

### Quality and progress indicator (Form no- M.5.)

The following is a list of indicators related to the progress and quality of the survey that should be monitored at least monthly. These indicators could be presented during regular meetings by the survey coordination team and working committee to guide decision-making. To be produced by Data management unit.

Indicator	Measure	Data Source	Requirement
<b>1. Progress of enrolment</b>			
Proportion of eligible bacteriologically confirmed pulmonary TB patients in routine registers at health facilities that were enrolled in the survey	<b>Numerator:</b> Number of enrolled patients.	<b>Numerator:</b> Survey database cross- validated against monitoring forms (remote or site visit)	Required
	<b>Denominator:</b> Total number of eligible bacteriologically confirmed pulmonary TB patients in routine registers of the health facility	<b>Denominator:</b> Monitoring forms	
Proportion of expected patients based on routine TB surveillance data that were enrolled in the survey	<b>Numerator:</b> Number	<b>Numerator:</b> Survey	Desirable
	<b>Denominator:</b> Total number of bacteriologically confirmed pulmonary TB patients notified to National TB program for the same period in the same or previous comparable year(s)	<b>Denominator:</b> Routine surveillance data	
<b>2. Completeness of clinical and demographic data</b>			
Proportion of enrolled patients for whom the final treatment history classification is missing <sup>2</sup>	<b>Numerator:</b> Number of enrolled patients for whom the final treatment history classification is unknown	<b>Numerator:</b> Survey database	Required
	<b>Denominator:</b> Total number of enrolled patients	<b>Denominator:</b> Survey database	

Indicator	Measure	Data Source	Requirement
Proportion of enrolled patients for whom data are missing for a key clinical or demographic variable	<b>Numerator:</b> Number of enrolled patients with missing data for a given variable (for example age, sex, HIV status)	<b>Numerator:</b> Survey database	Required
	<b>Denominator:</b> Total number of enrolled patients Proportions should be calculated separately for each key variable	<b>Denominator:</b> Survey database	
<b>3. Turnaround time (tat) for sample transport and processing</b>			
TAT from collection of samples at health facilities to arrival of samples at Central Reference Laboratory2	<b>Histogram</b> showing days from date of sample collection to date of sample arrival at Central Reference Laboratory. The mean and median time should be shown.	<b>Histogram:</b> Survey database	Required
	<b>Table</b> showing the cumulative percentage of samples arriving at day 0, 1, 2, etc. after sample collection.	<b>Cumulative percentage table:</b> Survey database	
TAT from collection of samples at health facilities to testing of samples at the Central Reference Laboratory	<b>Histogram</b> showing days from date of sample collection at peripheral health facilities to date of sample testing at the Central Reference Laboratory. Histograms are shown separately for each test (for example MTB/RIF Xpert; LPA; initial culture inoculation in solid or liquid media; other). The mean and median time should be shown.	<b>Histogram:</b> Survey database	Required

	<b>Table</b> showing the cumulative percentage of samples being processed at day 0, 1, 2, etc. after sample collection.	<b>Cumulative percentage table:</b> Survey database	
TAT from collection of samples at health facilities to shipment of samples to the Central Reference Laboratory	<b>Histogram and Table</b> as above.	<b>Histogram:</b> Survey	Desirable
		<b>Cumulative percentage table:</b> Survey database	
<b>4. Processing of samples at the central reference laboratory</b>			
Proportion of total samples received at the Central Reference Laboratory that were rejected <sup>2</sup>	<b>Numerator:</b> Number of sputum samples rejected on arrival <b>Denominator:</b> Number of samples received at the Central Reference Laboratory	<b>Numerator:</b> Survey	Required
		<b>Denominator:</b> Survey database	

