TRAINING MANUAL

FOR TB (AND MDR-TB) CONTROL

HOSPITAL/CLINIC/HEALTH FACILITY MANAGERS
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Preamble

It is with great pleasure we release this learning material – Training Manual for TB and MDR-TB Control for Hospital/Clinic/Health Facility Managers. Its aim is to target managers of hospitals, clinics and health services facilities, and as a result therefore, the focus will be less on clinical aspects, although reference is made to related literature. The focus instead is to prepare managers to take decisions in support of action in terms of therapies and drugs to treat TB and MDR-TB.

The first draft of this learning material was prepared by Dr. Rufi Macagba, to whom we express our sincere appreciation. Our appreciation is also extended to Dr. Hernan Reyes for his contribution on the special phenomenon of TB management in the prison environment.

Further, this project would not have been possible without the financial support from the International Aid Unit of Eli Lilly Pharmaceuticals.

It has been a great experience to collaborate in this project with the World Medical Association (WMA) and the International Council of Nurses (ICN), who have both contributed their own learning materials aimed at their respective membership.

Finally, we would like to express our gratitude to all the above-mentioned, the TB Strategy and Operations (TBS) Stop TB Department, HIV/AIDS, TB and Malaria cluster at the World Health Organization (WHO) and the peer-reviewers that have contributed their views on the first drafts of the learning material. We at the IHF Secretariat, however, take full responsibility of the final text of this learning material.

Ferney Voltaire, France – 2005

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INTRODUCTION

The objective of this training manual is to reach managers of hospitals/clinics and healthcare facilities in order for them to better understand their role in TB and MDR-TB control programmes and related activities. Managers have to understand the need for continuous and strong support for MDR-TB and TB control programmes. Financial support for TB treatment drugs has to be continuous as interruption to the drug therapy process increases the potential and likelihood of resistance to all major anti-TB drugs. Managers in charge of financing and organisation of health services have the responsibility of ensuring that such lapses in drug therapy do not occur. Thus, the aim of this training manual is, therefore, not to provide a textbook on TB and MDR-TB control. Such material already exist, some of which are referenced in this publication. The aim is rather to present summarized information on TB and MDR-TB control, to enable managers (some of whom may be medics, nurses or administrators) to understand the need to avoid interruptions in treatment. The role of managers would, therefore, be that of facilitators for doctors and nurses to enable them to provide treatment without interruption and apply actions for monitoring the control programmes, in the absence of which costs and human suffering increase significantly, particularly as a trend in resistance to major anti-TB drugs emerges.

In line with the principles outlined above, this training manual has been developed to include the following modules:

Part 1: Introduction to the Global and National Problem of Tuberculosis
This part aims at defining and recognizing TB and MDR-TB as a public health problem and reviewing the preventative measures and therapies available.

Part 2: The Hospital/Clinic/Health Facility Manager: The Task of Management
The role of management is addressed in this part as well as the fact that success of TB and MDR-TB control programmes will depend on collaboration between all levels of care from tertiary to primary. Management at all these levels of care need to adapt its human resource management, information management organisation in general, and more specifically, investment programme to facilitate an effective prevention and control strategy.

This part outlines the structure of the training manual and the objectives of the desired outcome.

Part 4: Leadership in Health Programme
Essential elements in management as relating to prevention and control of TB and MDR-TB are discussed:
- Management Leading, Organising and Controlling
- Management Process
- Project Planning
- Needs Analysis and Action Planning
Part 5: *Questions and Answers*
Some important questions are to be responded to by the participants in this Q&A module, which addresses policy and governance, human resources, finance, purchasing, information and quality.

Part 6: *Conclusions*
Some conclusions are drawn from previous modules, for example, ways in which to accelerate implementation of TB control measures and scale-up services in order to improve and maintain DOTS programmes and expand DOTS-Plus projects.

Part 7: *References*
This final module lists references in printed publications as well as websites cited in Parts 1-6

Our objective is to make this training manual available in printed format and on the internet. It is the intention of the International Hospital Federation to ultimately have the course accredited by a recognised CME accreditation institution once the results of test-case initiatives are determined. It will be provided, free-of-charge on-line and only postage and administration fee will be charged for those wishing to obtain the printed version.

This training manual is meant for both self-study and study-circle groups within health facilities.
1.1 Introduction
The Millennium Development Goals (MDGs) include targets for improved control of priority communicable diseases (including TB and HIV) by 2015. Progress in improving TB/HIV clinical care will contribute to achieving these goals.

It has been known for over 100 years that the Mycobacterium tuberculosis causes TB. Similarly, effective anti-TB drugs (isoniazid, streptomycin, ethambutol, pyrazinamide and rifampicin, usually referred to by their abbreviations: INH, SM, ETH, PZA and RIF) have been available for nearly 50 years. Yet, the reality is that the world’s TB problem is now bigger than ever. A phenomenon further complicated by the emergence in various countries surveyed, of strains of TB resistant to all major anti-TB drugs, the particularly dangerous form of which is multidrug-resistant TB (MDR-TB), resistant to at least isoniazid and rifampicin, the two most powerful anti-TB drugs.

How, therefore, can such an anomaly be explained? From a public health perspective, poorly supervised or incomplete treatment of TB is worse than no treatment at all. The problem, however, can not be attributed to the lack of an effective treatment, but organizational. The answer is essentially a well managed TB control programme within a framework of collaboration among all those health care professionals, in such vital fields as medicine, nursing and hospital management, bringing together knowledge and expertise involved in the treatment and care of sufferers of the disease.

1.2 Emergence and Recognition of TB and MDR-TB as a Public Health Problem
Halving TB prevalence and death rates by 2015 are included among the United Nations Millennium Development Goals. For the World Health Organization (WHO), these goals include a worldwide cure rate of 85% and a case detection rate of 70% by 2005. Globally the current level of achievement is only about 37% in case detection, and 83% with respect to cure.

The World Health Organization (WHO) has declared TB to be a global emergency, because in many parts of the world it is out of control. This loss of control is due primarily to:
- neglect of the disease by governments in many parts of the world and increased burden of the disease and the emergence of drug-resistant TB resultant from lack of adequate TB control programmes
- high rates of population growth which have contributed to an increased number of TB cases
- the HIV epidemic which has led to an enormous increase in the number of TB cases

WHO has expanded the framework for TB control in order to reflect experience gained since the original framework was developed in 1994. Settings in which HIV is common are incorporated within this expanded framework.
Components of the expanded TB control framework consist of the following:
- Goals
- Targets
- Policy Package
- Key operations for Directly Observed Treatments (DOTS) implementation
- Indicators to measure National TB Programme (NTP) progress

1.3 What is TB?
Tuberculosis, more commonly known by the abbreviation TB, is a social disease with medical implications, in that it has always occurred disproportionately among disadvantaged populations such as the homeless, malnourished, and overcrowded. The spread of HIV infection and immigration of persons from areas of high incidence has resulted in increased numbers of tuberculosis cases.

The global perspective on tuberculosis is that:
- It is one of the world’s deadliest diseases
- one-third of the world’s population is infected with the disease
- 9 million people around the world become sick, each year, with TB
- 2 million TB-related deaths worldwide are recorded each year
- it is the leading killer of HIV infected persons
- It causes more deaths among women worldwide than all causes of maternal mortality
- It remains a leading infectious cause of death among men and women mainly between the ages of 15 and 44, their economically and reproductively active years

The medical implications are that it is a contagious disease of the respiratory system caused by an organism called *Mycobacterium tuberculosis* (*M. tuberculosis*), also known as tubercle bacillus. It is spread from person to person through the air by droplet nuclei produced when persons with pulmonary or laryngeal tuberculosis cough, sneeze or speak. They can also be produced through aerosol treatments, sputum induction and manipulation of lesions or processing of tissue or secretions in the hospital or laboratory. The *M. tuberculosis* organisms are so small that air currents normally present in any indoor space can keep them airborne for long periods of time.

Four factors determine the likelihood of transmission of *M. tuberculosis*:
- i) number of organisms being expelled into the air
- ii) concentration of organisms in the air determined by the volume of the space and its ventilation
- iii) length of time an exposed person breathes the contaminated air, and
- iv) immune status of the exposed individual.

Techniques that reduce the number of droplet nuclei in a given space are effective in limiting the airborne transmission of tuberculosis. Ventilation with fresh air is especially important, particularly in health care settings. The most important means of reducing the number of bacilli released in the air, however, is by treating the patient with effective antituberculosis chemotherapy.

*M. tuberculosis* has no known endotoxins or exotoxins, therefore, there is no immediate host response to infection. Individuals with latent tuberculosis infection but not active disease are not infectious and thus cannot transmit the organism. It is estimated that approximately 10%
of individuals who acquire tuberculosis infection and do not undergo preventive therapy, will
develop active tuberculosis, the risk being highest in the first 2 years after infection. The
ability of the host to respond to the organism may be reduced by certain diseases such as
diabetes and diseases associated with immunosuppression, e.g. HIV infection. In these circumstances, the likelihood of developing tuberculosis disease is greater.

The clinical manifestations of tuberculosis are quite variable and depend on a number of factors. Of the number of tuberculosis cases reported, 85% are limited to the lungs, with the
remaining 15% being nonpulmonary or involving both pulmonary and nonpulmonary sites.
This proportional distribution is substantially different among persons with HIV infection. Cough is the most common symptom of pulmonary tuberculosis and sputum which is usually
produced is key to most diagnostic methods. Extrapulmonary tuberculosis usually presents
more of a diagnostic problem than pulmonary tuberculosis as it involves relatively
inaccessible sites and because of the nature of the sites involved, fewer bacilli can cause
much damage. The basis for the high frequency of extrapulmonary tuberculosis among
patients with HIV infection is the failure of the immune response to contain *M. tuberculosis*
thereby enabling hematogenous dissemination and subsequent involvement of single or
multiple nonpulmonary sites.

Of the systematic effects, fever is the most easily quantified. Loss of weight and appetite,
weakness, night sweats, haemoptysis (spitting up blood), and tiredness are also common but are more difficult to quantify and may relate to co-existing diseases.

In many patients tuberculosis is associated with other serious disorders, which include HIV
infection, alcoholism, chronic renal failure, diabetes and drug abuse, to name but a few. The signs and symptoms of these diseases and their complications can easily obscure or modify those of tuberculosis and result in considerable delays in diagnosis or misdiagnosis for extended periods of time, especially in patients with HIV infection.

1.4 Drug-and Multidrug-Resistant Tuberculosis (MDR-TB)

The World Health Organization estimates that up to 50 million persons worldwide may be infected with drug resistant strains of TB. Also 300,000 new cases of MDR-TB are
diagnosed around the world each year and 79% of the MDR-TB cases have shown resistance to three or more drugs.

As a basic concept of epidemiology, any disease condition results from a complex interplay
among the pathogen, host and environment. In the context of MDR-TB, the ‘health care
system’ also plays a pivotal role.
Emerging anti-TB drug resistance is a growing threat to public health that will draw heavily on human and monetary resources, as well as a major public health problem that threatens the success of DOTS (Directly Observed Treatment, Short-course.), the WHO-recommended treatment strategy for detection and cure of TB, as well as global tuberculosis control.

Tubercle bacilli are continually undergoing spontaneous mutations that create resistance to
individual antituberculosis drugs. Most commonly, the development of acquired drug
resistance occurs when there is a large bacillary population, such as pulmonary cavities,
when an inadequate drug regimen is prescribed (inappropriate drugs, insufficient dosage) or
when there is a combined failure of both the patient and the provider to ensure that an
adequate regime is taken.
Once a strain of MDR-TB develops it can be transmitted (often by air) to others just like a normal drug-susceptible strain. Patients with such acquired drug resistance may transmit their strains to others (patients, health care workers) who, if they develop tuberculosis, will have primary drug resistance. Patients harbouring stains of *M. tuberculosis* resistant to both isoniazid (INH), the first line drug used to treat TB and rifampicin (RIF), the drug most commonly used with INH, are at high risk for treatment failure and further acquired resistance.

### 1.5 Patient’s Perspective

Drug resistance is often attributed to a patient’s noncompliance with the therapeutic regimen. Noncompliance, however, has many causes, such as poverty, gender discrimination, homelessness and side effects of the anti-TB drugs themselves and how they affect individuals in different settings.

Under-nutrition is the outcome of poverty. A poor nutritional status affects drug absorption, resulting in sub-therapeutic serum drug levels, which may lead to non-response to drug therapy.

Gender issues can be equally significant. Very often, in low-income high incidence countries, for women, who maybe accompanied by a family member to the health centre, the costs exceed those for the patient alone. For men, as head of the family, the loss of job and fear of social isolation act as major reasons for discontinuation of the treatment.

Other stated reasons for interrupting and defaulting from treatment have been:
- poor experience in the health care setting and poor quality of the patient-provider relationship
- dissatisfaction with health care worker attitudes, resulting in missing or avoidance of treatment
- lack of social support from family or friends during treatment, reflective of the stigma attached to TB
- use of illegal substances during treatment
- low tolerance to side effects from medication.

### 1.6 Health Care System Perspective

Understanding the role of health care providers, the way in which health systems function and personnel behaviour influence patient help-seeking behaviour, is critical. For many medical conditions in low-income and high incidence countries, people prefer the private sector despite its reputation for being highly exploitative. Patients prefer private care for treatment of major illnesses, with perhaps convenience or confidentiality offering protection against social stigma. Private providers, in studies have shown do not necessarily follow standard therapeutic guidelines, offering inappropriate and often expensive treatment.

For the hard-pressed public health providers in public health facilities, incidents of misuse of drugs and failure to take the history of prior anti-TB treatment, resulting in misclassification of the patient, can occur. Patients may also, on their part, fail to mention previous treatment. However, homelessness or non-response to previous treatment may explain the reluctance of some patients to provide information about previous treatment.

Misuse of antimicrobials in the form of incorrect dosages over-prescribing, extravagant prescribing, under-prescribing is not an uncommon phenomenon. Where monitoring of treatment has not been possible, patients are given dosages for 1 or 2 weeks. With the lack of
adequate information, the patients consume tablets as per their will or sometimes fearing lack of tolerance by the patient of the drugs, the doctor/health care provider splits the doses of individual drugs. As a result of an improper spacing of dosing intervals, efficacious serum drug levels are probably not achieved, thus leading to reduced drug efficiency and generation of resistance.

Experiences in low-income countries have revealed that traditional healers, lacking any knowledge of pharmaceuticals, drug regulation or side effects of modern drugs, incorporate these drugs in their traditional therapy. Such practices may lead to adverse drug interactions or even cause side effect, thereby prompting the patient to shop around for treatment, all of which promotes drug resistance.

In many of the low-income high incidence countries, the doctor is a focal point for drug company efforts to influence the choice of drugs. The cost for MDR-TB treatment in the open market has been as high as US$20,000 per person for 18-24 months treatment, a price that is prohibitive for a large proportion of MDR-TB patients, and as a result are left untreated and end up possibly transmitting infection. Provider ignorance about the pharmaceutical market is likely also to aggravate the problem of drug resistance.

1.7 Laboratory Services
The laboratory is an essential part of the diagnosis, treatment, prevention, control and management of tuberculosis. This contribution involves the detection and isolation of mycobacteria, identification of mycobacterial species and handling of mycobacterial specimens, which all require special safety precautions and suitable isolation areas, which places burdens on health care facilities.

Delays in laboratory confirmation of TB and reporting of drug-susceptibility results can lead to delays in initiation of therapy, prolonged infectiousness, inappropriate therapy and missed opportunities to prevent transmission. Such delays contribute to the emergence of multi-drug resistance.

