

SEA-TB-232
Distribution: General

Guidelines for Formulating a National TB Strategic Plan

WHO Project: ICP CPC 002



World Health Organization
Regional Office for South-East Asia
New Delhi
May 2001

© World Health Organization 2001

This document is not a formal publication of the World Health Organization (WHO), and all rights are reserved by the Organization. The document may, however, be freely reviewed, abstracted, reproduced or translated, in part or in whole, but not for sale or for use in conjunction with commercial purposes.

The views expressed in documents by named authors are solely the responsibility of those authors.

CONTENTS

	<i>Page</i>
1. INTRODUCTION	1
1.1 How is a Strategic Plan Formulated?	2
1.2 Strategic Planning: Objectives.....	2
2. PREPARATIONS.....	2
2.1 Involvement of the Ministry of Health	2
2.2 Preparatory Visit	3
2.3 National Task Force	3
2.4 Planning Team.....	4
2.5 Planning Coordinators	5
2.6 Budgeting for Planning Activities	6
2.7 Setting dates for the Planning Exercise	7
3. ACTIVITIES DURING THE PLANNING PROCESS.....	7
3.1 Initial Briefing of Team Members	7
3.2 Meetings and Field Visits.....	8
3.3 Writing the Plan.....	10
4. PREPARING THE BUDGET COMPONENT OF THE PLAN	11
4.1 Key Issues for Developing TB Budgets.....	12
4.2 The Budgeting Process.....	15
4.3 Budgeting for Individual DOTS Components	21
4.4 Drug Distribution.....	25
5. NATIONAL CONSENSUS WORKSHOP	42
6. FINALIZING AND OBTAINING OFFICIAL APPROVAL OF THE PLAN	43
7. FOLLOW-UP ACTIVITIES	43
7.1 Disseminating the Plan.....	43
7.2 Mobilizing Resources	44

Annexes

1. Check-List for Preliminary Preparations	46
2. Background Materials.....	50
3. Sample Strategic Framework	53
4. Sample Workplan - For: 2001	56
5. Sample Plan Contents	57
6. Potential Sites for Meetings and Visits.....	59

1. INTRODUCTION

Tuberculosis is a major public health problem worldwide, especially in developing countries. About one third of the world's population is infected by the causative organism, *Mycobacterium tuberculosis*. In 2000, there were over 8 million new cases of TB with nearly 2 million deaths; 95% of these cases and 98% of these deaths occurred in the developing world. The emergence of HIV and of strains of drug-resistant TB in regions in the world with a high prevalence of TB are added concerns underlining the need to rapidly respond to this epidemic.

WHO declared tuberculosis a "global emergency" in 1993. Since then, substantial progress has been made with the worldwide implementation of the WHO-recommended "DOTS" strategy for TB control.

The components of DOTS strategy are:

- (1) Government commitment to a National Tuberculosis Programme;
- (2) Priority to detect infectious cases by sputum smear microscopy;
- (3) Standardized short-course chemotherapy, given under direct observation for, at least, the intensive phase of treatment;
- (4) Regular, uninterrupted supply of anti-tuberculosis medicines, and
- (5) Monitoring system for programme supervision and evaluation.

By the year 2000, 127 of WHO's Member Countries had officially adopted the strategy for the national tuberculosis control programmes. However, while the number of countries implementing DOTS has increased dramatically, progress with DOTS expansion within countries has been slow. A major reason for the limited success in some countries is the lack of a detailed implementation plan, which would describe country-specific strategies and specific activities in combination with financial resource requirements.

Successful DOTS implementation is likely to remain limited without a comprehensive framework for providing human resources, training, supervision and logistics for drugs and laboratory supplies. The preparation of a strategic plan for DOTS implementation is a key requirement for all countries attempting countrywide implementation of the DOTS strategy.

1.1 How is a Strategic Plan Formulated?

The planning process would involve the following steps:

- (1) An analysis of the current TB situation;
- (2) A review of the national response;
- (3) Setting targets based on agreed policies and priorities for a specified period;
- (4) Selecting strategies, interventions and activities towards achieving these targets;
- (5) Setting time frames and allocating responsibilities for the various components;
- (6) Estimating the budget requirements for the planned activities, and
- (7) Identifying ways of monitoring and evaluating progress.

1.2 Strategic Planning: Objectives

The objectives of formulating a strategic plan are as follows:

- (1) To provide a time-bound framework for action based on national priorities;
- (2) To ensure that resources are utilized in the most efficient way;
- (3) To facilitate the coordination of inputs from various sectors including NGOs and donors, and
- (4) To enable a continuous evaluation of TB control activities in the country and overall progress made within a stipulated period.

2. PREPARATIONS

2.1 Involvement of the Ministry of Health

Preparations would begin with a meeting between the senior staff of the NTP, its major collaborators and concerned officials from the Ministry of Health to

agree on the need for a planning exercise. This preliminary meeting will ensure ownership and commitment from the Ministry of Health for the plan and for its implementation later. Once it agrees to conduct the planning exercise, the responsibilities of the MOH would include:

- (1) Selection of the national task force and planning team members;
- (2) Requests for support by international agencies;
- (3) Approval of international planning team members;
- (4) Endorsement of the final plan, and
- (5) Mobilization of resources to implement the plan.

2.2 Preparatory Visit

A preparatory visit by an international consultant may be necessary. The consultant should visit the country at least 2-3 months prior to the actual plan formulation to assist the NTP manager with preparations. This visit would provide an opportunity to hold a preliminary meeting with NTP staff and senior officials from the Ministries of Health, Finance and Planning in order to discuss the purpose and scope of the planning exercise and the required background material. This visit would help clearly define the objectives of the plan and reach an agreement on the process, time-frame, stakeholders to be involved and areas of special interest that should be addressed. A checklist that could be used during the preparatory visit is given in Annex 1.

In countries where most of the information required for planning is readily available a preparatory visit may not be required prior to the arrival of the actual planning team. Some countries may opt to undertake preliminary preparations with support from WHO country or regional offices or through international communication channels.

2.3 National Task Force

A task force should be constituted to guide and facilitate the whole planning process including preparations, logistics and budgeting for the planning exercise. Besides NTP staff, the task force should include high-level decision-makers from the ministries of health and finance, experts in programme management, and the major donor agencies. If a large proportion of TB patients receive care from non-governmental facilities (private sector, NGOs

and industrial health facilities), representatives from these sectors should be included in the task force.

This task force will:

- (1) Review the objectives for the proposed plan;
- (2) Define specific terms of reference for the planning team;
- (3) Appoint the planning team and planning co-ordinators;
- (4) Set tentative dates for the planning exercise;
- (5) Obtain official endorsement of the final plan;
- (6) Assist in mobilizing resources to implement the plan, and
- (7) The task force may opt to prepare a draft plan in collaboration with the NTP for review by members of the planning team.

2.4 Planning Team

The planning team will be responsible for carrying out the various activities related to the actual writing of the plan. The team should consist of national and international members. A reasonable number would be five to six national members and two to three international members. It is important to ensure that all members of the planning team are available full time and for the full duration of the planning exercise.

The national team should be selected on the basis of their responsibilities and experience within the NTP and their knowledge of the local situation and background. As the planning team will divide into sub-teams, national members should be able to act as interpreters if necessary. They should be drawn from among the following:

- (1) The manager and other senior staff of the NTP;
- (2) Senior staff of health services;
- (3) Epidemiologists;
- (4) Laboratory specialists;
- (5) Specialists in programme management including programme planning, MIS and evaluation, and
- (6) Representatives of the private sector, NGOs, medical schools and other major sectors involved in national TB control efforts.

International team members should be selected on the basis of their specific expertise related to TB epidemiology, TB control, laboratory services or programme management. They should have good writing skills and should be computer literate. They should be drawn from amongst: Epidemiologists; chest physicians; TB programme managers; ; laboratory specialists; specialists in health policy, planning and evaluation; representatives from donor agencies; representative from international NGOs, and health economists.

The planning team will:

- (1) Assess the current TB situation and progress made with control activities;
- (2) Identify constraints based on the information available;
- (3) Review existing policy in consultation with the NTP/MoH;
- (4) Specify activities to be undertaken to achieve set objectives;
- (5) Decide on the plan timeframe and assign specific responsibilities;
- (6) Define indicators and milestones for measuring progress towards set objectives;
- (7) Determine the resource requirements for various components of the plan and identify existing and potential resources, and
- (8) Write and present the draft plan at the national consensus workshop.

2.5 Planning Coordinators

Two coordinators should be appointed. One will be an NTP representative, the other an international adviser.

The main role of the national coordinator is to oversee the local organization of planning process, including preparation of background materials. His/her tasks will include:

- (1) Preparing the background information required for the plan;
- (2) Inviting national team members;
- (3) Arranging salary/per diem for national team members and support staff;

- (4) Arranging internal transport (air/bus/rail tickets and vehicles);
- (5) Making hotel reservations;
- (6) Arranging meeting rooms for briefing, debriefing, plan preparation, national consensus workshops and local secretariat;
- (7) Arranging secretarial and administrative support;
- (8) Arranging equipment and supplies ((computers, printers, photocopiers, paper, pens, diskettes)
- (9) Communications (telephone, fax, e-mail);
- (10) Arranging appointments with stakeholders;
- (11) Selecting sites for field visits if deemed necessary, and
- (12) Identifying local budgetary sources to meet the costs for the planning exercise.

