Verification of tuberculosis services and reporting in health facilities

WHO Service Availability and Readiness Assessment (SARA) and Data Quality Report Card (DQRC)

SARA

- The WHO Service Availability and Readiness Assessment (SARA) assesses minimum service standards for health service delivery in health facilities.

- Readiness to provide a specific health intervention is measured by the presence of a defined set of tracer items (trained staff and guidelines, equipment, diagnostics, medicines & commodities).

- Includes a data verification (record review) module, to verify reliability of monthly facility reporting.
Main domains assessed

1) General service availability
   - Facility density, health worker density, service utilization

2) General service readiness
   - Basic amenities, equipment & supplies, diagnostics, medicines & commodities

3) Specific service availability and readiness:
   - Family planning, antenatal care
   - Obstetric and neonatal care
   - Child health (curative, immunization)
   - HIV/AIDS, PMTCT
   - Tuberculosis
   - Malaria
   - Chronic diseases
   - Surgical care, blood transfusion

Tuberculosis services
Availability and Readiness

<table>
<thead>
<tr>
<th>SERVICE AVAILABILITY</th>
<th>SERVICE READINESS</th>
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<tbody>
<tr>
<td>Health interventions offered by facilities</td>
<td>Tracer items for delivery of intervention</td>
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<tr>
<td>% of facilities offering tuberculosis services</td>
<td>Trained staff and guidelines:</td>
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<tr>
<td>Types of tuberculosis services offered:</td>
<td>- Guidelines for diagnosis and treatment of TB</td>
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<tr>
<td>• Diagnosis</td>
<td>- Guidelines for management of HIV and TB co-infection</td>
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<tr>
<td>• Treatment</td>
<td>- Guidelines for MDR-TB (treatment or need for referral)</td>
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<td></td>
<td>- Guidelines for TB infection control</td>
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<td>- Staff trained in diagnosis and treatment of TB in the past two years</td>
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<td>- Staff trained in management of HIV &amp; TB co-infection in the past two years</td>
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<td></td>
<td>Diagnostics:</td>
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<td></td>
<td>• TB microscopy</td>
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<td>• HIV diagnostic capacity</td>
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<td>• System for diagnosis of HIV among TB clients</td>
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<td>Medicines and commodities:</td>
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<td></td>
<td>• First-line TB medications (Isoniazid, Pyrazinamide, Rifampicin, and Ethambutol; or combinations to meet first-line TB treatment)</td>
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**Methodology**

- **Sampling:** National sample of ~150 health facilities
  - Including all hospitals (if possible) or oversampling of hospitals
  - Primary care facilities stratified by type and managing authority (public/private)
  - Simple random sample within strata
  - Margin of error of ~10%

- To be implemented 2-3 months in advance of the annual health sector review, to provide key results on service delivery in the country on which to base operational planning and resource allocation for the following year
  - To be conducted annually to monitor progress

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**Country assessments**

- **Benin 2013:** National sample of 189 facilities out of 1196 stratified by facility type (hospital, health centers, small health facilities) and managing authority (public/private). Field work completed March 2012.

- **Burkina Faso 2012:** National sample of 686 facilities out of 1982 stratified by 13 regions, type (hospital, large health centers, small health facilities) and managing authority (public/private). Sample is nationally and regionally representative. Field work completed December 2012.

- **Democratic Republic of Congo 2012:** Provincial sample of 100 facilities each in 3 provinces (Kinshasa, Nord Kivu, Kasai Oriental) stratified by type (hospital/primary care) and managing authority (public/private). Field work completed November 2012.
Country assessments

Togo 2012: National sample of 100 facilities out of 780, stratified by type (hospital/primary care) and managing authority (public/private). Field work completed November 2012.

Uganda 2012: National sample of 95 facilities out of 4980; two-level cluster sample in which one district was selected randomly from each of five zones, and facilities were sampled within districts stratified by facility type and managing authority (public/private). Field work completed August 2012.


EXAMPLES: RESULTS BY COUNTRY
Uganda 2012: Service availability
% of facilities offering tuberculosis services (N=95)

- Offers TB services: 45%
- TB treatment: 35%
- TB diagnosis: 33%

Uganda 2012: Service readiness
% of facilities offering tuberculosis services with tracer items (N=50)

- Staff and Guidelines: 69%
- Diagnostics: 59%
- Medicines and Commodities: 51%
- Readiness Score: 46%

- HIV diagnostic capacity: 36%
- System for diagnosis of HIV among TB clients: 78%
- TB microscopy: 64%
- All first-line TB medications: 66%
- Mean score: 56%
Sierra Leone 2011/12: Service availability
% of facilities offering tuberculosis services (N<sub>2011</sub>=207, N<sub>2012</sub>=106)

- **Offers TB services**: 2011: 17%, 2012: 19%
- **TB diagnosis**: 2011: 15%, 2012: 18%
- **TB treatment**: 2011: 15%, 2012: 16%

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Sierra Leone 2011/12: Service readiness
% of facilities offering tuberculosis services with tracer items (N<sub>2011</sub>=35, N<sub>2012</sub>=30)

