External Review of the National TB Programme
Republic of Fiji

21st November - 2nd December 2011
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### Abbreviations and Acronyms

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<th>Full Form</th>
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<tr>
<td>ACSM</td>
<td>Advocacy, Communication and Social Mobilization</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired immunodeficiency syndrome</td>
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<tr>
<td>ART</td>
<td>Antiretroviral therapy</td>
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<tr>
<td>CCM</td>
<td>Country Coordinating Mechanism</td>
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<tr>
<td>CPT</td>
<td>Co-trimoxazole preventive therapy</td>
</tr>
<tr>
<td>CWMH</td>
<td>Colonial War Memorial Hospital</td>
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<tr>
<td>CXR</td>
<td>Chest x-ray</td>
</tr>
<tr>
<td>DHS</td>
<td>Divisional Health Services</td>
</tr>
<tr>
<td>DMO</td>
<td>Divisional Medical Officer</td>
</tr>
<tr>
<td>DOT</td>
<td>Directly observed treatment</td>
</tr>
<tr>
<td>DOTS</td>
<td>Directly observed treatment, short course (an internationally recommended strategy for TB control)</td>
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<tr>
<td>DR</td>
<td>Drug resistance</td>
</tr>
<tr>
<td>DSPH</td>
<td>Deputy Secretary of Public Health</td>
</tr>
<tr>
<td>DST</td>
<td>Drug susceptibility testing</td>
</tr>
<tr>
<td>DTCO</td>
<td>Divisional TB Control Officer</td>
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<tr>
<td>EQA</td>
<td>External Quality Assurance</td>
</tr>
<tr>
<td>FBO</td>
<td>Faith Based Organization</td>
</tr>
<tr>
<td>FDCs</td>
<td>Fixed Drug Combinations</td>
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<tr>
<td>FRCS</td>
<td>Fijian Red Cross Society</td>
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<tr>
<td>FNC</td>
<td>Fijian Nursing Association</td>
</tr>
<tr>
<td>GF/GFATM</td>
<td>Global Fund (against AIDS, TB and Malaria)</td>
</tr>
<tr>
<td>GoF</td>
<td>Government of Fiji</td>
</tr>
<tr>
<td>HIU</td>
<td>Health Information Unit</td>
</tr>
<tr>
<td>HC</td>
<td>Health Centre</td>
</tr>
<tr>
<td>HIV</td>
<td>Human immunodeficiency virus</td>
</tr>
<tr>
<td>IEC</td>
<td>Information, education and communication</td>
</tr>
<tr>
<td>INH</td>
<td>Isoniazid</td>
</tr>
<tr>
<td>IPT</td>
<td>Isoniazid preventive therapy</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>M&amp;E</td>
<td>Monitoring and evaluation</td>
</tr>
<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MDR-TB</td>
<td>Multidrug-resistant tuberculosis (resistance to at least isoniazid and rifampicin)</td>
</tr>
<tr>
<td>MoH</td>
<td>Ministry of Health</td>
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<tr>
<td>MTB</td>
<td>Mycobacterium Tuberculosis</td>
</tr>
<tr>
<td>NS</td>
<td>Nursing Station</td>
</tr>
<tr>
<td>NGO</td>
<td>Nongovernmental organization</td>
</tr>
<tr>
<td>NRL</td>
<td>National Reference Laboratory</td>
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<tr>
<td>NTP</td>
<td>National TB Programme</td>
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<tr>
<td>OPD</td>
<td>Out Patients Department</td>
</tr>
<tr>
<td>OR</td>
<td>Operational Research</td>
</tr>
<tr>
<td>PAL</td>
<td>Practical Approach to Lung Health</td>
</tr>
<tr>
<td>PATIS</td>
<td>Patient Information System</td>
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</tbody>
</table>
PHIS  Public Health Information System
PICT  Provider Initiated HIV Counselling and Testing
PJTH  PJ Twomey Hospital
PLWHA  People living with HIV and AIDS
PPM  Public Private Mix
PSM  Procurement and Supply Management
QMRL  Queensland Mycobacterium Reference Laboratory
SDH  Sub-divisional Hospitals
SOP  Standard Operating Procedures
STI  Sexually transmitted infections
SSF  Single Stream of Funding
TB  Tuberculosis
TWG  Technical Working Group
PICT  Provider Initiated counselling and testing
WHO  World Health Organization
UNAIDS  Joint United Nations Programme on HIV/AIDS
UNDP  United Nations Development Programme
Acknowledgements

The review was fully enabled and facilitated by the administrative leadership and programmatic support of the Acting Permanent Secretary of Health and the Deputy Secretary of Public Health, Dr Joe Koroivueta.

The Grant Manager, Ms Vasiti Nawadra-Taylor with the support from the staff of the Grant Management Unit/Principal Recipient, coordinated the entire review process efficiently and effectively, which is highly appreciated by the review team.

Ms Maca Colata of the Grant Management Unit provided necessary administrative support for the review. The review team thanks her for facilitating the review process.

Mr Shakti Gaunder, Mr Nitish Narayan, Mrs Asenaca Mataika, Dr Joel Trazo, Ms Priya Narayan and Ms Mary Kama provided administrative and programmatic support for the review; their contribution is highly appreciated.

The team also acknowledges the support of the National TB Programme Manager, Dr Iobi Batio, the Divisional TB Control Officers and Coordinators, Dr Frank Underwood, Dr Apisalome Nakolinivalu, and whole NTP staff in facilitating the preparation and implementation of the review.

The team also thanks MOH staff of the HIV and Non Communicable Disease Health Programmes, Health Information Unit, the Procurement Unit, the Fiji Pharmaceutical and Biomedical Services, PJ Twomey CWM, Lautoka and Lambasa Hospitals, and other sub-divisional hospitals and health centers for their contribution to the whole review process.

Various governmental and non-governmental stakeholders, in particular the Fiji Red Cross Society, Fiji Nurses Association and members of the Country Coordinating Mechanism, participated in and made valuable contributions to the review process and are hereby recognized.

Lastly, the team recognises with the greatest gratitude, the cooperation of health staff at various levels of the health system, TB patients and community groups for their cooperation to the review process.

This report was written by Dr Kalpesh Rahevar, TB Programme Management consultant, Mrs Michelle Munro, ACSM consultant, Mr Levon Hovsepyan, PSM consultant and Dr Linh Nguyen, TB Medical Officer from WHO South Pacific Islands.
Executive Summary

Fiji is a low TB burden country with incidence of all tuberculosis (TB) cases estimated as 27 (21-33) per 100,000 population in 2010. The notification rate in that year of all TB cases was 23 per 100,000. The last comprehensive external review of the National TB Programme was conducted in May 2008.

With a Round 8/9 Single Stream Funding (SSF) grant from the Global Fund to Fight AIDS Malaria and Tuberculosis (GF/GFATM) Fiji has been implementing activities for TB and Health Systems Strengthening (HSS) since April 2010. To assess progress in achieving the goals and objectives of the National Tuberculosis Programme (NTP), especially implementation of recommendations of 2008 review and GF R8/9 supported activities; the Ministry of Health requested an external review of the National TB Programme in Fiji.

The outcomes of this review should be useful for the Ministry of Health to develop appropriate strategies and plans to improve TB control and reduce the burden of TB in Fiji. The information from the review would also be useful for the development of the work plan for Phase II of Fiji’s Global Fund SSF grant.

The review was carried out from 21st Nov to 2nd Dec 2011, by a team of 4 external experts, respectively on TB Programme Management, Advocacy, Communication and Social Mobilization, Procurement and Supply Management and the TB Medical Officer from WHO South Pacific Islands. The team used following methodology to review the National TB Programme in Fiji.

- document review of all available TB programme management, PSM and ACSM related documents including strategies, policies, standard operating procedures, guidelines, proposals and training materials;
- examination of TB, PSM and ACSM records and data for quality and accuracy; and
- semi-structured interviews of the staff, patients and communities at each level of the health system

Achievements since the 2008 review

1. The National TB Control programme since its establishment, has been funded by the Ministry of Health. In addition to this, the MoH received USD 5,528,193 from the Global Fund in April 2010 to implement Phase I (April 2010 – June 2012) of the R8/9 grant for TB and Health System Strengthening.


3. There has been a constant decline in case notification from 31 per 100,000 population in 1990 to 13 per 100,000 population in 2008. However, there is an increasing trend observed in notification from 17 per 100,000 in 2009 to 23 per 100,000 population in 2010.
4. The National Reference Laboratory in Suva has been refurbished recently and TB services have been re-initiated at Labasa DOTS centre of the Northern Division.

5. The NTP has recently introduced Fixed Dose Combination (FDCs) for adults and is in a process of procuring FDCs for paediatric patients.

6. There is a strong and adequate procurement legislation in the country.

7. NTP has introduced the web based data management system, EpiAnywhere at divisional level.

8. The NTP has formulated a National TB/HIV Collaboration body to oversee TB/HIV collaboration in the country.

9. From minimal civil society involvement in TB, since the introduction of Advocacy, Communication and Social Mobilisation (ACSM), there is now considerable delivery of TB-related activities by the FRCS as well as growing engagement by the FNA, the Fiji School of Medicine and the Fiji School of Nursing.

10. A National ACSM Committee has been established to steer and collaborate on ACSM activities.

11. A number of Information, Education and Communication (IEC) materials have been developed with a strong focus on case finding.

12. FRCS volunteers are raising awareness of TB in communities, workplaces and schools.

13. There has been some collaboration with the HIV programme on TB ASCM.

14. In collaboration with IUATLD (The Union), WHO and MoH, the Fiji National University conducted situational analysis on OR for TB and organized training for capacity building. This has brought out a list of priorities for TB research.

**Challenges**

1. Government budget is constant for last three years and its contribution to the NTP is about 23% of the total programme budget

2. There is a high turn-over of peripheral health staff especially nurses and training in TB is not keeping pace.

3. Long delays in transport of sputum samples and poor quality of sputum samples have implications on smear microscopy outcomes.

4. High culture contamination rate and no growth among sputum smear positives raise concern about the transport of samples and quality of services at National Reference Laboratory.

5. Trial treatment, incorrect categorization and starting TB treatment before receipt of sputum results were all observed to be frequent.

6. During the continuation phase, there is an issue of unsupervised medication and poor monitoring by health care staff.
7. There is early evidence of the New Sputum Positive (NSP) treatment success rate falling among 2010 cohort.

8. There are no precise, project-driven procurement Standard Operating Procedures (SOPs) as well no specific procurement schedule for each tender/contract in Phase 2.

9. There are vague evaluation criteria, a corruption risk.

10. Tenders are not internationally advertised.

11. About 5-10% cases are not registered, there is incorrect recording of TB type and outcome in paper registers and data is not updated in EpiAnywhere.

12. There is no evidence of involvement of other stakeholders for supervision and feedback on performance.

13. The culture laboratory in PJ Twomey Hospital does not have the capacity to conduct species identification and drug-susceptibility testing. While culture isolates are sent to Queensland Mycobacterium Reference Laboratory (QMRL) for drug susceptibility testing, the number is very small and thus one must be cautious in interpreting that there is no MDR among them.

14. The MDR-TB management guidelines do not explicitly describe the treatment regimen and management of patients under second line treatment.

15. There is poor monitoring of TB/HIV collaboration activities.

16. There is no evidence of regular TB screening happening among HIV positive clients and implementation of Isoniazid Preventive Therapy (IPT).

17. TB records do not contain information about the HIV status of TB patients and subsequent information about initiation of Co-trimoxazole Preventive Therapy and anti-retroviral therapy among co-infected.

18. The review team did not find a TB infection control plan. Waiting areas in most Divisional hospitals lack adequate ventilation.

19. There is not optimal involvement of prison authorities and health services in the TB programme. Recording of contact screening, diagnosis of paediatric TB and intensified screening of hot spot areas are all poor.

20. There is no formal guideline for the collaboration of TB and diabetes and consequently collaborative activities are not uniformly implemented.

21. There is a long delay in implementation of Practical Approach to Lung Health (PAL).

22. Despite implementing many activities, the potential impact of Fiji’s ACSM investments on its TB control targets of case finding and cure rates is difficult to discern.

23. General awareness of TB was observed to have increased in areas where outreach was conducted and this may have increased health care seeking; however targeting has been poor and the contribution to case finding has not been measured because there is no system to do so (for example, suspect registers).
24. No increase was observed in community volunteer participation as treatment observers or partners. The relationship with stigma reduction and meaningful participation, the other two Stop TB ACSM outcomes, is also unclear.

25. ACSM activities are not aligned with Fiji’s TB epidemic, targeted to populations most vulnerable to TB and those who can take action to prevent, detect and manage it, and focused on addressing the gaps in TB control.

Recommendations

1. The NTP and stakeholders should advocate with the MoH for increasing government funding for TB programme to sustain activities, introducing newer initiatives like TB/HIV, TB and diabetes collaboration, MDR-TB management and Xpert MTB/RIF and to aggressively head towards elimination.

2. The NTP should advocate with the MoH for retention of trained personnel.

3. Divisional TB Control Officers should regularly monitor sputum turn-around time. NTP should explore the possibility of starting TB laboratory services in Savusavu Sub-divisional hospital.

4. The NRL should identify the reasons of high contamination/ high negative culture among smear positive samples and implement measures to reduce it. NTP should also reconsider the policy of performing culture examination on all suspects and rather focus on selective priority group of patients.

5. NTP should ensure that all TB patients have evidence of TB before starting treatment and stop practice of trial treatment. It must ensure that TB patients are categorized correctly.

6. The NTP should collaborate productively and ensure training and supervision is provided to increase the utilisation of Village Health Care Workers (VHCWs) for treatment supervision and Zone Nurses for regular monitoring of treatment in ambulatory phase.

7. The NTP should identify reasons for the sudden fall in the NSP treatment success rate among the 2010 cohort and implement measures for improvement.

8. It is essential to draft and adopt SOPs for procurement and a procurement schedule covering tenders/contracts in Phase 2.

9. The MoH must crystallize messages to the market to avoid corruption risks in procurement process.

10. Procurement should advertise in well-known international arenas.

11. The NTP should ensure complete registration of all diagnosed TB patients, train relevant staff on correct recording and ensure data is updated in EpiAnywhere.
12. NTP should involve other stakeholders for routine supervision and devise an internal evaluation mechanism for conducting comprehensive evaluation of the programme on at least an annual basis.

13. Culture laboratory in PJ Twomey hospital should be strengthened further to be able it to undertake species identification and DST of at least 1st line anti-TB drugs. NTP should organize DST of all MDR-TB suspects to have better idea about resistance.

14. Depending on the availability of resources, the NTP should consider procurement of Xpert MTB/RIF in order to improve TB diagnosis and to quickly detect Rifampicin resistance.

15. NTP should develop proper guidance on the standard or individualized regimens to be used for MDR-TB patients and the flow of patient management after diagnosis.

16. The TB/HIV Coordination Committee should regularly meet and monitor implementation of TB/HIV activities in the country.

17. The HIV programme should revise the recording formats and include information about TB screening and IPT. The HIV programme should ensure training of HIV staff in TB/HIV and full implementation of TB screening among HIV positives and IPT for eligible patients.

18. The NTP should establish appropriate recording system to record TB/HIV activities so that there is a correct reporting on TB/HIV indicators.

19. The NTP should develop an infection control plan, ideally to be incorporated within the national infection control plan, and should organize rapid TB infection risk assessments of major crowded hospitals.

20. The NTP should intensify efforts for the involvement of prisons, improve recording for contact screening and intensify TB screening of hot spot areas. NTP should orient paediatricians on correct diagnosis and treatment of TB in paediatrics and ensure uninterrupted availability of paediatric formulations.

21. The NTP should develop and implement a framework for TB and diabetes in line with the recently published WHO framework in order to establish a coordinated response to both the diseases.

22. The NTP should expedite development of PAL guidelines and start implementation in phased manner.

23. NTP should engage any potential private health providers to maximise TB diagnosis and improvement in case management.

24. The ACSM strategy must be aligned with a low level epidemic, with a high proportion of cases being smear negative pulmonary ones and too many defaulters. Advocacy and communication needs to reflect this and be better targeted. Community based work should prioritize areas where there are patients currently on TB treatment, prioritise contacts and special population of PLWHA and those with diabetes.
25. Community participation in treatment observation and support is crucial, through training, involving and supervising VHCWs and Zone Nurses.

26. The NTP needs to assume leadership in terms of ACSM strategies that are likely to achieve TB targets, based on an analysis of epidemiological trends and the functions of the TB and health systems. It is recommended that an ACSM strategy be developed and included in the Stop TB Strategic Plan.

27. The less well targeted ACSM activities in Phase 1 should be considered as a pilot. Once the M&E is agreed for each ACSM area, assess their impact in terms of TB and ACSM objectives and use the assessment to refine them.

28. IEC materials need to be carefully segmented by message, media and audience and field tested. They must address case management and treatment adherence as well as case finding. Distribution and use should be monitored.

29. The training manual being developed for Zone Nurses needs to be focused on the competencies Zone Nurses need to acquire to engage in TB. Innovative training methods like a distance learning video distributed with the drug kits could help to overcome challenges of low prevalence combined with high staff turnover.

30. NTP should utilize review findings to reconsider priorities for research in TB which have maximum benefit to the TB programme
1. Introduction

1.1 Background

Fiji is a low TB burden country with an estimated incidence of all TB cases of 27 (21-33) per 100,000 population in 2010. The notification rate of all TB cases was 23 per 100,000 in 2010.

The National TB programme was established in 1951 and the WHO recommended DOTS strategy was introduced in 1997. There has been a constant decline of total case notification from 31 per 100,000 population in 1990 to the lowest of 12 per 100,000 population in 2007. In 2008, the notification was 13 per 100,000 population and from that, there has been an increasing trend observed to reach to 23 per 100,000 population in 2010.

The last comprehensive external review of the National TB Programme was conducted in May 2008. The findings of this review contributed to the development of the Global Fund R8/9 proposal for TB and the development of National Stop TB Strategic Plan 2011-2015.

The Ministry of Health organized a TB Laboratory assessment by external consultants in Aug-Sep 2011, which provided important information to the NTP about the standards of laboratory and TB microscopy services at the national and divisional levels and measures for improvement.

