Standards and benchmarks for TB surveillance and vital registration systems: Checklist
PART A: CHARACTERISTICS OF THE TB SURVEILLANCE SYSTEM

Before completing the checklist, it is important to characterize the national TB surveillance system. Please provide answers to the following questions.

COUNTRY NAME: ____________________                                     DATE OF ASSESSMENT: ____________

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>OUTCOMES (Best practices are in bold)</th>
<th>KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</th>
<th>ESTIMATED BUDGET REQUIREMENTS TO IMPLEMENT KEY ACTION(S)</th>
</tr>
</thead>
</table>
| A1. How are data recorded for individual TB cases at the service delivery level, e.g. in TB diagnostic units, health centres, clinics? *(Tick all that apply)* | ☐ Data are recorded electronically on a national internet-based system  
☐ Data are recorded electronically on a state/provincial/regional internet-based system  
☐ Data are recorded electronically on a local system  
☐ Data are recorded on paper  
☐ Data are not recorded                                                   |                                            |                                                         |
| A2. Do all service delivery points systematically use standardized TB data collection forms and tools? | ☐ Yes, completely  
☐ Mostly  
☐ Partially  
☐ No, not at all                                                                                 |                                            |                                                         |
| A3. Which TB cases are included in the national TB surveillance data? *(Tick all that apply and describe):* | ☐ All TB cases from all parts of the country  
☐ Some TB cases are excluded  
☐ Some part(s) of the country are excluded  
☐ Some case types are excluded  
☐ Some care providers, e.g. non-NTP providers, prisons, private practitioners, are excluded  
☐ Others: ________________________  
Describe: ________________________                                                      |                                            |                                                         |
| A4. What types of TB data are available at the national level? *(Tick all that apply)* | ☐ Patient-level data that allow multiple episodes of TB in the same person to be identified are available  
☐ Case-level data are available for all of the country  
☐ Case-level data are available for parts of the country  
☐ Aggregated data are available, i.e. summaries for groups of cases. |                                            |                                                         |
<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>OUTCOMES (Best practices are in bold)</th>
<th>KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</th>
<th>ESTIMATED BUDGET REQUIREMENTS TO IMPLEMENT KEY ACTION(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A5.</strong> What is the expected frequency of data transmission from the first sub-national administrative level to the national level? <em>(Tick all that apply)</em></td>
<td>☐ Real-time  ☐ More often than monthly  ☐ Monthly  ☐ Quarterly  ☐ Less often than quarterly</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A6.</strong> At what levels of the system are TB data systematically verified for accuracy, timeliness and completeness? <em>(Tick all that apply)</em></td>
<td>☐ From the service unit upwards  ☐ From the 1&lt;sup&gt;st&lt;/sup&gt; administrative level upwards  ☐ From the 2&lt;sup&gt;nd&lt;/sup&gt; administrative level upwards  ☐ Only at the national level  ☐ Not at any level</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A7.</strong> What types of quality assurance procedures are systematically undertaken for TB data? <em>(Tick all that apply)</em></td>
<td>☐ Quality controls are in place for the electronic surveillance system (automated checks at data entry and batch checking, plus standard operating procedures (SOPs))  ☐ Data are reviewed during supervisory monitoring visits to service units and sub-national levels (How often? __________<strong>)  ☐ Data are reviewed during meetings with TB staff (How often? ______________<strong>)  ☐ Other (Specify:</strong></strong>____________________)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A8.</strong> Is feedback on TB data quality systematically provided to all lower reporting levels?</td>
<td>☐ Yes, completely  ☐ Mostly  ☐ Partially  ☐ No, not at all</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A9.</strong> When are national TB case data for a given calendar year considered ready for national analyses and reporting?</td>
<td>☐ Before April the following calendar year  ☐ Before May the following calendar year  ☐ Before June the following calendar year  ☐ On or after beginning of June the following calendar year</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A10.</strong> Are there national guidelines for recording and reporting of TB data, e.g.</td>
<td>☐ Yes. They are posted on the internet  ☐ Yes. They are available in a manual or other reference document, e.g. training materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUESTIONS</td>
<td>OUTCOMES (Best practices are in bold)</td>
<td>KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</td>
<td>ESTIMATED BUDGET REQUIREMENTS TO IMPLEMENT KEY ACTION(S)</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------</td>
<td>------------------------------------------</td>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>documentation or instructions? <em>(Tick all that apply)</em></td>
<td>☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A11. Does the national TB programme have a training plan that includes staff involved in data collection and reporting at all levels of the reporting process?</td>
<td>☐ Yes ☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A12. How often do TB programme staff receive training specifically on TB surveillance, i.e. recoding and reporting of TB data? <em>(Tick all that apply)</em></td>
<td>☐ Training is routinely received at national and sub-national levels (How often?____________________________) ☐ Training is received on an ad hoc basis ☐ Staff receive training when they are hired ☐ No routine training is received</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A14. Is a national TB surveillance report routinely produced and disseminated on an annual basis?</td>
<td>☐ Yes ☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A15. Are there written goals of the surveillance system?</td>
<td>☐ Yes ☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A16. Are policies and procedures are in place to protect the confidentiality of</td>
<td>☐ Yes, completely ☐ Mostly ☐ Partially</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUESTIONS</td>
<td>OUTCOMES (Best practices are in bold)</td>
<td>KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</td>
<td>ESTIMATED BUDGET REQUIREMENTS TO IMPLEMENT KEY ACTION(S)</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------</td>
<td>--------------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>all surveillance data e.g. records, registers?</td>
<td>☐ No, not at all</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A17. Is there a long-term financial plan and budget in place to support TB surveillance activities?</td>
<td>☐ Yes ☐ No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A18. When was the last time the TB surveillance system was evaluated?</td>
<td>☐ Within the past 5 years ☐ Within the past 5-10 years ☐ Never</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ADDITIONAL NOTES: ________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
### PART B (Section 1): CHECKLIST FOR TB SURVEILLANCE AND VITAL REGISTRATION SYSTEMS

