Ministry of Health and Child Welfare

National Tuberculosis Control Programme

External Review Report
June 2011

with technical and financial assistance from the World Health Organization (WHO Zimbabwe)
ZIMBABWE 2011 NATIONAL TUBERCULOSIS PROGRAMME EXTERNAL REVIEW
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Very special thanks goes to district health officials of those districts visited, who thoughout the exercise kindly provided information to the external review teams on Zimbabwe’s current of social-economic status and development; roles and responsibilities of government and local authorities in the prevention and control of TB in the country; the drawbacks and bottlenecks experienced in the control of TB and TB/HIV; and the challenges ahead.

Our appreciation goes to Central Unit of the Zimbabwe NTP for the logistical support to the review mission and assistance to gather information throughout the mission.

The Review Team is also grateful to bilateral and multilateral Partners who participated in this exercise. Partners were also relevant to the findings, in particular by providing additional information on the health systems environment, the on-going challenges, the areas for concern and by showing commitment to strengthening the health System in Zimbabwe. Special thanks goes to The Union/TB CARE II, CDC, Medecins Sans Frontieres (Holland, Belgium and Spain); USAID; PSI; University of Zimbabwe’s Department of Community Medicine; and all local partners who assisted with the evaluation of the TB programme.

We would like to acknowledge the invaluable technical and financial assistance from the WHO Country Office team in making this mission and production of this report successful.
Foreword

The 2011 External National TB Programme review came at a time when the country was still experiencing fiscal challenges. External reviews are important as part of monitoring and evaluation of a programme and also as requirements from The Global Fund. As Zimbabwe prepares for The Global Fund call for proposals, the findings of this evaluation will assist in identifying current and future gaps.

Notable achievements since the 2003 NTP evaluation were evident, with increased TB programme funding through The Global Fund and other partners, contributing to improvement in human resources funding and improved logistics and equipment.

I urge the MOHCW, AIDS and TB Unit, staff and partners to use this document so that their programming is addressing the identified needs. Current phase of the Stop TB Strategy implementation calls for scaling up of activities as time to the 2015 platform reduces, and country achievements are important to push towards set MDG and Stop TB Partnership targets. As we prepare for the next evaluation, hopefully, in three years’ time, 2014, all efforts must be directed towards addressing the weaknesses reported in this evaluation.

The Government of Zimbabwe remains committed to reducing the burden of TB among its citizens.

Brigadier General (Dr) G. Gwinji
Permanent Secretary, Ministry of Health and Child Welfare
The 2011 Review of the Zimbabwe National TB Programme was carried out between 27 June and 08 July 2011, by multidisciplinary teams composed of professionals with variable expertise in TB Control and Health Systems, and from following background:

**International experts:**

- WHO/AFRO and WHO/HQ
- National TB Programmes (Malawi and Zambia)

**National experts:**

- USAID/CDC
- The Union/TB Care II
- The University of Zimbabwe’s Department of Community Medicine

**Resource persons:**

- WHO Country Office, Zimbabwe
- Zimbabwe NTP Staff
- HIV/AIDS Department - MOHCW
- Government Officials
- Local Partners

**Review Team per province visited**

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**Review coordination**

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The content of the 2011 Zimbabwe NTP Review report is the result of the team of international experts working closely and supported by local experts and the resource persons, to whom the international reviewers are grateful.

Opinions and analyses produced in this report are the responsibility of the consultants. The views expressed throughout the report do not necessarily reflect the opinion or position of the Ministry of Health and Child Welfare of Zimbabwe or of the Zimbabwe National TB Programme, but they are in line with modern policies adopted in Tuberculosis Control, and are in line with the STOP TB Strategy, the Global Plan 2011-2015 and STOP TB Partnership Working Groups’ recommendations.

Conflicts of interest have been taken into consideration: National experts listed in teams acted exclusively as resource persons.

Thematic areas assessed

- Health Systems, Policy and Planning
- National Health Systems Policy
- Organisation of the Health Sector
- Health Policy and Infrastructure
- Human Resources Development
- Financing

DOTS implementation, and Monitoring and Evaluation

- Case notifications and trends
- Impact measurement
- Treatment outcomes

TB/HIV

- Collaboration
- Prevention and care
- Three I’s including Infection Control
- Access to ART

MDR-TB and Infection Control

- Programmatic management of DR TB
- Surveillance of DR TB
- TB IC Guidelines
- TB IC plans

MDR-TB and Laboratory Strengthening

- Laboratory network and services
- AFB
- Culture & DST
- SOPs, QC, EQA
- Links to SRL

Drug procurement and Drug Management System, and LMIS

- Drug estimations
- Procurement
- Drug Management System
- LMIS
Health Services Strengthening and Public Private Mix DOTS

ACSM, Universal Access and Community Participation, and Partnerships

Operational Research
  • On-going research
  • Priorities and Research Plan
  • Programme Management and Coordination

TB implementation
  • Sectors within the MOH
  • Partners

The National TB Strategic Plan
  • Goals and objectives
  • Strategies and targets
  • Implementation indicators
Abbreviations and Acronyms

ACSM  Advocacy, Communication, and Social Mobilization
AFB   Alcohol Acid Fast Bacilli
AIDS  Acquired Immuno deficiency Syndrome
ART   Anti-Retroviral Therapy
ARV   Anti-Retroviral
CBO   Community Based Organization
CDC   United States Centers for Disease Control and Prevention
CPT   Cotrimoxazole Preventive Therapy
DHE   District Health Executive
DMO   District Medical Officer
DOT   Directly Observed Treatment
DOTS  Directly Observed Therapy, Short-course strategy
DPS   Director Pharmacy Services
DRS   Drug resistance survey
DST   Drug Susceptibility Testing
EQA   External Quality Assurance
GFATM Global Fund against AIDS Tuberculosis and Malaria
HBC   High Burden Country
HIV   Human Immunodeficiency Virus
IEC   Information Education and Communication
IPT   Isoniazid Preventative Therapy
KNCV  The Royal Netherlands Tuberculosis Foundation
LED   Light Emitting Diode (Fluorescent Microscopy)
LMIS  Logistic Management Information Systems
MDG   Millennium Development Goals
MDR-TB Multi Drug Resistant Tuberculosis
MOHCW Ministry of Health and Child Welfare
NATPHARM National Pharmaceutical Company
NGO   Non-Governmental Organization
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<th>Acronym</th>
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<td>NMRL</td>
<td>National Medical Reference Laboratory</td>
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<td>NTP</td>
<td>National TB Program</td>
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<td>NTRL</td>
<td>National TB Reference Laboratory</td>
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<td>OI</td>
<td>Opportunistic Infections</td>
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<td>OPD</td>
<td>Outpatient Department</td>
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<td>PD</td>
<td>Principal Director</td>
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<td>PEDCO</td>
<td>Provincial Epidemiology and Disease Control Officer</td>
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<td>PEHO</td>
<td>Provincial Environmental Health Officer</td>
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<td>PHE</td>
<td>Provincial Health Executive</td>
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<td>PLHIV</td>
<td>People living with HIV</td>
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<td>PMD</td>
<td>Provincial Medical Director</td>
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<td>PMDT</td>
<td>Programmatic Management of Drug –resistant TB</td>
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<td>PMTCT</td>
<td>Prevention of Mother to Child Transmission of HIV</td>
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<td>PPM</td>
<td>Public and Private Mix</td>
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<td>PSI</td>
<td>Population Services International</td>
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<td>PSM</td>
<td>Procurement Supply Management</td>
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<td>QC</td>
<td>Quality Control</td>
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<td>SAFAIDS</td>
<td>Southern Africa AIDS Information Dissemination Service</td>
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<td>SDP</td>
<td>Service delivery point</td>
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<td>SOP</td>
<td>Standard Operating Procedure</td>
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<td>SNRL</td>
<td>Supranational Reference Laboratory</td>
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<td>STI</td>
<td>Sexually Transmitted Infection</td>
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<td>WHO</td>
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<td>ZINQAP</td>
<td>Zimbabwe Quality Assurance Program</td>
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Executive Summary

Background

Zimbabwe still remains one of the African countries categorized as high TB burden countries in the world, requiring significant investments in the prevention and control of the disease. Tuberculosis was the fifth commonest cause of outpatient visits and the second commonest cause of mortality in 2008 (Zimbabwe Health Profile, 2008). Like in other high TB and HIV burden countries, the male and economically active, 25-49 year age-group remains the most affected by TB.

The 2011 National Tuberculosis Programme Review Summary

External reviews of the NTP are part of the standard monitoring and evaluation exercises critical for the continued implementation of the International Standard for TB Treatment guidelines. Zimbabwe is a recipient of the GF Round 8 grant and regular external reviews are part of the reporting requirements to triangulate programme reports to The Global Fund and ensure optimum use of the grant. The last comprehensive reviews of the NTP were in 1998 and 2003 by the Ministry of Health and Child Welfare in collaboration with WHO and the Royal Netherlands Tuberculosis Foundation (KNCV). Since then, there have been significant social and economic changes, which have affected the health delivery system and this review was therefore long overdue. The 2011 TB program external review was the best opportunity for MOHCW to assess the stage of TB Control in the country and to get data to strengthen the Round 11 GFATM proposal application as it documented the achievements made to date and the major weaknesses requiring more attention and additional funding for effective TB prevention and control in Zimbabwe.

The main objective of the Zimbabwe 2011 NTP external review was to undertake an in-depth review to determine the achievements, weaknesses and challenges facing the national program since the last review in 2003 and make appropriate recommendations.

Review methodology

The review methodology included literature review of NTP documents and reports and WHO Annual Global Reports, key informant interviews, observations and data abstractions on TB. Preliminary data was discussed with the National TB Programme, and presented to the MOHCW and partners to validate the findings before report writing.

Major achievements

Significant progress has been made in addressing the weaknesses identified during the 2003 external review.

Health Systems, Policy and Planning Achievements

The Government of Zimbabwe adopted the primary health care policy in 1980 where the district was confirmed as the functional level where all comprehensive health services including TB diagnosis, treatment initiation, and patient follow up and monitoring were provided. The District Medical Officer is the accounting officer and reports to the Provincial Medical Director. The province and district health offices are responsible for the management and control of all communicable diseases. District and Provincial TB coordinators are responsible for the day to day TB programme activities.

At national level, the TB Programme manager, logistics officer, training officers, data manager, TB programme officer and a laboratory focal person coordinate implementation of TB activities. There are ongoing efforts to formulate a human resources strategy for TB and HIV/AIDS to further strengthen human resource capacity at all levels. The NTP successfully applied for the Global Fund Round 8 and managed to attract several other partners who are supporting with funding for training, monitoring and evaluation and capacity building. National TB Program implementation is guided by a 5 year strategic plan, 2010-2014. There has been a significant improvement in human resources for TB at all levels and there was regular provision of in-service training on TB care.

Programme Management and Partner Coordination Achievements

The MOHCW approved a NTP structure with 15 people, from the previous 3 officer structure since independence. This new

structure is supported through the Global Fund, (GF). The NTP conducts joint quarterly partnership meetings with the HIV Programme to provide feedback on programme implementation and challenges but its impact is questionable. Zimbabwe uses standardized tools for TB surveillance. A procurement and logistic for anti-TB medicines is department of pharmacy to ensure smooth flow of medicines.

**DOTS implementation Achievements**

The Government showed political commitment through continued support of key NTP positions from national to facility level and a TB budget line for continued funding of TB activities to complement the GF and other partners was available. In 2010, Zimbabwe reported some improvements in the TB treatment outcomes (treatment success from 74% in 2009 to 82% in 2010)

, a reduction in the proportion of non-evaluated patients from 29% in 2008 to 9% in 2010, and also improved proportion of TB patients with known HIV status from 61% in 2009 to 80% in 2010

Access to direct sputum smear microscopy improved through decentralization of sputum microscopy centres and introduction of a transport mechanism to collect sputum specimens from cluster facilities mainly in the City of Harare.

The National TB Reference Laboratory (NTBRL) that had been dysfunctional for 2-3 years was rehabilitated with the support of partners and resumed work in March-2009. Capacity building for culture and DST was in progress, though a framework for laboratory referral and hierarchy was not in place.

The TB treatment guidelines were reviewed and published in 2010 and all TB patients were on fixed dose combination drugs since 2007. There was a well-documented and functional stock management system at all levels.

**Tuberculosis and HIV integration Achievements**

The NTP reviewed and finalized the TB and HIV management guidelines in 2010 and these were available at all levels though integration of services at service delivery level was not adequate. Testing for HIV among TB patients improved from 61% in 2009 to 82% in 2010.

**Advocacy, Communication and Social Mobilization (ACSM) Achievements**

A significant number of facilities had displayed IEC materials. The partners, in particular PSI and RAPT were supporting with printing and distribution of IEC materials and advocacy activities under the GF support. World TB Day commemorations were religiously conducted annually at a selected venue as a national event.

**Public, Private Mix DOTS Achievements**

Involvement of private general practitioners was limited to diagnosis and referral to public health facilities. Although the NTP has a national PPM Coordinator, the impact of his activity was not felt at the implementation level. Only large private hospitals had been diagnosing, initiating treatment and referring to public facilities for DOT. The NTP had a PPM focal person at National level and the NTP in collaboration with the HIV programme had carried out a situational analysis for effective implementation of PPM in the country.

**Drug Resistant TB and TB Infection Control Achievements**

Management of drug resistant TB (PMDT) is still under organization with treatment guidelines in the final stages of development. Two functional MDR-TB Committees in the Northern and Southern regions exist to provide guidance on the management of MDR-TB patients. A functional TB Reference Laboratory in Bulawayo provides culture and DST and is subscribed to External Quality Assurance and to a Supra National Reference Laboratory. The NTP is planning to carry out a national drug resistance survey early 2012.

**Operational Research Achievements**

Few studies in TB surveillance evaluation and treatment outcome assessments were done through the Field Epidemiology

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2Global TB Report 2010

3ibid
training programme (FETP). Operational research was mainly performed through partners.

**Major Challenges / weaknesses**

**Health Systems, Policy and Planning Challenges / Weaknesses**

Activities were in general described either as GF related or other, instead of globalized under one work plan. For example, Officers supported by GF were named GF officers.

The activities of the various GF supported officers could not be verified as individual work plans and reports of progress made were not readily available. The job descriptions were not clearly specifying roles and scope of responsibility of the officers. Lines of accountability were not clear.

**Programme Management and Partner Coordination Challenges**

In general, the coordination of Programme management and its implementation and that of partners was noted as a major challenge that the Central Unit of the NTP was facing.

1. **Structural and management issues**

The structural and management functions of the NTP need urgent attention. The majority of officers working at the Central Unit have no clear job descriptions and the scope of their functions is not clear. The current structure does not address the clearly recommended Global STOP TB strategy thematic areas. There is no clear delegation of responsibilities for all the officers and this had caused frustrations within the Unit. As a result there was no ownership of planned interventions by the Central Unit officers.

1. **Central Unit Structure**

   - Roles and responsibilities are not adequately defined
   - Lines of accountability are not clear or even in existence
   - Human Resources
     - A human resources strategy for TB and TB/HIV control was not available.
     - Non-existence of Substantive positions in line with the Global STOP TB Strategy.
     - Critical shortage of Microscopists was affecting quality of diagnosis
     - Skilled Human Resources to manage and coordinate TB Control (and build capacity and ensure institutional memory)
     - TB Coordinators are not in the TB Structure - they are local staff (province/district), and their technical ranking is below the professionals they have to supervise. This maybe explaining the poor quality of data being submitted to Central Unit.
     - The coordination of anti-TB medicines, management of human resources for TB control and monitoring and evaluation were left to junior officers with no decision making power.

