Digital TB Surveillance System
Assessment Report - Survey Form

A comprehensive real-time case-based TB notification, TB surveillance, and evidence-based data use and decision-making are critical for ending TB in the countries. Stop TB Partnership and WHO is partnering with the Global Fund to implement the Global Fund Strategic Initiative (SI), supporting countries to have real-time digital TB surveillance systems.

For this synergistic activity, the Stop TB partnership is conducting a rapid country assessment of TB surveillance systems in 19 high burden TB countries. The aim of this assessment is to understand the status of TB electronic data recording and reporting systems and to facilitate the strengthening/support of the transition to real-time case-based electronic reporting in the 20 TB Strategic Initiative (TB SI) countries. This would allow providing – as needed - high-level advocacy and technical support to key stakeholders including the NTPs team, National Governments, and in-country partners to further strengthen the national and subnational level TB notification systems.

The name and photo associated with your Google account will be recorded when you upload files and submit this form. Only the email you enter is part of your response.

* Required

Email *

Your email

PARTICIPATION CONSENT
Do you agree to participate in the assessment process? Please note that by answering yes, you give consent to participating in this survey *

☐ Yes
☐ No

PARTICIPANT DETAILS

Name of the Participant *

Your answer

Designation

Your answer

Country *

Choose

Email ID *

Your answer

Telephone Number

Your answer
**TB NOTIFICATION MAPPING**

1. Is the country using any electronic tool for case based TB notification?
   - [ ] Yes
   - [ ] No

2. Does the electronic tool for case-based TB notification allow notifying for DS TB or DR TB or both?
   - [ ] DS TB only
   - [ ] DR TB only
   - [ ] Both DR TB and DS TB
   - [ ] None

3. What is the trigger for case-based TB notification?
   - [ ] Registration for presumptive
   - [ ] TB register (post treatment initiation)
   - [ ] Diagnosis
   - [ ] Start of treatment initiation
   - [ ] Others

3.1. If others, Please explain

Your answer

4. What is the lowest unit for case-based TB notification?
   - [ ] District I/City/County level
   - [ ] Individual (Self-notification)
   - [ ] Facility level
   - [ ] Provincial Level
   - [ ] Regional Level
   - [ ] National Level
5. How does the private sector notifies the cases?

☐ Electronic
☐ Private sector not notifying
☐ Manual
☐ Others

5.1. If others, Please explain

Your answer

6. Are there any National Unique ID (including Insurance ID) that is associated to the patient?

☐ Yes
☐ No

7. Is the National Unique ID used or linked with TB notification?

☐ Yes
☐ No

8. If yes to question7? Please explain how

Your answer

9. Is a notification ID available to the patient for future TB care services?

☐ Yes
☐ No

10. What is the frequency of collecting of TB notification data?

☐ Real-Time
☐ Daily
☐ weekly
10. What is the frequency of notification data?

- Bi-monthly
- Monthly
- Quarterly
- Annually

Others _____________________________

10.1. If others, Please explain

Your answer

11. What is the frequency of digitization of TB notification data?

- Real-time
- Daily
- Weekly
- Monthly
- Quarterly
- Annually

Others _____________________________

11.1. If others, Please explain

Your answer

12. Are there any mechanisms to follow-up with TB patients already notified?

- Phone call
- Social Media
- Physical Visit
- Mobile App
- Nil

13. Are there any incentives for case-based TB notification?

- Incentives for the provider
14. What is the scale of use of the electronic system for TB notification if any?

- National roll-out
- State Roll-out
- District Roll-out
- Pilot Sites only
- Others

14.1. If others, Please explain

Your answer

15. Is there a specific Govt. guidelines or legal notice for notifying TB cases?

- Yes
- No

16. Does your country have data server or central repository for case based TB notifications and other core TB indicators?