For each standard, please assess whether the system is able to satisfy the associated benchmark(s), using the methods recommended in the user guide. Indicate ‘Met’, ‘Partially met’, “Not met” or ‘Not applicable’ in the results column. Describe the key results, any actions recommended to improve the quality of the system and the estimated budget to address these actions in the last two columns.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>RESULTS (See the User Guide for interpretation)</th>
<th>RESULTS (DESCRIPTION) INCLUDING KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</th>
<th>ESTIMATED BUDGET REQUIREMENTS TO ADDRESS KEY ACTION(S)</th>
</tr>
</thead>
</table>
| **B1.1** Case definitions are consistent with WHO guidelines | All benchmarks should be satisfied to meet this standard:  
- Laboratory-confirmed cases are distinguished from clinically diagnosed cases²  
- New cases are distinguished from previously treated cases  
- Pulmonary cases are distinguished from extrapulmonary cases. | ☐ Met  ☐ Partially met  ☐ Not met | | |
| **B1.2** TB surveillance system is designed to capture a minimum set of variables for all reported TB cases | Data are routinely collected for at least each of the following variables for all TB cases:  
- Age or age group  
- Sex  
- Year of registration  
- Bacteriological results  
- History of previous treatment  
- Anatomical site of disease  
- For case-based systems, a patient identifier | ☐ Met  ☐ Partially met  ☐ Not met | | |
| **B1.3** All scheduled periodic data submissions have been received and processed at the national level |  
- For paper-based systems: 100% of expected reports from each TB BMU have been received and data aggregated at the national level  
- For national patient-based or case-based electronic systems that import data files | ☐ Met  ☐ Partially met  ☐ Not met  ☐ Not applicable | | |