As tuberculosis can be transmitted to laboratory personnel who handle clinical specimens, adequate training in proper techniques and the availability of special containment areas are required for the safe manipulation of clinical specimens. In order therefore to ensure protection of laboratory personnel and environment, it is necessary that standard laboratory practices and techniques be observed.

Prompt, timely and reliable laboratory test results are critical. In the case of HIV-infected TB patients this is even more so because of differences in the clinical analysis and more rapid course of the disease. A laboratory, on the other hand, may choose to develop or maintain the skills for only some of the procedures required, depending on the frequency with which specimens are received for isolation of mycobacteria, the nature of the clinical community being served, and the availability of a specialised referral service.

Given that identification of organisms is critical in diagnosing tuberculosis, it is of utmost important that careful attention be given to the collection and handling of specimens. Optimal results are obtainable solely when and where specimens are collected in clean, sterile containers and held under conditions that inhibit growth of containing organisms, as most specimens will contain bacteria other than mycobacteria. All specimen collection procedures that produce aerosols potentially containing *M. tuberculosis* (eg, sputum) should be
performed in properly ventilated areas or safety cabinets by personnel using adequate respiratory protection.

Laboratories not only play a pivotal role in national TB programs in case detection and follow-up of TB patients under treatment, but they also are essential for monitoring drug resistance patterns. The information produced from the laboratories at all levels of the health system contributes to TB program policy, planning, and quality assurance.

Sputum microscopy is the cornerstone of diagnosis for the vast majority of TB patients in resource–poor settings. To provide this simple test in a routine program setting, systems need to be in place to ensure appropriate collection, storage, transportation, accurate registration, and quality-controlled examination of specimens. Timely recording and reporting of results to both the health care provider and the patient are essential links to care and treatment.

1.7.1 Challenges frequently encountered by TB laboratories:
- Poor recognition of the role of the laboratories
- Absence of national policies for laboratory services
- Insufficient resource allocation
- Inadequate numbers, capacity, and distribution of laboratory staff
- Inequitable distribution of smear microscopy services
- Low staff morale
- Poor and crumbling infrastructure
- Weak laboratory safety practices
- Poor communication between microscopy units and TB program
- Ineffective quality control of sputum smear microscopy
- Lack of equipment and commodity management
- Lack of any on-going training
- Lack of transversal sharing of information between laboratories, even within the same country

Improving TB laboratory services and developing an innovative integrated approach is complicated by concerns regarding:
- funding
- communication
- turnaround times
- technology
- workforce competence
- information management systems and
- maintaining proficiency standards

Funding:
The actual cost associated with provision of these services will often vary from country to country, healthcare setting to healthcare setting, all of which are dependent upon the level of political, social and economic provided through national TB programmes.

Communication:
Resources to develop and install integrated information systems to enable efficient, well coordinated and rapid flow of information and specimens among laboratorians, clinicians, health care providers and TB-control officials, are limited. As a result, delays in referring specimens and reporting information lead to delays in diagnosis, disease treatment and control and surveillance activities.
Turnaround Times:
Rapid detection: Although high quality sputum smear microscopy is the cornerstone of DOTS and remains the highest priority for case detection and TB control, the strengthening of *M. tuberculosis* culturing and drug susceptibility testing (DST) services is necessary especially in high HIV and MDR-TB prevalence settings. In most developing countries microscopic examination of sputum remains the only widely available diagnostic tool for identifying TB. The lack of sensitivity of this technique is compounded by the difficulty of maintaining well-equipped laboratories to perform it, meaning that only a fraction of TB patients receive a confirmed laboratory diagnosis. The majority of TB patients are diagnosed based on clinical grounds and chest X-ray findings, leading to both over and under-diagnosis.

Although new diagnostic tools for TB have been developed and introduced in developed countries, they however, have generally not been adopted in high-burden countries due to cost, complexity, lack of laboratory infrastructure. The relatively poor performance of TB diagnostic tests leaves large numbers of patients undetected, thereby allowing for continued transmission of the disease. Currently most patients with MDR-TB are not identified until they have failed one or more courses of conventional therapy over a period of months or years, leading to high rates of mortality and ongoing transmission of drug resistant TB strains.

There is therefore a need to develop country/regional policy to strengthen/build capacity to perform culture to enhance case finding, especially in areas experiencing a high burden of acid fast bacilli (AFB) smear-negative TB associated with HIV infection. The expansion of DST services in support of DOTS-Plus projects is also necessary, to enable implementation/scale up of culture and DST in settings where its use would enhance TB control and patient management.

Technology:
Introduction of certain ‘technologic advances’ can contribute to TB treatment and control by providing faster laboratory results.

Workforce Competence:
Workforce shortages result in the loss of expertise. In the face of such worker shortages, the vacant positions become filled by staff who lack training in laboratory science. Thus, there is need for multiple training programmes. Ambiguity may exist in interpreting laboratory results concerning treatment completion and cure. The quality of the sputum sample, as well as sputum microscopy, are major concerns, linked to decision making for categorization and treatment. With programme integration, besides sputum smears, the laboratory technician is also required to perform blood tests, urine tests and look for malarial parasites. Such overburdening of public health personnel, required to work without effective drug resistance surveillance facilities, may result and has resulted in a drop in quality and lack of motivation.

Information Management Systems:
Ideally, for the laboratory to operate efficiently and effectively, there would be need for an information management system to be integrated into the majority of laboratory activities, including inventory management, specimen tracking, test-result reporting and information sharing with clinicians and other TB control workers and health care providers. There is also need for compatibility with information management programmes of TB-control officials, clinicians and laboratories. Such an integrated system can improve the quality and organization of laboratory data and speed the flow of information to those who have a need to know.
Maintaining Proficiency Standards:
‘Regionalization’ of TB elimination activities to provide better access to and more efficient use of clinical, epidemiologic and other technical services, by initiating principles, benchmarks and outcome measures to guide development of TB laboratory systems.

In summary, any activities aimed at applying a comprehensive approach to strengthening laboratory systems and services should include:
- participatory laboratory assessments, including resource needs, and development of action plans
- strengthening management and leadership for performance improvement
- development of national laboratory policy and strategic plans
- development or adaptation of quality assurance systems to the local context
- development and implementation of standard operating procedures (SOP) laboratory equipment and commodity management
- development of training packages to improve management practices in laboratory settings

1.8 Better Drugs and Treatment
Today a majority of patients do not receive full and proper treatment - despite a decade-long push for more effective delivery and distribution of existing medicines. By dramatically reducing the length of treatment, new drugs can deliver the promise of existing control mechanisms and leverage earlier investments in health care infrastructure.

Much of the problem rests with today’s six to nine month regimen. While much progress has been achieved in simplifying treatment, the lengthy regimen handicaps TB control programs – particularly in poorer, endemic countries – fuels resistance, and impedes effective prevention. More people continue to be infected and incidence rates are rising.

The promise of TB control efforts will only be fully met when health care workers are given the best tools that modern science can deliver. A shorter TB drug regimen will radically improve treatment and compliance; accelerate the reach of DOTS and allow more patients to be treated cost-effectively. Cost savings may be redirected to detection and treatment of patients, thus accelerating the control of the epidemic.

1.8.1 Responsibility for Successful Treatment
The overall goals for treatment of tuberculosis are:
- to cure the individual patient
- to minimize the transmission of *Mycobacterium tuberculosis* to other persons.

Thus, successful treatment of tuberculosis has benefits both for the individual patient and the community in which the patient resides. For this reason the prescribing physician in the public or private sector, is carrying out a public health function with responsibility not only for prescribing an appropriate regimen but also for successful completion of therapy. Prescribing physician responsibility for treatment completion is a fundamental principle in tuberculosis control. However, given a clear understanding of roles and responsibilities, oversight of treatment may be shared between a public health program and a private physician.

1.8.2 Organization and Supervision of Treatment
Treatment of patients with tuberculosis is most successful within a comprehensive framework that addresses both clinical and social issues of relevance to the patient. It is essential that treatment be tailored and supervision be based on each patient's clinical and
social circumstances (patient-centered care). Patients may be managed in the private sector, by public health departments, or jointly, but in all cases the health department is ultimately responsible for ensuring that adequate, appropriate diagnostic and treatment services are available, and for monitoring the results of therapy.

It is strongly recommended that patient-centered care be the initial management strategy, regardless of the source of supervision. This strategy should always include an adherence plan that emphasizes DOTS, in which patients are observed to ingest each dose of antituberculosis medications, to maximize the likelihood of completion of therapy. Programs utilizing DOTS as the central element in a comprehensive, patient-centered approach to case management (enhanced DOTS) have higher rates of treatment completion than less intensive strategies. Each patient's management plan should be individualized to incorporate measures that facilitate adherence to the drug regimen. Such measures may include, for example, social service support, treatment incentives and enablers, housing assistance, referral for treatment of substance abuse, and coordination of tuberculosis services with those of other providers.

1.8.3 Recommended Treatment Regimens

There are four recommended regimens for treating patients with tuberculosis caused by drug-susceptible organisms. Although these regimens are broadly applicable, there are modifications that should be made under specified circumstances, described subsequently. Each regimen has an initial phase of 2 months followed by a choice of several options for the continuation phase of either 4 or 7 months. The initial phases are denoted by a number (1, 2, 3, or 4) and the continuation phases that relate to the initial phase are denoted by the number plus a letter designation (a, b, or c). Because of the relatively high proportion of adult patients with tuberculosis caused by organisms that are resistant to isoniazid, four drugs are necessary in the initial phase for the 6-month regimen to be maximally effective. Thus, in most circumstances, the treatment regimen for all adults with previously untreated tuberculosis should consist of a 2-month initial phase of isoniazid (INH), rifampin (RIF), pyrazinamide (PZA), and ethambutol (EMB). The initial phase may be given daily throughout (Regimens 1 and 4), daily for 2 weeks and then twice weekly for 6 weeks (Regimen 2), or three times weekly throughout (Regimen 3).

The continuation phase of treatment is given for either 4 or 7 months. The 4-month continuation phase should be used in the large majority of patients. The 7-month continuation phase is recommended only for three groups: patients with cavitary pulmonary tuberculosis caused by drug-susceptible organisms and whose sputum culture obtained at the time of completion of 2 months of treatment is positive; patients whose initial phase of treatment did not include PZA; and patients being treated with once weekly INH and rifapentine and whose sputum culture obtained at the time of completion of the initial phase is positive. For human immunodeficiency virus (HIV)-seronegative patients with noncavitary pulmonary tuberculosis (as determined by standard chest radiography), and negative sputum smears at completion of 2 months of treatment, the continuation phase may consist of rifapentine and INH given once weekly for 4 months by DOT (Regimens 1c and 2b)\textsuperscript{13}.

1.8.4 Deciding To Initiate Treatment

The decision to initiate combination antituberculosis chemotherapy should be based on epidemiologic information; clinical, pathological, and radiographic findings; and the results of microscopic examination of acid-fast bacilli (AFB)--stained sputum (smears) (as well as other appropriately collected diagnostic specimens) and cultures for mycobacteria.
If the suspicion of tuberculosis is high or the patient is seriously ill with a disorder, either pulmonary or extrapulmonary, that is thought possibly to be tuberculosis, combination chemotherapy using one of the recommended regimens should be initiated promptly, often before AFB smear results are known and usually before mycobacterial culture results have been obtained. A positive AFB smear provides strong inferential evidence for the diagnosis of tuberculosis. If the diagnosis is confirmed by isolation of *M. tuberculosis* or a positive nucleic acid amplification test, treatment can be continued to complete a standard course of therapy. When the initial AFB smears and cultures are negative, a diagnosis other than tuberculosis should be considered and appropriate evaluations undertaken. If no other diagnosis is established and the PPD-tuberculin skin test is positive, empirical combination chemotherapy should be initiated. If there is a clinical or radiographic response within 2 months of initiation of therapy and no other diagnosis has been established, a diagnosis of culture-negative pulmonary tuberculosis can be made and treatment continued with an additional 2 months of INH and RIF to complete a total of 4 months of treatment, an adequate regimen for culture-negative pulmonary tuberculosis. If there is no clinical or radiographic response by 2 months, treatment can be stopped and other diagnoses including inactive tuberculosis considered.

If AFB smears are negative and suspicion for active tuberculosis is low, treatment can be deferred until the results of mycobacterial cultures are known and a comparison chest radiograph is available (usually within 2 months). In low-suspicion patients not initially being treated, if cultures are negative, the PPD-tuberculin skin test is positive and the chest radiograph is unchanged after 2 months, one of the three regimens recommended for the treatment of latent tuberculosis infection could be used. These include INH for a total of 9 months, RIF with or without INH for a total of 4 months, or RIF and PZA for a total of 2 months.

### 1.8.5 Follow-Up Evaluations

Patients suspected of having tuberculosis should have appropriate specimens collected for microscopic examination and mycobacterial culture. When the lung is the site of disease, three sputum specimens should be obtained. Susceptibility testing for INH, RIF, and EMB should be performed on a positive initial culture, regardless of the source of the specimen. Second-line drug susceptibility testing should be done only in reference laboratories and be limited to specimens from patients who have had prior therapy, who are contacts of patients with drug-resistant tuberculosis, who have demonstrated resistance to rifampin or to other first-line drugs, or who have positive cultures after more than 3 months of treatment.

It is recommended that all patients with tuberculosis have counseling and testing for HIV infection, at least by the time treatment is initiated, if not earlier. During treatment of patients with pulmonary tuberculosis, a sputum specimen for microscopic examination and culture should be obtained at a minimum of monthly intervals until two consecutive specimens are negative on culture. More frequent AFB smears may be useful to assess the early response to treatment and to provide an indication of infectiousness. For patients with extrapulmonary tuberculosis the frequency and kinds of evaluations will depend on the site involved. In addition, it is critical that patients have clinical evaluations at least monthly to identify possible adverse effects of the antituberculosis medications and to assess adherence. Generally, patients do not require follow-up after completion of therapy but should be instructed to seek care promptly if signs or symptoms recur.
1.8.6 Completion of Treatment
A full course of therapy (completion of treatment) is determined more accurately by the total number of doses taken, not solely by the duration of therapy. For example, the "6-month" daily regimen (given 7 days/week) should consist of at least 182 doses of INH and RIF, and 56 doses of PZA. Thus, 6 months is the minimum duration of treatment and accurately indicates the amount of time the drugs are given only if there are no interruptions in drug administration. In some cases, either because of drug toxicity or nonadherence to the treatment regimen, the specified number of doses cannot be administered within the targeted period. In such cases the goal is to deliver the specified number of doses within a recommended maximum time. For example, for a 6-month daily regimen the 182 doses should be administered within 9 months of beginning treatment. If treatment is not completed within this period, the patient should be assessed to determine the appropriate action to take--continuing treatment for a longer duration or restarting treatment from the beginning, either of which may require more restrictive measures to be used to ensure completion.

Clinical experience suggests that patients being managed by DOTS administered 5 days/week have a rate of successful therapy equivalent to those being given drugs 7 days/week. Interruptions in treatment may have a significant effect on the duration of therapy. Reinstitution of treatment must take into account the bacillary load of the patient, the point in time when the interruption occurred, and the duration of the interruption. In general, the earlier in treatment and the longer the duration of the interruption, the more serious the effect and the greater the need to restart therapy from the beginning.

