

# Manual on use of routine data quality assessment (RDQA) tool for TB monitoring



*World Health Organization Stop TB Department, Geneva*

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## Contents

1. Background	1
Data quality audit and routine data quality assessment	1
Related monitoring and evaluation tools for TB control	1
2. Routine data quality assessment tool – the RDQA	2
Definitions	2
Purposes of the RDQA tool	2
3. Methodology	3
Five attributes	3
Procedure	3
Statistical representativeness of results	4
Implementation steps	4
Outputs of the routine data quality assessment tool	4
4. Data verification procedures	5
District health centre points – four types of data verification	5
Intermediate levels and central M&E unit – three types of data verification	5
Annex 1. RDQA indicators	7
Annex 2a. RDQA TB recording and reporting quality indicator for registration at district level	9
Annex 2b. RDQA TB recording and reporting quality indicator for registration at intermediate level	12
Annex 2c. RDQA TB recording and reporting quality indicator for registration at central level	14
Annex 3a. RDQA TB recording and reporting quality indicator for outcome at district level	16
Annex 3b. RDQA TB recording and reporting quality indicator for outcome at intermediate level	19
Annex 3c. RDQA TB recording and reporting quality indicator for outcome at central level	21
Annex 4a. RDQA MDR-TB recording and reporting quality indicator for registration at district level	23
Annex 4b. RDQA MDR-TB recording and reporting quality indicator for registration at intermediate level	26
Annex 4c. RDQA MDR-TB recording and reporting quality indicator for registration at central level	28
Bibliography	30

## Abbreviations

4-FDCs	Four-drug fixed-dose combination tablets
ART	Anti-retroviral therapy
CPT	Cotrimoxazole preventive therapy
BMU	TB basic management unit (with at least TB microscopy and treatment facility)
DOTS	The basic package that underpins the Stop TB Strategy
DST	Drug sensitivity testing
DQA	Data Quality Audit
IUATLD	International Union Against Tuberculosis and Lung Disease
M&E	Monitoring & evaluation
MDR-TB	Multidrug-resistant tuberculosis
NTCP	National TB control programme
PICT	Provider-initiated counselling and (HIV) testing
PLHIV	Person living with HIV
RDQA	Routine Data Quality Assessment
WHO	World Health Organization

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WHO Stop TB Department, KNCV, the Union participated in 2007 in the development and the pilot testing of the Global Fund tool on DQA (Data Quality Audit) published in 2008 [http://www.theglobalfund.org/documents/me/DQA\\_Tool.pdf](http://www.theglobalfund.org/documents/me/DQA_Tool.pdf). As a follow up of this work, WHO Stop TB, the Union and KNCV develop a similar tool more specific to TB data and for in-country use. A writing committee composed of 4 persons representing the above 3 organizations (Dr Jerod Scholten of the KNCV Tuberculosis Foundation, Dr Ignacio Monedero of the International Union Against Tuberculosis and Lung Disease, Drs Jacques Sebert and Pierre-Yves Norval from WHO) was established and an initial version was developed and pilot tested in 4 countries (Rwanda, Laos PDR, Kazakhstan and El Salvador). A second draft was tested in Laos and Rwanda and findings discussed and commented by the Stop TB Impact assessment task force, the Global Fund Secretariat and NTP managers and Global Fund Principal Recipients representatives from 35 countries attending a workshop on Global Fund grant implementation held in March 2010. The writing committee met 4 times during the entire process that lasted 9 months.

# 1. Background

The purpose of this document is to guide tuberculosis (TB) programme supervisors and others interested in Routine Data Quality Assessment (RDQA) for TB monitoring. Such people may come from district hospitals/centres, health centres and health posts; the intermediate level (regional/provincial); or the monitoring and evaluation (M&E) unit at central level (the national TB programme, or NTP).

Health facilities audited include TB diagnosis and/or treatment units at any of the three levels of care. Private health partners/facilities working in partnership with NTPS are also considered as health centres. Community support (such as that given by community health workers) is not considered as a “health centre”. One RDQA checklist spreadsheet is filled in for each district, province/region and central M&E unit audited.

Indicators’ power for measuring the impacts and outputs of TB control interventions depends on the capacity of the TB programmes themselves to establish and maintain the quality of the data collected.

## **Data quality audit and routine data quality assessment**

The Secretariat of the Global Fund to Fight AIDS, Tuberculosis and Malaria, the WHO Stop TB Department, the KNCV Tuberculosis Foundation and the International Union Against Tuberculosis and Lung Disease (the Union) collaborated to develop a Data Quality Audit (DQA) tool for TB. This tool is intended to verify reported programme data and to strengthen monitoring and reporting systems.

The WHO Stop TB Department, the KNCV Tuberculosis Foundation and the Union subsequently developed a simplified tool, the Routine Data Quality Assessment tool (RDQA). The RDQA is designed for use by NTPs, projects and technical partners both to measure periodic data quality of M&E; and to facilitate routine supervision (by NTPs for example) and review (by, for example, NTPs and all partners).

## **Related monitoring and evaluation tools for TB control**

The RDQA tool refers to the key Monitoring and Evaluation (M&E) tools for TB control and can be accessed from [www.who.int/tb/strategy/stop\\_tb\\_strategy](http://www.who.int/tb/strategy/stop_tb_strategy). A selection of related indicators is available in the Stop TB Strategy Tools (2010), available from [http://www.who.int/entity/tb/dots/planningframeworks/r10\\_TB\\_planning\\_tool\\_21\\_06\\_10.doc](http://www.who.int/entity/tb/dots/planningframeworks/r10_TB_planning_tool_21_06_10.doc)

The WHO Stop TB Department, KNCV Tuberculosis Foundation, the Union, the Centers for Disease Control and Prevention and members of the TB M&E Expert Group developed the "Revised TB recording and reporting forms and registers – version 2006" (WHO/HTM/TB/2006.373). This document is the backbone of the TB data collection system at country level allowing partners to collect, report, monitor and analyse TB data. It facilitates the monitoring of the six components of the Stop TB Strategy. It can be accessed from [www.who.int/tb/dots/r\\_and\\_r\\_forms](http://www.who.int/tb/dots/r_and_r_forms).

The standard indicators in the Global Fund M&E Toolkit are common with those of the Stop TB Strategy framework. They provide information on rationale for use; definition of indicators, including numerator and denominator; and measurement (comprising measurement tools, recommended periodicity of data collection, and source documents).

It can be accessed at [http://www.theglobalfund.org/documents/me/M\\_E\\_Toolkit\\_P2-TB\\_en.pdf](http://www.theglobalfund.org/documents/me/M_E_Toolkit_P2-TB_en.pdf).

## 2. Routine data quality assessment tool – the RDQA

### Definitions

The RDQA tool for TB is intended (i) to assess and measure rapidly the quality of data recording and reporting systems on a regular basis; and (ii) to monitor and improve data recording and reporting systems. It provides self-assessment by programme; measures the quality of the data collection system; and offers flexible use for monitoring and supervision or to prepare for an external audit.

Generally, the quality of reported data is dependent on the underlying data management and reporting systems; stronger systems should produce better quality data. In other words, for high-quality data to be produced by and flow through a data management system, key functional components need to be in place at all levels of the system:

- district health facilities (peripheral health centres and district health centres – also known, in TB programme terms, as basic management units [BMUs]);
- the intermediate level(s) where the data are aggregated (e.g. provinces or regions); and
- the M&E unit at the highest level to which data are reported.

The RDQA tool is therefore designed to assess and measure the quality of the data, and to monitor and improve the system that produces that data.

The potential users of the RDQA tool include TB programme managers and health staff involved in TB control at district, intermediate and central levels as well as in-country donors and partners.

### Purposes of the RDQA tool

The RDQA tool can serve several purposes. It can enable:

- *Routine data-quality checks as part of ongoing supervision.* Such checks can be included in supervision visits at the service delivery sites.
- *Assessments of data management and reporting systems.* Repeated assessments (e.g. biannually or annually) of a system's ability to collect and report high-quality data at all levels can be used to identify gaps and monitor improvements.
- *Strengthening staff capacity in data management and reporting.* M&E staff can be trained in the RDQA and in strengthening data management and reporting to produce high-quality data.
- *Preparation for a formal data-quality audit.* The RDQA can help identify data-quality issues and areas of weakness in the data management and reporting system that need to be strengthened for a formal data-quality audit. (Such audits use the DQA tool).
- *External assessment of data quality by partners.* The RDQA is more streamlined and less resource intensive than the DQA.

## 3. Methodology

### Five attributes

The RDQA tool has five attributes that build one indicator for the quality of the TB recording and reporting system: *accuracy–reliability* (data measure what they are intended to measure and measures do not change according to who is using them and when or how often they are used); *completeness* (all inclusive and not partial); *timeliness* (up-to-date and available on time); *availability* (the data collection system has the necessary source documents and details, including a written procedure); and *integrity/spot check* (no deliberate bias or manipulation).

While it is recommended that all five attributes be used to fully assess data quality, parts of these attributes can be applied and adapted to local contexts. Parts can be implemented at any or all three levels of the data management and reporting system.

### Procedure

Preferably all districts and provinces/regions in one country should be assessed on a cycle basis of one to three years, depending on the number of districts and workforce headcount.

A spreadsheet (in Microsoft Excel) should be filled in by TB supervisors, ideally on notebook computers at the supervision site. Data should be copied for backup either on the Internet when available or on memory keys. Hard copies of data files at the end of the RDQA procedure should be kept at each supervision site.

Alternatively, a central database made accessible via Internet could be developed where information technology (IT) expertise is available and where Internet access is well decentralized.

One indicator should be selected depending on specificities of the site supervised, e.g. one indicator for TB and one indicator for multidrug-resistant-drug resistant TB (MDR-TB) services:

- Case notification *or* treatment outcome for new smear-positive TB cases;
- Case notification *or* treatment outcome for confirmed MDR-TB cases (smear and/or culture).

One indicator on notification or outcome is representative of the quality of the TB data system and does need to be completed with a second indicator. In case of separate TB and MDR-TB registration systems, a second indicator would relate to MDR-TB.

The average time for completing RDQA forms is estimated at half a day per centre assessed (for two indicators). Staff workload and RDQA planning must also consider travel time, as for any supervisory visits.

Large countries with more intermediate levels in their M&E system should develop additional forms accordingly. However, in some large countries data analysis can be performed in M&E units at subnational level.

Calculating one national quality rate is not automated in the current version. The national rate is an average of each district, region and central unit audited *with the same weight per level, even though* the number of units per level is different.

The TB recording and reporting quality rate at district level is an average of the accuracy rate and the other four other rates (completeness, timeliness, availability and spot check rates, if any). The accuracy rate has the same weight as the other four characteristics combined. The accuracy rate itself consists of three *essential* and up to three *optional* sub-composite indicators.