2. **Managerial and Coordination issues**

   - Monitoring of Programme implementation: no plans or tools in place
   - Reports of NTP meetings and activities were not available to ascertain how the programme was coordinated at National level.
   - Annual NTP plans and monitoring reports were not readily available.
   - Expertise of the Central Unit of the NTP to plan and coordinate implementation of TB Control activities in the country
     - Inadequate working collaboration with MoHCW stakeholders like Laboratory, Natpharm/DPS, Department of Human Resources and other external partners to ensure efficiency.
     - This resulted in the inadequate Procurement of drugs and Laboratory commodities and absence of clear job descriptions specifying roles and scope of responsibility for Central Unit officers.
     - It was also translated in purchase of equipment not internationally recommended for certain roles (example Safety cabinets for smear microscopy and no purchase of fluorescent microscopes)
     - Inadequate Surveillance of TB and drug resistance TB
     - The National TB Partnership meetings are not regularly conducted and their effectiveness could not be ascertained as no minutes with clear action points were available
1. Financial Resources

- Insufficient funding from Central Government to meet its obligations on anti-TB medicines procurement – there was a shortfall of >US$2,000,000 for First Line Drugs at the time of this review.

2. Management style

- There was inadequate effective delegation of duties/tasks to officers and this affected proper coordination of the NTP programme activities
- In general all officers are accountable to NTP Manager
- Non standardization of supervision and role of supervision
- Training: no defined plan with priority areas to be covered and time frame

3. Coordination of Partners

Partner coordination was limited to quarterly feedback meetings and there was no evidence of joint planning. This was one of the major complaints from partners resulting in overlapping of activities and very likely wastage of some resources,

- Perception of performance of the National TB control Programme
  Partners’ perception of performance of the National TB control Programme is that on the whole programme performance is improving, with many TB control activities taking place at implementation levels. Key issues of concern consistently raised by partners included the following:
- The management system is not conducive for rapid implementation of programme related decisions. The expressions “things don’t move” and “things keep changing” were commonly used by partners. The impression is that management capacity at national level is not adequate to make effective use of available resources
- The current strategic plan does not include a costed operational plan
- Inadequate management guidance and coordination from the national level. This applies to sub national levels of care, departments such as pharmacy, laboratory, and human resources as well as to partners. Examples of inadequate coordination of support departments are drug and lab issues. The main form of coordination is the quarterly Partnership Forum meeting. This is a useful forum for providing updates on important TB control and HIV care and treatment developments. What was conspicuously lacking are partnership fora for planning, implementation performance updates and joint review of progress. The NTP engages and plans with different partners individually; as a result there is no shared understanding of national priorities, and there is duplication of activities and suboptimal use of resources.
- Although there is improvement in monitoring and evaluation, this area is perceived as still being weak and the data generated, not very reliable.
- TB/HIV collaboration activities need strengthening and scaling up.
- Planning, support supervision and reporting of performance apparently not regarded as of paramount importance by the NTP. Consequently information on programme status and performance is not readily available for use in planning by all involved in TB work.
- Management of drug resistant tuberculosis needs to be coordinated and improved, particularly in the area of size of the problem, management guidelines and surveillance, and owned by the NTP.
- Issues of “unit cost” and differences in health worker remuneration by partners can be damaging to the programme.

DOTS Implementation Challenges

Although provinces and districts implement DOTS, it was reported that there are no TB specific plans at that level. The findings include Harare City.

Majority of TB patients were on family-based DOTS in Zimbabwe and most treatment supporters were untrained, and no framework for CTBC existed. The critical shortage of microscopists affected diagnosis and follow up of treatment. The NTP’s role in forecasting and quantification of TB medicines was noted to be limited to providing epidemiological data to the Department of Pharmacy Services (DPS). There was no evidence that the NTP reviewed and approved the quantities of medicines procured by the Principal Recipient (PR), the United Nations Development Program (UNDP), PR since mid-2009. The PSM elaborated at the time of the start of R8 implementation had not been revised to include the patients reported every year since 2008, thus adjusting notified patients. As a result, there is need of more drugs for which funding is not available (> US$2,000,000). In addition, as a result of the distribution system, there was overstocking of rifampicin/isoniazid (RH) and very low levels of the rifampicin/isoniazid/pyrazinamide/ethambutol (RHZE) in the country, including reported stock outs of RHZE in Harare in the last month prior to the review.
Whilst there was a budget line at National level for TB, at the Provincial and district levels there was no budget line for TB making planning and implementation of TB activities at local level impossible. In some districts, due to long distances from facilities TB suspects requiring sputum smear microscopy were admitted during the testing. There was no evidence to indicate that TB surveillance data was being locally analyzed and used at all levels. It was also reported by interviewees that regular support and supervision was inadequate, however the review did not find evidence of its effectiveness and its role was not clear. The use of the available support and supervisory checklist was not evident at all levels. This could explain the quality of data received at National level in terms of consistency and completeness.

**Tuberculosis and HIV integration Challenges**

Despite having the two programmes under the same directorate and the presence of TB/HIV management guidelines, there was minimal active collaboration between the TB and HIV and AIDS programmes at all levels. Joint planning between TB and HIV units was not adequate at all levels. The review observed missed opportunities in strengthening TB and HIV collaboration at community level through the use of home based care givers. Screening of TB among people living with HIV could not be ascertained as there was no readily available data from the HIV and AIDS program. National TB specific Infection Control plan and implementation frameworks were not available. Access of TB patients to HIV and AIDS care services was low (78% on cotrimoxazole and 41% on ART) in the 2009 cohort. Zimbabwe has adopted isoniazid preventive therapy (IPT) policy but had not started implementing isoniazid preventive therapy (IPT).

**Advocacy, Communication and Social Mobilization (ACSM) Challenges**

World TB Day commemorations were limited to one selected venue every year for the national event with minimal local commemorations. This affected the reach of TB messages among other reasons. An ACSM plan was still under development.

**Private, Public Mix Challenges**

There is inadequate involvement of private general practitioners in the management of TB.

**Drug Resistant TB and TB Infection Control Challenges**

There was limited capacity to manage confirmed MDR-TB patients as evidenced by 2011 only 50 patients currently on treatment despite having more known confirmed patients and available drugs for 140 patients from the Green Light Committee, Government of Zimbabwe and partners. Culture and DST services were being affected by inadequate capacity to perform and provide results timeously. The turn-around time for specimens sent for culture and DST was unreliably long, up to 6 months or no results at all.

Adequate information on the management of MDR-TB (PMDT) was not available at the peripheral provincial, district and facility levels. The low MDR-TB case detection and enrolment on treatment was mainly due to poor index of suspicion, inadequate laboratory diagnostic capacity and resources. A TB and MDR-TB specific infection control policy and plan was not available. The surveillance systems of TB including DR TB were mainly paper based and there was no regular support and supervision of lower levels. The link between the NTP and the National TB Reference Labs is minimal. The budget for support and supervision was centralized making it difficult for provincial and district levels to support lower levels regularly.

**Operational Research Challenges**

During the review, the NTP had no operational research agenda for TB in Zimbabwe. Most of the operational research was through partners and uncoordinated to ensure the research answered pertinent NTP questions and inform review of policies. A TB research agenda, plan and dedicated research budget were not available.

**MAJOR RECOMMENDATIONS**

It is critical to refer to the 2003 NTP external review key recommendations. Whilst most of the recommendations from the 2003
review had been addressed, there were some basic low cost recommendations that had not been implemented. The capacity of the NTP to manage, coordinate and own the implementation of the Stop TB in the country remains a major issue. The review acknowledged the prevailing fiscal challenges affecting the country and the health delivery services. It is with this background that the review made the following recommendations. The launching of the Stop TB Strategy in 2006 calls for countries to scale up TB interventions, in particular the High Burden Countries of which Zimbabwe is one. There will be need to revisit the plans to adjust the progress made and the need for acceleration.

I. SHORT TERM: Requiring Immediate Action

I.1 TO THE MOHCW

- The MOHCW to mobilize resources to finance the medicines gap and prevent stock outs for RHZE
- The MOHCW to approve a functional organogram to ensure implementation and coordination of the Stop TB Strategy in the country, and clearly establishes lines of accountability

I.2 TO THE NTP

a. Programme Management and Partner Coordination

- The NTP manager to urgently ensure that a functional organogram is in place to allow adequate implementation and coordination of DOTS, with clear lines of accountability.
- The NTP manager is strongly recommended to take immediate responsibility over the critical components of programme management, namely:
  - Monitoring and evaluation of programme performance especially development of annual plans, analysis, use and dissemination of routinely programme data and preparation of annual TB programme reports
  - Follow up of programme implementation
  - Strengthening of working relations with other Ministry of Health and Child Welfare stakeholders to improve DOTS implementation, in particular logistics of laboratory commodities, anti-TB medicines and Human Resources.
  - Coordination of anti-TB medicines forecasting, procurement and distribution to prevent high levels of stock outs and or overstocking.
  - Revision of job descriptions of officers at the Central Unit to adequately define roles and responsibilities, clarify scope of the tasks assigned to each officer and ensure accountability
  - Map partners involved in TB Control (geographically, services provided and resources), and discuss roles and responsibilities for effective use of resources
  - Review the role and responsibility of provincial and district TB Coordinators and redefine the scope of their activities and make recommendations to MoHCW.

b. DOTS Implementation

- To mobilize resources for the procurement of RHZE. The mobilization could be through applying to GF for re-programming of funds and allocate more funds for the procurement of TB medicines and government allocation of some funding for this purpose
- Increase access to sputum smear microscopy at peripheral level through further decentralization of sputum smear microscopy services to clinic level in line with the Ouagadougou Declaration and strengthening and sustaining the outreach sputum collection mechanism.
- Strengthen and expand EQA for microscopy
- Revisit the role of supervision, update support documents and ensure that officers conducting (supportive) have been briefed/trained for the job
- Strengthen TB monitoring and evaluation
- Complete and manage TB surveillance data as per recommendations of the Regional Workshop on Surveillance (Nov-Dec 2010) as a pre requisite condition for TB Prevalence Survey.
  - Establish a plan to improve data from the least performing districts/provinces
    To put in place a system for routine data quality audits and data verification exercises at all level
  - Conduct regular support and supervision at all levels and consider decentralization of the support and supervisory budget, if available.

c. Drug Management

- To strengthen the role of the NTP in the forecasting and quantification TB medicines including development of technical policy/strategy for ensuring continuous supply of quality assured anti-TB medicines
• The MOHCW is encouraged to urgently mobilize resources to finance the medicines gap and prevent stock outs for RHZE

d. Drug Resistant TB and TB Infection Control
• The NTP to finalize the guidelines, training manuals and operational plans for drug resistant TB to standardize the diagnosis and treatment of drug resistant TB.
• The NTP to finalize the Plan and Guidelines for TB Infection Control, and set a framework for its implementation.
• The NTP to better coordinate involvement of partners in drug resistant TB management including the roll out of new technologies, finalization of the DRS Protocol and its implementation

II MEDIUM TERM RECOMMENDATIONS (Within the next 12 Months)

II.1 TO THE MOHCW
• MOHCW AIDS and TB Program should build capacity to facilitate data analysis and use for decision making at all levels
• The NTP, NATPHARM and DPS to review the ZIP system and create mechanisms to address current challenges
• Address training and recruitment of microscopists with HR Department in order to improve diagnosis and treatment follow up
• The Director, AIDS and TB Unit to strengthen the collaboration between the TB and HIV programs at all levels starting with the national level

• There should be alignment standardization and harmonization of support unit costs for the main programmes of tuberculosis, HIV and malaria
• The structural place and role of the TB Coordinators must be revisited and clarified

II.2 TO THE NTP
DOTS Implementation
• Jointly with the HIV Programme, define the policy to introduce CTBC on a routine basis
• Carry out district TB Review meetings that are structured to assess performance of the NTP using routine data
• Discuss training and recruitment of microscopists with HR Department
• To strengthen the laboratory external quality assurance (EQA) implementation
• Jointly with the HIV Programme, the TB Unit should mobilize resources to train and supervise treatment supporters on DOTS
• To strengthen interaction and coordination with the UNDP, Principal Recipient (PR) to develop an effective mechanism for the coordination of procurement and supply chain management for anti-TB medicines. To ensure TB commodities are always on the agenda of the Procurement, logistics and supply (PLS) meetings and the NTP has a say.

TB and HIV Collaboration Activities
• Scale up the access of TB patients to ART
• Jointly with the HIV/AIDS Programme, scale up implementation of the Three I’s, in particular ICF and IPT
• To put in place a joint training and a harmonized reporting system for collaborative TB and HIV/AIDS activities
• To ensure that the TB M&E plan includes inter-linkages with HIV monitoring systems

TB Infection Control (TB IC)
• The NTP should develop a TB national IC policy
• The NTP should finalize TB IC Guidelines and develop a framework for its operationalization
• The NTP to identify all the priority facilities to develop TB IC plans

Programme Management and Coordination
• To strengthen program management with particular attention to the Central Unit and partner coordination to improve efficiency in the use of resources for TB prevention and control
• Push for the re-definition of the role and background of TB Coordinators
LONG TERM RECOMMENDATIONS (12 months and more)

Community DOTS
- The NTP is advised to develop and finalize the Community TBCare (CTBC) guidelines. The NTP is advised to explore possibility of utilizing existing HIV CBOs and CSOs in TB implementation at community level.

Public Private Mix DOTS (PPM)
- Strengthen and expand existing PPM collaborations through establishment of PPM collaborating committees.
- Commence preparations for further engaging private health care providers to complement Government efforts.
- Establish a framework for PPM implementation.

TB Infection Control
- The NTP to assess implementation of the TB IC plan and update as necessary.
- Advocacy, Communication and Social Mobilization
  - The NTP is advised to strengthen coordination of partner support; printing, and distributions of IEC materials through structured partnership planning meetings and follow through action points.
  - The NTP to select the priority topics to be addressed in line with the components of the Stop TB Strategy with particular reference to TB/HIV and DR TB.

Monitoring and Evaluation
- TB data
  - Notified data should be checked and cleaned per districts and provinces.
- DR TB
  - A regular link between the NTP and the National TB Reference Laboratory should be established to regularly record and report DR TB cases.
- Collaborative TB/HIV Activities
  - Jointly with the AIDS Unit, the TB Unit is advised to harmonize TB/HIV and HIV tools for effective capturing of collaborative TB/HIV activities in line with current international recommendations.

Operational Research
- The NTP should review and develop a research agenda and list priority areas for research.

THE WAY FORWARD

Summary Suggestions at a glance for TB Program Strengthening
1. Capacity building of central level management to ensure timely decision and decentralization of decision making.
2. Introduction of an efficient and effective management style at the Central unit including effective delegation of authority to allow a collegial management of the Stop TB Strategy in the country.
3. Revision of job descriptions to ensure clear roles and responsibilities, and accountability.
4. Focal Points to take full responsibility and ownership of assigned tasks.
5. Establish continuous and systematic Performance appraisal for TB health workers at national level unit.
6. NTP to be closely involved in TB-related decisions and activities of laboratory and pharmacy services.
7. Coordination mechanisms strengthened through technical functioning working groups or thematic sub committees, that ensure joint planning, implementation and progress reviews should be considered.
8. Programme performance and treatment outcomes to be improved.
9. Urgently strengthen Monitoring and Evaluation
   - Ensure quality and consistency of data.
   - Improve systematic supportive supervision to ensure recording and reporting is of good quality.
   - Improve on the local use of routinely collected data for planning and decision making.
10. Costing of the strategic plan must be done immediately.
11. The TB programme needs to engage in advocacy in order to increase the limited number of partners supporting TB control.
REPORT OF
THE 2011 REVIEW
OF THE ZIMBABWE NTP
1. Introduction

1.1 Background information

Zimbabwe is a landlocked country in Southern Africa with an estimated population of 13.7 million up from 10.4 million in 1992 and 11.6 million in 2002 (Central Statistics Office). The annual population growth rate was 1.1 between 1992 and 2002. According to the 2008 Inter Census Demographic Health Survey (ICDHS), the average rate of natural increase declined to 0.7. The majority of the population was female. The top five common causes of morbidity were Malaria, Acute Respiratory Infections (ARI), direct and indirect Obstetric causes, Intestinal infections and Pulmonary Tuberculosis (PTB). Tuberculosis was the second most common cause of death after ARI.

