Ministry of Health
Malawi

National Tuberculosis Control Programme

Five-Year Strategic Plan
2012 – 2016

January, 2012

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Foreword

Tuberculosis continues to ravage our country health-wise and socio-economically. The highly productive age group is highly affected resulting to a reduction in their contribution to socio-economic development of the country**.** This has been largely attributed to a high TB/HIV co-infection. Tuberculosis is also compounded by the emergence of other complicated forms of TB such as Multi-drug resistant TB (MDR-TB), which are difficult and costly to cure thus posing a serious threat to TB control.

Achieving effective TB Control requires concerted efforts at all levels. Hence, in 2007 the Ministry of Health declared TB an emergency in order to raise awareness and advocate for more action by all stakeholders as a way of containing the TB problem. One of the initiatives embarked on in 2007 is the Universal Access to TB diagnosis and care. This entails a shift from centralized institutional DOTS to more innovative ways of reaching out to the general population of Malawi by ensuring that everybody regardless of socio-economic status has access to TB diagnosis and care.

This 5 year plan provides an outline of what the programme plans to implement from 2011-2016 in order to reduce the burden of TB in Malawi. At local level, the plan has been aligned with the Malawi Growth and Development Strategy (MGDS) and the Health Sector Strategic Plan (HSSP) while at Global level, the plan is aligned with the WHO Stop TB Strategy. It is this plan that will guide Malawi towards achieving the TB related Millennium Development Goals.

Let us all join hands in this quest against tuberculosis; together we can!

Dr Jean Kalilani, MP
Minister of Health

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Special thanks also go to WHO and IUATLD for their continued technical assistance to the Malawi TB Control Programme.

Dr Charles C V Mwansambo
Principal Secretary

List of Abbreviations/Acronyms

ACSM	Advocacy, Communication and Social Mobilization
AFB	Acid Fast Bacilli
AIDS	Acquired Immunodeficiency Syndrome
ARI	Annual Risk of Infection
ARV	Antiretroviral Therapy
BCG	Bacille Calmette-Guérin Vaccine
CBO	Community-based organizations
CHAM	Christian Health Association of Malawi
CMS	Central Medical Stores
CoM	College of Medicine
CRL	Central Reference Laboratory
CPT	Co-trimoxazole Preventive Therapy
DFID	Department for International Development
DHMT	District Health Management Team
DHO	District Health Officer
DIP	District Implementation Plan
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment Short-Course
DST	Drug Susceptibility Testing
DTO	District Tuberculosis Officer
EHP	Essential Health Package
EMLS	Essential Medical Laboratory Services
EPTB	Extra-Pulmonary Tuberculosis
EQA	External Quality Assurance
FDC	Fixed Dose Combination
GLC	Green Light Committee
HAAT	Highly Active Antiretroviral Therapy
HBC	Home Based Care
HTC	HIV Testing and Counselling

HEU	Health Education Unit
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HRD	Human Resource Development
HSA	Health Surveillance Assistant
IUATLD	International Union Against Tuberculosis and Lung Disease
JATA	Japanese Anti-Tuberculosis Association
JICA	Japan International Cooperation Agency
KNCV	Royal Netherlands Tuberculosis Association
MDG	Millennium Development Goal
MDR-TB	Multidrug-Resistant Tuberculosis
MoH	Ministry of Health
MSF	Medicines Sans Frontiers
NAC	National AIDS Commission
NGO	Non Governmental Organisation
NORAD	Norwegian Agency for Development Cooperation
NTP	National Tuberculosis Programme
PMTCT	Prevention of Mother to Child Transmission (of HIV)
POW	Programme of Work
PPM	Public Private Mix
PTB	Pulmonary Tuberculosis
QA	Quality Assurance
SWAp	Sector Wide Approach
TB	Tuberculosis
TB/HIV	HIV related-TB
TQM	Total Quality Management
TWG	Technical Working Group
USG	United States Government
WHO	World Health Organization
XDR-TB	Extensively Drug-Resistant Tuberculosis

Executive summary

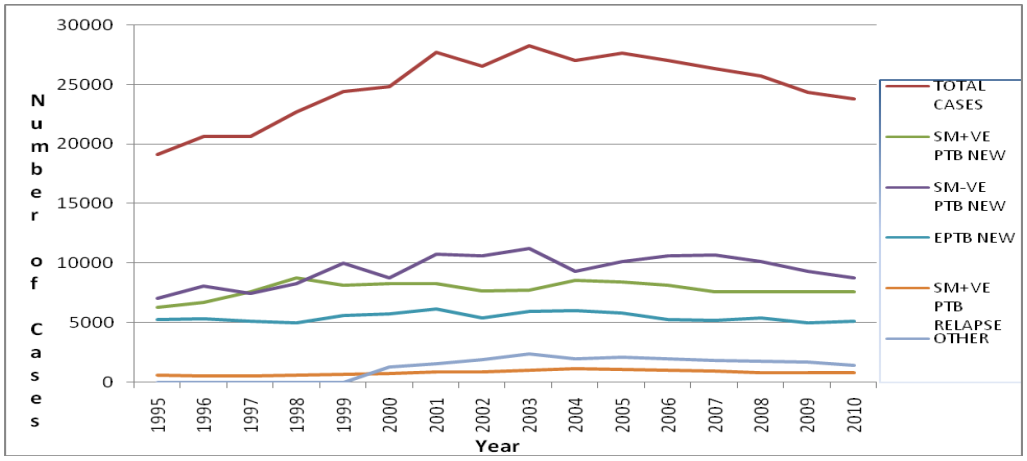
The NTP Strategic Plan (2007-2011) successfully guided the TB control efforts in the past 5 years in Malawi. Following a WHO led Program review in 2011, a number of strengths and weaknesses were highlighted and these have assisted the development of this Strategic Plan (2012-16). This Strategic plan therefore builds on successes and also seeks to improve on weaknesses of the previous plan. Among others, the current Strategic plan recognizes the challenges in case detection which is below the WHO target of 70%. NTP endeavours to increase case finding by mobilizing communities and other players, decentralizing TB services to facilities closer to the patients, introducing better diagnostic technologies, and improving on recording and reporting. In achieving this, the NTP will work within the SWAp framework of health care delivery and decentralization where District Assemblies play an increasing and important role in health care service provision.

This Plan is fully aligned to the Health Sector Strategic Plan (HSSP) and addresses the aspirations of the country as spelt out in the Malawi Growth and Development Strategy (MGDS). It also responds to the Global Plan to Stop TB and the Stop TB Strategy and supports the international efforts to achieve the Millennium Development Goals (MDGs).

1.0 Tuberculosis Control in Malawi

Each year, World Health Organization (WHO) estimates that approximately 9.4 million people develop active TB. More than 2.8 million of those cases are in Africa (6). Fueled by the HIV epidemic, the number of new cases affecting African countries each year has more than doubled since 1990.

Since Malawi started implementing the DOTS strategy, case notification increased steadily from 1995 until 2003 when it reached its peak and thereafter, there was a downward trend decreasing from nearly 28,000 cases in 2003 to about 23000 cases notified in 2010 (Figure 1). Disaggregation by age in smear positive TB cases indicates that the reproductive age group (15-49 years) is the worst affected age group in cases notified. Gender-disaggregated data on tuberculosis indicate that there are generally more males accessing TB care services than females. This could be an indication of higher TB burden among males or greater barriers to accessing TB services for women. This gender disparity has been reported in other parts of the world and fits well with research findings on barriers to accessing care, especially for women whose diagnostic pathway is prolonged or impeded by social, cultural and economic barriers.



Source: NTP data 2010

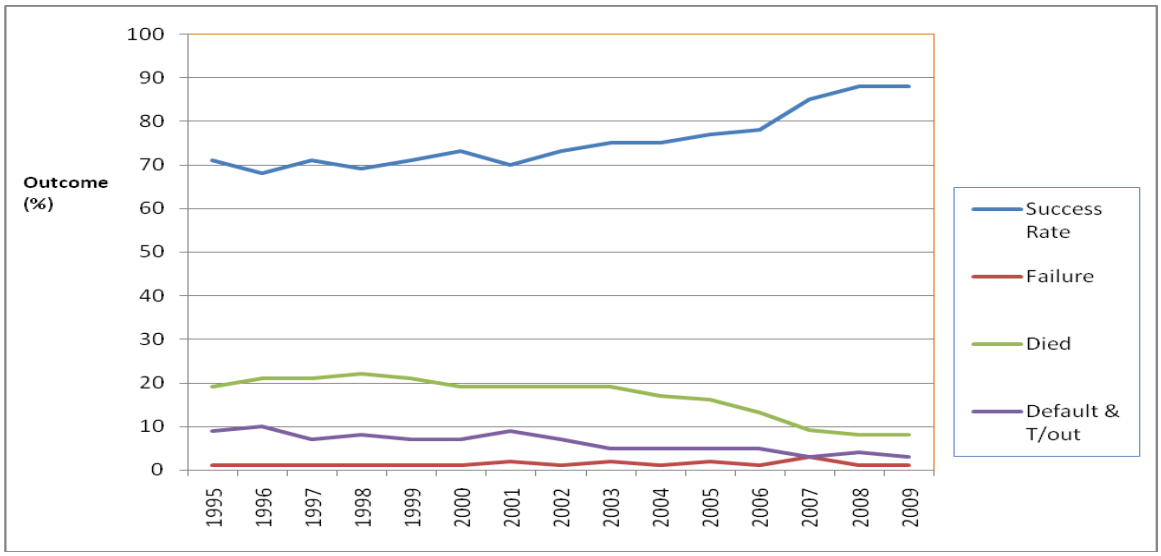
Figure 1: Notified TB cases 1995-2010

The declaration of TB as a national emergency in 2007 was partly to raise awareness and to advocate for enhanced actions in order to address the case detection gap which is estimated to be

at 50%, lower than the WHO recommended target of 70%. These efforts were guided by the National TB Control Program Strategic Plan (2007-2011).

