
2	Construction of VIP latrine	100	20	20	20	20	20

Task 2: Estimating workload and resource requirements for each component of the service.

Estimating work load

People like to do useful and worthwhile work, helpful to other people and helping themselves achieve their ideas. A health person likes to do work that they can see as contributing to the objective of health institutions. For successful community health activities the health worker should set an appropriate time for each activities or she/he should estimate the workload of all involved persons.

Workload balancing through proper scheduling of demand or capacity ensures that health workers, equipment and facilities are used efficiently and the community benefits at large.

The performance of daily activities requires many elements such as, people, time, equipment, materials, drugs, etc. that are brought together to achieve an objective and to carry out the work.

Resource requirement

The successful performance of activities and the achievement of objectives depend on the application of knowledge and skills to problem solving, using all the necessary resources in the most efficient way. Efficiency depends up on how these different elements are managed.

Improper utilization or limitation of these resources will prevent the full attainment of objectives. Proper attention to such details will ensure that, when knowledge and skills are applied to a problem solving, they will be supported by resources that functions and a system or health institution that enables the work to run smoothly. Timely distribution of materials and supplies is important for efficient and effective activities.

Each Health Extension Worker need a list of supplies and equipment needed for each activity.

Exercise

List down different types of resources that are required for HEW activities.

Task 3: Preparing a plan of action for providing day to day services:

Work plan is operational plans referring to the activities of a small unit or of an individual. Operational plan refers to activity plans detailing precise timing and mode of implementation.

Operational plans and work plans refers to what we have classified earlier as activity planning. They are terms used to describe the detailed formulation of specific activities usually with a monitoring time table. The work plan informs you what will be done, when, by whom and about the necessary resources.

The following figure shows how a work plan looks like.

Documentation

Table 6. Example of work-plan.

Activities	Responsible bodies	Resource needed	Week1	Week2	Week3	Week4
Questionnaire preparation	Data collector	Paper, pen, carbon	xxxxx			
Data collection	Data collectors	Questionnaire, pencil		xxxx		
Data compilation	Data collector	Calculator, pencil, paper			xxx	
Data analysis	Data collector	Paper, calculator, pen			xx	
Reporting	Data collector	Paper, pen				xx
Feed back from concerned bodies	Data collector					xx
Process evaluation	Data collector		xxxxx	xxxxx	xxxxx	xxxxx

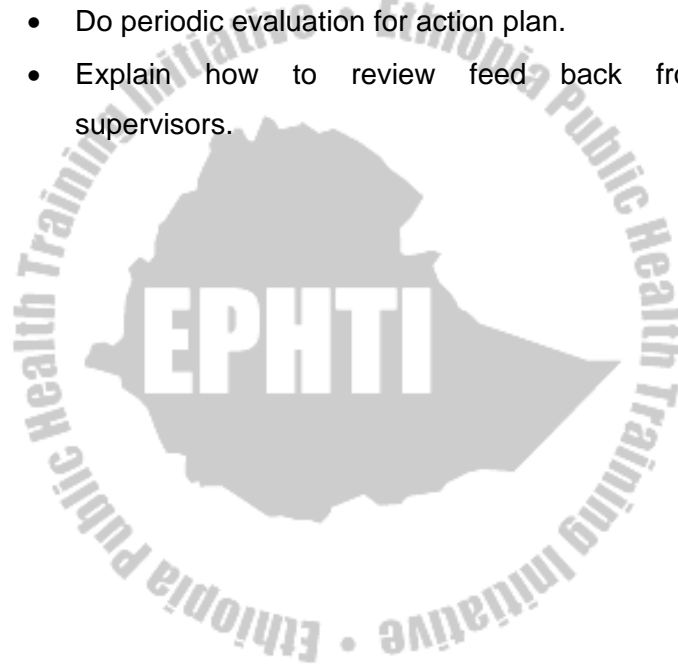
Exercise: Prepare two-month work-plan of HEWs.