Fiji has been implementing Round 8/9 Global Fund Single Stream Funding grant activities for TB and HSS since April 2010. The Ministry of Health of Fiji is the Principal Recipient (PR). The goals of the SSF grant are:

1. To reduce the burden of TB in Fiji.
2. To achieve improved TB and HIV/AIDS outcomes through strengthening the capacity of the health system to deliver services.
3. To strengthen the health system by means of improving the production, management and use of information.

To assess the progress in achieving the goals and objectives of the National TB Programme, especially implementation of recommendations of 2008 review and GF R8/9 supported activities; the Ministry of Health requested an external review of the National TB programme in Fiji.

The outcomes of this review should be useful for the MoH to develop appropriate an action plan to improve TB control and reduce the burden of TB in Fiji. The information from the review should also be useful for the development of the work plan for Phase II of the Global Fund grant.

1.2 Objectives of the review

1. To evaluate the situation of TB, achievements, strengths and programmatic gaps of TB control programme in Fiji;
2. To evaluate programmatic management aspects of the national TB programme related to the procurement and supply management;

3. To assess ACSM activities and community participation in TB control; and

4. To measure the outcome/impact of programmes supported by the Government of Fiji (GoF), the Global Fund and other stakeholders.

1.3 Methodology

The methodology was directed and facilitated by the Ministry of Health. Methods included:

- Document review of all available TB programme management, Procurement Supply Management (PSM) and ACSM related documents including strategies, policies, standard operating procedures, guidelines, proposals and training materials;
- Examination of TB, PSM and ACSM records and data for quality and accuracy; and
- Semi-structured interviews for which the interview guides are appended.

The review mission was led by Dr Kalpesh Rahevar, consultant TB Programme Management, and coordinated by Ms Vasiti Nawadra-Taylor, Grant Manager, TB Programme Management Unit. The review team comprised of four external consultants of varied expertise, namely the TB Programme Management consultant, Dr Kalpesh Rahevar, Mrs Michelle Munro on ACSM, Mr Levon Hovsepyan on PSM and Dr Linh Nguyen, TB Medical Officer from WHO South Pacific Islands. The review of Fiji’s NTP was carried out by the external experts with the support from the NTP staff, PR staff and representatives of key stakeholders including the FRCS, FNA and CCM. Field work was conducted between 21\textsuperscript{st} November and 2\textsuperscript{nd} December 2011.

To begin the review, on 21\textsuperscript{st} Nov 2011, under the chairmanship of Deputy Secretary of Public Health (DSPH) Dr Joe Koroivueta, the PR and the National TB Programme briefed the review team on the status and challenges of TB programme in Fiji.

During the review period, the team carried out desk reviews of all available documents on TB programme management, PSM and ACSM including strategies, policies, standard operating procedures, guidelines, proposals and training materials at the national and peripheral levels.

The team was divided into three expert areas (TB programme, ACSM and PSM) and they collectively visited all three DOTS centres and a sample of Sub-divisional Hospitals, Health Centres, HIV Hub Centres, Nursing Stations, drug warehouses, communities, grant Sub-recipients (SRs) and patients from all three health divisions of the country.

In each health facility, depending on the service provision, TB diagnosis, treatment, hospitalisation, drug supply management, patient management, HIV, monitoring and
evaluation, ACSM and patients were reviewed using structured interviews of the staff/patients and analysing available records and reports.

The terms of reference of the external review, which describes the details about methodology, evaluation questions and expected outputs is attached in Annex I.

### Table 1: Facilities, Organizations and Communities Visited

<table>
<thead>
<tr>
<th>Eastern/ Central Division</th>
<th>Northern Division</th>
<th>Western Division</th>
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</thead>
<tbody>
<tr>
<td>PJ Twomey Hospital (PJTH) DOTS Centre</td>
<td>Labasa Hospital DOTS Centre</td>
<td>The Lautoka Hospital DOTS Centre</td>
</tr>
<tr>
<td>TB Programme Management Unit</td>
<td>Labasa Health Centre</td>
<td>Lautoka HIV Hub Centre</td>
</tr>
<tr>
<td>Colonial War Memorial Hospital</td>
<td>Labasa HIV Hub Centre</td>
<td>Namaka Health Centre</td>
</tr>
<tr>
<td>HIV Hub Centre</td>
<td>Nakorovatu Health Centre</td>
<td>Fiji Red Cross Society, Lautoka Branch</td>
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<tr>
<td>Fiji Red Cross Society, National Office</td>
<td>Wainkoro Health Centre</td>
<td></td>
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<tr>
<td>Fiji Nurses Association</td>
<td>Savusavu Sub-divisional Hospital</td>
<td>2 current and 1 former patients</td>
</tr>
<tr>
<td></td>
<td>Fiji Red Cross Society, Labasa Branch</td>
<td>3 communities and their community leaders and VCHWS</td>
</tr>
<tr>
<td></td>
<td>Nabalebale nursing station</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 current and 2 former TB patients in the community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 communities and 2 VHCWs</td>
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</tbody>
</table>

**Debriefing**

At a meeting on 2\textsuperscript{nd} Dec 2011, the external team debriefed the Ministry of Health and stakeholders about the findings of TB review and recommendations for the improvement of the National TB Programme in Fiji. A detailed discussion ensued which contributed to the final review report.

### 1.4 Country profile

The Republic of Fiji is an island nation in Melanesia in South Pacific Ocean, surrounded by Vanuatu to the West, Tonga to the East and Tuvalu to the North. The country comprises
an archipelago of more than 332 islands, of which 110 are permanently inhabited, and more than 500 islets, amounting to a total land area of circa 18,300 square kilometres (7,100 sq mi). The two major islands, Viti Levu and Vanua Levu, account for 87% of the total population.

Administratively, Fiji is divided into 4 major Divisions; Central, Eastern, Northern and Western in which are 14 provinces.

**Table 2: Estimated Population of Fiji**

<table>
<thead>
<tr>
<th>Divisions</th>
<th>Estimated Population for 2010</th>
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<tbody>
<tr>
<td>Central</td>
<td>350,784</td>
</tr>
<tr>
<td>Eastern</td>
<td>40,190</td>
</tr>
<tr>
<td>Northern</td>
<td>140,920</td>
</tr>
<tr>
<td>Western</td>
<td>361,130</td>
</tr>
<tr>
<td>Total</td>
<td>893,024 of which, 53% are Fijians, 42% Indians and 5% Others</td>
</tr>
</tbody>
</table>

*Source: 2007 Census, Fiji Islands Bureau of Statistics*

**Figure 1: Map of Fiji islands Showing Administrative Divisions**
Table 3: Health and Development Indicators of Fiji

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Number</th>
<th>Year of estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross National Income per capita as per World Bank Atlas method</td>
<td>3,850 USD</td>
<td>2010</td>
</tr>
<tr>
<td>Per capita total expenditure on health</td>
<td>128 USD</td>
<td>2009</td>
</tr>
<tr>
<td>Per capita government expenditure on health</td>
<td>94 USD</td>
<td>2009</td>
</tr>
<tr>
<td>Literacy rate</td>
<td>94%</td>
<td></td>
</tr>
<tr>
<td>Life expectancy at birth</td>
<td>69.2 years</td>
<td>2010</td>
</tr>
<tr>
<td>Total fertility rate per woman</td>
<td>2.7</td>
<td>2009</td>
</tr>
<tr>
<td>Ante-natal care coverage</td>
<td>99%</td>
<td></td>
</tr>
<tr>
<td>Neonatal mortality per 1000 live births</td>
<td>8</td>
<td>2010</td>
</tr>
<tr>
<td>Infant mortality per 1000 live births</td>
<td>15</td>
<td>2010</td>
</tr>
<tr>
<td>Under 5 mortality per 1000 live births</td>
<td>17</td>
<td>2010</td>
</tr>
<tr>
<td>Maternal Mortality ratio (interagency estimate) per 100,000 live births</td>
<td>26 (14-48)</td>
<td>2008</td>
</tr>
</tbody>
</table>


Ministry of Health (MoH) manages a comprehensive decentralized health system of integrated primary, secondary and tertiary care. The Deputy Secretary of Public Health heads the public health division in MoH headquarters in Suva. Primary health care and public health care services are managed and administered through four Divisional Health Services (DHS) offices: the Central and Eastern combined in Suva, Western in Lautoka and Northern in Labasa, each led by a Divisional Medical Officer (DMO).

There are 5 sub-divisions in the Central Division, 4 in the Eastern Division, 6 in the Western Division, and 4 in the Northern Division. Public health services are provided through 16 Subdivisional Hospitals (SDH), 77 Health Centres(HC) and 101 Nursing Stations(NS). Subdivisional Hospitals have an average capacity of 12-40 beds, and provide inpatient and outpatient services. In addition, there are 3 Area Hospitals, which complement Subdivisional Hospitals.

There are three specialized hospitals in the country: St. Giles Psychiatric Hospital; the PJTwomey Hospital for tuberculosis and leprosy; and the Tamavua Rehabilitation Hospital.

MoH-trained community members serve as Village Health Care Workers (VHCWs).

A small private sector includes two private hospitals in Suva (and another under construction), several day clinics and 130 private general practitioners located mostly in the urban centres of the two main islands, Viti Levu and Vanua Levu. There is a private maternity hospital in the Western Division. In rural areas, traditional healers are visited for a variety of health reasons.
1.5 Epidemiology and performance of the National TB Programme

Fiji is a low TB burden country in Pacific. As there was no direct measurement of TB prevalence conducted in the country, the WHO estimates made by using indirect methods shows a wide range of uncertainty. More analysis of data is required to improve on these estimates.

Table 4: Estimated TB Burden in Fiji

<table>
<thead>
<tr>
<th></th>
<th>Incidence (including HIV)</th>
<th>Prevalence (including HIV)</th>
<th>Mortality (excluding HIV)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate per 100,000</td>
<td>Number</td>
<td>Rate per 100,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27 (21-33)</td>
<td>230 (180-280)</td>
<td>40 (16-70)</td>
<td>350 (140-600)</td>
</tr>
</tbody>
</table>

Source: WHO Global TB Report 2011

Figure 2: Case Notification of Tuberculosis in Fiji 1990-2010
As shown above, there was a constant decline in total case notifications from 31 per 100,000 population in 1990 to the lowest of 12 per 100,000 population in 2007. In 2008, the notification was 13 per 100,000 population and from that, there has been an increasing trend observed to reach to 23 per 100,000 population in 2010. Interestingly, the New Sputum Positive case notification has remained almost constant since 1990 to around 10 per 100,000 and now showing little increase from 2009.

Figure 4: Treatment Success Rate of New Smear Positive TB Cases (1994-2009)

Source: Ministry of Health, GoF
The treatment success rate for New Sputum Positive cases fluctuated from 75% to 90% since 1994. In 2008 and 2009 cohort it was about 90% but in the first 3 quarters of 2010, it is showing a decline (which is not shown here).

Mortality due to TB shows an increasing trend from 2000 and was highest in 2007 (~4 per 100,000) when the notification was lowest. From 2007, mortality reduced steeply until 2009 and then increased in 2010 to about 3 per 100,000.

As per the WHO Global DR-TB Report-2010, estimated MDR-TB prevalence in Fiji among new cases is 1.9% (0.0- 7.5) and among re-treatment cases is 13.8% (0.0-36.2) for 2009, which translates to about 5 MDR-TB incident cases per year. So far, there is no reported case of MDR-TB in Fiji. However, Fiji has never conducted Drug Resistance Surveillance and thus the estimates are to be used cautiously.

As per UNAIDS estimation, Fiji has an estimated HIV prevalence of 0.1% in adult population of 15-49 years for 2010. The cumulative number of HIV positives in 2010 was 366.

### 1.6 Organization of the National TB Programme

The major milestones of the National TB Programme:

- 1951: National TB Programme established
- 1997: DOTS was introduced
- 2000: TB Culture facility established in Suva
- 2008: External review of TB Programme conducted
- 2010: Global Fund R8/9 grant implementation began
- 2010: Web based recording system, Epi Anywhere established
- 2011: Fixed Drug Combinations (FDCs) introduced
- 2011: Labasa DOTS centre became functional
- Nov 2011: Opening of a newly refurbished TB culture lab in PJ Twomey hospital

The Ministry of Health has been implementing DOTS strategy since 1997. Under NTP, 3 DOTS centres have been established at the three Divisional Hospitals:

- The PJ Twomey Hospital (PJTH) in Suva for the Central and Eastern Division
- The Lautoka Hospital for the Western Division and
- The Labasa Hospitals for Northern Division

All three DOTS centres along with the Colonial War Memorial Hospital (CWMH) in Suva provide TB microscopy services.

Furthermore, the PJTH TB Laboratory in Suva has been performing solid media TB culture for all TB suspects/MDR suspects for the last 10 years. Isolates of *Mycobacterium tuberculosis* (MTB) requiring drug susceptibility testing (DST) are referred to the Queensland
Mycobacterium Reference Laboratory (QMRL), Brisbane. The PJTH lab has been upgraded to the National Reference Laboratory (NRL).

The PJTH has 40 TB beds, the Lautoka Hospital has 29 TB beds and recently opened Labasa hospital has 4 TB beds. The CWMH does not provide outpatient or inpatient services for TB patients.

Under the Ministry of Health, the Deputy Secretary of Public Health is the administrative head of the TB programme. The National TB Control Officer based at PJ Twomey hospital is responsible for the management of TB programme in the country. Under the GFATM Round 8/9 grant, a National TB Programme Manager post has been established who is responsible for the grant funded activities in alignment with the NTP. All three DOTS centres have Divisional TB Control Officers (DTCO) responsible for TB programme in the respective divisions. In some Sub-divisional Hospitals, there is a post of sub-divisional TB Liaison Nurse, who is responsible for overseeing TB activities in the Sub-division. Below that, the programme is integrated in general public health services.

Zone Nurses placed at Nursing Stations or in Health Centres have outreach activities in a defined area. The NTP draft Guidelines name them as being responsible for TB suspect referral, contact tracing, treatment supervision, defaulter tracing and health education. Village Health Care Workers are also seen as good potential resources for TB programme in terms of referral, treatment supervision, defaulter tracing and health education.

**Figure 5: Organogram of the National TB Programme, Fiji**

![Organogram of the National TB Programme, Fiji](image-url)
2. Major Review Findings by Thematic Areas

2.1 DOTS expansion and enhancement

Introduction

Fiji is a low TB burden country with an estimated incidence of all TB cases in 2010 of 27 (21-33) per 100,000 population. The notification rate of all TB cases was 23 per 100,000 in 2010.

All three DOTS centres (PJ Twomey Hospital for Central and Eastern Division, Lautoka Hospital for Western Division and Labasa for Northern Division) along with CWMH in Suva provide microscopy services for TB. These centres also provide X-rays and other investigation services for the diagnosis of sputum negative pulmonary and extra-pulmonary TB cases.

TB suspects from the catchment area are either referred or their sputum samples are transported to these laboratories for sputum smear microscopy. After diagnosis, all TB patients are admitted to the respective TB wards within the DOTS centres for initial 2 months of intensive phase. After completion of intensive phase, all clinically stable patients are discharged with the referral to the nearest health centre. Patients continue their medicines at home, using relatives as treatment supporters and zone nurses of nearest health centres as treatment supervisors. After completion of treatment, patients are referred back to the respective DOTS centres for final evaluation and confirmation of the treatment outcome.

The referral system is quite formal and adequate clinical information is available at the sub-divisional level. Contact tracing and provision of TB Preventive Therapy is conducted by Zone nurses at the peripheral level at the request of the DOTS centres.

NTP has recently introduced Fixed Drug Combinations (FDCs) for adults and in a process of procuring FDCs for paediatric patients. Drugs are distributed from the national warehouse to the divisional warehouses on quarterly demand basis.

DOTS centres are the registration units under the programme, which maintains paper and recently introduced web based TB data for the respective division. The treatment card is maintained at DOTS centre and through copies kept at the respective sub-divisional hospital or health centre after the discharge of the patient.

Divisional DOTS centres are responsible for reporting on diagnosis and treatment activities to the National TB Office in PJ Twomey Hospital.

2.1.1 Political commitment

Observations and achievements

- The National TB Control programme since its establishment, has been funded by the Ministry of Health. The funding through the Government of Fiji, for the treatment and care of all the TB patients, was about US$ 5,000,000 in the last 3 years.
• MOH received USD 5,528,193 from the Global Fund in April 2010 for implementing phase I (April 2010 – June 2012) of the R8/9 grant for TB and Health System Strengthening activities. In addition, the NTP received biannual funding from WHO for 2010-2011 biennium to about US$50,000.
• The GF grant through R8/9, provided a needed boost to TB activities.
• TB is a notifiable condition and TB drugs are almost exclusively available within the government TB programme.
• TB services are provided at free of cost.
• NTP has revised the National TB Guidelines in 2011, which incorporates TB/HIV, MDR-TB and Infection control. The NTP has also recently developed National Strategic Plan for 2011-2015, M & E plan for 2010-2014, TB/HIV collaborative framework and MDR-TB Management Guidelines’

Challenges

• The government budget for TB has been constant for the last three years and its contribution to the NTP is about 23% of the total programme.
• Moreover, there is no financial support to the NTP other than Government, Global Fund and WHO.
• Most health facilities did not have the revised TB Guidelines in place.
• There is a high turn-over of peripheral health staff, especially nurses, and TB training is not keeping pace. Hence, most peripheral staff were found not trained/ oriented in TB.

Recommendations

• NTP and stakeholders should advocate with MoH for increasing government funding for TB programme to sustain activities, introducing newer initiatives like TB/HIV, TB and Diabetes collaboration, MDR-TB management and Xpert MTB/RIF and to aggressively head towards elimination.
• NTP should print and disseminate the revised guidelines and National TB Strategic Plan 2011-2015 widely.
• NTP to advocate with MoH for retention of trained personnel for longer period. Peripheral health staff should be oriented in TB on regular basis using innovative methods like educational video CDs and during on site supervision.