The uptake of HIV testing and counselling steadily increased from 45% in 2005 to 94% in 2008 but slightly declined and was at 88% in 2010. Consequently, of those that were tested, the TB/HIV co-infection rate consistently remained above 60%. Although the programme has managed to provide CPT to over 90% of its TB-HIV co-infected patients, those accessing ART (both started before and during TB treatment) still remained low at 54% in 2010.

Over the years, there has been a steady increase in the proportion of patients successfully treated. In 2010, Malawi exceeded WHO's 85% target of treatment success rate and is currently at 88% for new sputum smear positive cases (Figure 2). Default rate has gone down from 5% in 2006 to 2% in 2010. Of particular importance are the TB treatment failures, from which MDRTB cases are derived. These have remained below 2% of the total notified cases. Mortality due to TB has declined from 20% in 2003 to 8% in 2009.



Source: NTP data 2010

Figure 2: TB Treatment Outcomes for New TB Cases

A majority of the TB deaths have been attributed to a high TB/HIV co-infection rate. However, as TB/HIV collaborative interventions continue to scale up, it is anticipated that this will

positively impact on the mortality among TB patients. The Programme will continue to ensure treatment adherence in TB patients in the quest to curb the development and spread of MDR-TB in Malawi.

2.0 Review of the 2007-2011 Strategic Plan

2.1 Rationale for the Programme Review

Following the expiry of the 5 Year Development Plan 2007-2011 Ministry of Health requested, WHO-AFRO to conduct a Programme review. The review was done to inform the development of the successor plan.

The review was specifically commissioned to address the following TB Control thematic areas:

- ***To review the epidemiology of TB, including assessment of trends of burden of disease, and predictions of incidence and mortality based on different models of programme efficiency and impact of HIV.***
- ***To review the NTP structure, processes and outcome of current TB control activities.***
- ***To review the current structure of health service management and financing, and potential changes over the next five years that may affect NTP performance.***
- ***To make specific recommendations for improvement of TB control services.***
- ***To evaluate the weaknesses and strengths of the general management of TB program.***

2.2 Programme Review Findings

The following were the identified key strengths, challenges and recommendations that were made;

2.2.1 NTP Structure and function

The NTP has a structure headed by a Programme Manager with 2 deputies and a Head of Program Management Unit. The review pointed out that the lack of clarity on official organogram as there were number of versions in circulation. The responsibilities for the officers were not well defined. It was recommended therefore to come up with one functional organogram with substantive posts and clear lines of accountability. The Ministry was requested to develop a clear career path for NTP, and also to improve the Human resource capacity through deployment of additional staff (e.g. medical doctors) and training.

2.2.2 Policy and implementation

The Program has made progress in the implementation of Universal Access to TB diagnosis and treatment. Decentralization of TB treatment and diagnostic centres is underway with more than 1000 sputum collection points currently operational. Widespread community DOTS has been achieved.

However the program faces inequitable distribution of microscopy centres, poor access to treatment registration centres, inadequate engagement of all care providers as well as challenges in diagnosis and management of paediatric TB and contact tracing. It was recommended therefore to map out distribution of both TB and HIV diagnostic and treatment centres throughout the country and draw up a decentralization plan that addresses access and equity challenges. In collaboration with HIV programme there is need to develop and implement policy for intensified TB case finding as well as isoniazid preventive therapy for PLHIV.

The programme implements community based MDR-TB management. An MDR-TB survey was conducted to determine the prevalence of MDR-TB in Malawi. National MDR-TB guidelines, culture and drug susceptibility Testing (DST) and adequate drugs have all been made available. Challenges however existed in surveillance, M&E of drug-resistance and follow up of patients in districts. The program needs to build sufficient capacity to implement MDR-TB guidelines as well as strengthen surveillance, M & E for MDR-TB.

2.2.3 Infection Control

The review identified that there was inadequate infection control measures for health care workers (HCWs), patients and communities as well as limited availability of TB infection control guidelines at facility level. Hence it recommended that a policy be developed to be incorporated in the existing national infection control policy for improved TB/HIV prevention/care for HCWs based on new WHO/ILO/UNAIDS guidelines. The programme was urged to review administrative, environmental, infrastructure issues for improving infection control.

2.2.4 Programme Monitoring and Evaluation

It was noted that there is well established TB surveillance system and a clear reporting structure adapted to new areas like TB/HIV and MDR-TB. There is inadequate quality, analysis and use of data for programme management at all levels. The NTP was advised to strengthen capacity at all levels to use data for action and exploit synergies with HIV and other programmes through joint planning and supervision.

2.2.5 TB Laboratory Management

The review noted that there are adequate human resources at CRL where Culture and Drug Susceptibility Testing (DST) for first line drugs is done using solid media. External Quality Assurance (EQA) for smear microscopy, culture and DST is being done but there are challenges in access to these services. Laboratory infrastructure, diagnostic methods and staff capacity at CRL and facility level need strengthening. For instance liquid culture and novel diagnostic methods have to be introduced at both regional and central levels. This may improve turnaround time for microscopy and culture which is currently long. For all these to be realised the program needs to implement national laboratory strategic plan which covers all the important areas highlighted above.

2.2.6 Drug Management

The review team noted that the Program has sufficient quantities of anti-TB drugs centrally and few stock outs were observed. Several challenges were identified such as: - inadequate storage space nationally to accommodate large medication buffer stock, difficulties with transportation logistics, problems forecasting consumption and inadequate stock management supervision at the district level.

2.3 Implementation of Program Review recommendations

The NTP review assisted the NTP to clearly identify its weaknesses and strengths. The programme realises that in order to improve access and quality of TB services, a multi-pronged approach needs to be used. As such, the following interventions will be strengthened:

1) **Decentralisation of treatment registration and initiation centres**.

The NTP plans to establish at least 70% of public health facilities as TB registration and treatment initiation centres by 2016.

2) **Diagnostic capacity**.

Specifically, strategies for improving the diagnostic pathway for patients will include the following:

- ***Reduction of turnaround time from an average of 2 weeks to same day (24hrs) diagnosis***
- ***Expanding and improving existing community-based sputum collection points***
- ***Expanding the number of microscopy centres throughout the country***
- ***Increasing the number of diagnostic centres implementing fluorescent microscopy***
- ***Piloting a two-sample "spot-spot" sputum collection approach in selected districts***
- ***Introduction of more robust technologies such as LED microscopy, GeneXpert, MGIT and LPA.***

3) **Address gender and poverty Issues**

The TB control programme has a vital role in addressing gender and poverty issues. TB disproportionately afflicts the poor and hence all efforts should be made to identify and provide TB services to all vulnerable populations as a contribution to poverty reduction.

The programme will continue to explore and work on pro-poor TB control interventions such as provision of enablers to address the needs of the following vulnerable groups, among others:

women, children, urban and rural poor, prisoners, migrant populations/refugees. The NTP will continue to work in partnerships with other Ministries i.e. Ministry of Gender.

The programme seeks to explore means of providing incentives, enablers and other social supports to TB patients as a way of enhancing treatment adherence. This includes supplemental nutritional support provided to selected TB patients and psychosocial support from community volunteers and patient groups.

4) Strengthening Paediatric TB diagnosis and management

The diagnosis of childhood TB is mainly based on clinical history and examination, growth assessment and suggestive radiology findings. The Programme has incorporated a detailed section on **p**aediatric TB management in its current TB manual. This section also covers isoniazid preventive therapy in children aged less than 6 years, contact tracing in children exposed to an index case with TB, as well as treatment regimens.

At managerial level, the programme will report routinely on paediatric TB case finding and outcome indicators so as to give paediatric TB management the prominence it deserves. The NTP will pilot and evaluate novel tools for diagnosis of paediatric TB.

5) Data management

The programme is working to strengthen its data management for effective recording, reporting and monitoring of programme indicators. The NTP will continue to work with partners to pilot electronic data systems for more accurate streamline, integrated and accurate data recording and reporting.

3.0 TB Control Efforts Towards 2016

3.1 Goal

To reduce the morbidity, mortality and transmission of tuberculosis until the disease is no longer a public health problem in Malawi

3.2 Vision

A tuberculosis free Malawi

3.3 Mission

To ensure effective, equitable and accessible TB prevention, diagnosis, treatment and care services in Malawi

3. 4 Objectives

1. ***To pursue high-quality DOTS expansion and enhancement***
2. ***To address TB-HIV, MDR-TB, and the needs of poor and vulnerable populations***
3. ***To contribute to health system strengthening***
4. ***To engage all care providers in TB control services***
5. ***To empower TB patients, ex-TB patients and civil societies through partnerships.***
6. ***To promote and strengthen TB research***
7. ***To strengthen TB programme monitoring and evaluation***

3.5 Stop TB Strategies

The programme will continue to implement TB control activities using the Stop TB Strategy's thematic areas from which the objectives for the Strategic Plan 2011-2016 are derived as follows;

3.5.1 Pursuing High Quality DOTS Expansion and Enhancement

Early diagnosis of TB and of high quality DOTS is indispensable in reducing TB morbidity and mortality. Each of the five elements of the DOTS strategy will continue to be implemented at service facility level with support from the National TB Control Programme.

i) Political Commitment

Sustained political commitment is crucial to ensure adequate and sustained financing. Currently the programme is funded through the health SWAp pool fund which includes the Global Fund against Tuberculosis, Aids and Malaria (GFTAM). WHO and USG partners also provide technical and discreet financial support to the NTP. NGOs such as TB CARE, TB REACH, MSF, Project HOPE and Dignitas support implementation of the District Implementation Plans (DIPs) in selected districts. GOM has demonstrated commitment to TB control through:

- ***The declaration of TB as a national emergency in 2007 in order to raise awareness and to advocate for enhanced TB control.***
- ***Provision of infrastructure and dedicated staff at all levels.***
- ***A functional national TB reference laboratory***
- ***Inclusion of a programme budget in health sector planning***
- ***Endorsement and implementation of TB control policies and guidelines***

ii) Case Detection Through Smear Microscopy and culture

Early case detection/diagnosis is critical in TB control. Sputum microscopy still remains the mainstay of diagnosis for pulmonary tuberculosis. Over the years the number of TB microscopy centres has increased from around 90 in the year 2000 to 227 in 2010. The NTP plans to

increase access to modern diagnostic tools including LED microscopes and GeneXpert technology. Currently only the national TB reference laboratory has capacity for solid culture. To expand access to TB culture services, this will be decentralised to two regional laboratories in Mzuzu and Zomba. The CRL will be upgraded to accommodate liquid culture in order to scale up first-line drug susceptibility testing on all MDR-TB suspects.