The TB recording and reporting quality rate at intermediate and central level is an average of the accuracy rate and the other three rates (completeness, timeliness and availability). That is, the accuracy rate has the same weight as the other three characteristics combined.

The TB recording and reporting accuracy–reliability rate at district level is an average of the three essential and the optional accuracy rate indicators (up to three). The formula for the accuracy–reliability rate at district level has to be created manually according to the number of optional cross-checks performed.

All formulae have been automated except the accuracy–reliability rate at district level, which needs to be made according to the number of optional cross-checks performed. If other checks are missing, the formulae need to be adapted.

### **Statistical representativeness of results**

- If all districts are subject to the RDQA procedure within a one-year period, there is no problem of representativeness.
- If the duration of the RDQA procedure is several years, results of the first year(s) give only a partial representation of the overall national situation. However, corrective measures taken after the results of the first year will probably influence the results in other units in later years.
- A definition of the qualitative criteria of assessment of the data management and reporting system should be used to design the overall evaluation score.
- A definition of acceptable values (or ranges) of percentages of data available, on time, complete and accurate in bar chart format (Microsoft Excel) should be used.

### **Implementation steps**

The RDQA tool has five implementation steps:

1. *Determine the purpose of the RDQA* (see “Purposes of the RDQA tool”, above).
2. *Select the levels and sites to be included* (depending on the purpose and resources). The three levels of the data management and reporting system should be determined once the reporting units have been identified and “mapped”. In some cases, the data flow will include several intermediate levels (e.g. regions, provinces or states).
3. *Identify one indicator out of four RDQA indicators or one RDQA indicator for TB and one RDQA indicator for MDR-TB services*. All indicators are available in Microsoft Excel format (.xls). Identify data sources and reporting period. RDQA assesses the quality of recording and reporting systems related to indicators for a specified reporting period (usually quarters in TB control programmes), as a reference from which to compare the “recounted” data.
4. *Conduct site visits*. During the site visits, the relevant sections of the appropriate level checklists in the Excel file are filled out. These checklists are completed following interviews with relevant staff and reviews of site documentation.
5. *Review outputs and findings*. The outputs (described in the next section) need to be reviewed for each site visited. Site-specific summary findings and recommendations are noted for each site visited.

### **Outputs of the routine data quality assessment tool**

The RDQA checklists (Excel) can be printed out and filled in by hand or entered directly in a computer. When completed electronically, a summary of each attribute by level and bar chart presentation shows the quantitative data generated from the data verification.

The final output of the RDQA is an indicator of the TB recording and reporting for monitoring and improving data quality.

## 4. Data verification procedures

Health centres report to the district health centre, then to one intermediate level (province/region), and then to the central M&E unit. In some countries, health centres may report directly to the intermediate level or central M&E unit.

Note: Information for filling in the checklists is provided in each Excel checklist for each indicator.

### **District health centre points – four types of data verification**

Health centres include TB diagnosis and/or treatment units at any level of care (central, provincial, district hospitals/centres, health centres and health posts with personnel trained on DOTS and involved in TB control). Private health partners/facilities working in partnership with NTPs are also considered as health centres. Community support (such as that given by community health workers) is not considered as a “health centre”. One RDQA checklist spreadsheet is filled in for each district, province/region and central level that is audited.

Four types of standard data-verification steps can be performed at district health centre points:

*1. Description.* This describes the connection between the health centres/facilities and the completion of the source document that records that service delivery.

*2. Documentation review.* This reviews completeness, availability and timeliness of all source documents for the reporting period.

*3. Cross-check of accuracy–reliability.* This relates to the verified recorded and reported numbers between data sources (e.g. patient records, laboratory reports, registers, quarterly reports). A recount is made of the reported numbers from available source documents, the verified numbers are compared to the site reported numbers, and reasons are identified for any differences. Comparison is based on cross-checking of different source documents. Comparison between independent source documents, such as laboratory-drug management and patient management documents, may be considered as a capture-recapture approach, as follows:

- From TB treatment cards to the TB district register.
- From the TB district register to TB treatment cards.
- From the TB district register to the TB quarterly report on TB registration and treatment outcome.
- From the laboratory register to the TB register (in the same district). Reasons for differences may include: laboratories in central or province reference hospitals referring TB cases in more peripheral treatment units (e.g. other provinces or districts), patients not returning to get their result, and cases being transferred.
- From the TB quarterly drug order to the TB quarterly report on TB registration.

*4. Spot checks.* This process verifies the actual delivery of services or other output to TB patients.

### **Intermediate levels and central M&E unit – three types of data verification**

Follow-up verifications take place at intermediate aggregation levels, e.g. provinces, and at the TB programme M&E unit (central level). One RDQA checklist spreadsheet is filled in at each intermediate level audited and one at the central M&E unit.

*1. Description.* This describes the connection between the health centres/facilities and the intermediate level.

*2. Documentation review.* This reviews the availability, timeliness and completeness of expected reports from district health centres for the selected reporting period.

3. *Cross-check of accuracy–reliability.* This relates to verification of reported numbers, by: (i) re-aggregating the numbers submitted by the district centres; (ii) comparing the verified counts to the numbers submitted to the next level; and (iii) identifying reasons for any differences. Comparison is based on cross-checking of different source documents. Comparison between independent source documents, such as laboratory-drug management and patient management documents, may be considered as a capture-recapture approach.

## Annex 1. RDQA indicators

Selecting one of four Routine Data Quality Assessment (RDQA) indicators is sufficient to measure the quality of the data. An alternative is to select one indicator for the tuberculosis (TB) data system and one indicator for the multidrug-resistant-drug resistant TB (MDR-TB) data system.

### Tuberculosis data system

#### 1.1 Case registration of smear-positive pulmonary TB patients

Indicator	Data source	Remarks
<p>1.1 Notification rate of new smear positive TB cases</p> <p>New smear-positive TB patients notified to the national health authorities during a specified period (number per year per 100,000 population)</p> <p>For countries using culture for case notification, the number of bacteriologically confirmed cases may be reported.</p>	<ul style="list-style-type: none"> <li>• TB register in basic management unit (BMU), or quarterly report on TB case registration in BMU</li> </ul>	<p>Numerator: Number of new smear-positive pulmonary TB patients (WHO definition) notified during the period.</p> <p>Denominator: 100,000 population</p>

#### 1.2 TB treatment outcome of smear-positive TB patients

Indicator	Data source	Remarks
<p>1.2 Treatment success rate. Number of new smear-positive TB patients cured plus completed treatment among the new smear-positive TB patients registered one year before.</p> <p><i>Note: Where applicable, report separately on:</i></p> <ol style="list-style-type: none"> <li>1. Treatment outcomes by HIV status</li> <li>2. Treatment success rate among new smear-positive TB patients in prisons; among new smear-positive TB patients managed by a specific type of health care provider (indicator 4.3) or by the community (indicator 5.2)</li> </ol>	<ul style="list-style-type: none"> <li>• BMU TB register, or quarterly report on TB treatment outcomes and TB/HIV activities in BMU</li> </ul>	<p>Numerator: Number of new smear-positive TB patients cured plus completed treatment (WHO definition)</p> <p>Denominator: Number of new smear-positive TB patients registered in the corresponding quarter one year before</p>

## MDR-TB data system

### 2.1 Case registration of laboratory-confirmed MDR-TB patients

Indicator	Data source	Remarks
<p>2.1.1 Case detection of MDR-TB patients: The number of sputum smear positive TB patients confirmed as MDR by the laboratory during the year of assessment among all new and retreatment sputum smear positive TB patients reported by the program in the same period who based on drug resistance studies or other estimates, would be expected to have MDR.</p>	<ul style="list-style-type: none"> <li>Aggregated reports of total MDR-TB cases reported</li> <li>Drug resistance study</li> </ul>	<p>Numerator: Number of TB cases who started treatment for confirmed MDR-TB</p> <p>Denominator: number of MDR-TB cases estimated by year in the country based on DRS study (national level)</p>
<p>2.1.2 New and retreatment TB cases (culture positive) receiving drug susceptibility testing (DST) for MDR-TB among all notified new and retreatment TB cases (culture positive) (numerator and denominator, number and percentage)</p>	<ul style="list-style-type: none"> <li>Quarterly report on MDR-TB detection and category IV treatment start</li> </ul>	<p>Numerator: Number of DST performed to high groups</p> <p>Denominator: Number of high-risk cases</p>
<p>2.1.3 MDR-TB patients enrolled in second-line treatment (number).</p> <p><i>Note:</i> This indicator should be reported when countries have a backlog of MDR-TB cases to be treated</p>	<ul style="list-style-type: none"> <li>Quarterly report on MDR-TB detection, category IV treatment start and reference laboratory MDR-TB registration</li> </ul>	<p>Numerator: Number of MDR-TB cases starting treatment</p> <p>Denominator: Number of confirmed MDR-TB cases diagnosed</p>

### 2.2 Treatment outcome of laboratory-confirmed MDR-TB patients

Indicator	Data source	Remarks
<p>2.2 Percentage of MDR-TB cases initiated on a second line anti-TB treatment who have a negative culture at the end of 6 months of treatment during the specified period of assessment</p> <p>2.3 Laboratory-confirmed MDR-TB patients successfully treated (cured plus completed treatment) among those enrolled on second-line anti-TB treatment during the year of assessment (number and percentage).</p> <p><i>Note:</i> Where applicable, report separately on: 1. Treatment outcomes by HIV status 2. Treatment outcomes by extensively drug-resistant (XDR) status</p>	<ul style="list-style-type: none"> <li>Aggregated reports of culture status at 6 months from start of treatment ("interim results")</li> <li>Annual report of treatment results of laboratory confirmed MDR TB patients starting second line anti-TB treatment</li> </ul>	<p>Numerator: Number of cured and completed treatment</p> <p>Denominator: All MDR-TB cases enrolled in second-line drug treatment</p>

## Annex 2a. RDQA TB recording and reporting quality indicator for registration at district level

Note: Four RDQA indicators are available in Microsoft Excel format (.xls) and will be posted on the web.