2.1.2 Diagnosis

There are 4 TB Microscopy centres, located in each of three divisional DOTS centres and in Colonial War Memorial Hospital, Suva performing sputum smear microscopy for more than 800,000 population of the country. The laboratory in PJ Twomey Hospital, Suva is performing TB culture using solid media.
Peripheral health centres either refer TB suspects or collect and transport their sputum samples to the respective microscopy centres. They use the government transport system and usually integrate it with other transport, mostly on weekly basis. A positive TB report is communicated to the respective health centre by phone and through return transport. After getting a positive TB report, peripheral health centres trace the patient and refer him/her to the respective DOTS centre for initiation of treatment and admission.

DOTS centres courier sputum samples of all diagnosed TB patients/chest symptomatic patients to the National TB Laboratory, Suva for culture examination. The national TB laboratory transports the positive culture isolates to QMRL in Australia for DST, as per the request.

The PJ Twomey lab is responsible for implementing EQA of sputum microscopy for the other 3 TB labs. As per the protocol, CWMH, Lautoka and Lambasalabs send 19 randomly selected slides to PJ Twomey hospital lab for blinded re-checking, on a quarterly basis. QMRL, Australia does panel testing for all 4 labs. It sends 10 pre-fixed known panel slides to each of four laboratories on annual basis. PJ Twomey laboratory staff does on site supervision of all laboratories, using standard checklist, once in a year.

**Table 5: Smear Microscopy from 1st Qtr’11 to 3rd Qtr’11**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>No. of patients examined for diagnosis</th>
<th>No. diagnosed as positive</th>
<th>Positivity rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Qtr’11</td>
<td>453</td>
<td>39</td>
<td>9%</td>
</tr>
<tr>
<td>2nd Qtr’11</td>
<td>480</td>
<td>25</td>
<td>5%</td>
</tr>
<tr>
<td>3rd Qtr’11</td>
<td>459</td>
<td>30</td>
<td>7%</td>
</tr>
</tbody>
</table>

The patient positivity rate ranges from 5% to 9%.

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Specimens examined for diagnosis</th>
<th>No. recorded as saliva</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Qtr’11</td>
<td>788</td>
<td>205</td>
<td>26%</td>
</tr>
<tr>
<td>2nd Qtr’11</td>
<td>882</td>
<td>163</td>
<td>18%</td>
</tr>
<tr>
<td>3rd Qtr’11</td>
<td>863</td>
<td>243</td>
<td>28%</td>
</tr>
</tbody>
</table>

Almost 18% to 28% diagnostic samples were recorded as saliva and this has implications on smear microscopy output.

<table>
<thead>
<tr>
<th>Quarter</th>
<th>No of suspects examined for diagnosis</th>
<th>No. given only 1 sample</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Qtr’11</td>
<td>453</td>
<td>266</td>
<td>59%</td>
</tr>
<tr>
<td>2nd Qtr’11</td>
<td>480</td>
<td>238</td>
<td>50%</td>
</tr>
<tr>
<td>3rd Qtr’11</td>
<td>459</td>
<td>222</td>
<td>48%</td>
</tr>
</tbody>
</table>

As shown above, almost 50% patients had given just one sample for smear examination and this also has negative implications on the output of sputum microscopy.
Table 6: Culture Report from 1st Qtr’11 to 3rd Qtr’11

<table>
<thead>
<tr>
<th>Culture done</th>
<th>Culture with AFB result</th>
<th>Total culture Pos</th>
<th>AFB+/culture-</th>
<th>AFB+/-culture+</th>
<th>AFB-/-culture+</th>
<th>Culture+/- No AFB</th>
<th>Cont in AFB-</th>
<th>Cont in AFB+</th>
</tr>
</thead>
<tbody>
<tr>
<td>503 (1st Qtr)</td>
<td>378</td>
<td>59</td>
<td>20</td>
<td>25</td>
<td>20</td>
<td>4</td>
<td>57</td>
<td>8</td>
</tr>
<tr>
<td>267 (2nd Qtr)</td>
<td>178</td>
<td>21</td>
<td>9</td>
<td>9</td>
<td>3</td>
<td>9</td>
<td>45</td>
<td>2</td>
</tr>
<tr>
<td>669 (3rd Qtr)</td>
<td>544</td>
<td>5</td>
<td>48</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

As shown above, culture contamination rate is ranging from 13% to 18% and about 31% to 91% samples with positive smears did not have culture growth.

In 2010, 8 sputum culture samples and in 2011, 5 were sent to Queensland lab for DST.

Observations and achievements

- There has been a constant decline in total case notification from 31 per 100,000 population in 1990 to the lowest of 12 per 100,000 population in 2007. In 2008, notification was 13 per 100,000 population and from that, there has been an increasing trend observed to reach to 23 per 100,000 population in 2010. Interestingly, the New Sputum Positive case notification has remained almost constant since 1990 to around 10 per 100,000 and now showing little increase from 2009. The possible reasons for the increase in case notification since 2009 may be:
  - The disaggregated data shows that, the increase is notified disproportionately more in sputum negative and EP cases and that may be due to improvement in follow up of sputum negative cases or improvement in diagnostic services for sputum negative and EP cases.
  - Increasing efforts in terms of social mobilization and suspect screening (need data to substantiate)
  - Improvement of recording and reporting
  - Real increase in numbers may be due to transmission/breakdown among diabetics (high prevalence in the country) and HIV positives- more sputum negative and EP cases.

There is a need to monitor the trend and possible reasons further to come to any conclusion.

- There is no evidence of stock out of laboratory consumables in past 6 months in any of the four laboratories.

- EQA for TB microscopy services is acceptable, based on the assessment of the QMRL as the reference laboratory (Ref. Lab assessment report).
• The usual turn-around time for DST from QMRL is ~2months and none so far detected as MDR.

• Savusavu Sub-divisional Hospital is almost 100 km from Labasa DOTS centre. This centre receives TB suspect referral from Rabi island which is a so called TB hot spot and other nearby areas. Every month, sputum samples from about 8-10 chest symptomatic are transported to Labasa DOTS centre for sputum smear examination. It has laboratory which is performing other general investigations but not TB.

Challenges

• In major hospitals, most general medical staff are not trained/oriented in TB, which may cause them to have a low suspicion index for TB.

• The usual delay in transport of sputum samples from peripheral health centres to Microscopy centre is 3-6 days which causes increased chance of disintegrated samples reaching to the laboratories. This has a negative impact on the efficiency of test and causes delay in diagnosis.

• In 2011, about half of the patients submitted just one sample and about quarter of examined samples were recorded as saliva.

• As seen in table above, in first two quarters of 2011, the culture contamination rate was 13-18%. In fact it surprisingly dropped to 1% in 3rd Qtr’11. Most of the positive smears had no culture growth (38-91%) and that raises concern about the delay in transport, and technical issues of processing culture.

• The culture turn-around time is ranging from 2-4 months and most TB cases are initiated on treatment before the receipt of culture results mainly by using X-ray and other investigations and others are lost. That reduces the importance of culture examination for all TB patients and suspects.

• The team did not find TB suspect registers or recording of suspect referrals in most of the peripheral centres.

Recommendations

• NTP should closely monitor the case notification trend and the possible reasons for it, to gather evidences for measuring impact of the programme.

• Divisional TB Control Officers should organize regular orientation of doctors working in hospitals, through workshops and meetings, on TB symptoms and importance of sputum examination.

• Divisional TB Control Officers/NRL should impart on site orientation to the peripheral health staff/ laboratory staff on the importance of quality of sputum samples and sending two samples for diagnosis. Sputum turn-around time, especially for peripheral patients should be monitored on regular basis.

• NRL should identify the reasons of high contamination/ high negative culture among smear positive samples and implement measures to reduce it. NTP should monitor
This vigorously and if needed, should take the help from QMRL to sort out the problem.

- The NTP should reconsider policy of culture examination for all suspects and all TB patients. Rather the programme should focus on doing culture and DST for confirming diagnosis of sputum negative TB cases, TB in HIV positive cases and MDR-TB suspects.

- NTP should consider developing and placing a TB suspect register or integrating information on TB in the OPD register in at least major peripheral HCs and general hospitals. The NTP should determine a mechanism to monitor this indicator. Before doing this, NTP should weigh the feasibility of creating a new record and report versus the expected output.

- The NTP should sort out the staff and space issue and explore the possibility of starting TB microscopy services in Savusavu hospital. This will have benefit in diagnosing patients early and improving on the follow-up of on-treatment patients, who visit this facility from surrounding high TB areas.

2.1.3 Treatment

NTP uses two types of regimens, Category I (2HRZE/ 4HR) for treating New cases and Category II (2SHRZE/ 1HRZE/ 5HRE) for treating Re-treatment cases. INH Preventive Therapy is offered to adults and children in contact with the sputum positive TB cases, after screening them for TB symptoms.

All diagnosed TB patients are admitted to TB wards in respective DOTS centres for the period of intensive phase but the practice differs in each.

Observations and achievements

- NTP has recently introduced Fixed Drug Combinations (FDCs) for adults which presumably will improve treatment compliance and logistic supply management

- Different admission practices
  - Lautoka DOTS centre admits almost all diagnosed TB cases for a period of intensive phase.
  - PJ Twomey DOTS centre puts about 5-10% TB cases on ambulatory treatment from the beginning.
  - Labasa DOTS centre due to fewer available beds, admits sputum positive TB cases for an average 2 months, sputum negative TB cases for an average 1 month and Extra-pulmonary TB cases for an average 1 week.

- Different practices of managing patients in continuation phase
  - Patients are given 4 months of continuation phase drugs at discharge, and consume medicines without supervision or under the supervision of relatives. In this case, the nearest Health Centre is intimated and the Zone Nurse supervises treatment by visiting patients fortnightly or monthly and organizes contact screening and follow-ups of patient.
Patients are provided 1 month of drugs on discharge and the rest of the drugs are supplied to the nearest Health Centre. The patient visits the Health Centre on a monthly basis to collect medicines.

Patients are provided 1 month of drugs on discharge and the rest of the drugs are kept at the DOTS Centre. Patient visits the DOTS Centre on a monthly basis to collect medicines.

Challenges

- Some Re-treatment cases (team found 3 such cases in Lautoka) were wrongly categorized as New and put on Category I treatment (proportion of Re-treatment cases to all TB cases was 6% in 2010)

- Some patients are started on treatment before the arrival of sputum result, probably on X-ray and clinical judgement

- In all three divisional hospitals, it was found that some patients are started on TB treatment in medical wards or paediatric wards, either on trial basis or full course of treatment and have never been registered (e.g. out of 8 paediatric patients started on treatment in Lautoka, 2 not registered and from medical ward, 6 out of 31 were not registered; One patient returned for retreatment but not registered for second episode but registered only for third episode in the Western Division)

- In continuation phase, most patients take either unsupervised treatment or are supervised by family members. Some patients are either irregularly visited or never visited by peripheral health care workers during their ambulatory treatment.

- Treatment success rate of NSP in first three quarters of 2010, the quarters for which the outcome report is available, is low (below 70% in quarter 1 and below 60% in quarter 3). High death and high defaulter rates are the reasons for the low treatment success rate in 2010.

Recommendations

- TB Control Officers in all DOTS centres should ensure correct categorization of diagnosed TB patients so that they are put on correct regimens.

- The practice of treatment trial by TB drugs should be stopped to avoid the risk of drug resistance. NTP/ DOTS centres should orient doctors from other departments about TB and risk of trial treatment in producing drug-resistance. All patients should have adequate laboratory and/or clinical evidence before they are started on TB treatment. All patients who are started on treatment must be registered and monitored as per the guidelines.

- The health staff at the Health Centres and Zone Nurse Stations should be involved in supervision of treatment in the continuation phase. These health staff need both training on and supervision so that they correctly supervise TB patients and their treatment observers during the continuation phase conduct home visits, manage drugs/patient kits, fill treatment card, monitor drug side effects, and ensure that the schedule for follow-up sputum and review is adhered to.
Family members of TB patients are not the ideal choice for treatment supervision. Instead, NTP itself or through partner, should identify Village Health Care Workers or other appropriate treatment supporters, and train and use them as treatment supervisors for TB patients.

NTP needs to evaluate the reasons for the sudden fall in treatment success rate in 2010, the geographical areas having high deaths and default and prepare a plan to contain it.

2.1.4 Procurement and supply management

Introduction

In the framework of National TB Programme Review a multidisciplinary team of consultants was engaged to evaluate The Global Fund’s TB grant progress and assess whether The Global Fund investments are effectively reaching the expected beneficiaries and contributing to desired outcomes. The Review was conducted on November 21 - December 2, 2011.

The task of Procurement and Supply Management (PSM) consultant was to evaluate the PSM activities performed by the PR during Grant implementation and assess effectiveness, efficiency, integrity and transparency of PR’s purchasing operations. In particular, the PSM consultant was requested to review sampled procurement documents, evaluate and assess PR’s planning, forecasting, tendering, evaluating, contract management and warehousing activities. In addition, the PSM specialist was expected to conduct one-day training related to Procurement and Supply Management findings and recommendations for PR-PSM, PR-M&E, PR-Finance and the Fiji Pharmaceutical & Biomedical Services (FPBS) Centre’s Logistics Management Unit Officers.

In the framework of its review, the PSM consultant inspected documents and data related to procurement and supply management, interviewed PR’s procurement personnel, Fiji Pharmaceutical and Biomedical Services personnel as well as visited Suva’s PJ Twomey Hospital to assess warehousing and inventory management systems.

The PSM consultant conducted training for expected audience on November 29, 2011.

The following report reflects observations, achievements; challenges and recommendations emerged after assessment of PR’s procurement and supply management operations.

Observations and achievements

Procurement regulations: To assess PR’s procurement operations, the PSM expert thoroughly reviewed existing procurement regulations, guidelines, financial acts and manuals released by the Government of the Republic of Fiji. This exercise would help the expert to evaluate the project against locally required practice, as well as to assess the level
of effectiveness and transparency of local public procurement regulations. In particular, the PSM expert reviewed:

- Fiji Procurement Regulations 2010 under Financial Management Act 2004
- Procurement Guidelines, The Procurement Policy Framework, August 2010
- Guide to Tender and Evaluation Process, December 2010

It should be noted, that the mentioned guidelines and regulations fully cover legislative needs of similar projects and correspond to best international standards.

**Procurement staff, duties, roles and responsibilities:** The PR currently engaged one Procurement and Supply Management Officer, as procurement of major health and non-health products is mainly managed by FPO (Fiji Procurement Office). The FPO is also responsible for clearance of goods purchased through overseas suppliers. It should be noted that PSM officer working in PR's office is committed, eager to learn and disciplined.

In its turn, Fiji Pharmaceutical and Biomedical Services (FPBS) is engaged in storage and distribution of health commodities and responsible for procurement and supply management of essential medicines and other health commodities for Ministry of Health. The project sources medicines from pre-qualified suppliers mostly from Australia and New Zealand by benchmarking the quality of medicines against USFDA, TGA Australia, NZ Med Safe and other countries with stringent regulatory authorities.

Inventory Management Software ‘Epicor’ is in place, while the government is currently in the process of acquiring a software which has more features. Medicines are distributed bi-monthly to divisional and specialist hospitals; monthly to sub-divisional hospitals; quarterly to health centres and nursing stations. Orders by divisional hospitals are computer-generated, however, orders by other health facilities are done manually.

Government is not engaged in direct distribution of medicines to Northern and Western Divisions, but piloted outsourcing of this activity to private logistics companies.

**Procurement tools, mechanisms and systems in place:** The PSM expert reviewed procurements conducted by PR with support of colleagues from FPBS and FPO. In particular, full procurement cycles of the following tenders have been reviewed:

- Procurement of Determine Test Kits (TB+HIV)
- Procurement of laboratory consumables
- Procurement of medical equipment
- Procurement of vehicles
- Procurement of motorbike
- Procurement of IT and office equipment.
In addition, procurement processes and documents in the possession of FPBS were reviewed.

The following section on challenges and recommendations displays missing procurement tools, and vital mechanisms,

**Challenges**

- The PR does not have SOP for procurement and does not use specific, time-bound, detailed procurement schedule for upcoming Phase 2. This tremendously hinders any procurement management for similar projects. Given the nature of the project and its scope, considerable delays and potential stock outs absence of any procurement SOP or detailed procurement schedule is an alarming signal.

- Screening procurement documents PSM expert noted that in many cases suppliers are provided vague, not specific evaluation criteria. A vivid example of this can be mentioning of “Other Services” as evaluation criteria, while no specifics are given as to what those other services mean and how critical those can be for evaluation.

- It has also been noted that while procuring medicines FPBS asks for at least 18 months of the remaining lifetime of the medicine once it reaches Fiji. While some medicines’ life period may be less than 18 months and some may have 5 years of validity period. Mentioning exact period instead of a percentage of remaining lifetime is an erroneous approach to ensuring medicines' lifetime.

- The logistics and distribution to remote facilities has been a problem, and although the government piloted outsourcing delivery of medicines to external companies, proper and timely organizing and distribution of goods met numerous bottlenecks.

- PSM expert noted that while procuring goods and in correspondence with suppliers PR or other procurers (FPO or FPBS) ask for suppliers’ preferred delivery period, warranty period or mode of payment. Although having own deadlines and timeframes, payment limits, modes and preferred warranty periods purchasers expect vendors to tell those and, therefore, leave it to the discretion of suppliers.

- Sending out Purchase Orders, the procurers did not attach or link those POs to essential conditions of contract. In other words, suppliers are not obliged to follow any conditions as per those Purchase Orders.

- Numerous corruption risks were identified while reviewing tendering procedures. Those risks are mainly related to incomplete, vague and easy-to-manipulate language of bidding documents. In particular, PSM expert noted the following corruption risks:
1. The language of tender document says: “The successful contractor may enter into a contract with the Government of Fiji with performance bond to be paid as surety of which the sum will be determined after the award”

The sentence above shows, that Purchaser will be selective in deciding whether it needs a performance bond or not. In fact it may not require the bond if the winner of the tender is Purchaser’s "favourite" bidder. Additionally, the Purchaser will decide the sum after the award, and in fact, it may decide a high amount if the winner is not the "favourite" bidder and decide the small amount if the winner is "favourite".