The NTP strives to maintain an excellent quality management system that meets international standards. Internal quality control and external quality assurance (QA) is crucial and will continue to be implemented to monitor the quality of smear microscopy, culture and drug susceptibility testing. This will be complemented by routine supervision and monitoring of the entire laboratory network.

The NTP will implement the following to improve the quality of diagnostic services;

1- ***Quality procedures will be strengthened at the National TB Reference Laboratory to assure that laboratory quality is maintained throughout the national laboratory network.***
2- ***National TB Reference Laboratory will review and update Standard Operating Procedures (SOPs), Quality and Safety Manuals, and develop specific guidelines and QA manuals for TB diagnostics taking in consideration new technologies***
3- ***Strengthen existing QA program through expansion of EQA including enrolment of National TB Reference Lab in international Proficiency Testing programs; and build capacity for the preparation and distribution of in-house quality control and panel testing for the central, district and CHAM TB laboratory network.***
4- ***Improve specimen collection, management and transportation system***

The NTP will work with partners to strengthen the CRL, develop and retain qualified laboratory staff, improve laboratory supply chain management, maintain laboratory equipment and promote internal data management and monitoring and evaluation efforts. The National TB Reference laboratory maintains links with the Medical Research Council (MRC) of South Africa as a supranational laboratory.

iii) Regular, Uninterrupted Drug Supply and Management

Drug and logistics management is key to ensure uninterrupted supply of quality assured anti-TB drugs in order to prevent emergence of drug resistant TB. Standardized treatment is used in all health facilities whether public or private using the TB Control Programme guidelines. Currently all new TB cases are treated using fixed dose combination (FDC) therapy for a duration of 6 months with an exception of TB meningitis which is treated for 9 months. All re-treatment cases are treated for a duration of 8 months and MDR-TB cases treated for a duration of 24 months using second line TB treatment. The NTP will continue to provide guidance in procurement processes especially quantification and forecasting of Anti-TB drugs which are normally sourced through the Global Drug Facility (GDF) either on a grant basis or through direct procurement

iv) Supervision

Supportive supervision is critical to sustaining and improving performance of the program. It provides an opportunity to identify gaps in performance, on the job training and coaching as well as validation of TB data at different levels. The frequency of the supportive supervision is quarterly at national and zonal levels and monthly at district level. TB and HIV programs also conduct biannual joint supervision to districts as part of TB/HIV collaboration. Quality improvement of the supervision is one of the challenges for the TB control programme. Capacity building in supportive supervisory skills has been identified as a need at all levels.

v) Patient support

At facility level, patient support is mainly provided by health care workers while at community level, majority of patients are supported by guardians who are usually family members. Each hospital has a team of focal persons responsible for the clinical, nursing and documentation and defaulter retrieval.

vi) Standardised Reporting and Recording System

Monitoring and evaluation is an integral part in TB control to track the programme's performance and impact on all aspects of DOTS. The NTP continues to monitor progress of programme implementation through monthly, quarterly, bi-annual and annual reports and reviews at district, zonal as well as national levels. All TB suspects, TB cases and TB/HV co-infected cases are entered into the TB Programme recording and reporting system through pre-

designed data collection tools (forms and registers). The NTP reports treatment outcomes for all forms of TB in line with WHO recommendations.

The NTP plans to conduct TB prevalence survey in 2012 to establish baseline information on the prevalence of pulmonary tuberculosis. This will in turn enable the programme to track and assess progress towards achieving the TB related MDGs. In addition, the NTP plans to work with partners to establish electronic data systems for recording and reporting TB data and improving linkages with HIV monitoring systems.

3.5.2 Addressing TB/HIV and MDR-TB Management

i) TB and HIV

The expansion of TB/HIV collaborative activities at all levels has improved the uptake of HTC and CPT for those co-infected. There also has been an improvement in ART uptake although it currently stands at 50%. These in turn have had a positive impact on death rates and overall TB care. Through continued TB/HIV collaborative efforts NTP will endeavour to increase the uptake of ART among TB patients. The programme also endeavours to improve implementation of the 3I's—Intensified Case Finding (ICF), Infection Control (IC) and Isoniazid Prophylactic Therapy (IPT). This is aimed at decreasing the burden of tuberculosis among people living with HIV (PLHIV). Screening of TB in HIV care settings continue to take place in the health facilities providing HIV care and treatment services. HIV recording and reporting tools (ART master card, ART register and HTC register) also capture information on TB screening in PLHIV.

ii) Multidrug Resistant Tuberculosis (MDR-TB)

Malawi introduced community-based MDR-TB management following a successful Green Light Committee (GLC) application for second line anti-TB drugs in 2007. An MDR-TB survey to assess the prevalence of MDR-TB cases from both the retreatment and new smear positive cases in the country completed in September 2011 has shown a 4.8% MDR prevalence among retreatment cases and 0.4% prevalence among new sputum smear positive cases.

MDR-TB is managed at community level. However, plans are underway to establish a specialised MDR-TB treatment unit at Bwaila hospital as a clinical backup for the community based management. It is envisioned that the MDR-TB unit will become a national centre of excellence for the delivery of MDR-TB care, MDR-TB infection control and the training of health workers on the management of MDR-TB. Districts hospitals will establish isolation facilities for MDR-TB patient hospitalization when need arises.

The NTP seeks to increase diagnostic capacity throughout the laboratory network by working with partners to establish regional TB laboratories with culture capacity, strengthening the sputum sample transportation network, upgrading the CRL with liquid culture (MGIT and Line Probe Assay) and piloting rapid molecular testing for rifampin resistance (e.g. GeneXpert) to detect drug resistance and guide the selection of appropriate second-line regimens.

The NTP will build capacity at central and district levels in MDR-TB management through a DOTS-Plus Coordinating Committee and MDR clinical management teams. The NTP will further strengthen its community-based approach by involving community-sputum volunteers and community nurses in DOT, providing nutritional support and enablers to patients and briefing community leaders on MDR-TB. The recording and reporting systems for MDR-TB will further be strengthened.

3.5.3 Contributing to health system strengthening based on PHC

i. Human Resources

Human resources development at all levels for TB control is also the NTP's mandate with highly specialized capacity building done centrally. The NTP endeavours to increase capacity to meet the demands of emerging problems in critical technical areas in TB control including drug-resistant TB, TB/HIV co-management, modern diagnostic technologies and paediatric TB. NTP has developed a human resources development plan (HRD)in order to address chronic human resource challenges. NTP will build laboratory capacity by training 240 additional laboratory assistants in conventional and fluorescent microscopy, train critical mass of district-level

clinicians in management of MDR-TB, identify a paediatric TB focal clinician at the central unit and strengthen overall capacity of central unit managerial staff through mentoring, further training and international exchange programmes. Districts will be supported to further expand microscopy network as well as train more microscopists.

ii. Supply Chain Management System

a. Laboratory Supplies

Key supplies such as laboratory reagents and microscopes need to be made available in uninterrupted manner in order to support service provision. Laboratory reagents and supplies are procured through approved procurement systems. Currently Ministry of Health is working with partners to scale up LED fluorescent microscopy and strengthen the Supply Chain Management system in order to prevent interruption of services.

b. Anti-tuberculosis Drugs

Anti-TB drug monitoring mechanisms have been put in place at different levels of the system. NTP will continue to address challenges to maintain an uninterrupted supply of anti-TB drugs by working to improve stock status at the district level, train staff on proper anti-TB drug stock management and lobby MOH to improve and expand storage conditions of anti-TB drugs at all levels.

iii) Health information system

Through HMIS, MOH ensures that key TB indicators are captured at national level. The Central Monitoring and Evaluation Department (CMED) compile periodic bulletins which include information on selected indicators for all disease control programmes.

However, quarterly TB data is collected at implementation levels on more indicators than are captured in the HMIS for programme management purposes. In this regard, stakeholders involved in TB control activities are provided with standardised TB data collection tools.

The data available from the NTP and HMIS are critical for informing policy decision-making at the central level. The NTP plans to strengthen its monitoring and evaluation capacity to use data to achieve quality improvement and an enhanced programme management at all levels. Data collected at the NTP is shared with all relevant stakeholders like WHO, SADC as well as CMED at central Ministry of Health.

vi) Infrastructure & equipment

Programme performance is highly dependent on availability of a conducive infrastructure and equipment and a reasonable fleet of vehicles for easy follow up between different levels.

3.5.4 Engaging All Care Providers in TB Control

The NTP works with other providers of health care in the country in order to widen the provider base and improve access to TB services. As such NTP works closely with private practitioners according to their level of competency. These practitioners are involved in;

1. ***Identification of suspects and referral for sputum examination***
2. ***Sputum microscopy***
3. ***TB diagnosis and health promotion***
4. ***HTC and management of HIV- associated conditions***
5. ***TB case management following national guidelines***
6. ***Public health responsibility of recording and reporting and defaulters tracing***

Private Practitioners are expected to carry out one or a combination of the above tasks in accordance with national guidelines. The programme also works with other governments departments on a public-public mix basis such as the Malawi Prison Services and Malawi Defence Force Medical Services in the fight against TB. The NTP will continue to engage all care providers through PPM and the use of the International Standards for TB Care (ISTC). Coordination with traditional healers will be strengthened to facilitate early referral of TB suspects to the formal health sector.