DUTY FIVE

Monitoring And Evaluation Of Activities

Learning Objectives: At the end of duty five, trainees will be able to:

- Discuss how to monitor implementation.
- Do periodic evaluation for action plan.
- Explain how to review feed back from supervisors.



Task 1: Monitoring implementation of health programs

Program monitoring used to improve the performance by influencing immediate decisions about how activities can be improved. This helps to know whether the things going all right or not. Regular and accurate monitoring helps to ensure that outputs are produced as planned so that the supervisor respond immediately if the things are not done. The monitoring reports should be submitted regularly, that is monthly or weekly or some times daily. This rapid feed back allows the supervisor to follow the work progress and organization climate as well as used to reveal unexpected problems or opportunities. It also provides information and matches it with the plan and the worker should use check list to observe performance and recognize deficiencies to trace cause of deficiencies.

Methods of monitoring

- Continuous observing of work progress, staff performance and achievement
- Checking supplies
- Examine records
- Examining records and reports

Documentation

- Discussing progress and difficulties with staffs and communities.

How to monitor program

1. Establish data source
2. Collect data on program implementation and out comes
3. Compare program out come with prior or expected out comes
4. Assist in making policy and management decisions.

Monitoring of input includes:

- Availability of staffs
- Resource consumption and costs are within planned limit
- The required information is available
- Community groups or individuals participate as expected.

Monitoring of process includes:

- Work progress according to schedule
- Addressing of expected function
- Communication take place as necessary
- Work planned (standard) are met, etc

Monitoring out put includes:

- Products meet as specified
- Delivery of service as planned
- Decision are timely and appropriate

Example

One of the health programs at health post level is immunization and monitoring for such activity can be undertaken as follows.

Monitoring of input includes:

- How much vaccine is available?
- The number of staff for out reach program.
- Availability of transportation
- The people participation actively, and etc.

Monitoring of process includes:

- Revise report as the plan going well
- Discussing the difficulties in out reach, etc.

Monitoring out put includes:

- Revise reports and compare the achievements with the plan and identify if there is any deviation
- Check that the problem encountered devised timely.

- Check the deficiency has got right decision, etc.

Task 2: Review of feed back from supervisors

A feedback can be a response to the reports or activities on the field for the worker or organization. The feed backs from the supervisors can be teaching, motivating and helps to rearrange working conditions or improving quality of work.

Any feed back should be:

- A. Timely - the information generated is in time for remedial action to be taken
- B. Reliable - based on facts.
- C. Precise - focuses on performance which needs to be addressed
- D. Relevant - related to the activities.

Example, Let us say a patient referred from health post to health center by HEW. A feed back is expected from the Health Center to Health Post. Therefore, HEW can acquire knowledge and skills from senior health professionals on how to deal with such problems. She/he can learn also on how to manage the scarce

resources and improve the health service program of the community.

Task 3: Periodic evaluations as per action plan

Evaluation is the process of examination or measurement and ultimate judgment of value of program and its activities in achieving set objectives. This periodic evaluation (formative) is taking place while the activities are carried out. Where as, final (summative evaluation) is at the end of implementation.

The importance of periodic evaluation

- It helps to decide whether the activities were well done.
- It looks for answers whether modification of activity might need.
- It looks for answers whether modifications of the activities might more a difference to its performance (activity done).
- Conducted to answer questions whether related activities should be carried out provide a means of unseen activities.

In periodic evaluation the basic questions to be asked is
- Are the results that were intended? If no, why not?
(reasons)

Evaluation has five steps

Step1. Deciding what aspect of the program to evaluate for efficiency and how to measure and assess efficiency. Normally a plan of action outlines the work of a health team. It lists necessary activities; indicate what they (health team) should achieve, who should perform them, when each activity should take place and how each activity would relate to the other.

So the question that should be asked here are:

- Were the planned activities completed?
- Did they achieve their target for specified period?
- Did they perform the task on time with allocated resources?

For example, assume that one of the plans in health extension package program is to give contraceptive pills for 100 mothers during home to home visits in a year.

Step2. Collect necessary information about the result and the previous situations.

