THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF HEALTH

DISTRICT HEALTH MANAGEMENT TRAINING

MODULE FOUR: PLANNING AND IMPLEMENTION OF DISTRICT HEALTH SERVICES

Second Version June 2001
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FOREWORD

The Ministry of Health has made another important milestone in its endeavours to improve health services for the people of Tanzania through district capacity strengthening. A series of modules on district health management training with a focus on capacity strengthening for the Council Health Management Teams (CHMTs) have been established and reviewed. This aims to bridge the performance gap among CHMTs in the management of district health services and enhance the decentralization process. The review of the modules has been done to accommodate new developments in line with the ongoing reforms processes in the health sector and local government Authority.

The management training modules are timely in that they are being reviewed at a time when the MOH is involved in the process of implementing. CHMT management training for district capacity building in response to Health Sector Reforms demands. The modules are tools that will ensure the change process is well moderated by the district teams and that the aim of the reforms is achieved. Moreover, the policy on Human Resources for Health stresses that a reformed health sector, requires well trained motivated and managed workforce. The focus is on the district level to:

- Enhance an effective and efficient decentralization of health services in terms of problems identification, priority setting, planning and decision making process
- Promote teamwork among CHMT members in the process of delivering quality health care services.
- Enhance programme integration for a rationalized resource-use in the district
- Empower the district to make own decisions and priorities
- Promote and strengthen partnership in health as there are other partners or actors who contribute significantly in health issues

I believe that this management course will address our need in the Ministry of Health in four key areas ie.

- the Health Sector Reforms and District Health Systems,
- promoting Partnership in the District,
- management of Health Resources, and
- planning and Implementation of District Health Services.

This management training is unique in that it is taking place at the district and is work related as the teams learn within the context of their experiences. Two or more CHMTs do share and exchange experiences to find out what works and what does not work in their respective districts.
This enables the district to reflect on their performance gaps and how to correct existing anomalies or deficiencies through improved and update management skills from the course. It is my hope that this course will continue to provide an answer to the deficient management skills currently observed among many untrained CHMT members. The expectations of the Ministry of the Health is that the course will:

- Produce effective and efficient CHMTs that will manage the reformed health sector better for overall improvement of quality health service
- Promote and rationalize better use of scarce resources in the district
- Improve and integrate health care services by avoiding duplication of activities. Thus using resources in the most cost-effective way
- Promote better use of information in planning (evidence - based planning) and make informed judgments and decisions
- Promote and address the issue of quality in health care (Quality assurance) in the districts. Performance norms and standards with criteria for judging quality of care will be developed and implemented in every district

The module review process did take into consideration all health sector cross cutting issues that needed harmonization among all stakeholders and partners.

I have every hope that all partners in health including governments, Non-Governmental Organizations, local and International health institutions and faith based organizations will find this strategy towards district capacity strengthening an interesting and challenging initiative. It requires the support of everybody. We welcome those who may want to support us, in whatever form, to do so!

Hone Anna Abdallah (MP)
Minister for Health
June, 2001
ACKNOWLEDGEMENTS

The work of reviewing these modules has been very much a consultative and a joint effort. A number of people, institutions and organizations have tremendously contributed to the developmental process and finally review of the modules. We want to thank them all for their exemplary work to make the initiative a reality.

A special mention would be to Dr. Gilbert Mliga - Director Human Resources Development and Training, MOH, Dr. A. O. Mwikilasa - Head Continuing Education and National Coordinator Council Health Management Training (CHMT) and Dr. A. Hingora- Head Health Sector Programme Support (HSPS) for their tireless efforts towards capacity building at the district level. The participation of Dr. Faustin Njau, Head of HSR secretariat and Dr. Sam Nyaywa HSR Adviser was very much recognised and a tremendous input to the review process. We thank them.

Special tributes need be directed to WHO-AFRO from whose module, our initial modules were adapted to suit the need and purpose of CHMTs in Tanzania. Starting from scratch would have not been an easy task.

Moreover, the technical cooperation role of WHO - Dar-es-Salaam and the excellent planning and organization in close collaboration with MOH, CEDHA Arusha, PHCI Iringa is recognized and appreciated. Special thanks are due to representatives from PORALG, GTZ, TEHIP,AMMP, for their active participation in the review exercise.

We are also thankful to the RMO's, DMO's, National facilitators and zonal trainers who participated in the review exercise for their input.

We appreciate the financial support towards this review from DANIDA through Health Sector Program Support. We would also like to appreciate the contribution of Dr. W. Mwambazi, WHO Representative Dar es Salaam towards the modules development process. In particular we appreciate the personal effort and commitment of Dr. Eileen Petit Mshana towards the Districts capacity building initiative. Thank you very much indeed.

Last but not least we would like to single out and mention a few names who played a coordination role of this work. These are Dr. Amos 0. Mwikilasa as overall national coordinator for MOH, Mr. Fredrick E. Macha (MOH), Dr. Eileen Petit Mshana (WHO), Dr. Ben Mboya, Dr. Catherine Jincen, Dr. John Mosha, Mrs. A. Kinemo, Mr. Denis Mazali for final editorial work and Ms. R. Mnonji and Clara Moses for their formidable word processing work.

To all we are grateful.
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<tr>
<td>AIDS</td>
<td>Acquired Immune-deficiency syndrome</td>
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<td>ANC</td>
<td>Ante-Natal Clinic</td>
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<td>AWP</td>
<td>Annual work Plan</td>
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<td>BOD</td>
<td>Burden of Disease</td>
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<td>CCUP</td>
<td>Comprehensive Council Health Plan</td>
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<td>CBR</td>
<td>Crude Birth Rate</td>
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<tr>
<td>CDR</td>
<td>Crude Death Rate</td>
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<tr>
<td>CEDUA</td>
<td>Centre for Education Development in Health Arusha</td>
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<tr>
<td>CUSB</td>
<td>Council Health Service Board</td>
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<tr>
<td>CUMT</td>
<td>Council Health Management Team</td>
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<tr>
<td>CORPs</td>
<td>Community Owned Resource Persons</td>
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<tr>
<td>CUPT</td>
<td>Council Health Planning Team</td>
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<tr>
<td>DAS</td>
<td>District Administrative Secretary</td>
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<td>DALYs</td>
<td>Disability Adjusted Life Years</td>
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<tr>
<td>DED</td>
<td>District Executive Director</td>
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<tr>
<td>DUP</td>
<td>District Health Plan</td>
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<tr>
<td>DMO</td>
<td>District Medical Officer</td>
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<tr>
<td>DPLO</td>
<td>District Planning Officer</td>
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<td>EDP</td>
<td>Essential Drugs Programme</td>
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<td>FAMS</td>
<td>Financial Administration Management System</td>
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<td>HCFs</td>
<td>Health Care Workers</td>
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<td>HF</td>
<td>Health Facility</td>
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<td>HESOMA</td>
<td>Health and Social Management</td>
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<td>HMIS</td>
<td>Health Management Information System</td>
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<td>HRU</td>
<td>Health Resources for Health</td>
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<td>HSR</td>
<td>Health Sector Reforms</td>
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<td>IDM</td>
<td>Institute of Development Management</td>
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<td>IEC</td>
<td>Information Education and Counseling</td>
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<tr>
<td>IMR</td>
<td>Infant Mortality rate</td>
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<tr>
<td>KCMC</td>
<td>Kilimanjaro Christian Medical centre</td>
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<td>MCU</td>
<td>Maternal Child Health</td>
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<td>MCUA</td>
<td>Maternal Child Health Aides</td>
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<td>MD</td>
<td>Medical Doctor</td>
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<td>MMR</td>
<td>Maternal Mortality Rate</td>
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<td>MOU</td>
<td>Ministry of Health</td>
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<tr>
<td>MTUUA</td>
<td>Mfumo wa Taarifa za Utekelezaji wa Huduma za Afya</td>
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<tr>
<td>MUCUS</td>
<td>Muhimbili University College of Heath Science</td>
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<td>NDUPGS</td>
<td>National district Health Planning Guidelines</td>
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<td>NMS</td>
<td>National Minimum Standards</td>
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<td>NGO</td>
<td>Non-Governmental Organization</td>
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<td>NSS</td>
<td>National Sentinel Surveillance System</td>
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<tr>
<td>PUC</td>
<td>Primary Health Care</td>
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<td>PUCI</td>
<td>Primary Health Care Institute - Iringa</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<td>PUN</td>
<td>Public Health Nurse</td>
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<td>PRA</td>
<td>Participatory Rural Appraisal</td>
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<td>RHMT</td>
<td>Regional Health Management Team</td>
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<td>RMO</td>
<td>Regional Medical Officer</td>
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<tr>
<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>TBA</td>
<td>Traditional Birth Attendant</td>
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<td>TEHIP</td>
<td>Tanzania Essential Health Interventions Project</td>
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<tr>
<td>ToR</td>
<td>Terms of References</td>
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<tr>
<td>TOT</td>
<td>Training of Trainers</td>
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<td>TT</td>
<td>Tetanus Toxoid</td>
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<tr>
<td>USMR</td>
<td>Under Five Mortality Rate</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>WHO-AFRO</td>
<td>World Health Organization Africa Regional Office.</td>
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DEFINITION OF TERMS

Integration of Health Services
The act of joining forces and resources in provision of health services for improved, optimal and rationalised comprehensive outcomes

Partnership
Means working together in a harmonious and supportive way for a common goal and outcome

Public -Private Partnership
Inter-sectoral collaboration either non - contractual or contractual between two or more organizations.

Equity
A principle of fairness. An equitable distribution of resources and services for example geographical equity, equity of access etc.

Burden of Disease (BOD)
The number of Years of Life Lost (LLY) annually due to deaths from that disease. These diseases which afflict large segments of the population, strike younger age groups and carry high case fatality rates and contribute most significantly to the disease burden.

Essential Health Interventions
A package of health interventions comprising of promotive, preventive, curative and rehabilitative interventions which are likely to have the greatest impact to reduce BOD for every level of care

Health Sector Reform
Sustained process of fundamental change in national policy and institutional arrangements which are evidence base, guided by the government, designed to improve the functioning and performance of the health sector and ultimate health status of the population.

Community Participation
Voluntary involvement of the public/community members in activities affecting their health. They actively participate in the process of identifying problems, setting priorities and taking actions
Participatory Rural Appraisal

An approach lending itself to methods of open conversation with communities for knowing each other in detail. It creates dialogue with communities and uses "MAPPING" for communities to analyse their own situation

Planning for the planning
The first step of getting prepared before the actual planning process

Planning

A systematic process of mobilizing information and organizing resources to ensure that resources are used efficiently to achieve set organizational objectives.

Objective Health Needs

These are perceptions from the point of view of health professionals, usually determined by epidemiological means

Subjective Health Needs

These are health needs as determined and seen by the community as priority problems not necessarily supported and verified epidemiologically

Indicator

A statement which reflects the degree of achievement of an objective. This can be qualitative or quantitative. It shows change in health status. An indicator allows us to measure exactly how far the objectives have been achieved at different time periods

Health Management Information System

A combination of health statistics from various sources, used to derive information about the health status, health care provision, use of services and impact on health. Health related information required by health planners, managers and other members of the health professions is inclusive

Monitoring

Is the continuous follow-up of the various activities of a planned intervention e.g. a health care programme, to ensure that they are proceeding according to plans or stated objectives
Evaluation

Is the formal determination of relevance, acceptability, effectiveness, efficiency and impact of a planned intervention e.g. a health care programme in achieving stated objectives in the light of its structure, process and outcome

Cost-effectiveness

The extent to which a specific intervention, procedure, regimen or service when deployed in the field, does what it is intended to do for a defined population at a relatively cheaper or reasonable price

Supervision

Supervision refers to the process of following up implementation of planned activities to ensure maximum achievement or outcomes. The process involves supporting juniors in their work encounters, teaching and facilitating them to cope with work challenges and motivating them towards better performance and achievement of planned objectives

Health

Health is more than just the absence of disease. World Health Organisation define health as “A complete state of physical, mental and social well-being and not merely the absence of disease or infirmity OR
Health is more than just the absence of pain or discomfort. Good health is a dynamic relationship between the individual, friends, family and the environment within which we live and work.
OVERALL INTRODUCTION TO THE MODULES

There have been considerable achievements in Tanzania as a result of implementation of the Primary Health Care (PHC) Strategy. However, health problems and ill health continue to exist despite these tremendous initiatives. For example, inequity in health care delivery is still dominant in many parts of the country. Health systems and programmes are often blamed for inefficiency and ineffectiveness, putting them under pressure to be re-orientated and re-organized.