1.8.7 Practical Aspects of Patient Management during Treatment
The first-line antituberculosis medications should be administered together; split dosing should be avoided. Fixed-dose combination preparations may be administered more easily than single drug tablets and may decrease the risk of acquired drug resistance and medication errors. Fixed-dose combinations may be used when DOT is given daily and are especially useful when DOT is not possible, but they are not formulated for use with intermittent dosing.

Providers treating patients with tuberculosis must be especially vigilant for drug interactions. Given the frequency of comorbid conditions, it is quite common for patients with tuberculosis to be taking a variety of other medications, the effects of which may be altered by the antituberculosis medications, especially the rifamycins.

Adverse effects, especially gastrointestinal upset, are relatively common in the first few weeks of antituberculosis therapy; however, first-line antituberculosis drugs, particularly RIF, must not be discontinued because of minor side effects. Although ingestion with food delays or moderately decreases the absorption of antituberculosis drugs, the effects of food are of little clinical significance. Thus, if patients have epigastric distress or nausea with the first-line drugs, dosing with meals or changing the hour of dosing is recommended. Administration with food is preferable to splitting a dose or changing to a second-line drug.

1.8.8 Treatment in Special Situations: HIV infection
Recommendations for the treatment of tuberculosis in HIV-infected adults are, with a few exceptions, the same as those for HIV-uninfected adults. The development of acquired rifampin resistance has also been noted among HIV-infected patients with advanced immunosuppression treated with twice weekly rifampin- or rifabutin-based regimens.
Management of HIV-related tuberculosis is complex and requires expertise in the management of both HIV disease and tuberculosis. Because HIV-infected patients are often taking numerous medications, some of which interact with antituberculosis medications, it is strongly encouraged that experts in the treatment of HIV-related tuberculosis be consulted. A particular concern is the interaction of rifamycins with antiretroviral agents and other antiinfective drugs. Rifampin can be used for the treatment of tuberculosis with certain combinations of antiretroviral agents. As new antiretroviral agents and more pharmacokinetic data become available, these recommendations are likely to be modified.

On occasion, patients with HIV-related tuberculosis may experience a temporary exacerbation of symptoms, signs, or radiographic manifestations of tuberculosis while receiving antituberculosis treatment. This clinical or radiographic worsening (paradoxical reaction) occurs in HIV-infected patients with active tuberculosis and is thought to be the result of immune reconstitution as a consequence of effective antiretroviral therapy. Symptoms and signs may include high fevers, lymphadenopathy, expanding central nervous system lesions, and worsening of chest radiographic findings.

### 1.8.9 Objectives for TB Drug Development

A new shorter TB regime will radically transform the fight against tuberculosis. Shortening the current six to eight-month treatment to two months or less will improve patient adherence, increase cure rates, and lessen the likelihood of patients developing drug resistance. New drugs will also benefit the growing number of people around the world who are co-infected with TB and HIV, as well as those who have been exposed to TB but are not yet ill with disease.

Established in 2001, “to expand access to and availability of, high-quality TB drugs to facilitate DOTS expansion”, the Global Drug Facility (GDF)\(^4\), is now one of the most important initiatives of the Stop TB Partnership, with the aim of:

- Saving 25 million lives and preventing 50 million new TB cases by 2020
- Preventing the emergence of new strains of drug-resistant TB
- Rendering the purchase of TB drugs more cost-effective
- Improving the quality of TB drugs globally

Creation of the GDF was in response to difficulties experienced by countries in the 1990s in finding and funding stable TB drug supplies, factors responsible for hindering the expansion of the DOTS TB control strategy, in the absence of which patients are developing resistance to TB drugs as a result of the intake of poor quality drugs and unreliable supply channels, thereby making the disease difficult and expensive to treat.

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<th>Problems</th>
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<td>Lack of Resources</td>
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<td>Inefficient procurement</td>
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A constant and reliable supply of high-quality drugs means that the WHO-recommended strategy for fighting TB, DOTS, can be expanded by governments, an element, therefore, of the GDF mandate is to ensure that TB drugs meet WHO quality standards and are procured within strict regulations. Low quality drugs damage patient recovery and increase the likelihood of drug-resistant strains of TB. Eliminating the task of ensuring an uninterrupted supply of quality drugs, thus frees up precious financial and human resources in poor countries.

The GDF has adopted a new perspective on TB drug procurement, by linking demand for drugs to supply and monitoring, outsourcing all services to partners on a competitive basis, using product packaging to simplify drug management and linking grants to TB programme performance. The GDF operates a direct procurement system (DPS) with several key advantages:

- Competitive prices of between US$ 14 -18 for a six month course of treatment for an average weight patient with the final price depending on the treatment regimen used and the packaging of the tablets
- High-quality products which meet WHO stringent standards
- Individual patient blister packs for easy administration
- Rapid drug delivery times
- Web-based tracking of orders
- In-country assistance on drug management, registration and supply issues

A simple and quick grant application process has been developed, assistance for which both governments and non-governmental organizations (NGOs) in collaboration with the respective Ministry of Health are able to apply to the GDF.

To effectively fulfil its mandate, the GDF requires budget of US$50 million annually, with which it would be able to treat three million patients a year. Despite its impressive achievements, the GDF, however, does not have enough resources to meet its commitments in 2005.

1.9 Pitfalls and Limitations of Tuberculosis programmes in the prison environment

Five years into the twenty-first century, one would think that the on-going WHO "DOTS strategy" for management of tuberculosis should have been accepted, adopted and implemented worldwide, and all the more so in such places as prisons, known to be important sources of all contagious diseases, including TB. Management of the disease, many would think, should be "easier" in the prison setting, as one does not have to run around the countryside looking for patients; it would seem relatively easy to create different compartments for patients in different stages of treatment; and where – theoretically – it would seem patients should comply with the treatment.

Unfortunately, any such assumptions are most usually dead wrong as far as many prisons are concerned – and this is true for prisons all over the world, and particularly in Latin America, Africa, SE Asia and the countries of the former Soviet Union.

TB management is more complicated among prisoners, and if health staff are not aware of the many pitfalls to be found in correctional settings, a TB programme can become a nightmare to run.
Prisons are often, especially in developing countries, unhealthy places, that import, concentrate, propagate, worsen and export tuberculosis.

- the prisoner population is usually made up mainly of the poor, forlorn, unhealthy, and often devil-may-care-about-health members of the population. TB is indeed a disease of poverty, and all the side effects of poverty contribute to neglect of health and risky behaviours which can only increase the prevalence of the disease. Those people who are committed to prison are more likely than the outside population to already have TB, therefore bringing it into the prison.

- overcrowding and often bad ventilation are very often realities of prison life -- creating ideal conditions for contagion. Incoming prisoners are often not screened, but put into overcrowded conditions where contagion is rife.

- treatment programmes are often poorly organised, often by untrained, unmotivated staff. It is not surprising that TB cases get worse, lacking proper treatment and wholesome food.

- prisoners are transferred and moved about constantly within prison systems, and even those who do get access to treatment often have to interrupt it, or are released without any follow-up provided for.

Prisoners are also an unruly population, with many of them eager to profit from any and all situations. Once prisoners feel better (generally after 2-3 weeks of treatment) they may try to not take their medicines, so as to trade or sell them, smuggle them to their family, or just hold on to them "for a rainy day"... Interruptions of treatment, combined with "self medication" - also is rampant in prisons - is a recipe for creating resistant strains of the mycobacterium. Finally, in many countries, TB wards tend to have better conditions and better food than "usual" prison wards. Therefore, prisoners try to "cheat" on their sputum exams, trading or otherwise obtaining "positive" samples of sputum that they try to pass off as their own -- and thereby staying on in the more comfortable hospital settings.

These pitfalls and limitations need to be known by all health staff working in prisons, if TB management and treatment is to be efficient and successful. Prisoners certainly have the right to receive correct treatment -- but health staff have to take precautions to ensure quality care is not misused.

1.10 The Direct Observation of Treatment Strategy (DOTS) for TB Control:
The internationally recommended TB and most effective strategy available for controlling the TB epidemic today is direct observation treatment DOTS. Since DOTS was introduced on a global scale in 1995, over 10 million infectious patients have been successfully treated under this programme. According to The World Bank the DOTS strategy ranks as one of the "most cost-effective of all health interventions."

1.10.1 DOTS programmes:
- produce up to 95 percent cure rates even in the poorest countries
- prevent new infections by curing infectious patients
- prevent the development of multidrug-resistant tuberculosis (MDR-TB) by ensuring the full course of treatment is followed.
- Are cost-effective: a six-month supply of drugs for DOTS costs US $11 per patient in some parts of the world
1.10.2 DOTS has five key components:

**Sustained political commitment** in order to increase human and financial resources and make TB control a nation-wide activity and an integral part of the national health system at all levels, including peripheral health facilities and the community. The effective expansion of DOTS demands a multi-sectoral and sustained response to address the social and environmental factors that increase the risk of developing TB. This requires TB control to be viewed broadly, as a component of international, national and local strategies to alleviate poverty. Particular efforts are needed to foster local, national and international partnerships for TB control. Governments could facilitate social mobilization by fostering communication among all health care providers, patients and public at large.

**Case detection by sputum smear microscopy** Sputum smear microscopy is the MOST COST-EFFECTIVE method of screening pulmonary TB suspects referring to health services. It identifies sputum smear-positive, highly infectious TB cases.

TB is diagnosed using patient history, clinical examination and diagnostic tests. In submitting a sputum sample to the laboratory, the results of the microscopic exam are entered into the laboratory register, in this way all suspects and ultimately patients diagnosed with TB who will have undergone a sputum smear microscopy exam are registered and treated.

**Standardized short-course chemotherapy with direct observation of drug intake**

A Short-course chemotherapy involves a treatment regimen of six to eight months using a combination of powerful anti-TB drugs. The Directly observed therapy (DOT) is essential at least during the intensive phase of treatment (the first two months) to ensure that the drugs are taken in the right combinations and for the appropriate duration. With direct observation of treatment, the patient doesn't bear the sole responsibility of adhering to treatment. Health care workers, public health officials, governments, and communities must all share the responsibility and provide a range of support services patients need to continue and finish treatment. One of the aims of effective TB control is to organize TB services which are integral part of health systems so that the patient has flexibility in where he or she receives treatment, for example in the home or at the workplace. Treatment observers can be anyone who is willing, trained, responsible, acceptable to the patient and accountable to the TB control services.

**Drug supply**—With DOTS, an accurate recording and reporting system is introduced, which provides the information needed to plan and maintain adequate drug stocks.

**Recording and reporting system** implemented is used to systematically evaluate patient progress and treatment outcome. The system itself consists of a laboratory register, in which all patients who have had a smear test done have been logged; patient treatment cards, detailing the regular intake of medication and follow-up sputum examinations; the TB register, listing patients starting treatment and monitoring their individual and collective progress towards cure; and reporting forms from districts to the national level, which allow assessment of control efforts.

1.11 **DOTS-Plus - WHO Strategy to the Problem of Drug Resistance**

High levels of multidrug-resistant TB (MDR-TB) in some areas have and are threatening TB control efforts. DOTS-Plus for MDR-TB is not intended as a universal strategy, but is a comprehensive management initiative, built upon the five elements of the DOTS strategy. It, nevertheless, also takes into account specific issues, such as the use of second-line anti-TB drugs.
DOTS-Plus has as its goal to prevent further the development and spread of MDR-TB. Application of this strategy is not required in all settings. Instead, its implementation should be in selected areas with significant levels of MDR-TB in order to combat potential or actual epidemics. Ultimately, the first step in controlling MDR-TB is prevention by full implementation of DOTS. Therefore, a prerequisite for implementation of DOTS-Plus is the existence of an effective DOTS-based TB control programme.

Treatment of MDR-TB is more difficult than for other drug-susceptible strains of TB. Treatment success will essentially depend on how quickly a case of TB is identified as drug resistant and whether an effective drug therapy is available. The second-line drugs\textsuperscript{21} used in cases of MDR-TB are often less effective and more likely to cause side effects. Tests to determine the resistance of a particular strain to various drugs often take several weeks to complete, during which time the patient may be treated with an ineffective drug regime. Some strains of MDR-TB are resistant to seven or more drugs, making the identification of effective drugs difficult. To address this problem, it is recommended that newly discovered cases of TB in populations at high risk for MDR-TB, be treated with four drugs rather than the standard three as part of the initial treatment. Treatment of MDR-TB involves drug therapy over many months or years, and as a result difficulties arise for some people to successfully complete their tuberculosis treatment.

An innovation developed has been the introduction of incentives and enablers, in the form of transportation, tokens or food coupons given to patients at each visit to the clinic or health care facility for treatment. Such incentives and enablers are combined with the use of DOTS, the system of treatment in which the patient is administered medication by the doctor, nurse or health care worker and observed taking the medication.

In some countries, for differences that vary according to economics or evolution in recent history, the re-emergence of TB, to begin with, has been biased, as the development of resistance in large groups of patients, was the result of drug consumption in an erratic and uncontrolled manner or the consumption of non-TB drugs. Such has been the case, for example, in the countries of the former USSR, where a high percentage of patients developed resistance, thereby rendering the application of the ‘classic’ first-line DOTS scheme ineffective. In such circumstances, the prescription of first-line drugs increases the likelihood of further development of resistant strains.

The World Health Organization in the 2002 Report on Global TB Control\textsuperscript{22} recorded that the estimated proportion of TB cases in South Africa identified as multidrug-resistant TB (MDR-TB) ranged from 1% to 2% among new cases and 4% to 14% among retreatment cases, depending on the province. Treatment default emerged as a significant problem, for which the following four major areas were identified as being associated with defaults among the patients receiving treatment for MDR-TB:
- quality of patient-provider relationship, with frequent dissatisfaction expressed by defaulters with health care worker attitudes and as a result missing of treatment
- lack of social support from family and friends during treatment, due to stigma attached to TB
- use of illegal substances during treatment
- low tolerance to side effects from medication
1.11.1 Strategy and focus of DOTS-Plus

- DOTS prevents the emergence of drug-resistant TB and MDR-TB by ensuring that patients adhere to the full course of treatment
- DOTS-Plus is designed to cure MDR-TB using second-line anti-TB drugs
- DOTS-Plus is needed in areas where MDR-TB has emerged due to previous inadequate TB control programmes
- DOTS-Plus pilot projects are only recommended in settings where the DOTS strategy is fully in place to protect against the creation of further drug resistance
- It is vital that DOTS-Plus pilot projects are implemented following the recommendations of the Stop TB Working Group on DOTS-Plus for MDR-TB, in order to minimize the risk of creating drug resistance to second-line anti-TB drugs
- Before launching DOTS-Plus pilot projects WHO Member States are strongly recommended to consult WHO
- With the coordination of the Working Group on DOTS-Plus for MDR-TB and a partnership with industry, the price of second-line anti-TB drugs have fallen considerably, making these drugs more accessible to the poor.

1.12 Financing DOTS

WHO Member States at the 58th World Health Assembly endorsed a resolution supporting sustainable financing for tuberculosis prevention and control. The four main areas of the resolution involve:

- strengthening and supporting mechanisms to ensure sustainable financing;
- need to deliver successful quality DOTS through health system strengthening;
- improving TB control in relation to the challenges posed by HIV and drug resistance; and
- mobilizing societies against TB.