- **Guidelines diagnosis/treatment**: 2011: 65%, 2012: 69%
- **Guidelines HIV/TB co-infection**: 2011: 43%, 2012: 74%
- **Trained staff diagnosis/treatment**: 2011: 13%, 2012: 40%
- **Guidelines TB infection control**: 2011: 90%, 2012: 72%
- **Trained staff TB infection control**: 2011: 50%, 2012: 88%
- **Trained staff HIV/TB co-infection**: 2011: 30%, 2012: 79%
- **Trained staff MDR-TB**: 2011: 28%, 2012: 50%
- **Guidelines MDR-TB**: 2011: 32%, 2012: 57%
- **HIV test**: 2011: 83%, 2012: 93%
- **Diagnosis of HIV among TB clients**: 2011: 26%, 2012: 50%
- **TB microscopy**: 2011: 74%, 2012: 70%
- **TB medications**: 2011: 34%, 2012: 46%
- **All items**: 2011: 72%, 2012: 82%
- **TB mean score**: 2011: 14%, 2012: 70%

2011: Lighter/top bars
2012: Darker/bottom bars
DATA VERIFICATION

SARA Data verification module

- Assess whether service delivery outputs (e.g. number of TB cases) are being compiled and reported correctly from source documents to monthly facility reports
  - Review documentation
  - Recount the number of events from source documents, compare to reported number from monthly reports
  - Report reasons for discrepancies
- Select 4-5 indicators for verification over 3 month period
  - Standard indicators include: ANC1, DTP3, institutional deliveries, total outpatient visits, PMTCT, malaria cases, **TB cases**
Source documents

- The source document used for data verification is the document that is used by the facility to compile monthly reports.

- Possible data sources include:
  - TB registers
  - Lab registers
  - Patient cards

Data verification

- Health facility level
  - Compare recounted values (from source documents) to reported values (from facility monthly reports).
  - Compute verification ratio for each facility.

\[
\text{Verification ratio} = \frac{\text{Recounted number of events from source document}}{\text{Reported number of events from HMIS}}
\]
**Verification factor**

- Weighted mean of verification ratios from lower levels.
  - Verification ratios are weighted by service volume outputs by region/facility type (depends on sampling)
- Summarizes information on the reliability of reporting of the data reporting system
  - VF close to 1 indicates high consistency between recounted and reported numbers
- Indicates the degree of over-/under-reporting in the system.
  - e.g. VF = 0.80 indicates that of the total reported number of events, approximately 80% could be verified in source documents → over-reporting

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**Data verification in Kinshasa, DRC**

- Indicators verified: ANC1, PENTA3, institutional deliveries, outpatient consultations, smear-positive TB cases
  
  NOTE: in future, the TB indicator will include all TB cases, not only smear-positive

- Systematically compare recounted numbers from registers and reported numbers from monthly reports and quarterly reports

- 99 health facilities included in sample (public and private)
  - 30 hospitals, 69 health centers

- Verification period: April-June 2012
Review of facility documents

99 facilities in sample

41 facilities provide TB diagnostic services

58 facilities do not

36 facilities had registers and monthly reports available for review

20 facilities had registers and quarterly reports available for review

5 facilities with missing registers or monthly reports

21 facilities missing quarterly reports

Verification Factors
Preliminary results (unweighted)

<table>
<thead>
<tr>
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<th>Monthly reports (N= 36)</th>
<th>Quarterly reports (N= 20)</th>
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<tbody>
<tr>
<td>Overall</td>
<td>0.83</td>
<td>0.97</td>
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<tr>
<td>Hospital</td>
<td>0.98</td>
<td>-</td>
</tr>
<tr>
<td>HC</td>
<td>0.77</td>
<td>-</td>
</tr>
<tr>
<td>Public</td>
<td>0.98</td>
<td>-</td>
</tr>
<tr>
<td>Private</td>
<td>0.74</td>
<td>-</td>
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</table>

- Considerable over-reporting in monthly reports, particularly for health centres and private facilities
- Good consistency between registers and quarterly reports; however, over half of facilities were excluded from this analysis due to missing TB quarterly report
Common reasons for discrepancies

- Miscounting, arithmetic errors
- Missing data in source documents, poor record keeping
- Poorly trained and/or overworked staff for compiling facility reports

Data verification results

- Results from data verification survey feed into:
  - WHO data quality report card, a cross-cutting assessment for annual monitoring of HMIS data quality
  - TB surveillance checklist, an in-depth assessment of the TB reporting system
INTEGRATING TOOLS INTO COUNTRY MONITORING SYSTEM

Monitoring intervention coverage
Country system with Data Quality component

Household surveys
Annual health progress reports

Year: 0

Annual Reviews

Five-year Health Sector Strategic Plan / TB plan
**Country implementation**

- Cross-cutting tool for a harmonized system of health systems service delivery (covers general health services, maternal, newborn, child and adolescent health, HIV, TB, malaria, NCDs, surgery, and blood transfusion)

- Requires 6-8 weeks to complete (including planning, field work, analysis)

- To be conducted annually 3 months in advance of the annual health sector review

- Results feed into:
  - Annual health sector review
  - TB programme review

- Alignment of sector and programme reviews to ensure that the TB indicator is included in the annual data verification exercise