The set-backs have been partly attributed to the continuing economic crisis and lack of resources. However, much still has to do with poor management especially in the organization of district health systems and the difficulties faced in translating PHC principles and Health Sector Reform proposals into practice.

One of the major problems is inherent to the tradition of managing district health systems in a top-down approach, with limited chances for integration, collaboration and participation of the many groups in the society who are responsible for health as part of general development. Related to this is lack of comprehensiveness in the organization of health services, which is indicated by failure to integrate medical and curative interventions with preventive, health promotion and other development activities.

These problems are associated to a great extent with lack of appropriate knowledge, skills and capacities, among those who are responsible for managing district health systems and programmes. The gap which exists between training of district health managers and what they are called upon to do, poses one of the major issues to be addressed for the achievement of health sector reform objectives as well as goal of health for all.

Bearing in mind this challenge, the Ministry of Health has developed a National Strategy to build managerial capacity of the CHMTs through training as part of conforming with the National Health Sector Reforms proposed in the Human Resources for Health five years plan (1996-2001).

District Health Management Training

The need for improved health service management at the district level is emphasized in the National Health Policy (1991), HRH Policy 1995, National PHC strategy (1992), HRH 5 years plan 1996 - 2001, and the National Health Sector Reform Proposals of 1994. Improved district health management is aimed to ensure effective and efficient planning, coordination, implementation of integrated and comprehensive health services in the district.

The Ministry of Health has taken various initiatives towards improving the district health planning and management capacity. The initiatives include training of RHMTs and CHMTs in health management planning geared towards improving skills in management and planning of health services in the district.
Training of CHMTs in health management has been going on for sometime. Different institutions have developed training materials on academic grounds not based on the current thinking of practical and decentralized districts health management requirement.

However, this training has not been consistent. It has addressed itself to different priorities, sometimes addressing to vertical PHC programme needs at the expense of national focused health needs. It is therefore, imperative to standardize training in management to enhance co-ordination by CHMTs in the decentralized district.

**Health Management Training Needs and Strategies**

Under the Health Sector Reform strategy, many changes are now occurring in the way health services are organized and financed. The reforms are placed high on the agenda of the government. One of the many interlinked strategies that aim at meeting the challenges of providing health services within the health sector reform agenda is addressing the challenges of human resources development to ensure that well-trained and motivated staff are deployed at the appropriate health service level. This strategy is thus one approach that will focus on quality assurance in the provision of health care services at institutional level.

CHMT's and all other health services providers at the district level are the main focus for the management training. This may later be followed by involving Regional Health Management teams, District Health Boards, and heads of health facilities at sub-district level. In this case specific modules will be used.

The institutions which will assume a leading role in this training are PHCI Iringa and the Centre for Educational Development in Health Arusha (CEDHA). Other institutes which are expected to support this programme are the Institute of Public Health - MUCHS, Department of Community Health - KCMC, IDM and private or independent Institutions which are recognized by the MOH. The existing Continuing Education Centres/Zonal Training Centres, under the Directorate of Human Resources Development and Training will be responsible for the training of the CHMTs within their respective zones.

The course is designed to strengthen managerial skills and capacities of Council Health Managers with the ultimate purpose of having in place CHMTs which are capable to manage District Health Systems and Programmes in a more cost-effective manner in line with National Health Sector Reforms.

**Objectives for Developing CHMT Training Modules**

The CHMT training modules have been developed to:-

1. Strengthen and harmonize the district health management training initiatives in the country, using management training modules developed by the MOH in conformity with PHC strategy and the National Health Sector Reforms.
2. Put in place CHMT members with adequate managerial skills and capacities for the implementation of Health Sector Reforms.

3. Sustain the programme of district health management training in Tanzania by promoting the training capacities of the existing zonal training centres. The district health management training modules have been developed to cover four major areas. The units in each module are organized sequentially as summarized below:

**Module 1: Health sector reforms and District Health Systems.**
- Unit 1 Primary Health Care Strategy and Health Sector Reforms
- Unit 2 District Health Structures
- Unit 3 Important concepts of management and leadership
- Unit 4 Team work

**Module 2: Promoting partnership in the District.**
- Unit 1 Partnership; why and with whom
- Unit 2 Approaches to partnership
- Unit 3 Partnership between organisations
- Unit 4 Promoting partnership with the community
- Unit 5 Communication skills

**Module 3: Management of Health Resources**
- Unit 1 Management of human resources
- Unit 2 Management of finances and accounts
- Unit 3 Management logistic support systems
- Unit 4 Management drugs
- Unit 5 Management of time and space
- Unit 6 Management of information

**Module 4: Planning and implementation of District Health Services**
- Unit 1 Basic concepts of district health planning
- Unit 2 Preparation for planning
- Unit 3 Steps in the planning process
- Unit 4 Disaster preparedness

The training for all modules is estimated to take at least four weeks. It is advisable to introduce the learners in all the four modules as they form a comprehensive course package for the district health management.

Training will be conducted within the zonal training centres or in other health institutions in the districts. Teaching and learning activities within the districts will enhance effective correlation of theory and practice.
PLANNING AND IMPLEMENTATION OF DISTRICT HEALTH SERVICE

Introduction

The Health Sector Reform Policy in Tanzania, recognizes that the district is the most important operational level, for implementing the Primary Health Care (PHC) strategy. Financial and managerial responsibilities are therefore being decentralized to the district level. This new role poses a challenge to the district health managers, who are responsible for the planning, management, implementing and monitoring of district health services.

One important new task for the district health managers is decentralized planning which allows a closer understanding of different needs and demands of communities. This in turn allows effective community participation and equity in the provision of health services. However, effective district health planning depends on a number of conditions, such as:

- planning skills,
- planning structure, planning processes,
- planning culture and planning cycle at the district level.

Decentralization in planning should be integrated with decentralization of functions, resources and authority to the district. District health planning also requires an effective health management information systems which are of fundamental important to:

- assess district health needs
- allocate resources and monitor their use,
- monitor the use of services, quality and coverage,
- interpret policy and health service evaluation
- make decision

To be able to develop such a system the district should review its information base and understand the underlying concepts through training and supervision, develop skills and systems in the data collection, analysis, presentation and use of information. In addition the districts should be able to use information that is collected beyond the district level.

How does planning relate to district health management?

Planning is an integral part of operational district health management which involves a number of processes, including; situational analysis, objectives setting implementation, monitoring, evaluation and re-planning. This module aims at strengthening the capacities of CHMTs to plan, implement, monitor and evaluate health services in their districts.
Objectives

At the end of this module, CHMT's members shall be able to:

- Explain the basic concepts of District Health Planning
- Identify their role in district health planning and implementation of the plans
- Identify information required to develop a comprehensive district health plans
- Identify and analyze priority problems
- Devise appropriate solution/interventions
- Set objectives and targets
  - Determine resources necessary for implementation of plans
  - Prepare a plan of action and budget
  - Develop indicators and targets
  - Develop performance monitoring tools
  - Outline the evaluation process of district health plans
  - Plan for disaster preparedness and response

Unit 1: Basic concepts of district health planning

Introduction

Health planning is based on the understanding of the health system in the country. In any health system there are three important components that are highly interdependent. These components serve as main determinants of the population's health status i.e. community participation, the health service delivery system and the environment where the former two operate. The interdependency of these components is illustrated in figure 1:

Figure 1 Interdependency relationships of the determinants of district health status
The diagram depicts that, health status depends on the community, environment and the health service delivery system.

The environment

This could be the context in which the health service delivery system operates. The environment could be the political system, policies of health care and development policies. It could also include the social economic status or the physical environment e.g. climatic condition. All these have a bearing on the health status of the individual/community as well as the functioning of the health service delivery system.

Health service delivery system

This depicts how the facilities are distributed in the community. This could have a bearing on coverage as well. Similarly the services could be looked at in terms of their affordability and responsiveness to equity thus contributing to the health status of the community.

The community

The characteristics of the society, ie the culture, gender, beliefs and health seeking behavior, which together with the environment and health services delivery system determine the health status.

1.1 Comprehensive District Health Planning

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<th>Activity 1</th>
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<td>Define the term Planning</td>
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Planning is a process of making choices among alternative actions in order to meet certain defined ends. Planning is also a method of trying to ensure that the resources available now and in the future are used in the most efficient way to obtain explicit objectives. It is important to note that, in health planning, one takes into account the resources available and the means and methods for providing the health care services.

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<th>Activity 2</th>
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<tr>
<td>List down reasons for planning. Have there been any other reasons which necessitated planning at your district/work place? Discuss in groups and share in plenary.</td>
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1.2 Why health planning?

There are a number of reasons for health planning process. The common ones are:

- To meet necessary standards or achieve the set objectives to improve the health status of the district population
- Translation of a "master plan" such as a national health plan, strategies and the Plan of Work into a regional or district plans
- To use the available resources in a cost effective and cost efficient way
- Re-planning on the basis of an already existing plan, for the purpose of reviewing existing health problems and needs and rendering services which are more effective and efficient
- Emergence of a new health problem e.g. AIDS, Ebola or re-emergence/resurgence of a known health problem e.g. TB, Malaria, which may require a special strategy or programme
- To ensure co-ordinated efforts and actions by all stakeholders

1.3 Aims and objectives of health planning

The aim of health planning is to improve and maintain health status of a given community. It also aims to provide health care for a given community according to, and in line with the community objective and subjective health needs. It should be a realistic planning.

There may be different perceptions of health needs. The perceptions may be from the point of view of health professionals and/or the community. Health needs could be either objective or subjective.

Objective health need are determined by epidemiological means. Subjective health needs are usually seen by the community as important problems. Their importance mayor may not be verifiable (be proven) epidemiologically.

To achieve the stated aim, a number of objectives have to be achieved first, these are:

- To ensure equity of health services to all members of the community
- To ensure uninterrupted or continuous health services to the community
- Identify appropriate interventions to meet community needs of high priority

Activity 3 With reference to your district

Define in groups the difference and relationship between health needs and subjective health needs. Share in plenary..
1.4 Types of Plans

There are three types of plans, ie annual, medium and long term:

**Annual plan**

This is a one year action plan. It is usually part of a long term plan of which the activities are specifically stated to be covered in one fiscal year. The plan comprise of 12 calendar months regardless of which month it begins e.g. January to December or July to June.

**Medium plan**

Is a 2 - 3 years plan which may be an extension of annual plan e.g rolling plan and forward budget.

**Long term plan**

Is a 5 years or longer plan which relates to longer projections and whose activities are stated in broader terms.

The definition of comprehensiveness should be based on the national health policy and include:

- The professional aspect: should include the Essential Health Package and the activities to address the mentioned health problems
- The financial aspect: should include all sources of financing available for the districts
- The structural aspect: has to take into account all stakeholders (public, private, community)
1.5 The planning process

The district health planning process must be comprehensive, specific and realistic. It is a sequence of steps which must be followed in deciding what is to be included in the plan. This seek to answer the following questions:

**Where are we now?**

This requires a **situational analysis** to identify health and health related needs and problems.

**Where do we want to go?**

This requires the **selection of priorities, identification of objectives** and **targets** to be met to improve health situation and/or service delivery in a district.

**How will we get there?**

This details and organises the tasks or **interventions** to be carried out, by whom, during what period, at what costs, using what resources in order to reach set objectives and targets.

**How will we know when we get there?**

This requires the development of measurable indicators and targets for monitoring progress and evaluating results.

The above questions form a planning cycle as represented in Figure 2. The planning circle is a continuous process which has no end.
Figure 2: The Planning Cycle

How will we know Where are we now
When we get there? (Identify needs and problems)
(Monitoring and evaluation)

How will we get there? Where do want to
(Develop interventions go. (set priorities
identify resources) targets and indicators)

In order to operationalise the above planning cycle at the district level, there are a number of specific planning steps to go through.