Let assume in the above example HEW delivered pills for 22 mothers in three months time.

Step 3: Compare achievements with plan and target. Collected information should be tabulated to show the results. It is necessary to prepare tables for each evaluation period.

In the above example the quarter plan is 25, and the result obtained is 22.

Step 4: Judge the degree to which plan have been met.

Recording of results on table helps evaluation to determine how far plans and targets have been met in the area as whole successive month or quarter. Tables can show to what extent targets are being achieved within the time period.

On the example above, the achievement is 88.0% which seems very good.

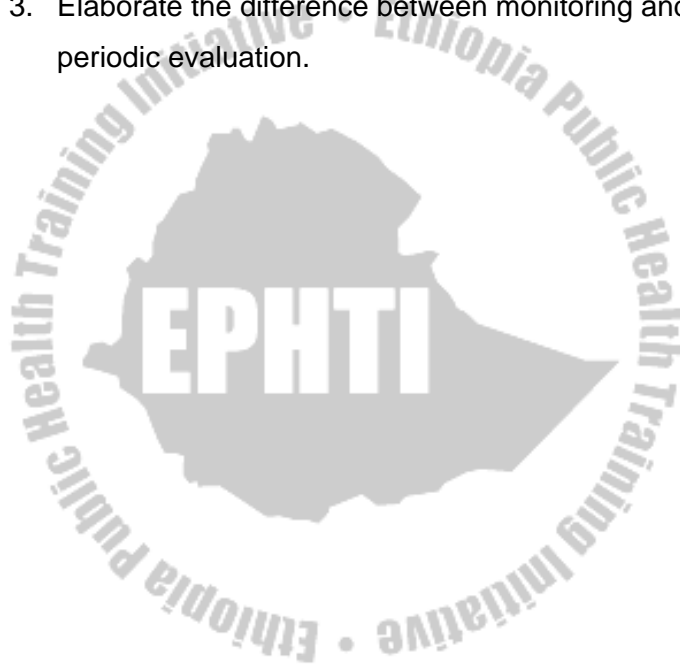
Step 5: Decide what to do next

The type of decision made at this stage shows whether performance must be further assessed and the program needs to be improved or the work continued as it was.

On the above example, the result obtained was very good thus the work should continue in the same way.

Exercise

1. Discuss in group how to monitor MCH activities in health post.
2. Explain how to make periodic evaluation of your plan if one of your plans is to increase family planning users by 20%.
3. Elaborate the difference between monitoring and periodic evaluation.

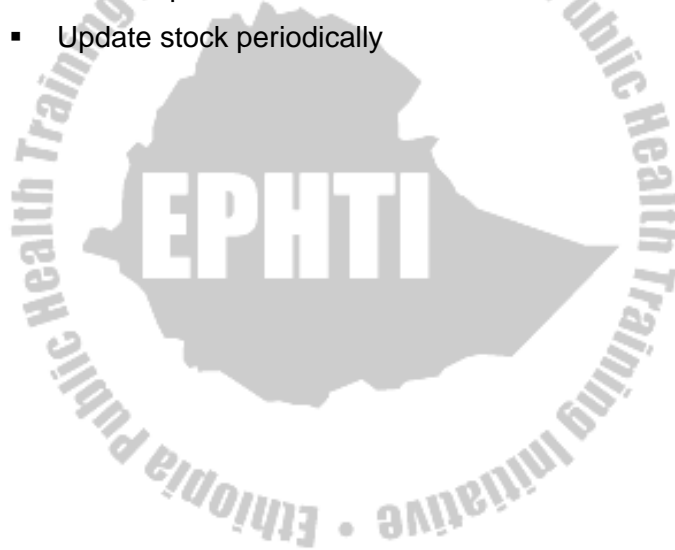


DUTY SIX

Maintaining Stock

Learning objectives: At the end of duty six, the trainees will be able to:

- Request required amount of annual stock
- Issue IEC material, drugs, vaccines, ORS and contraceptives.
- Update stock periodically



Task 1: Maintaining stock

Importance of Maintaining Stock

Good management takes care of equipment by:

- Instructing and motivating staff to feel responsible for the equipment they use
- Ordering supplies when needed
- Storing supplies safely
- Controlling the use of supplies.