For district health facilities preparing TB quarterly reports on case registration	
<b>New smear-positive TB cases notified</b>	
<b>Name of district (peripheral) health facility audited:</b>	
<b>Name of health facility at upper (intermediate) level aggregating data from this facility:</b>	
<b>Period audited:</b>	<b>FROM:</b> _____ <b>TO:</b> _____
<p><b>Note to supervision (audit) team:</b> The purpose of supervision at this level is to:</p> <p>a. calculate the accuracy rate by cross-checking sources of information among themselves (TB cases from the quarterly report on TB case registration compared with the district TB register, TB treatment cards, and patient spot checks);</p> <p>b. calculate the availability, completeness and timeliness rate of some of these source documents; and</p> <p>c. calculate the recording and reporting quality rate at district level (based on a and b).</p>	
<b>1. ACCURACY–RELIABILITY cross-checks</b>	
<p><b>Note for supervisor:</b> Recount the number of cases recorded in the district TB register (and unit register if relevant) and quarterly reports on TB case registration for the audited quarter, compare the verified numbers between different source documents and explain discrepancies. <b>Cross-checks 1.1, 1.2 and 1.3 are essential to calculate the recording and reporting accuracy–reliability rate.</b> Other cross-checks are optional.</p>	<b>Answer</b> (Yes/no or % or number)
<b><u>CROSS-CHECK 1.1 (essential): From the district TB register to the quarterly report on TB case registration</u></b>	
<i>Recount</i> the number of cases recorded during the reporting period in the district TB register? (for numerator in cell 1.1 below)	
Copy the number of cases <i>reported</i> by the site during the audited quarter in the quarterly report of TB case registration? (for denominator in cell 1.1 below)	
<b>1.1 Calculate the quarterly report on TB case registration accuracy–reliability</b> <i>(% difference in the recounted/reported number of cases)</i>	
<b><u>CROSS-CHECK 1.2 (essential): From TB treatment cards to the district TB register</u></b>	
If feasible, select 10 TB treatment cards (but for a maximum of four consecutive quarters) of patients currently on treatment. Patients transferred out or dead are excluded. How many cards were selected? (for numerator in cell 1.2 below)	
How many of the patients selected were recorded in the district TB register? (for denominator in cell 1.2 below)	
<b>1.2 Calculate the district TB register accuracy–reliability rate</b>	
<b><u>CROSS-CHECK 1.3 (essential): From the district TB register to TB treatment cards</u></b>	
If feasible, select 10 patients recorded in the district TB register who are currently undergoing treatment (but for a maximum of four consecutive quarters). Patients transferred out or dead are excluded. How many patients were selected? (for numerator in cell 1.3 below)	
How many of the patients selected had TB treatment cards? (for denominator in cell 1.3 below)	
<b>1.3 Calculate the TB treatment card accuracy–reliability rate</b>	
<p><b>Note for supervisor:</b> The supervision team can add other relevant cross-checks as appropriate. For example, when all diagnosed TB cases from a district are treated in the same district health facility, the TB laboratory register should be cross-checked with the district TB register. To the extent possible, cross-checks should be performed in both directions (for example, from TB laboratory register to district TB register and from district TB register to TB laboratory register). Cross-checks between the district TB register and laboratory register are more feasible in rural districts with few or no transfers than urban districts where transfers are more common and difficult to trace.</p>	

<b>CROSS-CHECK 1.4 (optional): From the TB laboratory register to the district TB register.</b>	
If feasible, select 10 smear-positive TB cases from the TB laboratory register during the audited quarter (or a maximum of all smear-positive TB cases for a maximum of four consecutive quarters). How many were selected? (for numerator in cell 1.4 below)	
How many of the patients selected were recorded in the district TB register, or referred to and received in another TB unit for starting treatment? (for denominator in cell 1.4 below)	
<b>1.4 Calculate the district TB register accuracy–reliability rate</b>	
<b>CROSS-CHECK 1.5 (optional): From the district TB register to the TB laboratory register</b>	
If feasible, select 10 smear-positive TB cases from the district TB register during the audited quarter excluding TB cases transferred in and TB cases referred, i.e. diagnosed in another district laboratory. (Or select a maximum of all smear-positive TB cases for a maximum of four consecutive quarters). How many were selected? (for numerator in cell 1.5 below)	
<b>1.5 Calculate the laboratory TB register accuracy–reliability rate</b>	
<b>CROSS-CHECK 1.6 (optional): 4FDC tablets (R150/H75/Z400/E275) from the quarterly order form for TB drugs to the district TB register</b>	
Multiply the number of new TB cases (sputum smear microscopy positive + sputum smear microscopy negative + extra-pulmonary + smear microscopy not done) registered by the site during the audited quarter from the TB district register, including transfers in and excluding transfers out, by 168 tablets of 4FDC. Multiply the number of previously treated TB cases (relapse, after failure, after default and other previously treated) registered by the site during the audited quarter from the TB district register including transfers in and excluding transfers out by 252 tablets of 4FDC. Adding both operations together, how many tablets of 4FDC were prescribed during the quarterly reporting period audited? (for numerator of cell 1.6 below)	
Counted from the quarterly order form for TB drugs or other TB drug stock register, the number of 4FDC tablets used during the quarterly reporting period audited from the stock at the last day of the previous quarter minus the stock at the last day of the audited quarter plus the quantity drug ordered and received during same period. How many 4FDC tablets have been used during the quarterly reporting period audited? (for denominator of cell 1.6 below)	
<b>1.6 Calculate the quarterly order form for TB drugs accuracy–reliability rate.</b>	
With drug consumption being the average consumption per case, drug accuracy rates of 90–110% are excellent and graded as 100% accurate. At 111% and above, the accuracy rate is noted as 89% and below. At 89% and below, the accuracy rate is noted as 89% and below.	
<b>1.7 Calculate the TB recording and reporting accuracy–reliability rate on TB case registration at district level (average of essential and optional accuracy rate indicators)</b>	
<b>2. COMPLETENESS (essential)</b>	
<b>Note for supervisor:</b> Recount the number of cases recorded in the district TB register (and unit register if relevant) and quarterly reports on TB case registration for the audited quarter (or selected period in facilities managing large numbers of TB cases).	<b>Answer</b> (Yes/no or % or number)
Recount number of TB patients recorded in the district TB register who have complete information on:	
<b>2.1</b> date of registration, during the audited quarter? (for numerator of the district TB register completeness rate)	
<b>2.2</b> site of disease, during the audited quarter? (for numerator of the district TB register completeness rate)	
<b>2.3</b> type of patient, during the audited quarter? (for numerator of the district TB register completeness rate)	
<b>2.4</b> sputum smear microscopy result before treatment start, during the audited quarter? (for numerator of the district TB register completeness rate).	
<b>2.5</b> Copy the number of cases recorded in the district TB register during the audited quarter (for denominator of the district TB register completeness rate)	
<b>2.6 Calculate the district TB register completeness rate (2.1+2.2+2.3+2.4)/4/(2.5)</b>	
<b>3. TIMELINESS OF SOURCE DOCUMENTS (essential)</b>	
<b>Note for supervisor:</b> It is recommended that the supervision team ask staff to describe the timeline for each recording and reporting step for the quarterly report on TB case registration, the district TB register and TB treatment card	<b>Answer</b> (Yes/no or % or number)
<b>3.1: Quarterly report on TB case registration</b>	
Check the dates the quarterly reports on TB case registration from the last four quarters were sent to upper level. How many reports were sent on time? (On time means the delay at quarter-end according to national guidelines, or usually less than 15 days after the end of the quarter.) Grade from 2 to 0. Grade as 2 when all reports follow the recommended delay; grade as 1 if the delay exceeds the recommended delay for one of	

the reports; grade as 0 if one of the quarterly reports on TB case registration from the last four quarters was not sent to the upper level or no copy of the reports sent was kept at district level (unless no new TB cases were registered during the quarter in the TB register).	
<b>3.2: The district TB register</b>	
Count (from the district TB register) the number of days between laboratory date before treatment and date treatment starts for 10 consecutive smear microscopy positive TB cases registered during the audited quarter (going beyond the audited quarter if necessary to assess 10 smear-positive TB cases). Grade from 2 to 0. Grade as 2 if the average delay is below 7 days; grade as 1 if the average delay is higher than 8 days; grade as 0 if dates are missing for more than 2 smear microscopy positive TB cases. Treatment that started before the result of smear microscopy was available should be graded as 0.	
<b>3.3: The TB treatment card</b>	
Count the number of days between date of registration in the TB treatment card and date of registration in the district TB register for 10 consecutive smear microscopy positive TB cases registered during the audited quarter (going beyond the audited quarter if necessary to assess 10 smear-positive TB cases). Grade from 2 to 0. Grade as 2 if the average delay is below 7 days; grade as 1 if the average delay is higher than 8 days; grade as 0 if dates are missing for more than 2 sputum positive TB cases. Treatment that started before the result of smear microscopy was available should be graded as 0.	
<b>3.4 Input timeliness rate, % (3.1+3.2+3.3/max. of 6)</b>	
<b>4. AVAILABILITY OF SOURCE DOCUMENTS (essential)</b>	
<b>Note for supervisor:</b> Availability measures the existence of data source documents and information without assessing (if the information is filled in). Completeness measures whether the required questions are answered.	<b>Answer</b> (Yes/no or % or number)
<b>4.1: TB source documents</b>	
Review availability of the district TB register, laboratory TB register, quarterly report on TB case registration, and quarterly report on TB drug order for the reporting period. Grade from 4 to 0 according to availability of these four source documents for the audited quarter (incomplete filing and archiving, or missing printout for computerized records, is considered missing).	
<b>4.2: Transfer document</b>	
Is there a written procedure or source document to ensure that smear-positive TB cases transferred out to another district have been registered as transferred in the new district (a counter-party document sent from district receiving the patient to district sending the patient)? (If yes, grade as 1; if no, grade as 0)	
<b>4.3 Calculate availability rate, % (4.1+4.2/max. of 5)</b>	
<b>5. SPOT CHECKS to verify that the patient entered in the district TB register has received TB services (optional)</b>	
<b>Note for supervisor:</b> A sample of smear-positive patients entered in the district TB register from the audited site may be visited, contacted by phone or invited to meet the supervision team. The purpose of spot checks is to confirm that cases registered in the district TB register (and/or TB treatment form) have received TB services. The supervision team can carry out spot checks in three ways: (1) it obtains the names and addresses of people and goes to find them in the community; (2) it asks representatives of the health facility to contact these people and ask them to go there; or (3) it calls selected patients by phone (if they can access a phone). Incentives or transport fees could be provided to patients visiting the health facility.	<b>Answer</b> (Yes/no or % or number)
<b>5.1</b> How many patients were contacted? (for numerator in cell 5.3 below)	
<b>5.2</b> How many of the patients contacted had actually received the service? (for denominator in cell 5.3 below)	
<b>5.3 Calculate % difference between beneficiaries recorded as having received the service and those having actually received the service</b>	
<b><i>DISTRICT RATE.</i></b> Calculate the TB recording and reporting quality rate for registration at district level (1.7+2.6+3.4+4.3+5.3). Note that the weight for accuracy (1.7) equals the combined weight for completeness (2.6) + timeliness (3.4) + availability (4.3) + spot check (5.3)	
<b>Additional Comments (if any)</b>	