Time frame for Planning in the district

For reform districts the time frame is given by the MoH/PORALG. The planning period starts in May and ends in January the following year. Table 1 gives the details
Table 1: Planning Time frame

<table>
<thead>
<tr>
<th>Activity</th>
<th>Completed by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Councils notified of resources available - GoT, Basket funds and other source of funds for the next financial year</td>
<td>End May</td>
</tr>
<tr>
<td>Technical plan prepared</td>
<td>Mid July</td>
</tr>
<tr>
<td>Recurrent and development budgets prepared from technical plan</td>
<td>End August</td>
</tr>
<tr>
<td>Health technical plan and Budget integrated into the Council technical plan and budget</td>
<td>End September</td>
</tr>
<tr>
<td>Council technical plan and Budget discussed with regional Secretariat and any amendments required made in the plan and budget</td>
<td>Mid October</td>
</tr>
<tr>
<td>Council technical plan and budget approved by Council</td>
<td>End October</td>
</tr>
<tr>
<td>Council health plan and budget passed to Regional Secretariat (3 copies)</td>
<td>First week in November</td>
</tr>
<tr>
<td>CHP passed to the PORALG and MoH by the RS</td>
<td>Second week November</td>
</tr>
<tr>
<td>Consolidated summarized comments and recommendations on CHPs to be approved for funding worked out by PORALG together with MOH</td>
<td>Second week December</td>
</tr>
<tr>
<td>Papers distributed to BFC</td>
<td>Second week December</td>
</tr>
<tr>
<td>BFC arranged by MOH in consultation with PORALG</td>
<td>Second week December</td>
</tr>
<tr>
<td>BFC meeting</td>
<td>Second week January</td>
</tr>
</tbody>
</table>

Who plans health services at the district level?

Planning is a collaborative action and efforts which shall involve the district authorities, the community and other health partners. At the district level therefore, planning for health will address all levels of care:

- household/village/community
- dispensary
- health center
- district hospital
- council health office
- private run health facilities (private for profit)
- NGO's
- faith based health facilities
Who makes up a district health planning team?

Core members of the district health planning team will include:
- district Planning Officer/or his technical representative (chairperson)
- district Medical Officer (secretary)
- other members of CHMT
- representative of the private sector
- representative of NGO's
- representative of community development department
- faith based service providers (religious organisations)

Note: When preparing the CCHp, the team should seek technical advice from Regional Secretariat and co-opt a representative from council finance department.

Activity 5

Think of the planning team at your district.
(i) Is membership similar to the one given above? If not how?
(ii) Will it make a difference to have additional or less members as above?
(iii) Does your current district health planning take into consideration all the levels listed above? Discuss these questions a group and share in plenary.

Planning for district health services should take into account

The existing district health system capacity in terms of resources (human and others). In addition it should consider the following:-

• Use of local (district) data

An evidence-based planning emphasizes the importance of using local data or information available in the district. The district health planning team is required to analyze and use existing data in the planning process. For example, data from (MTUHA and NSS) (National Sentinel Surveillance System). Existing data may be limited, therefore efforts should be made to seek additional data from:

(i) Community information

Think of community-based information (e.g from NSS) on NSS health and health related issues like deaths, maternal deaths due to child-labour, prevalence of malnutrition for the under-fives etc. Various epidemiological methods and tools could be designed such as community surveys to gather useful information for planning.

In particular, the PRA approach, which has been proved in many countries as a very useful tool to get more information from the community and to make the community participate in the planning and implementing, should be used. Details of this approach are described in Module 2.
(ii) **Local research information data**

Researches are done by different parties like students, research institutions, health training institutions, PHC programmes etc. Such important available and useful information or data lies idle and not used. CHMTs have a duty to actively search for this kind of information and use it for planning district health services. In some cases it may be necessary to formulates study designs for operational research to get information about specific health problems.

(For details see annex 1).

*Note: Data should be utilized to address the issues of equity of service provision in the community in terms of geographical, gender/social and economical accessibility.*

<table>
<thead>
<tr>
<th>Activity 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify areas for which health system research might be useful and share in plenary.</td>
</tr>
</tbody>
</table>

**Community partnership**

Dispensary and health centre committees should link up with communities so that communities have mechanisms for participating in setting priorities.

**Cost effectiveness**

If there is more than one feasible way of achieving results, the least costly but most effective health intervention should be selected. Cost consideration should be part of the planning process. It also means that health interventions should be implemented at feasible lowest level of care system (for example, normal deliveries or treatment of uncomplicated malaria) are best treated at dispensary/health centre than at the hospital where costs will be much higher.

**The Essential Health Package**

An essential health care package will comprise health interventions (promotive, preventive, curative and rehabilitative ), including the essential management support interventions, selected on the basis of being likely to have greatest impact on disease burden reduction, at various levels in the district.

The interventions are selected after taking into consideration, issues such as cost effectiveness and equity of access. It is usually determined at national level, however, districts may decide to include additional interventions in response to local needs and priorities.
The MoH has issued Essential Health Package which contains six Priority Areas broken down into intervention areas to address major health problems.

**Priority area 1: Reproductive and Child Health**

Areas of Interventions
- Maternal conditions
- ANC
- Obstetric care
- Post-Natal Care
- Gynaecology, STD/HIV
- Family Planning
- IMCI
- Perinatal
- Immunization
- Nutritional deficiencies

**Priority area 2: Communicable Disease Control**

Areas of Interventions
- Malaria
- TB/Leprosy
- HIV/AIDS/STD
- Epidemics (Cholera, Meningitis)

**Priority area 3: Non-Communicable Disease Control**

Areas of Interventions
- Cardiovascular diseases
- Diabetes
- Neoplasm
- Injuries/Trauma
- Mental Health
- Anemia & Nutritional Deficiencies
Priority area 4: Treatment and care of other common diseases of local priority within the district e.g. Eye disease, Oral Conditions etc.

Priority area 5: Community Health Promotion/Disease Prevention

Areas of Interventions

- IEC
- Water hygiene and sanitation
- School Health Promotion

Priority area 6: Establish/Strengthen organizational structures and institutional arrangements for improved health service management at all levels.

Areas of Interventions

- Establishment of council Health Service Boards
- Orientation /training of CHSB and HP - members and other people involved in health delivering services
- Preventive maintenance /rehabilitation/repair of facilities based on provided ceilings and guidelines
- Improve deployment of skilled and committed staff at all health centers and dispensary levels in order to increase utilization of services.
- Ensure attainment of minimum physical, infrastructural and equipment standards at all health facilities in the council.
- Supervision
- Inspection
- Strengthen management capacity to select, quantify drugs, medical supplies and equipment
- Make available on regular basis essential drugs, medical supplies and diagnostics.

Accountability

Accountability both in finances and performance should be emphasized. This will ensure that funds are used according to plan and accounted for, progress reports are made towards realizing set targets on quarterly and annual basis.
Unit 2: Preparation for Planning

Introduction

Preparation for the planning exercise is the first step towards developing the action plan for the next year. Funds for this activity should be available. It is expected that the planning team will retreat for at least 10 planning days.

Objectives

At the end of this unit, the CHPT will be able to

- Plan the planning as an activity within this annual work plan
- Identify activities and responsibilities to be performed by the team members before the planning process start
- Update the situation analysis and review of resources available (district health profile document)

2.1 Preparation of activities

The plan preparation activity should be budgeted for, as developing a district health plan, is an important activity in the current annual work plan. Resources and supplies will be required. These include human capital (planning team and support staff), transport, stationery, venue, funds to meet living expenses and other related costs. Important preparatory activities to be considered are as follows:

- Determine when to execute this activity
  - Identify persons to execute this important work
  - Determine resources e.g. budgetary requirements and compare with the available funds in the current annual work plan
  - Establish time frame
  - Assign specific tasks and responsibilities to each member of the planning body
  - Develop methodology for monitoring the planning process and output
  - Secure funds for the planning activity and arrange for logistics e.g., inform the team members
  - request permission from their supervisors
  - arrange for transport
  - arrange for stationery and equipment e.g., computer or typewriter, overhead projectors, etc.
Documents for review and reference should be collected, for example:

- District Health Management Training Module (Ministry of Health, 2001).
- Planning Guide for Local Authorities Regarding Utilization of Health Basket Grant, August 2000
- National Package of Essential Health Interventions in Tanzania, Jan 2000
- Format of a prototype comprehensive Council Health Plan, MoH, March 2001)
- Other relevant documents.

2.2 District Health Profile including Situation Analysis and Review of Resources

The district health profile, which is mainly a situation analysis and a review of resources provides you with information about your district in an organized manner, in one document. The district health profile will assist you to pick up and interpret important features about your district. Considering the importance of the district health profile in the planning and management of district health services, the document should be:

- Updated regularly on annual basis, before the planning sessions
- Reviewing the performance of the previous year in order to set new baseline and new targets.
- Developed as a team effort by the whole CHMT, which presents details of a district in terms of:
  - geographical features
  - economic activities including food production
  - literacy rates
  - demographic data (total population, women of child bearing age, children under one and under five, population growth rate, (CBR, CDR, IMR, U5MR, MMR etc)
  - epidemiological data (e.g top 10 causes of morbidity and mortality) for inpatients and outpatients
  - health services provision and use (patient bed ratio, bed occupancy etc ) access to water and sanitation facilities
  - health resource data (human, material, financial) including distribution and gaps
  - physical health infrastructure e.g. status of buildings
  - major health status and health services problems by priority membership of district health board, facility committees etc
  - communication facilities (transport, telephone, radio call, roads)
  - a district map with the necessary details including divisions, wards, roads, health facilities, etc.
  - major key partners in health in the district e.g. NGO's, Voluntary agencies etc.
  - existing training institutions and training resources
  - available/functional health committees
For CHMT to prepare the district health profile, information and data can be obtained from a number of sources such as:

- Health Management Information System (HMIS) and Health Statistics
- Abstracts
- Records and reports from the health facilities
- Survey and research reports including Burden Of Disease analysis
- Project and programme plans and reports
- Vital statistics records
- Census
- District annual reports and financial reports
- Community felt needs (these are either expressed by people or their leaders on their own feelings, needs and priorities)
- Your own experience as a health worker
- Any other relevant and available source of information.

2.3 Terms of Reference (ToR)

Terms of References are written in various forms, however, a standard one will consist of the following components:

- background information or nature of work
- scope of work
- objectives
- specific activities
- coverage
- inputs/resources
- logistics (administration of assignment)
- risks and assumptions
- time frame
- reporting / recommendations
UNIT 3: Steps in the Planning Process

There are several steps in the planning process which form a continuous cycle as illustrated in Figure 3:

Figure 3: The planning steps

Situation Analysis

Monitoring and Evaluation

Problem Prioritization and analysis

Setting objectives and targets

Implementation

Preparing action Plan, budget and approval

Determining resources.

Formulating Interventions

Activity 7

Think of Planning as a process which you engage in your daily life. Take an example of a priority need which you wish to address within this month.

(i) List down all the steps you will follow to achieve your intention.

(ii) Analyze to see whether you have followed a sequence of activities or steps similar to the ones which you’ve seen in the planning cycle above. Share in plenary Session.

Activity 8

Now reflect back to the way planning is carried out in your district.

(i) Are all the steps being observed? If Yes, do you think are sufficient?

(ii) If you do not follow the steps, how else do you go about planning?

(iii) Do you think you may improve your planning process by applying the steps?

Then ask yourself. Are these steps necessary? What if I skip any of them? Will I still be able to achieve my objective Share in Plenary.
3.1 Situational analysis and problem identification

Situational analysis

This step involves assessment of the current situation from various perspectives to establish the immediate and projected health situation in terms of needs and priorities. Generally, situational analysis may answer the key questions 'where are we now?', (district assessment to identify needs and problems), and leads to the next key question 'where do we want to go'? (sorting priorities, targets and indicators).

Review and interpret policy documents

When planning, it is essential to review the existing policy guidelines in order to familiarize yourself with the existing directives and regulations to be followed in the course of preparing a district health plan. The purpose of review is to ensure that national policy guidelines are being adhered to and community preferences are being interpreted and translated into appropriate actions.

Steps to be followed:

- Review national health policy guidelines that govern the development and implementation of the plan in terms of health packages to be provided, means of implementing the packages and what problems and constraints, rules and regulations have to be followed.

- Review resources available for implementing the plan in terms of human and financial resources, equipment, infrastructure and supportive services in the district.

- Review Health Sector Reform, Human Resources for Health Development Policy, PHC Strategy, Guidelines for the preparation of the rolling plan and for ward budget and programme guidelines. Find out additional resources required within the community that may be incorporated.

- Determine both constraints and advantages that may be inherent in the overall socio-cultural environment in which the plan is being developed.
Problem identification

During problem identification consideration should be given to health and health related problems based on available data from: HMIS, community surveys, census, reports your own experience etc.