The main role of the international adviser is to provide technical assistance for the planning process. His/her tasks will include liaising with the national authorities, WHO and collaborating institutions throughout the plan formulation; assisting in collating and preparing background materials for plan formulation; assisting in planning and in facilitating the national consensus workshop; inviting international team members and obtaining government clearance; identifying external budgetary sources to meet the costs for the planning exercise, and arranging salary/per diem, travel and visas for international team members.

(See Annex 2 for the minimum background information required for planning; for more details, please refer to *Guidelines for Conducting a Review of a National Tuberculosis Programme*, World Health Organization, 1998, WHO/TB/98.240.)

2.6 Budgeting for Planning Activities

The coordinators should prepare a detailed budget for the planning exercise. Expenses for the various components should be outlined. Collaboration with the WR should be sought to ensure that the budget developed would be in consonance with the normal procedures and rates used by the Organization in the country and government approval obtained. Funding must then be secured well in advance.

Budget items:

- (1) Salaries/per diem for international team members;
- (2) Travel to and within the country for planning team members;
- (3) Salaries/per diem for national participants;
- (4) Transport costs during the planning exercise and for the national consensus meeting;
- (5) Hotel costs;
- (6) Secretarial costs;
- (7) Rent for meeting rooms, if required;
- (8) Communication costs (fax, telephone);
- (9) Photocopying and printing costs;
- (10) Equipment and supplies including stationery;
- (11) Refreshments for briefing/debriefing, and
- (12) Dissemination seminar/workshop.

2.7 Setting dates for the Planning Exercise

The coordinators should select dates well in advance and develop a tentative agenda; deadlines for the various components and for the final preparation of the plan should be set. The planning exercise may take two to three weeks, depending on the size of the country, the level of preparedness including the availability of adequate background information prior to the visit of the planning team. Local festivals, national holidays, and other important events such as elections must be taken into account.

3. ACTIVITIES DURING THE PLANNING PROCESS

3.1 Initial Briefing of Team Members

The planning team should be briefed on the purpose of the mission and the methodology that will be used for planning. The logistics for the planning exercise should be discussed and finalized. Based on their expertise, individual team members should be assigned responsibilities for specific

components of the plan document, to record observations and conclusions, to compile and consolidate data, and to write the plan.

The briefing session should cover:

- (1) Definition of the purpose and objectives of the mission;
- (2) Explanation of the TB situation, response, progress and constraints;
- (3) Review of all relevant background information, reports and documents;
- (4) Clarification of policy issues;
- (5) Discussion of the schedule and logistic arrangements for various meetings and field visits;
- (6) Discussion of the technical content and format of the plan;
- (7) Assignment of specific roles and responsibilities in plan formulation to team members, and
- (8) Preparations for the national consensus workshop.

3.2 Meetings and Field Visits

A multisectoral response is essential for the success of TB control efforts and the national plan should be based on a broad consensus among the major stakeholders. Hence, meetings with existing and potential partners and stakeholders involved in TB control in the country are crucial.

These meetings will provide an opportunity to:

- (1) Assess the current involvement of sectors other than health, including the NGOs, the private sector and any other major providers of health care in the TB programme
- (2) Advocate for increased commitment for effective TB control through DOTS and sensitize and promote the active participation of various stakeholders as appropriate, in the efforts of the NTP, and
- (3) Develop a consensus on future plan priorities emerging out of a review of past progress, challenges and opportunities for TB control in the country.

The planning team may also be required to visit field sites. The purpose of these field visits is not to gather quantitative data, which should be available from the NTP, but to make an assessment of the organization and delivery of TB services. The field visits also provide an opportunity to learn, first hand, the experiences and opinions of field level workers and TB patients; this information could be valuable for the formulation of the plan.

The planning team should be divided into sub-teams. One of the sub-teams will be responsible for the central level and will meet senior officials of the Ministry of Health and other ministries, while the rest will visit other stakeholders, such as the private sector, NGOs, and medical schools.

While teams will be assigned roles and responsibilities for specific components of the plan, each sub-team should make observations on all or most of the following components during the field visits:

- (1) Advocacy and consensus within the health care system and among the various sectors;
- (2) Casefinding and laboratory services including a system for quality assurance;
- (3) Treatment services, access and adherence to DOT, treatment outcomes;
- (4) Logistics for supplies and equipment;
- (5) Monitoring and evaluation including supervision, recording and reporting;
- (6) Resources- availability of sustained funding; level of staffing, plans for capacity building;
- (7) Health education;
- (8) Coordination with general health services and other disease control programmes such as EPI, NAP, Leprosy Control;
- (9) Partnerships with other treatment providers such as medical teaching institutes, private sector, health facilities of other public sector undertakings and NGOs, and
- (10) Research capacity, review of ongoing research.

(See Annex 6 for the potential sites for meetings and field visits.)

3.3 Writing the Plan

Process

Each team member should be assigned the responsibility to write certain section(s) of the national TB control plan. S/he should be provided with relevant information for that section by other team members. The planning coordinators should, in consultation with the planning team leaders, put together various components of the plan and check for accuracy, consistency and uniformity.

Tasks of planning coordinators:

- (1) Consolidating the different sections of the plan;
- (2) Checking for consistency of language: names, terms and abbreviations;
- (3) Checking for consistency of findings: observations and conclusions;
- (4) Checking for accuracy of data and names;
- (5) Ensuring that all relevant issues are addressed in the plan, and
- (6) Preparing an executive summary.

The writing of the first draft of the plan should normally take two to three days. The first draft should be distributed to all members and the team should meet to discuss the first draft and to make any corrections, amendments, additions or deletions. The final draft will be presented at the national consensus conference (see below).

Based on a thorough analysis of the TB epidemic and the existing health care system, the plan will describe the steps required to achieve full DOTS coverage within a given time frame, both in terms of general strategies and as specific year-by-year activities. An executive summary should precede the actual plan in the final document. The executive summary is often the only thing most people read. It should include, in summary form, all important components of the plan including epidemiological situation of TB, programme achievements, constraints, proposed strategies and activities, and budgetary requirements.

(See Annex 3 for definitions and important terms used and some examples as they would apply to National TB programmes. Annexes 4 and 5 provide a proposed outline for the complete document.)

4. PREPARING THE BUDGET COMPONENT OF THE PLAN

A well-prepared budget is a crucial component of the planning document. The budget needs to include all resources that will be required for successful DOTS implementation. It will serve as a basis to describe funding gaps in negotiations with government finance offices or donor agencies. The budget must be comprehensive, realistic and easily comprehensible for funding agencies. The financial analysis of programme requirements often presents a difficult task for programme managers.

This section will outline the steps in preparing budgets that are adequate both for successful programme implementation and negotiations with potential donors in countries with insufficient available funding. The guidelines comprise the following major components:

- (1) **Key issues to consider when developing budgets**, in which programme vs. non-programme specific costs, initial investments (capital costs) and running (operating, recurrent) costs, and methods of programme expansion are discussed;
- (2) **Definition of the general health service and TB programme structures, and the “Basic Unit”**, in which the administrative levels at which budgets need to be developed are defined and the concept of the “Basic Unit” in budget development is introduced;
- (3) **Budgeting for staff**, which shows how to develop a budget for the staff required within (a) the TB programme and (b) in general health services;
- (4) **Budgeting for the major components of DOTS**, which shows how to budget for drugs, diagnostics, training, supervision, recording and reporting, patient supervision, health education and advocacy;
- (5) **Budgeting for programme expansion**, which shows how to budget for (a) expansion of geographical coverage and (b) expansion of the proportion of cases detected and treated in any given geographical area (i.e. expansion related to increased case detection rates in a given area), and
- (6) **Preparation of the total required budget and definition of the “budget” gap** (or “resource gap”), which shows how to prepare the final budget summary, funding sources, and the remaining gaps (if any).

4.1 Key Issues for Developing TB Budgets

What types of costs?

Budgets reflect the projected annual expenditures for the programme and thus the funding requirements. The financial calculations used for the determination of budgets are somewhat different from those required to assess the “economic costs” of a programme. Economic cost figures are used for economic evaluations such as cost-effectiveness analyses, which are important in health policy development. However, economic cost figures include items (e.g. joint/shared costs¹) that are not regularly included in budget calculations, and involve analytical calculations that are usually not relevant to budget development. Therefore, economic costs are not considered in this guideline. Where TB control requires investment in capital items and purchase of resources/inputs such as staff, equipment that may also be used by other health programmes, the budget guidelines involve (a) including the full cost of these items in the TB control budget and (b) recording the full cost in the year in which the expenditure needs to be made.