- Yes
- No

17. What is the core framework of your TB notification IT system?

- OpenMRS
- DHIS2
- Country Specific EMR/HMIS system
- Excel
- Other

17.1. If others, Please explain
18. Is the TB notification IT system dedicated to TB notification/program or generic to the health department like multi-program country HMIS?

- [ ] Dedicated for TB program
- [ ] General multi-program HMIS
- [ ] Others

18.1. If others, Please explain

Your answer

19. Do you have an in-house IT team to sustain the ongoing work and management of the IT platform?

- [ ] In-house country IT team
- [ ] Outsourced IT team
- [ ] Others

19.1. If others, Please explain

Your answer

20. Does the IT platform has interoperability and data exchange mechanisms?

- [ ] Necessary APIs available
- [ ] Data export available
- [ ] None

21. What are the measures kept ensuring individual patient data privacy and security?

Your answer

22. Are there any other case base reporting or notification system that is being implemented in your country for other programs like COVID-19, HIV, Mother and Child
etc. that can be leveraged or adapted for TB notification? Please share more details on the program implementing it.

Your answer

23. Could you kindly mention different mechanisms for TB notification and how it has evolved over all 5 years?

<table>
<thead>
<tr>
<th></th>
<th>Manual Paper Based</th>
<th>Excel</th>
<th>Desktop System</th>
<th>Mobile Apps</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
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<td>2020</td>
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<td>2017</td>
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</table>

24. What was the budget for developing the IT system in your country? (in USD)-2M

Your answer

25. Was it funded by external donor, national/state funding or other funding source

☐ National funding
☐ State Funding
☐ Global Fund
☐ USAID
☐ BMGF
☐ Others

25.1. If others, Please explain

Your answer
26. What is the annual recurring cost for developing the IT system?

Your answer

27. What was the cost of implementing the case based TB notification system beyond just the software development like Training health staff on the software, dissemination and communication materials etc.

Your answer

28. How much time did it take to develop the case-based TB notification system?

Your answer

29. Are there any specific challenges in real-time case based TB notification in spite of having a software system? Please specify the reasons. (example- timely data entry, lack of infrastructure like electricity, internet, or lack of training etc.)- facility roll out especially on hardware devices

Your answer

30. What is needed to enable a fully functional digital system for TB notification that can be scaled at a national level?

- Budget
- Technical Assistance (IT expertise and know-how)
- Political will
- Others

30.1. If others, Please explain

Your answer

31. How much budget would be needed to develop a fully functional digital system for TB notification for the country?
32. What all technical assistance will be needed for developing and implementing a fully functional case-based TB notification system?

Your answer

33. What would be the implementation cost of a fully functional case-based TB notification system?

Your answer

34. How much time might be needed if all necessary budget and technical support for developing case-based TB notification systems is provided?

Your answer

35. Any other specific challenges or bottleneck for developing a fully functional case based TB notification system?

Your answer

36. Is digital case-based TB notification has been included in the national strategic plan (NSP). Have you already budgeted it? How much?

Your answer

37. What are the core case based TB data variables collected through the electronic system?-Yes to all

☐ Yes
☐ No

☐ Demographic details (Age, DOB, Gender)
38. Which are the core indicators that you are using for reporting and evidence-based decision making? - Yes to all

☐ Yes
☐ No
39. Any additional information or remarks -

Your answer
## Country’s Mobile Penetration Profile

<table>
<thead>
<tr>
<th>Access to smartphones</th>
<th>Preferred technology (Android/ Windows/ iOS)</th>
<th>Access to internet services</th>
<th>Social media usage</th>
<th>Internet connectivity and performance</th>
<th>Cost particulars - Free or no cost, Expensive (approximate monthly expenditure)</th>
<th>Maturity of internet services (4G, 5G, etc)</th>
<th>Any other relevant findings</th>
</tr>
</thead>
</table>