A problem

A problem is the gap between what exists and what is supposed to be ideal. Problems can either be primary or secondary.

Primary problems
Illnesses identified by the community such as malaria, TB, AIDS, Leprosy etc.

Secondary problems also called contributory problems
These can be inadequate health resources, inefficient health delivery services or poor management skills which by themselves cannot cause illness.

3.2 Problem Prioritization

Planning is essential because resources are always scarce and inadequate. Having identified your district health problems which require some action to address them, using available resources the next logical step is to rank the problems in order of importance. This is known as problem prioritization. During this exercise national priority needs to be considered. Examples of national priorities include:

- eradication of poliomyelitis
- elimination of neonatal tetanus
- elimination of consequences of vitamin A deficiency
- elimination of iodine deficiency disorders
- increasing access to safe drinking water and basic sanitation.
- reduction of deaths from malaria
- increasing prevalence of Family Planning users
- reduction of IMR, U5MR, MMR

These examples of national priorities have been set at the higher level but have to be translated into district actions. While prioritizing problems, districts may base their selection considering the following factors:

- equity
- community participation
- acceptability by consumers
- availability of appropriate technology
- affordability to the consumers
- community expressed needs
Prioritisation of problems is usually determined by examining specific characteristics of health and other contributory problems against a set of criteria.

**Criteria for ranking health problems**

1. **Magnitude** - In terms of the proportion affected such as women, pre-school children, school children, the elderly, etc. This basically describes how big is the problem.

2. **Severity/danger** - To the individual and the community. How serious is the condition. Does it threaten life, cause major suffering, decrease the ability to lead a normal life, reduce productivity?

3. **Vulnerability to intervention** - If a problem is not vulnerable to intervention, it makes no sense to include in the list of those targeted for action.

4. **Cost of intervention** - expressed in terms of Cost-effectiveness. This criteria should answer the question whether the problem, if addressed, is worth the financial cost involved.

5. **Political expediency** - Even if a problem fulfils all of the above criteria, if it is not recognized by the central authority, it is very difficult to include it among the high priority list.

*Note: CHMT can also utilize Disability Adjusted Life Years (DALYS) approach found in Annex 3 for further determination of magnitude and severity of the problem. It is also one of the methods used for selecting interventions*

**Criteria for ranking secondary problems**

Secondary/contributory Problems are usually prioritized according to the following three criteria.

- Extent to which the secondary problem is a cause of a major contributing factor to the primary problem(s)
- Its own amenability to change in terms of acceptability, case and technical feasibility of bringing about change
- Cost effectiveness associated with such change

In the final analysis therefore, after prioritizing the problems, districts will need to consider national priorities, health Service needs, community expressed needs when developing district health plans.
Community expressed needs are essential to be included in plans as they ensure community ownership of the interventions and this leads in sustainability of activities.

Problem analysis

Problem analysis is the art of critical examination of problems against prevailing conditions in districts. It is important that the CHMT analyses identified problems in the context of their prevailing conditions in the districts using problem and needs trees. (example see figure 4 & 5)

A problem tree is a set of assumptions on causes associated with the problem and its consequences.

Steps in problem tree construction.

1. Start by writing the problem statement on a large single sheet of paper which is pinned to the wall. Each member of the group will be given cards and pen.
2. The facilitators will ask you to write down what you think are the main causes of the stated priority health problem. Write only one cause on each card and in as few words as possible.
3. For each cause, continue to ask yourself the question “BUT WHY” and write down one answer per card.
4. The facilitators will then arrange the card under the problem statement on the wall, thus creating a problem tree.
5. As you analyze problems and look at their causes, you may find that you wish to formulate the problem in a different way. For example, what appeared as a problem of lack of supplies for your immunization programme may, when you analyze it, turn out to be a problem of health planning or communication.
6. Having described the immediate and associate causes of a problem then you describe the possible consequences if the problem was not addressed. These are put above the problem and this completes the Problem Tree. You will realize that all that causes and consequences are all described negatively.
7. The last step is not review the problem tree you have just constructed. Going through each of the causes you have identified, ask yourself” If this something we can change in the district”? We would like you to focus on what is within the power of the district to improve, even if only in a small way.
Figure 4: Example of a Problem Tree

- **Economic loss**
- **Social problem**
- **Reduced child health**
  - **High maternal mortality**
    - **Poor obstetric care**
    - **Severe anemia**
    - **Poor post partum care**
      - **Poor trained TBAs**
      - **High fertility**
      - **Insufficient food intake**
        - **Non compliance**
    - **Insufficient food intake**
      - **Non compliance**
    - **Low food security**
    - **Ignorance**
      - **Conservative religious beliefs**
      - **Traditional beliefs**

- **Effects**
Needs Tree

A needs tree is an intended outcome of interventions to the problem. Developing a need tree will help you to identify interventions which are visible and those which are not and finally formulate activities.

Figure 5: Example of a Need Tree

- Reduce economic loss
- Less social problems
- Improv. Child health

- Reduce mat. mortality

- Good obstetric care
- Reduced anaemia
- Good post part. care

- Well trained TBAs
- Reduce fertility
- Adequate food intake
- Increased compliance

- FP being practiced
- Improved food security
- Improved knowledge
- Changing trad. beliefs

- Religious beliefs
3.3 Setting objectives and targets

This stage in the planning cycle involves the determination of the goal, objectives and targets of the district health organisation. This stage answer the key question 'where do we want to go'? or what do we want to achieve'? It is expected that the district health management teams will now have a clear picture of the district health situation (from the situational analysis ), from which the priorities and objectives will be derived.

Determining objectives

An objective is the intended result of a successful activity or programme with clear ultimate achievements the health care team should attain within given inputs and process. Objectives can be developed in the following areas:

- health status
- service activity
- management and organisation
- support system
- community involvement
- inter-multi-sectoral collaboration

Characteristics of objectives

Objectives must be:

S - Specific in terms of addressed functions
M - Measurable quantitatively
A - Attainable under given resources management and environmental conditions
R - Realistic
T - Time bound

Types of objectives

Objectives can be stated in terms of what can be achieved within a relatively short period, (short term objectives) which ultimately lead to achievement of long term objectives.

(i) Example of long term objective to reduce maternal mortality from the current 300/100,000 to 250/100,000 live births in 3 year period.
(ii) Examples of short term objectives
- advice and refer 70% of pregnant women in 10 villages to ante-natal care in 1 year.
- trained TEAs assist deliveries in 10 villages in 1 year

Activity 9

Formulating long and short term objectives from the problem/ need trees you have developed. Share in plenary.
Setting targets

After setting plan objectives, you have to determine the number and quality of specific activities that have to be carried out before objectives can be realized.

Defining a target

A target is a desired amount of progress toward a health objective via a specific programme activity. Certain targets are set at the national level while others can be set locally.

Example:

In order to reduce maternal mortality, TEAs have to be trained and regularly supervised. Tetanus immunization, prenatal care and nutritional advice provided. The targeted activities are:

- training of TEAs
- conducting training sessions
- giving tetanus injections
- mobilizing pregnant mothers to attend ANC establishing vegetable gardens

If you carry out the activities mentioned in the right numbers (targets), the achievements will be as follows:

- 80% of pregnant women will get at least 2 injections of tetanus toxoid in 2 years.
- 80% of women delivered by trained TBAs in 2 years.
- 70% of pregnant women attend antenatal clinics in 1 year.
- 90% of households establish vegetable gardens in 1 year

Matching targets to performance standards

Performance standards refer to the acceptable maximum attainable levels that will assure provision of basic health care against a given criteria. If the planned targets are less than the potential number of services that can be delivered, objectives need to be modified.

Example:

In Bagamoyo district there are 2000 pregnant women. If our service objective is to reach 40% of the women with an average of 3 antenatal visits each, then we need minimally 2400 service contacts to be provided in one health facility (40% of 2000 = 800 i.e. 800 x 3 = 2400 contacts). If there are four antenatal sessions per week, (in a year there are 52 weeks), and if the staff can attend 20 contacts per session, then 4160 contacts per year can be accommodated (i.e. 4x52x20 = 4,160, more than the planned service targets of 2,400. This implies that if the objective could be set at 60% of the women giving 3600 contacts the available staff could still handle them without additional resources.
Note: If planned targets are higher than the potential numbers of services that can be delivered, given available or potential resources and under prevailing constraints, objectives should be modified to allow consistence between planned service targets and potential performance level.

3.4 Formulating (developing) interventions

Strategy is action to be taken over a period of time to address priority problems. It consist of interventions and activities.

Intervention alternative measures to address priority health needs, they compile a set of several activities. Developing interventions is the process of identifying, short listing and deciding between alternative approaches and measures to address identified and prioritized health problems and needs. At this stage the key question "how will we get there" should be addressed. The problem/need tree will help you to define valid interventions.

Activity specific actions taken to produce the outputs, e.g. to train 24 CHMT members in 3 zones in the next one month (July 2001)

Table 2: Example of an intervention matrix with objectives and targets

<table>
<thead>
<tr>
<th>Problem</th>
<th>Long term objectives</th>
<th>Short term Objectives</th>
<th>Planned targets (output)</th>
<th>Strategy</th>
<th>Interventions/Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>High maternal mortality 300/100,000 live births</td>
<td>Reduced maternal mortality from the current 300 to 250/100,000 live births in 5 years period.</td>
<td>Advice and refer 70% of pregnant women in 10 villages to antenatal care in 1 year. Trained NMs &amp; TBAs assist deliveries in 10 villages in 1 year.</td>
<td>- One trained Nurse per facility 3 TBAs trained per village - 1600 pregnant women delivered by trained personnel</td>
<td>Community based obstetric care and referral to health facilities</td>
<td>- Training of personnel for 2 weeks - Complete the maternity ward and equipment Carry out supervision visits - Mobilize pregnant mothers to attend ANC - Provide nutritional advice.</td>
</tr>
</tbody>
</table>

Note: It may happen that you don't need a specific strategy for each short term objective.

Activity 10
In groups discuss problems, realistic objectives and targets for your plans share in plenary.
Activity 11

In groups discuss formulate strategies, interventions and activities. What are the limitations/deficiencies/constraints to some of the interventions. Present your answers in a table form and present in plenary session.

3.5 Determining resource (input) requirements

Determining resources required means translating interventions and all activities required to support the intervention into human resources, material, money, space, time and information.

Determining resource needs

Establish a resource inventory table. The table should specify existing resources, additional resources required and total resource needs. To do this, list all intervention(s) and the type and quality resources required by each intervention.

Example:

Determine resource required to immunize 10,000 women between 15 and 45 years of age with two injections each of tetanus toxoid within one year. This intervention will include the following activities training, immunization, health education specific follow up

While inputs will include personnel, physical infrastructure, equipment and material, drugs and supplies and travel/transport costs/funds. Resource requirements for this intervention will therefore look as seen in table 3.

Table 3: An example of resource requirements for an immunization program of women against neonatal tetanus

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Personnel</th>
<th>Physical Infrastructure</th>
<th>Equipment/Material</th>
<th>Drugs and Supplies</th>
<th>Travel/Transp</th>
<th>Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>6 PHNs, 2 MD</td>
<td>training centre x 5 days accommodation none</td>
<td>white board, 10 disposable syringes, needles</td>
<td>Vaccine 5 vials</td>
<td>5 days of minibus</td>
<td>$ 350 (for meals) $ 20 for diesel &amp; maintenance</td>
</tr>
<tr>
<td>Immunization</td>
<td>48 MCHAs</td>
<td>1 refrigerator, 4 cold boxes</td>
<td>20000 doses triple vaccine, 27000 syringes and needles none</td>
<td>260 days of minibus</td>
<td>$ 1500 to pay diesel &amp; maintenance expenses</td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td>12 PHN</td>
<td>1 flipboard</td>
<td></td>
<td>200 days of motorbike</td>
<td></td>
<td>$150 for petrol &amp; maintenance, $260 per diem</td>
</tr>
</tbody>
</table>
Activity 12

Work in groups to develop resource requirement for intervention of your district health. Share in plenary.

3.6 Preparation of Budget (Costing) and Action Plan

Budgeting is a process of costing inputs and activities into monetary terms.