Moreover, high amount may force the winner to refuse the contract signature, as high performance bond amount means higher expenses to implement the contract. Many corrupt purchasers hide the performance bond amount to use this as tool for “scaring” non-favourite bidders and once they refuse signature of contract - the "favourite" bidder enters into contract without any performance bond. The language of the tender document easily allows to use this corrupt approach.

2. The PR and FPO do not specify any weight of evaluation criteria. For example, warranty period, delivery time, “other services” and mode of payment are all evaluation criteria, however nobody specifies how much out of total evaluation they take. This means the weight of these criteria can be easily manipulated in case of need. Delivery period may be given 40% or 70% of importance, or 1% of importance if the non-favourite bidder offers a very good delivery period. In addition, such criteria as “other services” can always be exchanged to any criteria Purchaser may invent in the middle of the process.

3. The FPO does not specify its exchange rate or source and date of exchange rate it will use for evaluation. This means the Purchaser may use any exchange rate once tenders are open and prices in different currencies are shown, which in its turn may influence the final prices of bidders.

4. Conditions of contract, openly communicated to everyone in the market at the time of tender are not included in the Purchase Orders later. This means bidding against strict conditions at the tender "favourite" bidders may later use softer, easier conditions for delivery, as no condition at all is specified in the Purchase Order. The "favourite" bidder may quote cheaper, knowing that no strict condition will be specified later in the PO.
   - Tenders are advertised only locally in Fiji, while most of the procured products are made externally. In addition, tenders limit participation of international companies by requesting only local companies to bid.
The members of evaluation committee learn about specifics of tenders at the very day of evaluation. Those individuals do not have time to read and understand the substance of the tender before evaluating it.

**Recommendations**

- The PR should draft and adopt specific SOP for procurement, this document will describe all stages of procurement cycle, including but not limited to planning, forecasting, advertisement, tendering, evaluation, contract management, logistics and warehousing procedures. The document should also clearly mention responsible officers for each stage of procurement.

- A specific, measurable, detailed and time-bound Procurement Schedule template has been drafted. This will help PR and partners to schedule their procurement activities. The schedule covers following aspects:
  - forecasting of exact quantities.
  - application of specific procurement methods.
  - justification for non-competitive procurement, if any.
  - evaluation criteria while procuring goods, works or services.
  - deadlines for drafting technical specifications, bidding, evaluating, contracting, final delivery.
  - dates for requesting procurements.
  - dates of advertisement and bid opening.
  - individuals responsible for specific steps of procurement cycle.
  - other important data.

- The Procurement Schedule will provide comprehensive data on how and when procurement will be conducted. This important monitoring and control mechanism will eventually allow PR to have full ownership and control over information related to each tender.

- The PR should interact and share the Schedule with its partners. PR's PSM officer will make every effort to have the Schedule completed for each forthcoming year and provided to designated PR management by January 1 of the year for which the Schedule is drafted.

- It is also recommender to share the Procurement Schedule, hiding sensitive information, with external partners and suppliers, so market is ready to deliver upon timely request.

- The PR should clearly describe evaluation criteria in the tender documents, precisely describing requested delivery times, warranty periods or other services. The PR should provide the weight (or points/scores) of each criteria in the overall evaluation.
• FPBS should not mention exact months for medicines’ remaining lifetime, but should mention the percentage of the remaining lifetime. (i.e. “medicines delivered under this contract should have at least 75% (or 80%) of the total shelf life upon delivery to Fiji”)

• The PR should attach or link conditions of contract to each Purchase Order.

• Members of evaluation committees should be shared tender documents at least few days before tender opening.

• The PR should try to engage major suppliers in logistics and delivery to remote islands. The payments under contracts should be linked to distribution schedules. The major suppliers will negotiate and subcontract local logistics companies, but will include this price in their bids, thus competing to provide lowest prices, as delivery price will be an evaluation criteria as well.

• The PR and FPO should avoid corruption risks by clearly, openly and equally describing requirements under each tender to all potential participants.

• The PR should use best international arenas, many of which are free, for wider advertisement of procurement needs.

2.1.5 Monitoring and evaluation

NTP has developed a National Plan for TB M & E for 2010-2014. With the GF R8/9 grant implementation, the Grant Management Unit (GMU) has formed a Monitoring and Evaluation Technical Working Group (TWG) to monitor the grant supported activities.

TB patients are registered at respective DOTS centres, which uses paper register and web based EpiAnywhere to record and report to the national. Two treatment cards are prepared for each patient, one is retained at DOTS centre and other is sent to the health centre which is going to supervise patient’s treatment in ambulatory phase.

There is a parallel Public Health Information System (PHIS) and Patient Information System (PATIS) to collect all data from the health facilities. This is managed by the Health Information Unit (HIU) at the MoH. TB, being a notifiable condition, is captured in this system too.

Observations and achievements

• Introduction of the web based data management system, EpiAnywhere in the programme, at divisional level.

• Grant coordination committee meets every monthly. NTP conducts annual TB review meeting at national level to review the progress of the programme.

• NTP has developed and implemented National M & E plan for TB.
• NTP has recently revised recording and reporting forms which are currently being printed.

Challenges
• About 5-10% cases that had received TB medications are not registered due to various reasons like:
  o patients put on trial treatment.
  o patients including children from other wards being missed out of registration (e.g. in Lautoka DOTS centre, 6 from medical ward and 2 from paediatric ward not registered).
  o error in registration (e.g. in Lautoka DOTS centre, 4 patients from 2009 are registered in 2010 and not counted in any).
  o misunderstanding of the case definition (e.g. 1 case in Lautoka was not registered for second successive episode).

• Wrong recording of type of cases and outcome (e.g. in Lautoka DOTS centre, 3 re-treatment patients were recorded as new and all cured patients were recorded as treatment completed).

• Revised recording formats are still not in use and thus some important information like HIV testing status is missing from the treatment card and TB register. In addition, the treatment outcomes are not currently reported quarterly to the national level in a standard format.

• The data in EpiAnywhere is not yet updated. At some places, data entry is interrupted by poor internet coverage, as reported by data entry staff.

• Team could not see the supervisory plan but it seems that the supervisory team does not include other stakeholders. Team did not find any system of feedback to lower centres on TB programme performance.

Recommendations
• TB staff members who are responsible for TB registration at DOTS centres require refresher training on TB recording and reporting. The Divisional TB Control Officer should verify correct recording and reporting before the dispatch of data.

• The NTP should ensure quick replacement of all old formats with the revised formats of recording and reporting.

• NTP should identify and sort out the problem of data entry into EpiAnywhere, especially the internet connectivity issue so that all centres have uninterrupted access to the EpiAnywhere system.
- The NTP supervisors should be trained/retrained on the TB recording and reporting and supervision skills in order for them to support the Divisional TB Control Officers at the DOTS centres.
- NTP should have regular supervision schedule which is adhered to and should include all relevant stakeholders to have more comprehensive view of the programme. NTP can devise and implement an internal evaluation mechanism which uses standard protocol and local expertise to evaluate the programme holistically and intensively, at least once a year.

2.2 Drug resistant TB

Introduction

National Reference Laboratory in PJ Twomey hospital has been performing TB culture on solid media for many years. Currently, the culture isolates from requested samples are transported to the Queensland Mycobacterium Reference Laboratory in Australia for DST examination. So far, there is no MDR has been detected on any of the culture isolate. However, the closest islands to Fiji in the Pacific, Kiribati and Samoa, have detected MDR-TB cases. Moreover, some of the Southern Pacific Island Countries and Territories especially in Micronesia have observed high level of drug resistance. In response to the recommendations of 4th Pacific Stop TB meeting (WHO 2008), Secretariat of the Pacific Community (SPC) with the technical partners like Pacific TB Laboratory Initiatives, Centres for Disease Control (CDC) and WHO developed a framework to address MDR-TB in Pacific Islands and Territories. This framework provides guidance to NTP managers of the region on the urgent response plan and programmatic management of MDR-TB.

Observations and achievements

- NTP has developed an MDR-TB management guidelines in 2010.

Challenges

- MDR-TB management guidelines does not adequately describe the treatment regimens to be used and management of patients while on treatment.
- Culture laboratory in PJ Twomey hospital does not carry out species identification and drug-susceptibility testing even for 1st line anti-TB drugs.
- Sputum culture isolates of very few patients (8 in 2010 and 5 in 2011) were sent to QMRL for DST and hence should be cautious in interpreting small sample of no resistance to lack of MDR-TB in the country.

Recommendations

- NTP should develop proper guidance on the standard or individualized regimens to be used for MDR-TB patients and flow of patient management after diagnosis.
• Culture laboratory in PJ Twomey hospital should be strengthened further to be able to undertake species identification and DST of at least 1st line anti-TB drugs.

• Depending on the availability of resources, NTP can plan to procure Xpert MTB/RIF to improve TB diagnosis and to quickly detect Rifampicin resistance. Before the procurement of Xpert MTB/ RIF, NTP should prepare a plan for it’s implementation and develop diagnostic algorithm for the usage.

• NTP should organize DST of at least all MDR-TB suspects to get better idea about the presence or absence of MDR in the country to be able to plan for any outcome.

2.3 TB/HIV

Introduction

NTP has developed a TB/HIV collaborative framework in 2010 and TB/HIV coordination committee has been formed at the national level.

The major activities described in the framework are; to screen all HIV clients for TB symptoms, provide IPT to asymptomatic, Mantoux positive clients, offer HIV Counselling and Testing to all TB patients and provide CPT and ART to all co-infected patients, along with the anti-TB drugs.

There is an HIV centre called an HIV Hub located in each of 3 divisions, responsible for Provider Initiated HIV Counselling and Testing (PICT) with a focus on strict confidentiality and providing ART to eligible PLWHA. The eligibility criteria for starting ART is a CD4 count of less than 350 mm$^3$ for all HIV positive clients and irrespective of CD4 cell count, all TB patients infected with HIV.

Observations and achievements

• Development of new framework for TB/HIV collaboration in 2010.

• Formation of a National TB/HIV coordination committee with representation from TB and HIV programmes, NGO, FBO and Fiji network of positive people.

• HIV support group meetings are happening regularly at many places.

• Out of total 366 cumulative HIV positives, ~70 are initiated on ART by 2010. There is no data available on deaths among HIV positives and loss to follow-up.

Challenges

• Although there is an existence of a national committee on TB/HIV collaboration, it does not meet regularly. This leads to lack of monitoring and subsequent improvement in TB/HIV collaborative activities.

• There is a conflicting message about the dosage of IPT between National TB guidelines (10 mg/kg) and framework for TB/HIV collaboration (5mg/kg).
• The current HIV guidelines are very old (2004) and HIV counselling and pre-ART register formats have not been updated for a long time. These formats contain information about TB disease but do not contain information about TB screening. There is also no information about IPT in the pre-ART register. Moreover, there is poor follow up of HIV positive clients at HIV Hubs. This raises doubts about regular TB screening in HIV positive clients as well implementation of IPT.

• Staff at HIV Hubs are not well aware of TB screening; about half of the HIV counsellors are not trained in TB. Team could not find any record of TB screening done and clients on IPT.

• Very few HIV clients are on ART and it seems geographic convenience is the criteria for initiating ART (in Labasa, all 6 HIV clients out of 44 taking ART are from close vicinity of the Hub).

• HIV testing is offered to all admitted TB patients but most of the times those TB patients who are started straight on ambulatory basis (~10% in some DOTS centres) are missed out.

• TB register format does not have a column mentioning HIV status of the patient or on the status of initiation of CPT and ART. This poses challenge of reporting and monitoring co-infected patients on CPT and ART.

Recommendations

• TB/HIV coordination committee should regularly meet and monitor implementation of TB/HIV activities. The committee should identify reasons for poor coordination between TB and HIV programmes and suggest ways to fully implement all TB/HIV collaborative activities at all levels.

• NTP should correct discrepancies of IPT dosage between TB guideline and TB/HIV framework.

• There is an impending need to revise the HIV guidelines and recording and reporting formats specifically to include information about TB screening and IPT. As part of this it will be important to address concerns among HIV Hub staff regarding confidentiality and sharing or recording clients’ HIV status.

• NTP should organize training of all HIV staff in TB/HIV, in liaison with HIV programme. HIV programme should take the responsibility of regular TB screening among HIV positive clients and provision of IPT in non-TB HIV clients.

• HIV programme should conduct more analysis on number of HIV positive eligible clients not put on ART and act appropriately to improve ART coverage.

• NTP should ensure HIV counselling and testing on all diagnosed TB cases before or after they are referred to periphery for treatment.

• NTP should establish recording system so that there is correct reporting on TB/HIV indicators like the proportion of TB patients screened for HIV, the proportion of TB patients infected with HIV and the proportion of co-infected on ART and CPT.
2.4 Infection control

Introduction

In the wake of increasing spread of HIV and high prevalence of diabetes in Fiji, there is a potential risk of increase in the incidence of TB. It is imperative for the government to contain transmission of TB infection by early case detection, successful completion of appropriate treatment and prevention of transmission by applying infection control measures in health facilities, congregate settings and communities.

Observations and achievements

- In some places, team could find a designated staff for health facility infection control.
- In some places, staff informed that they do triaging of cough patients from the general OPD.

Challenges

- Fiji National TB Guidelines do not adequately cover administrative measures for TB infection control in health facilities, congregate and household settings.
- There is no National TB Infection Control Plan available.
- There is no system of regular medical surveillance of staff especially for those working in high TB risk areas.
- Waiting areas in most Divisional Hospitals lack adequate ventilation (e.g. Labasa hospital). TB ward in Labasa DOTS centre also has poor ventilation arrangements and moreover the oncology unit is functioning next to the ward which is a potential TB infection risk to oncology patients who are on immune-suppressants.
- Team could not find any staff working in high infectious areas, using appropriate personal protective equipment.

Recommendations

- NTP should develop TB infection control guidelines/ plan which ideally should be integrated into the general infection control guidelines/ plan,
- NTP should advocate with the MoH for establishing a system of regular medical surveillance of staff especially for those who are working in high TB risk areas, that includes TB screening and reporting of the outcome.
- NTP should coordinate with hospital administration to conduct rapid infection risk assessment of overcrowded facilities in priority and find out best suitable option within available resources to improve on ventilation.
- NTP should keep the stock of appropriate personal protective equipment for staff and patients especially for using them during high droplets producing procedures and in wards having highly infectious TB patients.
2.5 Vulnerable populations

Introduction
Fiji has a low incidence of tuberculosis but there are some vulnerable populations and geographical pockets having higher risk of TB and its transmission. Important populations in Fiji situation are as below:

a. HIV positive individuals
   i. There is no reliable estimate for HIV prevalence in the country but there is a gradual increase in the number of HIV positives in the country and it is a known fact that HIV positives are at a high risk of developing TB disease.

b. Contacts of pulmonary TB patients
   i. Evidences suggest that, close contacts of infectious TB patients have 2-3 times higher risk of TB disease than general population.

c. Diabetic patients
   i. The prevalence of diabetes is very high in Fiji at 16% (National STEP survey 2002). Diabetes is also the number one cause of morbidity in the country. Diabetes triples the risk of developing TB. Diabetes can worsen the clinical course of TB and TB can worsen glycaemic control in diabetic patients.
   ii. A quick assessment among hospitalized TB patients in a TB ward showing that around 60% of TB patients had diabetes (as per the communication with NTP Manager).

d. Prison inmates
   i. The living condition inside prisons in many countries and the background of the inmates put them on higher risk of TB disease than in general population. However in Fiji high TB prevalence among the prison population has not yet been documented.

e. TB in children
   i. Children due to various reasons have higher risk of contracting TB from an adult index case. Moreover, diagnosis of TB in children is difficult.

f. Hot spot areas
   i. There are numbers of identified hot spot areas in the country with a significant high TB notification rates. In particular, Rabi Island has maintained a high TB notification rate of around 300/100,000, which is about 15-time higher than the national average. In addition, there are some areas in Western and Central Divisions also have notified a high numbers of TB cases.

g. Populations in remote areas and outer islands
   i. With the unique scattered geographical lay out of the country, access to the TB and health services to the remote populations in outer islands is limited.

Observations and achievements

- NTP is implementing TB/HIV collaborative framework to reduce burden of TB in HIV infected clients.

- As per the National TB Guidelines, Zone Nurses are supposed to trace contacts of sputum positive pulmonary TB cases and refer them for TB screening. Children below six years are provided INH prophylaxis for 6 months if not found to have TB disease.
• Although there is no availability of framework for TB and diabetes, diabetic patients are screened for TB symptoms at diabetic clinics in major hospitals. TB patients also undergo blood sugar examination to rule out diabetes while they are in the hospital.

• There are 5 major prisons in Fiji. NTP has a plan to involve all of them in a phased manner. In 2011, only 1 patient was diagnosed as TB from prison. It was sputum negative so was treated in the prison. There is a system of entry and exit medical examination for all prison inmates. TB suspects from the prisons are referred to the nearest DOTS centre for investigations.

Challenges

• TB/HIV collaborative activities especially intensified TB case finding and IPT are not optimally implemented

• TB screening for close contacts of infectious patients has been conducted but not systematically done for all the contacts.

• Although the contact register is available (e.g. Lautoka DOTS centre), the record of contacts being screened and provided with INH Prophylaxis was incomplete. There is no way to monitor completion of prophylaxis in contacts.

• The screening algorithms for contacts: normally, symptoms screening and sputum examination are done for contacts, who cannot come to the hospital. When the contacts can come to DOTS centres for screening, Chest X-ray (CXR) is requested for both symptomatic and asymptomatic contacts. CXR were done for 31/134 contacts in Lautoka hospital. TST has been requested for some but not all the contacts. Yield of contact screening is low. No active TB case detected from screening 124 contacts in 2011 at Lautoka DOTS centre.

• There is no formal guideline for the collaboration of TB and diabetes and consequently collaborative activities are not uniformly implemented. This also results into lack of reliable data on collaborative activities.

• The NTP has conducted TB awareness workshops at some prisons. However, there is little evidence suggesting any coordinating mechanism established with the prison authorities for TB control in prison

• In paediatric wards of major hospitals, many patients are started on TB treatment on trial basis, they are not registered and thus there is no monitoring. Currently, there are no paediatric formulations available with the programme which leads to inconvenience and risk of improper dosages consumed by paediatric TB patients.