3.5.5 Empowering People with TB, and Communities through partnership

In order to achieve universal access to TB services, the NTP works in partnership with the communities for wider geographical coverage. NTP will continue to strengthen active case finding and symptom screening in selected high-risk groups, especially women, children, prisoners, migrant populations/refugees and the rural poor living in geographically isolated areas. Communities will continue to play a role in the following areas:

- ***Peer education and referral of potential TB suspects by ex-TB patients and volunteers.***
- ***Social mobilisation for TB/HIV using existing HIV community networks.***
- ***Establishment of community sputum collection points and linkages with microscopy centres***
- ***Transportation of specimens to microscopy sites***
- ***TB treatment support and direct observation of drug administration.***

3.5.6 Enable and Promote Operational Research

Operational research is an important tool for performance improvement, development of competencies, motivation, both for the individual and the organization as well as to guide policy direction. The programme will continue to strengthen research to address operational issues including capacity building at different levels through the following initiatives:-

- ***Identification of performance gaps requiring operational research***
- ***Mentoring of district staff***
- ***Linkages with academic and research institutions including the MOH research department.***

4.0 Key Targets and Indicators

The TB programme implementation is monitored through international targets and indicators. These provide guidance in formulation of country specific targets. These international targets include both the stop TB partnership targets and the TB related targets set in the Millennium Development Goals (MDGs) set for 2015 and 2050.

4.1 Core TB Programme indicators and Targets (2016)

- Case Notification rate – 127/100,000
- Treatment Success rate – 95%
- Default rate – 1%
- Proportion of diagnostic facilities using LED microscopy – 75%
- Proportion of district laboratories using rapid molecular tests-75%
- Percentage of TB patients with known HIV status – 100%
- Proportion of HIV positive TB patients enrolled on Cotrimoxazole Preventive Therapy – 100%
- Percentage of HIV positive TB patients on Anti-retroviral therapy – 100%
- Percentage of MDR-TB patients started on second-line TB treatment each year – 100%

Table 1: Core TB Indicator Matrix

Indicator	Numerator	Denominator	Purpose	Data Source	Monitoring Frequency	Base line	Annual Targets				
						2011	20112	2013	2014	2015	2016
Case Notification rate (rate per 100000)	Number of TB cases notified	Total population	Outcome	Routine NTP notification records	Annually	164	156	148	142	136	127
Treatment Success rate	Number of new smear positive cases cured and completed treatment	Total number of new smear positive cases	Outcome	Routine NTP notification records	Annually	88%	88%	89%	90%	92%	93%
Default rate	Number of new smear positive cases defaulted and transferred out	Total number of new smear positive cases	Outcome	Routine NTP notification records	Annually	2%	2%	2%	1%	1%	1%
Proportion of diagnostic facilities using LED microscopy – 75%	Number of diagnostic facilities using LED microscopes	All TB diagnostic facilities	Output	District reports	Annually	0%	16%	30%	45%	60%	75%
Proportion of district laboratories using rapid molecular tests-75%	Number of district laboratories using Rapid Molecular tests	Total number of district laboratories	Output	District reports	Annually	0%	25%	40%	50%	60%	75%
Percentage of TB patients who known their HIV status	Number of TB patients who know their HIV status	Total number of Registered TB Cases	Output	Routine NTP notification records	Annually	86%	88%	89%	90%	92%	92%
Proportion of HIV positive TB patients enrolled on cotrimoxazole preventive therapy	Number of HV Positive TB patients on CPT	Total number of HIV positive TB patients	Output	Routine NTP/HIV notification records	Annually	93%	95%	97%	98%	98%	99%
Percentage of HIV positive TB patients on ART	Number of HIV positive TB Patients initiated on ART	All TB Cases tested HV Positive	Output	Routine NTP notification records	Annually	54%	100	100%	100%	100%	100%
Percentage of MDR-TB patients started on second-line TB treatment each year	Number of MDR-TB cases registered and started on SLD	Number of all confirmed MDR Case	Output	Routine NTP notification records	Annually	65%	85%	90%	95%	96%	97%

5.0 Budgetary needs

The budget for this strategic plan will be submitted annually to Government Treasury through the MOH planning section. Budgetary plans with an incremental allowance of 10% each year will be developed on annual basis. Assistance from other discreet health development partners will also be sought to cover for the gaps i.e. financially and technically. The TB programme will continue to access its funding through the Health SWAp**.** The budget outlined below covers a 5 year period with an assumption of a 10% annual increase. **Refer to Annex 2 for a detailed budget.**

6.0 Annex

Annex 1: Logic Model for the NTP 2011-2016 Strategic Plan

Objective 1: To pursue high-quality DOTS expansion and enhancement

Strategies	Interventions	Activities	Indicators	Indicator Type	Annual Targets					Final Target
					2011-12	2012-13	2013-14	2014-15	2015-16	2016
Secure political commitment, with adequate and sustained financing	Enhance TB advocacy	Lobby for financial sustainability by GOM and technical/developmental partners	Percentage of Tb activities funded	Outcome	60%	70%	80%	90%	100%	100%
		Meeting with parliamentary committee on health to lobby for government support	Number of parliament sittings lobbying for government support for TB	Process	1	1	1	1	1	5
		Presentation of concept papers to the minister through the PS	Proportion of concept papers that led to action (2 papers presented annually)	Outcome	100%	100%	100%	100%	100%	100%
	Active Case finding and enhanced facility based suspect screening,	Routine screening for all TB suspects	Proportion of TB suspects screened	output	90%	90%	100%	100%	100%	100%
		Triaging of TB suspects in all health facilities	Proportion of health facilities providing triaging of TB suspects	Output	40%	50%	60%	70%	80%	80%
		Orient staff in national paediatric TB management guidelines	Proportion of staff oriented in paediatric TB guidelines	Output	40%	50%	60%	70%	80%	80%
Early case detection and diagnosis through quality-assured bacteriology	Screen for TB in all at risk groups	conduct TB contact tracing in all children 6 years & below	Proportion of TB Proportion of contacts, 6 years and below screened for TB	Output	40%	50%	60%	75%	85%	85%
		Conduct TB contact tracing for symptomatic contacts of all pulmonary TB index cases	Number of adult symptomatic TB contacts, screened for TB	Output	40%	50%	60%	75%	85%	85%

		Screen for TB in all ART clients	Proportion of ART clients routinely screened for TB	Output	95%	100%	100%	100%	100%	100%
		Routinely screen for TB in all clients accessing HIV care services	Proportion of all HIV Care Service clients routinely screened for TB	Output	95%	100%	100%	100%	100%	100%
		Screen for TB in all inmates in prisons	Proportion of new inmates in prisons screened for TB	Output	100%	100%	100%	100%	100%	100%
	Strengthen community participation	Establish functional sputum collection points out of the mapped points through DHMTs	Proportion of sputum collection points established	Output	40%	50%	60%	70%	80%	80%
		Train sputum collection points volunteers	Number of volunteers trained	Output	50%	60%	70%	80%	90%	90%
		Provide logistics and supplies in all sputum collection points	Proportion of sputum collection points with logistics in place in SCPs	Output	100%	100%	100%	100%	100%	100%
		Provide enablers to TB volunteer groups	Proportion of volunteers/facilities received enablers	Output	50%	55%	60%	65%	70%	70%
	Improve specimen collection, transportation and registration management	Develop specimen collection guidelines for hospitals and all sputum collection points	Specimen collection guidelines for hospitals and all sputum collection points distributed	Output	60%	70%	80%	90%	100%	100%
		Orientation of specimen collection guidelines to staff in sputum collection points	Proportion of staff oriented on specimen collection guidelines	Output	60%	65%	70%	75%	80%	80%
		Procure sputum container carrier boxes	Number of sputum container carrier boxes procured	Process	400	1000	1100	1500	2000	6000
		Procure and maintain Courier system	Operational sputum transportation courier system	Output	1	1	1	1	1	1
		Develop a sputum registration tracking system	Sputum registration tracking system in place	Output	1	1	1	1	1	1