² i.e. by smear, culture or WHO-endorsed molecular test e.g. GeneXpert MTB/RIF
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>RESULTS (DESCRIPTION) INCLUDING KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</th>
<th>ESTIMATED BUDGET REQUIREMENTS TO ADDRESS KEY ACTION(S)</th>
</tr>
</thead>
</table>
| B1.4     | All benchmarks should be satisfied to meet this standard:  
- Sub-totals of the number of TB cases by age group, sex and case type matches the total number of reported TB cases in £95% of quarterly reports (or equivalent) from BMUs  
- The number of TB cases in £95% of quarterly reports (or equivalent) matches the number of cases recorded in BMU TB registers and source documents (patient treatment cards and laboratory register)  
- Data for a minimum set of variables are available for £95% of the total number of reported TB cases in BMU TB registers. | ☐ Met  ☐ Partially met  ☐ Not met  ☐ Not applicable | |
| B1.5     | All benchmarks should be met to reach this standard:  
- Data validation checks are in place at the national level to identify and correct invalid, inconsistent and/or missing data in the minimum set (Standard B1.2)  
- For each variable in the minimum set (Standard B1.2), £90% of case records are complete, valid and internally consistent for the year being assessed  
- £1% of case records in the national dataset for the year being assessed are unresolved potential duplicates. | ☐ Met  ☐ Partially met  ☐ Not met  ☐ Not applicable | |
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>RESULTS (DESCRIPTION) INCLUDING KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</th>
<th>ESTIMATED BUDGET REQUIREMENTS TO ADDRESS KEY ACTION(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B1.6</strong> TB surveillance data are externally consistent</td>
<td>• Among new TB cases, the percentage of children diagnosed with TB is between 5–15% in low- and middle-income, and &lt;10% in high-income countries</td>
<td>☐ Met ☐ Not met</td>
<td></td>
</tr>
</tbody>
</table>
| **B1.7** TB surveillance data are internally consistent over time | If vital registration data are available, then the following benchmark should be satisfied for this standard to be met:  
1. Year-to-year change in the national number of reported TB cases is consistent with the year-to-year change in national TB mortality (HIV-negative, from national vital registration) i.e. trajectories with the same direction.  
If vital registration data are not available, then the following benchmarks should be satisfied for this standard to be met. At the national level, evidence of internal consistency over the previous five years for the following benchmarks:  
2. Ratio of notified pulmonary to extrapulmonary TB cases  
3. Ratio of male to female TB cases  
4. Proportion of childhood TB cases out of all TB cases  
5. Year-to-year change in the case notification rate for all forms of TB  
6. Year-to-year change in the case notification rate for new smear-positive TB  
and if data are available,  
7. Ratio of the number of people with | ☐ Met ☐ Partially met ☐ Not met | |
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>RESULTS (DESCRIPTION) INCLUDING KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</th>
<th>ESTIMATED BUDGET REQUIREMENTS TO ADDRESS KEY ACTION(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TB SURVEILLANCE SYSTEM COVERAGE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| B1.8  All diagnosed cases of TB are reported | Both benchmarks should be satisfied to meet this standard:  
- TB reporting is a legal requirement  
- >90% of TB cases are reported to national health authorities, as determined by a national-level investigation (e.g. inventory study, conducted in past 10 years). | ☐ Met  ☐ Partially met  ☐ Not met | |
| B1.9  Population has good access to health care | Both benchmarks should be satisfied to meet this standard:  
- Under-five mortality rate (probability of dying by age 5 per 1000 live births) is <10  
- <25% total health expenditure is out-of-pocket. | ☐ Met  ☐ Partially met  ☐ Not met | |
| **QUALITY AND COVERAGE OF VITAL REGISTRATION SYSTEM** | | | |
| B1.10 Vital registration system has high national coverage and quality | Both benchmarks should be satisfied to meet this standard:  
- Cause of death documented in >90% of total deaths recorded in: a) national vital registration system or b) sample vital registration system  
- <10% of deaths have ICD codes for ill-defined causes (defined as ICD-9 780-799 and ICD-10 R00-R99). | ☐ Met  ☐ Partially met  ☐ Not met | |
PART B (Section 2): SUPPLEMENTARY CHECKLIST FOR TB SURVEILLANCE

For each standard, please assess whether the system is able to satisfy the associated benchmark(s), using the methods recommended in the user guide. Indicate ‘Met’, ‘Partially met’, “Not met” or ‘Not applicable’ in the results column. Describe the key results, any actions recommended to improve the quality of the system and the estimated budget to address these actions in the last two columns.

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>RESULTS</th>
<th>RESULTS (DESCRIPTION) INCLUDING KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</th>
<th>ESTIMATED BUDGET REQUIREMENTS TO ADDRESS KEY ACTION(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SURVEILLANCE OF DRUG RESISTANT TB</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| B2.1 | Surveillance data provide a direct measure of drug-resistant TB in new cases | One of the two benchmarks should be satisfied to meet this standard:  
• Rifampicin susceptibility status (Positive/Negative) documented for ≥75% of new pulmonary TB cases  
• Rifampicin susceptibility status (Positive/Negative) documented for a nationally representative drug resistance survey of new pulmonary TB cases. | ☐ Met  
☐ Partially met  
☐ Not met | | |
| **SURVEILLANCE OF TB/HIV** | | | | |
| B2.2 | Surveillance data provide a direct measure of the prevalence of HIV infection in TB cases | One of the two benchmarks should be satisfied to meet this standard:  
• HIV status (Positive/Negative) is documented for ≥80% of all notified TB cases  
• HIV status is available from a representative sample from all TB cases notified in settings with a low-level epidemic state or where it is not feasible to implement routine surveillance. | ☐ Met  
☐ Partially met  
☐ Not met | | |