1.2 Socio-economic Situation

Zimbabwe experienced a consistent negative economic growth over the last decade with levels of poverty worsening steadily. This negative economic growth resulted in severe socio-economic challenges affecting all sectors. Most critically affected were the social services sectors of education and health. According to the Medium Term Plan 2010-2015, the major health related challenges were; insufficient resources to procure essential medicines including antiretroviral therapy, equipment, efficient transport and communication.

Furthermore there was lack of decentralized health budgets to support local development priorities, massive exodus of skilled health personnel, reduced access to health service delivery due to high user-fees, high transport costs and spatial distribution of health facilities, overall deterioration in infrastructure, household food insecurity and the resultant malnutrition, poor access to safe water and sanitation and consequent increase in cholera outbreaks and other communicable diseases. The major effects of the harsh socio-economic environment on the health system has been on human resources for health, that have continued to work with low morale due to inadequate remuneration, junior and inexperienced staff managing health services. Financing of health services over the last decade was highly dependent on partner support and user fees. Tuberculosis has benefitted from the Global Fund (GF) round 8. The GF round 8 supported human resource at national level, procurement of medicines and supplies and vehicles for all levels.

2. Health Systems, Policy and Planning

2.1 National Health Systems Policy

In 2009, the Ministry of Health and Child Welfare developed the Equity and Quality in Health-A People’s Right strategic plan, 2009 -2013. The National Health Strategy was informed by the Short-Term Emergency and Recovery Programme (STERP) and later the Zimbabwe Economic Development Strategy (ZEDS 2009-2013) after the first 100 days of the inclusive government. Tuberculosis prevention and control is goal number 8 in the National Health Strategy. The district hospital is the first point where comprehensive primary health care is provided. Primary health care centres provide continued care to patients discharged from district hospital, follow up chronic patients on treatment and treat minor ailments. There are 1654 health care facilities in the country, more than 90% of which are rural. In 1997, 85% of the population lived within 8 km of a primary health care facility, a proportion that has recently changed since the onset of the land reform exercise in 2002. The Primary Health Care Approach is the guiding principle for the provision of health care services in Zimbabwe.

2.2 Provision of Health services in Zimbabwe and Infrastructure

The Ministry of Health and Child Welfare has the sole mandate to provide, administer, coordinate, promote and advocate for the provision of equitable, appropriate, accessible, affordable and acceptable quality health services and care to Zimbabweans while maximizing the use of available resources, in line with the Primary Health Care Approach. Local authorities, under the Ministry of Local Government, have delegated responsibilities of providing primary health care services to residents of their towns and cities. A significant number of mission, private and mine hospitals complement the Ministry of Health in the provision of health care services in Zimbabwe.

\(^5\) Central Statistical Office, 2002 National Census
\(^6\) Ibid
\(^7\) Ministry of Health and Child Welfare, National Health Profile
\(^8\) Ministry of Finance, Medium Term Plan
For TB prevention and control, private hospitals are limited to TB diagnosis and refer to public and mission health facilities for treatment follow up and monitoring. Uniformed forces have their health facilities where they provide diagnosis, treatment follow up and monitoring to members of the uniformed forces. Reporting of treatment outcomes are done through the respective district health executives. Anti-TB medicines remain free of charge to all patients including those referred from private, mine and uniformed force facilities. Anti-TB medicines are provided by the Ministry of Health and Child Welfare in public sector institutions.

Zimbabwe is divided into 10 administrative and health provinces that include Harare and Bulawayo. There are 8 rural provinces which are made up of a total of 62 rural districts. Most health services are provided by the public health sector, which consists of the MOHCW, the Ministry of Defence, the Ministry of Home Affairs (prison and police health services), local authorities and mission health services. Management and administration of this sector is divided into four functional levels: national, provincial, district and primary. At national level, the National Tuberculosis (TB) Programme Manager, who administratively is the Deputy Director in the AIDS and TB Unit, is responsible for the success and or failure of the TB programme. The national level is responsible for policy formulation, regulation and resource mobilization.

The provincial level provides technical and management support to the district level including coordination of planning, ensuring that national standards and guidelines are followed, disbursement of resources for programme implementation, training, coordination of research activities and monitoring and evaluation. The overall responsibility for these activities lies with the Provincial Health Executive (PHE). The provincial level is generally considered as an extension of the central level. Provincial Medical Directors are the accounting officers at the provincial level.

The district level supports, supervises and coordinates the implementation of primary health care in the district. Essential primary health care is provided at the primary or rural/urban health centre level, the first point of contact between the community and the health sector. Each district has several rural hospitals and clinics that support with provision of basic health care services. The overall responsibility for these activities lies with the District Health Executive (DHE). The District Medical Officers are the accounting officers at district level. Provincial and district TB coordinators coordinate all TB activities at provincial and district levels respectively.

Many mines, large estates, and industrial complexes run their own health delivery services. There is a well-developed private health sector, comprising mainly of independent practitioners and private hospitals, almost all located in towns. Traditional healers have an important role in health delivery. The Zimbabwe National Traditional Healers Association (ZINATHA) was formed to regulate their activities.

Loss of experienced managers at all levels in the last three years reduced management capacity, negatively impacting on basic health care, particularly at the lowest level. This contributed to the breakdown of the referral chain and to the increasing use of referral hospitals as primary care providers.

### 2.3 Administrative Organization of the Health Sector

Zimbabwe's health system is organized into 5 levels of care. The National level, formulates policy, sets standards of care, mobilizes resources for health and supervises the provincial and Central Hospitals. The Minister, followed by the Deputy Minister and then the Permanent Secretary are at the head of the Ministry of Health and Child Welfare, supported at national level by three Principal Directors (PDs), who are responsible for preventive services, clinical services and policy, planning, monitoring and evaluation. Tuberculosis control is under the PD preventive services. The provincial level has delegated powers of the National level in terms of policy formulation, setting of standards and monitoring implementation of the agreed policies at district level. Central hospitals, also known as tertiary referral level of care, are in Harare and Bulawayo Cities. Specialist care is available at Central/tertiary levels of care and they receive referrals from General and Provincial hospitals.

At provincial level, there are provincial hospitals and General hospitals which are the secondary referral levels of care. These receive patients from district hospitals. The Provincial Medical Director (PMD) heads the Provincial Health Executive (PHE) at that level. The district level is the functional level where all essential components of care, that is, preventive and curative services are found. Rural hospitals, clinics and rural health centers refer patients to district hospitals. The District Medical Officer (DMO) heads the District Health Executive (DHE) which implements all curative and preventive services at district level.
2.4 Human Resources Development

Human resources for health development is the responsibility of the Human Resources Director, under the Principal Director, Policy Planning, Monitoring and Evaluation. Through collaboration with departmental Directors, they recommend creation of posts to the Ministry of Finance, through the Permanent Secretary for Health. A generic human resource strategy for the Ministry of Health was available. A new Ministry of Health and Child Welfare Structure was approved in 2007 (figure 3). The TB programme had 3 officers at National level supported by Government. In the new structure, the Global Fund (GF), is supporting 12 new posts for the TB programme at central level. This structure has been adopted by the Ministry of Health and Child Welfare and approved by the Ministry of Finance.

3. The Zimbabwe National Tuberculosis Control Programme

Zimbabwe’s National TB Program (NTP) started in the late 1960s and was integrated into the Primary Health Care system in 1983. The new 2010-2014 National TB Control Programme Strategic Plan has four major objectives.

3.1 Objectives of the Zimbabwe NTP

- To expand and ensure universal access to high quality diagnosis, care and treatment equally for people with all types of TB, in all age, gender and socioeconomic groups ensuring patient-centered care
- To reduce the suffering and socioeconomic burden associated with TB
- To protect vulnerable populations from TB, including drug resistant TB and TB/HIV
- To support the timely and effective introduction of new tools for diagnosis, treatment and prevention of TB

3.2 Structure, management and coordination of the NTP

The NTP is within the AIDS and TB Unit of the Ministry of Health and Child Welfare, with the Director, AIDS and TB Unit as the head and deputized by the NTP Manager. The TB programme is well integrated into the 5 levels of care. At the National level, the Central Unit of NTP is responsible for policy review, development, formulation and planning, coordination, monitoring, training and evaluation of programme performance. The unit collaborates with laboratory, pharmaceutical, environmental health directorates and the National AIDS Council. A total of 15 officers at National level assist the NTP Manager to coordinate TB prevention and control activities (figure 4 below).

The district is the basic management unit for TB control and is responsible for diagnosis, treatment and follow-up of patients, as well as supervision and monitoring of treatment, registration and compilation of quarterly and annual reports. There were 1331 rural health centres or municipal clinics (in urban localities) that function as primary health-care facilities. These centres and clinics assist in the identification and referral of TB suspects, supervision and observation of treatment and follow-up of contacts and defaulters. At the provincial level is responsible for, training of staff, collection and analysis of TB data and supervision of the districts. The Provincial Epidemiology and Disease Control Officer (PEDCO), is responsible for the implementation of TB activities in the province. The Central Hospital level diagnose, initiate treatment, refer patients to local authority or clinics and manage complicated or severe forms of TB, such as TB pericarditis.

4. Epidemiology of TB in Zimbabwe

Zimbabwe is ranked 17th among the 22 high burden TB countries (HBC) in the world. Furthermore Zimbabwe has one of the most severe TB epidemics in the world estimated to be the fourth highest after Swaziland, South Africa and Djibouti. During the 1990s Zimbabwe like many Southern African countries witnessed a dramatic rise in TB cases. Tuberculosis, once thought to be on the decline, almost trebled in incidence from 96.9/100 000 in 1990 to 267.5/100 000 in 1995 and 402/100 000 in 2000 (figure 5). While there is evidence of a reduction in TB incidence, rates are still extremely high, with programme case notification rate of close to 400 cases per 100 000 population. The trend of TB notification peaked in 2002 (475/100 000), and started falling down to the lowest in 2007 (302/100 000)\(^8\). From 2007, the notification rate has been going up to 330/100 000 in 2008, 369 /100 000 in 2009 and 402/100 000 in 2010.

Treatment success had been going up since 2006 (60%), to 75% in 2007, then 74% in 2008 and finally 78% in 2009. The

\(^8\)Ministry of Health and Child Welfare. National TB Control Programme; Five Year Strategic Plan; 2010-2014
period 2006-2007 was when the socio-economic challenges were at their worst, human resources for health morale was at its lowest and resources for surveillance were inadequate (figure 6). The WHO Global TB Report suggests that the prevalence of TB maybe coming down to 400 cases per 100 000 population (figure 7)⁹.

In 2008 pulmonary tuberculosis was the leading cause of death in the age group 5 years and above and the second most common cause of death in hospitals in all ages, after acute respiratory infection (National Health Profile, 2008). Based on studies of TB and HIV co-infection, it has become clear that the increase in TB was a result of the increasing prevalence of HIV in Zimbabwe. Like in other high TB and HIV burden countries, the male and economically active, 25-49 year age-group, population has the most affected by TB.

Figure 5: Trend in Estimated Number of TB Cases from 1981 to 2005, Zimbabwe

![Trends in estimated number of TB cases, Zimbabwe, 1980-2007](image)

Source: Zimbabwe National Health Profile, 2008

Figure 6: Notifications rates, 2000-2010 and treatment success and cure rates 2000-2009

![Notification Rates 2000-2010](image) ![Treatment Success & Cure Rate 2000-2009](image)

Source: Zimbabwe NTP

⁹The 2011 WHO Global TB Report
Figure 7. Trends in TB Prevalence from 1990 to 2010, Zimbabwe


4.1 TB Control Services in Zimbabwe: Implementation of the STOP TB Strategy and Global Plan

The NTP has a TB Strategic Plan for the period 2010 to 2014 with its vision as “A TB Free Zimbabwe.” It is guided by and aligned with the TB Global Plan to Stop TB 2006-2015 and the revised TB Global Plan to Stop TB 2011-2015, with the overarching objectives being 70% detection of sputum positive TB cases and 85% treatment success rate of detected cases. The 2010-2014 National TB Strategic Plan contains 8 broad strategic areas with specific objectives, activities, targets and indicators. The strategic plan was developed with technical assistance from the World Health Organization (WHO) and The Royal Netherlands Tuberculosis Foundation (KNCV) and active participation of non-governmental organizations working in TB and development partners.

In 2010, the NTP revised, printed and distributed TB treatment guidelines in line with the 2010-2014 strategic plan. Financial and technical partners provide support to the NTP to improve implementation of the strategic plan.

5. Significance of National TB Programme External Reviews

External reviews of the NTP are part of the standard monitoring and evaluation exercises critical for the continued implementation of the International Standard TB Treatment guidelines. Zimbabwe is a recipient of the GF Round 8 grant and regular external reviews are a requirement to ensure optimum use of the grant. The last comprehensive reviews of the NTP were in 1998 and 2003 by the Ministry of Health and Child Welfare in collaboration with WHO and the Royal Netherlands Tuberculosis Foundation (KNCV). Since then, there have been significant social and economic changes, which have affected the health delivery system. Summary findings and major recommendations from the 2003 external review are presented below to facilitate the readers of this report to appreciate the progress made since 2003.

5.1 Major Strengths and Weaknesses noted in the 2003 External Review

5.1.1 Political Commitment

The Government of Zimbabwe provided 100% funding for the NTP implementation. Treatment of TB remains free to the patient. Implementation of TB prevention and control activities was guided by a national TB policy and manual and that the DOTS strategy had been adopted in 1998. The major weaknesses were serious shortages of staff, equipment and consumables at all levels.

The review recommended that the MOHCW urgently develop and implement a general human resource policy to increase the number of posts in NTP central unit and ensure adequate programme supervision and monitoring, training and data management. The minimum recommended number of additional staff was five (two medical officers with public health

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10Ministry of Health and Child Welfare, National TB Control Programme; Five Year Strategic Plan, 2010-2014
training, a financial and administrative manager, a data manager, and a full-time dedicated secretary for the unit). The other recommendation was to develop and submit proposals for additional support for the NTP from the Global Fund to fight AIDS, Tuberculosis and Malaria.

5.1.2 Case Detection by Smear Microscopy

Smear microscopy was the mainstay for pulmonary TB diagnosis and laboratory reagents and diagnostic equipment were readily available six months prior to the evaluation. The National Tuberculosis Reference Laboratory (NTBRL) was funded through a separate budget line for all its operations. The major challenges were that in the two years prior to the review, no refresher training for health care workers on TB control had been done and no quality assurance activities in most part of the country due to inadequate funding and staff shortages. The 1999 TB manual required revision as some case definitions in use were out dated.

5.1.3 Case Management including Directly Observed Treatment (DOT)

The NTP adopted the DOTS Strategy in 1998 and all TB patients were on DOTS. Operational research on innovative DOTS was being implemented in the country. Major weakness was the inadequate capacity for defaulter tracing.