Indicator	Measure	Data Source	Requirement
Proportion of enrolled patients from whom samples were received at the Central Reference Laboratory which were tested <sup>1</sup>	<b>Numerator:</b> Number of enrolled patients with a documented testing date (for example Xpert MTB/RIF, LPA, inoculation date in culture media and for phenotypic DST)	<b>Numerator:</b> Survey database	Required
	<b>Denominator:</b> Number of enrolled patients with date of sample receipt at the Central Reference Laboratory and who are eligible for the test, according to the survey algorithm. Proportions will be calculated separately for each test type.	<b>Denominator:</b> Survey database	
<b>5. Completeness and availability of testing results</b>			
Proportion of enrolled patients with either no result, an invalid result, or an error for Xpert MTB/RIF or Ultra	<b>Numerator:</b> Number of enrolled patients with either no result, an invalid result or an error.	<b>Numerator:</b> Survey database	Required
	<b>Denominator:</b> Number of enrolled patients with a testing date for Xpert. Proportions will be calculated separately for each classification.	<b>Denominator:</b> Survey database	

Proportion of enrolled patients with M. tuberculosis complex detected at trace levels by Xpert Ultra	<b>Numerator:</b> Number of enrolled patients with MTB detected at trace levels.	<b>Numerator:</b> Survey database	Required
	<b>Denominator:</b> Number of enrolled patients with a testing date for Xpert Ultra.	<b>Denominator:</b> Survey database	
Proportion of enrolled patients with an invalid result for Truenat MTB or MTB Plus, and an indeterminate or error result for Truenat MTB-RIF Dx	<b>Numerator:</b> Number of enrolled patients with either an invalid result, an indeterminate result or an error.	<b>Numerator:</b> Survey database	Required
	<b>Denominator:</b> Number of enrolled patients with a testing date for Truenat. Proportions should be calculated separately for each classification.	<b>Denominator:</b> Survey database	
Proportion of enrolled patients with no interpretable result for LPA	<b>Numerator:</b> Number of enrolled patients with no interpretable LPA result.	<b>Numerator:</b> Survey database	Required
	<b>Denominator:</b> Number of enrolled patients with a testing date for LPA.	<b>Denominator:</b> Survey database	

Indicator	Measure	Data Source	Requirement
Proportion of enrolled patients with either no culture growth or a contaminated culture result	<b>Numerator:</b> Number of enrolled patients with either no growth or a contaminated culture result.	<b>Numerator:</b> Survey database	Required
	<b>Denominator:</b> Number of enrolled patients with a date for final culture result Proportions should be calculated separately for each classification.	<b>Denominator:</b> Survey database	
Proportion of enrolled patients with contaminated or uninterpretable phenotypic DST due to lack of growth of control (drug-free) tubes/plates	<b>Numerator:</b> Number of enrolled patients with either a contaminated or uninterpretable phenotypic DST result.	<b>Numerator:</b> Survey database	Required
	<b>Denominator:</b> Number of enrolled patients with a date for final phenotypic DST results. Proportions should be calculated separately for each classification.	<b>Denominator:</b> Survey database	
Proportion of enrolled patients for whom NGS	<b>Numerator:</b> Number of enrolled patients that failed NGS quality control criteria at any stage of the process.	<b>Numerator:</b> Survey database and laboratory	Required

failed quality control	<b>Denominator:</b> Number of enrolled patients with a result date for NGS. Proportions should be calculated separately for each stage of protocol where failure occurred.	<b>Denominator:</b> Survey database and laboratory registers	
Proportion of enrolled patients with no result or an invalid result from NGS	<b>Numerator:</b> Number of enrolled patients with either no result or an invalid NGS result.	<b>Numerator:</b> Survey database	
	<b>Denominator:</b> Number of enrolled patients with a result date for NGS. Proportions should be calculated separately for each drug.	<b>Denominator:</b> Survey database	
<b>6. Agreement of test results</b>			
Cross-tabulation of test results from different tests	<b>Grid</b> showing count of patients in each outcome result combination from two or more tests.	<b>Grid:</b> Survey database	Required
<b>7. TAT for reporting of critical or final test results to health facilities</b>			
TAT for reporting of a critical or final testing result from the Central Reference Laboratory to referring facilities	<b>Histogram</b> showing days between obtaining test result at Central Reference Laboratories to reporting to the referring facility. Histograms are shown separately for the various test outcomes depending on the report timing requirements.	<b>Histogram:</b> Survey database	Required
	<b>Table</b> showing the cumulative percentage of test results being reported at day 0, 1, 2, etc. from the date of the test result.	<b>Cumulative percentage table:</b> Survey database	