## Annex 2b. RDQA TB recording and reporting quality indicator for registration at intermediate level

For intermediate health facilities aggregating TB quarterly reports on case registration		
New smear-positive TB cases notified		
<b>Name of intermediate (province or equivalent) health facility audited:</b>		
<b>Names and number of district (peripheral) health facilities sending quarterly reports on TB case registration to this facility:</b>		
<b>Period audited:</b>	<b>FROM:</b>	<b>TO:</b>
<p><b>Note to supervision (audit) team:</b> The purpose of the supervision at this level is to:</p> <p>a. calculate the accuracy rate by recounting (re-aggregating) the number of TB cases reported from all quarterly reports on TB case registration and comparing those numbers with the total submitted to the upper level (usually central level);</p> <p>b. calculate the availability, completeness and timeliness rate of these quarterly reports on TB case registration received from all districts; and</p> <p>c. calculate the recording and reporting quality rate at provincial level based on a and b.</p>		
<b>1. ACCURACY–RELIABILITY cross-checks</b>		
<b>Note for supervisor:</b> The reported number of smear-positive TB cases for audited quarter from all health facilities in the area (province) sending quarterly reports on TB registration should be recounted (re-aggregated) and the total compared to the number contained in the summary report prepared by the intermediate aggregation site and sent to the upper level		<b>Answer</b> (Yes/no or % or number)
<b>1.1 CROSS-CHECK: From district quarterly reports on TB case registration</b>		
What is the reported number of smear-positive TB cases for the audited quarter sent to the upper level? (for numerator of cell 1.2 below)		
What is the recounted number of smear-positive TB cases from the quarterly reports on TB registration received from all district health facilities in the province sending quarterly reports for the audited quarter? (for denominator of cell 1.2 below)		
<b>1.1 Accuracy–reliability rate (intermediate level)</b> (% difference in the reported/recounted numbers)		
<b>2. COMPLETENESS of quarterly reports on TB case registration (essential)</b>		
<b>Note for supervisor:</b> Missing information from all district quarterly reports on TB case registration for the audited quarter should be checked. For missing reports, check in the TB register that no TB cases have been enrolled during the period.		<b>Answer</b> (Yes/no or % or number)
What is the recounted number of quarterly reports on TB case registration in the province with completed information on:		
<b>2.1</b> new pulmonary sputum smear microscopy positive, during the audited quarter? (for numerator of cell 2.6).		
<b>2.2</b> new pulmonary sputum smear microscopy negative, during the audited quarter? (for numerator of cell 2.6).		
<b>2.3</b> pulmonary sputum smear microscopy not done / not available, during the audited quarter? (for numerator of cell 2.6).		
<b>2.4</b> sputum smear-positive TB cases tested for HIV before or during TB treatment, during the audited quarter? (for numerator of cell 2.6).		
<b>2.5</b> Copy the number of district facilities sending quarterly report on TB case registration (for denominator of cell 2.6)		
<b>2. 6 Calculate the quarterly report in TB case registration completeness rate</b> (2.1+2.2+2.3+2.4)/4/(2.5)		

<b>3. TIMELINESS of reports received from all health facilities sending quarterly reports on TB case registration (essential)</b>	
<b>Note for supervisor:</b> It is recommended that the supervision team ask staff to describe the timeline for each recording and reporting step for the quarterly report on TB case registration	<b>Answer</b> (Yes/no or % or number)
<b>Quarterly reports on TB case registration.</b>	
Check the dates the aggregated quarterly reports on TB case registration from the last four quarters were audited at provincial level and sent to upper level (usually central level). How many aggregated reports were sent on time? (On time refers to the delay at quarter-end according to national guidelines, usually less than 15 days after the end of the quarter). Grade from 3 to 0 for each quarterly report. Grade as 3 when aggregated reports follow the recommended delay; grade as 2 if the delay exceeds the recommended delay for one aggregated report; grade as 1 if one or more district quarterly report is missing in the aggregated quarterly reports on TB case registration from the last four quarters (a district report without cases is not considered as missing); grade as 0 if one of the aggregated quarterly reports on TB case registration from the last four quarters was not sent to upper level (central) or a copy of the sent reports was not kept at provincial level.	
<b>3.1 Input timeliness rate for on-time reports, % (grade 0 to 3/max. of 3)</b>	
<b>4. AVAILABILITY of quarterly report on TB case registration and treatment outcome (essential)</b>	
<b>Note for supervisor:</b> This step involves all the reports that the intermediate aggregation level should have received from all districts sending quarterly reports on TB case registration.	<b>Answer</b> (Yes/no or % or number)
<b>Quarterly report on TB case registration</b>	
<b>4.1</b> How many district quarterly reports on TB case registration for the audited quarter are available at intermediate level? (for numerator in cell 4.3)	
<b>4.2</b> How many reports should there have been from all districts sending quarterly reports on TB case registration? (for denominator in cell 4.3)	
<b>4.3 Calculate availability rate for quarterly reports on TB case registration, %</b>	
<b>INTERMEDIATE RATE. Calculate the TB recording and reporting quality rate at provincial level (1.1+2.6+3.1+4.3).</b> (Note that the weight for accuracy (1.1) equals the combined weight for completeness (2.6) + timeliness (3.1) + availability (4.3))	
<b>Additional Comments (if any)</b>	



## Annex 2c. RDQA TB recording and reporting quality indicator for registration at central level

For central M&E unit aggregating TB quarterly reports on case registration		
New smear-positive TB cases notified		
Name of central M&E unit audited:		
Number of district (peripheral) health facilities sending quarterly reports on TB registration to upper (intermediate) level and directly to central level:		
Number of intermediate (province or equivalent) health facilities sending aggregated quarterly reports on TB case registration to central level:		
Period audited:	FROM:	TO:
<p><b>Note to supervision (audit) team:</b> The purpose of the supervision at central level is to:</p> <p>a. calculate the accuracy rate by recounting (re-aggregating) the number of TB cases reported from all quarterly reports on TB case registration sent by the intermediate level and comparing it with the total in the central level summary report;</p> <p>b. calculate the availability, completeness and timeliness rate of these quarterly reports on TB case registration received from all provinces; and</p> <p>c. calculate the recording and reporting quality rate at central level based on a and b.</p>		
<b>1. ACCURACY–RELIABILITY cross-checks</b>		
<b>Note for supervisor:</b> Reported number of smear-positive TB cases for the audited quarter from all district health facilities sending quarterly reports on TB case registration should be re-aggregated and the total compared to the number contained in the summary report prepared by the central level.		<b>Answer</b> (Yes/no or % or number)
<b>1.1 CROSS-CHECK: From aggregated provincial quarterly reports on TB case registration (essential)</b>		
What is the reported number of smear-positive TB cases for the audited quarter sent from provincial to central level? (for numerator in cell 1.1)		
What is the recounted number of smear-positive TB cases from the aggregated provincial quarterly reports on TB case registration received by the central level from provinces for the audited quarter (for denominator in cell 1.1)		
<b>1.1 Accuracy–reliability rate for aggregated report (at central level)</b> <i>(% difference in the reported/recounted numbers)</i>		
<b>1.2 CROSS-CHECK: From district quarterly reports on TB case registration (optional)</b>		
What is the reported number of smear-positive TB cases for the audited quarter sent from district to central level through the province (for numerator in cell 1.2)		
What is the recounted number of smear-positive TB cases from the quarterly reports on TB case registration received by the central level from district health facilities for the audited quarter (for denominator in cell 1.2)		
<b>1.2 Accuracy–reliability rate for district report (at central level)</b> <i>(% difference in the reported/recounted numbers)</i>		
<b>1.3 Calculate the TB recording and reporting accuracy–reliability rate on TB case registration at central level (average of essential and optional accuracy rates, cells 1.1 and 1.2)</b>		
<b>2. COMPLETENESS of quarterly reports on TB case registration (essential)</b>		
<b>Note for supervisor:</b> Missing information from provincial quarterly reports on TB case registration for the audited quarter should be checked. For missing reports, check that no TB cases have been enrolled during the period.		<b>Answer</b> (Yes/no or % or number)
What is the recounted number of aggregated quarterly reports on TB case registration sent by intermediate level with complete information on:		
2.1 new pulmonary sputum smear microscopy positive, during the audited quarter? (for numerator of cell 2.6).		
2.2 new pulmonary sputum smear microscopy negative, during the audited quarter? (for numerator of cell 2.6).		
2.3 pulmonary sputum smear microscopy not done / not available, during the audited quarter? (for numerator of cell 2.6).		
2.4 sputum smear-positive TB cases tested for HIV before or during TB treatment, during the audited		

quarter? (for numerator of cell 2.6).	
<b>2.5</b> Copy the number of provincial aggregated quarterly reports on TB case registration (for denominator of cell 2.6)	
<b>2.6</b> Calculate the quarterly report in TB case registration completeness rate $(2.1+2.2+2.3+2.4)/4/(2.5)$	
<b>3. TIMELINESS of aggregated quarterly reports on TB case registration (essential)</b>	
<b>Note for supervisor:</b> It is recommended that the supervision team ask staff to describe the timeline for each recording and reporting step for the aggregated quarterly report on TB case registration	<b>Answer</b> (Yes/no or % or number)
<b>Quarterly report on TB case registration</b>	
Check the dates on which the aggregated quarterly reports on TB case registration from the last four audited quarters were received at central level and aggregated at central level. How many aggregated provincial reports were sent on time? (On time refers to the delay at quarter-end according to national guidelines, usually less than 30 days after the end of the quarter). Grade from 3 to 0 for each aggregated national quarterly report. Grade as 3 when all provincial aggregated report follow the recommended delay; grade as 2 if the delay exceeds the recommended delay for one of the aggregated provincial reports; grade as 1 if one of the provincial aggregated quarterly reports on TB case registration from the last four quarters was not sent to central level or a copy of the sent reports was not kept at central level; grade as 0 if one of the central-level quarterly reports on TB case registration from the last four quarters were not made or a copy was not kept at central level	
<b>3.1</b> Input timeliness rate for on-time reports, % (grade 0 to 3/max. of 3)	
<b>4. AVAILABILITY of quarterly reports on TB case registration (essential)</b>	
<b>Note for supervisor:</b> This step involves all of the reports that the central level should have received from all intermediate aggregation sites sending aggregated quarterly reports on TB case registration.	<b>Answer</b> (Yes/no or % or number)
<b>Quarterly reports on TB case registration.</b>	
<b>4.1</b> How many aggregated provincial quarterly reports on TB case registration for the audited quarter are there? (for numerator of cell 4.3 below)	
<b>4.2</b> How many reports should there have been from all provinces sending aggregated quarterly report on TB case registration and aggregated country quarterly report on TB case registration? (for denominator of cell 4.3 below)	
<b>4.3</b> Calculate availability rate for quarterly reports on TB case registration, %	
<b>CENTRAL RATE.</b> Calculate the central TB recording and reporting quality rate $(1.3+2.6+3.1+4.3)$ . (Note that the weight for accuracy (1.3) equals the combined weight of completeness (2.6) + timeliness (3.1) + availability (4.3)	
<b>NATIONAL RATE.</b> Calculate the country TB recording and reporting quality rate (average of the audited district + intermediate + central rates)	
<b>Additional Comments (if any)</b>	