Programme-specific and non-specific costs

The successful implementation of a new control strategy will sometimes require expenditures that are not commonly listed in TB programme budgets. To detect these additional expenditures, it will be useful to make lists of all resources that are required to perform specific activities successfully. While going through the various budget items and making these resource lists, programme managers should try to present a comprehensive picture of the actual situation of the health care system in a country. Existing deficiencies should be adequately described to avoid developing unrealistic budgets that cannot be translated into actual programme performance. For example, budgeting enough money to purchase drugs for all patients in the country will be of little use if there is no adequate distribution system in place to ensure that drugs will actually be available everywhere, or if there are insufficient staff to dispense the drugs or provide DOT. In this case, it will be necessary to describe the resources required to build up a functioning drug distribution

¹ Examples of joint/shared costs are health clinic buildings and staff used for the provision of many different types of health service.

system, or to ensure that there are sufficient staff to deliver treatment. If such a system draws on existing resources in the health infrastructure, it is inappropriate to budget the complete costs of it independently as a component of the TB budget. Often, making these required resources available will depend rather on the skilful use of political influence than on adequate budgeting. Still, listing them in the planning stage will help to avoid or at least explain shortcomings during programme implementation. Where relevant, the guidelines explicitly ask users to identify whether or not any extra investment in non-programme specific inputs (e.g. staff) is required for successful TB control, and to budget accordingly.

Initial investments and running costs

During the initial stages of programme implementation, some investments for capital items may be required. A typical example for tuberculosis control is microscopes for diagnostic centres. Specific conditions may also require the purchase of vehicles, say, for supervision activities. Such investments will have to be repeated only after a relatively long interval (i.e., after the respective items have outlived their usefulness life). It is advisable to list such items separately in the budget, though this is not done in the guidelines at the moment, as they may require funding from different sources than the “running costs” of a programme, which occur on an annual basis.

Methods of programme expansion

WHO has set the targets of 85% cure rate in smear-positive cases and 70% case detection as necessary for the effective control of tuberculosis. Most high-burden countries will be committed to achieving these levels of control. For budgeting purposes, the requirement to detect 70% of all cases is of special interest, since this target can be reached in several ways. At the beginning of DOTS implementation, the new programme is usually implemented in a limited number of areas. Typically, case detection levels do not reach the 70% target level shortly after the new programme has been started. In this situation, programme managers will have to decide whether they want to focus on increasing detection levels in existing DOTS areas, or expand to new areas even if target case detection levels have not been reached. For the purpose of this guideline, we will assume that the latter approach will be taken. This means that programme expansion will primarily

focus on achieving geographical coverage of all areas in the country, and secondarily on increasing case detection levels in existing DOTS areas.

Clear criteria should be defined for a satisfactory performance in existing DOTS sites, which would allow further expansion. Immediately useful for this purpose would be satisfactory smear-conversion or cure rates. If these criteria, are used any expansion plan has to be viewed as preliminary, as it cannot be foreseen whether poor programme performance will delay expansion. Nevertheless, national agencies or donors will often require a provisional expansion plan. An expansion period should be defined during which it can reasonably be expected to cover the whole country (e.g., 5 – 10 years) and the expected number of basic units covered should be listed in the table below (See section 0 for a description on how to define “basic units” for TB control).

Year	Newly implemented BUs	Total existing Bus

After complete geographical coverage has been achieved, the focus will shift on increasing case detection levels. In general, there can be no standard recommendations or budgeting procedures that would accommodate the specific situation in a multitude of countries. Case detection will be increased through increased public awareness of the new TB control programme, publicizing of successes, intensification of collaboration with various partners such as the private sector or specific case finding activities. We will restrict the recommendations in this guidelines to listing a variety of options, which will have to be modified according to the situation in individual countries.

Use of the budgeting tables for programme expansion

Annual budget requirements will differ according to the geographical coverage achieved and the case detection levels in existing DOTS areas. For

each of the budget components listed below, a table listing annual budget requirements will be prepared. As the programme expands and the number of implementation sites increases, budget requirements need to be recalculated. This means that for the preparation of a DOTS expansion plan covering several years, the budgeting procedure described below needs to be repeated for each year of programme implementation. Specific instructions are given in the tables below.

4.2 The Budgeting Process

Definition of programme structure and staff requirements

General health service structure

Successful DOTS implementation and budgeting requires a transparent organization of the programme and clear task assignments for staff at all levels. Below is an outline of a potential organization of health services in a country at various administrative levels. Please compare this structure with that existing in your country:

Administrative level	Health services
Village	Health volunteer, midwife
sub-district	Health post, health center
District	District hospital, district health office
Province	Provincial hospital, provincial health office
Region	Regional hospital, regional health office
State	State hospital, state health office
Central	Central referral hospitals, Ministry, national programme offices

Now describe the structure of health services in your country, following the specific names in use in your country. You may add or delete rows as necessary.

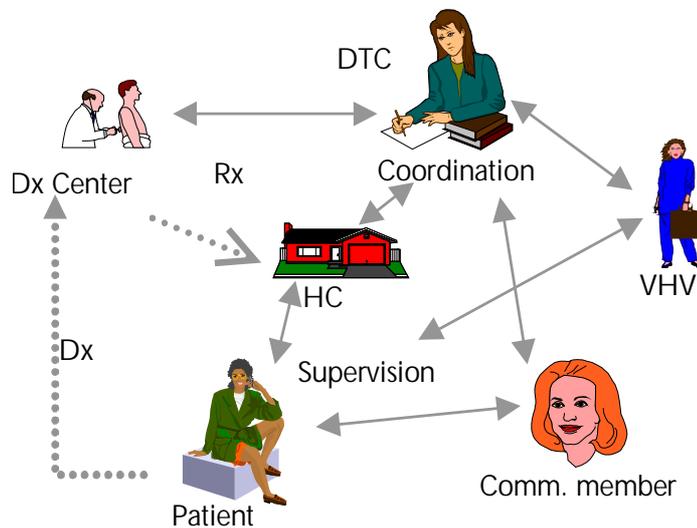
Administrative level	Health services

TB programme structure

We will now identify which components of the general health services will become part of the tuberculosis control programme. Again, we will first describe a potential arrangement in a hypothetical country and then let you determine the structure most appropriate for your own setting.

“Basic unit”

We define a “basic unit” for TB control as a geographic area with one facility for patient registration, and usually one diagnostic and several treatment centers. In many countries, a “basic unit” corresponds to the district level, but some countries may require alternative organizations. WHO recommends that the population covered by such a basic unit should be around 50000. A potential structure would be the following:



In this example, microscopy facilities would be available at the district hospital, where the patients would have to go for diagnosis. They would also be registered in a district TB register at the district hospital. For treatment, patients would be referred to a health center close to the patient's home. The patient could choose between three supervision options (HC staff, village health volunteer, community member) in discussion with the HC staff. A district TB coordinator (DTC) would be based at the district health office to monitor correct registration at the hospital, prepare regular reports, ensure communication between hospital and health centers, and ensure sufficient drug supply.

The table summarizes participating facilities, staff and their roles:

Facility	Staff	Role
District hospital	Doctor	Diagnose and prescribe treatment
"	Clinic staff	Register patient, fill out patient treatment card, inform DTC
"	Laboratory technician	Perform sputum smear exam
District Health Office	District TB Coordinator (DTC)	Inform HC, monitor district TB register, prepare reports, supply drugs to HC
Health center	HC staff	Patient education, drug administration, supervision of VHVs and community members, patient referral for follow-up visits
Health post	Village Health Volunteer	Drug administration under supervision, monitoring of side-effects, record-keeping
Village	Community members	Drug administration under supervision, monitoring of side-effects, record-keeping

The organization of a "basic unit" in the country programme. The following questions should be determined:

- (1) Where will the microscopy center be located?
- (2) Where will the TB register be?
- (3) Who will register the patient?
- (4) Where will the drugs be located?

- (5) Who will supervise treatment and where will treatment be supervised?
- (6) Who will prepare reports?

The structure in the country concerned may be simpler or more complex than the one described above. A sketch of the same may be drawn below:



The facilities involved, as well as the staff and their role should be listed:

Facility	Staff	Role

Staff costs at the “Basic Unit” level

Whether the budget needs to include staff salaries will depend on whether the staff described in the basic unit structure are currently available (either as “TB staff” or as existing staff that can be assigned to perform TB-specific tasks), or need to be hired. The various tasks to be performed by each staff listed in the table should be considered and asked the following questions:

Which of the staff are currently available? Would you need additional staff for any of the described functions? If yes, could existing staff be reassigned, or do you need to employ new staff? If you will need to employ staff, please list their approximate annual salary in local currency.

The situation for each staff required at the basic unit should be in the table below:

Staff	available	Not available	
		Can be assigned	Must be employed/ Contracted Annual salary:
Total staff cost per basic unit:			

Staff costs at additional programme levels

There are usually several additional programme levels between the “basic unit” and the central level. Their functions are training, supervision, data collection and evaluation, and the organization of monitoring meetings. The programme levels often follow the existing structure in the national health system, such as “provincial”, “regional” or “state” levels. To decide how many staff are needed at these levels, it is useful to consider the supervision requirements at the “basic units”. Every basic unit should receive a full-day supervision once per reporting period (e.g., every three or four months). The

number of required staff will also depend on whether staff are allocated full-time for tuberculosis control can be used, or staff with part-time responsibilities for TB. Full-time staff will usually be employed if no currently existing staff can be assigned to perform TB-specific activities. The table below shows a calculation of staff requirements for a hypothetical country:

Programme level	Local name	Total number with DOTS programme	Average number per higher level unit	Staff required		Staff available		Additional staff required	
				Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Basic unit	district	800	800/90=9	NA	NA	NA	NA	NA	NA
Secondary	province	90	90/20=5	-	2	-	1	-	1
Tertiary	state	20	20/1=20	-	2	-	2	-	-
Other	NA	NA	NA	NA	NA	NA	NA	NA	NA
Central	Central TB office	1	NA	10	-	12	-	-	-

Now determine staff requirements for your own programme. *Note: the calculations for this table will need to be repeated for each year of DOTS expansion, as the number of DOTS units in the country will increase.*

Programme level	Local name	Total number with DOTS programme	Average number per higher level unit	Staff required		Staff available		Additional staff required	
				Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Basic unit				NA	NA	NA	NA	NA	NA
Secondary									
Tertiary									
Other									
Central			NA						

The calculations in the tables above can easily be used to determine costs for any additional staff required for DOTS expansion. Again, the

calculations in the table below need to be repeated for each year of programme budgeting.