## Country HIS Architecture - Summary of Findings

<table>
<thead>
<tr>
<th># Notification systems</th>
<th>System 1</th>
<th>System 2</th>
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</thead>
<tbody>
<tr>
<td>Name of the system</td>
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<td>Date of Inception</td>
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<tr>
<td>Data Ownership</td>
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<td></td>
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<tr>
<td>Central system (Ys/Ns)</td>
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<tr>
<td>Supporting partners - Funders</td>
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<tr>
<td>Supporting partners - Technical agencies</td>
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</tbody>
</table>

### Basic Attributes
- Technology stack/ Platform
- Server hosting (Local/ Physical/ Cloud)
- Local language integration
- Social security and privacy measures (link related guidelines, if any)
- Other system integrations - Email, IVRS, QDN, Diagnostic tools, HMS, WHONET, etc

### Platform Attributes
- Implementation stage (Nationally rolled out/ Regional/ Pilot)
- Type of data (Case-based/ Aggregate)
- Extent of technology Integration (Web based/ Paper based/ Mobile app)
- Frequency of data collection (daily, monthly, etc)
- Point of data compilation and data entry (if online)
- Reporting from non-government service provers
- Identified challenges in implementation

### Implementation Particulars
- Use of unique identifiers
- Notification norms (input criteria)
- Stages of patients’ journey (Cascade of care)
- Allows a differential registration of ES and DR-TB (only for TB notification systems)
- Data privacy and protection measures (encryption, anonymity, etc)
- Contact tracing (Ys/Ns) (if yes, how?)

### Practices of handling case-based records
- Follow-up model
- Patient notification system (Manual, Social Media, Other apps, etc)

### Data Outputs
- Key data outputs
- M&E practices and indicators
- Modal of data dissemination
- Data warehousing and Dashboards (Ys/Ns) (link if found in public domain)
- Frequency of data output generation (real time, monthly, etc)
- Level of data access and usage

### Financials
- Initial budget sanction for developing IT system (USD)
- Grants/ Supplementary sanctions received from development partners/donors
- Annual recurring cost for developing/maintenance of IT system (USD)
- Implementation and training cost (USD)
- Any other costs involved (USD)

Any other relevant information
## Digital TB Surveillance System Assessment Report

### TECHNICAL ASSESSMENT TEMPLATE

<table>
<thead>
<tr>
<th>QUESTIONNAIRE</th>
<th>RESPONSE</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your country have data server or central repository for case-based TB notifications and other core TB indicators?</td>
<td>AF_008</td>
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<tr>
<td>What is the core technology of your TB notification IT system?</td>
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<tr>
<td>Is the TB notification IT system dedicated to TB notification/program or generic to the health department like multi-program country HMIS?</td>
<td>AF_033</td>
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<tr>
<td>Do you have an in-house IT team to sustain the ongoing work and management of the case based TB notification platform?</td>
<td>AF_010</td>
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<tr>
<td>Does the IT platform have interoperability and data exchange mechanisms?</td>
<td>AF_009</td>
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<tr>
<td>What are the measures kept ensuring individual patient data privacy and security?</td>
<td>AF_036</td>
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<tr>
<td>Does the notification platform can export data in excel?</td>
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<tr>
<td>Can the notification platform exchange data through APIs/JSON format? Are the APIs already available?</td>
<td>AF_036</td>
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<tr>
<td>What is the programming language used for the application?</td>
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<tr>
<td>What are the techstake for the database?</td>
<td>AF_036</td>
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</tbody>
</table>
## Digital TB Surveillance System Assessment Report