• There are some hot spot areas in Fiji with high TB rate as described above. However, there is not clear strategy for intensified TB case finding in these populations.

• Although the current epidemiological data shows low rate of TB in the outer islands in the Eastern Division, the actual epidemiological situation is not well known because of the limited available services for case detection as well difficulties of transport of patients or samples to the main islands.
Recommendations

- TB/HIV collaborating committee should regularly meet and monitor the implementation of TB/HIV collaborative activities. NTP should liaise with the HIV programme for joint planning and training of the staff.

- NTP should consider developing a separate register for recording and monitoring contacts in a pilot site and then to decide for its wide scale implementation depending upon the feasibility and output.

- NTP should develop and implement a framework for TB and diabetes in line with the recently published WHO framework in order to establish a coordinated response to both the diseases.

- NTP should prepare a plan for establishing coordination with the prison and involve prison authorities in planning and monitoring the National TB Programme.

- NTP should organize orientation of paediatricians on TB diagnosis, treatment and about the risk of treatment. NTP should procure paediatric formulations at the earliest.

- The algorithm for screening high risk populations should include more sensitive screening tools, such as chest X-ray, rather than only symptom screening. Depending on the availability, more reliable investigation tools, e.g. Xpert or culture, should be included in addition to microscopy in order to improve outcome of such screening.

- NTP should improve access to TB services to the populations living on the outer islands and remote areas in order to monitor situation and control TB in these populations.

2.6 Health system

Introduction

Health system strengthening is defined as “improving capacity in some critical components of health systems in order to achieve more equitable and sustained improvement across health services and outcomes”. Progress on all of health related Millennium Development Goals depends substantially on the strengthening of the health systems. The NTP can contribute in improving health policy, human resources, financing, management, service delivery like infrastructure and supply system and information systems.

NTP can make a potential indirect impact on strengthening general health system by efficiently implementing TB/HIV collaboration, TB and diabetes collaboration, PPM and Practical Approach to Lung Health (PAL). This has mutual benefit to all the health programmes which are collaborating and consequently to the general health system.
Observations and achievements

- NTP has been contributing immensely to the general health system in terms of providing infrastructure support for e.g. laboratory refurbishments, health personnel, lab and IT equipment, transport vehicles, HIV diagnostic kits etc.

Challenges

- NTP has not yet developed guidelines for the implementation of PAL

Recommendations

- NTP should develop guidelines for PAL and start implementing it in a phased manner

2.7 Public-private mix

Introduction

TB is a notifiable condition and mostly diagnosed and treated within the NTP. In the country context, the private sector has a role in referral of TB suspects and managing TB patients on treatment if the patient is referred back with the drugs.

Observations and achievements

- NTP has developed a draft of PPM memorandum which can be utilized for entering into an agreement with the private health care facility for the collaboration in TB control

Challenges

- Team could not find any evidence of establishment of mechanism for Public- Private Mix (PPM) and thus no data on the contribution of private sector in NTP.

Recommendations

- NTP should map private physicians/ private health care facilities and initiate process of collaboration by meeting/ workshops with the major health care providers.
- At later stage, NTP should develop mechanism to record the contribution of PPM in case finding and treatment outcome.

2.8 Empowering people with TB and communities through partnership: Advocacy, Communication and Social Mobilization

Introduction

The Round 8 TB application to the GFATM highlighted the lack of community, civil society and peripheral health system involvement in TB control as justification for its Advocacy, Communication and Social Mobilization (ACSM) activities. It noted that the NTP was seeking opportunities to collaborate with the Fiji Red Cross Society (FRCS) and other civil society...
organisations, the National AIDS Programme (NAP), health professional associations and academic institutions that train health care providers. The rationale for the HSS cross cutting support to the FRCS included the organisation’s widespread presence in Fijian communities through its network of volunteers and its existing work in HIV peer education and health education. The 2008 National Tuberculosis Control Programme Review did not address ACSM. However, reviewers interviewed at least one patient who said he had sought care after hearing a radio programme on TB care seeking. Information, Education and Communication (IEC) materials they observed had been made by staff in TB wards. There was no analysis of community members’ involvement in TB control. The 2008 Review also noted the lack of community based health cadres’ involvement with respect to case finding, laboratory diagnosis, case management, supervision, and monitoring and evaluation as a missed opportunity, given the existence of Zone Nurses on every island in Health Centres or Health Stations. It recommended enhanced involvement of Divisional Health Departments and nursing staff based in communities as a strategy to overcome the challenges of reaching Fiji’s far flung and often sparsely populated areas with TB control.

The Round 8 application to the GFATM for TB sought to address the Review’s recommendations and its own gap analysis by developing a comprehensive plan that reflected the Global Plan to Stop TB’s six components. With respect to component six, Empower People with TB and Communities through Partnership, the Fiji Country Coordinating Mechanism applied for funding to conduct a Knowledge, Attitudes and Practice (KAP) study among nurses regarding TB; raise the awareness of all nurses about TB and its control; train Village Health Care Workers (VHCWs) and FRCS volunteers who conduct health promotion in communities on community participation in TB; produce a range of IEC materials; and conduct community outreach among leaders, the wider community and special populations like prisons. It applied for additional support to the FRCS to strengthen its management and supervisory capacity as well as its ability to retain volunteers, important aspects of Community Systems Strengthening.

Observations and achievements

- All health system and community based individuals met were committed and keen to improve the TB programme.
- ACSM in Fiji benefits from culture values that encourage vulnerable members of communities to be supported.
- The draft Strategic Plan to Stop TB 2011-2015 recommends specific strategies for FRCS volunteers and VHCWs to participate in TB case finding and holding. The review team learned from patients and nursing staff that that some VHCWs and most Zone nurses visit TB patients during the continuation phase so this is a feasible and appropriate strategy. Enhancing political commitment is an additional strategy.
in the draft plan. The Strategic Plan includes a range of ACSM activities, albeit reiterating the Round 8 application.

- Advocacy efforts benefit from a positive policy environment in terms of TB drugs being free and only available through the NTP, TB being a notifiable disease, the HIV/AIDS Decree which promotes the rights and job retention of PLWHA being applied to TB patients, that doctors and nurses received a 6% salary increase in the most recent budget, and provision of transport and food during the intensive phase.

- From minimal collaboration there is now considerable delivery of TB-related activities by the FRCS as well as growing engagement by the FNA, the Fiji School of Medicine and the Fiji School of Nursing.

- A National ACSM Committee has been established to steer and collaborate on ACSM activities.

- With respect to advocacy, World TB Day was celebrated in each Division in 2011, IEC promotional IEC materials such as book marks, T-shirts and calendars have been developed and a radio talk back shows has addressed TB. There was also a radio talk show, a strategy that tends to promote discussion that reaches decision makers and opinion leaders.

- The PR has set up a Facebook account that includes copies of all the IEC material and invites ‘friend’ participation and comments.

- IEC materials focused on communication for behaviour change include print materials on case finding, on the Patients Charter for Tuberculosis Care, and an English DVD with general TB messages as well as messages that promote care seeking/case finding which has been produced and distributed to all TB Units.

- Collaboration with the HIV programme on World AIDS Day and health promotion has raised awareness of TB in a cost effective way that pins TB to HIV’s greater profile, and is appropriate given the risk of co-infection.

- To determine nurses’ knowledge and behaviour change, the FNA conducted a KAP study and developed a first draft of a training manual for Zone and other peripheral nurses. It found stigma, misinformation and myths as well as low awareness of the DOTS strategy.

- The FRCS conducted a Situation Analysis on the Support Needs of TB Patients and Vulnerable Groups that explored perceptions of TB and TB treatment and support from the community perspective.

- The FCRS adapted International Federation of the Red Cross health education and promotion materials into a TB training manual for a 3 day session for community based volunteers and leaders. The materials were translated into key local
languages. There is a focus on learning and practising skills, consistent with adult learning principles.

- The FRCS has used the materials to bring their volunteers (Health and Care and some VHCWs who are also FRCS volunteers) to Suva for training programme in 2010 and to repeat the sessions in each Division in the third quarter of 2011. Community/traditional leaders were trained in separate sessions held in each of Division. VHCWs selected from communities in Northern and Western Divisions in which NTP had advised them that TB was an issue also participated in TB training sessions. To date there have nine training sessions. Some core FRCS volunteers who attended the first session have attended up to three others and some have helped to facilitate.

- We spoke with TB trained traditional leaders who said they are advising their communities about TB prevention messages such as not spitting and ventilation; at least one had sought assistance and additional awareness raising from the FCRS when there has been a TB patient in their community.

- FRCS Health and Care volunteers have begun to conduct TB health promotion sessions in communities, planned through liaison with leaders.

- Workplace awareness sessions on TB-HIV have occurred in the Central Division where TB incidence is higher and there are many workers from rural areas who are both vulnerable to HIV and tend to live in crowded housing.

- The NTP has conducted TB awareness in schools and prisons.

Challenges

ACSM strategy and planning

- Overall despite implementing many activities, the potential impact of Fiji’s ACSM investments on its TB control targets of case finding and cure rates is difficult to discern. General awareness of TB was observed to have increased in areas where outreach was conducted and this may have increased health care seeking; however targeting has been poor and the contribution to case finding has not been measured because there is no system to do so (for example, by the use of suspect registers as recommended above). No increase was observed in community volunteer participation as treatment observers or partners. The relationship with stigma reduction and meaningful participation, the other two Stop TB ACSM outcomes, is also unclear.

- ACSM activities are not aligned with Fiji’s TB epidemic. With a sparse population and estimated incidence of 27 per 100,000, many community members and peripheral health workers will see TB only sporadically, as little as once in 5 years. TB ACSM needs to be targeted to populations most vulnerable to TB and those who can take
action to prevent, detect and manage it. It needs to address the gaps in TB control, which in Fiji includes high default rates as well as a large proportion of smear negative pulmonary TB.

- The NTP seems to have devolved not only the ACSM activities to the FRCS and the FNA as sub-recipients responsible for community outreach, IEC and developing training for Zone Nurses but also the responsibility for ensuring that these ACSM investments achieve TB goals. As the TB expert in the country, the NTP needs to lead and assist these non-TB experts to strategize and target activities appropriately.

- When the NTP and PR partnered with the FRCS and FNA as Sub-Recipients of the Round 8/9 grant, partnership principles do not seem to have been considered as much as they could have been. These include that:
  - each partner contributes resources to achieve a common and agreed objective;
  - other benefits, such as increased profile or access to new markets or populations, can make the partnership stronger but need to be understood by all; and
  - partners may have organisational challenges involved in participating; these that also need to be clear and strategies developed so that challenges do not undermine a partnership.

In the case of the FRCS, NTP asked it to contribute its network of volunteers to contribute to TB control, which is consistent with the IFRC’s and the FRCS’s vision and mission. The FRCS them submitted a successful sub-recipient proposal for inclusion in the Round 8 application. As well as being remunerated for community based TB activities, Round 8 provides the FRCS with support for financial and organisational cross-cutting HSS activities. This includes annual events to recognise, motivate and help to retain volunteers. However, in addition, the FRCS rewards volunteers with allowances for participating in TB training and conducting outreach. The frequency of or arrangements for these allowances does not seem to have been explicit or based on a shared understanding; nor is the FRCS’s commitment to independence, one of the IFRC’s seven core principles, seem to have been considered a potential challenge. One of the concerns that the PR has is that the FRCS has not been forthcoming with specific plans and criteria regarding which cadres of volunteers will be trained, the training facilitator and criteria for their selection. Training materials have also not been shared. Moreover, as the FRCS limits its community work to programmes with funding, the sustainability of their TB efforts is linked to GFATM or similar support. While building civil society human resource, leadership and financial capacity are important components of Community Systems Strengthening (CSS), it is not clear to the ASCM reviewer or the PR that the
current FRCS arrangement is a productive and sustainable strategy for building broader civil society capacity to respond to TB. It does, however, enable outreach to communities to raise TB awareness and has the potential to reach special populations (in the Fiji context areas where there TB has been diagnosed and vulnerable populations such as PLWHA and diabetes patients).

- Similarly, the FNA’s potential contribution to TB and its challenges in doing so do not seem to have been carefully considered. It does bring links to nursing through its members but its capacity to bring a nursing perspective to Zone nurse training is limited because of its own human resource challenges.

- The capacity of the FRCS and the FNA and mechanisms for their collaboration with the NTP and Public Health system to integrate supervision, support and training of FRCS volunteers, VHCWs, and Zone Nurses does seem to have been thought through.

- The PR tends to drive strategic thinking and commitment to ACSM. While this arrangement may cause activities to be implemented, it is not likely to build ownership, systems and sustainability.

**Advocacy activities**

- Advocacy efforts are not based on an analysis of which policies or community advocacy for better care need to change. Examples of policy gaps that such an analysis would consider are government funding for TB, transfers among health staff trained in TB and TB Coordinator and Zone nurses’ access to transport. An analysis of current and ideal community leader roles in advocating for better health and TB care is not included in any of the TB documentation.

- The impact of advocacy in terms of policy change and community leader advocacy for better TB care and support is not measured and so activities are not as well targeted as they could be. Indeed most ‘advocacy’ efforts are around general awareness of TB.

- There is no analysis of the policy issues discussed on the radio talk show although there is a recommendation to repeat it.

- As the FRCS training is generic, it has not taken advantage of the community leaders’ potential role in promoting better care and support for TB patients. They attend district meetings where they discuss district issues and could advocate to the health system for such support. This is not part of the FRCS training or programme.

**Communication activities**

- The lack of analysis also applies to communication materials. Such an analysis would include current attitude/behaviour and among whom, change desired and by whom, and best communication channel and message to produce the desired change.
Many IEC materials are difficult to read because of font size and background. While the PR reports they were field tested, there have been complaints since they were distributed.

IEC materials tend to have too many messages.

Most address case finding and are for the general public – there is a little on stigma reduction and almost nothing on case management, although the DVD mentions stigma and the length of treatment. There is a distinct lack of targeted materials to help patients, their families and peripheral health workers ensure treatment observation, and promote correct management and support to patients.

Media selection seems to be ad hoc. There is excellent radio penetration in Fiji and its use in not optimised.

Collaboration in IEC does not extend beyond HIV despite that diabetes is a risk factor for TB and is high profile as is contributes significantly to burden of disease.

Distribution of IEC materials is unclear and not targeted. No IEC evaluation mechanism was found.

The ACSM Publication database includes all TB materials (reports, reporting forms, training guidelines and manual etc as well as IEC). While it is important to maintain this data base, the programme needs to focus on ACSM.

The review team found that peripheral nurses had low levels of suspicion if presented with a patient with TB symptoms and that they were unsure about DOTS or their roles in TB control. This agrees with the KAP study. However, the study did not include a question regarding previous training and has no analysis that compares the different sub-cadres or work locations that would help to target training. There is also no analysis on the most appropriate training mode given the TB epidemiological situation in Fiji or to integrate training with how Zone nurses are supervised and supported. The survey design and questionnaire tool were provided to the NTP and WHO for comment and these issues were not identified.

The draft training for peripheral nurses does not focus on their roles in TB and instead reiterates the draft TB Guidelines. The NTP has been reluctant to comment.

Social mobilization activities

The FRCS strategy and training materials are not aligned with the epidemic or targeted to the desired behaviours for each group.

There is no analysis of FRCS volunteers’ penetration, roles, incentive systems and how they could best contribute to TB control, given the epidemic. The strategy...
being used mirrors HIV peer education and disaster preparedness, which have more straightforward behaviour change prevention messages.

- Appropriate strategies like using worker association and employers to reach internal migrant workers in the Nausori-Suva corridor, a hot spot, are not highlighted by the ACSM partners.

- Community leaders’ training does not seem to have been differentiated from FRCS training. Training traditional healers does not seem to have been considered.

- While the idea enhancing VHCW participation in TB case finding and management is appropriate, strategic thinking and collaboration regarding how to accomplish this has not been optimal. The ACSM reviewer could not find an analysis of VHCS presence in communities, basic training, role, length of service (other than comments on poor retention), remuneration and incentives, how an enhanced TB role might best be incorporated, and how to supervise them and assure quality.

- Despite repeated requests the ACSM reviewer was not able to see the final FRCS materials before the review team’s debrief with the NTP and partners, although the sections for the IFRC manual used to develop the training programme was provided by the PR. Interviews with those who attended indicate that in all FRCS sessions all cadres learn about IFRC principles, communicable disease and TB transmission, basic hygiene as a prevention strategy, symptoms, sputum collection and that TB can be cured but there is very little on stigma reduction strategies or care and support. The inclusion of sputum collection for all was suggested by the NTP Manager. A 2010 pilot of community based sputum collection for diagnosis found that about two thirds of specimens were saliva and none were AFB positive. The materials do not include the patient domiciliary record that they would need to fill in as an observer.

- There was no collaboration with the Health Promotion Unit that developed and is currently revising the VHCW training. However, the review team also had trouble meeting with the Health Promotion Unit.

- The FRCS initially selected trainees independently. More recently the NTP was consulted but not the Divisional NTP Officers who have the most recent information on TB cases.

- Some FRCS volunteers tend to plan activities independently from the health system or the Divisional NTP programme and so may or may not visit areas where TB has been found. Even when they did visit an area with a TB patient in Western, the volunteer did not know prior to visiting. In Northern, they did know but this information came from the National Office.
• Plans for supervision and support of ZRCS trained VHCWs are unclear and not linked with the health system. VHCWs are supervised by Zone nurses and trained by Divisional Public Health staff.

• No one interviewed within the NTP, the PR or the ACSM SRs was familiar with Health Centre Management Committees mentioned in the Round 8 application.

• Monitoring information collected by volunteers conducting outreach is sent to and analysed by the National Office and not fed back systematically, which does not facilitate volunteers improving upon their efforts.

• FRCS monitoring does not have a system to demonstrate whether the knowledge gained by communities during TB awareness sessions is applied, although the pre-post tests do measure if the correct information was shared.