Programme level	Additional staff required		Cost calculation (for one unit at each level)				Total (for one unit at each level):	No. of units covered in budget year	Total for all units
	Full-time	Part-time	Full-time		Part-time				
			Can be assigned	Must be employed, Annual salary:	Can be assigned	Must be employed, Annual salary:			
Basic unit									
Secondary									
Tertiary									
Other									
Central									
Total:					Total:				

4.3 Budgeting for Individual DOTS Components

Drugs

General budget calculation procedures

Since these guidelines focus specifically on the requirements for implementation of a new DOTS programme, we will limit ourselves to the calculation of the drug budget required for this purpose. Most countries will have a regular drug budget for their already existing TB control programmes. This budget will have to be maintained during the initial phases of DOTS implementation to cover non-DOTS areas. As the DOTS programme expands, something is missing here

The drug budget required for DOTS implementation and DOTS expansion is best calculated on the basis of the number of basic units covered in each budget year. If the initial detection level is lower than the WHO target level, an adjustment needs to be made over time to allow for increased detection due to the greater attraction of the successful programme.

If the number of smear-negative cases is currently very high due to over-diagnosis, this should be effectively limited by defining a maximum percentage for the proportion of smear-negative and extra-pulmonary cases among all cases. It is suggested that this limit be set at 100% of the number of smear-positive cases, but the limit may be different for specific programmes. An allowance needs to be made for the percentage of "seriously ill" smear-negative cases that would require treatment with Category 1 regimens. The percentage of re-treatment cases can initially be very high in countries with poor previous control programmes (upto 20% of smear-positive cases) and a sufficient allowance needs to be made for re-treatment regimens. The percentage of re-treatment regimens supplied can later be adjusted on the basis of actual case detection reports. The calculation of the number of drug regimens required would thus be as follows:

- number of sm+ cases per basic unit = population per basic unit x estimated incidence rate (sm+ cases) x current case detection level
- Number of smear- cases = number of smear+ cases x "limit factor"
- required number of Cat. 1 units = number of smear+ cases + number of smear- cases x "% seriously ill" required number of Cat. 2 units = Number of sm+ cases x "% re-treatment/failure"
- required number of Cat. 3 units = number of smear- cases x (1-"% seriously ill")
- Total drug requirement: number of units per basic unit x number of basic units to be covered during the fiscal year

Example:

- Average population per basic unit: 50,000
- Estimated incidence rate (sm+): 80/100,000
- Current case detection level: 0.5 (50%)
- "Limit factor" for smear- cases: 1 (100%)
- Proportion of "seriously ill" smear- cases: 0.5 (50%)
- Assumed proportion of retreatment/failure cases: 0.2 (20%)
- Basic units to be covered: 50
- Number of sm+ cases per basic unit = $50,000 \times 80/100,000 \times 0.5 = 20$
- Number of smear- cases = $20 \times 1 = 20$
- Cat 1 units required: $20 + (20 \times 0.5) = 30$
- Cat 2 units required: $20 \times 0.2 = 4$
- Cat 3 units required: $20 \times 0.5 = 10$

Total drug requirements:

- Cat 1 units: $30 \times 50 = 1500$
- Cat 2 units: $4 \times 50 = 200$
- Cat 3 units: $10 \times 50 = 500$

Use the following general formulae to prepare the drug budget for each year of DOTS implementation.

- Year for which estimate is being made =
- average population per basic unit: a =
- Estimated incidence rate (sm+): b =
- Current case detection level: c =
- "Limiting factor" for (sm-) cases: d =
- Assumed proportion of "seriously ill" sm- cases: e =
- Assumed proportion of retreatment/failure cases : f =

Calculation for one basic unit:

- Cat 1 units required: $(a \times b \times c) + (a \times b \times c \times d \times e) = (g)$
- Cat 2 units required: $a \times b \times c \times f = (h)$
- Cat 3 units required: $a \times b \times c \times (1-d) = (i)$

Basic units to be covered: j =

- Calculation of total drug requirements:
- Cat 1 units: $g \times j =$
- Cat 2 units: $h \times j =$
- Cat 3 units: $i \times j =$

Initial buffer stock

In the first year of programme implementation, an initial buffer stock of 30%-40% of the annual drug requirement should be set up for any newly established basic unit. During the programme expansion phase, this buffer stock needs to be supplied only for the additional basic units to be set up each year. The table below may be used to budget for this component.

Expected drug requirement per BU	Buffer stock per BU	Newly implemented BUs	Buffer stock for all BUs

Drug regimens and prices

WHO recommends a variety of SCC regimens with different prices. It will be useful to compare current drug prices in the country with internationally obtainable prices to determine whether savings could be made through alternative drug procurement mechanisms. If the potential savings are substantial, NTP managers should explore whether changes in procurement mechanisms could be made in their country. In Spring 2001, the lowest prices reported to WHO for individual regimens were:

Regimen	Price (spring 2001)
2 HRZE / 4HR	
2 SHRZE / 1 HRZE / 5 HRE	
2 HRZ / 4HR	
2 HRZ / 6HE	
2 H ₃ R ₃ Z ₃ E ₃ / 4H ₃ R ₃	
2 S ₃ H ₃ R ₃ Z ₃ E ₃ / 1 H ₃ R ₃ Z ₃ E ₃ / 5 H ₃ R ₃ E ₃	
2 H ₃ R ₃ Z ₃ / 4H ₃ R ₃	

List the currently used regimens in your country:

Category	Current regimen	Price
Cat. 1		
Cat. 2		
Cat. 3		

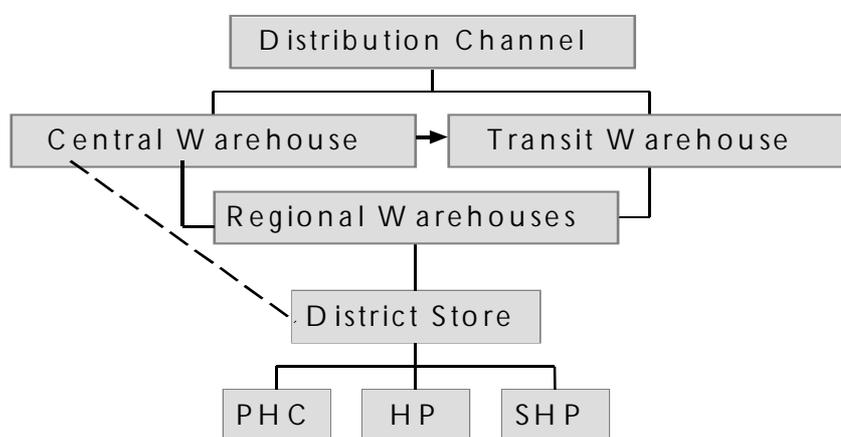
Now compare the drug budget required for your next fiscal year and other years need to be considered too, given your current prices, with those under alternative prices:

Category	Units required (including buffer stocks)	Cost for currently used regimen and current prices	Cost for currently used regimen and alternative prices	Cost for alternative regimen with lowest price
Cat. 1				
Cat. 2				
Cat. 3				
Totals:				

4.4 Drug Distribution

Effective drug distribution from the central level to all DOTS implementation sites is essential for the success of programme implementation. A well functioning system will require the provision of storage for buffer stocks at intermediate programme levels, from where drugs are usually supplied for each reporting period, based on current case-finding numbers. An assessment of the current drug distribution system in the country for effective performance should be carried out to ensure a continuous drug supply.

An example of a distribution network is provided below:



If it does not, an alternative would be to transport drugs through the supervision system (see below). If initially it is possible to guarantee that the supervision system will work adequately (i.e., regularly and covering all DOTS sites), an alternative transportation system, such as a public transport company or a courier service (regular postal services will often be unreliable) must be identified. The annual costs for this system will be calculated as follows:

- Number of basic units x number of reporting periods per year x average cost per transfer from intermediate level warehouse

plus

- Number of intermediate level warehouses x number of reporting periods per year x average cost per transfer from central level. The calculation for an additional drug distribution system (if required) may be performed below. This calculation needs to be performed for each year of programme expansion on the basis of the number of basic units covered in a year:

Diagnostics

General budget calculation procedures

Smear examination is the principal diagnostic method promoted under the DOTS strategy. Attention will therefore be focused on the preparation of adequate budgets for this procedure. Nevertheless, chest X-rays are important to rule out or confirm a diagnosis of tuberculosis in smear-negative cases. Procedures to make provisions for this diagnostic method are described at the end of this chapter.