5.1.4 Drug Supply

The country had not reported interruptions in drug supply 6 months prior to the external review and there was a commitment of adequate drug supplies until end of 2006. Major weaknesses were the unavailability of Paediatric formulations and the skewed distribution of anti-TB drugs in some areas.

5.1.5 Recording and Reporting, Supervision and Monitoring

There were available standardized data collection tools and were in use at all levels. One major weakness was that data was being submitted to the Head Office as provincial summaries instead of district summaries, preventing detailed analysis. There was no evidence of local data use as a management tool at all levels. Minimal support and supervision was reported which affected progressive monitoring of the program and this might have negatively affected the completeness and accuracy of submitted data.

5.1.6 Partnership Building

Best practice examples were the smooth patient referral mechanism between private to public institutions. The major weakness was the inadequate coordination of partners by the NTP.

5.1.7 Multidrug Resistant TB (MDRTB)

The last drug susceptibility survey performed in 1995 showed low levels of drug resistance TB. 3.3% of the strains were resistant with 1.3% of the strains being isoniazid mono-resistant and 1.9% of the strains being multi-drug resistant. The major weaknesses were the absence of recent drug resistance prevalence data and also the absence of National guidelines for programmatic management drug resistant TB (PMDT).

5.1.8 Advocacy and Information, Education, Communication (IEC)

Availability of IEC materials was generally good at most facilities visited. The main weaknesses were that all IEC materials were produced centrally without taking into consideration variations in language between regions and absence of a national TB advocacy plan.

5.1.9 TB/HIV Collaboration

The continuous care of TB was successfully integrated into the Community Home-Based Care (CHBC) programmes, although Community TB Care has not been universally expanded. There was a clear national policy in the management of TB/HIV/STI. Some mission hospitals had started providing antiretroviral therapy to known TB/HIV patients and Opportunistic Infection
Clinics had been set up in a number of Health institutions, providing fluconazole and cotrimoxazole prophylaxis. The major weaknesses were the overwhelming burden of TB/HIV in the country affecting service provision, absence of national guidelines on integrated TB/HIV care and Voluntary counseling and testing (VCT) was not routinely offered to TB patients.

5.2 MAJOR RECOMMENDATIONS FOR THE 2003 NTP EXTERNAL REVIEW

Recommendations were directed at MOHCW head office and the World Health Organization.

5.2.1 Recommendations to the Ministry of Health and Child Welfare

The review recommended that the MOHCW at national level should strengthen TB/HIV coordination and collaboration through functions of the Provincial TB/HIV/STI Officer, employ a full-time Provincial and district TB coordinators, strengthen DOT through provision of transport and funds for support and supervision, introduce a TB suspect register and train low level medical laboratory technicians to improve case detection and case holding.

5.2.2 Recommendations to the National Tuberculosis Programme

The review recommended to the NTP to urgently finalize and implement a work-plan for DOTS implementation, develop and implement a pre-service, in-service and refresher training for TB care, implement community TB care, revise treatment regimens to incorporate fixed dose combination therapy (FDCs), revise the National TB manual and strengthen programme monitoring, support and supervision. Other recommendations were to improve partner coordination, implement countrywide external quality laboratory control through the national TB reference laboratory and to conduct a drug resistance survey in collaboration with WHO.

5.2.3 Recommendations to WHO Zimbabwe

The reviewers recommended that the WHO Country Office should provide financial and technical assistance to develop a clear action plan to implement the review recommendations, disseminate the review findings, develop and implement plans for DOTS expansion and support with preparing funding proposals.

5.2.4 Recommendations to WHO/AFRO

Through the WHO country office, the WHO Africa regional office was advised to provide technical and financial support in implementing recommendations made from the review, developing funding proposals to GF and Global Drug Facility (GDF) and in conducting a drug resistance survey.

6. The 2011 Zimbabwe NTP external review

6.1 RATIONALE FOR THE 2011 REVIEW

6.1.1 Stop TB Strategy and THE GLOBAL PLAN to Stop TB 2006-2015

The new Stop TB Strategy and the Global Plan to Stop TB, 2006–2015 was developed with full recognition of the achievements of the DOTS Strategy that become a brand for TB prevention and control measures. The following changes necessitated the formulation of the Stop TB strategy and The Global Plan to Stop TB 2006-201511:

- Changes in the social context in which TB control is carried out and the resources required
- Disease control efforts have become increasingly patient-centred and directed towards universal access to care
- New Public Health challenges that have modified the TB epidemic have emerged
- HIV and AIDS
- Drug resistant TB
- Extensively drug resistant TB
- New Public Health Paradigm focusing on building health systems and primary services to provide access

11WHO. Guidelines for the Programmatic Management of drug resistant TB; Emergency Update 2008
The need for evidenced based medicine through operational research
The need to involve partners and other non-state actors

The goals of the Stop TB Strategy are to reduce dramatically the burden of TB by 2015 in line with the Millennium Development Goals and the Stop TB Partnership targets. The strategy continues to emphasize the importance of the DOTS strategy. The strategy has six principal components:

I. Pursue high quality DOTS expansion and enhancement
II. Addressing TB and HV, MDR-TB, XDR-TB and other health challenges by implementing collaborative TB/HIV activities
III. Contributing to health system strengthening by collaborating with other health care programmes to mobilize human and financial resources
IV. Engaging all care providers by scaling up public-private mix
V. Empowering people with TB and communities by scaling up community TB care and advocacy, communication and social mobilization
VI. Enabling and promoting research to improve programme performance

6.1.2 The 2011 NTP Program Review

The Zimbabwe NTP strategic plan 2010–2014, was formulated based on the Stop TB Strategy and The Global Plan to Stop TB. The last Zimbabwe NTP external review was in 2003 and this review was therefore long overdue. The significant macroeconomic challenges, compounded by the shortage of critical human resources for health, continue to impact negatively the implementation of all health programmes including TB control. The 2011 TB programme external review provided the best opportunity for MOHCW to strengthen resource mobilization strategy using the documented achievements to date and the major weaknesses requiring more funding for effective TB prevention and control.

The main objective of the 2011 Zimbabwe NTP external review was to undertake an in-depth review to determine the achievements, weaknesses and challenges facing the national program since the last review in 2003.

The terms of reference were to:
- Review the present policies, organizational structure, planning and financing;
- Determine the current status of the implementation of TB and TB/HIV prevention, management and control services
- Identify and document challenges, opportunities and lessons learnt during the implementation of the NTP
- Make appropriate recommendations to the NTP on how to further improve the national TB programme

6.2. Objectives of the 2011 Zimbabwe NTP Review

The specific objectives of the 2011 Zimbabwe NTP review were to assess:
- Progress in the implementation of DOTS strategy including management of MDR-TB at different levels of care
- Collaborative TB/HIV activities at programmatic and clinical levels
- Monitoring and Evaluation (M&E) practices including impact assessments and operational research
- Assessing advocacy, communication and social mobilization (ACSM) approaches including community participation in TB program.
- Reviewing governance/leadership structures in the management of TB program
- Financial and human resources for health support mechanisms including partners’ support
- Assessing patients’ perspectives and knowledge of TB
- Make appropriate recommendations to the NTP on how to further improve the national TB programme

6.3 Review methodology

The Review started with an orientation session held on 27 June 2011 with the aim of introducing all review members to the country policies and health system and the NTP objectives and strategies; giving current status of NTP achievements; and discussing the review tools in order to get a uniform and harmonized view of the tools. From day 2 the teams proceeded to respective provinces for one week. The field visits were followed by team member debriefing on the key findings to build
consensus and for the NTP to make clarifications. The findings of each review team were used to compile the data on each thematic area and give an overall current TB prevention and control activities in the country. Preliminary dissemination was done to allow implementation of urgent recommendations by the Ministry of Health and Child Welfare and NTP. Dissemination to stakeholders was done at the end of the review.

The review comprised of a mixture of methodologies to comprehensively assess the achievements and challenges of program implementation namely Review of Literature, Key Informant Interviews (KII), Observations and data abstraction, Initial data review and analysis.

The following thematic areas were selected for the 2011 assessment:
1. Programme Management and Coordination
2. Health Systems, Policy and Planning
3. DOTS implementation, and M & E
4. TB/HIV
5. MDR TB and Infection Control
6. MDR-TB and Laboratory Strengthening
7. Drug procurement and Drug Management System
8. Health Services Strengthening and Public Private Mix
9. ACSM, Universal Access and Community participation; Partnerships
10. Operational Research

There were 6 teams. Each team included at least one External reviewer. Local reviewers and consultants acted as resource persons. The teams visited Manicaland; Masvingo; Midlands; Mashonaland West; Matabeleland South and City of Bulawayo; the NTP, the MOHCW, City of Harare and Partners.

6.3.1 Review of Literature


6.3.2 Key Informant Interviews (KII)

Using structured questionnaires, reviewers interviewed the following key informants involved in TB prevention and control: Provincial Medical Directors (PMD) and the Provincial Health Executive (PHE) team members, District Medical Officers (DMO) and the District Health Executive (DHE) team members, Provincial and District TB coordinators, pharmacy, laboratory, Out-patient department (OPD) personnel and nurse in-charge at primary health facilities. Similarly, TB patients and partners supporting TB program in the districts were also interviewed. Policy and decision makers as well as relevant partners in TB Control implementation and staff of the Central Unit of the NTP were also interviewed.

6.3.3 Observations and data abstraction

The interviewers observed the displays of information, education and communications materials related to TB control as well as any evidence of TB data use in each facility. TB Registers, ART registers and Pharmacy stock cards were also reviewed for recording practices and data completeness. Data were abstracted from the stock cards and facility TB registers/reporting forms using structured review tools.

6.3.4 Initial data review and analysis

The preliminary information and responses gathered from interviews and data abstractions were used to assess the achievements and challenges of the Zimbabwe NTP in the ten thematic areas assessed.

6.3.5 Preliminary Dissemination

Findings from each Team were shared among team members with clarifications made by the NTP and local reviewers. Based on the narratives from the teams, a preliminary report was presented to the Ministry of Health and to Stakeholders. It is
expected that the preliminary dissemination will allow implementation of recommendations by the Ministry of Health and Child Welfare and by the NTP.

7. Findings

The review team visited five provinces (table 1 below), Harare and Bulawayo Cities and partners providing technical and financial support to the NTP. A total of 12 districts and 24 district hospitals and several clinics were visited to interview patients, the DHE and review TB data collection tools.

Table 1: Provinces and Districts Visited, Zimbabwe NTP Review, 2011

<table>
<thead>
<tr>
<th>Province</th>
<th>Districts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manicaland</td>
<td>Buhera, Makoni and Mutasa</td>
</tr>
<tr>
<td>Harare City</td>
<td>Harare City Health Services, Ministry of Health and Child Welfare and partners</td>
</tr>
<tr>
<td>Midlands</td>
<td>Chirumanzu, Shurugwi and Gweru urban</td>
</tr>
<tr>
<td>Mashonaland West</td>
<td>Makonde, Kadoma and Zvimba</td>
</tr>
<tr>
<td>Matabeleland South</td>
<td>Matobo and Bulawayo urban</td>
</tr>
<tr>
<td>Masvingo</td>
<td>Bikita and Masvingo urban</td>
</tr>
<tr>
<td>Bulawayo City</td>
<td>Bulawayo urban</td>
</tr>
</tbody>
</table>

7.1 The National Strategic Plan

The NTP is guided by the National Strategic Plan, TB/HIV co-management guidelines and the National TB Guidelines fourth edition for the implementation of TB prevention and control activities. The 2010-2014 TB National Strategic Plan has eight (8) broad strategic objectives:

1. To expand and enhance access to and provision of high-quality DOTS.
2. To enhance coordination and implementation of TB/HIV collaborative activities.
3. To effectively prevent, control and manage multi-drug resistant TB.
4. To contribute towards the strengthening of health systems based on the principles of the primary health care approach.
5. To promote partnerships with other care providers and stakeholders at all levels of the health system.
6. To empower people with TB and their communities.
7. To promote operations research.
8. To promote the development of adequate and sustainable human resources capacity for the NTP at the National, Provincial, District and Facility

Each strategic area has a number of objectives and related strategies with appropriate targets and indicators.

7.1.2 National Strategic Plan Achievements

The NTP has made significant achievements towards implementation of the TB National Strategic Plan. In 2010, the NTP introduced an additional 50 microscopy centres in rural areas to improve quality bacteriological diagnosis of PTB. There were efforts to ensure that the TB reference laboratory was functional. Routine surveillance of HIV among TB patients improved significantly over the past two years. With support from The Global Fund and other partners, there has been improvement in the logistics and equipment like computers, vehicles and consumables at all levels. The Union is a big contributor to Strategic
Plan implementation providing annual regular in-service training on TB prevention and control training on drug resistant TB to key personnel.

7.1.3 National Strategic Plan Challenges

The harsh economic environment had affected the implementation of the Zimbabwe TB National Strategic plan. Retention of experienced human resources for health at all levels was difficult. Procurement of anti-TB medicines and laboratory consumables was through partners support. TB service delivery is integrated into the general health service delivery. The MOHCW allocated US$200,000.00 for TB control activities. The Government of Zimbabwe pays salaries of all health care workers, supports health service delivery of all public health sector institutions.

7.2 Programme Implementation

7.2.1 The NTP Structure and Implementation of TB Activities

In 2007, the MOHCW reviewed the Ministry’s and NTP structures. In the new approved structure, the Principal Director, Preventive Services supervises the Director, AIDS and TB Unit. The TB programme is managed by a NTP Manager who holds the position of Deputy Director AIDS and TB Unit, a TB control officer and a TB control and logistics manager. The successful application of the Global Fund Round 8 grant strengthened the human resource base of the NTP through recruitment of extra key staff. This new GF supported structure of 15 officers was positively approved by the MOHCW as the official structure of the NTP central unit (figure 8).

At provincial level, the Provincial Epidemiology and Disease Control Coordinator (PEDCO) coordinates the prevention of all diseases including TB. The Provincial TB Coordinator is supervised through the PEDCO and Provincial Environmental Health Officer (PEHO), for the day to day TB duties and professional development respectively. District TB Coordinators are responsible for TB recording, reporting and DOTS implementation at district level. All nurses at clinic or rural facility level are responsible for the supervision of DOT through community treatment supporters. A new cadre was created to improve the diagnosis of TB using sputum smear microscopy, the microscopist. To date, the MOHCW has trained more than 50 microscopists for TB, HIV and malaria diagnosis who are assigned to a cluster of clinics.

7.2.2 NTP Structure Challenges

Whilst some job descriptions were available, there were no clear roles and responsibilities of some of the key National level staff. Accountability of officer activities could not be ascertained as there were no activity plans or reports of the activities performed by the officers. The new central NTP structure was more taskand “Global Fund” oriented rather than the STOP TB partnership oriented as shown in figure 8. As a result, the roles of the different officers were overlapping and measurement of their achievements was difficult.

The current NTP national structure has a training officer supported by two assistants, one for the Southern and the other for the Northern regions. However none of the two officers is responsible to him and the scope of work of the three officers was not clear, and how their activities were complementary. The coordination of training at national level was inadequate as exemplified with absence of training plans, detailing how the training must be delivered, to whom, the rationale for it and what impact was expected from it. Sustainability of the training post GFATM did not seem to have been considered. The role of provinces in the provision of training on TB management was not clear.