Description of budget

- Budgeting is made of estimated costs of inputs and activities that will be required to implement the plan.
- There are two kinds of costs: recurrent costs and capital costs.
  - Recurrent costs refers to the costs which you are incurring annually to make the system running e.g salaries, drugs, kerosine and any other consumables
  - Capital/developmental costs refers to costs that are incurred to a fixed asset. An asset with the life span of more than one year e.g x-rays, machines, thermos, weighing scales etc. has two types of costs i.e.: initial costs (purchasing price) and recurrent costs through amortisation or depreciation

Amortisation costs are useful for planning exercise since they tell us when are the capital inputs going to be replaced in order to accommodate in our budget if the budget is of more than one year, like the three year rolling plan and forward budget

Note: Preparing the budget implies conversion of inputs, activities, targets and support services into money and that the budget is made up of recurrent (on going/routine) and developmental (capital) - fixed asset within a period of time.

Activity 13

- Identify all sources of finances in the district
- What proportion did each partner contribute to last years district health budget?

Costing examples

Cost analysis is a process of estimating cost of each input for every activity. In this process you need to know the activity, input, quantity of inputs and price per unit (unit cost)
The following two tables (3 and 4) gives you examples of costing analysis matrix.

**Table 4: Example of cost analysis matrix**

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Activities</th>
<th>Inputs</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>Refresher courses for 20 TBAs at district headquarters for 7 days</td>
<td>- allowances</td>
<td>Allowances</td>
<td>3,068,000=</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Stationery</td>
<td>(i) 15,000= x 20p x8d = 2,400,000=</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Vehicle &amp; fuel maintenance</td>
<td>(ii) 5,000= x 5Facilitators x6d 150,000=</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Hall charges</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Refreshments</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>Activity</td>
<td>Details</td>
<td>Unit costs</td>
<td>Total Unit cost</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Obstetric care</td>
<td>Organize a 3 days Programme training for 30 participants and 4 facilitators</td>
<td>Venue: 3 1 1500</td>
<td>45.00</td>
<td>March DMCHC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allowances:</td>
<td>3 30 1500 1.350.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Participants:</td>
<td>3 4 20000 240.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Facilitators:</td>
<td>3 4 20000 240.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Driver</td>
<td>3 4 5000 20.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transport: bus tickets 30 x 2000</td>
<td>3 30 2000 60.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fuel:</td>
<td>3 20 600 36.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stationary</td>
<td>1 1 200000 200.000</td>
<td></td>
</tr>
</tbody>
</table>

Note: Column “Allowances” and “Fuel” are only mentioned because for some source of financing defined ceiling for these items exist.
Preparing the action plan

Plan of action(s) is a tool for organizational performance management. It serves to organize the implantation of a plan on an efficient and coordinated basis and enables review of progress and achievements to be carried out. The plan of action should cover the following:

- level of care/cost center
- intervention
- activity
- operational Target
- time frame
- responsible person
- progress indicators
- resources needed
- funding agency
- estimated costs

Table shows a format issued by the MoH/PORALG. To fill in this table correctly, it is also advised to read the following instructions carefully.

Instructions:

1. Level of care/ cost Centr …………….. Example: Write Hospital, Community etc
2. Intervention: …………………………. Use the same wording than in your costing format
3. Activities: ............................... Use the same wording than in your costing format
4. Operational Targets: ………………… Write the expected output for the National Minimum Standards you have defined (See Annex 2)
5. Time frame: ……………………........ Write period (Example: Jan or Jan-March) in which you want to conduct the activity
6. Responsible …………………… ........ Write title of the person or name of team, which is responsible to conduct the activity
7. Progress indicator: Refer to the following chapter, in which details on indicator will be explained. It is not necessary to define an indicator for each activity. Make a sound selection!
8, 9, 10, 11, 12, 13:
   Source of funding: ............... Enter the respective amount!
14: Estimated costs .................... Write the respective amount.
Table 6: Example Format for a Plan of Action

**Problem:** High Maternal Mortality Rate (MMR) of 229/100.000 (National Rate is 400 – 600/100)

**Objective:** To reduce MMR from 229 to 195/100.000 by the end of 1999

<table>
<thead>
<tr>
<th>Level of care (cost center)</th>
<th>Interventions (How)</th>
<th>Activity (What)</th>
<th>Operative Target</th>
<th>Resources Needed</th>
<th>Time Frame (When)</th>
<th>Responsible</th>
<th>Progress indicator (What measurement)</th>
<th>Source of Funding/ Amount</th>
<th>Estimated Cost (What Cost)</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Office</td>
<td>Strengthen referral of high risk pregnant mothers</td>
<td>Supervising Health Facilities</td>
<td>Each Health Facility Supervised twice a year</td>
<td>Personnel Vehicles Fuel Allowances</td>
<td>June-Sept</td>
<td>CHMT</td>
<td>No of supervision visits made No of Health facilities supervised</td>
<td>5,000,000 3,000,000</td>
<td>200,000 - - -</td>
</tr>
</tbody>
</table>

<p>| District Hosp.              | Strengthen referral of high risk pregnant women | Establishing a maternity waiting home at the district hospital | Maternity waiting home Constructed | Building materials Transport Community | Jan-June | DMO DMC H-Co | Site identified Resources mobilized Physical construction in progress | 2,000,000 500,000 | 1,500,000 - - - | 4,000,000 |</p>
<table>
<thead>
<tr>
<th>Level of care (cost center)</th>
<th>Intervention (How)</th>
<th>Activity (What)</th>
<th>Operational Target</th>
<th>Resources Needed</th>
<th>Time Frame (When)</th>
<th>Responsible</th>
<th>Progress indicator (What measurement)</th>
<th>Source of Funding/ Amount</th>
<th>Estimated Cost (What Cost)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Centre</td>
<td>To improve Obstetrical care</td>
<td>To train N/Mid wives and MCHA/PHN on the use of pantograph</td>
<td>MCHA &amp; PHN trained</td>
<td>Health Staff Stationery Vehicles Fuel Allowances</td>
<td>Sept-Dec</td>
<td>DMO DMC H-Co</td>
<td>-</td>
<td>950,000</td>
<td>150,000</td>
</tr>
<tr>
<td>Dispensary</td>
<td>To improve Obstetrical care</td>
<td>To train N/Mid wives and MCHA/PHN on the use of pantograph</td>
<td>MCHA &amp; PHN trained</td>
<td>Health Staff Stationery Vehicles Fuel Allowances</td>
<td>June-Sept</td>
<td>DMO DMC H – co</td>
<td>No of MCHA/PHN trained</td>
<td>-</td>
<td>2,750,000</td>
</tr>
<tr>
<td>Community</td>
<td>Improve Obstetrical care</td>
<td>To train TBAs on safe Obstetrical care</td>
<td>30 TBAs on safe Obstetrical care</td>
<td>TBAs CHMT Vehicles Fuel Allowances</td>
<td>Sept-Dec</td>
<td>No of TBAs trained</td>
<td>-</td>
<td>-</td>
<td>250,000</td>
</tr>
</tbody>
</table>
• **Developing indicators**

Indicators are tools used to measure change or progress of an activity. Indicators are measurable tools to determine directly or indirectly changes in status. Indicators have the following characteristics: Quantity, Quality, Time frame, Target group.

For example,

Trained 40 TEAs over 6 months where quantity = 40, quality = trained TEAs, time frame = over 6 months, target= TEAs

**Types of indicators**

- **Input indicators**: measures the resources that are used in the provision of services e.g. human, financial, materials
- **Output indicators**: measure the output following a process resulting from certain inputs e.g. number of staff trained, number of latrines constructed, number of immunization sessions conducted
- **Outcome indicators**: measure the result following some activity e.g.. immunization coverage, contraceptive acceptance rate etc.
- **Impact indicators**: show the long term effect of an intervention, e.g. reduced maternal mortality rate, reduced infant mortality rate resulting into an improved health status of a population or community in a given time

### Activity 14

From your action plans, develop appropriate progress indicators for each activity, specify means of verification for each indicator and share for plenary.

37. **Implementation**

Following approval of the plans, the next step will be implementation. Don't forget that implementation needs full commitment. Implementation will include the following activities

- to initiate all steps necessary to conduct the planned activities
- to mobilize all the required resources in time
- to conduct regular supervision at all levels (hospital, HC, dispensaries, communities) to make sure that activities related to this level are correctly done
- to alert decision makers in time if obstacles or specific problems turn up and jeopardize performance.

38. **Monitoring and Evaluation**

The key question to be addressed at this stage of the planning cycle is "how will we know when we get there".
Monitoring

Monitoring is a systematic and continuous assessment of the progress of an activity over time. Monitoring is part of implementation. Monitoring can be done through the process of collecting, coordinating, processing, measuring and communicating information to assist management make decisions.

Monitoring encompasses follow up of Inputs (vaccines, funds, personnel etc), the Process (activities/tasks being done according to accepted norms and standards), of Outputs (products meet specifications, services are delivered as planned, training results into new skills etc) and finally the Outcome (the short term effect of the programme or campaign).

Monitoring ensures

- work progresses according to schedule
- standards (such as storage and administration of vaccine) are maintained
- Resources are used rationally and as planned
- the required information is available and used etc.
- detection of problems during implementation and to undertake corrective measures
- verification whether plans are being implemented in the way and manner they were planned for

*Note: Monitoring is carried out internally by the district health management team in the course of implementation of the district health plan. Implementation of the district health plan should be the main focus of deliberation during the CHMT's meetings.*

Tools for monitoring

Tools for monitoring mean an and or gadget which assist in tracking implementation of planned activities. The following are some of the tools used for monitoring:-

- Supervision reports
- Activity progress reports
- Project plan of action
- National Minimum Standards
- HMIS (MTUHA) and NSS systems reports.

Evaluation

Evaluation is the systematic assessment of actions in order to improve planning or implementation of current and future activities. Evaluation includes areas of both process and impact to assess whether the set out objectives have been achieved. This can be internal (by the implementers) or external (by outsiders).
**Why evaluation?**

The essence of evaluation is to determine performance, effectiveness and efficiency of services. In other words evaluation can be done to:

- Decide whether an activity is worth doing
- Determine whether the objectives set were achieved
- Determine (formative evaluation) whether activities should be continued or not
- Determine whether the project should be extended elsewhere etc.

**When to evaluate ?**

Before implementation to:

- assess development needs and
- potentials determine feasibility of the plan

During implementation (formative evaluation) to:

- identify areas for changes or modifications
- detect deficiencies and immediate redesign of intervention strategies.

End of programme (summative evaluation) to:
Assesses programme or project effect, outcomes and aims at obtaining information on:

- effectiveness of the programme in achieving its stated objectives. its contribution to developmental goals.
- efficiency of the programme or project on utilization of resources.
- sustainability of the project results.
- whether to continue, modify or terminate the project.

Comprehensive evaluation can address the context, inputs, process/ output and outcome evaluation or just part of it. However, comprehensive evaluation may be too demanding for resources and therefore appear extremely expensive.

Before carrying out an evaluation, proper plans must be made to include correct methodologies to be followed and the logistics.

*Note:* When preparing a plan, you need to ensure that all relevant documents and guidelines that are expected to be referred to are considered and taken into account.
3.9 District health plan write-up

The following is an essential content of a Council Health Plan (CHP)

1. Executive Summary
   - maximum of two pages
   - summarizes major objectives, interventions and resources required.
   - how the plan will be implemented, monitored and Evaluated.

2. Introduction
   - statement of broad overall objectives of the CHP

3. Situation Analysis (from the district health profile)
   - Description of the district
   - Primary health problems
   - Morbidity & mortality statistics
   - Health problem/need priorities
   - Major secondary (or contributory) problems
   - Status of health services
   - Health service achievements
   - Health service shortcomings
   - Influences and problems imposed (if any)
   - Review of available resources e.g. human materials, finance and sources

4. Planned intervention measures
   - objectives and targets
   - inputs and planned activities
   - main actors and partners

5. Plan of operation and budget

6. Monitoring and evaluation

7. Assumptions and risks

Note: CHPs are discussed with Regional Secretariat and any amendments required will be made in the plans and thereafter approved by the council.
UNIT 4: Report writing

Report writing is an important aspect/requirement to reflect progress, performance and resource use. The importance of reporting in a timely manner cannot be over emphasized.

CHMTs have to produce altogether five reports per year, namely four quarterly reports and one annual report. Each of these reports contains two parts, a technical part and a financial part. The DMO has to take the first step which includes drafting of all report and submitting them to the Council Director.