There has been a big increase in National TB Programme (NTP) budgets and a big improvement in the funding available for TB control since 2002, with particularly large increase between 2003 and 2004. The total reported budgets for the 22 High Burden countries (HBCs) in 2005 are US$741 million. The total estimated costs of TB control are projected to be US$1.3 billion, of which US$1.2 billion is already available. With the exception of large additional government contributions in China, Indonesia and the Russian Federation, almost all of the extra funding for TB control since 2002 is from the Global Fund to fight AIDS, Malaria and TB (GFATM) grants. The GFATM, therefore now plays a major role in the financing of TB Control, contributing more than one third of the budget in several HBCs, and over half in a few.

For those countries that have secured large additional grants or loans, the key question now is whether the NTP can spend the money effectively. The most obvious need is for additional staff, particularly those with general and financial management skills, a need that has already been recognized in several countries. The absence of long-term planning and clearly defined finances is a barrier to TB control, which requires a sustained effort over many years, coordinated among a wide range of partners working together effectively. In light of this, therefore, for a number of HBCs, major improvements need to be made in the quantity and quality of data collected. Most NTPs have to date found it more difficult to provide data on expenditures than budgets.

Investment in TB programmes can, as identified in the WHA resolution, strengthen the general health system, for example through improvements in staff capacity, monitoring and evaluating systems and laboratories. Since 2002 TB control financing has improved, in some countries this has been dramatic. The task for those HBCs with sufficient funds, is to
demonstrate that they can spend them effectively. Countries that have recorded no apparent shortfall should verify that their budgets are sufficient to meet targets. Finally, for those with obvious funding gaps, the focus must be on raising the money needed to improve programme performance.

1.13 Successes and Constraints to DOTS Planning and Implementation

All HBCs have a strategic plan for DOTS expansion and during 2005, many will begin a new planning cycle for the next five years. However, the transition from planning to implementation, and then to the improvement of coverage, case detection and treatment success has been slower than anticipated in several countries.

Among the obstacles to DOTS expansion, five are of overriding importance:
- shortages of trained staff
- lack of political commitment
- weak laboratory services, and
- inadequate management of MDR-TB and
- inadequate management of TB in people infected with HIV

From the health systems management perspective, the following constraints also prevail:
- Inadequate infrastructure
- Budgets not matching closely with plans
- Under-development of private sector and other collaborative partnerships for DOTS delivery
- Ineffective decentralization
- Failure of drug supplies, inconsistent drug quality and inadequate drug policies

The acute shortage of adequately trained staff affects the distribution and quality of services, demonstrated particularly in the under-performance of central management and through failings in the laboratory network. The remedy for the HBCs, at the very least, would be the application of strong and clear policies for recruiting, retaining and motivating staff.

Many of the laboratories participating in DOTS programmes have insufficient equipment and supplies and limited procedures for quality assurance, all of which constitute essential elements to enable laboratories to take on the larger tasks of culturing M.tuberculosis and testing for drug sensitivity as well as integration of DOTS-Plus projects within DOTS programmes. To help improve capacity in HBCs, a subgroup concerned with laboratory strengthening, has been established by the DOTS Expansion Working Group (DEWG).

The absence of national policies on MDR-TB management, the widespread availability of drugs of uncertain quality and the large numbers of MDR-TB patients treated outside the NTP together suggest that the treatment of drug-resistant TB is often inadequate. WHO, however, in the process of expanding drug resistant surveillance and DOTS-Plus components within the context of regular TB control programmes as well as working to establish a long-term competitive market for quality-assured drugs by spearheading a project to pre-qualify second-line drugs worldwide.

HIV/AIDS programme staff are increasingly aware of the fact that people infected with HIV are at high risk of developing active TB, while their counterparts in TB control programmes are seeing the impact of HIV on TB case-load. Until now, little collaboration has existed between TB and HIV/AIDS control programmes. However, many such programmes are beginning to adopt elements of the WHO interim policy on collaborative TB/HIV activities.
Much closer collaborations of this kind, therefore, are needed to develop and improve access to prevention, treatment and support services, for both TB and HIV/AIDS patients.

Notwithstanding these weaknesses, a series of positive developments have been identified in DOTS implementation, namely:

- contribution of NGOs and community groups to TB control, demonstrating clear expressions of the growing commitment of civil society;
- establishment at the centre of the DOTS strategy as well as improved access to TB services in remote areas and among disadvantaged and marginalized populations as a result of involvement of these civil society groups;
- increased recognition of NGOs as essential members of national partnerships for TB control, which has helped not only to coordinate routine activities, but also to develop a collaborative approach to solving the problems faced by NTPs;
- measurable impact, through public-private mix (PPM) projects on case detection in several countries, which may prove a mechanism for expanding TB control services in Africa.
- launch in 2003 of the Intensified Support and Action in Countries (ISAC) - a new initiative to push towards 2005 targets in selected countries – China, India, Indonesia – the technical work of which aims at facilitating access of patients to DOTS services, through, for example, expansion of the geographical coverage of DOTS, involvement of a greater diversity of public and private health care providers, by strengthening in-country advocacy and social mobilization and partnership building and collaborative TB/HIV activities.

1.14 Proposed Remedial Action
In order to manage therefore the current upsurge of TB, the first priority would be to ensure that there are health services in place that are sustainable long term. To this end it would be necessary to:

- develop staffing plans for TB control which would be consistent with those aimed at strengthening the health workforce in general.
- introduce public-private mix projects and schemes involving other public providers and facilities
- provide adequate funding for and the build local capacity in countries with decentralized health systems
- establish supervision guidelines and reinforce the role and activities of a central monitoring team
- intensify advocacy at the local, national and global level for TB screening, diagnosis and treatment
- establish, as an integral part of DOTS programme, testing for drug sensitivity
- standardization of treatment regimes for patients that have failed treatment
- ensure availability of and proper administration of drugs for patients with MDR-TB
- match fundraising to realistic budgets
- expeditious disbursement and increase of funds by international donors (such as GFATM)
- encouragement of national governments to increase contributions to TB control programmes.
2.1 What is a Hospital?
Fundamentally, a hospital can be defined as a place where medical care is provided, normally on both an inpatient (i.e. residential) and an outpatient (non-residential) basis. Miller defines it as “an institution which provides beds, meals and constant nursing care for its patients while they undergo medical therapy at the hands of professional physicians. In carrying out these services, the hospital is striving to restore its patients to health”. It is important however to also point out that a ‘hospital’ may mean different things in different countries and that it may carry out different functions. Observation of the term ‘hospital’ within an international setting covers diverse structures, ranging from a ten-bed building run by ‘nurses’ with basic training who provide mainly social care, to a complex specialist centre equipped with the most advanced technology and staffed by a large array of medical specialists.

Hospitals thus can be categorized according to the following levels:
- Functional care- secondary or tertiary;
- Administrative ownership – national, regional/city, district and local;
- Size – number of beds;
- Ownership type – public / private;
- Range of specialities / general or single speciality

2.2 Role of the Hospital in the Health Care System
Hospitals are not only important in themselves, they also have crucial influence on the broader health care system. Great value is put on them by communities and they are major employers in the communities of which they form a part. They provide the principal setting for education of doctors, nurses and other health care professionals and the main base for clinical research. In short, their influence extends far beyond their walls in terms of potential impact on patterns of medical and social care of a nation’s health care system. This relationship between a hospital and its surrounding health care services is complex and varies considerably between countries and the organization of health services and treatment modalities will differ between counties and population groups which change over time.

In the high-income countries with high life expectancy there has been an epidemiological transition with a shift from communicable to non-communicable disease and as a result non-communicable disease, such as cardiovascular disease, cancers and injury, now accounts for most deaths. Conversely, the trend in low-income countries with high adult and child mortality rates, the trend is the attribution of 89% of majority of deaths to communicable diseases such as infectious and parasitic diseases and respiratory infections.

Prevention of many of these infectious (as well as the non-infectious) diseases is possible within improved socio-economic living conditions together with the introduction of effective campaigns aimed at preventing these diseases.
It is possible for health care services to be planned to respond to disease patterns. One argument in this regard is that low-income countries with high rates of infectious diseases should address the socio-economic conditions responsible for the prevalence and proliferation of these diseases and improve the capacity of primary health care in order to prevent disease and thereby enable an early response to patients in the disease process. Primary health care also needs strengthening in many countries where preventable non-communicable diseases, such as cardiovascular diseases are on the increase. However, whether the main disease burden lies in communicable or non-communicable diseases/conditions, the role of the hospital needs to be considered within the context of the health needs of the country as well as within the larger health care system, including the capacity of services to provide effective health care.

2.3 Management
The picture painted of the majority of public hospitals is one sever under-funding or sharp cutbacks by government in public spending which have had an impact on the state of buildings and equipment, quality standards in delivery of services, staff morale and creation of long waits by patients. Tackling these problems will require money. However, money by itself will not be enough in the absence of management and leadership of a high order. In order to be able to define and clarify the terms management and leadership, it would be necessary to consider the following key elements:

- Political vision, leadership and a feasible plan
- Investment
- Human resource management
- Information management
- Centralisation, decentralization and autonomy

2.3.1 Political vision
Every health care system requires a clear sense of what it is trying to achieve and how it needs to adjust what it is currently doing. In larger governmental systems this lead can only come from government. Governments, however, often work to short time scales – mainly periods between elections – and reach for ‘quick fix’ solutions in the form of organizational change, to solve problems which call for quite different responses, pursued systematically over a long period.

Generally, there is a lack of linkage between strategic intent and actual delivery in the statements of mission of large public hospitals and the overall national strategy and purpose.

2.3.2 Investment
This is required to fulfil central government budget expectations, maintain equipment, upkeep, adapt and when necessary replace buildings and personnel and non-personnel costs, such as pharmaceuticals, medical and non-medical supplies, energy costs, etc.

2.3.3 Human resource management
While under-funding is widespread, so is poor management of human resources. What is all too common is a workforce where people feel undervalued and unable to influence, let alone to shape, the contexts in which they work. In medicine, the main problems have not lain in initial recruitment into medical education, the difficulties come later in staffing of remote areas, obtaining the numbers needed in less popular specialities. International migration, particularly in low-income countries, many of which are high MDR-TB and TB burden countries (HBCs) is proving an even greater problem.
Today, however, there are many other health professionals besides medicine and nursing, with a lower profile, but to whom, the issues of recruitment, retention, motivation, development and performance, also apply. In addition, there are all the occupations not classed as professions, but vital to keeping a hospital going, cleaning, portering, maintenance, secretarial, clerical and administrative.

In the task of management, it is thus, increasingly clear that the overall direction of a hospital lies an effective teamwork and on leadership of a high order. It is necessary that an effective interactive network be established between clinical staff and financial/administrative staff.

Many of the low-income countries currently lack the human resources capacity to plan, manage and evaluate their health care systems. The physicians in these countries that typically administer state departments of health or who run health services organisations, seldom are trained in management.

2.3.4 Information management

Whether the issue to be tackled is about the care of an individual or about the needs of a whole community, or about institutional or system performance, good information is crucial. Never has there been such a wealth of skills, techniques and tools to collect, process, analyse and present information. Unfortunately, however, hospital systems do not typically do this well. In those countries attempting to successfully implement TB control programmes, particularly where health care facilities and hospitals have and are facing large cuts in funding, very little is able to be done in terms of information management. However, in certain case, this is not the main problem, instead the issue being confronted is one of making connection between data generated at one level and its use at another, whether this is within the same hospital or more remotely, at regional or national level.

2.3.5 Centralisation, decentralization and autonomy

Hospitals are predominantly public institutions, or are dependent on public funding. Detailed management by central regulation is rule bound, inflexible and slow. It also undermines willingness of all involved at the local level (managers, clinical staff, the local community) to stand on their own feet, so far as they are able and tackle local problems in their own way.

A suggestion may well be one of experimenting with the concept of public hospitals run under the ultimate authority of the Ministry, but with substantial managerial independence.

2.4 Primary Health Care (PHC)

2.4.1 Definition

Primary Health Care (PHC) is a health systems policy model adopted by the World Health Organization and the United Nations at the Conference of Alma Ata in 1978 and defined as an approach to health care that:

- is evidence based;
- uses appropriate technology;
- promotes community participation in decisions about health services;
- is provided at a cost the community can afford;
- encourages self-care and empowerment of community members;
- is the first level of contact with the health care system; and
- brings health care as close as possible to where people live, work and play.
Primary health care services serve as the first point of health care contact. Although both the public and private sector offer primary health care services, there is a trend towards growing utilization of private sector providers in low- and middle-income nations.

Primary health care services substantially affect the general health of a population because they address basic diseases that constitute most of a developing nation's disease burden.

2.4.2 Difference between primary health care and primary care

Primary care refers to the first contact people have with the health care system to seek out primary care services for the diagnosis, treatment and follow-up for a specific health problem or access routine screening, such as annual check-up. In general, primary care is provided by family physicians, home care and public health nurses, pharmacists, physiotherapists, and dentists among others. Primary care is a core component of primary health care, although it is more narrowly focused on illness treatment and rehabilitation.

Primary health care is an approach that more broadly addresses illness prevention and health promotion. It encompasses determinants of health, such as the influence of culture, education and income on health and wellbeing.

In a primary health care model, there will be multiple points of access and the member of public may choose to see the physician, nurse. Teams of health care providers will work together to address the health care needs of a defined population. Leadership of the team will be dependent on the priority needs of the patient/client. For example, a home care patient might need rehabilitation, nursing care and social services. The coordinator of the care may therefore be the physiotherapist, registered nurse or social worker depending on the priority need of the patient. The services provided at a primary health care centre may be different based on the needs of the population.

Primary health care promotes continuity of care and provides for seamless and smooth transitions through linkages between the components of the health care system (acute, public health, home care, and long-term care), external agencies and partners, and formal and informal caregivers. Integrated multidisciplinary teams will make full use of the complimentary skills of all health care providers.

2.4.3 Use of Appropriate Technology

Technology can refer to the structure and delivery of health services, human resources, medical equipment, pharmaceutical agents, or new interventions and techniques. There is need, therefore, to ensure that interventions and technologies used in health care are proven to be effective and affordable.

2.4.4 Individual and Community Participation

The primary health care model encourages ‘full participation’ of the public. Implementing this component of the primary health care model means that there must be a shift from ensuring that people are given consistent information that is fully discussed with them. In this model, the patient/client becomes a partner in care and the public becomes more involved in making decisions. A well-informed public will be able to:

- take responsibility for their own health
- understand the implications of the health care decisions they are making
- support the appropriate use of technology
- be involved in planning for health services
The primary health care model advocates that health services should be offered ‘in the spirit of self-reliance and self-determination’, that is in a manner that enables individuals to take more ownership of their own health. Health care professionals have traditionally taken on the role of expert within the system and this can unnecessarily foster dependence on health care providers. Client empowerment and self-care capacity are supported in the primary health care model.

### 2.4.5 Increased Health Promotion and Disease Prevention

There needs to be a shift to providing sufficient health care funding to encompass the full spectrum of services from health promotion, prevention, treatment, rehabilitation, to palliative care services. In a primary health care system, services should increasingly be provided in the community. High quality tertiary care in hospitals and long-term care centres should continue to be available for those who require specialized care, but without them being the major focus of the system, as is currently the case. In addition to the provision of illness care, orientation of the health care system needs increasingly to be towards health, wellness, competence, and coping. Increased funding targeted at health and wellness will expand opportunities for early identification of risk and prevention of illness.