Supervision of DOTS implementation was a challenge at district level. Ownership of the TB programme at provincial and district levels was minimal as evidenced by the absence of meaningful support and supervision and absence of use of TB reports or TB data for planning and decision making. Provinces referred that they have no specific TB or TB/HIV plans.
Figure 8: Zimbabwe NTP Approved Structure Central unit organogram, 2010
7.3 Tuberculosis Services Provision

Health centres or municipal clinics in rural and urban localities respectively are mostly responsible for the identification, treatment and referral of complicated cases (as appropriate). Health centres are also responsible for supervision and observation of DOTS treatment at community level and follow-up of TB contacts and defaulters.

The Government of Zimbabwe had the mandate of providing TB prevention and control in Zimbabwe through the different structures found at National, Provincial and District offices. In major cities and towns, the MOHCW delegated the provision of TB treatment, follow up and monitoring to local authorities. Before the fiscal crises, provision of TB treatment was 100% through the public sector, including local authorities and the uniformed forces' health facilities. The fiscal crises necessitated the entry of other partners working in the most disadvantaged rural areas to provide TB treatment. Partners are performing a wide range of TB control activities that support diagnosis, patient treatment, patient follow up support supervision, technical advice, human resource development initiatives, participation in NTP technical meetings and funding.

Majority of the NTP technical and development partners were based in Harare. Most partners had been in the country for at least 5 years and were mainly involved in HIV and AIDS related activities, but had added tuberculosis activities in recent years. The exception was The Union whose core business in the country is tuberculosis and TB/HIV. The partners acknowledged that on the whole NTP programme performance was improving. Partners generally operate under some form of agreement including a memorandum of understanding (MOU). The major partners supporting the NTP include the GF through the United Nations Development Programme (UNDP), United States Agency for International Development (USAID) through TB Care, World Health Organization, Médecins Sans Frontières(MSF)-Holland, Spain and Belgium, Centers for Disease Control (CDC)/Zimbabwe, SAFAIDS, Population Services International (PSI), Zimbabwe and Biomedical Research and Training Institute (BRTI), Rehabilitation and Prevention of TB (RAPT).

7.3.1 Urban Authorities

Local authorities were found to be a major implementer of TB prevention and control activities. City Health departments have their own staff complement of doctors, nurses and paramedics. Local authorities therefore have capacity to implement DOTS just like any other district in Zimbabwe. Local authority health centres or clinics were responsible for the identification, treatment and referral of TB cases, supervision and observation of DOTS at community level and follow-up of TB contacts and defaulters. Data on TB programme implementation was submitted religiously on quarterly basis to the NTP.

A network of laboratories at selected polyclinics had recently been refurbished and these perform all sputum microscopy for the city health and surrounding suburbs contributing to quality diagnosis using smear microscopy. There are no culture facilities and specimens are sent to the National Reference Laboratory in Bulawayo or Harare. In Harare City, sputum collection has been decentralized to create fifty (50) additional community based sputum collection points through support from TB Reach working with a number of funding mechanism. However, in one of the hospitals in Harare, the Review noticed extreme shortage of microscopists. A transport mechanismsystem is in place to move samples from all the 50 points to the designated laboratories for processing and the results from the laboratories back to the collection points. This is a best practice. The turn-around time for sputum smear microscopy is 24 – 48 hours as laboratories are situated on site.

The two major cities of Harare and Bulawayo have infectious hospitals were critically ill TB patients are admitted. The city health departments are members of the National TB Expert Committee and they participate actively in the policy making, planning and guidelines making processes coordinated by the Ministry of Health and Child Welfare. The management of drug resistant TB was anchored by Harare and Bulawayo City authorities.

Besides TB the three infectious diseases hospitals also managed other notifiable diseases like bloody and other diarrhoeal diseases and childhood infectious diseases. The major source of funding for the local authorities is from ratepayers. The City Health departments are responsible for the supervision of private hospitals in terms of complying with local authority regulations of cleanliness and submission of medical statistics. Whilst the vacancy rate for nurses was around 45%, City Health departments had been able to recruit extra locum nurses to manage the shortfall.

7.3.2 Private institutions

Private institutions (hospitals and laboratories) participate in the diagnosis of TB patients; and on diagnosed the patients are
referred to a Public Health facility for initiation of treatment. Only large private hospitals can initiate anti-TB treatment and refer for follow up of treatment to the public sector.

7.4 Programme Management and Partners’ Coordination

Programme Management addresses both the technical issues, and programme implementation and coordination. There has been considerable improvement in terms of number of qualified personnel working on TB at national level supported through The Global Fund. Programme management ensures that TB patients receive quality treatment from the health facilities:

- ensuring availability of anti-TB medicines;
- regular analysis, use and dissemination of routinely collected data, production and dissemination of annual reports;
- and ensuring that the available human resources is maximally used to improve programme performance.

There were officers delegated to coordinate anti-TB medicines procurement, monitoring and evaluation, training and drug resistant TB.

7.4.1 Programme Management and Partners’ Coordination achievements

The NTP conducts quarterly meetings with partners to provide update on programme implementation though its impact was questionable. Most implementing partners were using national guidelines for the management of TB. Regular training of health care workers in TB case management was being conducted.

7.4.2 Programme Management and Partner Coordination Challenges

With MOHCW Stakeholders

There was limited working interaction between the NTP and the Human Resources and Finance, Pharmacy and Laboratory Departments as evidenced by for example inadequate anti-TB drug forecasting and procurement. The inadequate interaction of the NTP and the Human resources could explain the lack of clear job descriptions and roles and responsibilities. The lines of accountability were unclear especially within the training sub-unit. This is likely to affect ownership of planned interventions. The review noted that there was inadequate delegation of functions to junior officers.

With partners

The Review could not get evidence of a plan where the role of each partner was highlighted or mapping the geographical areas they cover in order to maximize resources use. The quarterly meetings were limited to feedback on programme implementation without including joint planning with partners. Some of the partners had stopped attending coordination meetings claiming that the meetings were not adequately announced or planned; technical discussions were inadequate and did not make an impact in programme implementation. Agenda items suggested for inclusion during the quarterly meetings were presentation of monitoring and evaluation data, future planning, discussion of national policies and guidelines and presentations on new diagnostic and treatment approaches.

The lack of costing of the strategic plan had made partner contribution difficult as the gaps are not well described. There were no programme and/or individual annual plans to operationalize the strategic plan and despite the increase in the number of human resources there were no clear delegation of responsibilities. Annual reports were not available suggesting that routinely collected data was not being used to inform programme performance.

Human resources issues

The review identified that the vacancy rate at peripheral level was highest for laboratory scientist (61%) followed by Pharmacy (58%), medical doctors (50%) and nurses (38%) in the hospitals and facilities visited. The training plan to prioritize the type of training by category of health personnel was not available. Given the high staff attrition rate in the country, a clear training plan is critical.

Whilst the TB coordinators were capable of ensuring recording and reporting was done, they could not provide adequate support and supervision towards the actual TB case management. The number of health centres performing sputum smear microscopy was few and the NTP require more microscopists.
7.4.3 Perception of performance of the National TB control Programme

Whilst partner perception could be difficult to change and largely depended on the partners as well, the following review findings are important to report since the collaboration between partners and the NTP has tremendous influence on the success of the programme. Partners’ perceived that the performance of the National TB control Programme was improving, with many TB control activities taking place at implementation levels. Key issues of concern consistently raised by partners included the following:

- The management capacity at national level was inadequate to make effective use of available resources. The management system was therefore not conducive for rapid implementation of programme related decisions as decision “keep changing” and “things don’t move.”
- Inadequate management guidance and coordination from the national level to other MOHCW departments such as pharmacy, laboratory, human resources and to partners.
- The main form of coordination is the quarterly HIV/TB Partnership Forum meeting. This is a useful forum for providing updates on important TB control and HIV care and treatment developments weakly working for TB. What are conspicuously lacking are partnership fora for planning, implementation performance updates and joint review of progress.
- The NTP engages and plans with different partners individually; as a result there is no shared understanding of national priorities, and there is duplication of activities and suboptimal use of resources.
- Although there is improvement in monitoring and evaluation, this area is perceived as weak and data unreliable.
- Management of drug resistant tuberculosis needs to be owned and coordinated and improved by the NTP; particularly in the area of size of the problem, management guidelines and surveillance.
- Planning and support supervision and reporting of performance was apparently not being given the importance it deserves. Consequently information on programme status and performance was not readily available for use in planning by all involved in TB work.
- Issues of “unit cost” and differences in health worker remuneration by partners can be damaging the programme.
- Staff from the Malaria, HIV/AIDS and TB programmes receives different salaries from the GF.
- Per diem rates suffered the same problem.

7.4.4 Programme Management and Partner Coordination Weaknesses

- Inadequate planning and coordination
- Inadequate programme monitoring and evaluation as evidenced with absent plans, minutes, reports and tools for support and supervision
- The coordination of drug and laboratory commodities at national level was inadequate with no evidence of regular meetings between Natpharm, Logistics Sub Unit (LSU) and the programme.
- Absence of a training plan with priority areas to be covered and time frame
- Minimal working interaction with other Ministry of Health and Child Welfare departments to improve programme management:
  - The HR department could assist with formulating officer job descriptions and responsibilities

7.4.5 Partners’ suggestions for TB program strengthening

- Capacity building of central level management to ensure decentralization of decision making in technical thematic areas to reduce delay in implementation of agreed positions, and for more effective reporting.
- NTP needs to be closely involved in TB-related decisions and activities of laboratory and pharmacy services.
- Coordination mechanisms, such as technical working groups or thematic sub committees, that ensure joint planning, implementation and progress reviews should be considered.
- There should be greater focus on recording and reporting and use of data for all management planning and decision making.
- There should be alignment, standardization and harmonization of support unit costs for the main programmes of tuberculosis, HIV and malaria.
- The strategic plan must be costed for the plan to be fully useful.
- The TB programme needs to engage in advocacy in order to increase the limited number of partners.
7.5 DOTS Implementation

Introduction

The review team describes the Zimbabwe NTP DOTS implementation for the period when the country has just stabilized from the worst socio-economic challenges, characterized by extremely low morale among health care workers and inadequate resources. Treatment outcomes have remained constantly below the Millennium Development Goal (MDG) targets. It is with this background that the review team describes the DOTS implementation as observed during the review.

7.5.1 Political Commitment achievements

The senior management in the MOHCW reported that Tuberculosis was a national public health problem and a health priority. They acknowledged that the poor resources available for health programmes including TB was a result of the difficult socio economic situation the country is undergoing. Shortage of resources had also affected the motivation of Health Care Workers and their retention in the system. The increased demand posed by the high TB and HIV/AIDS prevalence had not been matched with a deliberate revision of the 1980 positions in the establishment. This had hampered the implementation of the Stop TB Strategy in the country. MOHCW has no Human Resources Development Plan (HRDP) but a Human Resources Policy exists which notes the need for a HRDP.

The Government of Zimbabwe continues to pay salaries for all health care workers and treatment for TB disease is free of charge to the patient. Minimum infrastructural requirements for the management of TB have been maintained despite the harsh economic challenges. Partners have been allowed to support TB prevention and control activities. There is a dedicated vehicle for TB control and an officer at health facilities, district and provincial levels.

7.5.2 Political Commitment Challenges/Weaknesses

The economic crisis affecting Zimbabwe over the last decade resulted in most activities in the NTP becoming dependent on donor funding. Prioritization of Government activities for TB control is difficult as most of the donor funds are earmarked for areas of interest. As Government could only provide USD 200,000 annually to TB Control, achievement of the Abuja targets may not be possible. At district level there were no adequate resources for contact and defaulter tracing as the TB budget was centralized at National level. The high vacancy rate at peripheral level previously reported was high for the critical personnel (laboratory scientist (65%), Pharmacy (61%), medical officers (58%) and nurses (38%), environmental health officers (67%)) for DOTS implementation, and no clear strategy to address the shortage was presented.

7.6 Quality Assured TB Diagnosis Using Sputum Microscopy

Laboratory network

Zimbabwe has three (3) National Reference Laboratories namely the National Microbiology Reference laboratory (NMRL), National TB Reference Laboratory (NTBRL) and National Virology Reference Laboratory (NVRL). There are five (5) Central Hospital laboratories, eight (8) provincial laboratories and an estimated 180 District/ Mission/Military (and Private) Hospital Laboratories. All the laboratories have capacity to offer direct smear microscopy smears (DSM). The NTBRL and the NMRL provide TB microscopy and culture services. The reference laboratories also provide support of management of MDR and XDR, conduct field evaluations of new diagnostic technologies, training of laboratory staff and supervision of peripheral TB diagnostic centres. Mission hospital laboratories and peripheral diagnostic centres serve clusters of other rural health facilities. The District hospital laboratories serve as the hub for the rest of the laboratories in the district. The country has six to seven Gene Expert machines for point of care diagnosis through partners working in TB control.

Zimbabwe has adopted the recommendation on the use of two sputum samples for diagnosis, the first provided on spot during the initial patient evaluation, and the second sputum sample on the following morning. Most facilities visited reported that

12 J. Whande and D. Mangwanya. Laboratory strengthening in high TB-burden African countries Seminar. Ministry of Health Lesotho, Lesotho, FIND and WHO; Maseru, 24 February 2010
Sputum samples are coughed up outdoors and away from patient waiting areas at designated spots.

Centrally procured pre-prepared laboratory reagents were used in all laboratories. These and other laboratory supplies were found to be in sufficient quantities in all provinces. The ZN method using light microscopes was the sole approach used in all the laboratories.

The Standard Operating Procedures (SOPs), Biosafety manuals, quality control (QC) assurance manuals, TB laboratory registers, quality control materials for new batches of reagents and other relevant documents were available and easily accessible in all laboratories visited. A limited number of DSM laboratories had subscribed and regularly participated in Zimbabwe Quality Assurance Program (ZINQAP), a special program that has direct support from a technical partner. All other sites participated in EQA which was administered by the National Reference Laboratory (for provincial sites) and by provincial laboratories for district DSM laboratories using blinded slide re-checking, proficiency testing and on site supervision, though related evidence could not be found. All sites were using safety hoods (not necessary for smear microscopy) most of which had never been serviced.

Very few eligible specimens are being sent for culture and DST and the regularity and turnaround time for results from the Reference laboratories was reported as generally over 6 months, if at all. The National TB Reference Laboratory in Bulawayo had Bio-Safety Cabinets (BSC) and had facilities, space and rooms dedicated to introduce newer technologies, notably PCR. The laboratory had well trained but inadequate staff. External quality assurance (EQA) for culture was through supranational laboratories, Medical Research Council in South Africa and Antwerp Belgium. The laboratory had capacity to routinely perform culture using LJ (IDs using SD Bioline MPt64 test to confirm identification) and MGIT systems although currently the media for MGIT are in short supply. However, the laboratory can perform first line DST and recent proficiency results from the supra-national laboratories showed concordance of 95% for isoniazid and rifampicin.

7.6.1 Quality Assured TB Diagnosis Using Sputum Smear Microscopy Achievements

A five year costed Zimbabwe National Laboratory Strategic Plan (2010-2014) guides implementation of laboratory services in Zimbabwe. Laboratory services are headed by a Director of laboratory services and a Deputy Director at MOHCW headquarters. National coordinators head the two reference laboratories, the National Microbiology Reference Laboratory (NMRL) and the National TB Reference Laboratory (NTBRL). Within the AIDS and TB Unit, there is a Coordinator, Laboratory Services who links with the Public Health laboratory services to ensure TB and HIV and AIDS diagnostic services are smooth. The National TB Reference Laboratory in Bulawayo is headed by a Chief Medical laboratory scientist. Recently, more than 150 general hands were trained as microscopists to assist in microscopic diagnosis of TB mostly in peripheral sites though the process of their deployment was taking long.