Effective smear diagnosis requires the examination of three sputum smears for every tuberculosis suspect. The average number of suspects is ten times the number of smear-positive cases. During treatment, three follow-up examinations with two sputum samples should be performed. The required amount of diagnostic supplies per basic unit can therefore be calculated as:

- Number of expected sm⁺-cases x 10 X 3 + Number of expected sm⁺-cases x 3 X 2

The diagnostic supplies required include sputum cups, slides, staining solution (usually as powder for dilution), slide boxes, marker pens, pipettes, microscope lamps and immersion oil. These supplies frequently come in units of relatively large quantities, so that it will not be possible to exactly calculate the required amount. In this case, an "oversupply" should be calculated. The laboratory technician in the country should be consulted to determine unit sizes, prices and required quantities of diagnostic supplies for one basic unit to perform the number of smear examinations as calculated above. The cost per basic unit can be calculated as shown below:



To calculate the total budget for diagnostic supplies, the result above should be multiplied by the number of basic units to be covered each year.

Distribution system

As for drugs, an uninterrupted supply of diagnostic materials has to be ensured at all DOTS implementation sites. If the current existing distribution system does not perform effectively, distribution through the supervision system should be considered an alternative system as described under drug supply should be set up. If it is planned to set up a distribution system for drugs, the same system can be used for diagnostic supplies. A separate system will be needed only for the distribution of diagnostic materials, the

instructions under drug supply should be followed and the calculation may be written down below:

Infrastructure investments

WHO recommends the use of binocular microscopes in all diagnostic centers for tuberculosis. If these are not available in all DOTS implementation sites, the purchase of additional units will be required. If it is planned to set up diagnostic centers in places where laboratory facilities currently do not exist, the complete equipment necessary will have to be purchased to perform smear diagnosis. Prices for microscopes and other laboratory equipment will have to be obtained by local laboratory staff. The table below may be used to budget laboratory investments for future programme implementation years (use annual "basic unit" numbers from the expansion plan developed above).

Year	Number of new basic units to be implemented	Number of BUs with sufficient laboratory equipment	Number of BUs requiring new microscopes	Total cost	Number of BUs requiring new lab equipment	Total cost

Laboratory quality control

Smear microscopy for AFB in sputum is one of the pillars of the DOTS strategy. Diagnosis of the infectious cases and their follow-up during treatment are entirely based on this test. Quality assurance is thus always needed as a component of the NTP. A comprehensive QA system would comprise the following components

Training

Training of laboratory technicians / assistants:

- at the basic unit level, it should cover techniques of smearing and Ziehl Neelsen staining, AFB microscopy, safety issues and administration, besides the storage of slides for QC;
- at the secondary level, also QC technique including feedback and supervision should be covered; and
- at the tertiary level, preparation and QA of reagents besides other logistic issues should be taught.

Supervision

- Supervision by tertiary level laboratory technicians should be performed annually or as per needs, and it would be desirable that technicians from the secondary level laboratory supervise their basic units at this frequency. They will look mostly at technical and administrative issues, using a national format laboratory checklist.
- Since this supervision cannot be so frequent, TB coordinators at the secondary and basic unit levels should visit the laboratory during their supervision visits to a centre. They can use a more general checklist, paying attention mainly to administrative issues, less to technical matters. At the same time, they can take a sample for QC and/or give feed-back on earlier QC series.

Proficiency testing by sending smears with known results from central to periphery

- Although of lesser value for established centres and experienced microscopists, proficiency testing can be organized by tertiary level laboratories if they wish to do so. A limited series of four to six slides sent out once a year is adequate.

- This is an excellent tool to assess capacities at the end of a training course.
- It should also be used to test tertiary-level technicians in view of their high turn-over. The central laboratory is responsible for this part. For these two last indications, more extensive series (10 to 20 smears) should be used.

Cross-checking of smears (QC)

- This is the most efficient method to assess the level of performance of individual laboratories and to improve it at the same time. However, it is also the most demanding one. Well-established QC should be considered as a priority requirement for DOTS expansion.
- A comprehensive QC system will require the incorporation of all levels of the health care structure, with the higher level controlling the one below, e.g., district is controlled by province, province by region and region by the central level.

Quality control of reagents

- Each batch of reagents prepared should be tested before distribution. It should be identified by a batch number, and records of the test results must be kept.
- Tests should include positive as well as negative control smears. Both should be checked for presence and colour of AFB as well as background after one staining cycle. To detect the possible presence of contaminating saprophytic mycobacteria in the acid or counterstain, the negative slides should be cleaned of oil and subjected to one or more additional complete staining cycle, and re-examined for presence of AFB.
- Date of manufacturing should be shown on each bottle and peripheral laboratories should be instructed about the shelf-life of the reagents.

Proposed process for cross-checking of smears

- Workload: The average number per slides crosschecked in each basic unit (36 slides) may be used as a basis for calculating workloads, plus an additional 10 % of discordants (to be counted double, more time-consuming readings). To calculate the estimated

average annual number at the secondary level this figure should be multiplied with the average number of basic units per secondary level unit. The estimated time requirement per slide for the full process including administration, restaining and reading is 15 minutes. The total worktime requirements for staff at the secondary level should be calculated to determine whether this additional workload can be performed by existing staff, or whether new laboratory technicians will have to be employed.

QA slides per BU	BU's per secondary level lab	QA Slides per secondary level lab	QA workload (hours)	Additional staff required? (list number)

Budgeting for chest X-rays

The DOTS strategy has been designed to provide effective tuberculosis control even in low-income countries with a limited health infrastructure. Facilities for chest x-rays will not be available in all countries. The purchase of x-ray equipment specifically for TB control in countries where such equipment does not exist is not recommended, as this would interfere with the principle of the DOTS strategy to provide TB control in the most cost-effective way. Nevertheless, expenditures for x-rays should be budgeted in situations when

- X-ray equipment is generally available in the health care system, or
- There is a possibility to reimburse suspects for x-rays performed at other facilities, e.g., private hospitals/clinics

For the number of x-rays to be budgeted, the number of expected suspects (usually number of expected sm+ cases x 10) can be used as a basis for calculation. Individual country policies will either require a chest x-ray for all suspects, or the use of a "limiting factor" based on experience with more restrictive diagnostic algorithms, such that

- number of x-rays = number of suspects x "limit factor"

For each basic unit, this number will provide a basis for calculating supply requirements in the form of films, developer and fixer. In cases where the unit sizes for supplies cannot be exactly matched with requirements, "overbudgeting" will be necessary. Alternative to the direct provision of

supplies, budget provisions can be made on the basis of fees. This will be generally the case when third-party providers are employed. The table below may be used to calculate budget requirements for x-ray diagnosis for each year of the DOTS implementation plan.

Expected number of x-rays per basic unit	Cost per basic unit (cost of supplies or fees)	Number of basic units covered	Total budget for x-ray diagnosis

Training

Training requirements

If DOTS is not yet being implemented,, staff at all levels will need to be trained in the new programme strategy. After initial training, training courses should be repeated annually, both as refresher for previously trained staff and as initial training for newly assigned staff members. The specific training requirements for the programme will depend on the individual structure, as defined above. As an example of the calculation of a training budget, the typical requirements of a hypothetical country with five programme levels {sub-districts (health centers), districts, provinces, regions and central level are shown below. These terms should be modified to reflect the programme situation. Annual training requirements would include the following:

- National conference;
- Training of trainers;
- Training of basic unit staff;
- Training of health center personnel;
- Training of laboratory staff, and
- “DOTS-meetings” for staff at all level after each reporting period.

If this has not already been done, costs for developing training materials for all levels of staff should be included; if this has been done initially, you may plan to update programme manuals /modules if this is required.

Budget calculation

The budgeting of training courses is usually based on per diem for the duration of the course, plus allowances for transportation, food and facility rentals. Each country will have individual regulations for the calculation of meeting budgets. A hypothetical example is provided below, which shows how one can proceed from the budget calculation for an individual course to a total country budget by accounting for the number of basic units established and the number of courses or meetings to be offered per year.

Consensus conference			Region / Province		
	Sums			Sums	
Central level staff	5		Provincial staff per course	20	
Other attendants	25		Regional Staff per course	6	
days	1		days	5	
per diem	120	3,600	per diem	120	15,600
hotel	450	0	hotel	450	46,800
transport	3000	75,000	transport	500	13,000
food	200	6,000	food	200	26,000
coffee	100	3,000	coffee	100	13,000
trainer fee	0	0	trainer fee	600	18,000
room rent	2000	2,000	room rent	2000	10,000
	Total per course	89,600		Total per course	142,400
Courses offered	1		Courses offered	4	
	Country Total	89,600		Country Total	569,600
District			DOTS meeting		
	Sums			Sums	
Provincial staff per course	2		Provincial staff per course	2	
District staff per course	12		District staff per course	12	
days	5		days	1	
per diem	120	8,400	per diem	120	1,680
hotel	450	25,200	hotel	450	0
transport	500	7,000	transport	100	1,400
food	200	3,400	food	200	2,800
coffee	100	12,500	coffee	100	1,400
trainer fee	600	6,000	trainer fee	0	0
room rent	2000	10,000	room rent	0	0
	Total per course	72,500		Total per course	7,280
Provinces covered	76		Provinces covered	76	
courses per year	1		meetings per year	4	
	Country Total	5,510,000		Country Total	2,213,120
HC			Lab		
	Sums			Sums	
District staff per course	2		Provincial staff per course	2	
HC staff per course	10		Lab staff	8	
days	1		days	3	
per diem	120	1,440	per diem	120	3,600
hotel	450	0	hotel	450	9,000
transport	50	600	transport	500	5,000
food	100	1,200	food	200	6,000
coffee	0	0	coffee	100	3,000
trainer fee	0	0	trainer fee	600	14,400
room rent	0	0	room rent	0	0
	Total per course	3,240		Total per course	41,000
Districts covered	304		Provinces covered	76	
Courses per district	6		Courses offered	2	
	Country Total	5,909,760		Country Total	6,232,000
				GRAND TOTAL	20,524,080

Your budget requirements may be calculated by using the following table (use a separate table for each year of programme expansion):

Programme level	Type of training course offered	Courses required per year	Unit cost per course	Total cost

Supervision activities

Supervision requirements

After staff at all levels have been trained, regular supervision of their activities is required to identify problems and assist in the continuous improvement of patient services. Supervisors have to check the various types of recording and reporting material to ensure that all programme components are implemented adequately and reports are available in a timely manner. Again, the specific requirements will vary with each country's individual structure. A programme with five levels would require the following supervision activities. A hypothetical example is shown below.