### 2.5 Issues in Primary Care Services

Many factors undermine the quality and efficiency of primary health care services, particularly in low-income countries. Some of the main issues include appropriate counseling, prescribing practices, inadequate technology and insufficient medical supplies. The problems identified include:

- **Skills** – poor provider skills which lead to inappropriate diagnosis and treatment of illnesses, contributing to higher morbidity and mortality levels in patients
- **Technology** – Many low-income countries often utilize medical technology inappropriately because they use high-tech equipment to deal with basic health problems
- **Medical Supply** – Many primary health care centres lack essential drugs on a continuous basis
- **Bypassing** – Underutilisation of public primary health care by patients when they encounter public primary care clinics poorly staffed, lacking medicine and poorly organised. Instead, they go ‘up the chain’ to higher level, often more costly providers, or to the private sector.

### 2.6 Trends in Primary Care Services

Several mechanisms may be used in order to improve primary health services, particularly in low-income countries, namely:

- **Capacity Building** - This aims to improve the knowledge and skills of primary care professionals.
- **Community Involvement** - Would improve governance and accountability of public primary health clinics via community involvement.

The intended results from this approach are an increase in the drug supply and improved provider skills.

Another widely used mechanism is contracting, which has the potential to improve primary health services because:

- it utilises the private sector’s greater flexibility and better morale to improve services and responsiveness to consumers;
- increases managerial autonomy and decentralises decision-making to managers on the ground;
- uses competition to increase the quality and efficiency of services;
- allows governments to focus less on service delivery and more on other roles in which they have a comparative advantage;
- may improve quality of care by selecting better providers, and reduce financial burdens for people using private providers.

Cambodia is an example of a low-income country that successfully used contracting for delivering primary health services\textsuperscript{33}. In South Africa a new model of private primary care provision has emerged in which private companies own multiple primary care clinics and provide standardized primary care services at a relatively low cost\textsuperscript{34}.

2.7 The Provision of TB Patient Primary Care

In the fight against TB, the role played by primary health care services is critical with regard to the care provided to TB patients.

The results of a research study on the provision of tuberculosis patient care at the government clinics in the Qwa-Qwa district of the Free State, South Africa\textsuperscript{35} indicated the following obstacles for primary health care nurses to render effective tuberculosis patient care:

- Lack of knowledge, training and skills amongst some of the nurses in the treatment of tuberculosis,
- Poor access to tuberculosis information, which include the procedures that protect nurses from tuberculosis infection,
- Poor management system for nurses in tuberculosis patient care;
- Lack of health resources related to tuberculosis treatment;
- Fear of the consequences of contracting tuberculosis by some of the nurses, and;
- Negative attitudes of some nurses towards tuberculosis patients as well as towards their work.

2.8 Prevention and Control of Nosocomial Transmission of Tuberculosis in Health Care Settings and among Health Care Workers

2.8.1 Occupational tuberculosis in health care workers

Health care workers are exposed to a variety of occupational infections. Tuberculosis can be considered both a nosocomial and an occupational infection. The incidence of \textit{mycobacterium tuberculosis} infection in and transmission to or from health care workers varies widely, according to the type and size of the facility, the prevalence of TB in the community, the patient population served by the facility, the occupational group the person represents, the area of the facility where the person works and the effectiveness of the facility’s TB control programme. Multiple drug-resistant strains of \textit{M. Tuberculosis} are an increasing occupational concern among health care personnel, with hospitals and other health care facilities proving settings for the nosocomial transmission of these strains of \textit{M. Tuberculosis}. Disturbing trends have been the emergence of infection with Human immunodeficiency virus (HIV) which increases the risk of TB disease subsequent to infection.

The primary cause of TB transmission in health care facilities is incomplete implementation of recommended TB infection control measures. The Center for Disease Control and Prevention (CDC), in \textit{Guidelines for Preventing the Transmission of M. Tuberculosis in...}
Health Care Facilities, 1994\(^{36}\) published detailed recommendations for the prevention of transmission of TB in health care settings. The recommendations include the need for the conduct of a detailed risk assessment in order to identify the nature of TB control measures appropriate for a particular facility, specific area and occupational groups within a facility. In addition, for TB transmission to be minimised, they recommend the development and implementation of an effective TB control programme based on a hierarchy of the following controls:

- Administrative controls
- Engineering controls
- Personnel respiratory protection

The recommendations also call for:

- implementation of TB screening programmes for personnel as an integral part of a health care facility’s comprehensive TB control programme
- follow-up evaluation of the group with the potential for exposure
- management of the personnel after exposure, by administering the appropriate test as soon as exposure is recognized
- institution of appropriate preventative therapy
- application of work restrictions, through exclusion from duty, until the personnel with the disease become non-infectious.

2.8.2 Health care worker protection

The use of respiratory protective devices, such as high-efficiency particulate filters (or approved masks) is recommended for those health care personnel providing care for patients with tuberculosis. Wearing of respiratory protective devices reduce the chances of infection from a variety of harmful airborne diseases such as TB. The purified protein derivative (PPD) skin test is the recommended instrument for tuberculosis screening in health care workers.

![Replaceable filter and disposable respirators\(^{37}\)](image-url)
2.9 MDR-TB & TB Management Team within the Hospital Environment - Organigramme

Hospital / Health Facility Manager

Doctor Nurse HR Manager Financial Manager Systems Manager District TB Coordinator

For detailed skills and knowledge needed for tasks of doctors\textsuperscript{38}, nurses\textsuperscript{39}, health personnel and District Coordinators\textsuperscript{40,41} in charge of MDR-TB & TB programmes and patients, the respective referenced materials may be consulted.
2.10 QUESTIONS AND ANSWERS

How is TB spread?
TB is spread through the air from one person to another. The bacteria are put into the air when a person with active TB disease of the lungs or throat coughs or sneezes. TB bacteria can settle in the lungs and begin to grow. From there, they can move through the blood to other parts of the body, such as the kidney, spine, and brain. TB in the lungs or throat can be infectious.

What is latent TB infection?
In most people who breathe in TB bacteria and become infected, the body is able to fight the bacteria to stop them from growing. The bacteria become inactive, but they remain alive in the body and can become active later. This is called latent TB infection. People with latent TB infection have no symptoms, don't feel sick, can't spread TB to others, usually have a positive skin test reaction, can develop active TB disease if they do not receive treatment for latent TB infection. Many people who have latent TB infection never develop active TB disease. In people, especially people who have weak immune systems, the bacteria become active and cause TB disease.

What is active TB disease?
TB bacteria become active if the immune system can't stop them from growing. The active bacteria begin to multiply in the body and cause active TB disease. The bacteria attack the body and destroy tissue. If this occurs in the lungs, the bacteria can actually create a hole in the lung. Some people develop active TB disease soon after becoming infected, before their immune system can fight the TB bacteria. Other people may get sick later, when their immune system becomes weak for another reason. Babies and young children often have weak immune systems. People infected with HIV, the virus that causes AIDS, have very weak immune systems. Symptoms of TB depend on where in the body the TB bacteria are growing. TB bacteria usually grow in the lungs and may cause symptoms such as a bad cough, pain in the chest, coughing up blood or sputum; Other symptoms of active TB disease are weakness or fatigue, weight loss, no appetite, chills, fever, sweating at night.

2.10.1 The Healthcare Workers Questions & Answers Guide:

How can I protect myself from tuberculosis infection?
Tuberculosis is an infection caused by slow-growing bacteria. These bacteria can infect the lungs or any other body structures, including the brain, the skeleton and the lymphatic system. You could catch tuberculosis by breathing in infected droplets that get into the air when infected people cough. It's important to know which patients might have tuberculosis. Infected patients may have symptoms such as a chronic cough (lasting for weeks and bringing up mucus or blood), weight loss, fever or night sweats. If you work around these patients, wear a protective mask. Have these patients wear a mask also, to contain their secretions, and isolate them from other patients (that is, get them out of the waiting room in an office setting, or into isolation in the hospital setting).

How will I know if I have contracted tuberculosis?
As a health care worker, you should have a tuberculosis skin test once or twice a year. The test will determine if you have picked up the bacteria that causes tuberculosis, but the test won't tell if you have disease or active infection. A negative skin test means that you have not picked up the bacteria (unless you are HIV-positive or immunosuppressed). If you have any illnesses or take medicines that keep you from reacting to the tuberculosis skin test, you may need to have additional skin tests to see if you are able to react to the test.

What does a positive skin test mean?
If you have a positive reaction to the tuberculosis skin test, it usually means that you have been exposed to the bacteria, but there is a better than 90 percent chance that your body's immune system has suppressed the infection. When your skin test is found to be newly positive, you will have a chest radiograph to make sure that you don't have an active infection. If your chest radiograph is negative and your skin test reaction is recent, you may be given an antituberculous medicine for six to 12 months. This medicine is used to prevent any activation of the infection in the future, but you are not infectious to others.

What does it mean to have active tuberculosis?
If you have a positive skin test and an abnormal chest radiograph or symptoms of tuberculosis, you'll be treated for active disease. When you're diagnosed with active disease, you're infectious to others. You may be treated with three or four medicines for nine to 12 months. You'll need to take precautions with your family, and you'll be kept out of work until you're no longer infectious. Active tuberculosis is much less common than skin test conversion.

What should I do if I learn that a patient I cared for had active tuberculosis?
Unless you recently had your yearly tuberculosis test, you should have a baseline tuberculosis skin test if you are exposed to a patient with active tuberculosis, especially if the disease wasn't recognized, and isolation and masks were not used. A follow-up test in three months will show if the exposure resulted in infection.
If I have a positive skin test, should I continue to be tested?
Once you have had a positive skin test, you shouldn't continue to have skin tests because the tests almost always will be positive. Once you have a positive skin test, it's necessary to rely on symptoms to determine if you have tuberculosis. A chest radiograph should be obtained if you have a cough lasting for two to three weeks, if you are bringing up mucus with blood in it or if you have fever or weight loss. Routine yearly chest radiographs usually are not necessary.

If I have a positive tuberculosis skin test, should I continue to use precautions?
Some people think that once they've been infected with the bacteria that causes tuberculosis, they don't need to take precautions or wear a mask when dealing with tuberculosis patients. Since there have been rare instances of persons being re-infected with a new tuberculosis strain, however, you should continue to take precautions.

How can I keep myself from getting an infection at work?
As a health care worker, you may be exposed to many different sources of infection. Infections may be transmitted by blood or body fluids, by air or respiratory secretions, or by direct contact with other infectious materials. You can protect yourself from infection by following the infection control guidelines in your workplace, by using personal protective equipment like gloves and masks, and by following universal precautions (that is, handling all blood and body fluids as though they are infectious). This handout discusses some of the infections that may be transmitted in your workplace and ways you may keep yourself from getting them.

What if I have HIV infection?
Because HIV infection weakens the immune system, people with latent TB infection and HIV infection are at very high risk of developing active TB disease. All persons with HIV infection should be tested to find out if they have latent TB infection. If they have latent TB infection, they need treatment as soon as possible to prevent them from developing active TB disease. If they have active TB disease, they must take medicine to cure the disease.

Active TB disease can be prevented and cured, even in people with HIV infection.

What are blood-borne pathogens, and how can I protect myself from infection with them?
Many infections can be spread by blood or body fluids. The human immunodeficiency virus (HIV) and the hepatitis B virus are common examples. However, infections caused by other viruses and bacteria, such as syphilis and hepatitis C, can also be spread by blood or body fluids. The guidelines below can help you protect yourself from blood-borne infections:
Follow universal precautions. Consider every patient to be infected.
Avoid contact with the blood or body fluids of all patients.
Avoid risky behavior when using needles and other sharp instruments, including scissors, scalpels, blades and knives. For example, don't recap needles. Carefully dispose of sharp instruments in appropriate containers.
Wear protective equipment, including gloves and face shields, to avoid getting blood on your skin or in your eyes when you're performing procedures that may cause splashes or spills. Be certain you are immunized against hepatitis B (this vaccine should be offered to you in your workplace).

Do all body fluids transmit blood-borne pathogens?
Body fluids such as tears, sweat, saliva, urine and vomitus are not thought to transmit blood-borne pathogens unless they are visibly contaminated with blood. (Urine or fecal material may contain bacteria or infectious agents that are not considered blood-borne pathogens, but you may wish to avoid them.) Most other body fluids, such as semen, vaginal secretions and pericardial, peritoneal, joint, amniotic and cerebrospinal fluids, can transmit blood-borne pathogens.

What should I do if I'm exposed to blood by a cut, a needle-stick or a splash?
If an incident occurs, tell your employer or the employee health service right away. If your skin is broken (by a needle-stick) or fluid has splashed into your eyes, your mouth or onto broken skin, both you and the source patient will be tested. Blood tests should verify that you're immune to hepatitis B and don't currently have a blood-borne infection. The source patient's current and past infections will also be checked. If the source patient is infected with hepatitis B and, despite immunization, you never developed immunity to hepatitis B, you will be given hepatitis B immune globulin. If the source patient has syphilis, you will be offered antibiotics. If the source patient has HIV infection, you may take preventive medicines for four weeks. These medicines should be started within hours of the accident. You will have repeat blood tests for six to nine months, depending on the risks posed by the source patient. Thus, if any infection develops, it will be found as soon as possible.

What about a splash of blood on my skin?
If your skin has no breaks, cracks or rashes, you have virtually no risk of getting a blood-borne infection despite the splash of blood. If you do receive an exposure to your skin, immediately wash the affected area thoroughly.

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Part 3: The Training Course: Programme Design and Schedule

3.1 Purpose of this Training Course
Against this background, the International Hospital Federation (IHF), as a leading global representative body for hospitals and health care management professionals, will through its Distance (on-line) Training Course, seek, as a primary objective, to enable its target audience, hospital and health care professionals to address the problem of TB diagnosis, prevention and treatment in a result-oriented and impact-effective way.

Several key learning objectives have been built into the syllabus, from which it is hoped and believed that every Course participant will emerge with a clear knowledge, for example, of principles of management control and the essential elements of a management control system for the success and sustainability of an MDR-TB and TB control programme.

3.2 Critical Performance Areas for the Hospital/Clinic/Health Facility Manager
Management is a process that managers use to achieve results with and through people. It is a process enabling people to achieve personal goals as well as organisational ones.

This process can be divided into four basic functions: (1) planning the work, (2) organizing the team, (3) leading the team and (4) controlling results. Each management function consists of a set of distinct activities which are measurable and can be learned as a set of skills. There are about twenty activities in the management process all of which are within the four management functions. These functions and their activities are performed, as needed, sometimes simultaneously, in sequence or in various combinations. They are really going on all the time, in various degrees.

These management functions and activities will help managers attain the results expected them. Together, they compose the process of management – which is the essence of the job of a manager.

3.3 Objectives of the Training Course
1) Know facts about the global problem of tuberculosis, and their own countries, including the extent of the problem, its effects on the health and wellbeing of affected individuals, families and communities, and its effects on the economy and society.

2) Be able to describe the current policies and approaches to TB control in their own countries, the lessons learned from these approaches, problems met, solutions tried, and examples of TB control programmes that have shown success in meeting their objectives.

3) Will have shared lessons they have learned from their own past or on-going participation in TB control programmes.
4) Know the programme design elements important to the success and sustainability of TB control programmes: key objectives, key activities, coordination with other agencies/organizations, staff organization, and monitoring and evaluation components.

5) Have participated in making a critical evaluation of examples of TB control programme descriptions sent to them, using lessons learned from past programmes and this course.

6) Have practiced using a simplified nine-section logical framework to design a generic TB control programme for their country.

7) Have practiced using a Needs Analysis Process as a tool for identifying 4 kinds of needs, setting priorities and assigning responsibilities with a TB control programme team.