Laboratory Management Information System (LMIS)

The laboratory information management system (LMIS) has recently been installed in the National TB Reference Laboratory in Bulawayo. However, the software was attacked by virus as the equipment was not online and remained with no anti-virus protection. At the time of visit, the LMIS system was not in use.

Regular support and supervision showed that 72% (61/85) and 91% (1010/111) of the laboratories in 2010 and 2011 respectively were performing according to National Standards.

7.6.2 Quality Assured TB Diagnosis Using Sputum Smear Microscopy Challenges/Weaknesses

Access to sputum smear microscopy was still inadequate in Zimbabwe. A plan for further decentralization of smear microscopy and laboratory expansion was not available during the review period. There was no operational plan as yet for the introduction and scale-up of new technologies for the diagnosis of TB and drug resistant TB.

- Although there were six to seven GeneXpert machines used by partners, the NTP had not yet finalized discussions on the role of GeneXpert in diagnosis of TB, recording and reporting of cases.
- Microscopists
- Although microscopists had been trained, they remain too few to improve coverage of bacteriological diagnosis of TB and ensure bacteriological follow up of patients in treatment. This has affected the bacteriological monitoring of treatment outcomes of TB in Zimbabwe.
• It was reported that some laboratories in some areas (Makonde Christian Hospital, St Alberts and Chidamoyo Mission hospitals, Mpilo and UBH) were not offering sputum smear microscopy for various reasons.

• The majority of laboratory personnel had not been oriented / refreshed on TB case management to update their skills to TB diagnosis but they had undergone refresher courses on Quality Assurance.

• EQA

• The proportion of sputum smear positive to total notified cases was small indicating that most patients either had sputum not done or the quality of sputum smear microscopy was poor (figure 9). The observed low sputum smear positivity could also be due to inadequate quality control system as the system was only limited to the ZINQAP scheme with no evidence of other approaches to quality control and assurance. A significant number of laboratories were not storing slides for Blinded rechecking. About 33% (8) of the laboratories visited had no quality assurance manual and 62% had no biosafety manuals.

• There was not a single facility owning a fluorescent microscope and plans to introduce this technology were not available.

• There was minimal technical collaboration between the NTP and the Department of Laboratories as exemplified by the unnecessary procurement of Safety cabinets for smear microscopy centers.

• Culture and drug sensitivity testing (C& DST)

• The two reference laboratories offering drug sensitivity testing (DST) do not have a hierarchical relationship to ensure quality diagnosis of drug resistance TB. The NTRL in Bulawayo should remain the National Reference Laboratory capable of providing quality assurance to all laboratories offering Culture in the country. The two SNL are offering quality assurance to the two laboratories.

• The Review mission observed that the diagnostic algorithm for sputum culture and DST was not available. Although there were instructions available in the NTP guidelines on the type of cases to assess culture on a routine programme basis, health workers needed to be reminded of this as not all were doing this. This was therefore affecting case detection of drug resistant TB.

• The Review also observed that in spite of the existence of a MDR TB Focal Point, the link between this officer and the National Reference Laboratory for routine surveillance DR TB was not established.

• Although the NTBRL had capacity to carry out culture and drug sensitivity testing, few specimens were being sent for culture & DST because the regularity and turnaround time for results was reported as generally over 6 months or not at all.

Source: Zimbabwe NTP

7.7 Standardized Treatment with Supervision and Patient Support

Treatment of TB patients was mainly in public health institutions, uniformed forces facilities, mine hospitals and mission
hospitals using standardized national treatment guidelines. Treatment initiation for sputum positive adults was through TB focal nurses, registered general nurses and medical doctors. All cases of extra pulmonary TB, previously treated TB patients and children were seen and initiated by the doctors only. Majority of facilities had TB screening tools displayed and in use for intensive case finding. Directly observed therapy (DOT) was mainly through family treatment supporter and in local authority clinics it was facility based. Environmental Health Technicians were responsible for follow up of non-compliance patients, contact tracing and supervision of sputum collection at designated areas outside the facilities.

7.7.1 Standardized Treatment with Supervision and Patient Support Achievements

Zimbabwe introduced task shifting for the initiation of anti-TB treatment for new sputum positive TB patients where nurses are testing and initiating treatment, a practice currently in use in many countries. This is a best practice for the antiretroviral therapy programme to adopt. Knowledge among nurses on TB prevention and control was universally good, 100% mentioned fever, nights sweats and cough. Fixed dose combination anti-TB drugs were introduced in 2007. Two categories for drug sensitive TB patients exist, “category 1” for new adults and children, 2HRZE + 4HR and “category II” for retreatment TB patients, 2 SHRZE + 1HRZE + 5HRE in adults and 3HRZE + 5HRE in children.

Treatment guidelines for TB including paediatric TB management were available at all facilities visited and health care workers were knowledgeable about the available treatment regimens. The TB screening tool was displayed at most facilities, 80% of the facilities. Review of treatment registers showed that correct treatment regimens as recommended by National guidelines were used for all patients.

7.7.2 Standardized Treatment with Supervision and Patient Support Weaknesses

In the Africa region, about 8% of TB cases are children. With the high HIV prevalence in the region, this could be an underestimation.

- The NTP had been developing the Paediatric TB treatment guidelines for the past 2 years from 2009 after NTP officers attended training on Paediatric TB diagnosis. This could explain the low proportion of TB cases among children from inadequate diagnosis.
- Direct Observation of treatment was not universally practiced. Patients were given 2 weeks to one month supply of medicines without proper DOT education on to the treatment supporters. There was no evidence to show that the DOT supporters were supervised. The community TB treatment guideliesthat were supposed to be used for the training of community TB treatment supporters were not available.
- Treatment outcomes for TB have remained low over the past years, mainly due to poor case holding strategies, inadequate monitoring and evaluation and inadequate data management capacity at all levels (figure 10).
- A significant number of patients were not evaluated for treatment outcomes in most facilities.
- Some health care workers received refresher training on TB case management.
- No structured community involvement observed during visit and the existing HIV CSO, CBOs were not being used for TB care at the community level.

Figure 10. Treatment Success & Cure Rate, 2000-2009, Zimbabwe
7.8 Drug Management System

The MOHCW in Zimbabwe is guided by the National Drug Policy of 1995, in the medicines management system. Other critical policy documents include the Essential Medicines List of Zimbabwe (EDLIZ 2006), that list and categorizes all drugs registered in Zimbabwe and the Standard Treatment Guidelines (STGs) for the specific diseases.

The National Drugs and Therapeutics Policy Advisory Committee (NDTPAC) of the MOHCW is responsible for the medicines selection. The NDTPAC is responsible for the review and updating of the Essential Medicines List (EML) and the Standard Treatment guidelines in consultation with all stakeholders at all levels of health care.

The Drug Management System (DMS) is coordinated by the Directorate of Pharmaceutical Services (DPS) within the MOHCW. The Directorate works with sub-units within the MOHCW to ensure all components of the drug management cycle are effectively implemented. The table below shows the key stakeholders in the DMS.

Table 2: Stakeholders in the Management of Anti-TB Medicines, WHO NTP Review, 2011

<table>
<thead>
<tr>
<th>Institution</th>
<th>Key role</th>
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<tbody>
<tr>
<td>Directorate of Pharmacy Services (DPS)</td>
<td>Policy development and management:</td>
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<td></td>
<td>Forecasting and quantification through the logistics sub-unit</td>
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<td></td>
<td>Oversight functions over the provincial and district pharmacists</td>
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<td></td>
<td>Logistics Management Information System (LMIS)</td>
</tr>
<tr>
<td>National Drug Therapeutic Policy Advisory Committee (NDTPAC)</td>
<td>Selection of essential medicines for inclusion in the Essential Medicines List (EML)</td>
</tr>
<tr>
<td>National Pharmaceutical Company (NatPharm)</td>
<td>Procurement, Storage and Distribution of all medicines</td>
</tr>
<tr>
<td>Medicines Control Authority of Zimbabwe (MCAZ)</td>
<td>Medicines registration and regulation</td>
</tr>
<tr>
<td></td>
<td>Quality Assurance of medicines</td>
</tr>
<tr>
<td>Service delivery points</td>
<td>Treatment and RDU</td>
</tr>
</tbody>
</table>

Major partners were supporting with anti-TB medicines procurement, ZIP distribution system, funding and electronic Delivery Receipt Voucher (DRV) and included, The United Nations Development Programme (UNDP), United Nations Children’s Fund (UNICEF), Crown Agents, USAID/DELIVER and TheGlobal Fund.

National Pharmaceutical Company

The harsh economic challenges over the past 8-10 years affected the capacity of NatPharm to adequately procure drugs for the country. This created parallel procurement systems of TB, Malaria and HIV and AIDS medicines and other related commodities, reducing the role of NatPharm to a storage and distribution agent for the public sector.

NatPharm still procures medicines for its Strategic Business Unit with very limited procurement activities for the public sector. The NatPharm and Crown Agents Consortium and UNDP procured health products under the GFATM grants, in line with the existing PSM plans. UNICEF procured essential medicines packages (Primary Health Care Package) through funding from DFID and ECHO and the Expanded Support Program (ESP).

The warehousing and delivery of medicines to the Service Delivery Points (SDPs) is integrated at NatPharm although different
supply models were in use. The medicines for malaria, TB and primary health care (PHC) packages were being distributed to SDPs using the Zimbabwe Informed Push (ZIP) system. The district and provincial levels used the pull system from the central level on a monthly basis. The activities for the ZIP system are guided by the Standard Operating Procedures Manual (June 2010). The system uses the TB or Malaria Delivery/Receipt Voucher (DRVs) for controlling and managing the distribution. District teams comprising of 1 District Pharmacy Manager and the NatPharm delivery crew quarterly delivers medicines direct to the health facilities. The quantities of TB and malaria commodities that are delivered at each SDP are based on the past consumptions of the respective commodities.

7.8.1 Drug Management Systems Achievements

There was a TB focal person working within the DPS who coordinated all the procurement, storage and distribution of TB medicines and related medical consumables in collaboration with the NTP manager. The NTP had a Procurement and Logistics Officer (PLO) who coordinates procurements and logistics management for the NTP. A TB medicines procurement and supply management plan was developed after the successful application of the Global Fund Round 8. This plan was being updated for phase 2 Global Fund implementation, 2011 to 2012. Although there were reported anti-TB medicines, stock availability improved for most products mainly FDCs in 2011 as compared to 2010 from an average of 50% stock out at service delivery to an average of 15%. An average of 74% of health workers had been trained on drug stock management and 49% of the health workers reported a history of drug stock out in the six months prior to the NTP review (table 3).

The MOHCW had an established and functional stock management system at all levels of the medicines supply chain. The systems are both manual and electronic. At the service delivery points, manual systems are used in the form of stock cards for stock management. At central level, NatPharm, used the Navision software for warehousing, stock management and distribution. The maximum, minimum, and emergency order point (EOP) and safety stock levels of stock had been established. At SDP the Minimum stock is 3 months, Maximum stock is 6 months, Emergency Order Point is 1 month and safety stock is for 3 months.

Logistics management information systems (LMIS) for the HIV and AIDS, Malaria and TB exists but the LMIS for HIV and AIDS was different from that for Malaria, TB and essential medicines. The computerized LMIS for TB medicines was adequate to monitor, track and report on stock availability at different levels of the supply chain. The Summary Delivery Report (SDR) produced by the LMIS unit, reported on stock on hand, adjustments (expired, damaged), monthly consumption, and quantities delivered for each product to the respective facilities. The system is manual at SDP using the Delivery/Receipt Vouchers, Truck Stock Cards and ZIP Stock Transfer forms to manage the stocks. Results of quarter 1 (Q1) 2011 national stock status report showed overstocking and under stocking of some TB medicines. Storage capacity at the NatPharm was adequate.

Table 3: Anti-TB Medicines Training and History of Stock Out, Review 2011 data

<table>
<thead>
<tr>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number who received training on drug stock management</td>
<td>29</td>
<td>74</td>
<td>9</td>
</tr>
<tr>
<td>History any anti-TB Medicines Stock-outs in the past 6 months</td>
<td>19</td>
<td>49</td>
<td>19</td>
</tr>
<tr>
<td>Have any anti-TB drugs expired in the past 3 months?</td>
<td>9</td>
<td>23</td>
<td>28</td>
</tr>
</tbody>
</table>

There were adequate anti DR-TB medicines at the two management sites, Beatrice Road Infectious Disease Hospital (BRIDH) and Thorngrove Hospital, which were procured through support from the GF.

7.8.2 Drug Management Systems Challenges/Weaknesses

The failure by the NTP to use the trends of notifications, consumption and available stocks and adjust the original procurement plan for the GF Round 8 which had a fixed 40 000 adults and 10 000 children over the 5 year period, resulted in forecasting gap of USD 2, 090, 953 against the USD 1, 316, 271 that was in the PSM Plan. The MOHCW had made a commitment to
procure TB medicines worth US$ 2 090 953, which represent 61% of the country’s requirements. Funds were not available for the Government to honour its commitment affecting availability of RHZE, Ethambutol 400mg, INH 100mg, PZA 500mg, and Rifampicin 150mg. Without urgent action from the MOHCW to mobilize resources, for RHZE procurement, stock outs may be experienced in the short to long-term periods. Accurate and timely submission of TB morbidity data to DPS was not available and procurement and distribution of TB medicines relied on consumption patterns.

Expired TB medicines were in store at the Harare Nat Pharm including INH 100MG that expired June 2011. Nat Pharm procured these TB drugs through funding from the EC, which formed the majority of the expired products. The reason for the expiry was that some unregistered products were procured and there was a delay in distribution awaiting MCAZ approval to distribute to the facilities. The delay in the implementation of the IPT program contributed to the expiry of INH.

The coordination of drug and laboratory commodities at NTP level was inadequate with no evidence of regular meetings between NatPharm, the department of pharmacy services and the NTP. This could be the reason for the observed uneven distribution of drugs to health facilities. The procurement and supply and logistics officer of NTP had not been attending the procurement, supply and logistics subcommittee (PLS) meetings.

Coordination between NTP, DPS, and UNDP on procurement planning and processes was inadequate which may have resulted in the erratic availability of RHZE at all levels. There was no evidence that the NTP reviewed and approved the quantities of medicines procured by UNDP. An example is the procurement of RH in Quarter 5 by UNDP that was already overstocked. Best practice would require that the NTP reviewed the PSM plan in line with support from a technical team from DPS, NatPharm and LSU. The forecasting was done for medicines for treating category 1 and 11 adults and paediatric TB patients.

The Quarter 1 2011 LMIS report showed that there were pile-ups of expired stocks in the country (table 4) with Masvingo province having the most quantities of expired medicines followed by Mashonaland Central province (graph 1). This was mainly because of the Zimbabwe Informed Push (ZIP) system that distributed drugs based on the consumption of anti-TB medicines rather than morbidity data. In March 2011, the NTP requested assistance to find out whether the country was facing a stock out of First Line Anti TB medicines. Although the MOH had a Procurement and supply chain logistics (PSL) committee to provide oversight to the TB Medicines PSM, it was reported that greater attention was given to the PSM of HIV and AIDS medicines and consumables than TB. This could explain the observed anti-TB medicines distribution and stock management challenges.

