Xpert MTB/RIF implementation

Republic of Moldova

V. Soltan
A. Mosneaga

Workshop for early implementers of Xpert MTB/RIF system
(Geneva, 7-8 April 2011)
Background

- Moldova: a country in Eastern Europe, regained independence from FSU in 1991
- Population 4.1 mln, area 33,000 sq.km.
- The poorest country in Europe (by GDP per capita)
- TB epidemic reemerged after independence and its burden remains high
  - 2009 case notification rate (new cases and relapses) – 120 / 100,000 (2nd highest in WHO EUR region)
- DOTS implemented since 2002 (full coverage: end-2003, including prisons and Transnistria)
- The country is often quoted in terms of best practices in many areas of TB control
- Universal access to MDR-TB diagnosis and treatment (since 2008)
- Extensive Global Fund support (TB grants: Rounds 1, 6, 8 and 9)
- However, important challenges remain:
  - Poor treatment success
  - Extremely high burden of drug resistance
  - TB/HIV is a growing problem
MDR-TB prevalence 2006-2010 (%)
## Resistance pattern 2010

<table>
<thead>
<tr>
<th></th>
<th>New cases</th>
<th>Retreatment cases</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Abs</td>
<td>%</td>
<td>Abs</td>
</tr>
<tr>
<td><strong>Total number of patients with DST results</strong></td>
<td>1116</td>
<td>100,00</td>
<td>957</td>
</tr>
<tr>
<td><strong>Sensitive to all 4 drugs</strong></td>
<td>562</td>
<td>50,36</td>
<td>188</td>
</tr>
<tr>
<td>Any resistance:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any resistance to H</td>
<td>406</td>
<td>36,38</td>
<td>710</td>
</tr>
<tr>
<td>Any resistance to R</td>
<td>315</td>
<td>28,23</td>
<td>640</td>
</tr>
<tr>
<td>Any resistance to E</td>
<td>244</td>
<td>21,86</td>
<td>514</td>
</tr>
<tr>
<td>Any resistance to S</td>
<td>470</td>
<td>42,11</td>
<td>720</td>
</tr>
<tr>
<td><strong>Mono-resistance:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>39</td>
<td>3,49</td>
<td>22</td>
</tr>
<tr>
<td>R</td>
<td>13</td>
<td>1,16</td>
<td>9</td>
</tr>
<tr>
<td>E</td>
<td>21</td>
<td>1,88</td>
<td>2</td>
</tr>
<tr>
<td>S</td>
<td>99</td>
<td>8,87</td>
<td>42</td>
</tr>
<tr>
<td><strong>H+R resistance (MDR-TB)</strong></td>
<td>288</td>
<td>25,81</td>
<td>626</td>
</tr>
<tr>
<td>HR</td>
<td>4</td>
<td>0,36</td>
<td>10</td>
</tr>
<tr>
<td>HRE</td>
<td>4</td>
<td>0,36</td>
<td>4</td>
</tr>
<tr>
<td>HRS</td>
<td>97</td>
<td>8,69</td>
<td>125</td>
</tr>
<tr>
<td>HRES</td>
<td>183</td>
<td>16,40</td>
<td>487</td>
</tr>
<tr>
<td><strong>PDR R + other</strong></td>
<td>14</td>
<td>1,25</td>
<td>5</td>
</tr>
<tr>
<td>RE</td>
<td>1</td>
<td>0,09</td>
<td>-</td>
</tr>
<tr>
<td>RS</td>
<td>4</td>
<td>0,36</td>
<td>3</td>
</tr>
<tr>
<td>RES</td>
<td>9</td>
<td>0,81</td>
<td>2</td>
</tr>
<tr>
<td><strong>Other PDR</strong></td>
<td>1</td>
<td>0,09</td>
<td>1</td>
</tr>
<tr>
<td>ES</td>
<td>1</td>
<td>0,09</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total PDR-TB</strong></td>
<td>94</td>
<td>8,42</td>
<td>68</td>
</tr>
<tr>
<td><strong>Total MDR-TB</strong></td>
<td>288</td>
<td>25,81</td>
<td>626</td>
</tr>
</tbody>
</table>
TB laboratory network