	Establish microscopy centres	Conduct mapping exercise for microscopy centres	Number of microscopy centres mapped	Output	227	56	56	56	56	451
		Provide microscopy centres with LED microscopes	Proportion of microscopy centres with LED microscopes	Output	0	16%	30%	45%	60%	75%
		Provide rapid molecular diagnostic tests to district hospitals	Proportion of district facilities with Rapid molecular diagnostic tests	Output	0%	25%	40%	50%	60%	75%
		Construct and upgrade infrastructure to accommodate lab services	Proportion of infrastructure upgraded to accommodate lab services	Output	56	56	56	56	56	280
	Improve the quality of TB microscopy services	Supply microscopes and reagents and supplies to all microscopy centres	Proportion of microscopy centres supplied with microscopes and reagents	Output	100%	100%	100%	100%	100%	100%
		Develop a supply chain management for laboratory supplies	A supply chain management system in place	Output	1	1	1	1	1	1
		Maintain and operate existing microscopy network	Proportion of functional microscopy centres	Output	100%	100%	100%	100%	100%	100%
		Procure laboratory equipment and service contracts	Proportion of laboratory equipment serviced in time	Output	100%	100%	100%	100%	100%	100%
	Improve diagnosis of MDR-TB patients	Build TB culture capacity to increase access to first and second line DST for MDR-TB diagnosis	Number of staff trained in culture and DST for MDR-TB diagnosis	Output	7	5	5	5	-	22
	Introduce same day TB diagnosis	Implement the spot-spot sputum collection mechanism	Proportion of TB diagnostic facilities implementing spot-spot sputum collection method	Output	0%	25%	50%	100%	100%	100%
	Maintain internal and external QA	Review and update QA guidelines and SOPs	Availability of updated QA guidelines and SOPs	Output	1	1	1	1	1	1

	system	Enrol for the TB lab accreditation process	TB CRL accredited and maintained	Output	-	-	1	1	1	1
	Improve HR capacity for lab services	Train Lab staff in new technologies	Proportion laboratory staff trained in new technologies and innovations	Output	0%	25%	50%	75%	100%	100%
		Support training of lab assistants to perform laboratory services including TB diagnostics/microscopy (instead of HSAs)	Number of laboratory assistants trained	Output	-	-	30	30	30	90
		Recruit CRL TA	CRL TA in place	Output	1	-	-	-	-	1
Provide standardized treatment with supervision, and patient support	guidelines and Standard Operating Procedures	Perform systematic reviews of TB deaths to inform TB programmatic management	Number of districts conducting TB death audits	0	28	28	28	28	28	28
		Train community DOT supporter	Number of community DOT supporter trained annually	0	0	500	500	500	500	2000
		Conduct follow up for treatment interrupters	Percentage of defaulters	Output	2%	2%	1%	1%	1%	1%
Effective drug supply management chain	Strengthen supply chain management	Procure anti-TB drugs 6-monthly (June & December)	Number of anti-TB drug stock-outs	process	1	0	0	0	0	0
		Conduct regular physical quality checks when drugs arrive and at all stages of the drug supply cycle	Number of physical quality checks conducted	process	4	4	4	4	4	4

Objective 2 : To address TB-HIV, MDR-TB, and the needs of poor and vulnerable populations

Strategies	Interventions	Activities	Indicators	Indicator Type	Annual Targets					Final Target
					2011-12	2012-13	2013-14	2014-15	2015-16	2016
Address TB/HIV co-infection	Strengthen mechanisms for TB and HIV collaboration	Conduct routine surveillance of HIV prevalence among TB patients	Proportion of TB patients with known HIV sero-status	Outcome	86%	90%	95%	100%	100%	100%
		Conduct joint monitoring and evaluation of TB and HIV and including	Number of joint TB/HIV monitoring activities conducted	process	4	4	4	4	4	4
		Increase integrated TB/HIV service (one-stop-shop)	Number of facilities offering integrated TB/HV services	Process	4	30	50	70	80	90
		Implement electronic patient data management system for TB and HIV	Number of facilities using electronic patient data management system for TB and HIV	Output	0	4	15	35	45	50
	Decrease the burden of TB in people living with HIV	Procure INH for HIV positive adults	Number of HIV adults put on IPT	Output	91390	197600	276640	286520	286520	1138670
		Conduct routine TB screening for ART patients at each visit	Proportion of ART clients screened for TB	Output	100%	100%	100%	100%	100%	100%
		Provide routine TB screening in all HTC clients	Proportion of PLHIV screened for TB	Output	100%	100%	100%	100%	100%	100%
	Decrease the burden of HIV among TB patients	Initiate ART on TB eligible patients within the 1st two weeks of TB treatment	Proportion of TB patients started on ART within 2 wks of diagnosis	Output	0	50%	75%	95%	100%	100%
		Provide Cotrimoxazole to HIV positive TB patients	Proportion of HIV positive TB patients on CPT	Output	94%	100%	100%	100%	100%	100%

Scale up TB infection control measures in care settings, congregate settings and community level	Strengthen workplace administrative infection control measures	Implement TB infection prevention and control in all TB registration centres	Proportion of TB registration centres implementing TB IC	Output	25%	50%	75%	100%	100%	100%
	Implement environmental control measures appropriate for service level	Introduce ultraviolet germicidal irradiation (UGI) as appropriate	Number of health facilities with UVGI	Output	2	5	15	25	30	30
	Promote use of personal protective equipment (PPE)	Procure PPEs for use in high risk areas	Number of health facilities providing PPEs in high risk areas	Output	10	50	75	90	100	100
	Scale-up programmatic management of drug resistant TB	Update MDR-TB programmatic management guidelines	Availability of guidelines	Output	1	1	1	1	1	1
		Initiate treatment for all diagnosed MDR-TB cases	Proportion of notified MDR-TB cases initiated on 2nd line treatment	Output	65%	100%	100%	100%	100%	100%
		Advocate for establishment MDR-TB isolation rooms in all district hospitals	Number of districts with MDR-TB isolation rooms	Output	2	15	20	25	28	28
Address TB in high risk groups and special populations	Targeted case identification	Screen for TB in all inmates in prisons on admission	Proportion of prisons conducting TB screening on admission	Output	40%	75%	90%	100%	100%	100%
		Screen for TB in antenatal and postnatal clinics	Proportion district hospitals screening for TB in antenatal and postnatal clinics	Output	0	25%	50%	75%	100%	100%
		Screen for TB in under five clinics	Proportion of district hospitals screening for TB in under fives	Output	0	25%	50%	75%	100%	100%
	Provide enablers to needy TB patients	Advocate for provision of food supplements and/or other incentives to needy TB patients	Proportion of hospitals providing food supplements	Output	10%	50%	75%	90%	100%	100%

Objective 3: To contribute to health system strengthening

Strategies	Interventions	Activities	Indicators	Indicator Type	Annual Targets					Final Target
					2011-12	2012-13	2013-14	2014-15	2015-16	2016
Infrastructure improvement	Provision of appropriate tools for efficient service delivery.	Procure computers to support introduction of electronic reporting and recording system	Proportion of TB registration centres with health institutions with IT equipment	Output	44%	60%	75%	90%	100%	100%
		Refurbish and expand the CRL	CRL refurbished	Outcome	-	-	1	-	-	1
		Expand internet services at in the NTP	Sustainable internet service at NTP	Outcome	1	1	1	1	1	1
		Procure and maintain standby generator at NTP CU	Functional generator at NTP CU	Output	-	1	-	-	-	1
Human resource development	Enhance skills and career development	Develop NTP resource centre	An NTP resource center established	Output	1	-	-	-	-	1
		Facilitate the participation of NTP staff at international conferences and training courses	Number of conferences attended by different cadres of HCWs.	Output	5	10	10	10	10	50
		Review and adapt the Staff Performance System to monitor and evaluate staff performance (CU and zone?)	Proportion of staff members appraised.	Outcome	0%	100%	100%	100%	100%	100%
		Develop a TB annual training plan	Annual TB training plan available	Output	1	1	1	1	1	5

	Strengthen the TB component in pre-service training	Collaborate with all health care institutions to integrate TB programmatic issues	Proportion of health care training institutions teaching TB programmatic issues.	Output	10%	50%	70%	90%	100%	100%
		Provide training materials to pre-service training institutions	Proportion of Health training institutions with the TB undergraduate training materials	Output	10%	50%	70%	90%	100%	100%
	Implement the TB- HR strategy	Revise and lobby for approval of NTP organogram	NTP organogram approved	Output	1	1	1	1	1	1
		Lobby with MOH to fill in vacant positions in collaboration with the HR dept	Proportion of NTP vacant positions filled	Output	0%	50%	70%	90%	100%	100%
		Maintain TB HR inventory	Availability of an up to date TB HR inventory	Output	1	1	1	1	1	1
Adapt new approaches that strengthen systems including practical approach to lung health	Source, share and appraise information on new approaches and innovations	Disseminate research findings from different organizations	Number of Research findings disseminated	Output	1	2	2	2	2	9
		Orientation of health facility staff on Practical Approach to Lung Health (PAL)	Proportion of health facilities practicing PAL	Output	0%	25%	50%	75%	100%	100%

Objective 4: To engage all care providers in TB control services

Strategies	Interventions	Activities	Indicators	Indicator Type	Annual Targets					Final Target
					2011-12	2012-13	2013-14	2014-15	2015-16	2016
Expand TB service provider base through Public-public and public-private mix approaches	Strengthen collaboration with all stakeholders	Conduct biannual PPM collaborative meetings	Number of collaborative meetings conducted every year	Output	1	2	2	2	2	9
		Conduct TB orientation to providers identified	Number of private care providers oriented	Output	32	60	60	60	60	272
		Conduct supervision on all care providers involved in TB/HIV activities	Percentage of supervisory visits conducted	Output	0	2	2	2	2	8
Promote patient centred approach in tuberculosis care	Dissemination and use of the International Standards for TB Care (ISTC)	Orient care providers on International Standards for TB care (ISTC) and Patients Charter	Proportion of care providers trained in ISTC	Output	0	30%	30%	50%	70%	90%

Objective 5: To empower TB patients, Ex-TB patients and civil societies through partnerships.