8) Have practiced developing Action Plans (including Standards of Satisfactory Achievement, key activities, target dates, and responsible persons) to achieve major priorities identified in their Needs Analysis Process.

9) Have taken an individual exercise on how they feel their boss delegates and how they think they should delegate responsibilities.

10) Know an improved method of delegating tasks including responsibilities, authority and accountability to their teammates.

11) Know the key activities of a management leader, including, initiating action when needed, developing a team spirit, 2-way communication, motivating people, decision-making and problem solving, training/developing people, recruitment and orientation, and developing personnel policies.

12) Know the principles of management control and the essential elements of a management control system for a TB control programme, including standards or indicators of progress, appropriate reports, measuring and comparing progress with standards, and what to do with the results.

13) Have practiced designing a recording and reporting system for a generic TB control programme in their country.

14) Know the essential elements of a financial control system for a TB control programme, what financial reports to ask for and how to interpret these reports.
3.4 Course schedule: one day a week over eight weeks

3.4.1 “Day one”/Week one: Introduction to the global and national problem of TB
Send Syllabus to:
 Participants

 Introductions:
Instructors and participants send something about their own backgrounds and previous experience in TB programmes.

 Lecture for week one:
The global problem of tuberculosis in their own countries, including the extent of the problem, its effects on the health and wellbeing of affected individuals, families and communities, and its effects on the economy and society.

 Assignment due at end of week:
Find out and report on additional information from their countries.

3.4.2 “Day two”/Week two: Lessons learned from past and present TB programmes
Comments on previous week:
From instructor and participants

 Lecture for week two:
Current policies and approaches to TB control in their own countries, the lessons learned from these approaches, problems met, solutions tried, and examples of TB control programmes that have shown success in meeting their objectives.

 Assignment due at end of week:
Participants share lessons they have learned from their own past or on-going participation in TB control programs.

3.4.3 “Day three”/Week three: Principles of TB programme design
Comments on previous week:
From instructor and participants

 Lecture:
Programme design elements important to the success and sustainability of TB control programmes: key objectives, key activities, coordination with other agencies/organizations, staff organization, and monitoring and evaluation components.

 Assignment due at end of week Make a critical evaluation of two examples of TB control program descriptions sent to participants, using lessons learned from past programs and this course.

3.4.4 “Day four/Week four: Designing a TB control programme
Comments on previous week:
From instructor and participants

 Lecture with example:
A simplified nine-section logical framework to design a generic TB control programme for their country.

 Assignment due at end of week Each participant uses the 9-section logical framework to design and submit a TB programme design for his/her area.

3.4.5 “Day five/Week five: Needs analysis and action planning
Comments on previous week:
From instructor and participants
**Lecture with example:**
Needs Analysis Process as a tool for identifying 4 kinds of needs, setting priorities and assigning responsibilities with a TB control programme team. Action Plans as a tool for determining Standards of Satisfactory Achievement, key activities, target dates, and responsible persons, to achieve major priorities identified in the Needs Analysis Process.

**Assignment due at end of week:** Practice using the Needs Analysis process with the staff in an existing project and develop one Action Plan on one of the priorities identified and submit.

**3.4.6 “Day six / Week six: Leadership in a health programme**

**Comments on previous week:**
From instructor and participants

**Lecture:**
Improved method of delegation and key leadership activities in a TB programme; initiating action when needed, developing a team spirit, 2-way communication, motivating people, decision-making and problem solving, training/developing people, recruitment and orientation, and developing personnel policies.

**Assignment due at end of week:**
Submit results of delegation exercise on how they feel their boss delegates and how they think they should delegate responsibilities. Submit key characteristics of leaders they know and admire.

**3.4.7 “Day seven / Week seven: Management control and reporting system in a TB control programme**

**Comments on previous week:**
From instructor and participants

**Lecture:**
Principles and essential elements of a management control system for a TB control programme, including standards or indicators of progress, appropriate reports, measuring and comparing progress with standards, and what to do the results. Essential elements of a financial control system for a TB control programme, what financial reports to ask for and how to interpret these reports.

**Assignment due at end of week:**
Describe an example of an existing recording and reporting system for a TB control programme in your country. Describe an example of an existing financial recording and reporting system for a TB control programme in your country. Submit your critical analysis of these two system descriptions

**3.4.8 “Day eight” / Week eight: Final exam and course evaluation**

Describe ten most important lessons you have learned in this course.
Fill up and submit course evaluation questionnaire

**3.5 Observations**
In most countries there is real difficulty engaging clinicians in the management and leadership process and where it does exist they are often poorly trained in management and leadership. The engagement of clinicians at all levels will be critical.

At the same time it is difficult to assess the extent to which the training programme will provide the tools to achieve this quantum leap in performance. As ever, it is really the way in which training is delivered, reinforced and reviewed as much as the curriculum that leads to changes in competency. It also needs to be seen to be part of a wider culture of individual,
organisational and system performance review. Development needs to be seen as part of the wider "improvement agenda" and personal targets need to be set within wider organisational goals to ensure that any variations can be quickly identified and acted upon in either further developmental activities or work performance reviews.

It is recognised that many of the management challenges listed below are included within the management programme; others are not and may or may not be important:

− improved health education and community engagement
− high quality facilities management (e.g. fresh air, laboratory requirements)
− understanding of risk management and health and safety
− understanding of approaches to and models of priority setting
− standard-setting and benchmarking
− performance management approaches
− development of workforce competencies
− improved communication skills
− training and development for all staff
− information management
− staff motivation
− change management
− service transformation science and techniques e.g. business process re-engineering
− resource utilisation and cost-benefit techniques
− financial and planning

Finally, many of the specific needs related to the TB Programme are part of any managers "tool-kit" and thus the extent of additional development/training will depend upon the competency level of each individual. There are a range of tools that can be used to assess individual competencies.

This manual is, however, believed to be an important piece of work which can serve as a useful instrument to advancing the currently limited, but nevertheless growing research evidence, serving to confirm the correlation between high quality management practice and health improvement and quality outcomes.
Part 4: Leadership in a Health Programme

- Management Leading
- Management Organising
- Management Controlling
- Management Process
- Project Planning
- Needs Analysis and Action Planning
4.1 Management Leading
The ability to lead people by directing their energies toward the achievement of specific goals is perhaps the most satisfying of the four functions of management.

The manager, as an effective leader, concentrates on productive relationships with others; influences activities toward the achievement of results; maintains and builds mutual respect within the organization; develops the knowledge and skill levels of the team; and is oriented toward forward movement. Managers are inherently responsible for influencing and guiding human resources toward the achievement of results.

Leadership is considered to be that process of influence. The dynamics of this influence is a result of interactions between the leader, the needs and aspirations of employees and the nature of the work environment. In the final analysis, managers lead by their ability to develop, motivate and communicate with employees and help them reach decisions, which they can implement.

An effective leader is not only open and honest with employees, but recognizes that people are entitled to dignity, self-respect and is capable of achieving the results expected of them if given an opportunity to do so.

4.1.2 The Management leader:
Achieves success through Team Work
- in planning
- in organizing
- in leading, and
- in controlling

4.1.3 Management leading activities:
- initiating action
- developing a team spirit
- communicating
- motivating people
- decision-making
- problem solving
- developing people

4.1.4 Possible causes of management problems - attributable to lack of:
- planning
- organization
- leadership
- controlling
- other
4.1.5 QUESTIONS AND ANSWERS

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<th>NATURAL LEADER</th>
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<td>Achieves success by doing much of the work</td>
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<td>Organizes work around personalities</td>
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<td>Acts according to feeling and moods</td>
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<td>Makes most decisions</td>
</tr>
<tr>
<td>Communicates more by telling than listening</td>
</tr>
<tr>
<td>Tries to control everything</td>
</tr>
</tbody>
</table>

**Have you seen this kind of leader? Is this the kind of leader that you would like to have? Why?**

**What is the best application of the natural leader style?**

**When is it time to change this style of leadership?**

<table>
<thead>
<tr>
<th>MANAGEMENT LEADER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieves success through team work — in planning, organizing, leading, controlling</td>
</tr>
<tr>
<td>Organizes work to achieve objectives</td>
</tr>
<tr>
<td>Acts according to principles and plans</td>
</tr>
<tr>
<td>Delegates many decisions to others</td>
</tr>
<tr>
<td>Communicates by listening as well as telling</td>
</tr>
<tr>
<td>Controls by exception</td>
</tr>
</tbody>
</table>

**Have you seen this kind of leader?**

**Is this the kind of leader that you would like to have? Why?**

**What is the best application of the management leader style?**

**Are you a natural leader or a management leader?**

**What aspect(s) of your management work would you like to change or improve?**

**What do we mean by "control by exception?"**

Management leading activities: Initiating action:

**What does this mean?**
Developing a team spirit:
What does this mean?

Why is it important?

Motivating people:
In general, what motivates people to give their best to their work?

In your culture, what motivates people to give their best to their work?

Problem solving and decision making:
What constitutes good management decisions?

How are decisions made in the culture where you work?

How are decisions made in your programme?

What other qualities of effective decision-making can you identify?

Name the three important things that you learned in decision making?

1.

2.

3.

State how you plan to use them in your own work

Problem solving:
How do you solve problems?

List the approaches or methods or problem solving that you have found useful in your work:

What is the role of “research” in problem solving?
4.2 Management Organizing

4.2.1 What is management organizing?

Management Organizing is arranging and relating work so that people can carry it out most effectively.

4.2.2 The key activities of Management Organising:

- **Developing Organization Structure**
- Identifying, grouping and arranging the work to be done so that it can be accomplished effectively.
- **Selecting people**
- Choosing people for positions who are most able to accomplish the tasks of the organization.
- **Delegating**
- Work a manager performs in assigning Responsibility and Authority to others and establishing Accountability for results

4.2.3 The Role of Delegation

- Contributes to growth and development.
- Utilizes skills and abilities.
- Frees the manager to manage.
4.2.4 QUESTIONS & ANSWERS

A. Continuing problems:
What is going on that needs our continuing attention and action?

Example:

B. New problems:
What problems do we have that need our attention and action?

Example:

C. Creative opportunities
What new things can we do that will help us solve A and B above better?

Example:

D. Staff development needs:
What kinds of staff training would improve individual or group performance to take care of A, B or C above?

Example:
4.3 Management Controlling
The ultimate step in management’s responsibility is management control, to make sure that the goal and objectives are met and problems that arise are solved. A systematic control process must include the following: 1. Setting standards of performance. 2. Comparison of results against standards and 3. Corrective action.

“What exactly do you mean by management control?”
Management control is fundamentally the evaluation of information or results against plans and any necessary corrective action to assure that the objectives of the original plan are actually attained.

Control is necessary whenever supervisors delegate to subordinates because when they delegate, they simply cannot sit back and forget about it. A supervisor’s accountability for seeing that results in his organization are achieved remains the same, whether he does the job or his staff does. Delegating work and authority is not the abandonment of control; it necessitates the establishment of it! Control is seeing that the work actually gets done.

A basis for EFFECTIVE management control exists when people understand the differences between “planned” and “actual” performance and is able to do something about it.

INEFFECTIVE management control is likely when people conceive of it as something restrictive, domineering, or concerned with punishment.

Management control should be the process of letting people know what is expected of them, measuring and evaluating their performance using agreed-upon standards, and correcting deviations through re-allocation of resources, re-training, or re-planning.

Management controlling means assessing and regulating work in progress, or assessing results completed. Effective management control is tied directly to having written and measurable plans, comparing actual performance with those plans, assessing deviations, and making adjustments to ensure performance achieves or exceeds planned results. If there are no plans to accomplish anything, you have nothing to control.

4.3.1 Principles of control
Several principles can be identified in the control process that are essential to its implementation:

1. Feedback -- The vital element in control is that some sort of feedback or information exists pertaining to actual performance. Feedback can be accomplished through oral and written communication and should identify the performance of a task.
2. Self-control -- Self-Control is the best form of control. People will correct mistakes more quickly if they can spot their own mistakes first. If people have the means of identifying and correcting their own variances, correction tends to be more effective and lasting.
3. Objectives -- Since control implies the existence of objectives, no supervisor can control without them. A fundamental task of control is to assure the accomplishment of objectives by detecting any deviation from plans early enough to permit effective corrective action.
4. Standards -- Effective control requires the development of realistic standards of performance. There should be an objective, specific and verifiable way to measure
whether a task or job is being accomplished. If there are no standards to measure work against, or no plans to accomplish anything, you have noting to control!

5. **Efficiency of Control** – The more that control approaches and techniques detect and illuminate the causes of deviations from plans, the more efficient these controls are.

6. **Control Responsibility** – The primary responsibility for exercising control rests with the supervisor charged with the execution of plans. Although delegation of authority and assignment of tasks to subordinates are necessary in any organization, supervisors still maintain the final accountability for over-all work results, so it follows that control over that work should be exercised by them.

7. **Point of Control** – The greatest amount of control should occur at the point where action takes place. The more quickly first-line supervisors can spot variances and take corrective action, the more effective control becomes.

8. **Flexibility** – If controls are to remain effective despite failure or change, flexibility is required in the design of controls. Controls must not be so inflexible that if the plan or situation changes, they would be useless.

9. **Action** – Evaluation and measurement is a wasteful use of managerial time unless it is followed by action. Action may call for re-organization, developing alternate plans or even re-training personnel, but whatever action it takes, do it!

10. **Praise** – Not all jobs require re-work or making major correction. Therefore, compliment employees for a job well done, and they will respond by doing more good work.

4.3.2 A management control system includes the following tasks:

a. **Performance Standards** -- developing the criteria or yardsticks by which work and results are considered satisfactory.

b. **Performance monitoring** -- measuring and recording work being done or completed, through observation and feedback.

c. **Performance evaluating** -- determining the quality of work done and the results obtained. This consists of assessing the significance or variances in comparing the actual performance against established performance standard.

d. **Reporting** -- recording and forwarding results of performance evaluation or proposed action to appropriate personnel. A system, which enables personnel to monitor and evaluate their own performance, tends to produce results superior to a system where the employees need to wait for their managers to tell them about the quality of their work.

e. **Performance correcting** -- taking the action necessary to correct and improve the work being done or the results achieved. It includes correction of deficiencies as well as preventive action to correct anticipated problem areas.

f. **Performance re-inforcement** -- appreciating and acknowledging people for specific achievements, especially in relation to planned results. Positive reinforcement tends to breed more positive results.

Managers should consider the above functions and activities of management as their primary responsibility, in order to fulfill their organizational role and to achieve success in their job. If they are not doing these kinds of work, they are not managing. The higher the management level, the greater should be the emphasis on management work.
4.3.3 QUESTIONS & ANSWERS

Individual exercise:
What control is not:

What control is:

What steps to achieve control in your work

How does a budget help in controlling?

Why is periodic checking of work better than only evaluating work when it's almost completed?

Why are too many controls harmful?

How do controls help a manager?

What are some examples of standards of performance?

Can standards measure work now and in the future?

When you measure performance standards how does this help a manager?

Is control always making a change?

What are the benefits of good management control?

Individual work:
What Managerial Control activities can I do in my job to cause effective results to happen?

1.

2.

3.
4.4 Management Process
Management is a process that managers use to achieve results with and thorough people. It is a process enabling people to achieve personal goals as well as organization ones.

This process can be divided into four basic functions: (1) planning the work, (2) organizing the team, (3) leading the team and (4) controlling results. These functions can take place simultaneously, but generally flow in the order stated above.

Each management function consists of a set of distinct activities which are measurable can be learned as a set of skills. There are about twenty activities in the management process. These are described under each of the four management functions.

