Results from the pilot of the checklist for TB surveillance standards and benchmarks:

Egypt

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STB unit, WHO Regional Office for the Eastern Mediterranean
Meeting of the task force on impact measurement
28-29 September, 2011
Overview of surveillance system

TB Notification System

<table>
<thead>
<tr>
<th>Case notifications 2010</th>
<th>(%)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New cases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smear-positive</td>
<td>4,679</td>
<td>53</td>
</tr>
<tr>
<td>Smear-negative</td>
<td>1,137</td>
<td>13</td>
</tr>
<tr>
<td>Smear unknown</td>
<td>21</td>
<td>(&lt;1)</td>
</tr>
<tr>
<td>Extrapulmonary</td>
<td>3,048</td>
<td>34</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total new</td>
<td>8,885</td>
<td></td>
</tr>
<tr>
<td>Total &lt; 15 years</td>
<td>490</td>
<td></td>
</tr>
<tr>
<td>Total new and relapse</td>
<td>9,260</td>
<td>(97% of total)</td>
</tr>
<tr>
<td>Total cases notified</td>
<td>9,588</td>
<td></td>
</tr>
</tbody>
</table>

Mortality Information System

- Use of death certificates: ~100% of deaths
- Causes of death: ~50% use of ICD10
- Weak coordination between the NTP and general surveillance system of the MOH
Main findings from pilot test (1):
Essential Features - Table 1

• Overall remarks:
  • Surveillance budget constitutes less than 5% of TB control budget. The surveillance officer at the central level is a medical doctor, data entry on excel is done by 2 technicians, one of them has a background in statistics. All data management processes are available except data dictionary. Aggregated and electronic patient based reports are submitted from district to governorate then central level.

• Problems identified:
  • Human resources: Epidemiologists are under the Ministry of Higher Education and the MOH regulations do not allow their full integration in the routine activities of the NTP. They can just be recruited as consultants with limited engagement in the daily work.
Main findings from pilot test (1):

Essential Features - Table 1 (cont.)

- Standards/benchmarks that could not be adequately assessed
  
  None

- Standards/benchmarks identified to be important but not in the checklist:
  
  None

- Standards/benchmarks thought to be unnecessary:
  
  None
Main findings from pilot test (2):
System coverage - Table 2

• Overall remarks:
  77% of cases were reported from NTP providers, and 28% of non-NTP cases were not notified to NTP (Capture-TB), 10% were not diagnosed (CDR=62%, Capture TB)

• Problems identified:
  Need to clarify the differences between the 3 questions (all cases reported by NTP, %of cases not notified by non-NTP and %undiagnosed).

• The situation of VR could not be assessed
Main findings from pilot test (2):
System coverage - Table 2 (cont.)

• Standards/benchmarks that could not be adequately assessed
  – None

• Standards/benchmarks identified to be important but not in the checklist:
  – Availability of first line drugs in the private pharmacies, national drug authorities legislations and practices of physicians and pharmacists: OTC, prescriptions or referral to NTP
  – VR: extent of agreement between TB deaths reported by NTP and VR systems

• Standards/benchmarks thought to be unnecessary:
• VR: % with garbage code (enough to have the % with cause of death)
Main findings from pilot test (3): Core data items

• **Overall remarks:**
  - Data are disaggregated by age, sex, HIV co-infection, MDR-TB, and some high risk groups

• **Problems identified:**
  - VR: weak VR system and lack of sample vital registration study (planned)
Main findings from pilot test (3): Core data items (cont.)

- Standards/benchmarks that could not be adequately assessed
  - VR

- Standards/benchmarks identified to be important but not in the checklist:
  - None

- Standards/benchmarks thought to be unnecessary:
  - None
Main findings from pilot test (4): Data quality and completeness

• Overall remarks:

• Due to frequent supervisory visits with OSDV and regular review meetings at all levels, there is 100% completion of the core variables, 100% report completeness, very low % of primary defaulting from treatment, ~100% agreement between registers and reports, and 99% of notified cases are evaluated for treatment.
Main findings from pilot test (4): Data quality and completeness

• Overall remarks: Evaluating overdispersion

1. Male notifications 2009-2010
• population annual increase: 1.8; annual decline in incidence: 2%;
• year to year difference in cases
  \[ |N2 - N1| < 2\sqrt{N1 + (1 + k)^2 N2}, \text{ where } k \text{ is the expected rate of change} \]
• Male notifications (2009-2010): \( N1 - N2 = 396 \) compared to 197.6 i.e. overdispersion in male notification