Table 4. Facilities Reporting Anti TB Medicines Stock Out and Cost of Expired anti-TB Medicines, NTP Review 2011

<table>
<thead>
<tr>
<th>Item description</th>
<th># of Visited SDP</th>
<th># of facilities with Stock Out N</th>
<th>Months stock on hand</th>
<th>Quantity of stock expired/ Tablets</th>
<th>Estimated value/ USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHZE</td>
<td>1317</td>
<td>195 (15)</td>
<td>3</td>
<td>64,835</td>
<td>1880</td>
</tr>
<tr>
<td>RH 150/75mg</td>
<td>1338</td>
<td>222 (17)</td>
<td>7</td>
<td>19,635</td>
<td>412</td>
</tr>
<tr>
<td>RHE</td>
<td>1155</td>
<td>155 (13)</td>
<td>8</td>
<td>61,410</td>
<td>2579</td>
</tr>
<tr>
<td>RHZ 60/30/150mg</td>
<td>1102</td>
<td>152 (14)</td>
<td>18</td>
<td>27,801</td>
<td>473</td>
</tr>
<tr>
<td>RH 60/30 mg</td>
<td>1202</td>
<td>175 (15)</td>
<td>15</td>
<td>51,789</td>
<td>1450</td>
</tr>
<tr>
<td>Streptomycin</td>
<td>1155</td>
<td>190 (16)</td>
<td>9</td>
<td>1,774</td>
<td>1882</td>
</tr>
<tr>
<td>Ethambutol 400mg</td>
<td>82</td>
<td>37 (45)</td>
<td>8</td>
<td>56,500</td>
<td>1489</td>
</tr>
<tr>
<td>Isoniazid 100mg</td>
<td>38</td>
<td>24 (63)</td>
<td>5</td>
<td>23,000</td>
<td>69</td>
</tr>
<tr>
<td>Pyrazinamide 500mg</td>
<td>49</td>
<td>16 (33)</td>
<td>158</td>
<td>17,000</td>
<td>170</td>
</tr>
<tr>
<td>Rifampicin 150mg</td>
<td>71</td>
<td>5 (7)</td>
<td>8</td>
<td>1,000</td>
<td>21</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 406</td>
</tr>
</tbody>
</table>
In summary, the major TB medicines supply chain management weaknesses were:

a. Inadequate coordination between NTP, DPS, and UNDP on procurement planning and processes
b. Distribution of medicines relied on past consumption not linked to morbidity data resulting in some SDP reporting stock outs, expiries and over-stocking in some cases (RH and RHZE).
c. Inadequate GOZ funding to fully cover estimated national medicines requirements

d. Failure of the NTP to adjust the initial R8 PSM to include annual increase of TB patients resulting in shortage of TB medicines

e. Poor management of drug supplies translated in mid-2011 in a gap of more than US$ 2 million for TB medicines.

7.9 Recording, Reporting, Monitoring and Evaluation

7.9.1 Recording, Reporting, Monitoring and Evaluation Achievements

A monitoring and evaluation focal person was available at National level. A NTP partner was providing monitoring and evaluation technical support to the NTP. Data verification at selected partner support districts was being done. The District TB Coordinator at the District health office plays a key role in the recording, reporting and preparing monitoring and evaluation reports for the NTP. The district TB coordinator follows up all facilities for TB data, prepares and submits quarterly summary reports to the provincial TB coordinator. Tools completed at the district level include the treatment outcomes form, notifications form, programme management form and drug assessment forms. The provincial TB coordinator analyses district data, collate, and aggregate to produce a provincial report for submission to the MOHCW, AIDS and TB Unit, every quarter. The district also ensures that primary data collection tools are available at all levels within the district (figure 11).

There were standardized tools for data collection and reporting being used at all levels. Besides the TB coordinators, there were TB focal persons (nurses) who ensured monitoring and evaluation, recording and reporting at health facility, district and provincial levels. The mechanism to analyse routinely collected TB data was available within the NTP and decentralized to all sites though in line with the latest WHO recommendations on data surveillance. The review noted that there was a clear description of what information is generated from each level and which forms were used at the different levels of care (figure 11). The weakest link seemed to be at national level.
A support and supervisory checklist was observed at the National level but the evidence of its use was not available.

7.9.2 Recording, Reporting, Monitoring and Evaluation Challenges/Weaknesses

Aggregated and analysed data at national were not readily available for review. Quarterly summary return forms were filed as paper copies in files. There were no annual reports indicating that routinely collected TB data was being analysed and used for improving programme performance at national level. However, few districts had summary quarterly and annual reports. Support and supervision at all levels was inadequate as evidenced by poor data quality observed in most of the districts and absence of support and supervision reports. Although a support and supervisory checklist was available, the frequency, format and content of the support and supervision could not be assessed without supervisory reports. The budget for TB programme activities was centralized affecting implementation at provincial and district level. Even the City of Harare does not have a plan for TB.

There were no minutes of the NTP meetings at Central level to assess whether Programme specific programme activity plans and routinely collected TB data were discussed and used for planning. There was inadequate evidence to indicate that routinely collected TB data was being utilized at all levels (no notification summaries were kept at the facilities, and this applies to Harare City). Verification of completeness or consistency of data was therefore difficult not to say impossible. There was inconsistent data between suspects, laboratory and DOTS registers. The NTP had no mechanism to carry out routine TB data audits. Incompleteness of data and poor recording practices were observed in some facilities significantly affecting the quality of information reported at national and international levels. Similarly, data quality assessments had not been routinely conducted.

The monitoring and evaluation systems for TB and HIV were not linked at national level. However, at implementation level, there was significant integration of TB and HIV surveillance activities. The TB surveillance system in Zimbabwe was found to be paper based and was not fully integrated into the district health information system of the MOHCW.
Level of reporting

Reporting tools and recording tools

1. Tuberculosis Quarterly Notification and treatment outcome summaries
2. DOT report form
3. Tuberculosis yearly report on programme management

1. District Tuberculosis register
2. Tuberculosis Quarterly Notification summary
3. Quarterly Treatment outcome summaries
4. DOT report form
5. Tuberculosis yearly report on programme management
6. Notice of transfer
7. Treatment Outcome Request form

1. Suspect registers
2. Sputum laboratory request form
3. Lab register
4. Tuberculosis Notification form
5. Health facility TB register
6. Treatment Card
7. Contact tracing form
8. DOT register
9. TB Quarterly Notification Summary
10. TB treatment outcome summary
11. DOT report form
12. Notice of transfer
13. Treatment Outcome request form

1. Patient treatment card

Source: NTP Presentations, Review Orientation
7.10 Collaborative TB/HIV Activities

7.10.1 Collaborative TB/HIV Activities Achievements

Zimbabwe adopted the 12 point WHO interim policy of collaborative TB/HIV in 2006/7 which has guided the implementation of TB/HIV collaborative activities in the country. A policy document on TB and HIV co-management was available and widely distributed. The 2010 – 2014 strategic objective on TB/HIV implementation aims to enhance the coordination and implementation of collaborative TB/HIV activities in Zimbabwe through providing anti-retroviral therapy in TB/HIV co-infected patients and routinely screening HIV positive people for TB. Testing for HIV among TB patients improved from 62% in 2009 to 82% in 2010. A best practice pilot project of nurse led initiation of antiretroviral therapy among TB patients in Harare City was ongoing.

There were revised TB registers to capture data on collaborative TB/HIV activities and training materials on collaborative TB/HIV activities had been developed and currently incorporated as a module in the TB case management training. Healthcare workers from most facilities reported that joint TB/HIV planning and service provisions were currently on-going as evidenced by high proportion of TB and HIV co-infected patients receiving HIV testing and counselling as well as Cotrimoxazole Preventive Therapy (CPT) in line with national TB guidelines. Some degree of integration at service delivery level was observed.

7.10.2 Major Collaborative Activities, Challenges/Weaknesses

The implementation of the three Is' - Infection Control, Isoniazid Preventive Therapy and Intensive Case Finding were still below the minimum required standard. Infection Control assessment had not been done in most facilities and implementation at facility level was still generic despite the fact that the NTP has attended the WHO AFRO Regional TB Infection Control in 2010. Also despite the improved human resources base of qualified health professionals at national level, there was no full time TB/HIV focal person to coordinate and take lead in collaborative TB and HIV activities. At programmatic, provincial and district levels, joint TB/HIV planning, monitoring and evaluation, and support supervision were limited despite the two programmes being coordinated under the same directorate. Collaborative TB/HIV committees were not active in most facilities.

Whilst HIV testing and counselling was part of the treatment algorithm for TB patients, initiation of antiretroviral drugs among HIV-TB co-infected patients remained below the targets with only 30% and 34% of the TB/HIV co-infected receiving ART in 2009 and 2010 respectively. Testing and counselling for HIV among TB patients was good although below the national target of 100%. Tuberculosis and HIV clinics were not integrated in most instances.

Zimbabwe had not started implementing Isoniazid Preventive Therapy (IPT) in HIV positive adults. In children less than 5 years, IPT implementation was ad-hoc with most facilities out of stock of the paediatric INH formulations. This is certainly an area for improvement. Specific TB infection control plans were not available in most facilities.

Monitoring and evaluation of TB/HIV activities including tracking the outcomes of those co-infected with TB/HIV was inadequate. Inter-linkages between TB and HIV data recording tools were limited.

7.11 MDR-TB, Infection Control and Laboratory Services

As many other countries in the Region Zimbabwe attended, in 2010 and 2011, regional workshops on the programmatic management of DR TB including surveillance.

7.11.1 MDR-TB, Infection Control and Laboratory Services Achievements

7.11.1.1 Management of Drug Resistant TB

The programmatic management of drug resistant TB (PMDT) was still in its infancy in Zimbabwe at the time of the review. Draft MDR-TB Operational Plan and treatment guidelines were underdevelopment. The management of drug resistant TB patients is through an expert committee from the Northern and Southern part of the country. City of Harare and City of Bulawayo anchor the MDR-TB expert committee. A Physician, Laboratory Scientist, Pharmacist, Social worker and mental health specialist are members of the team. The regional technical teams are responsible for deciding when to start a confirmed MDR-TB patient on treatment.
Two facilities, Thorngroove and Wilkins Hospitals, were dedicated to manage MDR-TB in Zimbabwe. A standardized drug regimen of Pyrazinamide, Kanamycin, Levofloxacin, Cycloserine and Ethionamide is used in Zimbabwe. Mono and poly resistant TB patients were managed based on drug sensitivity results. Treatment of patients is ambulatory for a full minimum period of 24 months or until the patient converts to negative culture.

There were 56 confirmed MDR-TB patients in Zimbabwe but only, 23 from the Northern and 15 from the Southern region were on treatment. Multidrug resistant TB drugs were available for 140 patientsthrough a Green Light Committee grant, GoZ and partners.

### 7.11.1.2 Laboratory Services and MDR-TB

The National TB Reference Laboratory in Bulawayo had been dysfunctional for almost 4 years, but resumed normal service in mid-2011 after international training of 3 key laboratory personnel in culture and drug sensitivity testing (DST) and on the spot support work of CDC team for 3 months. Diagnosis of drug resistant TB is through culture and drug sensitivity testing (DST). Two laboratories were performing culture and first line DST, National TB Reference Laboratory (NTRL) in Bulawayo and National Microbiology Reference Laboratory (NMRL) in Harare. External quality assurance and proficiency testing was through a supranational reference laboratory in Antwerp, Belgium, but as earlier mentioned the MRC in South Africa was performing the same role. The NTP, with support from the partners, was in the process of developing a drug resistant survey protocol.

### 7.11.2 Multi Drug Resistant TB, Infection Control and Laboratory Services, Challenges/Weaknesses

The effective management of drug-resistant tuberculosis requires input from different components or units of the National TB Control Programme. These components include case detection, treatment, prevention, surveillance, and monitoring and evaluation of the programme’s performance. Collectively, such activities are referred to as the “programmatic management of drug-resistant tuberculosis” (PMDT).

In spite of Bulawayo being the National Reference, the referral level between the two laboratories was not clearly established and there was no hierarchical relationship between these two laboratories. This had resulted in confusion of where to send sputum specimens for local quality assurance and which laboratory was responsible for the communication with the Supra National Reference Laboratory (SNRL).

There were no country specific drug resistant diagnostic algorithms. Currently no instructions exist on what type of TB patients has access to culture or DST. Newer technology, Gene Xpert MTB/Rif was introduced in the country through support from partners. The absence of a proper diagnostic algorithm for MDR-TB diagnosis and implementation plan will affect the rollout of the Gene Xpert MTB/Rif. Drug sensitivity testing for second line drugs was not available. The sputum specimen for culture transportation pathway to NRLs and results from NRL was not well defined and this had affected the turn-around times for culture results, with some facilities reporting turnaround times of more than 6 months. Currently, the NTP has no capacity to perform second line DST and there are no plans to expand the laboratory network to be able to improve access and ability to perform second line DST. But strengthening of EQA remains the top priority.

Smooth implementation of culture and drug sensitivity testing was affected by inadequate procurement of laboratory reagents. Surveillance system for drug resistant TB was not adequate. Drug resistant TB treatment guidelines were still under development and there was no framework for patients to access culture and DST. Infection control plans were not available and implementation of infection control was not practiced according to international standards.

### 7.12 Public-Private Mix

#### 7.12.1 Public and Private Mix Achievements

Treatment of TB patients is primarily through public health facilities. Private medical practitioners and hospitals only provide diagnosis and then refer to public institutions for treatment and follow up. The referral mechanism between private sector and public sector was found to be lacking normative guidance.

The NTP has managed to attract significant funding, technical and implementing partners. The major funding partners are the USAID through TB Care II and the GFATM. Implementing partners include MSF-Holland and Spain, RAPT, SAFAIDS and PSI.
Médecins Sans Frontières are linked to clinical management providing diagnosis, treatment and follow of TB patients whilst SAFAIDS and PSI support with development of IEC materials and dissemination of TB and HIV information.

7.12.2 Public Private Mix Challenges

The burden of TB and HIV has overwhelmed the Ministry of Health and NTP especially coupled with the reduced funding. There has not been any intentional plan to engage the private medical practitioners to initiate treatment and monitor TB patients. Referral from public to private care providers was not practice in Zimbabwe. There was no formal public/private partnership policy document. The PPM framework was still in its early stages of development: private sector participation in TB prevention and control was still limited to the diagnosis and referral to public sector for treatment follow up except large private hospitals where initiation of anti-TB treatment was possible. The referral mechanism of TB patients from private to public was not documented, but was reported to be working well.

7.13 Advocacy, Communication and Social Mobilization

The disease burden required that the health system develop innovative strategies for health education, especially in High Burden Countries (HBC) with high levels of transmission.

7.13.1 Advocacy, Communication and Social Mobilization Achievements

Health education was provided as group sessions in the waiting areas of health facilities. Patient knowledge on TB was satisfactory. The NTP had adequate printed and distributed posters with both TB and TB/HIV messages although some facilities were not displaying IEC materials.

The NTP religiously organized and coordinated the World TB Day commemorations annually. Partners integrated social marketing of TB, HIV and AIDS using Radio spots, newspaper adverts, billboards, interpersonal communication, road shows, training of journalists on TB/HIV reporting and community sensitization. One partner provided rehabilitation and prevention of TB patients through skills retraining and supportive care.

7.13.2 Advocacy, Communication and Social Mobilization Weakness

There was limited involvement in TB of non-governmental organizations (NGOs) and community based organizations (CBOs) who were already working in HIV and AIDS prevention and care. Community based organizations have a potential to improve case holding. The achievements of the HIV and AIDS’ home based care programme have not been exploited to benefit TB patients. Although most of the TB patients in Zimbabwe are managed in the community, there are no Community TB Care guidelines. The implementation of the ACSM activities was not in line with the strategic plan 2010-2014 objectives. ACSM activities were not planned based on programme indicators; it was hence difficult to measure impact and outputs. Although there was evidence of commemoration of the World TB Day annual routine, there was no evidence of targeted ACSM activities at national level, provinces and districts towards specific groups.