Strategies	Interventions	Activities	Indicators	Indicator Type	Annual Targets					Final Target
					2011-12	2012-13	2013-14	2014-15	2015-16	2016
Promote Advocacy Communication and Social Mobilization (ACSM)	Knowledge gap identification, information dissemination and capacity building	Conduct KAP studies	Number of KAP studies conducted	Output	0	1	-	-	-	1
		Develop and distribute TB IEC materials targeting patients, family members, communities and people living with HIV and AIDS	Proportion of health facilities with TB IEC materials displayed	Output	20%	80%	100%	100%	100%	
		Conduct biannual media briefings	Number of media briefings conducted	Output	1	2	2	2	2	9
		Develop and feature TB radio and TV programmes	Number of radio programmes featured	Output	52	52	52	52	52	
		Procure and distribute radios to community listening clubs	Number of radios distributed	Output	160	160	160	160	160	800
Encourage community participation	Integrate TB activities in existing community structures	Orient informal care providers (traditional healers, grocery owners) on signs, symptoms and referral	Number of informal care providers oriented on TB	Output	0	200	200	200	200	800
		Train drama groups in theatre for development	Number of drama groups trained	Output	5	28	28	28	28	117
Patients Charter for TB Care	Disseminate TB Patients Charter	Orient Civil Society Organizations on the TB Patient Charter	Number of Civil Society Organizations oriented on the TB Patient Charter	Output	0	15	-	15	-	30
Strengthen TB advocacy at all levels	Implement package of communication and social mobilization activities	Conduct quarterly ACSM Technical Working Group (TWG) meetings	Number of ACSM TWGs conducted	Output	4	4	4	4	4	20
		Facilitate commemoration of world TB day at national and district level	Number of districts with World Stop TB Day commemoration	Output	12	29	29	29	29	128

Objective 6: To promote and strengthen TB research

Strategies	Interventions	Activities	Indicators	Indicator Type	Annual Targets 2011-12	2012-13				Final Target
Build capacity for TB operational research at all levels.	Enhance health worker knowledge and skills in TB operational research	Conduct health worker trainings in TB operational research	Number of health workers trained in operational research skills	Output	20	20	20	20	20	100
		Review and disseminate TB operational research guidelines	Availability of operational research guidelines at all level as	Output	1	-	1	-	1	3
Strengthen stewardship role of the NTP over conduct of TB operational research.	Provide leadership in TB operational research	Identify ,compile and disseminate annual research agenda	Availability of research agenda	Output	1	1	1	1	1	5
Promote the utilization of research findings for planning	Translate research findings into policy and practice	Create and maintain a database on all TB research conducted in the country	Availability of TB research database	Output	1	1	1	1	1	5

Objective 7: To strengthen TB programme monitoring and evaluation

Strategies	Interventions	Activities	Indicators	Indicator Type	Annual Targets 2011-12	2012-13	2013-14	2014-15	2015-16	Final Target 2016
Strengthen Monitoring & Evaluation system and impact measurement	Institutional capacity development for data collection, analysis, use and storage	Establish a secure national database	Availability of a secure database	output	1	1	1	1	1	5
		Install high capacity servers in separate buildings	Availability of severs	output		1	1	1	1	5
		Procure hard and soft ware gadgets (IT equipment) for the database	Number of sets of IT equipment procured	Output	10	10	10	10	10	50
		Install IT equipment to support electronic data recording	Functional electronic data monitoring system	Output	1	1	1	1	1	1
		Procure internet services	Functional internet services	Output	1	1	1	1	1	1
		Harmonize NTP and HMIS data collection tool to produce appropriate TB data	Availability of harmonized data collection tool	Output	1	1	1	1	1	1
		Evaluate new intervention models of community and social mobilization in rural areas.	Number of evaluations conducted of new interventions evaluated.	Output	2	2	2	2	2	10
		Establish NTP website	Website available	Out put	1	1	1	1	1	1
		Lobby for posting of Statistician, and an M&E officer	Posts for statistician and M&E officer filled	Output	2	2	2	2	2	2
		Conduct training on M&E tools	Number of TB staff trained in M&E concepts	output	50	50	50	50	50	250
	Develop M&E Plan for the program	Conduct supportive supervision	Number of supportive supervision conducted	Output	4	4	4	4	4	20

		Conduct quarterly data review meetings	Number of review meetings conducted	output	4	4	4	4	4	20
		Produce programme monitoring reports bi-annually and annually	Number of reports produced	Output	2	2	2	2	2	10
	Develop Institutional capacity for impact measurement	Partner with national research institutions to conduct impact assessment studies	Number of impact assessment studies conducted	Output	-	-	-	-	1	1
		Conduct periodic TB prevalence surveys	Number of surveys conducted	Output	1	-	-	-	-1	2
		Conduct TB Programme review	Programme review report submitted	Output	-	-	-	-	1	1

Annex 2: Strategic Plan budget

Budget by Line Items(MK)	2012	2013	2014	2015	2016
ACSM					
Develop and transmit TB IEC Radio programmes	4,198,750.00	4,618,625.00	5,080,487.50	5,588,536.25	6,147,389.88
Procure TB IEC Radios	2,240,000.00	2,464,000.00	2,710,400.00	2,981,440.00	3,279,584.00
Develop TB IEC Materials	5,865,000.00	6,451,500.00	7,096,650.00	7,806,315.00	8,586,946.50
Advocacy and campaign undertaken	12,200,000.00	13,420,000.00	14,762,000.00	16,238,200.00	17,862,020.00
Develop and print IEC materials	12,360,000.00	13,596,000.00	14,955,600.00	16,451,160.00	18,096,276.00
Drama groups training in theatre for development	11,079,000.00	12,186,900.00	13,405,590.00	14,746,149.00	16,220,763.90
Conduct ACSM TWG meeting	2,150,000.00	2,365,000.00	2,601,500.00	2,861,650.00	3,147,815.00
Develop TV and radio programmes	12,820,000.00	14,102,000.00	15,512,200.00	17,063,420.00	18,769,762.00
Conduct Mobilization campaigns	9,751,200.00	10,726,320.00	11,798,952.00	12,978,847.20	14,276,731.92
TOTAL ACSM	**72,663,950.00**	**79,930,345.00**	**87,923,379.50**	**96,715,717.45**	**106,387,289.20**
Pharmaceutical Products					
Procure Standardised Isoniazid Prophylaxis	36,000,000.00	39,600,000.00	43,560,000.00	47,916,000.00	52,707,600.00
Procure First line anti-TB drugs	74,250,000.00	81,675,000.00	89,842,500.00	98,826,750.00	108,709,425.00
Procure Second line anti-TB drugs	40,000,000.00	44,000,000.00	48,400,000.00	53,240,000.00	58,564,000.00
GLC Subscription	7,000,000.00	7,700,000.00	8,470,000.00	9,317,000.00	10,248,700.00

Nutritional supplementation provided	20,520,000.00	22,572,000.00	24,829,200.00	27,312,120.00	30,043,332.00
TOTAL PHARMACEUTICALS	**177,770,000.00**	**195,547,000.00**	**215,101,700.00**	**236,611,870.00**	**260,273,057.00**
Laboratory Supplies and equipment					
Procure Sputum transportation boxes	800,000.00	880,000.00	968,000.00	1,064,800.00	1,171,280.00
Procure Laboratory supplies	11,547,000.00	12,701,700.00	13,971,870.00	15,369,057.00	16,905,962.70
Procurement of laboratory supplies, reagents and equipment	126,133,667.83	138,747,034.61	152,621,738.07	167,883,911.88	184,672,303.07
TOTAL FOR LAB SUPPLIES AND EQUIPMENT	**138,480,667.83**	**152,328,734.61**	**167,561,608.07**	**184,317,768.88**	**202,749,545.77**
Prevalence Surveys					
Conduct of TB surveys	95,880,000.00	225,468,000.00	116,014,800.00	247,616,280.00	272,377,908.00
TOTAL SURVEYS	**95,880,000.00**	**225,468,000.00**	**116,014,800.00**	**247,616,280.00**	**272,377,908.00**
Programme Management and Supervision					
Conduct Supervisory visits	24,850,000.00	27,335,000.00	30,068,500.00	33,075,350.00	36,382,885.00
Conduct Urban Committee meetings	7,220,000.00	7,942,000.00	8,736,200.00	9,609,820.00	10,570,802.00
Conduct Case finding meetings	27,200,000.00	29,920,000.00	32,912,000.00	36,203,200.00	39,823,520.00
Conduct CU and Zonal planning meetings	11,200,000.00	12,320,000.00	13,552,000.00	14,907,200.00	16,397,920.00
Conduct PA peer meetings	5,730,000.00	6,303,000.00	6,933,300.00	7,626,630.00	8,389,293.00
Conduct Supervisory visits	6,200,000.00	6,820,000.00	7,502,000.00	8,252,200.00	9,077,420.00
Develop and maintain Electronic TB					

register	2,500,000.00	2,750,000.00	3,025,000.00	3,327,500.00	3,660,250.00
Conduct Annual seminar	6,762,500.00	7,438,750.00	8,182,625.00	9,000,887.50	9,900,976.25
Conduct NTP Sub-group meetings	1,760,000.00	1,936,000.00	2,129,600.00	2,342,560.00	2,576,816.00
Conduct writings skills and planning workshop	4,660,000.00	5,126,000.00	5,638,600.00	6,202,460.00	6,822,706.00
Provide administrative overheads	50,600,000.00	55,660,000.00	61,226,000.00	67,348,600.00	74,083,460.00
Conduct Zonal annual DIP review meetings	1,512,500.00	1,663,750.00	1,830,125.00	2,013,137.50	2,214,451.25
Internet server serviced	6,300,000.00	6,930,000.00	7,623,000.00	8,385,300.00	9,223,830.00
Conduct Supervisory visits	3,330,000.00	3,663,000.00	4,029,300.00	4,432,230.00	4,875,453.00
Conduct microscopy refresher and review meetings	39,400,000.00	43,340,000.00	47,674,000.00	52,441,400.00	57,685,540.00
Maintain External Quality Assurance (EQA)	200,000.00	220,000.00	242,000.00	266,200.00	292,820.00
TOTAL	**199,425,000.00**	**219,367,500.00**	**241,304,250.00**	**265,434,675.00**	**291,978,142.50**
Community Involvement					
Orient Traditional Healers	3,960,000.00	4,356,000.00	4,791,600.00	5,270,760.00	5,797,836.00
Community clubs training in TB control	11,079,000.00	12,186,900.00	13,405,590.00	14,746,149.00	16,220,763.90
Total for Community Involvement	**15,039,000.00**	**16,542,900.00**	**18,197,190.00**	**20,016,909.00**	**22,018,599.90**
Implementation of 3Is					
Disseminate TB infection prevention and control guidelines	9,550,000.00	10,505,000.00	11,555,000.00	12,711,050.00	13,982,155.00