## Annex 3a. RDQA TB recording and reporting quality indicator for outcome at district level

For district health facilities preparing TB quarterly reports on treatment outcome	
<b>New smear-positive TB cases outcome</b>	
Name of district (peripheral) health facility audited:	
Name of health facility at upper (intermediate) level aggregating data from this facility:	
Period audited:	FROM: <span style="float: right;">TO:</span>
<p><b>Note to supervision (audit) team:</b> The purpose of the supervision at this level is to:</p> <p>a. calculate the accuracy–reliability rate by cross-checking sources of information among themselves (TB cases from the quarterly report on TB treatment outcome compared with the district TB register, compared with TB treatment cards);</p> <p>b. calculate the availability, completeness and timeliness rate of some of these source documents; and</p> <p>c. calculate the recording and reporting quality rate at district level based on a and b.</p>	
<b>1. ACCURACY–RELIABILITY cross-checks</b>	
<p><b>Note for supervisor:</b> Recount the number of TB cases recorded in the district TB register (and unit register if relevant) and quarterly reports on TB treatment outcome for the audited quarter. Compare the verified numbers among different source documents, and explain discrepancies. <b>Cross-checks 1.1, 1.2 and 1.3 are essential to calculate the recording and reporting accuracy–reliability rate.</b> The other cross-checks are optional.</p>	<b>Answer (Yes/no or % or number)</b>
<b>CROSS-CHECK 1.1 (essential): From district TB register to the quarterly report on TB treatment outcome.</b> Was this cross-check performed?	
What is the recounted number of new smear-positive TB cases recorded during the audited reporting period in the district TB register (for numerator in cell 1.1 below)	
Copy the number of new smear-positive cases reported by the site during the audited quarter as total number evaluated for outcome in the quarterly report of TB treatment outcome (for denominator in cell 1.1 below)	
<b>1.1 Calculate the quarterly report on TB treatment outcome accuracy–reliability</b> <i>(% difference in the recounted/reported numbers)</i>	
What are the reasons for the discrepancy (if any) observed by the supervision team (i.e. any data entry errors, arithmetic errors, missing source documents, other reason)?	
<b>CROSS-CHECK 1.2 (essential): From TB treatment cards to the district TB register.</b> Was this cross-check performed?	
If feasible, select 10 TB treatment cards (but for a maximum of four consecutive quarters) for patients who have started their treatment during the audited period (more than 9 months ago). How many cards were selected? (for numerator in cell 1.2 below)	
How many of the patients selected have an outcome recorded in the district TB register? (for denominator in cell 1.2 below)	
<b>1.2 Calculate the district TB register accuracy–reliability rate</b> <i>(% difference)</i>	
What are the reasons for the discrepancy (if any) observed by the supervision team (i.e. any data entry errors, arithmetic errors, missing source documents, other reasons).	
<b>CROSS-CHECK 1.3 (essential): From the district TB register to TB treatment cards.</b> Was this cross-check performed?	
If feasible, select 10 patients recorded in the district TB register (but for a maximum of four consecutive quarters) who have started their treatment during the audited period (more than 9 months ago). How many patients were selected? (for numerator in cell 1.3 below)	
How many of the patients selected had their treatment outcome recorded in the TB treatment card? (for denominator in cell 1.3 below)	
<b>1.3 Calculate the TB treatment card accuracy–reliability rate</b> <i>(% difference)</i>	

What are the reasons for the discrepancy (if any) observed by the supervision team (i.e. any data entry errors, arithmetic errors, missing source documents, other reasons).	
<b>Note for supervisor:</b> The supervision team can add other relevant cross-checks as appropriate. For example in districts where defined support is provided during treatment by the community, the TB quarterly report on treatment outcome should be cross-checked with the district TB register (or treatment card). To the extent relevant, the cross-checks should be performed in both directions (for example, from quarterly report on treatment outcome to the district TB register and from the district TB register to the quarterly report on treatment outcome).	
<b>CROSS-CHECK 1.4 (optional): Treatment support by the community from the quarterly report on treatment outcome to the district TB register.</b> Was this cross-check performed?	
What is the recounted number of cases supported by the community during treatment and recorded during the audited reporting period in the district TB register? (for numerator in cell 1.4 below)	
Copy the number of cases supported by the community during treatment and reported by the site during the audited quarter in the quarterly report of TB treatment outcome (for denominator in cell 1.4 below)	
<b>1.4 Calculate the district TB register accuracy–reliability rate for community involvement during treatment</b> (% difference)	
What are the reasons for the discrepancy (if any) observed by the supervision team (i.e. any data entry errors, arithmetic errors, missing source documents, other reason)?	
<b>CROSS-CHECK 1.5 (optional): Treatment support by private providers from the quarterly report on treatment outcome to the district TB register.</b> Was this cross-check performed?	
What is the recounted number of cases supported by private providers during treatment and recorded during the audited reporting period in the district TB register? (for numerator in cell 1.5 below)	
Copy the number of cases supported by private providers during treatment and reported by the site during the audited quarter in the quarterly report of TB treatment outcome (for denominator in cell 1.5 below)	
<b>1.5 Calculate the district TB register accuracy–reliability rate for private providers involvement during treatment</b> (% difference)	
What are the reasons for the discrepancy (if any) observed by the supervision team (i.e. any data entry errors, arithmetic errors, missing source documents, other reason).	
<b>CROSS-CHECK 1.6 (optional): TB/HIV patients on anti-retroviral therapy (ART) from the quarterly report on treatment outcome to the district TB register.</b> Was this cross-check performed?	
What is the recounted number of TB/HIV patients started on ART during TB treatment and recorded during the audited reporting period in the district TB register? (for numerator in cell 1.6 below)	
Copy the number of TB/HIV patients on ART during treatment and reported by the site during the audited quarter in the quarterly report of TB treatment outcome (for denominator in cell 1.6 below)	
<b>1.6 Calculate the district TB register accuracy–reliability rate for TB/HIV patients on ART during TB treatment</b> (% difference)	
What are the reasons for the discrepancy (if any) observed by the supervision team (i.e. any data entry errors, arithmetic errors, missing source documents, other reason)?	
<b>1.7. Calculate the TB recording and reporting accuracy–reliability rate on treatment outcome at district level (average of essential and optional accuracy rate indicators, cells 1.1 to 1.6)</b>	
<b>2. COMPLETENESS</b>	
<b>Note for supervisor:</b> Recount the number of cases in the district TB register (and unit register if relevant) and quarterly reports on TB treatment outcome for the audited quarter (or selected period in facilities managing large number of TB cases).	<b>Answer (Yes/no or % or number)</b>
<b>2.1: Completeness of the quarterly report on treatment outcome to the quarterly report on TB registration. Was this cross-check performed?</b>	
Copy number of smear-positive TB cases reported as evaluated for outcome during the audited reporting period in the quarterly report on TB treatment outcome (for numerator of	

cell 2.1 below)	
Copy the number of cases registered and reported one year earlier in the quarterly report of TB cases registration by the site (for denominator of cell 2.1 below)	
<b>2.1 Calculate the quarterly report on treatment outcome completeness rate for new smear-positive TB cases</b>	
<b>2.2: Completeness of the TB register. Was this cross-check performed?</b>	
What is the recounted number of TB patients recorded in the district TB register with completed information on:	
<b>2.3</b> outcome status (cure, treatment complete, treatment failure, died, default, transfer), during the audited quarter? (for numerator of cell 2.8 below).	
<b>2.4</b> sputum smear microscopy result at month 5, during the audited quarter? (for numerator of cell 2.8 below).	
<b>2.5</b> treatment support provided by community/private provider or health facility, during the audited quarter? (for numerator of cell 2.8 below).	
<b>2.6</b> ART status for TB/HIV patients, during the audited quarter? (for numerator of cell 2.8 below).	
<b>2.7</b> Copy the number of cases recorded in the district TB register during the audited quarter (for denominator of cell 2.8 below)	
<b>2.8 Calculate the district TB register completeness rate <math>(2.3+2.4+2.5+2.6)/4/(2.7)</math></b>	
<b>2.9 Calculate completeness rate <math>(2.1+2.8)/2</math></b>	
<b>3. TIMELINESS OF SOURCE DOCUMENTS</b>	
<b>Note for supervisor:</b> It is recommended that the supervision team ask staff to describe the timeline for each recording and reporting step for the quarterly report on TB treatment outcome, the district TB register and TB treatment card	<b>Answer (Yes/no or % or number)</b>
<b>The quarterly report on TB treatment outcome. Was this timeliness measured?</b>	
Check the dates on which the quarterly reports on TB treatment outcome from the last four quarters were sent to upper level. How many reports were sent on time? (On time refers to the delay at quarter-end according to national guidelines, usually less than 15 days after the end of the quarter). Grade from 2 to 0. Grade as 2 when all reports follow the recommended delay; grade as 1 if the delay exceeds the recommended delay for one of the reports; grade as 0 if one of the quarterly reports on TB treatment outcome from the last four quarters were not sent to upper level or a copy of sent reports not kept at district level (unless no new TB cases were registered during the quarter).	
<b>3.1 Input timeliness rate (grade 0 to 2/max. of 2)</b>	
<b>4. AVAILABILITY OF SOURCE DOCUMENTS</b>	
	<b>Answer (Yes/no or % or number)</b>
<b>4.1: TB source document. Was this availability measured?</b>	
Review availability of the district TB register, and quarterly reports on TB treatment outcome for the audited reporting period. Grade from 2 to 0 according to availability of these two source documents for the audited quarter (incomplete filing and archiving, or missing printout for computerized records, is considered missing).	
<b>4.2: Transfer document. Was this availability measured?</b>	
Is there a written procedure or source document to ensure that smear-positive TB cases transferred out to another district have their treatment outcome result updated in the TB district register (counterparty document/information sent from district receiving the patient to district sending the patient on treatment outcome)? (If yes, grade 1; if no, grade 0)	
<b>4.3 Calculate availability rate <math>(4.1+4.2)/\text{max. of } 3</math></b>	
<b>DISTRICT RATE. Calculate the TB recording and reporting quality rate at district level for treatment outcome <math>(1.7 + 2.9 + 3.1 + 4.3)</math> Note that the weight for accuracy (1.7) equals the combined weight for completeness (2.9) + timeliness (3.1) + availability (4.3)</b>	
<b>Additional Comments (if any)</b>	