• The assessment on TB Patient Support Needs provides only minimal information for ACSM planning, for example the level of stigma, and has not been used to help the FRCS develop their programme. Using recall for health education messages is only effective if the education was within the last 2 weeks so these sections are not useful. There is a section on civil society lack of involvement in TB support (although the need for such support is not clear from this review except for some families during hospitalization of a breadwinner or mother) but no activities with civil society organisations have been planned and FRCS volunteers do not carry out these types of TB activities. It must be noted that its design and questionnaire were provided to the NTP and WHO for comment so any design challenges should be considered a shared responsibility.

Recommendations

ACSM strategy and planning

The following priority recommendations for the ACSM programme are followed by more specific ones under the sub-headings of advocacy, communication and social mobilisation.

• The ACSM strategy must be aligned with a low level epidemic, with a high proportion of cases being smear negative pulmonary ones and too many defaulters. Advocacy and communication needs to reflect this and be better targeted. Community based work should prioritize areas where there are patients currently on TB treatment, prioritise contacts and special population of PLWHA and those with diabetes. Community participation in treatment observation and support is crucial.

• The NTP needs to assume leadership in terms of ACSM strategies that are likely to achieve TB targets, based on an analysis of epidemiological trends and the functions of the TB and health systems. It is recommended that an ACSM strategy be developed and included in the Stop TB Strategic Plan.
• While the current ACSM programme is activity driven and lacks focus, the SRs and participants are committed to TB control. A complete redesign or change of SRs would be unlikely to move the programme along significantly within the Round 8/9 timeframe so what is suggested are strategic and incremental changes combined with a commitment to acting on plans.

• A suggested first step is a rapid assessment to identify the ideal policy, situation or behaviour, the change needed, adapted or new activities and related M&E. This could be done by the ACSM Committee but given the timing challenges it might be more appropriate for each IU or SR to do their section and then present their work to the PR and Committee. Specific recommendations for what to consider are below as well as suggestions for the way forward.

• The less well targeted activities in Phase 1 should be considered as a pilot. Once the M&E is agreed for each ACSM area, assess their impact in terms of TB and ACSM objectives and use the assessment to refine them.

• The NTP and any advisors need to provide honest and constructive critiques of assessments, plans, training and other materials that ACSM partners produce.

• Regarding partnership arrangements:
  o If the FRCS is using training to recruit new volunteers or to retain existing one, this must be clear to everyone. If the major objective for its participation in TB is CSS through organisational development this must also be clear.
  o The FNA’s capacity and potential to bring a nursing perspective to Zone Nurse training must be clarified.

• The ACSM programme must collaborate and integrate with the Public Health, Health Promotion and NTP DOTS Centre systems. Collaboration is working together to achieve an objective and involves agreeing objectives, shared planning and sharing resources to achieve the objective, for example a training session. Consultation is asking someone their views, making a plan, telling them about it and then asking them to join. It does not work as well because others have not committed to your plan.

• It is recommended that Divisional ACSM Committees be established to coordinate Divisional TB activities. Potential members are the DOTS Centre TB Manager or Coordinator, the Public Health Sister in Charge, the FRCS, a representative of FNA and one or more representatives of district/municipal councils.

• Meaningful monitoring of community contribution to TB must be included in TB M&E. Suspect registers can include a column for how a suspect was referred, for example. The number of volunteers supporting TB treatment as observers or by
supporting family members also needs to be monitored, either through community based monitoring or use of treatment cards for this purpose.

Advocacy activities

- To re-strategize policy advocacy, the NTP should lead but bring in appropriate SRs and partners. The rapid assessment would include:
  - policy gaps (national to sub-Divisional levels, eg, funding, staff transfers, transport);
  - the desired policy(ies);
  - decision makers: the individuals or organisations that can make the policy decision;
  - the individuals or groups that influence decision makers (this can range from the public to one influential person);
  - advocacy strategies and specific activities to influence both the decision makers and those who influence them; and
  - indicators and mechanism for monitoring progress (that should also be used to assess what had been implemented to date).

- World TB Day activities and materials should address policy issues as well as TB awareness.

- Two page policy briefs for policy makers and journalists are a good way to help them to address the issues. A cost effective strategy are breakfasts for the same groups that include a brief on policy issues at strategic moments, like before a debate on a budget.

- Some policy needs, like nurses transport or staff transfers, require meetings with decision makers at the Divisional and Sub-Divisional levels. In some countries, an agreement is made with the Division and trainee staff member that if training is provided, the trained staff will not be transferred for at least 2 years.

- To re-strategize community leaders’ roles in promoting better TB care, the FRCS should lead. The rapid assessment would include:
  - the current role and processes for leaders to advocate for better health care in their communities (eg councils, health committees);
  - the desired behaviours (eg leaders support and encourage communities to support VHCWs, leaders support and encourage communities to support TB patients, leaders advocate with health workers and facilities for quality TB care);
  - strategies and specific activities to help leaders assume this role (eg TB orientation, assistance to develop action plans on promoting better TB care, IEC materials); and
- The community leader of FRCS work should be focused on communities with current TB patients as confirmed by the Divisional DOTS Centres.

- It should build on community leaders current roles in municipal/district councils to reach other leaders.

- Any additional training should be focused on what community leaders do and not be the generic one the FRCS is currently using. A half or one day meeting with trained leaders where there is patient would be sufficient.

- An operational option would be for FRCS Health and Care volunteers to work with leaders to develop plans.

Communication activities

- To re-strategize IEC for behaviour change the NTP and FRCS should collaborate. The rapid assessment would include:
  - current attitude/behaviour and among whom (both stigma and TB case finding/management);
  - change desired and by which target audience;
  - message;
  - best communication channel to reach the target audience;
  - collaborators (eg the HIV or NCD/diabetes programme); and
  - indicators and mechanism for monitoring progress (that should also be used to assess what had been implemented to date).

- All current IEC materials should be reviewed before reprinting.

- Media need to be selected for each target population and message. Mass media is a good way to raise general awareness on TB; Fiji has high radio penetration and its use should be greater.

- Continue collaborative work with HIV on stigma reduction but also be careful that the two are not confused in the messages. Also explore collaboration with the diabetes and non-communicable disease programmes.

- All IEC materials must be pre-tested among the people who you want to read, to understand the messages and act on them.

- IEC posters should have a clear message. The case finding check list is an example of a clear poster. It could be contextualised for each Division by adding a sticker with the location of the DOTS Centre.
• The poster on The Patients Charter for Tuberculosis Care is an example of one that is difficult to read; it should not be reprinted in its current format. To make it appropriate for Fiji and clear, the messages may need to be conveyed in more than one IEC material and adapted to this context.

• There is an urgent need for materials for patients, families and VHCWs on how to continue TB treatment in the community to ensure treatment observation, and promote correct management and support to patients.

• A TB care plan form could be developed and attached to the TB continuation phase form. This would communicate key treatment messages, dates and contact numbers for each patient to Zone Nurses and VHCWs.

• The NTP needs to lead in maintaining the publication data base.

• Both the NTP and the FRCS need to track and monitor distribution and use of IEC materials.

• As a monitoring tool, IEC materials should be split by purpose (eg general awareness, stigma, case finding, management) and audience. This can help to determine if the focus and investment match what you want to achieve.

• If the KAP is repeated to assess impact on nurses’ TB knowledge, attitudes and practises, a question on past TB training needs to be included and more cross tabs performed. All questions and analyses should be assessed for the usefulness of the information provided before repeating it.

• To focus the training for Zone and other nurses, a rapid assessment would include:
  - current role and competencies (skills) of Public Health and Zones nurses in TB and how they are supervised;
  - role and competencies that you want each to take up;
  - training objectives for that cadre; and
  - indicators and mechanism for monitoring progress (that should also be used to assess what had been implemented to date).

• In addition it is important to assess how the training will be rolled out and in collaboration with whom, including how Zone Nurses currently receive in-service. To do this FNA must collaborate with the Public Health and TB programmes.

• The draft currently being developed is not appropriate for Zone Nurses or based on a competency model; the ACSM reviewer sent detailed comments. A nurse needs to develop or be involved in decisions about the materials to ensure that it builds competencies in nursing. Sending comments may not be sufficient.

• The training roll out should facilitate rapidly reaching Zone Nurses with key TB competencies in TB hotspots. The approach should also leave behind a system. One
strategy would be to develop a training of trainers programme for Divisional and Sub-Divisional Public Health Sisters-in-Charge and TB Coordinators. This would be cascaded with routine in-service to Zone Nurses and supported with TB finding. It must be clear from the materials that TB Coordinators would participate as facilitators and advise on where to conduct the training based on TB case loads.

- At the same time, to allow the training to reach Zone Nurses as soon as they have a TB patient it is suggested that a 30 minute distance learning video with the key messages and competencies for Zone Nurses around caring for a TB patient in the community. This could be sent to the nearest Health Centre along with the referral letter when a patient returns home to complete treatment. Since the only computer is likely to belong to the Medical Officer, facilitating Zone Nurses watching it could be suggested in the referral letter from the DOTS Centre. This is not for TB patients.

**Social mobilization activities**

- To reiterate, the FRCS should consider activities to date as a pilot and reassess targeting and impact before conducting any further training. The HIV peer counselling and disaster preparedness models are not appropriate for TB which needs more precise targeting.

- The strategy of using volunteers for general awareness raising is difficult to target given TB prevalence. Health and Care volunteers should focus on developing and delivering plans for general awareness, stigma reduction and patient/family support in areas where there are current TB patients.

- More work should focus on urban and per-urban areas like the Nausori-Suva corridor, where there is more TB. The workplace strategy is a good one.

- Community leaders are discussed above under advocacy; they can advocate to councils, as well as the health and social systems for better care and support, also based on action plans.

- For its VHCW programme, the focus should be treatment support in the continuation phase and contact tracing.

- The FRCS might consider including traditional healers if this is feasible.

- FRCS training and materials should be differentiated by cadre. The IFRC manual, while a good basis, needs to be contextualised to Fiji, adapted to each volunteer cadre and include specific TB actions for each; the section on immunisations should be excluded. Community based sputum collection by VHCWs could be an aspect of TB care during the continuation phase (for collection at 5 and 8 months) but should not be part of volunteer’s contribution to case finding or contact tracing, as so much of TB is smear negative.
• VHCWs need specific sessions on observation, filling the domiciliary form, potential problems during treatment and collaborating with the Zone nurse.

• To re-focus the FRCS training, a rapid assessment would include:
  o current role of each training cadre - i) Health and Care volunteers whether they are based in Branches or have other roles such as students or VHCWs, ii) community leaders iii) VHCWs, others?
  o the ideal role that the cadre should take up;
  o training objectives for that cadre;
  o how past trainees could be rapidly updated without bringing them in for another 3 day session; and
  o indicators and mechanism for monitoring progress (that should also be used to assess what had been implemented to date).

• To be effective in TB the FRCS must collaborate with the Divisional NTP (DOTS Centres) in all their work and with the Public Health and Health Promotion for their work with VHCWs. Collaboration is working together to achieve an objective and involves agreeing objectives, shared planning and sharing resources. Consultation is asking someone their views, making a plan, telling them about it and then asking them to join. It does not work as well because others have not committed to your plan.

• The trainees need to be selected with the Divisional NTP Officer or Coordinator; in the case of VHCWs, Public Health should also be involved.

• Vertical reporting to the FRCS without involving the Divisional and Sub-Divisional levels is not recommended; FRCS volunteers need to be linked into the peripheral health system to be effective in TB.

• It would be better to train VHCWs as part of routine training, or to support an entire one week Public Health delivered VHCW training in high TB areas to ensure that it included TB. The training would then be a collaboration with Divisional Public Health and consistent with VHCW supervision and support.

• Planning of community outreach should also be collaborative, in consultation with the Divisional NTP Coordinator so that areas where there are current TB patients are reached. This could also be through the recommended Divisional ACSM Committees but it is unlikely that they will meet often enough.

• The current pre-post tests indicate that correct training was delivered. FRCS should also monitor behaviour change. In addition, volunteers need to be able to evaluate their own efforts so that they can improve. It is suggested that a simple system be developed to monitor social mobilisation for TB actions and VHCW participation in TB care.
• The ACSM reviewer does not suggest repeating the TB Patient Support Needs assessment.

2.9 Operational research

Introduction

With the advent of introduction of many newer initiatives/ approaches in the programme, there is an increasing scope of conducting programme based operational researches in order to find efficient ways of putting these approaches into practice.

Observation and Achievements

• In September 2011, in collaboration with MoH, the International Union Against Tuberculosis and Lung Diseases (The Union) and WHO, the Fiji National University (FNU) conducted situational analysis on operational research needs for TB, and a training workshop for building capacity on OR in Fiji. This has brought out a list of priorities for operational research in TB and TB-related health issues e.g. TB-HIV, TB-Diabetes etc.

• As a result of the training, twelve OR proposals have been developed and approved by the Union’s ethics committee. The investigators are waiting for approval of Fiji National Ethics Committee in order to start data collection. Another OR study has been conducted by the FNU on registration of TB patients and initial defaulters.

• There has also been an established long-term plan for capacity building and promoting OR in Fiji in collaboration with the FNU, The Union, Auckland School of Population Health and Woolcock Institute of Medical Research in Sydney, Australia and WHO. The international and national mentors are working with the local investigators and providing necessary support along the study process. Follow-up training modules on data analysis and writing report are planned to be conducted next year from the same participants who attended the first training workshop on proposal development.

Challenges

• The health staff working on TB has limited experiences on research work.

• The interpretation and use of existing data for programme management is inadequate.

Recommendations

• The NTP should utilize this review findings to reconsider priorities for research in TB which have maximum benefit to the TB programme.

• The NTP should consider establishing sub-committee on operational research under technical working group to monitor the implementation of OR plan and activities in the country.
2.10 Evaluation of outcomes and impact

2.10.1 Case notification

Over the past 60 years, the notification rate of all TB cases declined from over 50/100,000 in the 1950s to around 20/100,000 in the last decade. However, an upward trend has been observed since 2008. The notification of new smear positive pulmonary TB, however, remained at the same level from 1995 to 2005, albeit showing upward trend since 2008. The NTP’s preliminary data of 161 TB cases notified in first three quarters of 2011, also indicates the possible increase of case notifications in 2011 too in comparison to the total of 191 and 144 TB cases in 2010 and 2009 respectively.

In 2008 and 2009, the increase in total case detection was largely due to the increase in sputum negative and EP TB cases, which may be due to improved follow-up of negative cases and/or improved diagnosis of sputum negative and EP TB along with a general improvement in laboratory diagnosis (section 2.1.2).

The previous external TB review conducted in 2008, identified several gaps and recommended ways to improve the performance of the NTP. It found a significant number of diagnosed TB cases at the DOTS centers not being reported to the NTP at the national level. The increase in number of notified cases in 2008 and 2009 compared with the previous years could also be due to improved quality of the registration and surveillance system following the implementation of recommendations of the 2008 review.

Table 7: Case Notifications, Fiji 1990 - 2011

<table>
<thead>
<tr>
<th>Year (Q1-3)</th>
<th>New cases</th>
<th>New Smear Positive</th>
<th>New Smear Neg/Unknown</th>
<th>New EP</th>
<th>Relapse</th>
<th>Total of New and Relapse</th>
<th>Total case notification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>226</td>
<td>84</td>
<td>105</td>
<td>37</td>
<td>0</td>
<td>226</td>
<td>226</td>
</tr>
<tr>
<td>1995</td>
<td>201</td>
<td>68</td>
<td>99</td>
<td>34</td>
<td>2</td>
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</tr>
<tr>
<td>2000</td>
<td>144</td>
<td>62</td>
<td>42</td>
<td>40</td>
<td>0</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>2005</td>
<td>132</td>
<td>63</td>
<td>29</td>
<td>40</td>
<td>0</td>
<td>132</td>
<td>132</td>
</tr>
<tr>
<td>2008</td>
<td>102</td>
<td>78</td>
<td>5</td>
<td>19</td>
<td>4</td>
<td>106</td>
<td>106</td>
</tr>
<tr>
<td>2009</td>
<td>142</td>
<td>83</td>
<td>21</td>
<td>38</td>
<td>2</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>2010</td>
<td>179</td>
<td>89</td>
<td>45</td>
<td>45</td>
<td>10</td>
<td>189</td>
<td>191</td>
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<tr>
<td>2011 (Q1-3)</td>
<td>158</td>
<td>85</td>
<td>24</td>
<td>1</td>
<td>159</td>
<td>161</td>
<td></td>
</tr>
</tbody>
</table>

In addition, there has been a significant increase of investment in TB control in the last two years with the Global Fund grant for TB and health system strengthening, which was started in April 2010. There is a restructuring of the NTP since the grant start with stronger leadership at the national level and better coordination between the national and divisional
levels as well as among the DOTS centers in management of the programme. There are also a significant increase in the number of programme activities conducted by the NTP and other TB stakeholders, e.g. ACSM, training/retraining staff, supervisory visits, strategy and policy development, which could be contributing to the increase in case detection. There is evidence of increased numbers of suspects tested by microscopy laboratory facilities since 2010 (e.g. PJ Twomey laboratory).

Moreover, high diabetes prevalence and an increasing number of HIV positives in the country, the possibility of increasing breakdown into TB cannot be ignored.

This review has also identified a number of TB cases, which are diagnosed and treated with TB medications but not registered within the NTP. The TB cases that are missing to registration (section 2.1.5) imply that the actual number of notified TB cases is higher than reported. Furthermore, intensified case-finding for high-risk and special populations have not been sufficiently implemented (section 2.5) or implemented with low sensitive algorithms. In other words, as the NTP improves registration of the diagnosed TB cases and implements sufficiently the intensified case finding for high-risk groups, the notification rate would possibly be higher than the previously reported data.

Recommendations:

- NTP should conduct an investigation on the diagnosed TB patients who are not registered with the NTP’s recording system. The findings from this investigation, together with other information on performance of the NTP, need to be shared with the WHO Stop TB for re-estimation of the impact indicators.
- NTP should implement more proactive approaches to intensify TB case finding while improving the quality of case management.