---

3 Low-level epidemic state: HIV prevalence has not consistently exceeded 5% in any defined sub-population.
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>RESULTS</th>
<th>RESULTS (DESCRIPTION) INCLUDING KEY ACTION(S) REQUIRED TO ADDRESS THE GAPS</th>
<th>ESTIMATED BUDGET REQUIREMENTS TO ADDRESS KEY ACTION(S)</th>
</tr>
</thead>
</table>
| **B2.3** | Surveillance data for children reported with TB are reliable and accurate, and all diagnosed childhood TB cases are reported | Both benchmarks should be satisfied to meet this standard:  
• Ratio of age groups 0–4 to 5–14 years is in the range 1.5–3.0  
• >90% of childhood TB cases are reported to national health authorities, as determined by a national-level investigation (e.g. inventory study, conducted in the past 10 years) | ☐ Met  
☐ Partially met  
☐ Not met | |
Data, materials and personnel requirements to undertake the checklist
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>DATA REQUIREMENTS (if available)</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TB SURVEILLANCE SYSTEM DATA QUALITY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **B1.1** Case definitions are consistent with WHO guidelines | All benchmarks should be satisfied to meet this standard:  
• Laboratory-confirmed cases are distinguished from clinically diagnosed cases\(^4\)  
• New cases are distinguished from previously treated cases  
• Pulmonary cases are distinguished from extrapulmonary cases | 1. NTP manuals and guidelines  
2. National TB policy documents  
3. National TB reporting forms, registers, treatment cards  
4. NTP annual reports  
5. Surveillance-related training documents  
NTP programme officer  
NTP monitoring and evaluation officer  
NTP statistician/epidemiologist  
NTP data manager  
WHO TB programme officer |
| **B1.2** TB surveillance system is designed to capture a minimum set of variables for all reported TB cases | Data are routinely collected for at least each of the following variables for all TB cases:  
• Age or age group  
• Sex  
• Year of registration  
• Bacteriological results  
• History of previous treatment  
• Anatomical site of disease  
• For case-based systems, a patient identifier | 1. NTP annual reports  
2. Documentation of the surveillance system e.g. SOPs, data dictionary  
3. National surveillance database listing the dataset of minimum variables  
4. Paper data collection tools e.g. quarterly reports, sub-national reporting forms  
5. National laboratory register  
6. Reports or publications on data quality or surveillance evaluations. | As above |
| **B1.3** All scheduled periodic data submissions have been received and processed at the national level | For paper-based systems: 100% of expected reports from each TB BMU have been received and data aggregated at the national level  
\(\text{For national patient-based or case-based electronic systems that import data files from sub-national (e.g. provincial or regional) electronic systems: 100% of expected data files have}\) | For paper-based systems:  
1. Quarterly reports of TB cases sent to the NTP from BMUs over the period of one year  
2. Other reports are received that are outside the quarterly report system e.g. NGOs, non-NTP providers  
3. Possible requirement: if the national level only receives sub-national aggregates then each sub-national entity e.g. BMU, needs to be contacted and reviewed. | As above  
In addition:  
Provincial TB officers  
District TB officers |

