Strengthening and aligning diagnosis and treatment of DR-TB in Myanmar

Joint Partners Forum, Geneva, 29 April 2015
Overview

- TB and MDR-TB burden
- MDR-TB diagnostic capacity
- Updated algorithms
- Treatment capacity (enrolment)
- Treatment results
- MDR-TB expansion plan
- Support services
- Challenges and solutions
TB burden in Myanmar

- One of the 22 TB high burden countries
- One of the 27 MDR-TB high burden countries
  - Estimated MDR rate: 9000 cases per year
- One of the 41 TB/HIV high burden countries
- Incidence, prevalence and mortality estimates (2013)
  - Incidence (all forms): 373/100,000
  - Prevalence (all forms): 473/100,000
  - Mortality: 59/100,000
- HIV prevalence in TB (2014)
  - HIV in TB: 8.5%
Trends in incidence, prevalence and mortality of TB (1990-2013)
Results of three DRS surveys

<table>
<thead>
<tr>
<th></th>
<th>New cases</th>
<th>Previously treated cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-2003</td>
<td>4.0% (95% CI: 2.7-5.7)</td>
<td>15.5% (95% CI: 9.5-23.4)</td>
</tr>
<tr>
<td>2007-2008</td>
<td>4.2% (95% CI: 3.1-5.6)</td>
<td>10.0% (95% CI: 6.9-14.0)</td>
</tr>
<tr>
<td>2012-2013</td>
<td>5.0% (95% CI 3.1-6.8)</td>
<td>27.1% (95% CI 15.0-39.2)</td>
</tr>
</tbody>
</table>

Third DRS: higher rates in 2012-2013 but no statistically significant increase in MDR-TB
DR-TB Diagnostic facilities

- NTRL, Yangon
- Upper Myanmar TB Reference Laboratory, Mandalay
  - Liquid culture
  - Liquid DST since mid-2010
  - LPA
- State TB Laboratory, Taunggyi
  - Solid culture since Dec 2013
- District and township laboratories
  - Xpert MTB/RIF started in 2013
  - 38 facilities in 2015

Drug-susceptibility testing
- First line DST (solid/liquid), Mandalay, Yangon: H, R, E, S
- Second line DST (solid), Yangon: Am, Km, Cm, Ofx
RR yields from Xpert MTB/RIF
Performance of BSL-3 laboratories
Yangon and Mandalay, 2010-2014

![Bar chart showing the performance of BSL-3 laboratories in Yangon and Mandalay from 2010 to 2014. The chart compares liquid culture, liquid DST, LPA, and MDR-TB detected tests across different years.]
Current indications for Xpert MTB/RIF

- All retreatment cases
- Patients on first-line treatment, not converting after 3 months
- New TB patients
  - HIV-positive
  - Close contacts of known MDR-TB patients
  - Resident in Yangon (3rd DRS: 11% MDR-TB among new cases)

Outcome:
- Earlier detection of MDR-TB with better prognosis (initially only Cat.2 failures)
- Increased detection of MDR-TB
MDR-TB: Annual enrolment (non-cumulative)

- Significant increase in treatment capacity
- But diagnostic capacity has also increased
- Overall, treatment gap (wait list) has been reduced
Region/State-wise diagnosis and enrolment, 2014
## Treatment outcomes