- Central and regional level to provinces;
- Provinces to districts; and
- Basic unit manager to hospitals, health centers and patient supervisors.

The frequency of supervision will vary according to the specific situation in your country. As a general rule, supervision of staff at all levels should be to ensure at least once during each reporting period (i.e. once per 3-4 months).

Budget calculation

Budgeting is usually based on a per diem allowance and transportation costs. Total budgets will depend on the number of DOTS implementation sites and the number of supervision visits to be performed annually.

Province to district			District to HC		
	Sums			Sums	
No. of supervisors	2		No. of supervisors	1	
Driver	1		Driver	0	
days	1		days	1	
per diem	120.00	360	per diem	0	0
hotel	450.00	0	hotel	0	0
transport	500.00	500	transport	100	100
Total per trip		860			100
districts per province	2		HC per district	6	
Total per province		1,720	Total per District		600
Trips per year	4		Trips per year	12	
Total per year		6,880	Total per year		7,200
Provinces covered	76		Districts covered	304	
Country Total		522,880	Country Total		2,188,800
Region to Province			Province to Lab		
	Sums			Sums	
No. of supervisors	2		No. of supervisors	1	
Driver	1		Driver	1	
days	4		days	2	
per diem	120.00	1,440	per diem	120.00	480
hotel	450.00	4,050	hotel	450.00	900
transport	500.00	2,000	transport	500.00	1,000
Total per trip		7,490	Total per trip		2,380
Provinces per Region	6		labs per province	2	
Total per region		44,940	Total per province		4,760
Trips per year	2		Trips per year	2	
Total per year		89,880	Total per year		9,520
Regions covered	12		Provinces covered	76	
Country Total		1,078,560	Country Total		723,520
			GRAND TOTAL		4,513,760

The country's budget requirements for supervision may be calculate in the table below, using a separate table for each year of programme expansion:

Programme level	Type of supervision activity	Trips required per year	Unit cost per trip	Total cost

Budgeting for transportation

The frequency and regularity of supervision is dependent on the availability of adequate transport facilities for staff. A carefully assessment of whether these facilities exist in the programme or whether the public transport system provides sufficient mobility to reach all DOTS areas should be made. If this is not the case, the purchase of vehicles or motorcycles may be required. It is important to emphasize that funding for programme-specific vehicles and

motorbikes may be very difficult to obtain. The justification for budgeting for vehicles and motorbikes must therefore be strong. If it is felt that effective functioning of the programme cannot be achieved without the provision of new transport facilities may be budgeted in the table below (if programme expansion will require additional vehicles) a separate table may be used for each future year:

Programme level	Type of vehicle/ motorcycle required	Number of vehicles/ motorcycle required	Unit cost	Total cost

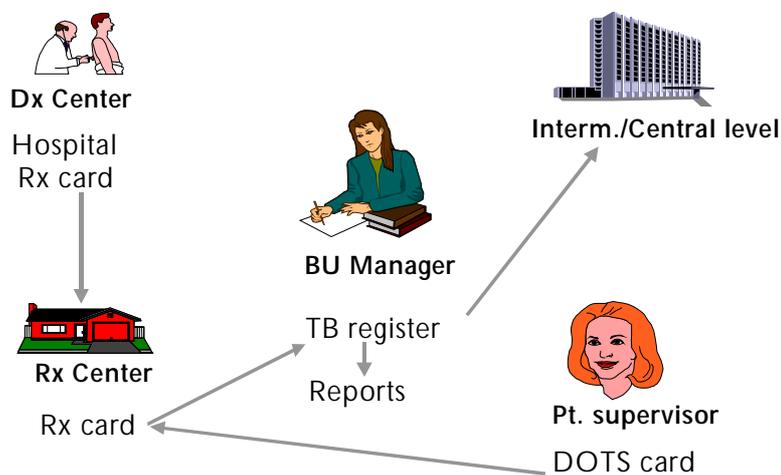
If it is decided to budget for programme-specific vehicles and motorcycles, maintenance costs will be required. These costs will vary for individual countries, but are often about 10% to 15% of a vehicle's purchase price. Since these costs will occur annually, they should be budgeted separately in the table below (use a separate table for each future year).

Programme level	Type of vehicle	Number of vehicles	Annual maintenance costs per vehicle	Total cost

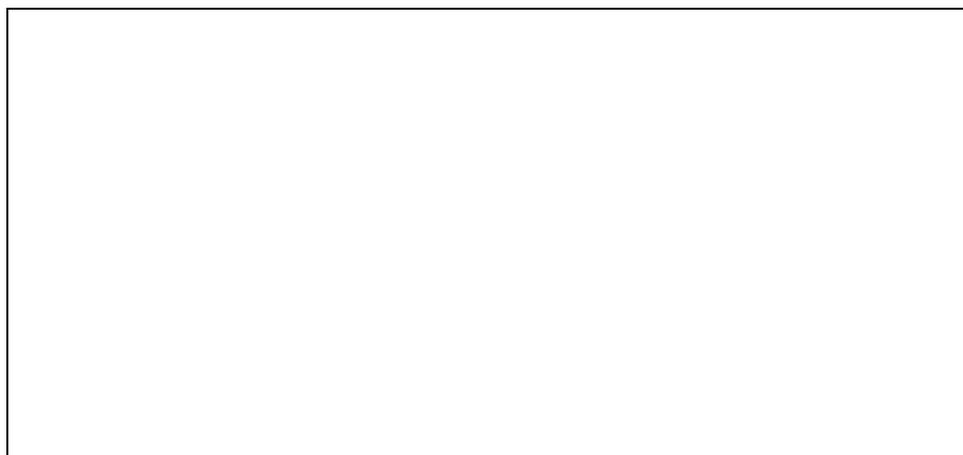
Recording and reporting

Recording and reporting requirements

Figure 1: Organization of recording/reporting



A well functioning recording and reporting system is a key requirement for a successful DOTS programme. Reliable reports alone allow the adequate assessment of programme performance and the timely recognition of weak areas. Before budgeting for the required items, the structure of the recording and reporting system should be clarified. The picture shows an example for a hypothetical programme. The structure of recording and reporting system below:



Budget calculation

The forms that are to be used in the programme must be decided upon. A list of forms recommended by WHO and a description of how they can be used in a programme setting. It must be decided for each whether they would fit into the programme structure, or whether additional or different forms would be required.

- Laboratory form
- Laboratory register
- Treatment card
- District tuberculosis register
- Report forms

A list of the types of forms required for each level of the programme and the required budget calculated in the table below (several tables may be used if requirements will change during programme expansion):

Programme level	Form required	Cost per unit	Units required	Total cost

Patient supervision

As discussed above, several supervision options will need to be provided to ensure that every patient can be provided with a reliable supervisor throughout treatment. The use of community members or health volunteers for this purpose often does not require any expenditure. However, there may be specific circumstances that require the budgeting of special training

sessions for supervisors, transportation costs, incentive payments etc. If this is the case, these expenditures may be budgeted for in the table below:

Type of expenditure	Cost per basic unit	Units covered in budget year	Total cost

Measures to increase case detection levels

One of the targets for DOTS programmes defined by WHO is the achievement of case detection levels of 70% of the estimated total incidence. As described above, DOTS expansion should initially focus on the achievement of full geographical coverage. However, after full coverage has been obtained, additional measures may be required to increase case detection in existing DOTS areas. The primary means for this will be the preparation of information and advocacy materials. Information material about tuberculosis and the DOTS programme should be prepared both for the general public and targeted at patients. This material can be in the form of posters, information booklets, flipcharts, videos and radio/television spots. In addition, case detection can often be increased through strengthening collaboration with the private sector or NGOs. Collaboration with health care providers targeting HIV-positive persons might prove particularly useful due to the high risk for developing tuberculosis in this population. The specific activities that planned in each fiscal year may be budgeted for in the table below. Some allowance may be made for activities related to World TB Day!

Type of activity	Cost per unit	Annual units required	Total cost

Monitoring and evaluation

Quarterly and half-yearly workshops with TB programme staff at peripheral, district, provincial and national levels must be arranged to provide feedback on progress and to address specific local issues. It is also necessary to hold annual national reviews to assess DOTS expansion, case-finding and treatment outcomes which would reflect the quality of programme management and implementation. Mid-term and end-of-plan external reviews must also be planned and budgeted for.