2.10.2 Vital registration and mortality of TB

The review team found that the vital registration system in Fiji is functioning reasonably well and is an important source of data for monitoring mortality of TB. Most hospital and outside hospital deaths are registered and death certificates have been issued by a local Medical Officer. The data of TB deaths are recorded in an electronic database of the Public Health Information System (PHIS), which is managed by the Health Information Unit (HIU) within the Ministry of Health. During the TB review, TB mortality data from 1999 to 2010 were extracted from PHIS and provided by the HIU (Table 9 and Figure 6). This is an important data source for monitoring mortality rate which is an impact indicator for measuring TB burden in Fiji, albeit requires further validation of the data.
Table 8: Mortality of TB, Fiji 2000 – 2010 (data from the national vital registration)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Total</th>
<th>Mortality</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>12</td>
<td>1.5</td>
<td>0.8</td>
</tr>
<tr>
<td>2001</td>
<td>15</td>
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<td>3.5</td>
<td>2.4</td>
</tr>
<tr>
<td>2006</td>
<td>25</td>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td>2007</td>
<td>34</td>
<td>4.1</td>
<td>2.9</td>
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</tr>
<tr>
<td>2009</td>
<td>19</td>
<td>2.3</td>
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</tr>
<tr>
<td>2010</td>
<td>24</td>
<td>2.9</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Figure 6: Mortality of TB in Fiji 2000–2010

(Data source: Public Health Information System (PHIS), Health Information Unit, MOH)

There is a need to cross-check TB deaths in PHIS database and in the NTP register. The aim of the data linkage is to confirm that all the TB deaths during treatment, which are recorded in the NTP registers, are captured in the PHIS database. Because of the limited time frame of the review and the procedures of extracting information from two databases, the review team could not conduct this data validation.
Another observation from the current NTP’s registration practice is that the NTP registers TB patients who are started on TB treatment. That means TB patients who die before receiving treatment are not registered. As per discussions with the NTP staff and medical officers, it was found that such cases are usually diagnosed by pathologists or clinicians in hospitals through post-mortem autopsy, pathological and sputum test with the results only available after patients’ death.

**Recommendations**

- NTP and HIU should conduct a cross-check between the NTP and PHIS databases on TB deaths to ascertain linkage.
- NTP should consider establishing a system of recording and reporting for all diagnosed TB cases and a system to measure deaths among them before the start of treatment. This would give a better epidemiological picture of all diagnosed TB cases in the country and deaths before treatment.
- NTP should organize an assessment of the quality and completeness of vital registration since the system’s start, for validation of the PHIS database on TB mortality.
- After validation, NTP can consider using the mortality data from vital registration, in addition to the estimated morbidity indicators, for monitoring impact of TB control program on the burden of TB in the country.

### 2.10.3 Outcome of New Smear Positive Pulmonary TB

The treatment success rate for New Smear Positive Pulmonary TB cases has been consistently high, fluctuating between 75% and 90%, for the last two decades. It was almost 90% in last two years (2008-2009 cohort). Unfortunately, the earlier data shows a sudden drop in the treatment success rate in first three quarters of 2010 to ~68%. The major reason is a very high default rate (21%).

It has also been observed that there is a high death rate among Sputum Negative and EP TB; this raises doubts about the quality of diagnosis and/or delayed diagnosis among HIV co-infected individuals or TB with diabetes.

**Recommendations**

- NTP should ensure adequate supervision of all TB cases especially during ambulatory phase. Every missed dose should be notified and acted upon by the treatment supervisors. Analyse the reasons of recent defaulters and implement measures to contain it.
- NTP should ensure that, every death case is visited and reasons identified to implement appropriate measures to reduce deaths. NTP should also strengthen TB/HIV collaboration and establish mechanism for TB and diabetes collaboration to intensify TB screening and early diagnosis of TB among co-infected and people with diabetes.
Table 9: Treatment Outcomes of New Smear Positive Pulmonary TB (%), Fiji 1995-2009

<table>
<thead>
<tr>
<th>Year</th>
<th>No. new smear positive PTB</th>
<th>Cured (%)</th>
<th>Completed (%)</th>
<th>Died (%)</th>
<th>Failed (%)</th>
<th>Defaulted (%)</th>
<th>Not Evaluated (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>73</td>
<td>79</td>
<td>8</td>
<td>7</td>
<td>0</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2000</td>
<td>62</td>
<td>81</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>2005</td>
<td>68</td>
<td>71</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>2007</td>
<td>78</td>
<td>81</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>2008</td>
<td>82</td>
<td>82</td>
<td>9</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2009</td>
<td>79</td>
<td>89</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2010 (Q1-3)</td>
<td>68</td>
<td>68</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>21</td>
<td>2</td>
</tr>
</tbody>
</table>

2.10.4 Trend of disease burden and impact of the TB control program

Impact indicators and trends of disease burden

From the available mortality data (Figure 6), the higher mortality rates (3-4/100,000) are observed between 2003 and 2007 in comparison with previous and later years. This trend does not align well with the trends in notification rate and estimated TB incidence and prevalence (Figure 7), which were lowest in 2007.
Together with the above analysis of notification data (e.g. missing cases, significant increase of CNR after improvement of TB surveillance and NTP performance), the differing trend of the mortality rate (from the national vital registration) suggest that the Incidence/Prevalence might be higher than what has been estimated for the period of 2004-2007. In other words, the trend of prevalence and incidence of TB would not have been going down to those low levels in 2007 but somewhat the same or higher level than 2010.
Recommendations

- More in-country investigations and assistance of the epidemiologists, especially the TB impact measurement team of WHO, would be necessary to have better estimation of the disease burden and measuring impact of the TB control programme.

Impact of the TB control program

TB Programme in Fiji has been successful in containing the spread of the disease. All major impact indicators have been showing consistent decline, however, there are some issues around the estimation of impact indicators. The significant increase of case notifications during the last two years due to various reasons explained before, can lead to faster removal of prevalent cases in communities and reducing TB transmission by quickly treating them.

However, the low treatment success rates reported by the NTP in the first three quarters of 2010 (69% among new smear positive patients; and 67% in all TB cases) is a serious problem and can hinder the progress towards the programme goals. The NTP and other stakeholders should give a high priority to address this problem by strengthening case management for all the detected TB patients.

If the NTP intensifies TB case detection by implementing evidence based activities, improves recording and reporting of cases and ensures high treatment success rate for all TB patients, it can make a significant impact on TB control in the country in the shortest possible time.
Annex I: Terms of Reference of the External Review of the National TB Programme, Fiji

Objectives of the review

1. To evaluate the situation of TB, achievements, strengths and programmatic gaps of TB control programme in Fiji;
2. To evaluate programmatic management aspects of the national TB programme related to the procurement and supply management;
3. To assess ACSM activities and community participation in TB control
4. To measure the outcome/impact of programmes supported by the Government of Fiji (GoF), the Global Fund and other stakeholders.

The review team

A team of four external consultants is recruited for the review with the following expertise:

1. One consultant on TB programme management (Team leader)
2. One consultant on advocacy, communication and social mobilization (ACSM) community involvement
3. One consultant on procurement and supply management (PSM)
4. One TB medical officer from WHO.

Part 1: Evaluation of TB situation, achievements, strengths and programmatic gaps of TB control programme in Fiji

1. to evaluate the situation and trends of TB in Fiji
2. to assess achievements, strengths and programmatic gaps and recommend relevant interventions, resources and training needs for improvement of TB control programme;
3. to strategize on expansion of TB clinical and TB programme services in light of reducing disease burden and to recommend service expansion considering care of other respiratory diseases;
4. to assess the collaboration with HIV programme to address TB-HIV co-infection;
5. to assess the preparedness of the national TB programme for surveillance and management of drug resistant TB;
6. to provide strategic recommendations on the high impact interventions to reduce burden of TB in the country.

Scope of the work

The disease component proposal under the Single Stream Funding (SSF) specifically focuses on improving access, availability, equity and quality of the health services on the supply
This intervention seeks to strengthen delivery of TB-DOTS capacity in the health sector in controlling Tuberculosis (TB) in particular:

- System readiness for possible re-emerging of TB epidemic and sustainability of service provision; and
- Maintenance of low prevalence and mortality from TB in the country.

Understand to what extent the expansion of TB-DOTS activities have contributed to the development and/or strengthening of TB Programme Management in order to improve quality, availability & access to services delivery by:

- Improving the access and equity of the National TB (HIV due to co-infection issues & other directly related co-infections e.g. Diabetes) Programmes to health facilities and community members;
- If the health sector (public and private) is engaged in addressing the TB disease at all stages, and strengthening the community’s voice in demanding efficient health care services;
- Assessing if the investments in Health Systems & Community Systems Strengthening programmes, including all community level disease interventions supported by the Government of Fiji (GoF), the Global Fund and other stakeholders have improved the results of the TB programme;
- Contributing directly to the improvement of services delivery at both service provider & community levels;
- Identifying improvements in the health sector to strengthen community capacity & coordination with health community workers with respect to the national TB programmatic activities; and;
  - Increasing the provision for services at the community level for TB.

In collaboration with Ministry of Health and other TB stakeholders in Fiji, the review team will evaluate the TB control services in Fiji.

**Evaluation Questions:**

**Part 1 - TB Component**

**Programme design:**

- Is the proposed service delivery model for DOTS expansion comprehensive to identify missing TB cases in the community
Based on assessment of the TB Surveillance systems (using the WHO tool for assessment of surveillance data\(^1\)), what proportion of TB cases are being missed and where?

Are the Global Fund investments allocated efficiently based on assessment of the missed opportunities for TB diagnosis and the potential yield (ex. community DOTS, PPM DOTS, Urban DOTS, TB/HIV etc)

- Is the system ready for possible re-emerging of TB epidemic & able to sustain services provision? To what extent have the programmatic targets been achieved?

**Programme Implementation**

- Have the DOTS expansion services been implemented as intended?
  - Adherence to work plan: service package, delivery approaches, target populations and subgroups,

- Have the DOTS expansion being implemented to maintain low prevalence & mortality from TB in the country?

- What are the facilitating and inhibiting factors in the field implementation?
  - Health and community systems challenges
  - Current and future

- What has been the effect on quality of DOTS implementation (equity; reductions in diagnostic delay; QA procedures for diagnostics; stakeholder perceptions on provider and client satisfaction)

- To what extent has the GF-Financing contributed to health system strengthening? Has this in turn been effective in improving TB service delivery?

- What progress the national programme made in the past years and how GF-financing has contributed to it?

- Have services been delivered in a cost-effective manner?
  - Could similar outputs have been achieved with less inputs?
  - Could outputs be further increased without increasing inputs?

- Were the GF-supported activities carried out in alignment with national financial, procurement and M&E system?

- Were GF-supported activities harmonized with partners?
• Were GF funds recorded in the national budget and if MoF were made aware of GF financing?

Programmatic results
• To what extent have the grant and programmatic targets been achieved?
  o What have been the results/yield of the planned DOTS expansion and TB/HIV collaborative activities till date?
  o What are the trends in TB outcome and impact? What are the trends in MDR-TB?
  o What are the enabling and limiting factors for achievement of results?
  o What is the impact of Global Fund investments on TB-related morbidity and mortality, at population level and on key client groups such as High Risk Groups such as TB-HIV, prisoners, contacts of prisoners/TB-HIV & those that live in TB Hot Spots zones, Most at Risk Population?

• What has been the effect on quality of DOTS implementation (equity - access for diagnosis and treatment – distance, time, convenience, by age/sex/urban-rural etc; reductions in diagnostic delay - economic and potential epidemiological impact of early diagnosis; quality – adherence to treatment guidelines; QA procedures for diagnostics; stakeholder perceptions on provider and client satisfaction)?

Part 2 – Community Systems

Programme design:
• Integration of community based approaches across health programmes – Is there any evidence that programmes (HIV, TB, MNCH, Sanitation, nutrition, etc.), have incorporated community based approaches into their programme strategies (policy level, planning and budgeting, documenting and monitoring expenditures, activities and results)?

• Has the proposed community systems service delivery model been effective in improving access to services at the community level for TB?
  o Was there a mapping of health and social actors and services, service providers and networks and an understanding of their roles in the community prior to implementation of the programme?
  o Equity of services – is there evidence to demonstrate that the community based approaches helped in improving access to the hard to reach/marginalized/at risk population groups?
• **Innovation and adoption of community health approaches**– Is there any evidence to suggest that communities have participated, contributed to and utilized the community based approaches promoted by the programmes?

• To what extent has there been an increase in the demand for health services?

• To what extent has community participation contributed to increased responsiveness and accountability of NTP services?

• What has been the contribution of Village Health Support Group (VHSGs) and Health Centre Management Committee (HCMCs) to improving community participation delivery and monitoring of health services, and extent to which Global Fund and partner support has improved their effectiveness?

• **Synergies across Global Fund grants for community based interventions** for HIV, TB, and HSS – what are the identified synergies (and missed opportunities) – programmatic and financial - where investments in one intervention has led to a positive beneficial effect across other programmes?

• **Sustainability of community approaches** in the current political, policy and economic environment – Based on stakeholder interviews, what is the overall perception on sustainability of community based approaches – enablers and bottlenecks?

### Programme Implementation

• Have the community health approach interventions been implemented as intended?

• Adherence to work plan: service package, delivery approaches and adherence to national guidelines/procedures, target populations and subgroups

• Which actors have been involved in implementation in practice: role of commune councils, village leaders, programme beneficiaries, etc.?

• Is there adequate capacity (staff and appropriate skill-mix) to implement these interventions?

• How adequate is the quality of data and flow of information and what are the gaps that need to be addressed to improve decision-making and programme implementation?

• What are the facilitating and inhibiting factors in the field implementation of the community system design?

• What aspects of the community system design have proven most challenging to implement, and those that are achievable?
  
  o What are the main success stories and what are the critical barriers?
What are the drivers of change: Who influences the approach and what is the influence?

**Programmatic results**

- Has the community health approach model increased the demand, and coverage of programme interventions?
- Has the community based approaches contributed to scaling-up the programme strategies/interventions?
- What have been the results of the community interventions on HIV & TB diagnosis and treatment, referral and follow-up, linkage between home/community-based care with facility care and provision of care and support till date? What are the enabling and limiting factors for achievement of results?
- Has support for community interventions and/or community oversight structures (HCMCs, etc.) improved the responsiveness of services provided by health centres and hospitals?
- What has been the effect on health outcomes - quality of services for HIV & TB (access to diagnosis and treatment – distance, time, convenience etc.; reductions in diagnostic delay - economic and potential epidemiological impact of early diagnosis; adherence to treatment guidelines; QA procedures for diagnostics; stakeholder perceptions on provider and client satisfaction; gender equity and participation of women for improved health care)?

**Expected Outputs & Deliverables**

The key output of the review is a comprehensive programme review report with conclusions on TB situation and TB control programme in Fiji and recommendations for improvement of the programme performance.

**Methodology:**

The proposed evaluation of TB programme in Fiji will focus on the National TB programme (NTP) and collaboration with MoH and CSO partners supported by the Global Fund with great emphasis on programme design and implementation. The anticipated methodology will focus on (1) desk review; (2) analysis of existing data; and (3) Semi-structured interview of programme staff and stakeholders.

- Desk review
  - Programmatic data, ie, number and kind of services provided; size of population, people reached by the programme, by geographic areas; facility data on services utilization
• Financing data, i.e., committed budget, disbursement and expenditure against disease burden, by geographic areas, executed budgets of the government, partners financial reports

• Literature review, to identify documented factors facilitating and inhibiting the programme implementation; best practices from national programme and other international programmes.

• Based on the results of the analysis, a plan for additional data collection will be formulated

  • Additional semi-structured interview
    • Define the type and quantity of data/information to be collected
    • Define the number and type of programme staff to be interviewed
    • Select the programme sites for field visits

**Tools and guidelines:**

The draft edition of the Operational Guide for Conducting a Joint Monitoring and Evaluation of a National Tuberculosis Programme by the World Health Organization can be used as a reference but should not be limited to this.
Annex II: ACSM Semi-Structured Interview Questions

Introductions
- Your role in TB programme
- Who you report to
- Who you collaborate with

Describe the part of the ACSM programme you know about eg:
- Advocacy by whom, with who, to do what, how
- Communication – materials produced, process of development, target, message, media, Can I see?
- SM –who, to do what, with who do they work/collaborate, what else do they do (eg transfusion services, HCMC, VHCW etc) who supervises/supports/enables and how?

Design
- Would you use a different process if you had to do it again?

Management
- How is the programme going?
- Timeliness vis-à-vis the workplan? Standards? Cost?
- Who is involved? Are the right people/organizations involved in managing the programme?
- Describe the effectiveness and quality of relationships with partners/collaborators? Other health programmes like HIV and diabetes?
- How does the supervision/support and enabling strategy working? RC volunteers? Health provider links?
- Does it reach all the people/places it is supposed to?
- Is the right information available to manage the programme? In time? Correct?
- What makes the programme work? Enabling factors.
- Challenges? Inhibiting factors?

Results
- How do you measure success? Is this the right way to measure what the programme is trying to achieve?
• What difference do you see in the TB programme? Promptness of case finding and Dx? Adherence/Completion/referral? Community engagement in treatment observation, with health facilities?
• Any changes in what communities, health workers do? In attitudes? Satisfaction?
• Are the right people reached? Both men and women? PLWHA? Special populations? Hard to reach?
• What has worked really well? Why?
• And what has not?
• SM – could communities continue to support TB on their own? What would they need to do this?
Annex III: Health Facility and Community Observations

Eastern/Central Division

1. P J Twomey Hospital

Introduction

- Services provided for TB, Leprosy and rehabilitation
- 2 MOs, 2 skin specialists and 1 Rehabilitation staff
  - Both MOs are on leave, skin specialist is in charge
- Frequent turn-over of nursing staff

Laboratory

- Recently upgraded to BSL III
- LT received training at Queensland Lab in Australia on Culture & DST
- All suspects from PJ Twomey hospital area and all TB patients from the country are subjected for culture examination. Cultures of MDR-TB suspects are transported to Queensland lab for DST

<table>
<thead>
<tr>
<th>Culture done</th>
<th>Culture with AFB result</th>
<th>Total culture Pos</th>
<th>AFB+/culture-</th>
<th>AFB+/culture+</th>
<th>AFB-/culture+</th>
<th>Culture+/No AFB</th>
<th>Cont in AFB-</th>
<th>Cont in AFB+</th>
</tr>
</thead>
<tbody>
<tr>
<td>503 (1st Qtr)</td>
<td>378</td>
<td>59</td>
<td>20</td>
<td>25</td>
<td>20</td>
<td>4</td>
<td>57</td>
<td>8</td>
</tr>
<tr>
<td>267 (2nd Qtr)</td>
<td>178</td>
<td>21</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>3</td>
<td>9</td>
<td>45</td>
</tr>
<tr>
<td>669 (3rd Qtr)</td>
<td>544</td>
<td>5</td>
<td>48</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

- As seen above, in first two quarters of 2011, the contamination rate was 13-18%, in fact it surprisingly dropped to 1% in 3rd Qtr’11. Most of the positive smears have negative culture growth (50-90%) and that raises concern about the delay in transport, processing and some other technical issues.