Objective

At the end of this unit, CHMT's will be able to:

- Outline the importance of reporting
- Explain types of reports
- Write technical and financial reports of district health services

4.1 Importance of reporting:
- report writing is a valid tool to monitor performance (technical and financial)
- timely approved reports will ensure continuous funding for the councils so that the entire CHP can be implemented according to the planed time schedule
- sound reports are a prerequisite for MoH/PORALG and other partners to dispose further transfer of money for the implementation of council health plans
- to make sound decisions on how to continue the entire financing process and promote accountability
- to provide further information for planning.

4.2 Types of Report

The quarterly report
The quarterly report is a holistic report on the technical and financial performance of the council against the Council Health Plan. It should not be excessively burdensome to produce but should summarize the critical data required for the councils to manage the health service and allow the Council and Regional Secretariat to monitor the performance.
The Annual Report
At the end of each implementation year each council will submit a report indicating health services delivery performance. The crucial part of this report is the achievement which contains the targets set by the CHMTs. The achieved results for the past 12 months have to be compared with the National Minimum Standards.

Instructions on report writing

Instructions for report writing are available in different documents issued either by the MoH or the PORALG for example:

- Planning and Management Guide for Regional Secretariat and Local Authority of 2000.
- Procedures Manual for the Joint Disbursement System for Council Health Basket Funds, issued by the PORALG in February. 2000

There might be other report formats from other sources for specific activities. Be aware of them and use them accordingly.

There are three main sections i.e Overview, Technical and financial in writing a report.

The quarterly report

(Overview) and comprehensive summary. This summary should contain

- a comprehensive appraisal if the activities planned for the respective quarter were implemented. In case of serious time delay for implementation a substantial explanation should be given

- the different sources of funds and the respective amount allocated in the respective quarter

- a summary of expenditures per cost center
Lindi town Council is among Local authorities under reform programme- phase one- eligible for Health Basket funds with effect from July 2000.

Basket funds were only allocated by end of Jan, so only 2 months were left to conduct the activities of the first quarter. This explains a certain delay in regard to our quarterly planning. It has to be stressed however, that all routine activities (supervision, drug supply) could be conducted and other planed activities could either be terminated or at lest started.

We received the basket grants on January, 30, so we started to conduct basket grant related activities from February 1. In total we received in the first quarter the following funds

<table>
<thead>
<tr>
<th>Description</th>
<th>Tshs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Council health Basket Grant</td>
<td>6,623,600</td>
</tr>
<tr>
<td>Block Grants</td>
<td>27,331,836</td>
</tr>
<tr>
<td>Others</td>
<td>Nil</td>
</tr>
</tbody>
</table>

**Total funds**

Tshs 33,955,436

The following funds were exended to date for the cost center:

<table>
<thead>
<tr>
<th>Description</th>
<th>Tshs</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Hospital</td>
<td>1,165,000</td>
</tr>
<tr>
<td>Council Health Department</td>
<td>21,124,987</td>
</tr>
<tr>
<td>Health Center</td>
<td>3,000,000</td>
</tr>
<tr>
<td>Dispensaries</td>
<td>3,323,920</td>
</tr>
</tbody>
</table>

**Total payments**

Tshs 28,613,908

**Balance by March 31:**

Tshs 5,341,529

The remaining money will be spent in the second quarter.

Yours truly,

(Signature DMO)

---

**Technical Report**

The following hints should be taken into account

1. Information for the first three columns (cost center, priority area, planned activity) should be identical with those of the CHP.
2. “Planned activity” means planned in the respective quarter, which are planned for later quarters shouldn’t be mentioned,
3. The last three columns are the most important ones. Their content will allow the reviewers to assess the performance of the CHMT. These reviewers (RMO/RS etc.) will mainly apply the following criteria:

- are the activities executed in line with the CHP?
- are activities carried out according to the cost centers?
- are activities implemented according to the schedule?
- are sound reasons given, if activities are not implemented in time?

**Table 8: Council Health Plan Quarterly Technical Progress Report**

<table>
<thead>
<tr>
<th>Cost center</th>
<th>Priority area</th>
<th>Planned Activity</th>
<th>Amount allocated</th>
<th>Achievement</th>
<th>Amount spent</th>
<th>Constraints</th>
<th>Comts.</th>
</tr>
</thead>
</table>

Prepared by DMO         Date: 

Prepared by Council Treasurer Date: 

Authorized by DED/Municipal Director Date: 

Checked by RMO          Date: 

**Financial Report**

Usually it has to be prepared by the council treasurer according to the available format. Furthermore he has to provide all relevant bank statements. The report has to be discussed and agreed upon with the DMO.

**The annual report**

In January of each year, two reports have to be produced, the quarterly report for the last quarter and the annual report. It is advisable to write first the quarterly report, because you need the respective information for the annual report. The annual report itself follows mainly the same format as the quarterly report. There are also three sections:
Overview

(i) Which should be written after section 2 and 3 is done, the situation of the entire year should be summarized. The main achievement and problems should be highlighted, an overview on the financial situation should be given.

(ii) **Technical Report** - Structured as described in the quarterly report, but for the annual report it is crucial to review the whole plan. That means by using table 6 as a format all planned activities should be listed and be assessed by filling in properly the columns "achievements", "constraints" and "Comments".

(iii) **Financial Report** - Same format is to be used as for the quarterly report. The figures of the four quarters have to be compiled.
UNIT 5: DISASTER PREPAREDNESS AND RESPONSE

Introduction

Disasters are terrifying destructive events. Natural disasters are caused by earthquakes, floods, hurricanes, droughts, epidemics and the like. Man made disasters are caused by war, terrorism, and air traffic accidents. Confronting a disaster's force can be one of the most frightening experiences of a lifetime. Thinking about disasters and their resulting deaths and destruction is difficult. We have to think about disaster in advance and we need to be prepared for it.

When a society is well prepared for disasters the great majority of the deaths and long-term effects can be avoided or at least minimized. Disaster preparedness and management involve a coordinated effort of many sectors and discipline. However, the CHMT need to be aware of its role and prepare for its contribution.

Are you prepare in your district?

Objectives

After completing this unit, the CHMT should be able to:

• Describe essential facts about disasters
• Explain the need for a district to be better prepared in facing disasters
• Take appropriate actions in your district in managing disasters
• Manage and control an epidemic

5.1 Some facts about disasters

• Some people and communities who are already most vulnerable in daily life are also most severely affected by sudden disasters such as floods and slow-onset disasters such as famine
• Communities affected by disasters are far from apathetic and helpless. The people in these communities are usually the first to respond and have a lot of strength that need to be supported
• Local people are more able to cope with disasters than foreign teams who have to be housed and fed and do not know the local language and situation
• Careful rationing should insure that everyone is fed. Regular food supply is especially needed for people involved to salvage work and reconstruction
• Teamwork is the most efficient way of dealing with disasters, especially if the teams have been trained for disaster preparedness
• There is no clear distinction between natural and man-made disasters. Strict adherence to building codes in earthquake-prone areas significantly reduces loss of life when an earthquake occurs. Soil erosion and creation of deserts is to a large extent due to human mismanagement of the environment
Despite the usual urgency of the situation, an evaluation of most urgent needs should be made before overloading the system with a lot of unnecessary "assistance' and items such as out-dated medicines

Impact of big disasters is often felt for years

5.2. National and International preparedness for disasters

To a large extent disasters can be foreseen and predicted. However, some of the "early warning systems" require expensive high technology and international collaboration. There is a need for international community and national governments to be prepared. Drought, tropical storms and volcanic eruptions can often be predicted by the use of high technology. An earth observing system based on a number of satellites is monitoring the earth in detail.

WHO in collaborating with the United Nations High Commissioner for Refugees and a number of other organizations have developed an emergency kit with drugs and medical supplies calculated to meet the needs of 10,000 people. Many more examples can be given. However, international preparedness makes little sense if the national level is not prepared. There should be:

- A national health policy implemented regarding preparedness and relief
- A person within the Ministry of Health in charge of promoting, developing and co-ordinating disaster preparedness
- Emergency preparedness activities co-ordinated with the health sector, civil defense authorities and key ministries, health sectors and international agencies in the country
- National operational plans for health responses to natural and manmade emergencies
- Mass casualty management plans at national and hospital level
- Identified disaster prone areas, groups and high-risk seasons
- Early warning and surveillance systems and a national reference laboratory
- Environmental health services prepared to respond to emergencies and disasters
- Facilities and safe areas designed as temporary settlement sites in case of disaster
- Provision made for health services, staffing, supplies, water and sanitation for disaster situations
- Training activities devoted to disaster preparedness
- An organized communication centre in the Ministry of Health, an emergency budget and an emergency transport arrangement
- Up-dated inventories on human resources, drugs, four wheel vehicles and other potentially needed resources
- Opportunities to test the effectiveness of emergency plans through exercises and drills
5.3 What should be done at the district and health facility in case of disasters

The national and international community may help, but the greatest reduction of disaster impact is expected from your local preparedness. The best preparedness consists of existing working relations, partnership, and communication network.

Special preparedness measures (response)

Identify a contact person and contact network: establish, in advance and regularly communicate on paper who is to contact who in case of emergencies. Such a contact chain should extend from community to district level and beyond. For preparedness to handle many casualties at hospital level the anaesthesiologist or anaesthetic officer are usually people who have received special training in handling multiple casualties

- Identify communication channels in the district: Is there any institution with short wave radio connections etc.? 
- Identify in advance vulnerable communities and areas
- Make disaster preparedness plans
- Know the transport situation in the district. Where are the vehicles, who owns them, what procedure has been agreed on for emergency situations.
- Have a stock of emergency drugs
- Train health staff in monitoring and early reporting of suspected epidemics including meningococcal meningitis, cholera, plague and the like
- Train community members in first aid procedures

Response

Action caused out immediately before, during and immediately after a hazard impact, which are aimed at saving lives, reducing economic loss and alleviating suffering e.g.

- reduce suffering
- facilitate rehabilitation
- health information.

Activities to address immediate and short-term effects at the onset of an emergency, to include actions to save lives, protect property and meet basic human needs, also reduce the likelihood of secondary damages.
Response functions

- Directions and control
- Warming and communication
- Disaster analysis and assessment
- Evaluation
- Emergency welfare
- Public information
- Fire and rescue
- Emergency medical care
- Public works and utility repair. Radiological contamination
- Logistics
- Security.

Rehabilitation / Recovery

Restoring people's lives back to normal, as well as essential service including the beginning of the repair of physical, social and economic damages.

Short term recovery measures

- Restore vital services and facilities to minimum standards of operation and safety
- Identify badly damaged building for removal
- Repair utilities e.g. water, sewer etc
- Normalize electrical and telecommunication system.

Reconstruction

The medium and long term repair of physical, social and economic damage and the return of affected structures to a condition equal to or better than before the disaster.

Activity 15

Liase with relevant authorities to organize drill or simulation with local community members, for instance a local school to test if your emergency plan works. Use your imagination to invent a disaster, for instance a bus accident with many dead and more wounded 20 km from the district hospital.

5.4 Principles of epidemic control

An epidemic is unusual occurrence of a disease in a given place and time. An epidemic often evolves rapidly so that a quick response is required (e.g. cholera, meningococcal meningitis, rabies etc). A threatened or potential epidemic is said to exist when circumstances are such that the epidemic occurrence of a specific disease may reasonably be anticipated. This requires:
- susceptible human population
- presence or impending introduction of a disease agent
- the presence of mechanism such that large scale transmission is possible (e.g. contaminated water supply, vector population etc)

**General lines of action/Principles of action**

When an epidemic occurs the resulting panic among the population and pressures of various kinds leave no time for reflecting on the soundness of the actions necessary to control the situation. Success in dealing with an epidemic, therefore, depend largely on the state of preparedness achieved in advance of any action.

**The basic steps / principles in dealing with epidemics**

- Institutionalize an emergency health service in the district headed by a co-ordinator responsible for preparing contingency plans
- Organize your team
- Establish an early warning system to detect any unusual incidence of a communicable disease that could cause an emergency situation
- Use of appropriate techniques in collecting, handling, transporting samples/specimens
- Confirm that an epidemic or threatened/potential epidemic does exist.
- Ensure availability of minimum stock of drugs and supplies e.g. intra-venue fluids, antibiotics, gloves, disinfectants etc.
- Eliminate or reduce the source of infection Interrupt transmission
- Protect persons at risk
- Carry out active epidemiological surveillance (monitor disease trends using HMIS and NSS systems)
- Mobilise resources
- Notify the relevant authorities about the epidemic

**Note:** Adequate structures must be established and maintained so that a quick response can be made to a disaster and an epidemic or the threat of an epidemic. Emergency health services should be considered by the District Health Managers as an integral part of communicable disease prevention and control. Training and refresher courses to the personnel responsible for disaster should be one of the priorities in the district.
References


10. MOH, (1992) Proposals for Health Sector Reforms


14. PORLG - February 2000 Procedure Manual for the Joint Disbursement System for Council Health Basket fund,


HEALTH SYSTEMS RESEARCH (HSR)

The purpose of this sector is to introduce the basic concepts and uses of Health Systems Research

Definition

Research - is a systematic collection, analysis and interpretation of data to answer a certain question or solve a problem. Health systems research is ultimately concerned with improving the health of people and communities, by enhancing the efficiency and effectiveness of the health system as an integral part of the overall process of socio economic development, with full involvement of all partners.

