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

Brazil
Overview of surveillance system

TB Notification System (SINAN)
- SINAN = 40 compulsory notification diseases and illnesses
- 100% geographical coverage
- Recorded electronically on 4600 of 5600 municipalities
- Transmitted electronically across 3 - 4 admin levels
- Case-based data available at national level
- There are automatic checks at data entry, automatic verification reports for some inconsistencies, basic epidemiological analyses outputs
- More advanced separate system for the State of São Paulo, but data is compatible with SINAN

Mortality Information System (SIM)
- >85% population coverage as compared with 2011 census
- ~5% ill-defined
- Active surveillance for deaths with ill-defined causes
- Maternal and infant mortality deaths submitted to investigation by dedicated committees
Main findings from pilot test (1): Essential Features - Table 1

• Brazil meets most of the standards/benchmarks

• Problems identified:
  – SINAN software updated too frequently
  – Staff – high turnover and poor qualification, particularly at peripheral level
  – MDR-TB separate system
  – No annual report
  – Electronic data less complete than paper registers in localized areas
Main findings from pilot test (1): Essential Features - Table 1 (cont.)

- S&B mostly well understood and easy to collect

- Standards/benchmarks that could not be adequately assessed
  - Data quality assessment – not representative, standardized assessments
  - Allocated budget

- Standards/benchmarks identified to be important but not in the checklist:
  - Subnational S&B. E.g. high quality of M&E staff at national level but quality/quantity not uniform across states and municipalities

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

- Brazil meets standards/benchmarks for VR data
- Thought to meet/be close to standards/benchmarks for notification data, but insufficient evidence to demonstrate this is true
- Problems identified:
  - No inventory study to quantify under-reporting of diagnosed cases and show it is less than 10% (the draft benchmark)
    - although close ties between notification and drug supply make extensive under-reporting unlikely
  - Under-5 mortality at 22.5 > benchmark of <10/1000
Main findings from pilot test (2): System coverage - Table 2 (cont.)

- **Standards/benchmarks that could not be adequately assessed**
  - As audit of cases reported X expected for subnational levels not already in place, this was a time consuming exercise
  - Level of underreporting from all providers (see above); OOP expenditures on health

- **Standards/benchmarks identified to be important but not in the checklist:**
  - S&B for subnational level – important for targeted recommendations/interventions
  - Time period for these evaluations not clear

- **Standards/benchmarks thought to be unnecessary:**
  - None
Main findings from pilot test (3): Core data items

- Brazil meets almost all the standards

- **Problems identified:**
  - HIV status only available for ~70% of cases
  - Data on whether cases were are/were in prison is incomplete
  - MDR status mostly restricted to retreatment cases
  - MDR-TB patients followed separately from main notification system
Main findings from pilot test (3): Core data items (cont.)

• Standards that could not be adequately assessed
  – Monitoring of TB deaths at VR at national level (not at subnational levels)

• Standards identified to be important but not in the checklist:
  – Collection of microbiological results (diagnostic + follow-up)
  – Capacity to follow individual through several TB episodes – only available for the State of São Paulo that has a separate system

• Standards thought to be unnecessary:
  – TB among immigrants and smoking status of TB cases not collected – but not considered to be important at this stage, as there are no dedicated interventions
Main findings from pilot test (4): Data quality and completeness

• Brazil meets or is close to meeting some standards
  – E.g. core variables >95% complete for 10/19 variables, 8 in range 85-95% and 1 was 76% complete
  – Case-based reporting system with delays usually < 2 months
  – National data internally and externally consistent

• Problems identified:
  – Duplications known to exist and 2009 study showed standard of <5% not met
  – Misclassifications known to exist
  – 10% cases have treatment outcomes missing
  – Apart from documenting % missing values on "essential variables", little is done to verify data completeness
  – Insufficient staff to analyse/interpret data, particularly when subnational level is considered
Main findings from pilot test (4): Data quality and completeness (cont.)

• Standards that could not be adequately assessed
  – Whether data in aggregated case reports match source documents
  – Limited assessment of whether lab-confirmed results reported as cases
  – Whether <5% implausible values – needs to be better defined
  – External consistency at subnational level

• Standards identified to be important but not in the checklist:
  – Initial defaulter is major flaw – allowing 5% missed is too soft
  – Assessment of whether >95% lab-confirmed results from private labs reported as cases

• Standards thought to be unnecessary:
  – Smear/Culture laboratory-confirmed results should not be “reported as suspects” – the word suspect should be removed from this standard
General comments/Lessons learned

• Some standards difficult to assess
• Time-element needed for many standards
• Site audits were not considered feasible and representative
• Analyses of data at subnational level may bring important information about discrepancies which are not easily seen with national level data
Recommendations

- Many standards need better definition of numerator/denominator
- Data collection tools
- Standard analyses
- Description of sampling strategy
- should be provided for audits
- Some benchmarks need to be adjusted for settings with different TB epidemiology