Scaling up comprehensive TB care in a high burden drug-resistant TB setting – lessons from Western Province, PNG

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Background

- Tuberculosis is a major public health issue in Western Province, with high numbers of cases of both drug-sensitive TB (DS-TB) and drug-resistant TB (DR-TB). In 2014 the case notification rate for TB was 810 per 100 000, and TB was the leading cause of hospital admissions and deaths.[1,2] The epidemic of TB in Western Province is characterised by high rates of *primary transmission* of DR-TB in South Fly District, including extensively drug resistant TB (XDR) adding to the burden on a health system already under strain.
- Since 2011, the Western Provincial Health office (WPHO) has been strengthening TB service delivery with support from the Australian Government through human resources, infrastructure, and service agreements and in partnership with World Vision. Despite significant gains, it was recognised that scale up of service coverage, including the programmatic management of DR-TB (PMDT), was needed.
- In recognition of the need to scale up services, in mid 2014, the National Department of Health (NDOH) convened a TB taskforce to implement an accelerated response to respond to the challenges of DS and DR-TB. WPHO established a technical partnership with the Burnet institute to support the design and implementation of its TB program and scale up comprehensive TB care, including DR-TB.

Objectives

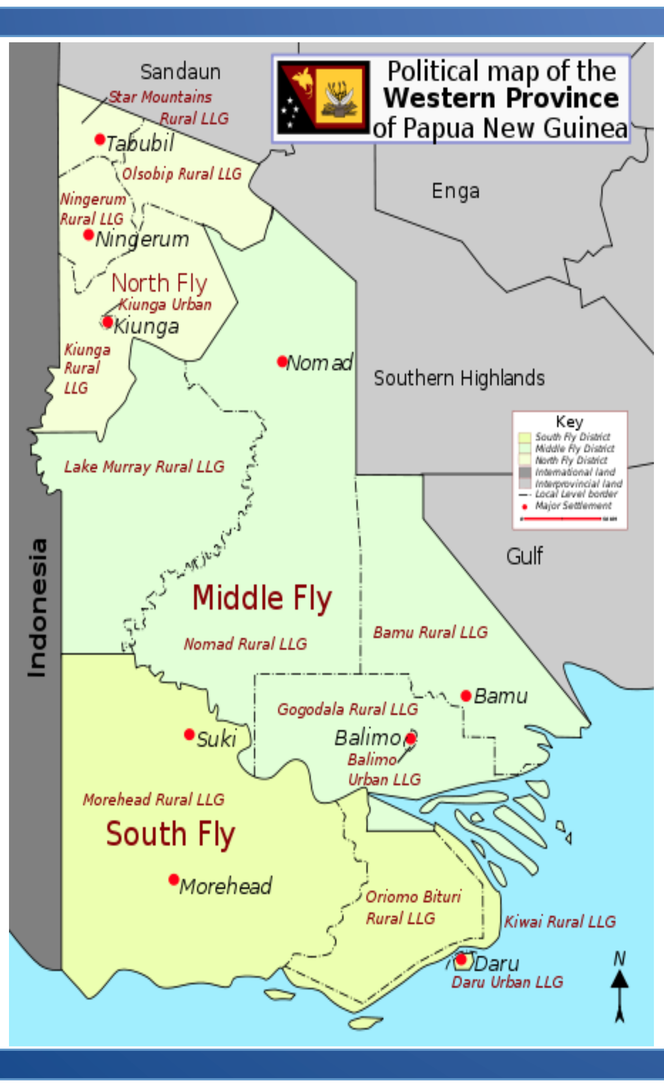
- To assess the baseline situation of the Western Province TB program and progress at year 1 prior to scale up of PMDT in order to identify barriers to implementation and scale up of services, and to identify lessons learned that can inform context-specific solutions.

Methods

- A program evaluation was conducted through a document review from June 2014 – June 2015. The evaluation framework was based upon the seven logical framework components of the Western Province TB Program logframe

1. Enabling governance and funding are in place for a TB program
2. Logistics and supply system are functioning without interruptions that affect service provision
3. Suspected DS-TB/DR-TB patients are identified and diagnosed
4. DS-TB and DR-TB patients are retained in and receive timely, effective care
5. Community-based and facility-based TB transmission is prevented
6. Epidemiological data on TB in WP are available and used for program guidance
7. The TB program conducts TB research and TB training as a national centre for excellence

- The document review incorporated situation analysis reports, program meeting minutes, prior program evaluation reports and written stakeholder correspondence. Progress against indicators under each component was determined, and barriers to success described. A set of proposed solutions was developed.