7.13.3 Advocacy, Communication and Social Mobilization Recommendations

a) The NTP should explore the potential of utilizing existing HIV CBOs and CSOs in TB implementation at community level and improve treatment outcomes
b) The NTP should develop an evidence based national ACSM strategy guidelines and an operational plan
c) The NTP should collaborate with the Health Education department and relevant partners to review all the existing IEC materials in the field and improve on them to focus on general public, community and patient awareness on early symptoms / sign and curability of TB.
d) The NTP is advised to develop Community TB Care guidelines to facilitate training of treatment supporters and participation of other partners already working in the community
7.14 Operational Research

This is one of the components of the Stop TB Strategy.

7.14.1 Operational Research Achievements

Several Masters of Medicine in Public Health (MPH) carried out operational research on TB surveillance and outcome evaluations but in a free not coordinated process. There was an active process of finalizing the drug resistant TB survey. A TB research agenda was not developed during the time of the review but prospects for its development were under consideration.

7.14.2 Operational Research Weaknesses

Studies that have been conducted had not been used to review policy. A TB research agenda document to prioritize areas that require further studies was not available. There was no inventory of what studies had been conducted and what were the findings. Operational research was mainly left to partners. In summary, although research activities were on-going, the majority were not actively involving the NTP, resulting in poor capacity building in this essential domain, and somehow removing ownership of the findings from the NTP. Findings from studies conducted by partners had not been used to inform policy.

8. Discussion

The implementation of TB prevention and control activities in Zimbabwe were affected by the progressive decline in health financing from a decade of economic challenges. There are similarities between the 2003 external review and the 2011 review, notably, that diagnosis of TB was through direct smear microscopy and that the short course treatment regimen was adhered to for all patients. Other similar positive findings from the 2003 review were that standardized TB surveillance tools were being used, the smooth referral mechanism from private to public sector and IEC materials were widely available and in use. The 2011 External Review of the National TB Programme is the first conducted since the launching of the Stop TB Strategy.

Among major weaknesses identified in the 2011 external review similar to the 2003 review was the serious shortage of human resources when the TB burden was getting worse; the limited NTBRL capacity to perform culture and DST for all retreatment pulmonary TB patients, defaulter tracing, skewed distribution of anti-TB drugs and minimal support and supervision.

Significant progress has been made in the financing of health services including TB and HIV and AIDS, with the successful application to the GF and mobilization of funding from international partners operating in the country. Drug supply improved through GF and other development partners, however distribution is a problem. Draft MDR-TB treatment guidelines are expected to be finalized soon and go for printing and a process to develop a human resource plan for TB/HIV prevention and control is in progress with support of partners. Provincial and district TB coordinators were in post in the majority of the provinces and districts visited. In-service training on TB care is now being provided with support from a partner.

Most manuals were revised taking into account new evidence on TB prevention and control. In Harare improvement in the diagnosis of TB by DSM was achieved through the training of 50 microscopists and decentralization of sputum collection but the gap is still significant. The critical shortage of microscopists in the country and the erratic EQA need urgent attention to improve diagnosis and follow up of treatment. The employment of laboratory focal persons within the AIDS and TB Unit to support with logistics and supply management for laboratory consumables is showing return. The establishment of a second national reference laboratory in Harare to complement the NTRL on culture and DST is an important step but needs to be regulated.

Expertise of the Central Unit of the NTP to plan and coordinate implementation of TB Control activities is necessary and efforts should be made in this direction;

- Roles and responsibilities, lines of accountability and job descriptions clearly specifying roles and scope of responsibility should be considered as priority to be addressed.
- The standard and role of supervision also need attention.
- TB Surveillance and Drug Management issues are other areas of concern.
TB Coordinators is an issue the MOHCW/NTP has to urgently address: TB Coordinators have a lower background than the professionals they are meant to supervise. In addition, they have no clinical background to make them conversant with TB case management and/or master TB epidemiology. Should the scope of their assigned tasks change, be redefined and they just be involved in data collection/reporting?

The 2011 external review gives the best opportunity for MOHCW to address the gaps identified, in particular the management of the Programme, programme implementation and coordination with partners. It is expected that it will also contribute to improve the indicators of this HBC.

9. Recommendations

9.1 SUMMARY OF RECOMMENDATIONS

9.1.1 CRITICAL RECOMMENDATIONS

The review recommended the following critical recommendations that require urgent attention.

TO THE MINISTRY OF HEALTH AND CHILD WELFARE
1. The MOHCW to mobilize resources to finance the medicines gap and prevent stock outs for RHZE
2. The MOHCW to approve a functional organogram to ensure implementation and coordination of the Stop TB Strategy in the country, and clearly establishes lines of accountability
3. The MOHCW to ensure recruitment of (already trained) microscopists fill the gaps observed

I.2 TO THE NATIONAL TB PROGRAMME

1. The NTP manager to urgently ensure that a functional organogram is in place to allow adequate implementation and coordination of DOTS, with clear lines of accountability.
2. The NTP Manager to revise the job descriptions of officers at national level
3. Address the role and responsibility of the TB Coordinators and redefine the scope of their activities
4. The NTP Manager to revisit the working relations with MOHCW stakeholders to ensure smooth implementation of the Stop TB Strategy, in particular with DPS, NatPharm and Laboratory Department.
5. Establish a functional TB Partnership forum, with discussed and harmonized roles and responsibilities also contributing to effective use of resources

9.1.2 OTHER RECOMMENDATIONS

A. To the Ministry of Health and Child Welfare

1. The Director, AIDS and TB Unit to ensure close collaboration between the NTP and HIV programmes translated into a joint plan so that TB patients have early access to ARVs and that there is universal screening for TB among people living with HIV
2. Revisit role of provincial and district MO in coordination and supervision of TB Control activities in their geographical areas

B. To the National TB Programme

The NTP manager to:

1. Monitor and evaluate programme performance through development of annual plans, analysis, use and dissemination of routinely collected programme data.
2. Strengthen the Monitoring and Evaluation System in line with the WHO revised guidelines for TB Surveillance.
4. Use evidence based coordination for the forecasting, procurement and distribution of anti-TB medicines, and preventing high levels of stock outs and/or overstocking.

6. Strengthen working collaboration with UNDP, the PR.

7. Continue to decentralize TB sputum smear microscopy testing using microscopists

8. Jointly with the Laboratory Department, develop a plan of laboratory networks and define diagnostic algorithm for drug resistant TB

9. Improve the sputum specimen pathway for bacteriology and culture to reduce the turn- around time of results

10. Establish a plan to introduce new technologies including of Xpert/RITF and LPA with a clear framework for ensuring capacity to implement it within a defined diagnostic algorithm;

11. Accelerate finalization of unfinished plans and Guidelines, namely of Drug Resistant TB, Infection Control and PPM

12. To update the supervision guide and tools

13. To develop and use updated implementation plans based on the available strategic plan in collaboration with provinces, districts and partners

14. Finalize the DRS protocol and conduct the activity

15. Continue the development of the GF proposal

C. To Partners

1. Partners are recommended to assist the cost of the current strategic plan.

2. To assist the NTP to develop and use updated implementation plans based on the available strategic plan in collaboration with provinces, districts and partners

3. To support the NTP to update the supervision guide and tools

4. Support the development of the GF proposal

D. To WHO

1. Provide support to strengthen the Central Unit of the NTP

2. Jointly with partners involved in TB Control in Zimbabwe, assist the NTP to move forward the TB agenda in the country, namely assisting in the finalization of pending guidelines

3. Provide Technical Assistance to the development of the GF proposal

4. Support the holding of the TB expert committee meeting every quarter
9.2 DETAILED RECOMMENDATIONS PER STOP TB STRATEGIC AREA

9.2.1 DOTS Implementation

Political Commitment Recommendations

1. The MOHCW to continue mobilizing resources for TB control
2. The AIDS and TB Unit to take opportunity of increased funding to the HIV and AIDS programme and integrate provision of TB services.
3. The NTP to advocate for decentralization of TB funds to lower levels

Quality Assured TB Diagnosis Using Sputum Smear Microscopy Recommendations

4. The NTP to continue decentralizing sputum smear microscopy diagnostic centres across the province to clinic level (Ouagadougou Declaration of Ministers of Health) and also strengthen the existing outreach sputum collection mechanism:
   • Discuss training and recruitment of Microscopists with HR Department
5. The NTP is recommended to introduce, in addition to the ZINQAP scheme, an internal quality assurance and control for TB microscopy to complement the ZINQAP scheme
6. The NTP in collaboration with the Laboratory Directorate to develop and disseminate a standard national TB Laboratory manual
7. The NTP to develop an algorithm for TB diagnosis and universal culture and DST for all high risk patient groups
8. The NTP to include laboratory and pharmacy personnel in TB case management training courses
9. The NTP jointly with the MOHCW laboratory services to develop a routine strategy for regular servicing of microscopes and TB safety hoods in all laboratories
10. The NTP to consider introducing LED AFB smear microscopy technology in order to increase case detection at local level, in particular in the busiest facilities.
11. The NTP to introduce a mechanism for timely dissemination of sputum culture and DST results
12. The NTP to ensure that a plan for expansion of the Laboratory network for TB is available including the roll out plan for new technologies (LPA and Gene Xpert), also addressing capacity building for its use.
13. Joint with Partners and the Laboratory department, discuss the best location for already purchased Gene Xpert machines as part of the roll out plan for new technologies.

Standard Treatment with Supervision and patient Support Major Recommendations

14. Strengthen DOT
   • Train the health workers on DOT
   • In collaboration with partners, develop training materials and mechanisms for the continuous training of treatment supporters
   • Conduct regular support and supervision at all levels
   • Develop National Community DOTS guidelines and operational plan in line with global TB CTBC policies
15. Assign clinical staff to overlook treatment, in particular for smear negative, EPT and paediatric TB cases
16. The NTP is recommended to develop and disseminate paediatric TB treatment guidelines
17. NTP in collaboration with the ART programme should map out existing HIV CSO, CBOs and NGOs and create opportunities that could be used for supporting TB care at community level.

**Drug Management Systems Recommendations**

18. The NTP to should strengthen its role in forecasting, quantification and procurement of anti-TB medicines through regularly participating in procurement, logistics and supply chain meetings

19. NTP manager should work with DPS and NatPharm to review the ZIP system and develop a distribution model that is based on number of patients at Service Delivery Points

20. NTP manager should collaborate with UNDP to review and approve the national TB medicines requirements prior to procurements

21. NTP to ensure TB commodities are always on the agenda of the PLS meetings

22. MOHCW is strongly recommended to mobilize resources to finance the TB medicines gap

23. The NTP recommended to improve collaboration between laboratory and NatPharm to improve the sputum specimen pathway for bacteriology, culture and drug logistic supply management system

**Monitoring and Evaluation (Recording and Reporting)**

24. The NTP is recommended to develop a system for routine data quality audits at all levels

25. In collaboration with partners, there is need for capacity building within the NTP to facilitate data analysis and use of routinely collected TB data at all levels

26. NTP should conduct regular district TB review meetings to measure the performance of the TB programme

27. The NTP is strongly recommended to conduct regular supportive supervision to lower level structures

28. e) NTP should develop mechanisms for feedback of analyzed routinely collected TB programme data to provinces and districts.

9.2.3 Clear data as per recommendations of the Regional Workshop on Surveillance in high TB-burden African countries, Nov-Dec 2010 Seminar.

**9.2.2 Collaborative TB and HIV Activities, Recommendations**

1. The Director, AIDS and TB Unit to ensure close collaboration between the NTP and HIV programme for an early access of TB patients to ARVs

2. The HIV programme to improve on the universal screening for TB among people living with HIV

3. The Director, AIDS and TB Unit to enhance TB/HIV coordination through rationalizing available human resources, defining their roles and responsibilities in the implementation of national TB/HIV policy

4. The Director, AIDS and TB Unit to facilitate the speedy recruitment of the TB/HIV focal person at national level and expand terms of references of the existing provincial/district TB/HIV committees for an improved TB and HIV collaborative activities lower levels

5. The ART Programme manager to develop mechanisms for improved access to ART for TB and HIV co-infected patients according to the WHO 2010 ART guidelines
6. The Director, AIDS and TB Unit to use the lessons learnt from the Harare City Council’s nurse led ART initiation experiences to roll out ART and improve access to ART among TB and HIV co-infected patients.

7. The Director, AIDS and TB Unit to integrate monitoring and evaluation systems of the TB and HIV programmes following development of harmonized indicators.

**9.2.3 MDR-TB Management, Infection Control and Laboratory Services Recommendations**

1. The NTP is advised to finalize the programmatic management of MDR-TB guidelines including the implementation plan.
2. The NTP is advised to carry out an MDR-TB drug resistance survey to measure the level of drug resistance in Zimbabwe.
3. Improve the transportation mechanism of sputum samples from peripheral laboratory to the NLR for C & DST and back to peripheral laboratory.
4. The NTP is strongly recommended to develop an effective sputum specimen and culture and DST results transportation mechanism similar to the system used for drug sensitive TB sputum transport system.
5. The NTRL to provide results of sputum culture and DST to referring facilities timeously to encourage improved drug resistant detection and enrolment on treatment.
6. The NTP to validate the use of rapid drug resistant diagnostic techniques in collaboration with other implementation partners and develop rollout plan of the techniques.
7. The NTP advised to improve MDR-TB case detection.
8. The NTP is advised to urgently develop and implement the DR-TB surveillance system.
9. The NTP to conduct regular support and supervisory visits to facilities managing DR-TB.
10. The NTP to work jointly with health facilities/ households managing drug resistant TB to implement infection control measures (based on TB IC plans).
11. The NTP to include drug resistant TB training for health care workers in the current case management training course.
12. The NTP to work jointly with the laboratory Department to establish hierarchy in the references labs, resulting the Bulawayo NTRL being the only national reference laboratory also providing quality assurance to the NMRL.

**9.2.4 Public Private Mix Recommendations**

1. The NTP is advised to start the process of engaging private medical providers to provide TB treatment, care and support.

**9.2.5 Operational Research Recommendations**

1. NTP should develop a research agenda and provide a list of priority research topics to guide researchers.
2. Train and mentor health care workers to conduct operational research.

**10. The Way Forward**

Summary Suggestions at a glance for TB Program Strengthening

1. Capacity building of central level management to ensure timely decision and decentralization of decision making introduction of changes in the management style of the Central unit including delegation of authority to allow a collegial management of the Stop TB Strategy in the country.
2. Revision of job descriptions of officers at the central unit to ensure clear roles and responsibilities, and accountabilities.
3. Focal Point to take full responsibility and ownership of assigned tasks.
4. NTP to be closely involved in TB-related decisions and activities of laboratory and pharmacy services.
5. Coordination mechanisms strengthened through technical functioning working groups or thematic sub committees, that ensure joint planning, implementation and progress reviews should be considered

6. Programme performance and treatment outcomes to be improved

7. Urgently strengthen Monitoring and Evaluation
   - Ensure quality and consistency of data
   - Improve systematic supportive supervision to ensure recording and reporting is of good quality
   - Improve on use of routinely collected data for planning and decision making

8. Costing of the strategic plan must be made immediately

9. The TB programme needs to engage in advocacy in order to increase the limited number of partners supporting TB control

10. Performance appraisal for TB health workers at national level should be established.

11. References

1. WHO Global TB Report, 2010


3. Ibid

4. Ministry of Finance and Economic Development


7. Ministry of Finance. Medium Term Plan year?