Types of research

- Basic research - generates new knowledge and technologies to deal with major unresolved health problems.
- Applied research - used to identify priority problems, design, evaluate policies and programs that will deliver the greatest health benefits.

The major objective of HSR is therefore to provide health managers at all levels, as well as community members, with the evidence-based information they need to make decisions on health-related problems they are facing and develop evidence based plans.

Guidelines for HSR.

1. HSR should focus on priority problems in health care.
2. It should be action-oriented, i.e., aimed at developing solutions.
3. An integrated multi-disciplinary approach is required, i.e. research approaches from many disciplines.
4. The research should be participatory in nature, involving all parties concerned (from policymakers to community members) in all stages of the project.
5. Studies should be scheduled in such a way that results will be available when needed for key decisions; research must be timely.
6. Emphasis should be placed on comparatively simple, short-term research designs, which are likely to yield practical results relatively quickly.
7. The principle of cost-effectiveness is important in the selection of research projects.
8. Results should be presented in formats that are most useful for managers, decision makers and the community. Each report should include:
• A clear presentation of results with a summary of the major findings.
• Honest discussion of practical or methodological problems that could have affected the findings.
• Alternative courses of action that could follow from the results.

9. Evaluation of the research undertaken should concentrate on its ability to influence policy, improve services and ultimately lead to better health.

Figures 1 and 2 illustrate the steps to be followed in the development of a proposal for HSR and for data analysis and report writing. More detailed information can be obtained from the HSR training module Volume 2.
Figure 1. Steps in the development of a health systems research proposal

<table>
<thead>
<tr>
<th>Questions you must ask</th>
<th>Steps you will take</th>
<th>Important elements or each step</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the problem and why should it be studied?</td>
<td>Selection, analysis and statement of the research problem</td>
<td>Problem identification</td>
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<tr>
<td></td>
<td></td>
<td>Prioritizing problem</td>
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<td></td>
<td></td>
<td>Analysis</td>
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<tr>
<td></td>
<td></td>
<td>Justification</td>
</tr>
<tr>
<td>What information is Available?</td>
<td>Literature review</td>
<td>Literature and other available information</td>
</tr>
<tr>
<td>Why do we want to carry out the research? What do we hope to achieve?</td>
<td>Formulation of objectives</td>
<td>General and specific objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hypotheses</td>
</tr>
<tr>
<td>What additional data do we need to meet our research objectives? How are we going to collect this information?</td>
<td>Research methodology</td>
<td>Variables</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Types of study</td>
</tr>
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<td></td>
<td></td>
<td>Data collection techniques</td>
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<td></td>
<td>Sampling</td>
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<td></td>
<td>Plan for data collection</td>
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<td></td>
<td>Plan for data processing and analysis</td>
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<td>Ethical considerations</td>
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<td></td>
<td></td>
<td>Pre-test or pilot study</td>
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<tr>
<td>Who will do what, and when?</td>
<td>Work plan</td>
<td>Human resources</td>
</tr>
<tr>
<td>What resources do we need to carry out the study? What resources do we have?</td>
<td>Budget</td>
<td>Material support and equipment</td>
</tr>
<tr>
<td>How will the project be administered? How will utilization of results be ensured?</td>
<td>Plan for project administration and utilization of results</td>
<td>Administration</td>
</tr>
<tr>
<td>How will we present our proposal to relevant authorities, community and the funding agencies?</td>
<td>Proposal summary</td>
<td>Monitoring</td>
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<td></td>
<td>Identification of potential users</td>
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<tr>
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<td></td>
<td>Briefing sessions and lobbying</td>
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<tr>
<td>Questions you must ask</td>
<td>Steps you will</td>
<td>Important elements of each step take</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
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<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>What data have been collected for each research objective?</td>
<td>Prepare data for analysis</td>
<td>Review field experience</td>
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<td></td>
<td></td>
<td>Inventorize data for each study population</td>
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<tr>
<td></td>
<td></td>
<td>Are data complete, accurate?</td>
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<tr>
<td></td>
<td></td>
<td>Sort data and check quality.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check computer outputs</td>
</tr>
<tr>
<td>What do the data look like?</td>
<td>Summarize data and describe variables/identify new variables</td>
<td>Frequency tables, figures, means, proportions, descriptive cross-tabulations,</td>
</tr>
<tr>
<td>How can the data be summarized for easy analysis? (quantitative data);</td>
<td></td>
<td>Coding, listing, summarizing data in compilation sheets, matrices, flow charts, diagrams and narratives (qualitative data);</td>
</tr>
<tr>
<td>How can the associations between variables be determined?</td>
<td>Analyze associations</td>
<td>Analytic cross-tables, Measures of association based on risk. Dealing with confounders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Choosing appropriate statistical tests.</td>
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<td></td>
<td></td>
<td>Measures of dispersion</td>
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<tr>
<td></td>
<td></td>
<td>Normal distribution and Sampling variation</td>
</tr>
<tr>
<td>Do we measure differences or associations between variables?</td>
<td>Determine the types of statistical analysis</td>
<td>Choosing significance tests</td>
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<tr>
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<td>t-test, chi-square test paired t-test</td>
<td>t-test, chi-square test paired t-test</td>
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<td></td>
<td>** McNemar's chi-square test</td>
<td>** McNemar's chi-square test</td>
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<tr>
<td>How can differences between groups be determined?</td>
<td>Analyze unpaired and paired</td>
<td>** Scatter diagram</td>
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<td>** Regression line and</td>
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<td></td>
<td>** Correlation coefficient</td>
</tr>
<tr>
<td>How can the associations between numeric variables be determined?</td>
<td>Implement measures of association</td>
<td>Prepare outline for report written? Present and interpret data Draft and redraft</td>
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<tr>
<td></td>
<td></td>
<td>Discuss and summarize conclusion</td>
</tr>
<tr>
<td>How should the report be written?</td>
<td>Write the report and formulate</td>
<td>Formulate recommendations</td>
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<tr>
<td></td>
<td>recommendations</td>
<td>Discuss summaries and plan for implementation of recommendations</td>
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<tr>
<td>How could the findings and Recommendations be</td>
<td>Present summaries and draft a plan for implementation of recommendations</td>
<td>Formulate recommendations</td>
</tr>
<tr>
<td>Communicated, disseminated And used?</td>
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<td>Discuss summaries and plan for implementation</td>
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<td>With all stakeholders</td>
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<td>Main components of an HSR proposal</td>
<td>Main components of an HSR report</td>
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<td><strong>Executive summary</strong></td>
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<td><strong>I. Introduction</strong></td>
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<tr>
<td>1.1 Background information</td>
<td>Summary of findings and recommen-</td>
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<td>1.2 Statement of the problem</td>
<td>dations</td>
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<td>1.3 Literature review</td>
<td>Acknowledgements (optimal)</td>
<td></td>
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<tr>
<td><strong>2. Objectives</strong></td>
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<td><strong>3. Methodology</strong></td>
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<tr>
<td>3.1 Study type, variable, data</td>
<td>1. Introduction</td>
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<td>collection Techniques</td>
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<td>3.2 sampling</td>
<td>2. Objective</td>
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<td>3.3 Plan for data collection</td>
<td>3. Methodology</td>
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<td>3.4 Plan for data processing and</td>
<td>3.1 Study type, variables, data</td>
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<td>analysis</td>
<td>collection Techniques</td>
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<td>3.5 Ethical considerations and</td>
<td>3.2 Sampling</td>
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<td>analysis</td>
<td>3.3 Plan for data collection</td>
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<td>3.6 Pre-test</td>
<td>3.4 Plan for data processing</td>
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<td>3.7 Ethical considerations</td>
<td>3.7 Ethical considerations</td>
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<td>3.8 Pre-test</td>
<td>3.8 Pre-test.</td>
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<td><strong>4. Work plan</strong></td>
<td>4. Findings and conclusions</td>
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<td><strong>5. Budget</strong></td>
<td>5. Discussion</td>
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<td>**6. Plan for administration,</td>
<td>6. Recommendations</td>
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<td>monitoring, and utilization of</td>
<td>7. Plan for use of results &amp;</td>
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<td>results</td>
<td>recommendations</td>
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<td><strong>7. Annexes</strong></td>
<td>8. References</td>
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<td><strong>8. References</strong></td>
<td>9. Annexes</td>
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<tr>
<td>List of abbreviations (if</td>
<td>Data collection tools</td>
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<td>applicable)</td>
<td>Tables.</td>
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<td>Data collection instruments.</td>
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</tbody>
</table>
### OBJECTIVE

<table>
<thead>
<tr>
<th>Improve obstetric care</th>
<th>DATA TO BE COLLECTED/ PERFORMANCE INDICATORS</th>
<th>COUNCIL</th>
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<th>REMARKS</th>
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<td>Improve obstetric care</td>
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<td>Improve obstetric care</td>
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</table>

1) Proportion of clients attending for purposes of:
   a. ANC
   b. Deliveries
   c. Post delivery complication
   d. Postnatal Care

2) a) Proportion of women of child bearing age using family planning method
   b) Proportion of women of clients receiving family planning by method

   (i) Pills
   (ii) Injection
   (iii) IUD
   (iv) Condom
   (v) Natural
<table>
<thead>
<tr>
<th>MoH/PORALG Council Health Guide</th>
<th>Council Minimum Health Standards</th>
<th>COUNCIL</th>
<th>COUNCIL</th>
<th>COUNCIL</th>
<th>REMARKS</th>
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<tr>
<td><strong>OBJECTIVE</strong></td>
<td><strong>DATA TO BE COLLECTED/ PERFORMANCE INDICATORS</strong></td>
<td><strong>BASELINE INFORMATION (JAN YEAR…..)</strong></td>
<td><strong>EXPECTED OUTPUT (DEC YEAR…..)</strong></td>
<td><strong>ACTUAL ACHIEVEMENT .....</strong></td>
<td><strong>REMARKS</strong></td>
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<tr>
<td>Improve STD care management and HIV new transmission</td>
<td>3) (b) Proportion of under five children with body weight less than 60%</td>
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<tr>
<td>Improve TB/Leprosy care management and disease transmission</td>
<td>4) Proportion of children under one year immunized against (a) Measies (b) Polio (c) BCG (d) DPT3</td>
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<td>5) (a) Proportion of malaria cases for under 5 years (b) Proportion of death due to malaria under 5 years</td>
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<td>7) (a) Proportion of death due to malaria under 5 years.</td>
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<td>8) (a) Proportion of population infected with STDs (b) Proportion of blood donors tested HIV positive</td>
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<td>9) (a) Proportion of TB cases completed treatment (b) Proportion of Leprosy cases completed treatment.</td>
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<tr>
<td>OBJECTIVE</td>
<td>DATA TO BE COLLECTED/ PERFORMANCE INDICATORS</td>
<td>BASELINE INFORMATION (JAN YEAR….)</td>
<td>EXPECTED OUTPUT (DEC YEAR….)</td>
<td>ACTUAL ACHIEVEMENT</td>
<td>REMARKS</td>
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<tr>
<td>Strengthen diseases surveillance and case management of specific epidemic diseases</td>
<td>10) Promotion of treated cases of cholera/meningitis who died. 11) (a) Proportion of patients diagnosed with the following non communicable diseases:  i) Hypertension  ii) Trauma/injuries  iii) Mental disorders  iv) Neoplasm  v) Diabetes</td>
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<tr>
<td>Improve non-communicable disease case management</td>
<td>12) Proportion of health facilities by level with constant supply of drugs/medical supplies vaccines and Laboratory reagents. (a) Hospital (b) Health Centre (c) Dispensary</td>
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<td>Improve availability of drug/medical supplies, laboratory reagents and vaccines</td>
<td>13) Respect/Adherence to ceilings stipulated in the DHP guidelines (a) Hospital (b) Health Centre (c) Dispensary</td>
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<tr>
<td>OBJECTIVE</td>
<td>DATA TO BE COLLECTED/ PERFORMANCE INDICATORS</td>
<td>BASELINE INFORMATION (JAN YEAR…)</td>
<td>EXPECTED OUTPUT (DEC YEAR…)</td>
<td>ACTUAL ACHIEVEMENT …..</td>
<td>REMARKS</td>
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</tbody>
</table>
| Improve human resource for health in terms of number, professional max at all levels | 14) Proportion of trained personnel per level actually available compared to the national minimum standards  
   a) hospital  
   b) Health Centre  
   c) Dispensary  
15) Proportion of health personnel who have undertake short-term training  
16) Proportion of facilities supervised by CHMT  
   a) hospital  
   b) Health Centre  
   c) Dispensary  
17) (a) Proportion of households with acceptable toilets, refuse bins or pit and access to safe water  
   (b) Proportion of HF with JEV materials  
18) Proportion of facilities in good state of repair  
   a) hospital  
   b) Health Centre  
   c) Dispensary |                                                                                                              |                                |                            |                       |         |
<table>
<thead>
<tr>
<th><strong>MoH/PORALG Council Health Guide</strong></th>
<th><strong>Council Minimum Health Standards</strong></th>
<th><strong>COUNCIL</strong></th>
<th><strong>COUNCIL</strong></th>
<th><strong>COUNCIL</strong></th>
<th><strong>REMARKS</strong></th>
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<tr>
<td><strong>OBJECTIVE</strong></td>
<td><strong>DATA TO BE COLLECTED/ PERFORMANCE INDICATORS</strong></td>
<td><strong>BASELINE INFORMATION (JAN YEAR….)</strong></td>
<td><strong>EXPECTED OUTPUT (DEC YEAR….)</strong></td>
<td><strong>ACTUAL ACHIEVEMENT .....</strong></td>
<td><strong>REMARKS</strong></td>
</tr>
</tbody>
</table>
| Improve Health facilities utilization rate at all levels | 19) Proportion of facility with bed occupancy rate of 60% and above  
  a) hospital  
  b) Health Centre  
  c) Dispensary | | | | |
DETERMINING THE ESSENTIAL HEALTH PACKAGE USING DISABILITY ADJUSTED LIFE YEARS (DALYs)