<table>
<thead>
<tr>
<th>Period</th>
<th>Total enrolled</th>
<th>Cured</th>
<th>Trt. completed</th>
<th>Died</th>
<th>Failure</th>
<th>Loss to follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot</td>
<td>303</td>
<td>216</td>
<td></td>
<td>52</td>
<td>3</td>
<td>31</td>
</tr>
<tr>
<td>July ‘09- Sep ‘11</td>
<td></td>
<td>71.3%</td>
<td></td>
<td>17.1%</td>
<td>1.0%</td>
<td>10.2%</td>
</tr>
<tr>
<td>PMDT</td>
<td>50</td>
<td>37</td>
<td>3</td>
<td>9</td>
<td>18.0%</td>
<td>1</td>
</tr>
<tr>
<td>Oct-Dec ‘11</td>
<td></td>
<td>74.0%</td>
<td>6.0%</td>
<td></td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>PMDT</td>
<td>170</td>
<td>135</td>
<td></td>
<td>30</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Jan-Sep ‘12</td>
<td></td>
<td>79.4%</td>
<td></td>
<td>17.6%</td>
<td>1.2%</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Treatment results (too?) good:
- Extra support during pilot phase
- Patient and provider support with manageable number of patients per health worker
- Long waiting times: selection of most motivated patients? (high death and loss-to-follow-up while on wait list)
# Scale-up of PMDT

<table>
<thead>
<tr>
<th>Year</th>
<th>Culture lab</th>
<th>DST lab</th>
<th>Centres with Xpert</th>
<th>R/S with MDR-TB center</th>
<th>Townships with MDR-TB center</th>
<th>Townships covered</th>
<th>Pop. covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2 (2)</td>
<td>10 (10)</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>2011</td>
<td>2</td>
<td>2</td>
<td>5 (2)</td>
<td>2 (2)</td>
<td>22 (22)</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>2012</td>
<td>5 (2)</td>
<td>2 (2)</td>
<td>7 (5)</td>
<td>5 (7)</td>
<td>37 (38)</td>
<td>11%</td>
<td>15%</td>
</tr>
<tr>
<td>2013</td>
<td>5 (3)</td>
<td>2 (2)</td>
<td>12 (19)</td>
<td>10 (13)</td>
<td>62 (53)</td>
<td>20%</td>
<td>26%</td>
</tr>
<tr>
<td>2014</td>
<td>5 (3)</td>
<td>5 (3)</td>
<td>12 (38)</td>
<td>10 (14)</td>
<td>72 (83)</td>
<td>24%</td>
<td>32%</td>
</tr>
<tr>
<td>2015</td>
<td>5 (4)</td>
<td>5 (4)</td>
<td>19 (46)</td>
<td>10 (14)</td>
<td>100 (108)</td>
<td>33%</td>
<td>42%</td>
</tr>
<tr>
<td>2016</td>
<td>5 (5)</td>
<td>5 (5)</td>
<td>&gt;67 (54)</td>
<td>14 (14)</td>
<td>100 (108)</td>
<td>33%</td>
<td>42%</td>
</tr>
</tbody>
</table>
Increased enrolment possible due to:

- Geographical expansion of PMDT townships
  - Revision of plan with increased priority to cover entire Yangon Region in 2015

- Increased domestic and external funding:
  - Global Fund, 3MDG Fund, Unitaid, USAID, MSF-H, WFP
  - Government contributes 2.7m US$ in 2015 for SLDs

- Xpert MTB/RIF roll-out with algorithms for timely diagnosis

- Expansion of TB/HIV townships

- Indications for investigation for MDR-TB modified

- Procurement of SLDs more timely

- Streamlined support package

- Result: waitlist has almost disappeared
Support package for MDR-TB

- **Patient support**
  - Free-of-charge baseline and follow-up investigations (Global Fund)
  - Free-of-charge ancillary drugs (Global Fund)
  - Cash support to patients, 30 US$ per month (3MDG, USAID, Global Fund)
  - Nutritional package (WFP)

- **DOT provider support**
  - Cash incentive for basic health staff, 30 US$ per month (Global Fund)
Challenges

- Less motivated patients
  - Earlier detected, don’t perceive to be very sick
  - New cases with unexpected MDR-TB (Yangon: all TB cases are tested)
- Further expansion of diagnostic capacity
  - Many centres with few cases
  - Frequent breakdown of Xpert MTB/RIF modules
- Further expansion of treatment capacity
- Monitoring capacity
  - Need to move from paper-based to e-based system
- Health sector reform
  - Mandate of disease control teams broader than TB teams
  - Access to laboratories: no longer under NTP
Thank you for your attention!