Research

Operational research to assess the current situation and see where improvements can be made is useful as the programme progresses.

Research project planned	Costs for each component	Total costs

Preparation of the total budget for your programme and definition of the “budget gap”

After calculating the budget requirements for each individual DOTS component, the table on the following page can be used to calculate total annual budgets for each year of programme expansion. Again, note that tables for each individual budget component should be **prepared separately for each year of the DOTS expansion plan**, to account for changing numbers of basic units to be covered and expected changes in case detection levels. The available resources should be listed from national budgets and any donor funding to identify the “funding gap” for your programme.

Year:

Number of BUs covered:

Budget Category	Total budget required	National budget available	Donor budget available	Funding gap
Staff salaries				
Drugs				
Drug distribution				
Diagnostic supplies				
Supplies distribution				
Laboratory equipment				
Training				
Supervision				
Staff transport				
Quality Assurance of Sputum microscopy				
Recording / reporting				
Patient supervision				
Monitoring and Evaluation				
Research				
Information / advocacy				
Totals:				

Columns to cover “miscellaneous” and also (a) activities related to increasing case detection (e.g. patient incentives, public/private sector strategy), (b) rehabilitation of facilities, (c) community mobilization, (d) facility expansion may be added. It is also worth having a separate row for a drugs buffer stock, as this is dealt with as a distinct item in the guidelines.

5. NATIONAL CONSENSUS WORKSHOP

The planning team’s activities should end with a national consensus meeting to be attended by the members of the task force, high level officials of the ministries of Health, Finance, Planning Commission, other ministries, private sector, NGOs, academic institutions, potential donors and other partners including other UN agencies. It is important to invite those individuals who are in a position to commit their sectors/organizations. A copy of the draft plan should be distributed to all delegates prior to the meeting. Alternatively, the executive summary should be distributed.

At the meeting, the planning coordinators should briefly present factual information on the existing TB situation in the country and introduce the plan. Respective team members will then make detailed presentations on each major component of the plan. Comments and suggestions made during discussions that follow should be carefully noted by the designated team member for inclusion in the final draft.

The objectives of this workshop are as follows:

- (1) To disseminate information about the status of TB and advocate for national commitment to TB control;
- (2) To widen the scope of the consultation and increase the ownership of the plan;
- (3) To obtain a consensus on the plan and ensure that the plan is fully understood and accepted;
- (4) To agree on the time frame and allocated responsibilities for implementation of the plan
- (5) To secure the commitment, cooperation and collaboration of all concerned persons and agencies.

6. FINALIZING AND OBTAINING OFFICIAL APPROVAL OF THE PLAN

After due consideration of the comments and suggestions made at the consensus workshop, the planning team should revise the draft and prepare the final plan within a day or two. The national coordinator should submit the final plan to the Ministry of Health for government approval. Similarly, the WHO coordinator should submit the final plan to WHO for approval.

7. FOLLOW-UP ACTIVITIES

7.1 Disseminating the Plan

The final plan should be widely distributed to the members of the task force as well as to all agencies concerned either with providing support or with implementing the plan. The plan should be disseminated to all levels of health services, potential donors and other partners involved in TB control. Copies of the plan should also be provided to the persons met during the field visits, as a token of feedback and appreciation of their inputs to the planning process.

The plan should be distributed to include the following people:

- Members of Task Force,
- Senior policy-makers in the Ministry of Health,
- Directors/Directors-General in the Department of Health Services,
- Planning Commission,
- Ministry of Finance,
- Other ministries,
- Academic institutions,
- National and international NGOs,
- associations of medical practitioners,
- National and international potential donors,
- managers of intermediate levels of health services (state/province/region),
- district health officers, and
- persons met during the field visits.

The consensus meeting may be followed by a media event to enhance awareness about TB and the actions proposed in the plan. Journalists from the national and international press, radio and TV should be invited to a press briefing, where a senior official in the Ministry of Health, usually the NTP manager, could present highlights of the plan. A press release and other appropriate materials such as photographs and video footage should be provided to the press and media.

Advocacy is a valuable tool for encouraging greater political commitment to TB control. It is easy for policy recommendations to be ignored if they come in the form of a report that can be quickly filed away. It is much more difficult to ignore public concern about a problem. If care is taken when presenting the highlights of the plan to the press, it is unlikely to cause adverse publicity, criticism of the government, or raise unrealistic hopes in the community. In fact, the scheduling of a press event at the conclusion of the consensus meeting could be an excellent way to attract the interest and involvement of key government officials who are seeking to be proactive in addressing their country's social concerns.

For further ideas and advice on preparing for an advocacy event, see the WHO publication "TB Advocacy – A practical guide 1998".

7.2 Mobilizing Resources

Adequate resources must be secured from the government for implementation of the plan. National philanthropic organizations and NGOs should similarly be approached. National allocation of resources is a prerequisite to securing funds from donors. It is important to note that external resources only supplement national resources and that unless national commitment is demonstrated, donors are unlikely to contribute.

The economic reforms being implemented in many countries often focus on budget deficits and the control of public expenditure. These policies, while reducing overall expenditure, tend to affect the social sector such as health, education and social welfare most. A general issue that helps in resource mobilization is the demonstration of cost-benefit and/or cost effectiveness of the interventions proposed in the national TB plan. It is

important to highlight the fact that the World Bank considers DOTS one of the most cost-effective health interventions.

While individual contacts with potential donors may bring some results, in some situations, it might be more productive if all potential donors, both national and external, are brought together at a meeting to mobilize resources. Donors and funding agencies often choose their recipients from amongst programmes that are within their sphere of interest and which show the greatest capacity for efficient implementation. Potential donors should be identified from among those who have shown or are likely to show interest in health programmes, especially the TB programme. It is, therefore, important to elicit information on the funding priorities, interests, preferences and mechanisms of the donors in the country to identify the potential donors. For example, some may be interested in human resource development, others in establishment of infrastructure, yet others in providing supplies and equipment, and so on. It would also be extremely useful to show the total resources required over the timeframe of the plan, broken down by different cost components, what the national contribution is and how much is being requested from donors. The plan should be distributed to the potential donors well in advance, about two months before the meeting. This will allow enough time for consultation within their organizations.

The meeting should be either organized by the Ministry of Finance or by the Ministry of Health in coordination with the Ministry of Finance. The main highlights of the plan should be presented at the meeting with major emphasis on budgetary requirements in order to provide an opportunity for the donors to discuss the plan and to facilitate coordination of the components to be supported by them. The meeting should aim to secure definitive commitment or at least an expression of interest for specific areas from the donors.

The meeting should be followed by contacts with individual donors for preparation of detailed project proposals.

Further reading: *Mobilizing Resources for TB Control A Brief*, World Health Organization, Regional Officer for South East Asia, New Delhi 1999, SEA/TB/219.

Government/non-government/private sector active in TB control

Name of organization	Activities being implemented

Briefing the staff

Name	Designation	Comments

Programme Review

Latest programme review Date: _____ Report Attached: Yes/No
Review to be carried out with plan formulation: Brief/Detailed

Planning

Option	Tick	Comments
A. Traditional MOH approach		
B. National consensus workshop/meeting		
C. Full workshop approach		

Dates of plan formulation

Activity	Date
Arrival of WHO coordinator	
Arrival of international members of Planning Team	
Briefing of Planning Team	
National Consensus Workshop	
Field visit	
Writing of draft plan	
Consensus meeting to discuss the draft plan	
Writing of final plan	

Sites for field visits

Location	Person to meet	Designation	Main purpose

Logistic arrangements

Activity	Responsible	Deadline
Nomination of national members of task force		
Nomination of national members of planning team		
Invitation to national members		
Travel within the country and booking of accommodation		
Booking venues		
Provision of refreshments		
Arrangement of secretarial support		
Supplies and equipment		
Finalization of budget		
Notification to sites of field visits		
Notification to press/news media		

Budget (give details in separate sheets where applicable)

Activity	Cost (\$)
Salary/per diem of national team members	
Salary of secretarial staff	
Transport cost at the capital city	
Travel for field visits	
National consensus workshop and meeting*	
Communication costs	
Printing and photocopying costs	
Supplies and equipment	
Refreshments	
Others	
Total	

* Give details e.g. no. of participants, no. of days, per diem, travel cost, rent of meeting rooms, refreshment, stationery, audiovisual equipment, etc.

Annex 2

BACKGROUND MATERIALS

GENERAL INFORMATION, HEALTH SECTOR ORGANIZATION

- General background information on the country
- General health profile of the country
- Health services structure: organization, personnel available, access and coverage of health services
- Policy and planning: long-term health plan, summary of main strategies of current long-term plan; health sector reforms - planned changes in organization and integration of health services
- Essential drugs list, pharmaceutical regulations

EPIDEMIOLOGY OF TUBERCULOSIS

- Epidemiology of TB : Annual risk of infection, expected incidence, case notifications, trends, case fatality, risk factors, risk groups, prevalence of TB among people living with HIV/AIDS, drug resistance surveillance reports

NATIONAL TB PROGRAMME

- History, political commitment, coverage, plans for expansion
- Organization and coverage of TB control services, level of integration with general health services
- National TB policies, general manual/guidelines and laboratory manuals/guidelines
- Personnel; type, number and distribution of posts available and filled
- Budget: Total allocation, allocation within the programme, sources, trends, projected requirements, external assistance, resources provided by other sectors.