- 70 sputum collection points
- 59 microscopy centres (DSM)
- 3 Regional Reference Laboratories (DSM, culture, DST)
- National Reference Laboratory (DSM, culture, DST, QA, training)
- Automated MGIT: NRL since 2007, RRLs since 2009
- LPA MDRTBPlus (Hain): NRL since 2009, RRLs since 2010
- EQA by Supranational Reference Laboratory in Borstel, Germany
The need and rationale for Xpert implementation

- The country has extremely high burden of drug resistance and high burden of TB/HIV co-infection;
- The network of laboratory services is well developed and processes the full range of investigations;
- Universal access is ensured to treatment of MDR-TB and ARV treatment;
- Appropriate infrastructure (including power supply, storage space, waste management, etc., as required for the technology)
- Qualified medical staff
- Small territory, reliable transportation, etc.

Moldova is keen to introduce and rollout Xpert technology:

- Fast
- Country-wide
- To lower health system level(s)
EXAMINATION OF TB SUSPECTS

1. Other TB suspects (not included in path 2)

- **MICROSCOPY**
  - **Result**
    - SS negative
    - **Repeat, SS positive**
    - **SS positive**
      - **LJ method**
        - Repeat, SS negative, Clinical & X-ray – TB (?)
    - Other disease

2. Patients with high risk of TB and MDR-TB *

- **X-pert MTB/RIF**
  - **Result**
    - MTB (--)
    - MTB (+), RIF (S)
    - MTB (+), RIF (R)

- **BACTEC MGIT**
  - MTBDRPlus (+2nd line DST)

* Patients with high risk of TB and MDR-TB:

- Patients with TB symptoms, who had contact with MDR-TB patients;
- Children with TB symptoms, esp. contacts of MDR-TB patients;
- HIV positive persons with TB symptoms;
- Patients in prisons with high risk to be infected with MDR-TB;
- Vulnerable groups: homeless, drug users, patients on immunosuppressive therapy, haemodialysis, with diabetes, hepatitis
- Groups at risk with symptoms suggestive of TB such as medical staff working in laboratories and TB hospitals;
- Patients with suspected TB relapse but with repeated negative SSM results;
- Patients with clinical symptoms of extrapulmonary TB
Implementation Plan (1)

• **Xpert is part of the new National TB Programme 2011-2015**

  • Stage 1: Introduction and rollout to district level
    • To start and complete ASAP (during 2012)
    • Include:
      • TB services in the civilian sector
      • TB services in the penitentiary sector
      • AIDS Centres
    • NB: To cover Transnistria region as well
    • Whom to test: see above but expand to all TB suspects given the extremely high MDR levels
  
  • Stage 2: TBD
    • Consultations with WHO e.g. this workshop
    • Learn from early implementation experience
    • Consider funding, cost-efficiency and sustainability issues
    • Health system issues: financing, service delivery, information system, etc.
Implementation Plan (2)

• Placement of instruments (Stage 1), totally 52:
  • Civilian TB services – 47:
    • NRL – 2
    • Regional RL and city Balti – 2
    • Chisinau city – 5
    • Regional RL and city Bender (Transnistria) – 2
    • Tiraspol city (Transnistria) – 1
    • 35 district TB institutions
  • Penitentiary TB services – 3:
    • Central Prison Hospital Pruncul – 1
    • Pre-trial isolators in Chisinau and Balti – 2
    • NB: Other penitentiary institutions ‘assigned’ to civilian services in respective areas
  • AIDS services – 2:
    • Regional AIDS Centre Balti (Northern part) – 1
    • Regional AIDS Centre Comrat (Southern part) – 1
Our concerns and challenges

• **Funding**
  • TB REACH Wave 2 (awaiting for results)
    • Due to funding ceiling, the application includes procurement of 25 instruments only
  • TGF R8/9 – reallocation of funds (questionable)
  • TGF NSA – EOI (not accepted)
  • TGF R11 (the country will apply but chances are limited)
  • EXPAND TB?
  • National funding – would be possible in about 5 years to fully take over

• **Implications for MDR-TB treatment**
  • Challenge to manage the potentially increased number of diagnosed MDR patients

• **Improving TB (including DR-TB) treatment delivery**
  • Hospitals’ performance and efficiency
  • New models of care delivery (patient-centered approaches, emphasis on outpatient treatment, PHC role, community involvement)
  • Changing management and financing mechanisms (case-based payment across levels of care, motivation of patients and staff for ensuring adherence)
  • Xpert can play a triggering role in making change happen