4.4.1 What should managers be concerned about?
Critical perform areas in management
1. People served
2. Managers
3. Professionals
4. Workers
5. Material resources
6. Financial resources
7. Efficiency and productivity
8. Innovations
9. Relationships with other agencies
4.4.2 Management planning

*Management planning* is a key management function that predetermines a course of action –
- What to accomplish,
- How and when this will be done, and
- The resources needed to achieve success.

4.4.3 Management Planning Activities

- **Determining the expected outcome**
  - *Forecasting future needs and opportunities* - Future needs and opportunities related to the purpose of the organization. It relates these to past trends and the present situation and identifies priorities and opportunities for the organization.
  - *Developing alternative responses*
  - *Establishing objectives* - Outcomes, changes or targets which should be achieved or toward which effort will be directed.

- **Determining Methods**
  - *Developing action plans* -- Activities or action steps to accomplish your objectives, their priority, timing, and persons responsible.
  - *Establishing procedures* -- Written standard methods (procedures) for doing work which are done regularly and need to be done uniformly.
  - *Establishing policies* -- Written guidelines on how to handle certain situations or problems which are important to the organization. Policies usually apply to all employees.

- **Allocating resources**
  - people, facilities, materials and money (budgets) to implement the planned activities.

- **Establishing a review system**
  - *Review dates* -- Review dates and system to discuss progress, problems and their solutions.
4.5 Project Planning

The programme/project planning is the practical way to design a project in summary form with a group, to have an overall picture of what the project will look like. It is strongly recommended that the project be planned in the following order:

1. **Summary of expected results and indicators**
2. **Key activities (and indicators)** needed to achieve the expected results;
3. **Resources (and indicators)** needed to carry out the key activities.
4. **Possible barriers** in each of the three levels.
5. **Review system** to follow-up and make adjustments in the plan when needed.

Once complete, the programme summary is used as a guide for writing a more detailed plan and budget.

4.5.1 Background information:
First identify and describe the intended target area, then fill up the form as follows:

A. **Summary of TB and other major health problems in target area**:
   This information identifies any other important health problem (other than TB) that should not be ignored by the TB control programme.

B. **Existing relevant institutions and programmes in target area**
   This identifies the local health institutions or organizations (and any other agencies) that can collaborate with the TB control programme to make it more effective.

C. **Summary of needs that this programme will address**
   Make a list of the needs or priorities that your programme should address.

D. **Expected results, outcomes, changes, or objectives**:
   These are the changes from the present situation that you expect regarding the target population, their communities, and the environment.

E. **Methods/key activities**:
   - What are the key activities, interventions, or tasks to be done to accomplish the “expected results?”
   - Meetings with community leaders in target areas to raise their awareness and enlist their participation in the programme -- quarterly
   - Organize small groups of TB patients in each participating community to be responsible for ensuring compliance with treatment -- at least one per community

F. **Resources**:
   - Human, material and financial resources needed for the project.
   - Human resources include project personnel, consultants, and a partner agency if present.
   - Material resources include vehicles, computer equipment and software, other equipment, food, medicines, seeds, gardening and agricultural implements, office and other supplies.
   - Financial resources: develop a budget for expected income/funding and expenses
4.6 Needs Analysis and Action Planning

4.6.1 What is Needs Analysis?
Needs Analysis is a management tool that helps the team to identify important needs that would benefit from action from members of the team. It helps improve team performance by calling attention to four important kinds of needs that should be attended to by the team.

The four kinds of needs are identified as:
- Continuing Problems
- New Problems
- Creative Opportunities
- Staff Development Needs

Principle:
The more you attend to C and D (Creative Opportunities and Staff Development), the less you will need to attend to A and B (Continuing Problems and New Problems).

4.6.2 Needs analysis – A framework of determining priority needs
Objective: To develop skills that enable programme staff to identify the different types of needs in the programme, determine priority needs, assign responsibility for specific needs, and use the results for action planning.
4.6.3 Developing Action Plans

4.6.4 What is an action plan?
An action plan is a management tool used to get things going once objectives have been set. It is an implementation plan that specifies the conditions necessary for successful achievement, various tasks to be done, who will do them and when. It is most useful when an objective needs several steps and several people to accomplish it.

The action plan is like a ‘Road Map’ that helps the members of a team to achieve their objectives. The Action Plan prevents misunderstanding and promotes trust because it helps people to understand the standards of good work, the actions to be done, by whom, and when.

An Action Plan is based on needs: The action plan is based on the needs that exist within the group. These needs may be current problems, anticipated future problems, or ways in which the work can be improved.

The needs can be something that is being attended to but needs further attention (continuing needs).

They can be a problem that needs to be solved (problem-solving needs).

They can be a need for a new or creative approach to present or anticipated problems (creative/innovative opportunities).

They can address the need to further develop the skills of team members (staff training needs).

4.6.5 Parts of an action plan
1. **Statement of Purpose**: The purpose statement describes the main areas of need that the action plan will address and the results that must be accomplished to satisfy the need we have identified. In short, it answers the question, "What results do we want and for what?"

2. **Standards of Satisfactory Achievement**: Accompanying every purpose statement is a standards statement. This tells us what we can look for to tell us that the action plan is successful in addressing the needs or problems being addressed. Standards answer the question, "How will we know that the action plan was successfully done?"

3. **Action Steps**: Once we have our Purpose Statement and Standards, we need to think through the various steps necessary to accomplish the results desired. We call these action steps. They answer the question, "What steps will we take to accomplish the results?"

4. **Accountability**: Usually we won't do all the action steps ourselves. More work can be done if the action steps are assigned to different members of the team. For each action step, then, we identify the person who will do it. The statement of accountability answers the question, "Who will be responsible for accomplishing the steps?"

5. **Cost**: Estimating the cost of implementing each action step will enable us to estimate the total cost of implementing the action plan, and making adjustments if it is too expensive.
4.6.6 What can an action plan do for the team?
1. An action plan helps to distribute the work to different members of the team.
2. It helps people to know and remember what they need to do and when.
3. It helps people see how their work and the work of others contribute to achieving common objectives.
4. It helps people to know the standards that need to be met to consider the work well done.
4.6.7 QUESTIONS & ANSWERS

A. Continuing problems:
What is going on that needs our continuing attention and action?

Example:

B. New problems:
What problems do we have that need our attention and action?

Example:

C. Creative opportunities:
What new things can we do that will help us solve A and B above better?

Example:

D. Staff development needs:
What kinds of staff training would improve individual or group performance to take care of A, B or C above?

Example:

Developing action plans:
What is an action plan?

What can an action plan do for the team?

How do you develop an action plan?
The questions in this section have been prepared and designed to assist the participant in assessing how well the content of the course has been learned. The answers are spread throughout the reading material.

**5.1 POLICY AND GOVERNANCE**

Please provide hospital classification references in your country/state? (e.g. district (first referral), speciality/regional etc)

Is the geographical area or population group served by your hospital defined by?
- national policy
- patient behaviour

Who is responsible for overall policy and management at your hospital level?

How are relations between the clinical, ancillary and administrative departments governed?

How are and who determines staff training needs in the hospital?

Describe, if any, current in-house training procedures/programmes

Does the hospital operate a system of resource allocation for staff training?

Are there staff motivation programmes? If yes, please provide descriptions.

Define the relationship between your hospital, clinics and other health care facilities in your catchment area in identification, treatment of active MDR-TB and TB:
- Organisationally separate or related?
- Co-ordination?

Do referral arrangements exist? If yes, what form do they take?

Are patients, TB or others, able to turn directly to the hospital as out-patients or in-patients?
### 5.2 Management & Human Resources

List the medical/nursing/administrative staff assigned in the following primary process of conducting TB surveillance and case management:

- Identification of suspected or active TB cases
- Collection of patient information
- Conducting interviews
- Planning for follow-up care

**How is interaction between departments (e.g. clinical, Information, HR, administration, etc.) governed?**

**How is the performance of each department assessed?**

**What is the level and nature of involvement, if any, from the local community?**

### 5.3 Finance

**Who is responsible for preparing and approving annual budgets?**

**Is the budgetary process linked to departmental goals and objectives?**

**Are financial targets/allocations related to priorities set by national or local authorities?**

**What are the major sources of revenue for the hospital (e.g. central, regional government, private sector, etc)?**

**What are the methods of receiving revenues (e.g. international/national grants, donations, etc)?**

**Who is responsible for setting drug, equipment and other expenditure and cost targets?**

**Are drug procurement and administration policies governed by international/national/local/institutional priorities?**

List the key departments involved in the hospital’s drug procurement, administrative activities.

**What procedures are envisaged or recommended to reach or provide services free of charge to the inaccessible patients or those from low-income families?**

**What procedures exist to ensure your hospital together with other health care settings within your catchment area has adequate funding for the different groups of population?**
5.4 Infrastructure, Purchase of Equipment/Supplies & Services

Describe the established guidelines for procurement of drugs, equipment and services

Are there established procedures for? If yes, please describe and confirm whether they are internationally/nationally/locally governed?
- large volume/value purchases of equipment, drugs, goods and services;
- infrastructure projects

What procedures exist to ensure adequate and continuous maintenance your hospital’s equipment and infrastructure?

Describe the established technology assessment procedures for new and existing equipment, services and drugs

Is there a dedicated staff team (clinical and administrative) assigned to manage these activities

5.5 Information Management

What are the established procedures for identifying the hospital’s needs in regard to:

a) Patients:
   - TB Case investigation
   - Diagnostic evaluation
   - Drug regime treatment, therapy, monitoring, etc
   - Catchment population involvement & needs
b) Medical, nursing and other members of the multi-disciplinary team
c) Revenue sources and providing authorities
d) Regulatory authorities (international/national/local/in-house)

What procedures exist to define the data/information to be collected?

What procedures have been established to plan, design and ensure continuous update of the clinical and information management system (software, hardware and personnel)?

What established guidelines exist for converting data collected for management information purposes?

What procedures have been established to determine how, when, where and to whom information is reported/transmitted?

What standard procedures have been established to develop, gather, review and maintain medical records?

Is there a system of aggregating data from medical records for clinical decision-making purposes?
Is the department, if any, responsible for the information management activities central or decentralized?

5.6 Quality
Has your hospital established or plan to establish quality assurance programmes?

In which areas of activities, epidemiology, etc have these been or are to be established?

How do the quality assurance programmes enable your hospital to?

a) provide health care services appropriate to the needs of the target population
b) reduce risks to patients and staff
c) ensure equitable access to the different income patient groups and staff
d) promote education and training among staff and patient
e) assure cost-effectiveness

What measures have been introduced to ensure effective and proper communication of new procedures (clinical, administrative and others) to relevant departments?

Does the hospital implement an accreditation system? If yes, is it compulsory or voluntary?
6.1 Observations
Successful TB control programmes (Kenya\textsuperscript{48}, the Philippines\textsuperscript{49}, Vietnam\textsuperscript{50}, South Africa\textsuperscript{51}) have emerged in countries/communities/environments where policy-makers, public health leaders and communities collaborated to develop and execute well-defined strategic health reform plans, involving national political commitment, community participation to ensure a nationwide coverage of TB services, establishment of partnerships with the private sector and other international organisms, implementation and application of strong managerial and operational structures.

However, despite these successes, many African, Asian countries and states of the Soviet\textsuperscript{52} Union have seen increasing numbers of TB cases as well as a growing epidemic of MDR-TB and TB/HIV, with recorded treatment success rates substantially below the 85\% target. The Stop TB Partnership\textsuperscript{53} has acknowledged that to make progress towards achievement of the Millennium Development Goals (MDGs), accelerate implementation of the global TB control measures and scale up services in order to improve and maintain DOTS programmes and expand DOTS-Plus projects, efforts need to be intensified to:

- develop a clear strategic direction;
- face broader health sector issues and widen the current scope of influence;
- apply new thinking, programme innovation;
- make large scale investments in order to make available TB control tools – drugs, diagnostics and vaccines;

The challenges to be addressed and subsequently overcome within the broader health sector include:

- Political will and commitment
- Health systems organization
- Health infrastructure
- Management and Human resources
- Information
- Financing
- Drugs – diagnostic / administration
- TB/HIV
- Primary care
- Private sector community and other extended partnership contributions
- Research

This training manual, therefore, it is hoped, in seeking to successfully address those challenges within the hospital sector per se, will, firstly serve to create an ideal framework and opportunity for the entire health professional community to consider the function, leadership and
management of hospitals within the wider health care system, especially as they consume over half the severely limited health budgets in low-income countries.

Secondly, the neglect of human resources, that is the numbers of staff, their distribution and the quality of their performance, has been ranked first among the five key constraints to reaching the global targets for TB control in the 22 HBCs as well as to global DOTS expansion.

At the same time there is growing recognition of the importance of training and HR development as an integral part of NTP activities, although little progress has been made in finding ways of countering the loss of health care staff involved in organizing and delivering TB care in many developing countries. The call therefore is for training courses to become essential components of technical assistance as well as the development of generic training materials and tools for effective human resource management. For TB control-specific activities, the emphasis should be on:

- Quality
- Better management of training programmes
- On-going follow-up training and re-training
- factors influencing behavioural change of health workers
- community and environmental factors facilitating or obstructing change

6.2 Management deserves much more attention than it has received

Typically, politicians and civil servants understand policymaking, but do not understand how to run organisations. Management is also not highly regarded by doctors and other health care professionals, nor by the general public. The result is a dangerous vacuum in hospital management, which needs filling, both by initial training schemes and by continuing personal and organisational development for hospital directors and managers. In the incidence of MDR-TB and TB control programmes, this is no exception.

Lastly, but most important of all the timely delivery of this training manual for hospital and health facility managers is best summed up in one of the observations of the Stop TB Partnership 2nd ad hoc Committee on the TB epidemic, that: “Although many NTP personnel and others involved in TB control at different levels exercise considerable managerial responsibilities, few have acquired managerial expertise through ‘hands-on’ training. More formal development of managerial capability among these personnel would help to ensure high-quality managerial performance” (emphasis in bold and italics added by ‘authors’).
TRAINING MANUAL
FOR TB (and MDR-TB) CONTROL
HOSPITAL/CLINIC/HEALTH FACILITY MANAGERS

Part 7: References

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Southern Caucasus: prisoners particularly vulnerable to TB epidemic; ICRC News 05/25; http://www.icrc.org/Web/Eng/siteeng0.nsf/html/6ARGPX!OpenDocument
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Centers for Disease Control and Prevention (CDC)
http://www.cdc.gov/
EuroTB: Surveillance of Tuberculosis in Europe
http://www.eurotb.org
International Committee of the Red Cross
http://www.icrc.org
International Union Against Tuberculosis and Lung Disease (IUATLD)
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Management Sciences for Health (MSH)
Medecins Sans Frontieres
http://www.accessmed-msf.org/
Partners In Health
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Program for Appropriate Technology (PATH)
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Stop TB Partnership
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http://www.unicef.org/saotome/health.htm
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8.1 General Terms
AP  Action Plan
AFB  Acid-Fast Bacilli
AIDS  Acquired Immunodeficiency Syndrome
CDC  Centers for Disease Control and Prevention
CDR  Case detection rate (i.e. smear-positive case detection rate, whole country)
DOTS  Directly Observed Therapy Short-course (DOTS)
DDR  DOTS Detection Rate (i.e. smear-positive case detection rate under DOTS)
DFB  Damien Foundation Belgium
DFID  Department for International Development (UK)
DPS  Direct Procurement System
DST  Drug Susceptibility Testing
EMB  Ethambutol
GDF  Global Drug Facility
GFATM  Global Fund to Fight AIDS, TB and Malaria
HBC  High Burden Countries (The 22 high-burden countries accounting for approximately 80% of all new TB cases arising each year)
HCW  Health Care Worker
HIV  Human immunodeficiency virus
INH  Isoniazid
IUATLD  International Union Against Tuberculosis and Lung Disease
MDR-TB  Multidrug-Resistant Tuberculosis
MDGs  Millennium Development Goals
MSF  Médecins Sans Frontières
MSH  Management Sciences for Health
NASCOP  National AIDS/STDs Control Programme
NAP  Needs Analysis Process
NGO  Non-Governmental Organization
NTLP  National Tuberculosis and Leprosy Programme
NTP  National Tuberculosis Control Programme
PATH  Program for Appropriate Technology
PHC  Primary Health Care
PPD  Purified Protein Derivative
PZA  Pyrazinamide
RIF  Rifampin
RNTCP  Revised National TB Control Programme
SOP  Standard Operating Procedures
SSA  Standards of Satisfactory Achievement
STB  Stop TB
8.2 Glossary of Terms Related to TB

**Active TB disease** – an illness in which TB bacteria are multiplying and attacking different parts of the body. The symptoms of active TB disease include weakness, weight loss, fever, no appetite, chills, and sweating at night. Other symptoms of active TB disease depend on where in the body the bacteria are growing. If active TB disease is in the lungs (pulmonary TB), the symptoms may include a bad cough, pain in the chest, and coughing up blood. A person with active TB disease may be infectious and spread TB to others.