**PROGRAMMATIC ASSESSMENT TEMPLATE**

### QUESTIONNAIRE

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>RESPONSE</th>
<th>REMARKS</th>
<th>Analytical Framework Mapping</th>
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<tbody>
<tr>
<td>Is the country using any electronic tool for case-based TB notification?</td>
<td>AF_001</td>
<td></td>
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<tr>
<td>In the current module capturing the following part of the workflow:</td>
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<td>Workflow</td>
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<tr>
<td>Screening</td>
<td>Digital</td>
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<td>Manual</td>
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<td>Treatment Initiation</td>
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<td>Treatment Adherence</td>
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<td>Treatment Outcome</td>
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<td>Contact tracing</td>
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<tr>
<td>Who has developed the system? National TB Program, Any other program? General Health Dept.?</td>
<td>AF_001</td>
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<tr>
<td>Does NTP has autonomy on improving the system? If not who has?</td>
<td>AF_001, AF_033</td>
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<td>Does the electronic tool for case-based TB notification allow notifying for DR TB or DR TB or both?</td>
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### Data Collection

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<thead>
<tr>
<th>Data Collection</th>
<th>Total Scale</th>
<th>Implementation</th>
<th>Tools</th>
<th>Channels</th>
<th>Data Type</th>
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<td>Facility</td>
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<td>Outreach</td>
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### Data Use

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<th>Data Use</th>
<th>Total Scale</th>
<th>Implementation</th>
<th>Tools</th>
<th>Channels</th>
<th>Data Type</th>
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<td>Facility</td>
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<td>Outreach</td>
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</table>

### Stakeholders

<table>
<thead>
<tr>
<th>Stakeholder name/organisation</th>
<th>Stakeholders not</th>
<th>Remark/Specific roles</th>
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</thead>
<tbody>
<tr>
<td>Who has developed?</td>
<td></td>
<td>How many resources?</td>
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<tr>
<td>Who has funded?</td>
<td></td>
<td>How much and for what period?</td>
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<tr>
<td>Who manages the application?</td>
<td></td>
<td>How many resources?</td>
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<tr>
<td>Who owns the application?</td>
<td></td>
<td>How many resources?</td>
</tr>
<tr>
<td>Who hosts the data?</td>
<td></td>
<td>How many resources?</td>
</tr>
</tbody>
</table>

### Other Information

- What is the trigger for case-based TB notification?
- What is the lowest unit for case-based TB notification?
- What is the proportion coverage of private sector notification? How many private facilities vs how many notify?
- Are there any National Unique ID (including Insurance ID) that is associated to the patient?
- Is the National Unique ID used or linked with TB notification?
- If yes to Q7, then how?
- Is a notification ID available to the patient for future TB care services?
- Who are managing duplication of records?
- What is the frequency of collecting of TB notification data?
- Are there any mechanisms to follow-up with TB patients already notified?
- Are there any incentives for case-based TB notification?
- Who are the stakeholders for case-based TB notification?
- Are there specific Govt. order or legal notice for notifying TB cases?
- Could you kindly mention different mechanisms for TB notification and how it has evolved with important milestones?

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### Analytical Framework Mapping

<table>
<thead>
<tr>
<th>YEARS</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>9 for case based TB notification</td>
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</tbody>
</table>
What was the budget for developing the IT system in your country? (in USD)  
Was it funded by external donor, national/state funding or other funding source  
What is the annual recurring cost for developing the IT system? (in USD)  
What was the cost of implementing the case-based TB notification system beyond just the software development like Training health staff on the software, dissemination and communication materials etc.  
How much time did it take to develop the case-based TB notification system?  
What would be the top 3 success stories or achievements according to you?  
What are the top 3 challenges with the current case-based TB notification?  
What are the top 3 changes you would like to see in case-based TB notification and to address the challenges?  
What is needed to enable a fully functional digital system for TB notification that can be scaled at a national level?  
How much budget would be needed to develop a fully functional digital system for TB notification for the country (in USD)?  
What all technical assistance will be needed for developing and implementing a fully functional case-based TB notification system?  
What would be the implementation costs of a fully functional case-based TB notification system? (in USD)  
How much time might be needed if all necessary budget and technical support for developing case-based TB notification system is provided?  
Any other specific challenges or bottlenecks for developing a fully functional case-based TB notification system?  
Is digital case-based TB notification has been included in national strategic plan (NSP). Have you already budgeted it? How much?  