Train Health workers in TB –IC	9,440,000.00	10,384,000.00	11,422,400.00	12,564,640.00	13,821,104.00
Total for TB IC	**18,990,000.00**	**20,889,000.00**	**22,977,900.00**	**25,275,690.00**	**27,803,259.00**
Monitoring and Evaluation					
M&E meetings	8,650,000.00	9,515,000.00	10,466,500.00	11,513,150.00	12,664,465.00
Conduct Programme monitoring sessions	6,725,000.00	7,397,500.00	8,137,250.00	8,950,975.00	9,846,072.50
Conduct M&E meetings for WHO and SADC	2,090,000.00	2,299,000.00	2,528,900.00	2,781,790.00	3,059,969.00
Total for M&E	**17,465,000.00**	**19,211,500.00**	**21,132,650.00**	**23,245,915.00**	**25,570,506.50**
MDR-TB					
Produce MDR-TB IEC materials	3,348,750.00	3,683,625.00	4,051,987.50	4,457,186.25	4,902,904.88
Develop MDR-TB Paper based Registration system	2,940,000.00	3,234,000.00	3,557,400.00	3,913,140.00	4,304,454.00
Develop MDR-TB ETR system	3,135,000.00	3,448,500.00	3,793,350.00	4,172,685.00	4,589,953.50
Conduct MDR-TB management meetings	7,000,000.00	7,700,000.00	8,470,000.00	9,317,000.00	10,248,700.00
Staff training in MDR-TB ETR use	1,095,000.00	1,204,500.00	1,324,950.00	1,457,445.00	1,603,189.50
Total for MDR-TB Management	**17,518,750.00**	**19,270,625.00**	**21,197,687.50**	**23,317,456.25**	**25,649,201.88**
Operational Research					
Conduct operational research	10,360,000.00	11,396,000.00	12,535,600.00	13,789,160.00	15,168,076.00

Total For Research	**10,360,000.00**	**11,396,000.00**	**12,535,600.00**	**13,789,160.00**	**15,168,076.00**
TB/HIV Collaboration					
TB/HIV research dissemination and collaborative meetings	5,345,000.00	5,879,500.00	6,467,450.00	7,114,195.00	7,825,614.50
Train HTC Trainers	7,550,000.00	8,305,000.00	9,135,500.00	10,049,050.00	11,053,955.00
Total for TB/HIV Collaboration	**12,895,000.00**	**14,184,500.00**	**15,602,950.00**	**17,163,245.00**	**18,879,569.50**
Infrastructure and Other Equipment					
Procure bicycles	2,400,000.00	2,640,000.00	2,904,000.00	3,194,400.00	3,513,840.00
Refurbishment of treatment facilities	90,000,000.00	99,000,000.00	108,900,000.00	119,790,000.00	131,769,000.00
Rehabilitate District laboratories	1,680,000.00	1,848,000.00	2,032,800.00	2,236,080.00	2,459,688.00
Rehabilitate Culture laboratory	14,000,000.00	15,400,000.00	16,940,000.00	18,634,000.00	20,497,400.00
Establish MDR-TB centre	30,000,000.00	33,000,000.00	36,300,000.00	39,930,000.00	43,923,000.00
General infrastructural maintenance	5,000,000.00	5,500,000.00	6,050,000.00	6,655,000.00	7,320,500.00
Motorcycles service	8,800,000.00	9,680,000.00	10,648,000.00	11,712,800.00	12,884,080.00
Motor vehicles service	6,000,000.00	6,600,000.00	7,260,000.00	7,986,000.00	8,784,600.00
Construction of MDR-TB isolation wards	135,000,000.00	148,500,000.00	163,350,000.00	179,685,000.00	197,653,500.00
TOTAL FOR INFRASTRUCTURE	**292,880,000.00**	**322,168,000.00**	**354,384,800.00**	**389,823,280.00**	**428,805,608.00**
Training and HR Management					

District microscopists and laboratory technicians training	12,832,500.00	14,115,750.00	15,527,325.00	17,080,057.50	18,788,063.25
HSAs and other HC staff training in TB management	14,499,750.00	15,949,725.00	17,544,697.50	19,299,167.25	21,229,083.98
Health workers attend external training	4,200,000.00	4,620,000.00	5,082,000.00	5,590,200.00	6,149,220.00
HSAs and other HC staff training in TB management	88,530,000.00	97,383,000.00	107,121,300.00	117,833,430.00	129,616,773.00
Attend International conferences/meetings/trainings	14,300,000.00	15,730,000.00	17,303,000.00	19,033,300.00	20,936,630.00
Conduct Total Quality Management training	12,850,000.00	14,135,000.00	15,548,500.00	17,103,350.00	18,813,685.00
Conduct DTO training	9,670,000.00	10,637,000.00	11,700,700.00	12,870,770.00	14,157,847.00
Conduct Training coordination meetings	4,180,000.00	4,598,000.00	5,057,800.00	5,563,580.00	6,119,938.00
Provide Technical Assistance	17,360,000.00	19,096,000.44	21,005,600.48	23,106,160.53	25,416,776.59
TOTAL FOR HRM	**178,422,250.00**	**196,264,475.00**	**215,890,922.50**	**237,480,014.75**	**261,228,016.23**
PPM activities					
Meetings with prisons' medical staff	3,550,000.00	3,905,000.00	4,295,500.00	4,725,050.00	5,197,555.00
PPM DOTs workshop	8,200,000.00	9,020,000.00	9,922,000.00	10,914,200.00	12,005,620.00
Private providers training	9,337,500.00	10,271,250.00	11,298,375.00	12,428,212.50	13,671,033.75
Total for PPM	**21,087,500.00**	**23,196,250.00**	**25,515,875.00**	**28,067,462.50**	**30,874,208.75**
TOTAL ANNUAL BUDGETS	**1,268,877,118.23**	**1,515,764,830.05**	**1,535,341,313.06**	**1,808,875,444.36**	**1,989,762,988.80**

Annex 3. International Standards for TB Care

Standards for Diagnosis
Standard 1
All persons with otherwise unexplained productive cough lasting two-three weeks or more should be evaluated for tuberculosis.
Standard 2
All patients (adults, adolescents, and children who are capable of producing sputum) suspected of having pulmonary tuberculosis should have at least two sputum specimens submitted for microscopic examination in a quality-assured laboratory. When possible, at least one early morning specimen should be obtained.
Standard 3
For all patients (adults, adolescents, and children) suspected of having extrapulmonary tuberculosis, appropriate specimens from the suspected sites of involvement should be obtained for microscopy, culture, and histopathological examination.
Standard 4
All persons with chest radiographic findings suggestive of tuberculosis should have sputum specimens submitted for microbiological examination.
Standard 5
The diagnosis of sputum smear-negative pulmonary tuberculosis should be based on the following criteria: at least two negative sputum smears (including at least one early morning specimen); chest radiographic findings consistent with tuberculosis; and lack of response to a trial of broad spectrum antimicrobial agents. (Note: Because the fluoroquinolones are active against *M. tuberculosis* complex and, thus, may cause transient improvement in persons with tuberculosis, they should be avoided.) For such patients, sputum cultures should be obtained. In persons who are seriously ill or have known or suspected HIV infection, the diagnostic evaluation should be expedited and if clinical evidence strongly suggests tuberculosis, a course of anti-tuberculosis treatment should be initiated
Standard 6
In all children suspected of having intrathoracic (i.e., pulmonary, pleural, and mediastinal or hilar lymph node) tuberculosis, bacteriological confirmation should be sought through examination of sputum (by expectoration, gastric washings, or induced sputum) for smear microscopy and culture. In the event of negative bacteriological results, a diagnosis of tuberculosis should be based on the presence

of abnormalities consistent with tuberculosis on chest radiography, a history of exposure to an infectious case, evidence of tuberculosis infection (positive tuberculin skin test or interferon- gamma release assay), and clinical findings suggestive of tuberculosis. For children suspected of having extrapulmonary tuberculosis, appropriate specimens from the suspected sites of involvement should be obtained for microscopy and for culture and histopathological examination.
Standards for Treatment
Standard 7
Any practitioner treating a patient for tuberculosis is assuming an important public health responsibility to prevent ongoing transmission of the infection and the development of drug resistance. To fulfil this responsibility the practitioner must not only prescribe an appropriate regimen, but also utilize local public health services and other agencies, when necessary, to assess the adherence of the patient and to address poor adherence when it occurs.
Standard 8
All patients (including those with HIV infection) who have not been treated previously should receive an internationally accepted first-line treatment regimen using drugs of known bioavailability. The initial phase should consist of two months of isoniazid (INH), rifampicin (RIF), pyrazinamide (PZA), and ethambutol (EMB). The continuation phase should consist of isoniazid and rifampicin given for four months. The doses of antituberculosis drugs used should conform to international recommendations. Fixed dose combinations (FDCs) of two (isoniazid and rifampicin), three (isoniazid, rifampicin, and pyrazinamide) and four (isoniazid, rifampicin, pyrazinamide, and ethambutol) drugs are highly recommended.
Standard 9
To assess and foster adherence, a patient-centred approach to administration of drug treatment, based on the patient's needs and mutual respect between the patient and the provider, should be developed for all patients. Supervision and support should be individualized and should draw on the full range of recommended interventions and available support services, including patient counselling and education. A central element of the patient centred strategy is the use of measures to assess and promote adherence to the treatment regimen and to address poor adherence when it occurs. These measures should be tailored to the individual patient's circumstances and be mutually acceptable to the patient and the provider. Such measures may include direct observation of medication ingestion (directly observed treatment or DOT) and identification and training of a treatment supporter (for tuberculosis and, if appropriate, for HIV) who is acceptable