\(^4\) i.e. by smear, culture or WHO-endorsed molecular test e.g. GeneXpert MTB/RIF
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>DATA REQUIREMENTS (if available)</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>been imported.</td>
<td><em>For electronic-based systems:</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. System logs that show which data files were imported for the reporting year and when they were imported.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Possible requirement: If some sub-national data providers also manage their databases by importing data files extracted from databases managed lower down the administrative chain e.g. BMUs, then each of those sub-national data providers need to be contacted and asked to report on the total number of files expected and the total number of data files received and included in the datasets provided to the national level for the year being assessed</td>
<td></td>
</tr>
</tbody>
</table>
| B1.4     | Data in quarterly reports (or equivalent) are accurate, complete, and internally consistent (*For paper-based systems only*) | All benchmarks should be satisfied to meet this standard:  
- Sub-totals of the number of TB cases by age group, sex and case type matches the total number of reported TB cases in ≥95% of quarterly reports (or equivalent) from BMUs.  
- The number of TB cases in ≥95% of quarterly reports (or equivalent) matches the number of cases recorded in BMU TB registers and source documents (e.g. patient treatment cards and laboratory register)  
- Data for a minimum set of variables are available for ≥95% of the total number of reported TB cases in BMU TB registers | Method 1:  
Service Availability and Readiness Assessment (SARA): This assessment requires health facility visits with data collected based on key informant interviews and observation of key items. SARA can either be carried out as a sample or a census; the choice between these methodologies will depend on a number of elements including the county's resources, the objectives of the survey, and the availability of a complete listing of all health facilities (public and private) in the country (Master Facility List). The data quality module for TB should be part of SARA to fulfil the standard. More details: [http://www.who.int/healthinfo/systems/sara_methods/en/index.html](http://www.who.int/healthinfo/systems/sara_methods/en/index.html)  
Method 2:  
Data quality audit of TB BMU (review data for a specified period of time e.g. one quarter) including quarterly reports sent to the NTP from BMUs, TB registers from health facilities, patient treatment cards, laboratory registers and a list of all TB BMUs in the country. | As above  
In addition:  
Provincial TB officers  
District TB officers  
Laboratory managers  
SARA: Small survey teams to do the census and health facility assessments that should include NTP staff. |
| B1.5     | Data in the national | All benchmarks should be met to reach this standard:  
1. Records of notified TB cases in the national patient- or case-based database for the year of assessment. | As above |
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>DATA REQUIREMENTS (if available)</th>
<th>PERSONNEL</th>
</tr>
</thead>
</table>
| database are accurate, complete, internally consistent and free of duplicates *(For electronic case-based or patient-based systems only)* | • Data validation checks are in place at the national level to identify and correct invalid, inconsistent and/or missing data in the minimum set (Standard B1.2)  
• For each variable in the minimum set (Standard B1.2), ≥90% of case records are complete, valid and internally consistent for the year being assessed  
• <1% of case records in the national dataset for the year being assessed are unresolved potential duplicates. | 2. Documentation and/or SOPs for electronic surveillance systems  
  o System logs that show which data files were imported for the reporting year and when they were imported  
  o List of automated checks run at the time of data entry  
  o List of data queries used to check data quality at the national level  
  o SOPs for detection and removal of duplicate TB cases at national level. | As above |
| B1.6 TB surveillance data are externally consistent | • Among new TB cases, the percentage of children diagnosed with TB is between 5-15% in low- and middle-income, and <10% in high-income countries. | 1. Reported TB case data from the national routine TB surveillance system disaggregated by age from the last year for which complete data are available  
| B1.7 TB surveillance data are internally consistent over time | If vital registration data are available, then the following benchmark should be satisfied for this standard to be met:  
1. Year-to-year change in the national number of reported TB cases is consistent with the year-to-year change in national TB mortality (HIV-negative, from national vital registration) i.e. trajectories with the same direction.  
If vital registration data are not available, then the following benchmarks should be satisfied for this standard to be met. At the national level, evidence of internal consistency | 1. If available, TB mortality rates (HIV-negative TB) at the national level are obtained from vital registration (VR) systems  
2. National level TB case data disaggregated by age (or age group), sex, type of disease, along with case notification rates (all forms and smear-positive TB cases) are obtained from routine TB surveillance for the past 5 years. Although not part of the benchmark assessment itself, similar subnational data should also be collected and examined  
3. If available, TB suspect registry data at the national level. | As above |
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>DATA REQUIREMENTS (if available)</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>over the previous five years for the following benchmarks:</td>
<td>1. Legal and regulatory frameworks national TB health reports and policy documents 2. Inventory study reports 3. Reports or publications on data quality or surveillance evaluations.</td>
<td>As above</td>
</tr>
<tr>
<td></td>
<td>2. Ratio of notified pulmonary to extrapulmonary TB cases</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Ratio of male to female TB cases</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Proportion of childhood TB cases out of all TB cases</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Year-to-year change in the case notification rate for all forms of TB</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Year-to-year change in the case notification rate for new smear-positive TB</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and if data are available,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Ratio of the number of people with presumptive TB to total notifications of TB cases.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TB SURVEILLANCE SYSTEM COVERAGE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| B1.8 All diagnosed cases of TB are reported | Both benchmarks should be satisfied to meet this standard:  
• TB reporting is a legal requirement  
• ≥90% of TB cases are reported to national health authorities, as determined by a national-level investigation (e.g. inventory study, conducted in past 10 years). | 1. Under-five mortality rate:  
2. Proportion of national health expenditures that are out-of-pocket:  
| B1.9 Population has good access to health care | Both benchmarks should be satisfied to meet this standard:  
• Under-five mortality rate (probability of dying by age 5 per 1000 live births) is <10  
• <25% total health expenditure is out-of-pocket. |  | As above |
### QUALITY AND COVERAGE OF VITAL REGISTRATION SYSTEM