Why is it important to keep accurate records of equipment? Why we take the trouble to keep requisition books, stock ledgers, issue vouchers and inventories? Is all the paperwork a waste of time and effort? In fact, there are several good reasons for doing the paperwork:

1. Previous order records make subsequent orders, whether the following month or the following year, much quicker and easier. They show suppliers' addresses, item reference numbers, normal quantities required, etc.
2. The balance in the stock ledger shows when to order more supplies. This prevents from staying long periods without necessary equipment. Being 'out of stock' of equipment reduced the effectiveness of the health services.

3. Issue vouchers encourage workers to take responsibility for equipment and can indicate who is accountable for loss or breakage.
4. Inventories assist in the rapid checking of equipment in use and in the detection of discrepancies, wastage, extravagance and theft.

In summary, accurate records save time and contribute to the economy, efficiency and smooth functioning of the health service.

There are two types of material/equipment; expendable (also called consumable or recurrent), and non-expendable (also known as capital or non-recurrent). Expendable equipment is equipment that is used within a short time. Examples of expendable equipment are matches, cotton, wool, laboratory stains, paper, disposable syringes, etc.

Non-expendable equipment is equipment that lasts for several years and needs care and maintenance. Examples are microscopes, scalpels, furniture, weighing scales, vehicles, etc.

The four main procedures in the management of equipment are:

- Ordering (obtaining equipment from stores or shops)
- Storing (recording, labeling and holding equipment in a stock or store room)
- Issuing (giving out, stock, and receiving a signed issue voucher)
- Controlling/maintaining (controlling expendable equipment) and maintaining and repairing non-expendable equipment)

N.B. The first two procedures are discussed below and the remaining will be discussed in the proceeding tasks.

1. Ordering Equipment

This is obtaining equipment/materials from stores or shops. Ordering requires the following skills.

- Listing requirements, from a knowledge of past use and estimates of present use.
- Balancing requirements with available resources and making cost-estimates
- Use of a catalogue
- Completion of order-forms or requisition forms

Receiving new items of equipment in to store

A new item is usually delivered with a document. Either it

might be in the form of invoice (a statement of the cost of the article), if the item is not yet paid, or a delivery note if payment has been made. Sometimes both papers are delivered. Invoices and delivery notes must be placed in separate files prepared for this purpose and labeled appropriately.

The receipt of the item is then noted in the stock-book or lodger, which usually has a separate page for each item stocked. Items in a stock-book or lodger are recorded in different columns comprising of the following information.

- The date on which the item was received
- The reference number of the item /from the catalogue / and the place of purchase or order.
- The number of the invoice or the statement of account.
- The quantity of items.

Every time an item is delivered, the quantity received is added to the total in stock. However, when an item is issued, the quantity is subtracted from the total stock .The resulting number is the balance in stock. The following table is an example of registering during receiving of new item and issuing an item in order to maintain balance in stock.

Table 7. An example of registering during receiving of new item and issuing an item in order to maintain balance in stock.

Item	Date	Received from	Invoice	Quantity received	Quantity issued	Balance in stock

2. Storing Equipment

Equipment is stored in two places. The first is the main or reserve store where stocks are kept but not used. And the second is the place of use, after the equipment is issued from the main or reserve store.

To store equipment/stocks the following skills are necessary.

1. Recording the receipt of new article and the issue of articles.
2. Keeping a stock-book or ledger in balance.

Task 2: Requesting Required Stock

In Ethiopian setting, the required stock for the coming year is requested before the start of the next fiscal year. The new fiscal year or budget year starts every July and material requisition should be filled and delivered to the Woreda Health Department one or two months before this time depending on the ease of communication between the health services. The amount of material or equipment requested is primarily based on consumable capacity of an institute or organization. During requesting annual stock requirement, HEW can use as a reference of the amount used in the previous year.