## Annex 3b. RDQA TB recording and reporting quality indicator for outcome at intermediate level

For intermediate health facilities aggregating TB quarterly reports on treatment outcome	
<b>New smear-positive TB cases outcome</b>	
<b>Name of intermediate (province or equivalent) health facility audited:</b>	
<b>Names and number of district (peripheral) health facilities sending quarterly reports on TB case registration to this facility</b>	
<b>Period audited:</b>	<b>FROM:</b> _____ <b>TO:</b> _____
<p><b>Note to supervision (audit) team:</b> The purpose of the supervision at this level is to:</p> <p>a. calculate the accuracy–reliability rate by counting the re-aggregate numbers of TB cases reported from all quarterly report on TB treatment outcome and compare it with the total submitted to the upper level (central level most often);</p> <p>b. calculate the availability, completeness and timeliness rate of these quarterly reports on TB treatment outcome received from all districts; and</p> <p>c. calculate the recording and reporting quality rate at provincial level based on a and b.</p>	
<b>1. ACCURACY–RELIABILITY cross-checks</b>	
<b>Note for supervisor:</b> The reported number of smear-positive TB cases for the audited quarter from all health facilities of the area (province) sending quarterly reports on TB treatment outcome should be re-aggregated and the total compared to the number contained in the summary report prepared by the intermediate aggregation site and sent to the upper level.	<b>Answer</b> (Yes/no or % or number)
<b>1.1 CROSS-CHECK: From district the quarterly reports on TB treatment outcome.</b> Was this cross-check performed?	
What is the reported number of smear-positive TB cases for the audited quarter sent to the upper level? (for numerator of cell 1.1 below)	
Recount the number of smear-positive TB cases from the quarterly reports on TB treatment outcome received from all district health facilities of the province sending quarterly reports for the audited quarter (for denominator of cell 1.1 below)	
<b>1.1 Accuracy–reliability rate (intermediate level)</b> (% difference in the reported/recounted numbers)	
<b>2. COMPLETENESS of quarterly reports on TB case registration</b>	
<b>Note for supervisor:</b> Missing information from all district quarterly reports on TB treatment outcome for the audited quarter should be checked. For missing reports, check that no TB cases have been enrolled during the period.	<b>Answer</b> (Yes/no or % or number)
What is the recounted number of quarterly report on TB treatment outcome in the province with completed information on: <b>2.1</b> new pulmonary sputum smear microscopy positive, during the audited quarter? (for numerator of cell 2.6).	
<b>2.2</b> new pulmonary sputum smear microscopy negative, during the audited quarter? (for numerator of the quarterly report on TB treatment outcome completeness rate below).	
<b>2.3</b> pulmonary sputum smear microscopy not done / not available, during the audited quarter? (for numerator of the quarterly report on TB treatment outcome completeness rate below).	
<b>2.4</b> sputum smear-positive TB cases tested for HIV before or during TB treatment, during the audited quarter? (for numerator of cell 2.6 below).	
<b>2.5</b> Copy the number of district facilities sending quarterly report on TB treatment outcome. (for denominator of cell 2.6 below)	
<b>2.6 Calculate the quarterly report in TB treatment outcome completeness rate</b> (2.1+2.2+2.3+2.4)/4/(2.5)	

<b>3. TIMELINESS of reports received from all health facilities sending quarterly reports on TB treatment outcome</b>	
<b>Note for supervisor:</b> It is recommended that the supervision team ask staff to describe the timeline for each recording and reporting step for the quarterly report on TB treatment outcome	<b>Answer</b> (Yes/no or % or number)
<b>The quarterly report on TB treatment outcome.</b> Was this timeliness measured?	
Check the dates on which the quarterly reports on TB treatment outcome from the last 4 audited quarters were received at provincial level and sent to upper level (central level). How many reports were sent on time? (On time refers to the delay at quarter-end according to national guidelines, usually less than 15 days after the end of the quarter). Grade from 3 to 0 for each quarterly report. Grade as 3 when report respect the recommended delay; grade as 2 if the delay exceeds the recommended delay for one of the reports; grade as 1 if one or more district quarterly report is missing in the aggregated quarterly reports on TB treatment outcome from the last four quarters (a district report without a case is not considered missing); grade as 0 if one of the aggregated quarterly reports on TB treatment outcome from the last four quarters were not sent to provincial level and to upper level (central) or copy of sent reports not kept at provincial level.	
<b>3.1 Input timeliness rate for on-time reports, % (grade 0 to 3/max. of 3)</b>	
<b>4. AVAILABILITY of quarterly report on TB treatment outcome</b>	
<b>Note for supervisor:</b> This step involves all of the reports that the intermediate aggregation site should have received from all districts sending quarterly reports on TB treatment outcome.	<b>Answer</b> (Yes/no or % or number)
<b>Quarterly report on TB treatment outcome.</b> Was this availability measured?	
<b>4.1</b> How many quarterly report on TB treatment outcome for the audited quarter are there? (for numerator of cell 4.3 below)	
<b>4.2</b> How many reports should there have been from all districts sending quarterly report on TB treatment outcome and aggregated provincial quarterly report on TB treatment outcome? (for denominator of cell 4.3 below)	
<b>4.3 Calculate availability rate for quarterly reports on TB treatment outcome, %</b>	
<b>INTERMEDIATE RATE.</b> Calculate the TB recording and reporting quality rate at provincial level (1.1+2.6+3.1+4.3). (Note that the weight for accuracy (1.1) equals the combined weight of completeness (2.6) + timeliness (3.1) + availability 4.3)	
<b>Additional Comments (if any)</b>	

## Annex 3c. RDQA TB recording and reporting quality indicator for outcome at central level

For central M&E unit aggregating TB quarterly reports on treatment outcome	
New smear-positive TB cases outcome	
<b>Name of central M&amp;E unit audited:</b>	
<b>Number of district (peripheral) health facilities sending quarterly reports on TB case registration to upper (intermediate) level and directly to central level</b>	
<b>Number of intermediate (province or equivalent) health facilities sending aggregated quarterly reports on TB case registration to central level:</b>	
<b>Period audited:</b>	<b>FROM:</b> _____ <b>TO:</b> _____
<p><b>Note to supervision (audit) team:</b> The purpose of the supervision at this level is to:</p> <p>a. calculate the accuracy–reliability rate by recounting (re-aggregating) the number of TB cases reported from all quarterly reports on TB treatment outcome sent by the intermediate level and comparing it with the central-level total;</p> <p>b. calculate the availability, completeness and timeliness rate of these quarterly reports on TB treatment outcome received from all provinces; and</p> <p>c. calculate the recording and reporting quality rate at central level based on a and b.</p>	
1. ACCURACY–RELIABILITY cross-checks	
<p><b>Note for supervisor:</b> Reported number of smear-positive TB cases for the audited quarter from all district health facilities sending quarterly reports on TB treatment outcome should be re-aggregated and the total compared to the number contained in the summary report prepared by the central level.</p>	<b>Answer</b> (Yes/no or % or number)
<p><b>1.1 CROSS-CHECK:</b> From district quarterly reports on TB treatment outcome. Was this cross-check performed?</p>	
<p>What is the reported number of smear-positive TB cases for the audited quarter sent from provincial to central level (for numerator of cell 1.1 below)</p>	
<p>What is the recounted number of smear-positive TB cases from the quarterly reports on TB treatment outcome received by the central level from district health facilities for the audited quarter (for denominator of cell 1.1 below)</p>	
<p><b>1.1 Accuracy–reliability rate (central level)</b> (% difference in the reported/recounted numbers)</p>	
2. COMPLETENESS of quarterly reports on TB treatment outcome	
<p><b>Note for supervisor:</b> Missing information from provincial quarterly reports on TB treatment outcome for the audited quarter should be checked. For missing reports, check that no TB cases have been enrolled during the period.</p>	<b>Answer</b> (Yes/no or % or number)
<p>What is the recounted number of aggregated quarterly report on TB treatment outcome sent by intermediate level with completed information on:</p> <p><b>2.1</b> new pulmonary sputum smear microscopy positive, during the audited quarter? (for numerator of cell 2.6 below).</p>	
<p><b>2.2</b> new pulmonary sputum smear microscopy negative, during the audited quarter? (for numerator of cell 2.6 below).</p>	
<p><b>2.3</b> pulmonary sputum smear microscopy not done / not available, during the audited quarter? (for numerator of cell 2.6 below).</p>	
<p><b>2.4</b> sputum smear-positive TB cases tested for HIV before or during TB treatment, during the audited quarter? (for numerator of cell 2.6 below).</p>	
<p><b>2.5</b> Copy the number of provincial aggregated quarterly report on TB treatment outcome (for denominator of cell 2.6 below)</p>	

<b>2.6 Calculate the quarterly report in TB treatment outcome completeness rate (2.1+2.2+2.3+2.4)/4/(2.5)</b>		
<b>3. TIMELINESS of aggregated quarterly reports on TB case registration</b>		
<b>Note for supervisor:</b> It is recommended that the supervision team ask staff to describe the timeline for each recording and reporting step for the aggregated quarterly report on TB case registration		<b>Answer</b> (Yes/no or % or number)
<b>The quarterly report on TB case registration. Was this timeliness measured?</b>		
Check the dates the aggregated quarterly reports on TB case registration from the last 4 audited quarters were received at central level and aggregated at central level. How many reports were sent on time? (On time refers to the delay at quarter-end according to national guidelines, usually less than 30 days after the end of the quarter). Grade from 3 to 0 for each aggregated quarterly report and country report. Grade as 3 when all reports followed the recommended delay; grade as 2 if the delay exceeded the recommended delay for one of the reports; grade as 1 if one or more provincial quarterly report is missing in the country aggregated quarterly reports on TB treatment outcome from the last four quarters (a district report without cases is not considered as missing); grade as 0 if one of the country aggregated quarterly reports on TB case registration from the last four quarters were not made or a copy not kept at central level.		
<b>3.1 Input timeliness rate for on-time reports, % (grade 0 to 3/max. of 3)</b>		
<b>4. AVAILABILITY of quarterly reports on TB treatment outcome</b>		
<b>Note for supervisor:</b> This step involves all of the reports that the central level should have received from all intermediate aggregation sites sending aggregated quarterly reports on TB treatment outcome.		<b>Answer</b> (Yes/no or % or number)
<b>Quarterly reports on TB treatment outcome. Was the availability measured?</b>		
<b>4.1</b> How many aggregated quarterly report on TB treatment outcome for the audited quarter are there? (for numerator of cell 4.3 below)		
<b>4.2</b> How many reports should there have been from all provinces sending aggregated quarterly report on TB treatment outcome and aggregated country quarterly report on TB treatment outcome? (for denominator of cell 4.3 below)		
<b>4.3 Calculate availability rate for quarterly reports on TB treatment outcome, %</b>		
<b>CENTRAL RATE. Calculate the central TB recording and reporting quality rate (1.1+2.6+3.1+4.3).</b> (Note that the weight for accuracy–reliability (1.1) equals the combined weight of completeness (2.6) + timeliness (3.1) + availability (4.3))		
<b>NATIONAL RATE. Calculate the country TB recording and reporting quality rate (average of the audited district + intermediate + central rates).</b>		
<b>Additional Comments (if any)</b>		