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>DATA REQUIREMENTS (IF AVAILABLE)</th>
<th>PERSONNEL</th>
</tr>
</thead>
</table>
| **B1.10** Vital registration system has high national coverage and quality | Both benchmarks should be satisfied to meet this standard:  
• Cause of death documented in ≥90% of total deaths recorded in: a) national vital registration system or b) sample vital registration system  
• <10% of deaths have ICD* codes for ill-defined causes (defined as ICD-9 780-799 and ICD-10 R00-R99). | 1. Routine annual reports or periodic surveys about vital statistics  

(*ICD: International Classification of Diseases)

---

### SURVEILLANCE OF DRUG-RESISTANT TB

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>DATA REQUIREMENTS (IF AVAILABLE)</th>
<th>PERSONNEL</th>
</tr>
</thead>
</table>
| **B2.1** Surveillance data provide a direct measure of drug-resistant TB among new cases | One of the two benchmarks should be satisfied to meet this standard:  
• Rifampicin susceptibility status (Positive/Negative) documented for ≥75% of new pulmonary TB cases  
• Rifampicin susceptibility status (Positive/Negative) documented for a nationally representative drug resistance survey of new pulmonary TB cases. | 1. NTP report – covering surveillance systems based on routine diagnostic testing of previously untreated TB cases  
2. Report covering the results from special surveys of a representative sample of previously untreated TB cases e.g. results from a drug resistance survey conducted in the past five years including documentation of results of proficiency testing conducted at the supranational TB reference laboratory  
3. National laboratory register. | As above  
In addition: Laboratory manager |

### SURVEILLANCE OF TB/HIV

<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>DATA REQUIREMENTS (IF AVAILABLE)</th>
<th>PERSONNEL</th>
</tr>
</thead>
</table>
| **B2.2** Surveillance data provide a direct measure of the prevalence of | One of the two benchmarks should be satisfied to meet this standard:  
• HIV status (Positive/Negative) documented for ≥80% of all notified TB cases | 1. NTP report – covering surveillance systems based on routine HIV testing of TB cases  
2. Dataset from a standardized electronic system that may include an assessment of record linkages between TB and HIV surveillance systems | As above  
In addition: Laboratory manager |
<table>
<thead>
<tr>
<th>STANDARD</th>
<th>BENCHMARK(S)</th>
<th>DATA REQUIREMENTS (IF AVAILABLE)</th>
<th>PERSONNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV infection in TB cases</td>
<td>• HIV status is available from a representative sample from all TB cases notified in settings with a low-level epidemic state(^5) or where it is not feasible to implement routine surveillance.</td>
<td>3. Report covering the results from a periodic survey of HIV infection among a sample of TB cases.</td>
<td>HIV surveillance officer</td>
</tr>
<tr>
<td>SURVEILLANCE OF PAEDIATRIC TB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B2.3 Surveillance data for children reported with TB are reliable and accurate, and all diagnosed childhood TB cases are reported</td>
<td>Both benchmarks should be satisfied to meet this standard: • Ratio of age groups 0–4 to 5–14 years is in the range 1.5–3.0 • &gt;90% of childhood TB cases are reported to national health authorities, as determined by a national-level investigation (e.g. inventory study, conducted in past 10 years).</td>
<td>1. NTP annual reports, manuals and guidelines 2. National and subnational datasets that are disaggregated by case type, age (including children &lt;15 years) and sex 3. National TB reporting forms, registers, treatment cards specifically with reference to children &lt;15 years of age.</td>
<td></td>
</tr>
</tbody>
</table>

\(^5\) Low-level epidemic state: HIV prevalence has not consistently exceeded 5% in any defined subpopulation.