While making a list of materials /equipments/items for the purpose of ordering or purchasing the following percussion needs to be given attention:

- The list of the item should be prepared according to the expected place of purchase; for example:
 - Paper and torch battery can be bought from a local shop
 - Thermometers and other medical equipments can be order from the Woreda Health Department's medical store

- The type of each item required be written down accurately; for example:
 - Torch battery, 1.5 volts
 - Syringe, 5 ml Luer fitting

The quantity of each item should be estimated

The available resource may not always match with the need. Priorities must therefore be established among needs, and the needs must be balanced against available budget/fund. Usually, the amounts or kinds of materials that the Health Extension Worker wants to order/purchase must be reduced until they correspond with the funds/budget available to purchase them. For this, a cost estimate must be made before completing the order form. The items required, and their quantity, price per unit and total price should be listed in the tabular form as shown below.

Table 8. This table can be used for preparation of cost estimation of materials/equipments.

Ser No	Description	Measurement	Quantity	Unit price	Total price	Remark

Using a catalogue

A catalogue is a book that contains a list of articles available for purchase from a certain place. It is used whenever things are ordered at a distance. Rural health services are advisable to use catalogue ordering system as shops there are small and do not stock the type of equipment required.

An order form or requisition-form is usually supplied together with the catalogue. In Ethiopia, different offices used the same requisition form prepared by the ministry of financing Ethiopian context “models” can not be used interchangeably. . Below are different models dealing with property: for example,

- “model” 19 model for confirming delivering of items/drugs.
- “Model”20 model for requesting items/drugs.
- “Model” 21 model for approving item delivery by person in authority.
- “Model” 22 model for issuing items/drugs.
- “model” 70G model for recording items received and delivered.
- “model”70A model for recording items issued.
- “model” 70K model for balancing items received and issued.

Task 3 .Issuing from stock

After equipment/material has been ordered, received and recorded in the stock-book or ledger, it is issued for use when it is needed. Three paperwork procedures are involved in issuing equipment/materials from stock.

1. A ledger record (writing the issue in the stock lodger)
2. Issue of a voucher which must be signed
3. An inventory record of the section receiving and using the equipment or material.

Ledger record

When an issue is entered in the stock ledger, the balance of items remaining in stock is calculated by subtracting the quantity issued from the total in stock. When the balance reaches a certain low point, it is time to order new equipment. This is most important; unless issues are recorded in the stock ledger and the balance of stock remaining is calculated, it is very difficult to know when to order more stock.

Issue voucher

The issue voucher is an official form on which the following need to be recorded:

- Date of issue
- What is issued, in what quantity, and its page number in ledger
- Where it is to be used (section of health post)
- Who is responsible (usually head of section)
- Signature of person responsible for its use.

The person who signs the issue voucher takes responsibility for the care of the material or equipment. Issue vouchers must be filed and kept in the store. Duplicate copies are given to the department or section that receives the equipment/material.

Updating stock periodically

An Inventory system is an important tool for updating stock periodically. It is a list of items that are kept in a certain place. Each section of a health post keeps an inventory of its non-expendable equipment. New equipment issued must be added to the inventory, which is used at intervals to check stocks of equipment in use.

Controlling and maintaining equipment

Expendable equipment must be controlled to avoid wastage. Non-expendable equipment must be maintained, i.e. kept in good working condition.

To control and maintain equipment the following skills are needed:

- Convincing staff that equipment must be cleaned, inspected, and kept in good order, that defects must be reported immediately, and that equipment must always be returned to its correct place after use.
- Using an inspection checklist and inspection schedule
- Detecting discrepancies and explaining them.

Convincing staff of the importance of maintenance

There is no easy way to convince staff of the need to clean equipment and keep it in good condition. The best way is for the supervisor to set a good example and to emphasize that equipment must be cared for:

- To prevent transmission of infection, for instance by dirty instruments
- To keep it in good condition (dirty or damp equipment deteriorates more rapidly than equipment that is kept clean and dry)
- To economize.