Data variables captured:  

<table>
<thead>
<tr>
<th>Data Variables</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Programmatic Variables</td>
<td></td>
</tr>
<tr>
<td>Demographic details (Age, DOB, Gender)</td>
<td></td>
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<tr>
<td>Address and contact details (Country, Province, District, House address)</td>
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<tr>
<td>Geolocation (GPS coordinates of the household)</td>
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<tr>
<td>Contact details (Phone number, Mobile number, WhatsApp, Email etc.)</td>
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<tr>
<td>Health Facility address</td>
<td></td>
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<tr>
<td>Type of health facility (Public, Private etc.)</td>
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<tr>
<td>Programmatic Variables</td>
<td></td>
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<tr>
<td>Site of TB (Pulmonary, Extra-pulmonary)</td>
<td></td>
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<tr>
<td>Type of diagnostic test (Microscopy, GeneXpert, PaSaat, CXR, etc.)</td>
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<tr>
<td>Date of test result</td>
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<td>Drug susceptibility (DOTS, IHRTB)</td>
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<td>Treatment Regimen</td>
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<td>Treatment start and end</td>
<td></td>
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<tr>
<td>Co-morbidity (HIV, Diabetes, COVID-19 etc.)</td>
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<tr>
<td>Treatment adherence and outcomes</td>
<td></td>
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</tbody>
</table>

Which are the core indicators that you are using for reporting and evidence-based decision making?  

Indicators:  

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Yes/No</th>
<th>Likely Available</th>
<th>Format in which it is available?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prognostic scoring (proportions)</td>
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<tr>
<td>Treatment initiation (proportions)</td>
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<td>Treatment monitoring</td>
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<tr>
<td>Treatment outcome (proportions)</td>
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<tr>
<td>Spatial distribution of TB notification</td>
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<td>Age-group wise rates aggregate numbers and proportions notified</td>
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<tr>
<td>Basis of diagnostic wise aggregate numbers and proportions notified</td>
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<td>Tuberculosis resistance wise aggregate numbers and proportions notified</td>
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<td>Provider-source-wise aggregate numbers and proportions notified</td>
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<tr>
<td>Country-wise aggregate numbers and proportions notified</td>
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<tr>
<td>Estimate/Target-wise notification/treatment coverage (proportions)</td>
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<tr>
<td>Provider-type disaggregated treatment outcomes (proportions)</td>
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<tr>
<td>Comorbidity disaggregated treatment outcomes (proportions)</td>
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<tr>
<td>Key population disaggregated treatment outcomes (proportions)</td>
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</tbody>
</table>

Other ancillary systems supporting or complementing case based TB notification:  

Name of the platform/initiative | Developed by? | Funded by? | How is it complementing the national case based TB notification initiatives? |
|------------------------------|---------------|------------|-----------------------------------------------------------------------------|

Program:  

<table>
<thead>
<tr>
<th>Programs</th>
<th>Tools</th>
<th>Developed by?</th>
<th>Funded by?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>Priority</td>
<td>Urgency</td>
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<tr>
<td>----------------------</td>
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<td></td>
</tr>
<tr>
<td>Area needing support</td>
<td>Priority-1-5</td>
<td>Urgency 1-5</td>
<td></td>
</tr>
<tr>
<td>Vision - theory of change</td>
<td>Priority-1-5</td>
<td>Urgency 1-5</td>
<td></td>
</tr>
<tr>
<td>Who pays the technical support team responsible for developing the solution</td>
<td>AF_001, AF_033</td>
<td></td>
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<tr>
<td>Under what budget, funding scheme?</td>
<td>AF_001</td>
<td></td>
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<tr>
<td>How long the support is committed?</td>
<td>AF_029</td>
<td></td>
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<tr>
<td>Who are the key stakeholders and their roles</td>
<td>AF_033</td>
<td></td>
<td></td>
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</tbody>
</table>