• 2. Female notifications 2009-2010
• \( N1 - N2 = 126 \) compared to 138.3 i.e. no overdispersion
Internal consistency: Evaluating overdispersion over time

<table>
<thead>
<tr>
<th>PTB, ss+ notifications</th>
<th>age group</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Male</td>
<td>0-</td>
</tr>
<tr>
<td>2009</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>0</td>
</tr>
<tr>
<td>N1-N2</td>
<td>0</td>
</tr>
<tr>
<td>2*sqrt(N1+(1+k)^2 N2)</td>
<td>0</td>
</tr>
</tbody>
</table>

2*sqrt(N1+(1+k)^2 N2) over threshold
# Internal consistency: Evaluating overdispersion over time

<table>
<thead>
<tr>
<th>PTB, ss+ notifications</th>
<th>Age group</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Female</td>
<td>0-</td>
</tr>
<tr>
<td>2009</td>
<td>0</td>
</tr>
<tr>
<td>2010</td>
<td>0</td>
</tr>
<tr>
<td>N1-N2</td>
<td>0</td>
</tr>
<tr>
<td>2*sqrt(N1 + (1 + k)^2 N2)</td>
<td>0</td>
</tr>
</tbody>
</table>

*over ???
Evaluating external consistency

TB notification rate (per 100,000 population)

Case notifications by type of patients, 2010

New smear-negative 12%
New extrapulmonary 32%
Other 7%

Notified new smear-positive cases per age groups and sex (rate per 100,000 population), 2010

Number of cases per 100,000 population

Treatment outcomes of new smear-positive cases, 2009 cohort

Cured 72%
Completed 16%
Other 12%
Died 3%
Failed 2%
Defaulted 4%
Transferred out/not evaluated 3%

New smear-negative 49%
New smear-positive 12%
New extrapulmonary 32%
Other 7%

Treatment after failure 1%
Treatment after default 2%
Main findings from pilot test (4): Data quality and completeness (cont.)

• Standards/benchmarks that could not be adequately assessed
  – Consistency of trends in notifications with trends in measured TB mortality could not be assessed from vital registration

• Standards/benchmarks identified to be important but not in the checklist:
  – The RDQA checklist can be applied at the 3 levels during NTP review missions. It allows quantification of data quality at all levels.
  – Have a separate section for evaluating high risk groups (HRG) (% of contacts, PLHIV prisoners, and other HRG tested)
General comments/Lessons learned

The checklist was useful in evaluating the quality of the surveillance system. However, the following gaps were identified during its completion:

• Certification of the surveillance system indicates meeting certain standards to be able to provide data of sufficient quality and coverage so that TB incidence can be measured directly from TB notifications. However, the extent of coverage of the high risk groups where TB transmission is expected to be focused was not given due emphasis.
General comments/Lessons learned

• Some questions were not clear to NTP and the methods of collecting data request some clarifications.

• The core data items as a separate component is somehow weak as, except for the VR section, it is already part of the revised recording and reporting that all countries have adopted.
Recommendations

– Include surveillance among the high risk groups as it reflects the efficiency of the surveillance system

– Use the WHO/KNCV/Union RDQA tool with its data attributes under the data quality component instead of presenting several DQA tools which might be confusing to the reader

– Prepare an automated checklist (e.g. excel-based) to allow for quantification of all benchmarks and obtain a baseline for each topic evaluated as well as overall summary score for the country
The checklist can be reorganized into 4 main components:

<table>
<thead>
<tr>
<th>Main components</th>
<th>Topics to add</th>
<th>Topics to remove or shift</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential features of the M&amp;E system</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Surveillance system coverage</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Surveillance of the High risk groups (HRG)</td>
<td>% of coverage of contacts, PLHIV, prisoners, refugees, HCW, bovine TB, other risk groups</td>
<td></td>
</tr>
<tr>
<td>Data quality attributes</td>
<td>RQDA tool</td>
<td>Contacts shifted under HRG</td>
</tr>
<tr>
<td></td>
<td>Shift Core variables under this component</td>
<td></td>
</tr>
</tbody>
</table>