## Annex 4a. RDQA MDR-TB recording and reporting quality indicator for registration at district level

For district health facilities preparing MDR-TB quarterly reports on detection and treatment initiation of suspected and bacteriologically confirmed MDR-TB patients	
Suspected and bacteriologically confirmed MDR-TB cases detected and started cat. IV treatment	
Name of district (peripheral) health facility audited:	
Name of health facility at upper (intermediate) level aggregating data from this facility:	
Period audited:	FROM: _____ TO: _____
<p><b>Note to supervision (audit) team:</b> The purpose of the supervision at this level is to:</p> <p>a. calculate the accuracy rate by cross-checking source of information among themselves (MDR-TB cases from the quarterly report on MDR-TB case registration compared with the facility/district Cat. IV TB register, compared with TB treatment cards, compared with patient spot checks);</p> <p>b. calculate the availability, completeness and timeliness rate of some of these source documents; and</p> <p>c. calculate the recording and reporting quality rate at district level based on a and b.</p>	
<b>1. ACCURACY–RELIABILITY cross-checks</b>	
<p><b>Note for supervisor:</b> Recount the number of MDR-TB treatment cards, facility/district MDR-TB (Cat. IV) register (and unit register if relevant) and quarterly reports on MDR-TB case registration (Cat. IV register) for the audited quarter(s). Compare the verified numbers among different source documents, and explain discrepancies. <b>Cross-checks 1.1, 1.2 and 1.3 are essential to calculate the recording and reporting accuracy–reliability rate.</b> The other cross-checks are optional</p>	<b>Answer</b> (Yes/no or % or number)
<b>CROSS-CHECK 1.1 (essential): From facility/district MDR-TB register (Cat. IV) to the quarterly report on MDR-TB register</b>	
What is the recounted total number of MDR-TB suspected and confirmed cases registered for treatment during the reporting period in the district MDR-TB (Cat. IV) register (for numerator in cell 1.1 below)	
Copy the total number of MDR-TB suspected and confirmed cases reported by the site during the audited quarter in the quarterly report of MDR-TB case registration (for denominator in cell 1.1 below)	
<b>1.1 Calculate the quarterly report on MDR-TB case registration accuracy</b> (% difference in the recounted/reported numbers)	
<b>CROSS-CHECK 1.2 (essential): From MDR-TB (Cat. IV) treatment cards to the facility/district MDR-TB (Cat. IV) register</b>	
If feasible, select 10 MDR-TB (Cat. IV) treatment cards (but for a maximum of 4 consecutive quarters) who are currently on treatment. Patients transferred out or dead are excluded. How many cards were selected? (for numerator of cell 1.2 below)	
How many of the patients selected were recorded in the facility/district MDR-TB (Cat. IV) register? (for denominator of cell 1.2 below)	
<b>1.2 Calculate the facility/district MDR-TB (Cat. IV) register accuracy rate</b> (% difference)	
<b>CROSS-CHECK 1.3 (essential): From the facility/district MDR-TB (Cat. IV) register to MDR-TB (Cat. IV) treatment cards</b>	
If feasible, select 10 suspected and/or confirmed MDR-TB patients recorded in the facility/district MDR-TB (Cat. IV) register who are currently on treatment (but for a maximum of 4 consecutive quarters). Patients transferred out or dead are excluded. How many patients were selected? (for numerator of cell 1.3 below)	
How many of the MDR-TB patients selected had MDR-TB (Cat. IV) treatment cards? (for denominator of cell 1.3 below)	
<b>1.3 Calculate the MDR-TB treatment card accuracy rate</b> (% difference)	
<p><b>Note for supervisor:</b> The supervision team can add other relevant cross-checks as appropriate. For example in districts where all diagnosed TB cases are treated in the same district health facility, the TB laboratory register should be cross-checked with the district TB register. To the extent relevant, the cross-checks should be performed in both directions (for example, from culture and DST laboratory register to the facility/district MDR-TB (Cat. IV) register and vice versa). Cross-checks between facility/district MDR-TB (Cat. IV) register and culture and DST laboratory register are more feasible for facilities/districts with culture/DST facilities on-site than at a reference laboratory outside the facility. However, it is essential to cross-check these cases regardless of the location of culture/DST facilities.</p>	
<b>CROSS-CHECK 1.4 (essential): From the culture and DST laboratory register to the facility/district MDR-TB (Cat. IV) register</b>	
If feasible, select 10 bacteriologically confirmed positive TB cases who started treatment from the culture and DST laboratory register during the audited quarter (or a maximum of all bacteriologically confirmed MDR-TB cases of 4 consecutive quarters). How many were selected? (for numerator of cell 1.4 below)	

How many of the bacteriologically confirmed MDR-TB patients selected were recorded in the facility/district MDR-TB (Cat. IV) Register (or referred to and received in another TB unit for starting treatment)? (for denominator of cell 1.4 below)	
<b>1.4 Calculate the facility/district MDR-TB (Cat. IV) register accuracy rate (% difference)</b>	
<b>CROSS-CHECK 1.5 (essential): From the facility/district MDR-TB (Cat. IV) register to the culture and DST laboratory register.</b>	
If feasible, select 10 bacteriologically confirmed MDR-TB cases from the facility/district MDR-TB (Cat. IV) register during the audited quarter excluding TB cases transferred in and bacteriologically MDR-TB cases referred, ie diagnosed in another culture and DST laboratory (or a maximum of all bacteriologically confirmed MDR-TB cases of 4 consecutive quarters). How many were selected? (for numerator of cell 1.5 below)	
How many of the patients selected were recorded in the culture and DST laboratory TB register? (for denominator of cell 1.5 below)	
<b>1.5 Calculate the culture and DST laboratory TB register accuracy rate (% difference)</b>	
<b>CROSS-CHECK 1.6 (optional): Line-probe assay MDR-TB positive patients from the laboratory register to the quarterly report on suspected and confirmed MDR-TB case registration</b>	
If feasible, select 10 line-probe assay confirmed (positive) MDR-TB cases who started treatment from the line-probe assay laboratory register during the audited quarter (or a maximum of all suspected and confirmed MDR-TB cases of 4 consecutive quarters). How many were selected? (for numerator of cell 1.6 below)	
How many of the line-probe assay confirmed (positive) MDR-TB patients selected were recorded in the facility/district MDR-TB (Cat. IV) register (or referred to and received in another TB unit for starting treatment)? (for denominator of in cell 1.6 below)	
<b>1.6 Calculate the facility/district MDR-TB (Cat. IV) register accuracy rate (% difference)</b>	
<b>1.7 Calculate the MDR-TB recording and reporting accuracy rate at facility/district level (average of essential and optional accuracy rate indicators (cells 1.1 to 1.6))</b>	
<b>2. COMPLETENESS</b>	
	<b>Answer (Yes/no or % or number)</b>
What is the recounted number of suspected and confirmed MDR-TB patients recorded in the facility/district MDR-TB (Cat. IV) register with completed information on:	
<b>2.1</b> date of registration, during the audited quarter? (for numerator of cell 2.6 below).	
<b>2.2</b> suspected or bacteriologically confirmed disease at the start of treatment, during the audited quarter? (for numerator of cell 2.6 below).	
<b>2.3</b> registration group of patient, during the audited quarter? (for numerator of cell 2.6 below).	
<b>2.4</b> sputum smear microscopy result before treatment start, during the audited quarter? (for numerator of cell 2.6 below).	
<b>2.5</b> Copy the number of cases recorded in the facility/district MDR-TB (Cat. IV) register during the audited quarter (for denominator of cell 2.6 below)	
<b>2.6 Calculate the district TB register completeness rate <math>(2.1+2.2+2.3+2.4)/4/(2.5)</math></b>	
<b>3. TIMELINESS OF SOURCE DOCUMENTS</b>	
<b>Note for supervisor:</b> It is recommended that the supervision team ask staff to describe the timeline for each recording and reporting step for the MDR-TB treatment card, facility/district TB (Cat. IV) register (and unit register if relevant) and quarterly reports on MDR-TB case registration	<b>Answer (Yes/no or % or number)</b>
<b>Quarterly reports on MDR-TB case registration</b>	
Check the dates on which the quarterly reports on MDR-TB case registration and treatment start registration from the last four quarters were sent to the upper reporting level. How many reports were sent on time? (i.e. on time means delay at the end of the quarter according to national guidelines usually less than 15 days after the end of the quarter). Grade from 3 to 0. Grade as 3 when all reports followed the recommended delay; grade 1 if the delay exceeded the recommended delay for one of the report; grade as 0 if one of the quarterly reports on TB case registration from the last four quarters were not sent to upper level or copy of sent reports not kept at district level (unless no new TB cases were registered during the quarter in the MDR-TB register).	
<b>3.1 Input timeliness rate, % (grade 0 to 3/max. of 3)</b>	

4. AVAILABILITY OF SOURCE DOCUMENTS	
	<b>Answer</b> (Yes/no or % or number)
<b>4.1: TB source document.</b>	
Review availability of the facility/district MDR-TB (Cat. IV) register, culture and DST laboratory register, quarterly reports on MDR-TB case registration and treatment initiation for the reporting period. Grade 0 to 4 according to availability of these 4 source documents for the audited quarter (incomplete filing and archiving, or missing printout for computerized records, is considered missing).	
<b>Transfer document.</b>	
<b>4.2</b> Is there a written procedure to ensure that people diagnosed as bacteriologically confirmed MDR-TB cases and registered in the culture and DST laboratory register have started their MDR-TB (Cat. IV) treatment? (if yes, grade 1; if no, grade 0)	
<b>4.3</b> Is there a written procedure to ensure that bacteriologically confirmed MDR-TB cases who started treatment and transferred out to another facility/district have been registered as transfer in the new facility/district (counter-party document sent from facility/district receiving the patient to facility/district sending the patient)? (if yes, grade 1; if no, grade 0)	
<b>4.4 Calculate availability rate (4.1+4.2+4.3/max. of 6)</b>	
<b>5. SPOT CHECKS</b> to verify that the patient entered in the facility/district MDR-TB (Cat. IV) register have received MDR-TB services	
<b>Note for supervisor:</b> A sample of suspected and confirmed MDR-TB patients entered in the facility/district MDR-TB (Cat. IV) register from the audited site may be visited, contacted by phone or invited to meet the supervision team. The purpose of spot checks is to confirm case registered in the district MDR-TB register (and/or MDR-TB treatment card) have received MDR-TB services. Spot checks can be performed in three ways: (1) either the supervision team obtains the names and addresses of people and goes to find them in the community; or (2) the supervision team asks representatives of the site to contact these people and ask them to come to the health facility; or (3) the supervision team call by phone the selected patients if they have access to a phone. Incentives or transport fees could be provided to patients visiting the health facility.	<b>Answer</b> (Yes/no or % or number)
<b>5.1</b> How many patients were visited/called by phone/met at the health centre? (for numerator of cell 5.3 below)	
<b>5.2</b> How many of the suspected and confirmed patients registered as having started treatment who were contacted had actually received the service? (for denominator of cell 5.3 below)	
<b>5.3 Calculate % difference between beneficiaries recorded as having received the service and those having actually received the service</b>	
<b><i>DISTRICT RATE.</i> Calculate the MDR-TB recording and reporting quality rate at facility/district level (1.7+2.6+3.1+4.4+5.3).</b> (Note that the weight for accuracy (1.7) equals the combined weight of completeness (2.6) + timeliness (3.1) + availability (4.4) + spot check (5.3).	
<b>Additional Comments (if any)</b>	