**BCG** - a vaccine for TB named after the French scientists Calmette and Guérin. BCG is not widely used in the United States, but it is often given to infants and small children in other countries where TB is common.

**Cavity** - a hole in the lung where TB bacteria have eaten away the surrounding tissue. If a cavity shows up on your chest x-ray, you are more likely to cough up bacteria and be infectious.

**Contact** - a person who has spent time with a person with infectious TB.

**Culture** - a test to see whether there are TB bacteria in your phlegm or other body fluids. This test can take 2 to 4 weeks in most laboratories.

**Extrapulmonary TB** - TB disease in any part of the body other than the lungs (for example, the kidney or lymph nodes).

**Infectious TB** - TB disease of the lungs or throat, which can be spread to other people.

**Infectious person** - a person who can spread TB to others because he or she is coughing TB bacteria into the air.

**INH or isoniazid** - a drug used to prevent TB disease in people who have latent TB infection. INH is also one of the five drugs often used to treat TB disease.

**Latent TB infection** - a condition in which TB bacteria are alive but inactive in the body. People with latent TB infection have no symptoms, don't feel sick, can't spread TB to others, and usually have a positive skin test reaction. But they may develop TB disease later in life if they do not receive treatment for latent TB infection.

**Negative** - usually refers to a test result. If you have a negative TB skin test reaction, you probably do not have latent TB infection.

**Positive** - usually refers to a test result. If you have a positive TB skin test reaction, you probably have latent TB infection.

**Pulmonary TB** - TB disease that occurs in the lungs, usually producing a cough that lasts longer than 2 weeks. Most TB disease is pulmonary.

**Resistant bacteria** - bacteria that can no longer be killed by a certain drug.

**TB skin test** - a test that is often used to detect latent TB infection. A liquid called tuberculin is injected under the skin on the lower part of your arm. If you have a positive reaction to this test, you probably have latent TB infection.
Smear - a test to see whether there are TB bacteria in your phlegm. To do this test, lab workers smear the phlegm on a glass slide, stain the slide with a special stain, and look for any TB bacteria on the slide. This test usually takes 1 day.

Sputum - phlegm coughed up from deep inside the lungs. Sputum is examined for TB bacteria using a smear; part of the sputum can also be used to do a culture.

Tuberculin - a liquid that is injected under the skin on the lower part of your arm during a TB skin test. If you have latent TB infection, you will probably have a positive reaction to the tuberculin.

8.3 Leadership Management Report Forms

<table>
<thead>
<tr>
<th>NEEDS</th>
<th>Priority</th>
<th>Needs action</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. CONTINUING PROBLEMS:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. NEW PROBLEMS:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. CREATIVE OPPORTUNITIES:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. STAFF DEVELOPMENT NEEDS:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACTION PLAN FORM</th>
<th>Action Plan Title:</th>
<th>Estimated cost:</th>
<th>Person responsible:</th>
<th>Approval by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start date:</td>
<td>Completion date:</td>
<td></td>
<td></td>
<td>Date:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACTION STEPS</th>
<th>Responsibility</th>
<th>TIMING</th>
<th>Progress Report</th>
</tr>
</thead>
</table>

69
## MANAGEMENT ORGANIZING SURVEY

<table>
<thead>
<tr>
<th>How do you rate yourself in the following tasks?</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. DEVELOPING ORGANIZATION STRUCTURE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You get the most work done with the finest people</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. SELECTING PEOPLE</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Your team based on their suitability for their job and future of the organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>3. DELEGATING meaningful work to staff</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Together with the authority they need to work effectively and creating accountability for results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. DEVELOPING ORGANIZATIONAL RELATIONSHIPS</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>With selected organizations or individuals outside the organization for mutually beneficial cooperation and collaboration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5. EMPHASIZING the use of TEAMS</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Composed of people from relevant departments to identify problems or inefficiencies and propose or help implement solutions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Personal Rating:

1 = Not applicable in my work
2 = I need more training
3 = I need more practice
4 = I am doing this well
5 = I can trust others in this activity

---

## PERSONAL ACTION PLAN FORM

<table>
<thead>
<tr>
<th>Purpose: Standards of satisfactory achievement</th>
<th>How will Evaluation take place?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ACTION STEPS</th>
<th>Responsibility</th>
<th>THING</th>
<th>Status Report</th>
</tr>
</thead>
</table>

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# Sample Hospital Standards Checklist

(For identifying needs and priorities for actions)

These are examples. Each hospital is encouraged to develop its own standards.

<table>
<thead>
<tr>
<th>Name of hospital:</th>
<th>Date:</th>
<th>Department:</th>
</tr>
</thead>
</table>

### GENERAL MANAGEMENT OF THE HOSPITAL

**SUGGESTED STANDARDS**

- Annual review of Vision, Mission, and Core Values
- 3-Year Strategic Plan approved yearly
- Annual Plan and Budget developed each year
- Annual review of Policies, Systems, and Procedures

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### PATIENTS AND FAMILIES

**SUGGESTED STANDARDS**

- Regular patient surveys are conducted about hospital services and patient perception for improvement
- Attention given to psychological and spiritual needs
- A health education program for patients, their families, and the public
- Involvement of a larger community involvement of community health programs coordinated with government agencies

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### MEDICAL STAFF

**SUGGESTED STANDARDS**

- Action statements and educational programs
- Capabilities include family medicine, pediatrics, obstetrics, gynecology, and general surgery
- Medical staff are properly documented
- Formal enrollment process determines each physician's appointment and clinical privileges
- Regular dialogue between physicians, nurses, and other hospital staff to identify and solve problems

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### MEDICAL RECORDS

**SUGGESTED STANDARDS**

- Easy retrieval of past records of patients
- Medical records satisfy legal requirements and permit review of mortality and morbidity
- Medical records completed within one week after discharge
- Medical record section uses PID and Current Procedure Codes

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### LABORATORY

**SUGGESTED STANDARDS**

- Feasible blood, urine, and stool exam availability
- Biologic chemistry capabilities
- Environmental sanitation and medical safety capability
- Emergency laboratory capability
- Equipments of quality checked at least weekly
- Proper equipment maintenance
- Good control of equipment and supplies
- Medical staff have confidence in lab exam results
- Monthly staff meeting for in-service training, problem solving, and possible improvements
- Current reading references available
- Raisin staff in boras and availability
- Facility for quality control, analyses, and tests
- Laboratory manual of policies and procedures for ensuring new personnel and maintaining standards

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### X-RAY DEPARTMENT

**SUGGESTED STANDARDS**

- Available routine and special x-ray examinations that hospital personnel need
- Medical staff/department in good health
- Radiation protection following national standards
- Maintenance program for equipment
- Adequate control of supplies, films, and chemicals to ensure use and proper efficiency
- Proper in-service training of staff
- Proper protection capability
- Uniforms of policies and procedures help to maintain new personnel and maintain quality of work
- Conduct x-ray in the operating room when needed

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### PATIENT SAFETY AND RISK MANAGEMENT

**SUGGESTED STANDARDS**

- Procedures and training on how to maintain the patient's health
- Policies for the setting of the patient's health
- Safety of equipment and machinery
- Safety of equipment and machinery
- Procedures to prevent the production of blood and the patient's blood
- Training in safe patient transportation
- Uniforms of policies and procedures are required

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### NURSING SERVICE

**SUGGESTED STANDARDS**

- A policy and procedures on patient safety and monitoring of accidents, follow-up, and treatment
- Reference to patients' safety for nursing staff
- Control of supplies and equipment
- Proper handling of surgical hospital supplies
- Non-disposable syringes and needles centrally sterilized and stored

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### BUSINESS OFFICE

**SUGGESTED STANDARDS**

- Accounting set up by a professional accountant
- Balance Sheet and Income Statement prepared monthly or quarterly
- Monthly staff meeting to identify and solve problems and discuss improvements
- An external financial audit is performed annually

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### DENTAL DEPARTMENT

**SUGGESTED STANDARDS**

- Equal facilities for dentists and patients
- Equal facility for dentists and patients
- Adequate system of control, storage, and use of equipment, drugs, and supplies
- Nursing manual of policies and procedures for training new personnel

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

### PHARMACY

**SUGGESTED STANDARDS**

- Formulary approved by a pharmacy committee
- No use of outdated drugs
- Monthly evaluation of drugs
- Dispensing of drugs
- Uniforms of policies and procedures help to maintain new personnel and maintain standards

**SUGGESTED RESPONSIBILITIES**

1. 2. 3. 4. Assigned to

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### MAINTENANCE AND TRANSPORTATION

<table>
<thead>
<tr>
<th>SUGGESTED STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department head is a responsible person preferably with multiple skills</td>
</tr>
<tr>
<td>Basic tools for woodworking, painting, plumbing and electrical work</td>
</tr>
<tr>
<td>Preventive maintenance and cleaning schedule for equipment, buildings, etc.</td>
</tr>
<tr>
<td>Drivers and maintenance work on hospital vehicles</td>
</tr>
<tr>
<td>Preventive maintenance schedule for vehicles</td>
</tr>
<tr>
<td>Basic tools for vehicle maintenance and minor repairs</td>
</tr>
<tr>
<td>Tri and disaster plan for the hospital</td>
</tr>
<tr>
<td>Regular training program to upgrade the skills of maintenance personnel</td>
</tr>
<tr>
<td>Regular meeting of staff to discuss problems, solutions and possible improvements</td>
</tr>
</tbody>
</table>

### LINES AND LAUNDRY

<table>
<thead>
<tr>
<th>SUGGESTED STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate amounts of clean and presentable linen for patients and other departments</td>
</tr>
<tr>
<td>Standardized linen list reviewed at least yearly</td>
</tr>
<tr>
<td>Standard sets for different kinds of patients' rooms</td>
</tr>
<tr>
<td>Active linen repair and replacement program</td>
</tr>
<tr>
<td>Adequate control of linen losses</td>
</tr>
<tr>
<td>Disinfection of contaminated linen</td>
</tr>
<tr>
<td>Satisfactory sanitary standards</td>
</tr>
<tr>
<td>Linen equipment appropriate to size of hospital</td>
</tr>
</tbody>
</table>

### HOUSEKEEPING AND JANITOR SERVICES

<table>
<thead>
<tr>
<th>SUGGESTED STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital and patient clean and attractive</td>
</tr>
<tr>
<td>Proper care of housekeeping equipment</td>
</tr>
<tr>
<td>Adequate storage of cleaning equipment</td>
</tr>
<tr>
<td>Adequate turnover of housekeeping equipment</td>
</tr>
<tr>
<td>Systems of control for the correct use of supplies</td>
</tr>
<tr>
<td>Ongoing training program to improve skills and efficiency</td>
</tr>
<tr>
<td>Sanitary disposal of waste and garbage</td>
</tr>
</tbody>
</table>

### PERSONNEL

<table>
<thead>
<tr>
<th>SUGGESTED STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typing and filing services are available for department heads and executives</td>
</tr>
<tr>
<td>Personnel policies maintained with policies &amp; procedures</td>
</tr>
</tbody>
</table>

### COMMUNITY HEALTH INVOLVEMENT

<table>
<thead>
<tr>
<th>SUGGESTED STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Considered an official program of the hospital</td>
</tr>
<tr>
<td>Designation of a person-in-charge</td>
</tr>
<tr>
<td>Includes health education on nutrition, good health habits, family planning, and other health care matters</td>
</tr>
<tr>
<td>Regular visits made to poor communities</td>
</tr>
<tr>
<td>Involvement of medical and nursing staff</td>
</tr>
<tr>
<td>Outreach program undertaken in cooperation with government health care efforts</td>
</tr>
<tr>
<td>Monthly meetings to review work done, find out and solve problems, and add improvements</td>
</tr>
</tbody>
</table>

---

Sample monthly report (modify as needed)

Report for month: __________ Year of programme: __________ Date of Report: __________

Name of Programme: __________ Location: __________ Programme Manager: __________

| Description | Baseline | Mo. 1 | Mo. 2 | Mo. 3 | Mo. 4 | Mo. 5 | Mo. 6 | Mo. 7 | Mo. 8 | Mo. 9 | Mo. 10 | Mo. 11 | Mo. 12 | YTD | Targets for |
|-------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|     |            |
| No. of program staff |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| No. of consultants |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Baseline data collected |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Community surveyed |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Total population |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Total patients |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Total with positive smear |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Total with ongoing treatment |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Training days completed |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Programming staff |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Collaborating agencies |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Health education data collected |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Community leaders |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| TB patient groups |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| TB deaths |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| No. of participating communities |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Total population |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| No. of families with a TB patient |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| No. of patients reported |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| No. of positive smear |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| No. of TB patients treated |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| No. of TB patients treated |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| No. of positive to negative smear changes |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| Medical evaluation done |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |
| End of year evaluation done |          |       |       |       |       |       |       |       |       |       |       |       |       |     |            |

---

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## Program Design Summary Form

### Program Description

**Program Name:**

**Location:**

**Program Manager:**

### Program Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Indicator</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve health outcomes in target area</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Program Goals

<table>
<thead>
<tr>
<th>Goal</th>
<th>Indicator</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase access to healthcare services</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Program Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Indicator</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and awareness</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Program Activities

<table>
<thead>
<tr>
<th>Activity</th>
<th>Indicator</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community engagement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Program Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Indicator</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Program Outputs

<table>
<thead>
<tr>
<th>Output</th>
<th>Indicator</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health outcomes in target area</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Program Impact

<table>
<thead>
<tr>
<th>Impact</th>
<th>Indicator</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved health status</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Program Evaluation

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Indicator</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-year evaluation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Program Outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Indicator</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved quality of life</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Sample monthly report (monthly to be submitted): [Sample Report]

**Request for month of:** [Month]  **Year of programme:** [Year]  **Date of Report:** [Date]

**Name of Programme:** [Programme Name]  **Location:** [Location]  **Programme Manager:** [Manager Name]

---

**Programme Manager**

---

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