NTP ACTIVITIES

- Advocacy
 - Special events/meetings organized
 - World TB day observed
 - Media involvement and coverage
- Diagnosis
 - case-finding policies, registration, notification
 - procedures for diagnosis
 - laboratory services
 - quality assurance
 - case-finding performance
- Treatment
 - treatment policies, regimens
 - procedures to ensure compliance, adherence to DOT
 - policy on prevention (BCG, chemoprophylaxis)
 - treatment outcomes
- Drugs
 - Procurement policies and procedures for supplies and equipment
 - Logistics for drugs and other supplies
- Monitoring and supervision
 - recording and reporting
 - supervision; procedures and frequency
 - NTP performance; case finding and treatment outcome reports
 - Laboratory performance, number of smears, procedure and results of quality control
- Training
 - Technical and operational guidelines
 - Modules developed for various levels of health personnel
 - training plan, including refresher training
- Social mobilization
 - IEC activities
 - Communication strategies adopted including Health education materials
 - KAP studies conducted
- Research
 - Policy, capacity, plans and reviews of ongoing research

OTHER IMPORTANT DOCUMENTS/INFORMATION

- NTP annual report
- Annual reports published by NGO partners
- Recent reports from consultants/donors, review missions
- Relevant policy documents and guidelines
- Samples of NTP registers and forms
- Information on private and non-governmental health sector/professional organizations including anti-TB associations
- Recent research reports
- Resource allocation for TB within general health services
- External resources available for major components of the TB programme

Information on other components of NTP that should be included is:

- co-ordination and collaboration with other disease control programmes such as Expanded Programme on Immunization (EPI), National AIDS Programme (NAP), Leprosy Control, etc.;
- role of other diagnostic/treatment providers, such as academic institutions, NGOs and the private sector;

Annex 3

SAMPLE STRATEGIC FRAMEWORK

Goal: a broad unquantified statement of achievement toward improving health status, specifying what should be accomplished in general terms.

Objective: a definition of achievements that should be specific, measurable, achievable, relevant and time-bound.

Strategy: a major approach to achieving an objective, which may include one or more interventions.

Intervention: a set of activities through which a strategy is implemented.

Policy: a course or method of action selected from among alternatives to express long-term political commitment and/or to guide and determine present and future decisions.

Guidelines: Documented decisions that provide direction in conducting activities to achieve a particular end, or define national norms of care.

Objectives are indicated by Roman numerals (I)

Strategies are indicated by capital letters (A)

Interventions are indicated by Arabic numerals (1)

- (I) Expand DOTS to achieve 100% coverage with $\geq 85\%$ treatment success and $\geq 70\%$ case detection
 - (A) Advocate for national commitment and for allocation of resources including for integrating the NTP with existing Primary Health Care services
 - (1) Organize advocacy meetings at national, intermediate (State/Provincial/Division), and local (district/county) levels, increasing local capacity for advocacy, effective communication, and social mobilization
 - (2) Track and ensure adequate funding of staff

- (3) Track and ensure adequate approval for staffing patterns and adequate filling of approved positions
 - (4) Monitor and take steps to ensure the long-term sustainability of the programme
 - (5) Listen to, motivate, and recognize good performance by health workers and community volunteers at all levels
- (B) Improve laboratory diagnosis using microscopy
- (1) Organize training on laboratory diagnosis
 - (2) Ensure availability of required supplies and equipment
 - (3) Increase number of and access to microscopy centres
 - (4) Develop/implement quality assurance
 - (5) Increase awareness of free diagnostic activities
 - (6) Involve labs from other sectors including private labs
- (C) Treat patients with short course chemotherapy under direct observation
- (1) Develop and implement models of patient-centred treatment observation which are accessible and acceptable to patients and accountable to the health system
 - (2) Enhance participation of health care workers, community volunteers and NGOs
 - (3) Improve information, education and communication, especially inter-personnel communication
 - (4) Train doctors to correctly diagnose and treat patients and provide appropriate case management in case of non-adherence, adverse reactions, etc.
- (D) Ensure uninterrupted supply of quality drugs
- (1) Assess alternative drug procurement systems
 - (2) Establish quality control of medicines
 - (3) Improve system of drug storage, indenting, and feedback
 - (4) Establish independent monitoring of quality and availability
- (E) Systematic monitoring and evaluation
- (1) Assess existing system of supervision
 - (2) Strengthen systems of management and supervision
 - (3) Establish accurate and timely quarterly reporting
 - (4) Establish effective data management
 - (5) Ensure prompt and detailed feedback on quarterly reporting

- (6) Establish system of review meetings at national, intermediate, and local levels to review report, problem solve, motivate staff, etc.
 - (7) Widely disseminate results of the programme at all levels
 - (8) Conduct appropriate operational research (e.g., on delays in diagnosis and means of minimizing, strengths and weaknesses of different types of treatment observers, socio-economic burden of tuberculosis and benefits of DOTS, constraints and opportunities, etc.)
 - (9) Conduct surveillance of drug resistance, annual risk of infection, and TB/HIV
 - (10) Conduct periodic programme reviews and national and sub-national levels
- (II) Mobilize and Unify National and International Efforts
- (A) Disseminate information on the impact of TB
 - (1) Monitor the TB burden including the impact of HIV and multi-drug resistance and disseminate information on this widely
 - (2) Describe the health and socio-economic consequences and identify ways to alleviate these consequences
 - (B) Mobilize national and international efforts
 - (1) Develop advocacy plans targeted at policy-makers to increase political commitment
 - (2) Advocate for TB control at community level and develop consensus on DOTS
 - (3) Promote effective approaches for communication and social mobilization
 - (4) Build partnerships within and outside government
 - (5) Ensure dialogue between multi/bi-lateral agencies and countries
 - (6) Widely disseminate the review reports at all level including national and international collaborating and funding agency.

Annex 4

SAMPLE WORKPLAN FOR - 2001

Country:

Objective:

Strategy:

Intervention:

S. No.	Activity	Time Frame (5 years)	Place	Responsibility	Output Indicator	Planned Output	Total Cost (\$)	Source of Fund
	Total							

Annex 5

SAMPLE PLAN CONTENTS

National TB Control Plan

Content

Abbreviations

Executive summary

(1) Introduction

- 1.1 Geographic and socio-demographic features
- 1.2 Health situation and system
- 1.3 History of TB control

(2) Current TB situation

- 2.1 Epidemiological situation
 - 2.1.1 TB infection: tuberculin surveys, estimates
 - 2.1.2 TB disease: incidence, prevalence, age, sex, vulnerable groups, trends, projections
 - 2.1.3 TB deaths: mortality and case fatality rates, trends, projections
 - 2.1.4 Drug resistance: MDR TB
 - 2.1.5 TB/HIV co-infection
- 2.2 Response
 - 2.2.1 Political commitment to national TB programme
 - 2.2.2 NTP policies and objectives: short term and long term
 - 2.2.3 Organization: structure, coverage, integration, access
- 2.3 Programme Management
 - 2.3.1 Case finding: care seeking, case detection
 - 2.3.2 Treatment: regimens, adherence to DOTS, other strategies, outcomes, BCG, preventive therapy,
 - 2.3.3 Supplies and equipment: procurement, distribution, adequacy of supply

- 2.3.4 Monitoring and evaluation: recording, reporting, supervision, reviews
- 2.3.5 Resources: staff, financial
- 2.3.6 Training
- 2.3.7 Quality Assurance
- 2.3.8 Infrastructure and maintenance
- 2.3.7 Expansion of services
- 2.3.8 Coordination within government sector, collaboration with other sectors, such as private sector and NGOs
- 2.3.9 IEC activities
- 2.3.10 Research
- 2.3.11 Other issues: cross border collaboration

(3) Challenges and constraints

(4) National TB Plan

- 4.1 Goals, short and long term objectives, policies
- 4.2 Strategies, interventions,
- 4.3 Plan of action; activities, time frame, responsibility, evaluatory modality,
- 4.4 Financial implications: resources, financing of each component
- 4.6 Benefits

Annexes

1. Geographic, socio-demographic and health information
2. TB epidemiology
3. Organogram of National TB Programme
4. Work plan – what, when, how, where, for whom, by whom, cost
5. List of supplies and equipment with source price lists
6. Checklists, data collection and evaluation forms.

Annex 6

POTENTIAL SITES FOR MEETINGS AND VISITS

Central level

- Ministry of Health
 - Secretary of Health
 - Director General of Health Services
 - Planning Division
 - Central Chest Clinic/ Hospital
 - AIDS Programme
 - EPI
 - Health Education Unit
 - Health Training Unit
 - Central Drug Store
 - Central Laboratory
- Ministry of Finance
- Planning Commission
- NGOs involved in TB control, anti-TB associations
- Medical and Nursing schools
- International agencies

Intermediate Level

- Regional/Provincial hospitals
- Regional/Provincial Health Office
- Regional/Provincial Laboratory
- Regional/Provincial Medical Store
- NGOs

District Level

- District Health Office
- District Hospital and Laboratory

- District medical store
- Private hospitals
- NGO offices/clinics/self-help or community based organizations

Local level

- Health posts/centres
- Village Health Workers
- Health Volunteers
- TB patients

The institutions/organizations to be visited need to be informed in advance.