## Annex 4b. RDQA MDR-TB recording and reporting quality indicator for registration at intermediate level

For intermediate health facilities aggregating TB quarterly reports on case registration	
Suspected and bacteriologically confirmed MDR-TB cases detected and started cat. IV treatment	
Name of intermediate (province or equivalent) health facility audited:	
Names and number of district (peripheral) health facilities sending quarterly reports on TB case registration to this facility:	
Period audited:	FROM:                      TO:
<p><b>Note to supervision (audit) team:</b> The purpose of the supervision at this level is to:</p> <p>a. calculate the accuracy rate by recounting (re-aggregating) the number of TB cases reported from all quarterly reports on TB case registration and comparing it with the total submitted to the upper level (usually central level);</p> <p>b. calculate the availability, completeness and timeliness rate of these quarterly reports on TB case registration received from all districts; and</p> <p>c. calculate the recording and reporting quality rate at provincial level based on a and b.</p>	
1. ACCURACY–RELIABILITY cross-checks	
<p><b>Note for supervisor:</b> Reported number of smear-positive TB cases for audited quarter from all health facilities of the area (province) sending quarterly reports on TB registration should be re-aggregated and the total compared to the number contained in the summary report prepared by the Intermediate Aggregation Site and sent to upper level.</p>	<b>Answer</b> (Yes/no or % or number)
1.1 CROSS-CHECK: From district the quarterly reports on TB case registration	
What is the reported number of smear-positive TB cases for the audited quarter sent to the upper level (for numerator of cell 1.1 below)	
Recount the number of smear-positive TB cases from the quarterly reports on TB registration received from all district health facilities of the province sending quarterly reports for the audited quarter (for denominator of cell 1.1 below)	
<b>1.1 Accuracy–reliability rate (intermediate level)</b> <i>(% difference in the reported/recounted numbers)</i>	
2. COMPLETENESS of quarterly reports on TB case registration	
<p><b>Note for supervisor:</b> Missing information from all district quarterly reports on TB case registration for the audited quarter should be checked. For missing reports, check that no TB cases have been enrolled during the period.</p>	<b>Answer</b> (Yes/no or % or number)
What is the recounted number of quarterly report on TB case registration in the province with completed information on:	
<b>2.1</b> new pulmonary sputum smear microscopy positive, during the audited quarter? (for numerator of cell 2.6).	
<b>2.2</b> new pulmonary sputum smear microscopy negative, during the audited quarter? (for numerator of cell 2.6).	
<b>2.3</b> pulmonary sputum smear microscopy not done / not available, during the audited quarter? (for numerator of cell 2.6).	
<b>2.4</b> sputum smear-positive TB cases tested for HIV before or during TB treatment, during the audited quarter? (for numerator of cell 2.6).	
<b>2.5</b> Copy the number of district facilities sending quarterly report on TB case registration (for denominator of cell 2.6).	
<b>2.6 Calculate the quarterly report in TB case registration completeness rate</b> <b><math>(2.1+2.2+2.3+2.4)/4/(2.5)</math></b>	

<b>3. TIMELINESS of reports received from all health facilities sending quarterly reports on TB case registration</b>	
<b>Note for supervisor:</b> It is recommended that the supervision team ask staff to describe the timeline for each recording and reporting step for the quarterly report on TB case registration	<b>Answer</b> (Yes/no or % or number)
<b>The quarterly report on TB case registration</b>	
Check the dates the quarterly reports on TB case registration from last 4 audited quarters were received at provincial level and sent to upper level (central level). How many reports were sent on time? (On time means delay at quarter-end according to national guidelines, usually less than 15 days after the end of the quarter). Grade from 3 to 0 for each quarterly report. Grade 3 when report respect the recommended delay; grade 1 if the delay exceeds the recommended delay for one of the report; grade as 0 if one of the quarterly reports on TB case registration from the last four quarters were not sent to provincial level and to upper level (central) or copy of sent reports not kept at provincial level.	
<b>3.1 Input timeliness rate for on-time reports, % (grade 0 to 3/max. of 3)</b>	
<b>4. AVAILABILITY of quarterly report on TB case registration</b>	
<b>Note for supervisor:</b> This step involves all of the reports that the intermediate aggregation site should have received from all districts sending quarterly reports on TB case registration.	<b>Answer</b> (Yes/no or % or number)
<b>Quarterly report on TB case registration</b>	
<b>4.1</b> How many quarterly reports on TB case registration for the audited quarter are there? (for numerator of cell 4.3)	
<b>4.2</b> How many reports should there have been from all districts sending quarterly report on TB case registration and aggregated provincial quarterly report on TB case registration? (for denominator of cell 4.3)	
<b>4.3 Calculate availability rate for quarterly report on TB case registration, %</b>	
<b>INTERMEDIATE RATE. Calculate the TB recording and reporting quality rate at provincial level (1.1+2.6+3.1+4.3)</b> (Note that the weight for accuracy (1.1) equals the combined weight of completeness (2.6) + timeliness (3.1) + availability (4.3).	
<b>Additional Comments (if any)</b>	

## Annex 4c. RDQA MDR-TB recording and reporting quality indicator for registration at central level

Central M&E unit aggregating TB quarterly reports on case registration	
<b>Suspected and bacteriologically confirmed MDR-TB cases detected and started cat. IV treatment</b>	
Name of central M&E unit audited:	
Number of district (peripheral) health facilities sending quarterly reports on TB registration to upper (intermediate) level and directly to central level	
Number of intermediate (province or equivalent) health facilities sending aggregated quarterly reports on TB case registration to central level:	
Period audited:	FROM: <span style="float: right;">TO:</span>
<p><b>Note to supervision (audit) team:</b> The purpose of the supervision at this level is to:</p> <p>a. calculate the accuracy rate by recounting (re-aggregating) the number of TB cases reported from all quarterly reports on TB case registration sent by the intermediate level and comparing it with the central-level total;</p> <p>b. calculate the availability, completeness and timeliness rate of these quarterly reports on TB case registration received from all provinces; and</p> <p>c. calculate the recording and reporting quality rate at central level based on a and b</p>	
<b>1. ACCURACY–RELIABILITY cross-checks to ascertain the accuracy</b>	
<b>Note for supervisor:</b> Reported number of smear-positive TB cases for audited quarter from all district health facility of the country sending quarterly report on TB registration should be re-aggregated and the total compared to the number contained in the summary report prepared by the central level.	<b>Answer</b> (Yes/no or % or number)
<b>1.1 CROSS-CHECK: From district the quarterly reports on TB case registration</b>	
What is the reported number of smear-positive TB cases for the audited quarter sent from provincial to the central level (for numerator of cell 1.1 below)	
What is the recounted number of smear-positive TB cases from the quarterly reports on TB registration received by the central level from district health facilities for the audited quarter (for denominator of cell 1.1 below)	
<b>1.1 Accuracy rate (central level)</b> (% difference in the reported/ recounted numbers)	
<b>2. COMPLETENESS of quarterly reports on TB case registration</b>	
<b>Note for supervisor:</b> Missing information from provincial quarterly reports on TB case registration for the audited quarter should be checked. For missing reports, check that no TB cases have been enrolled during the period.	<b>Answer</b> (Yes/no or % or number)
What is the recounted number of aggregated quarterly report on TB case registration sent by intermediate level with completed information on:	
<b>2.1</b> new pulmonary sputum smear microscopy positive, during the audited quarter? (for numerator of cell 2.6).	
<b>2.2</b> new pulmonary sputum smear microscopy negative, during the audited quarter? (for numerator of cell 2.6).	
<b>2.3</b> pulmonary sputum smear microscopy not done / not available, during the audited quarter? (for numerator of cell 2.6).	
<b>2.4</b> sputum smear-positive TB cases tested for HIV before or during TB treatment, during the audited quarter? (for numerator of cell 2.6).	
<b>2.5</b> Copy the number of provincial aggregated quarterly report on TB case registration (for denominator of cell 2.6)	
<b>2.6 Calculate the quarterly report in TB case registration completeness rate</b> <b>(2.1+2.2+2.3+2.4)/4/(2.5)</b>	

3. TIMELINESS of reports	
<b>Note for supervisor:</b> It is recommended that the supervision team ask staff to describe the timeline for each recording and reporting step for the aggregated quarterly report on TB case registration	<b>Answer</b> (Yes/no or % or number)
<b>The quarterly report on TB case registration.</b>	
Check the dates on which the aggregated quarterly reports on TB case registration from the last 4 audited quarters were received and aggregated at central level. How many reports were sent on time? (On time refers to the delay at quarter-end according to national guidelines, usually less than 30 days after the end of the quarter). Grade from 3 to 0 for each aggregated quarterly report and country report. Grade 3 when all report respect the recommended delay; grade 1 if the delay exceeds the recommended delay for one of the reports; grade as 0 if one of the aggregated quarterly reports on TB case registration from the last four quarters were not sent to central level or copy of sent reports not kept at central level.	
<b>3.1 Input timeliness rate of on-time reports, % (grade 0 to 3/max. of 3)</b>	
4. AVAILABILITY of quarterly report on TB case registration	
<b>Note for supervisor:</b> This step involves all of the reports that the central level should have received from all intermediate aggregation sites sending aggregated quarterly report on TB case registration.	<b>Answer</b> (Yes/no or % or number)
<b>Quarterly reports on TB case registration</b>	
<b>4.1</b> How many aggregated quarterly reports on TB case registration for the audited quarter are there? (for numerator of cell 4.3 below)	
<b>4.2</b> How many reports should there have been from all provinces sending aggregated quarterly reports on TB case registration and aggregated country quarterly report on TB case registration? (for denominator of cell 4.3 below)	
<b>4.3 Calculate availability rate for quarterly reports on TB case registration, %</b>	
<b>CENTRAL RATE.</b> Calculate the central TB recording and reporting quality rate (1.1+2.6+3.1+4.3). (Note that the weight for accuracy (1.1) equals the combined weight of completeness (2.6) + timeliness (3.1) + availability (4.3).	
<b>NATIONAL RATE.</b> Calculate the country TB recording and reporting quality rate (average of the audited district + intermediate + central rates).	
<b>Additional Comments (if any)</b>	

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