and accountable to the patient and to the health system. Appropriate incentives and enablers, including financial support, may also serve to enhance treatment adherence.
Standard 10
Response to therapy in patients with pulmonary tuberculosis should be monitored by follow-up sputum microscopy (two specimens) at the time of completion of the initial phase of treatment (two months). If the sputum smear is positive at completion of the initial phase, sputum smears should be examined again at 3 months and, if positive, culture and drug susceptibility testing should be performed. In patients with extra-pulmonary tuberculosis and in children, the response to treatment is best assessed clinically.
Standard 11
An assessment of the likelihood of drug resistance, based on history of prior treatment, exposure to a possible source case having drug-resistant organisms, and the community prevalence of drug resistance, should be obtained for all patients. Drug susceptibility testing should be performed at the start of therapy for all previously treated patients. Patients who remain sputum smear-positive at completion of 3 months of treatment and patients who have failed, defaulted from, or relapsed following one or more courses of treatment should always be assessed for drug resistance. For patients in whom drug resistance is considered to be likely, culture and testing for susceptibility/resistance to at least isoniazid and rifampicin should be performed promptly. Patient counseling and education should begin immediately to minimize the potential for transmission. Infection control measures appropriate to the setting should be applied.
Standard 12
Patients with or highly likely to have tuberculosis caused by drug-resistant (especially MDR/XDR) organisms should be treated with specialized regimens containing second-line ant-tuberculosis drugs. The regimen chosen may be standardized or based on suspected or confirmed drug susceptibility patterns. At least four drugs to which the organisms are known or presumed to be susceptible, including an injectable agent, should be used and treatment should be given for at least 18–24 months beyond culture conversion. Patient-centered measures, including observation of treatment, are required to ensure adherence. Consultation with a provider experienced in treatment of patients with MDR/XDR tuberculosis should be obtained.
Standard 13
A written record of all medications given, bacteriologic response, and adverse reactions should be maintained for all patients.

Standards for Addressing HIV Infection and other Co-morbid Conditions
Standard 14
HIV testing and counselling should be recommended to all patients with, or suspected of having, tuberculosis. Testing is of special importance as part of routine management of all patients in areas with a high prevalence of HIV infection in the general population, in patients with symptoms and/or signs of HIV-related conditions, and in patients having a history suggestive of high risk of HIV exposure. Because of the close relationship of tuberculosis and HIV infection, in areas of high HIV prevalence integrated approaches to prevention and treatment of both infections are recommended.
Standard 15
All patients with tuberculosis and HIV infection should be evaluated to determine if antiretroviral therapy is indicated during the course of treatment for tuberculosis. Appropriate arrangements for access to antiretroviral drugs should be made for patients who meet indications for treatment. However, initiation of treatment for tuberculosis should not be delayed. Patients with tuberculosis and HIV infection should also receive cotrimoxazole as prophylaxis for other infections.
Standard 16
Persons with HIV infection who, after careful evaluation, do not have active tuberculosis should be treated for presumed latent tuberculosis infection with isoniazid for 6-9 months.
Standard 17
All providers should conduct a thorough assessment for co-morbid conditions that could affect tuberculosis treatment response or outcome. At the time the treatment plan is developed, the provider should identify additional services that would support an optimal outcome for each patient and incorporate these services into an individualized plan of care. This plan should include assessment of and referrals for treatment of other illnesses with particular attention to those known to affect treatment outcome, for instance care for diabetes mellitus, drug and alcohol treatment programs, tobacco smoking cessation programs, and other psychosocial support services, or to such services as antenatal or well baby care.
Standards for Public Health
Standard 18

All providers of care for patients with tuberculosis should ensure that persons who are in close contact with patients who have infectious tuberculosis are evaluated and managed in line with international recommendations. The determination of priorities for contact investigation is based on the likelihood that a contact: 1) has undiagnosed tuberculosis; 2) is at high risk of developing tuberculosis if infected; 3) is at risk of having severe tuberculosis if the disease develops; and4) is at high risk of having been infected by the index case; The highest priority contacts for evaluation are; Persons with symptoms suggestive of tuberculosis; Children aged <5 years; Contacts with known or suspected immune-compromise, particularly HIV infection; Contacts of patients with MDR/XDR tuberculosis. Other close contacts are a lower priority group.
Standard 19
Children <5 years of age and persons of any age with HIV infection who are close contacts of an infectious index patient and who, after careful evaluation, do not have active tuberculosis, should be treated for presumed latent tuberculosis infection with isoniazid.
Standard 20
Each healthcare facility caring for patients who have, or are suspected of having, infectious tuberculosis should develop and implement an appropriate tuberculosis infection control plan.
Standard 21
All providers must report both new and re-treatment tuberculosis cases and their treatment outcomes to local public health authorities, in conformance with applicable legal requirements and policies.

Annex 4: The Patients' Charter for Tuberculosis Care

The Patients' Charter outlines the Rights and Responsibilities of People with Tuberculosis. It empowers people with the disease and their communities through this knowledge. Initiated and developed by patients from around the world, the Charter makes the relationship with health care providers a mutually beneficial one.

The Charter sets out the ways in which patients, the community, health providers, both private and public, and governments can work as partners in a positive and open relationship with a view to improving tuberculosis care and enhancing the effectiveness of the health care process. It allows for all parties to be held more accountable to each other, fostering mutual interaction and a 'positive partnership'.

Developed in tandem with the International Standards for Tuberculosis Care[(1)] to promote a 'patient-centered' approach, the Charter bears in mind the principles on health and human rights of the United Nations, UNESCO, WHO, Council of Europe, as well as other local and national charters and conventions[(2)].

The Patients Charter for Tuberculosis Care practices the principle of Greater Involvement of People with TB. This affirms that the empowerment of people with the disease is the catalyst for effective collaboration with health providers and authorities, and is essential to victory in the fight to stop TB. The Patients' Charter, the first global 'patient-powered' standard for care, is a cooperative tool, forged from common cause, for the entire TB Community.

PATIENTS' RIGHTS

1. Care

a) The right to free and equitable access to tuberculosis care, from diagnosis through treatment completion, regardless of resources, race, gender, age, language, legal status, religious beliefs, sexual orientation, culture or having another illness.
b) The right to receive medical advice and treatment which fully meets the new International Standards for Tuberculosis Care, centering on patient needs, including those with MDR-TB or TB-HIV coinfections, and preventative treatment for young children and others considered to be at high risk.
c) The right to benefit from proactive health sector community outreach, education and prevention campaigns as part of comprehensive care programs.

2. Dignity

a) The right to be treated with respect and dignity, including the delivery of services without stigma, prejudice or discrimination by health providers and authorities.
b) The right to quality health care in a dignified environment, with moral support from family, friends and the community.

3. Information

The right to information about what health care services are available for tuberculosis, and what responsibilities, engagements, and direct or indirect costs, are involved.

a) The right to receive a timely, concise and clear description of the medical condition, with diagnosis, prognosis (an opinion as to the likely future course of the illness), and treatment proposed, with communication of common risks and appropriate alternatives.
b) The right to know the names and dosages of any medication or intervention to be prescribed, its normal actions and potential side-effects, and its possible impact on other conditions or treatments.
c) The right of access to medical information which relates to the patient's condition and treatment, and a copy of the medical record if requested by the patient or a person authorized by the patient.

d) The right to meet, share experiences with peers and other patients, and to voluntary counseling at any time from diagnosis through treatment completion.

4. Choice

a) The right to a second medical opinion, with access to previous medical records.
b) The right to accept or refuse surgical interventions if chemotherapy is possible, and to be informed of the likely medical and statutory consequences within the context of a communicable disease.
c) The right to choose whether or not to take part in research programs without compromising care.

5. Confidence

a) The right to have personal privacy, dignity, religious beliefs and culture respected.
b) The right to have information relating to the medical condition kept confidential, and released to other authorities contingent upon the patient's consent.

6. Justice

a) The right to make a complaint through channels provided for this purpose by the health authority, and to have any complaint dealt with promptly and fairly.
b) The right to appeal to a higher authority if the above is not respected, and to be informed in writing of the outcome.

7. Organization

a) The right to join, or to establish, organizations of people with or affected by tuberculosis, and to seek support for the development of these clubs and community based associations through the health providers, authorities, and civil society.
b) The right to participate as 'stakeholders' in the development, implementation, monitoring and evaluation of TB policies and programs with local, national and international health authorities.

8. Security

a) The right to job security after diagnosis or appropriate rehabilitation upon completion of treatment.
b) The right to nutritional security or food supplements if needed to meet treatment requirements.

PATIENTS' RESPONSIBILITIES

1. Share Information

a) The responsibility to provide the health care giver as much information as possible about present health, past illnesses, any allergies and any other relevant details.
b) The responsibility to provide information to the health provider about contacts with immediate family, friends and others who may be vulnerable to tuberculosis or may have been infected by contact.

2. Follow Treatment

a) The responsibility to follow the prescribed and agreed treatment plan, and to conscientiously comply with the instructions given to protect the patient's health, and that of others.
b) The responsibility to inform the health provider of any difficulties or problems with following treatment, or if any part of the treatment is not clearly understood.

3. Contribute to Community Health

a) The responsibility to contribute to community well being by encouraging others to seek medical advice if they exhibit the symptoms of tuberculosis.
b) The responsibility to show consideration for the rights of other patients and health care providers, understanding that this is the dignified basis and respectful foundation of the TB Community.

4. Solidarity

a) The moral responsibility of showing solidarity with other patients, marching together towards cure.
b) The moral responsibility to share information and knowledge gained during treatment, and to pass this expertise to others in the community, making empowerment contagious.
c) The moral responsibility to join in efforts to make the community TB Free.

Help turn these words into realities. Support the drive towards implementation in the community. Sign-Online at http://www.wcc-tb.org or Sign-Up by SMS text: +33 679 486 024. In common cause, with mutual respect, together we can raise the standards of care.

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