Western Province & TB in South Fly District (SFD)

- The largest, most remote province in PNG with a low population density and low socio-economic indicators
- Modeling of scenarios demonstrated that without effective scale-up of DS *and* DR-TB services in Western Province, TB rates would increase, DR-TB strains would predominate in 10 years and health system costs would rise[3]
- The Provincial hospital (DGH) on Daru Island (population ~16 000) is the PMDT centre
- SFD is the epidemic hotspot for TB and DR-TB: 70% of TB patients at DGH reside in crowded settlements and are mobile in SFD[4]
- DS-TB: 573 cases were enrolled at Daru BMU in 2014 with a treatment success rate of 54%[4]
- DR-TB: 150 patients were on treatment at Daru as of July 2014. In 2014, 51% were registered as new cases (not previously treated for TB). 14 patients have been diagnosed with XDR-TB[4]

Results

TB Program Component	Findings at Baseline June 2014	Progress & solutions June 2015
1. Governance, Financing and Human Resources	• Limited coordination due to complex governance structures across central, provincial and district Government. • Minimal provincial finances allocated & readily available • Critical HR gaps in DGH and the TB program	• Joint decision-making body formed: Provincial TB Core Group with technical support for decision making • Developed PNG's first Provincial Strategic Plan for TB(2015-18) and mapped activities of all partners • Budgeted response plans developed and funding sought from government and other donors • DGH HR re-structure and supplementary funding sought from Donors with 11 TB team staff recruited
2. Supply chain, laboratory, and infrastructure	• Interruptions to supply of quality assured TB medication and other essential supplies • Insufficient lab systems and resources, affecting specimen turn around time • DGH infrastructure limitations to cater for increasing patients	• Supply management tool implemented and linkages to central level strengthened. No stock outs in 2015 • Improvements to diagnostic & supply tools & systems through implementing standard operating procedures (SOPs) • DGH infrastructure needs identified and redevelopment plan funded by donor
3. Case finding	• Systematic screening for TB not yet established at DGH or the community • High numbers of patients lost before treatment initiation	• Established a TB diagnostic centre at DGH with symptom screening and enhanced use of Xpert MTB/RIF • Enhanced lab and TB registers, implemented SOPs and TB case manager tracking patients
4. Care and treatment	• Care and treatment at DGH not systematic for DS and DR-TB with high lost to follow up • High case burden placing DGH services under pressure	• Implemented case management tools (paper based and database) and care systems through SOPs. 95% of DR-TB cohort retained in care. Ongoing work for DS-TB. Patient education established. • Ambulatory TB care commenced on Daru; pilot community based care of DR-TB commenced and planning for systematic community program
5. Prevention and infection control (IC)	• Areas of TB service & infrastructure not yet minimising risk of transmission • Community stigma and delayed presentation to TB services	• TB IC facility assessment, development of IC policies, IC work plan and IC officer • Administrative controls established (cough screening, separation by resistance), mask protocols drafted with fit testing for health care staff • ACSM activities in the community has seen increased utilisation of TB services
6. Monitoring and evaluation	• Program data not routinely collected and no national PMDT M&E framework	• Strong focus on strengthening recording and reporting with the implementation of tools and systems guided by SOPs
7. Implementation of innovative solutions and program-based research	• Knowledge and implementation gaps hampering the ability to effectively address the epidemic	• Geo-spatial mapping of cases conducted • Operational research agenda to understand the epidemic, including socio-behavioural research on access and utilisation of TB services • Compassionate use of bedaquiline for 3 XDR patients approved and in progress

Discussion

- TB in Western Province and the transmission of DR-TB in South Fly district is a complex public health issue in a challenging operating context. The program evaluation was able to identify barriers to establishing a functional TB response through the use of a public heath framework at baseline and monitoring progress at the end of one year.
- The major barriers to effective TB response were governance, co-ordination, human resources gaps and the need for an effective model of care to address DS and DR-TB. Donor support enabled technical support in partnership with the WPHO and NDOH. This support was effective for conducting detailed assessments and analysis.
- The response has resulted in the WPHO and NDOH Strategic Plan for TB and the Accelerated response plan for SFD. These plans outline a systematic approach to reduce TB transmission by building a functional delivery system for DS and DR-TB care in SFD. The approach will use a patient-centred model of care, will strengthen health system building blocks and will include community engagement strategies.

Conclusions

- Despite ongoing gaps to effective functioning of TB services, Western Province and its partners have made rapid and significant progress by identifying barriers and determining solutions. This has been achieved mainly through improved systematic program planning, co-ordination, advocacy, donor support and successful engagement with technical and implementing partners.

References

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