DALYs is an abbreviation of Disability Adjusted Life Years. DALYs is a methodology used to measure the Burden of Disease (BOD) in terms of lifetime lost due to death and disability. DALYs measures the burden of all mortality (deaths) and morbidity (disease or illness or disability). The DALYs is a summary measure of population health that combine information on mortality and morbidity, to represent population health in a single number.

DALYs is calculated as the sum of YEARS of life Lost due to premature mortality (YLL) in the population PLUS the Years Lost due to Disability (YLD) for incident cases of health condition.

\[
\text{DALY} = \text{YLL (deaths or mortality)} + \text{YLD (Illness or morbidity)}
\]

Guiding process to take into account when using DALYs:

- One DALY is not lost year of health life.
- The DALYs lost due to a single cause will be the sum of DALYs lost due to death and DALYs lost due to disability.
- To calculate total DALYs for a given condition in the population, years of life lost and years lived with disability of known severity and duration for that condition must each be estimated, and then summed up.
- DALYs take into account that healthy years of life lost today have a higher value than health life in future. It also values years of healthy life worth more in young adults compared to early life and late life.

Determining burden of the disease (BOD)

Using health facility data, supplemented by community based data e.g. from National Sentinel Surveillance System for each disease condition, information on morbidity and mortality is obtained. Based on that information, DALYs lost for each disease are worked out based on the principles that:-

- The DALYs lost due to a single disease will be the sum of that loss due to death and that lost due to disability.
- To work out DALYs lost as a result of death, you need to know the number of people who die from a particular disease for example (malaria) in your district by age group and sex. Next for each age group and sex, check (in table I) what the DALY loss for that particular disease is and multiply by the total number of deaths in that particular age group to get DALYs lost from that death by that age group. You do similar calculations for other age for the same disease and add the sum of all these to get total DALYs lost as a result of death from that disease.
The next step is to work out DALYs lost from the same disease condition as a result of disability. To get that information you need to know the following information: degree of disability as a result of that condition, duration of disability, age when disability started and sex of effected person. Get DALY loss value for that age group and sex, multiply by degree of severity (see table 2) multiply by the number of morbidity cases for that affected age group, multiply by duration of disability. Similarly calculate morbidity for different age groups for the same disease and the sum will be total DALYs lost for the disease as a result of morbidity from that disease.

DALYs lost from that particular disease is a sum of DALYs loss for that disease condition as a result of death plus DALYs lost as a result of disability.

Table I: Shows life expectancy and death (DALYs lost for each age group)

<table>
<thead>
<tr>
<th>Age</th>
<th>Life Expectancy Female</th>
<th>Life Expectancy Males</th>
<th>Deaths DALYs Females</th>
<th>Death DALYs Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>82.50</td>
<td>80.00</td>
<td>32.45</td>
<td>32.34</td>
</tr>
<tr>
<td>1</td>
<td>81.84</td>
<td>79.36</td>
<td>33.37</td>
<td>33.26</td>
</tr>
<tr>
<td>5</td>
<td>77.95</td>
<td>75.38</td>
<td>36.86</td>
<td>36.71</td>
</tr>
<tr>
<td>10</td>
<td>72.99</td>
<td>70.40</td>
<td>36.32</td>
<td>36.06</td>
</tr>
<tr>
<td>15</td>
<td>68.02</td>
<td>65.41</td>
<td>34.32</td>
<td>34.31</td>
</tr>
<tr>
<td>20</td>
<td>63.08</td>
<td>62.44</td>
<td>32.12</td>
<td>32.02</td>
</tr>
<tr>
<td>25</td>
<td>58.17</td>
<td>55.47</td>
<td>30.12</td>
<td>31.87</td>
</tr>
<tr>
<td>30</td>
<td>53.27</td>
<td>50.51</td>
<td>29.31</td>
<td>29.02</td>
</tr>
<tr>
<td>35</td>
<td>48.38</td>
<td>46.66</td>
<td>26.31</td>
<td>25.97</td>
</tr>
<tr>
<td>40</td>
<td>43.53</td>
<td>40.54</td>
<td>23.26</td>
<td>22.85</td>
</tr>
<tr>
<td>45</td>
<td>38.72</td>
<td>35.77</td>
<td>20.24</td>
<td>19.76</td>
</tr>
<tr>
<td>50</td>
<td>33.99</td>
<td>30.99</td>
<td>17.33</td>
<td>16.77</td>
</tr>
<tr>
<td>55</td>
<td>29.37</td>
<td>26.32</td>
<td>14.57</td>
<td>13.92</td>
</tr>
<tr>
<td>60</td>
<td>24.83</td>
<td>21.81</td>
<td>11.97</td>
<td>11.24</td>
</tr>
<tr>
<td>65</td>
<td>20.44</td>
<td>17.60</td>
<td>9.55</td>
<td>8.76</td>
</tr>
<tr>
<td>70</td>
<td>16.20</td>
<td>13.58</td>
<td>7.33</td>
<td>6.55</td>
</tr>
<tr>
<td>75</td>
<td>12.28</td>
<td>10.17</td>
<td>5.35</td>
<td>4.68</td>
</tr>
<tr>
<td>80</td>
<td>8.90</td>
<td>7.45</td>
<td>3.68</td>
<td>3.20</td>
</tr>
</tbody>
</table>

Life expectancy is calculated for the age at the beginning of the interval.
Table 2: Gauging the Severity of disability classes and weights and set by GBD* protocol for 22 indicator conditions (Reproduced from Global burden of disease Summary by Murray J. L and A. Lopez)

<table>
<thead>
<tr>
<th>Disability Class</th>
<th>Severity Weights</th>
<th>Indicator Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.00 - 0.02</td>
<td>Vitiligo on face. Weight for height less than two standard deviations</td>
</tr>
<tr>
<td>2</td>
<td>0.02 - 0.12</td>
<td>Watery diarrhoea, severe sore throat, severe anaemia</td>
</tr>
<tr>
<td>3</td>
<td>0.12 - 0.24</td>
<td>Radius fracture in a stiff cast, infertility, erectile dysfunction, rheumatoid arthritis angina</td>
</tr>
<tr>
<td>4</td>
<td>0.24 - 36</td>
<td>Below knee amputation, deafness</td>
</tr>
<tr>
<td>5</td>
<td>0.36 - 0.50</td>
<td>Recto vaginal fistula, mild mental retardation, Down syndrome</td>
</tr>
<tr>
<td>6</td>
<td>0.50 - 0.70</td>
<td>Unipolar major depression. Blindness, Down syndrome</td>
</tr>
<tr>
<td>7</td>
<td>0.70 - 1.00</td>
<td>Active psychosis, dementia, severe migraine quadriplegia</td>
</tr>
</tbody>
</table>

*Note: The Global Burden of Disease project (GBD) was a world wide collaboration of over 100 researchers, sponsored by WHO and the World Bank and based at the Harvard School of Pubic Health - revolutionized health priority - setting when it first published its findings in 1993. The widely publicized GBD presented a bold, new analysis, providing the first plausible description of the World's health.

While it examines minutely causes of death, the GBD is most striking in its inclusion of disability. The authors here explore the technical bases and moral implications of incorporating disability in health assessments, explicating the widely publicized indicator that they have developed, the disability - adjusted life year (DALY).

Using Burden of Disease data in comprehensive Council Health Planning

CHMTs may use BOD data in setting priority health problems, selecting interventions based on the magnitude and importance, selecting interventions on the basis of their cost-effectiveness in terms of averting the largest portion of BOD and Evaluation of the impact of the health interventions in terms of the outcome measure that relate to BOD prevented or treated.
Using DALYs to determining cost effective interventions

(i) Determine average cost of treating a particular disease condition (average cost/per person/year). This includes such costs as personnel, pharmaceutical supplies, per diem, equipment, operational costs and maintenance, promotion costs, water and electricity.

(ii) Determine Demand cost which is average cost x total number of people receiving care using that same intervention.

(iii) Determine efficacy of intervention (extent to which the intervention works under ideal conditions)

(iv) Determine quality of intervention being applied (take into consideration factors like patient compliance, diagnostic accuracy, and health provider compliance).

(v) Determine effectiveness of intervention (efficacy x quality)

(vi) Determine potential DALYs saved by intervention. (Effectiveness of intervention x Total DALYs lost as a result of that disease problem)

(vii) Determine cost per disability adjusted life years saved = \( \frac{\text{cost per year}}{\text{Potential DALYs saved}} \)

(viii) The cost of intervention (cost per year to population of district or country) depends on individual countries i.e. whether the package will be determined by using national figures or districts will come up with own packages using district data.

For example:

To compare cost effectiveness of treating a case of TB, two alternative interventions could be assessed to find out the more effective intervention of the two as shown in table 3.
Table 3: Showing example concerning determination of cost effective intervention

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Intervention A</th>
<th>Intervention B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment regimen</td>
<td>(A) month admitted + 4 months treated as outpatient</td>
<td>(B) 3 weeks admitted +5.25 months as outpatient</td>
</tr>
<tr>
<td>Average cost to treat one case</td>
<td>US $ 381.575</td>
<td>US $ 287.825</td>
</tr>
<tr>
<td>Demand/year (number in need of treatment in a year)</td>
<td>25,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Cost of treatment per year for 25,000 people</td>
<td>$ 9,539,375</td>
<td>$ 7,195,625</td>
</tr>
<tr>
<td>Efficacy of intervention (inherent)</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Quality (defined by system)</td>
<td>60%</td>
<td>52%</td>
</tr>
<tr>
<td>Effectiveness of intervention (efficacy x quality)</td>
<td>48%</td>
<td>42%</td>
</tr>
<tr>
<td>Potential DALYs save (effectiveness x DALYs lost)</td>
<td>50,511</td>
<td>43,777</td>
</tr>
<tr>
<td>Cost per Disability Adjusted life year saved (cost per year/potential DALYs saved)</td>
<td>US $ 188,856</td>
<td>US $ 164,372</td>
</tr>
</tbody>
</table>

As can be seen from this example, intervention (B) is more cost effective than intervention (A).