DST

- In 2010, 8 sputum culture samples and in 2011, 5 were sent to Queensland lab for DST
- Usual turn-around time is ~2months and none so far detected as MDR
EQA

- Labs from CWMH, Lautoka and Lambasa send 19 randomly selected slides to PJ Twomey hospital lab for blinded re-checking on quarterly basis
- Queensland lab, Brisbane send 10 pre-fixed known panel slides to each of four laboratories for panel testing on annual basis
- PJ Twomey laboratory staff does on site supervision of all laboratories, using standard checklist once in a year

OPD

- About 15-20 per day; reduced in last 2 months due to absence of MO

Hospitalization:

- Chest symptomatic are subjected for sputum smear examination; those found sputum positives are admitted for intensive phase.
- ~10% patients are denying admission and are started treatment on ambulatory basis
- On admission, the treatment card is prepared by the ward nurse and ticked while in the hospital
- Hospital wards are found clean and well ventilated but the patients are not provided with masks to cover during coughing.
- On discharge, patient is supplied with one month medication and a treatment form and identity card and explained to visit nearest health centre for continuing medicines. One card is dispatched directly to the health centre.
- Sputum negative patients are given 2-3 days off in week-ends to visit their families
- In some instances, patients do not visit health centre in time and it is the responsibility of the zone nurse to trace patient and retrieve for treatment continuation
- Bed occupancy is on an average 75% and average duration of stay is 2 months for new patients and 3 months for re-treatment cases

Treatment:

- Some patients are started on trial basis
- Some are prescribed inadequate regimens

Pharmacy

- In Sept’11, FDCs have been introduced in the DOTS centre
• In last 6 months, there is one instance of INH stock out for almost 1 and half months. Patients including in the ward went without the drug
• About 740 Rifampicin 450 mg are expiring in Dec’11
• Medicines are ordered directly from the central warehouse.

Recording and reporting
• P J Twomey hospital is a registration unit. All patients after admission are registered by the registration nurse. Some patients are found unregistered due to put on trial treatment
• Treatment cards and TB registers are found not updated and without the HIV information
• Registration is done on paper register but recently introduced web based system Epieverywhere and so far the data for 2010 have been entered.

2. Colonial War Memorial Hospital (CWMH)

Introduction
• It is a TB microscopy centre which caters about 15 health centres
• There is no general OPD at present and laboratory receives most sputum samples which are transported from other health centres
• There are 5 Laboratory Technicians performing TB microscopy on rotation; only 1 is trained by NTP
• There is no standard laboratory register in use. All patients are registered in a simple sputum book and are re-registered in a standard TB lab register by Lab Technician from PJ Twomey hospital, who visits this centre on monthly basis. From Sep’11, the lab register which is lying at PJ Twomey hospital has not been updated.

3. Suva HIV Hub

Introduction
• 1 MO, 2 Nurses, 1 Phlebotomist
• Daily attendance: 20-30 per day
• Sometimes HIV test kits are out of stock
• Only one centre in Suva is doing CD4 cell count
• HIV counselling form and pre-ART register formats are old and do not contain information about TB screening
• No IPT
• All 3 divisions have different HIV reporting formats
• ART guidelines is old, 2004 version and not updated
• More than 100 HIV positives, 42 on ART
• No regular follow-up of HIV positives but HIV clients asked to visit the centre at 3 monthly basis

4. HIV department, Ministry of Health
• There is a National HIV Board headed by the Permanent Secretary and at divisional levels, in a process of changing to Divisional HIV Boards
• National AIDS/ STI Strategic Plan 2007-2011 is ending and MoH is in a process of developing new plan
• In 2010, the cumulative number of HIV positives in the country were 366 (no information about death among HIV positives), about 70 are currently on ART

Northern Division

5. Labasa Health centre
Introduction:
• In Northern division, there are 4 sub-divisions, 19 health centres and 21 nursing stations. Nursing stations are manned by nurses who run clinics on two days of the week, while the rest of the days they have field duties. However, because of a shortage of transport, outreach to the community may actually occur less often.
• Macuata sub-division caters almost 2/3rd of northern division’s population and has 6 health centres under it. Labasa health centre is a sub-divisional hospital having 9 zones under it.
• Zone Nurses based in either Health Centre or Stations are supposed to trace patients for diagnosis and follow-up, conduct contact tracing and health education, and supervise DOTS during the continuation phase but none found had been trained in TB or had correct TB information.
• There is a rapid turnover of staff and the training does not correspond with the change

OPD
• Average OPD is ~50-60 per day. All TB symptomatic are referred to Labasa hospitals for further investigations. There is no record of referred suspects.
Recording and reporting

- The centre keep the records of TB patients under it’s territory using the same NTP register but it was found incomplete and inconsistent with the divisional register.

6. Labasa DOTS centre

Introduction:

- Started in Mar 2011. It has 4 beds allotted for males squeezed into Intensive care unit, and 2 for females in the isolation room of the female medical ward.
- No nurse acting as TB Coordinator for the Centre or Division, although the post has recently been advertised.

General OPD:

- 100-120 per day
- Chest symptomatics are referred for sputum examination but no record of referral
- OPD waiting area has very poor ventilation arrangements and generally no infection control measures implemented
- Hospital has diabetic clinic runs on weekly basis and about 150-200 patients visit the centre. The waiting area has very poor ventilation arrangements.

Hospitalization:

- 4 male beds located in ICU section which has an adjacent oncology room with patients on immuno-suppressants and 2 female beds in female isolation ward which is utilized for other patients too when TB case is not there
- Average stay of sputum positive cases is 1 month, sputum negative cases is 2 weeks and extra-pulmonary cases is 1 week

Laboratory:

- In 3rd quarter 2011, 77 suspects tested and 3 found sputum positive. Out of 22 cases tested during follow-up, 2 were found positive
- Almost 60% patients had just one sputum given for diagnosis and 50% of them had saliva
- Almost all suspects had their sputum sample sent to Twomey lab for culture examination. Most TB patients were started on treatment before the culture result is received, which usually takes 2-4 months.
Treatment:

- In 2011, upto November 25 TB patients have been registered
- Sputum negative patients have been started on treatment on the same day of sputum smear report which indicates that sputum negative algorithm is not followed
- During continuation phase, drugs used to be transferred to the relevant Zone for monthly distribution to patients. Since the introduction of FDCs, patients take the kits with them and a letter is sent to the Health Centre Medical Officer and Zone Nurse.

Recording and reporting

- TB register is not completely updated. The division is still using old register which does not have column for writing HIV status
- Divisional Medical Officer supervises all health centres at least once in a year. There are 4 outreach centres which are visited by the medical team once in a month.
- There is a quarterly meeting organized at the divisional level wherein all sub-divisional medical officers attend and TB is given sufficient space to discuss

7. Labasa HIV hub

- There are 41 cumulative HIV positive patients and only 6 those who are near the vicinity of the centre are receiving ART
- TB screening is not done regularly at VCT
- 1 out of 2 counselors is not trained in TB/HIV
- No record of any HIV patient screened for TB
- On TB side, as per the report, about 80% TB patients are screened for HIV in 2011 and none is found HIV positive

8. Nakorovatu health centre

Introduction

- Caters to a 2,629 population in a 50 km radius
- 2 zones, 9 villages, 25 settlements and 5 estates
- Area Medical Officer is in charge of Nakorovatu health centre and Nabalebale nursing station
- Nakorovatu health centre has 1 zone nurse and 1 clinic nurse.
• Zone nurse was trained in TB long before but had never came across any TB case in the area. There is no TB guidelines with the centre.

OPD

• 20-25 per day, most cases are upper respiratory infection and muscular pain

Diagnosis

• Only 1 chest symptomatic referred by MO in recent past for further investigation and who turned out to be negative for TB
• Non-communicable diseases are common in the area

9. Savusavu sub-divisional hospital

Introduction

• 3 Medical Officers, 1 trained and >20 nursing staff
• 54 beds, 8 are designated for infectious disease patients where TB suspects are admitted till the receipt of results from Labasa divisional hospital

OPD

• 90-120 per day
• Ventilation in OPD waiting area is moderately good.

Diagnosis

• About 6-8 TB suspects in a month are screened for TB, admitted and their sputum samples are collected and transported to Labasa DOTS centre.
• About 2-3 TB suspects from Rabi island are referred every month on an average to this centre for diagnosis
• The usual turn around time for receiving results from Labasa DOTS centre is about 6-8 days and there is a risk of loss of patients especially from Rabi
• Centre has laboratory with 1 lab technician who performs all routine investigations except sputum microscopy. As per the recent evaluation, if space and work load distribution by training expectant phlebotomist for sputum microscopy are dealt, then microscopy services for patients from Savusavu and Rabi area can be initiated.
Treatment

- In 2011, 13 patients from Savusavu area has been started on treatment from Labasa DOTS centre and being monitored by it.

10. Wainikoro Health Centre

- Zone Nurse interviewed regarding care of TB patients in communities where there have been 2 patients recently. No Medical Officer (MO) or other staff who had worked on TB available.
- Health staff: 1 Medical Officer, Sister In Charge, 2 Staff Nurses, Zone Nurse.
- Has received no TB training since her basic training.
- Previously, the Health Centre dispensed treatment that had been sent by the Labasa DOTS Centre but now kits go directly to patients.
- Understands the need to visit and check on treatment but difficult to follow up as monthly requests for transport based on outreach plans are not filled. Usually only 1 day in every 2 weeks is spent in the community.
- If TB patients are on islands, they are seen during periodic outpost clinics conducted by the Medical Officer and clinic team which are even more infrequent.

11. Fiji Red Cross Society (FRCS), Labasa branch

- There are 5 branches in Northern division, each has about 2-3 Health and Care volunteers.
- FRCS has received GF grant for awareness generation activity and as per their set target, every month 2 communities are visited by the volunteers. About 30-40 participants take part in such awareness meetings where participants are provided information about TB disease, diagnosis and treatment. Until now there has been no collaboration with the DOTS Centre when planning these sessions. However, the National Office has advised the volunteers to go to villages where there has been a request at the national level.
- FRCS has also organized TB training workshops for community leaders in early in 2011 and, recently, Village Health Care Workers (VHCW) in Northern. The latter are based in and selected by communities and report to Zone Nurses. They were selected for training by the National Office with NTP but not DOTS Centre inout. Some VHCWs are also FRCS volunteers. The workshops encourage them to participate in the TB programme in terms of referring suspects, health education and monitoring of treatment of TB cases. However, since it was very recent, significant activity has not begun in communities.
12. TB Patient Visits, Northern Division

- The zone nurse from Nabalebale nursing station accompanied team to a nearby village where there are 3 TB patients taking treatment
- Team could visit and interview 2 TB patients
- Both are on regular TB treatment, are well aware of the disease and treatment duration but on self-medication. Zonal nurse visits them on monthly basis and monitors their treatment.
- The ACMS consultant with the Labasa FRCS volunteer visited Nutu community where there were 3 TB patients who had completed treatment (in 2006, 2009 and the 1980s) and 2 VCHWs who had supported them. The former TB patients were asked about but did not feel that they had experienced support problems in terms of food, transport or poverty that would have caused them to stop their treatment. One VCHW had learned about TB during her 6 week basic course and from the Zone and Health Centre staff when patients were sent back to the community for continuation phase treatment. The second was a newer VHCW, had only had one week of VCHW training from the Health Centre and had also attended a recent FRCS TB course. Knew basic TB messages on cause, symptoms, that TB is curable, sputum collection process and that treatment completion is important but had never seen the domiciliary form, did not know who was in charge of TB in the health system and had not been asked to develop a plan. The VHCW and Labasa FRCS volunteer planned awareness raising, with the former TB patients as advocates, during the visit.
- A third VHCW in Vinivutu village was unable to attend the recent FRCS TB training for personal reasons but was supporting a TB patient who had been started on the continuation phase in the past few weeks. The Zone Nurse has advised her to visit the patient, check if there were any problems and ensure he took his drugs.
- VHCWs visited said that they tend to act in the position for 3 to 6 years.

Western Division

13. Lautoka Divisional Hospital

Introduction

- Pop: ~300,000
- 6 sub-divisions with sub-divisional hospitals
- 8-10 MOs working in General OPD, none trained in TB
- Fast turn-over of staff
- 16 beds, all usually occupied
OPD
- 100-120 per day
- TB OPD- 2-3 per day

Diagnosis
- Sputum and chest X-ray are requested simultaneously for all TB suspects
- Sputum from MDR-TB suspects are sent to Suva laboratory for culture examination
- In Aug’11, 69 patients tested for sputum smear and 2 came positive. Out of 69 patients, 32 gave only one sample
- 47 out of 139 samples had saliva
- No history of stock out of consumables
- All requested samples are sent to Suva for culture examination by courier, the report usually comes between 2-4 months even for contaminated samples.
- Contaminated samples are not repeated
- Contract tracing is done and there is a register but it is difficult to decipher which contact was reached, had symptoms, provided sputum for microscopy, or had chest xray. The register would benefit from columns and tick marks.

Treatment
- 3 re-treatment cases registered as New and put on category I treatment in 2011
- Continuation phase drug supply is all from Lautoka hospital, rather than sending kits or drugs to the Health Centres. Patients have to travel to Lautoka monthly to collect their drugs. Reluctance to devolve treatment.

Recording and reporting
- 4 cases of 2009 registered in 2010 and not counted in both 2009 as well 2010
- 1 patient had second episode in early 2011 and started on treatment but not registered, had third episode and registered in late 2011
- All cured cases in 2010 have been recorded as treatment completed
- 6 out of 31 patients who were supplied medicines in medical wards were never registered, it was reported to the team that they had been trialed on TB treatment.
- 2 pediatric patients were also not registered, probably on trial treatment
- There is no buffer stock of medicines
- There is a confusion and lack of coordination between TB ward and pharmacy about supply of medicines at discharge of the patients
14. Lautoka HIV hub

Introduction

- 1 MO, 1 clinical nurse and 1 advocate
- Could not see the counselling format, but it seems on discussion that, it does not contain TB information
- 32 HIV positive clients; 2 had TB
- There is a monthly meeting of Fiji network of positive people which was conducted by the HIV advocate and TB is hardly discussed in it

14. Namaka health centre

- 2 MOs
- OPD: 100-120 per day, mainly NCD patients
- Once in a week, sputum samples from all patients are transported to Lautoka hospital, only positive result is notified
- Diabetic clinic is on every Friday
- 7 TB patients in the area but all are collecting medicines directly from Lautoka hospital on monthly basis and this centre is not involved. Though patients are visited on monthly basis by the respective zone nurse

15. Fiji Red Cross Society (FRCS), Lautoka branch

- TB programme is the same as that described for Northern.
- Health and Care volunteers tend to be younger HIV Peer Educators and to use that model. The President wants to motivate and retain volunteers; he encourages them to participate in any health programme with funding so they do a range of health education and stay on as volunteers.
- Volunteers trained in TB make up a monthly programme for community outreach which is approved by the President of the Branch and then sent to the National Office for support to be confirmed. The TB Coordinator is not normally involved.
- They receive an allowance to attend trainings and a transport allowance when they conduct outreach, minimal remuneration/incentives.
- There have been attempts to collaborate but it was difficult because of the uncertainty for transport for the TB Coordinator. Plans were made but she asked to reschedule at the last minute because she was not able to go on that day. For the volunteers, who travel in by bus that they pay for on their own, and then rely on completing the planned activity that day so that they receive their allowance, rescheduling at short notice is a problem. Moreover, they have usually planned the activity with the community leader.
16. TB Patient and Community Visits, Western Division

- Two patients visited in the DOTS Centre, Lautoka, both in the intensive phase. First had gone to OPD with a week history of cough, malaise and weight loss and was provided with Panadol. Since this did not resolve his illness he visited a private physician who tried a 3 day course of antibiotics; when this did not improve the symptoms, the physician transferred the patient to the DOTS Centre. Had been in the DOTS centre almost a month; looked well, stated he was feeling much better, and was motivated to complete treatment and verify cure. No symptoms among family members; there is a plan for them to be screened when he goes home for a holiday after one month of treatment. He is not being paid but his job is being held for him. Not working is a problem from him and his family.

- Second patient visited Sinatoka Hospital after being sick for 2 weeks. He stayed there one week and was transferred to Lautoka. After a week on a medical ward he was diagnosed and transferred to the DOTS Centre. Father and small brother are symptomatic and no plan to screen as yet; it was difficult to tease this out of him. TB Coordinator advised. Still feels and appears weak, fatigued and unwell but states he is motivated to complete treatment. He thinks his job is also being held for him.

- A third patient, a housewife and mother of three small children in Nawaka village, had completed treatment. She became ill post-partum and there was about a 6 week delay in diagnosis as providers attributed her symptoms to post-partum amenorrhea and depression. Her mother took care of two of her children during the intensive phase; the infant stayed with her. All family members screened and no TB found. Completed treatment and confirmed cured by microscopy. Travel to Lautoka to collect medications monthly was a problem for her but she was not provided with the option to collect them from her Zone nurse.

- Two community visits. In Matawalu the leader had attended the leaders training and said that he had provided health education on TB prevention (hygiene primarily). He did not know that a former patient was living in the community. He had no plan for TB education. Leaders attend district meetings where they discuss community issues.

- In the Naviang community outreach had been conducted by the FRCS volunteer. However none of the people trained were in attendance at this meeting or knew anything about TB. There was a TB patient on intensive phase that the FRCS did not know about. Some evidence of stigma among community members. Key messages provided.