It is economical to make the best use of equipment and supplies. Equipment that is well cared for lasts longer; material used correctly is not wasted. (Examples of wasting resources are; using cotton wool for cleaning purposes, not turning lamps down, or not turning off lights when they are not needed.) Equipment should be returned clean and in good order to its correct place after use; in this way it lasts longer and has to be replaced less often.

Inspection checklist

Equipment in a department is inspected by checking what is present and comparing it with the inventory. How often equipment should be checked depends on whether it is

consumable or long-lasting and whether it is liable to break down.

Consumable items need to be checked frequently to avoid wastage and extravagance. Long-lasting equipment such as beds, tables and chairs needs to be checked only once a year. Equipment and machinery that is liable to break down (e.g. sphygmomanometers, electric sterilizers, and vehicles) need regular and more frequent check-ups.

Detecting and interoperating discrepancies

A discrepancy' is a difference between what is reported and what is found, for instance a difference between the amount of something actually used and the amount normally expected to be used, or a difference between the equipment entered on the inventory list and the equipment actually present.

Exercises

1. Use the format of stock lodger (shown on task 1) and record the amounts of each item listed below.

5 kg cleaning cloth	10 1-liter glass jar with lids
3 kg gauze	0.5 kg stains (laboratory)
5 kg cotton	3 chairs with armpits
6kg soap	20 rolls adhesive tape
3 liters disinfectant liquid	200 writing paper pad
2 book selves	5 metal boxes
2000 disposable syringes (2 ml)	5000 record cards
2000 hypodermic needles (reusable)	2 metal-frame tables
50 medical books	1000 envelops
2000 swab sticks	50 pencils
1000 test-tubes (disposable)	20 ballpoint pens
2 liters ethanol	10 erasers
20 liters methanol	5 kg detergent
1000 wooden tongue- depressors	

From the stock:

- Assume that an issue of the following items is

Documentation

made on 16/12/2003 for four kebele health posts.

- Soap 0.6 kg
- Cotton 0.5 kg
- Gauze 1 kg
- Methanol 1 liter
- Disinfectant 0.5 liter

- Record card 200
- Syringe 2 ml 50
- Needles for the syringe 50

- Assume also that an order received on 15/01/2004 from the woreda medical store containing items:

- Syringes (2 ml, reusable) 100
- Disinfectant 2 liter
- Soap 4 kg
- Test-tubes (disposable) 200

2. Write “E”, if you think the item is expendable and “NE” if not expendable on the remark section for each item recorded.

3. Record these items on the pages of the lodger

4. Balance your stock

5. Compare your result to you peer.

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Glossary

Data- elements of information, usually unprocessed.

Effectiveness- a measure of the degree of attainment of predetermined objectives.

Efficiency- a measure of how economically resources are utilized to achieve predetermine objectives.

Feed back- the flow of information back from one stage in a cycle or process or system to a preceding stage, as a basis for further development.

Goal- the intended end result or achievement of a program or activity.

Health problem- a departure from accepted norms in the health status of community; some time also an understanding cause of such a departure.

Information- data processed for a purpose (e.g. Decision making things)

Job description- a statement of activities and tasks assigned to a staff members.

Learning objectives- what a learner should be able to do after, and as a result of, the learning process, which he or she could not do before.

Limitation- a deficiency of necessary resource (personnel, materials, money etc)

Monitoring- observing, measuring and recording the way activities are being implemented. Monitoring leads to control.

Objectives- the planned or intended result of a program or activity.

Plan- a statement of goals, objectives and out puts, and a description of the courses of action and the resources necessary to achieve them.

Priority- a preferential rating that indicates importance or urgency, according to given criteria.

Resources- the means (personnel, materials, money) required for the implementation of a Program or activity.

Sample- a subset of population, representative of the total

population, used for estimating some property or properties of the population as a whole.

Strategy- a broad approach to achieving goals, with in which program may be formulated.

Target- a statement of a measurable out put related to a certain population and a certain time.

