TB REACH’s Monitoring & Evaluation (M&E) Framework
This information note has been developed to assist applicants in better understanding TB REACH’s M&E framework and the concept of additionality. It is supplemented by these important definitions.

Section 1 is designed for ‘Improving detection, linkage to treatment and reporting of TB’ applicants. Section 2 is designed for ‘Improving TB treatment adherence and outcomes’ applicants.
Section 1
Improving detection, linkage to treatment and reporting of TB
Example of Evaluation & Control Areas

Health Facility
A TB REACH project uses community workers to go door to door screening people who live within 3 kilometres from a health facility (target population) to identify people with suspected TB and to refer them to the health facility for diagnostic testing.
An evaluation area is the geographic area in which a project’s target group lives, which includes all intervention health facilities as well as some non-intervention health facilities.
Selecting the right Evaluation Area

• If possible, the evaluation area should include non-intervention health facilities.
  1. People with TB who live near non-intervention health facilities may choose to visit an
     intervention health facility because of its increased activity (better tests, fast-track care,
     etc). This represents a transfer of patients from one health facility to another, without
     an increase in the total number of people treated for TB. If you only monitored
     intervention health facilities, you would think you are finding lots of additional
     notifications.
  2. There may be a halo / knock-on effect where the impact of the intervention spills over
     into non-intervention sites. For example, because more people are treated for TB in the
     evaluation area, someone who has not interacted with the project, but knows a friend
     who has, may recognize their TB symptoms and visit a non-intervention health facility
     near their home. If you only monitored intervention health facilities, you would not
     count such additional notifications.

• The evaluation area should not be too large relative to the target population
  because your direct yield will be small relative to the evaluation area and impact
  on additional notifications will be diluted and may even be undetectable.
The project should also identify another geographical area to serve as the control area which is similar to the intervention area but somewhat distanced and comprises only non-intervention health facilities.
Basic Process Indicators

A) Number of people eligible for screening

B) Number of people screened

C) Number of suspected TB patients identified

D) Number of people tested/evaluated for TB

E) Number of people diagnosed with TB

F) Number of TB patients initiated on treatment

G) Number of TB patients successfully completing treatment

B/A – Acceptance

D minus E – Eligible for TB infection screening

B/E – NNS

D/E – NNT

F/E – PTLFU

G/F – Tx Success

doi: 10.1093/inthealth/ihu055
Calculating Additional Notifications

**Historical / Baseline Period**

- **Evaluation Area: Historical/Baseline Period**
- **Control Area: Historical/Baseline Period**

**Intervention Period**

- **People treated for TB and reported to NTP (TB Case Notifications)**

- **Q1 2013**: 3,100
- **Q2 2013**: 2,952
- **Q3 2013**: 2,076
- **Q4 2013**: 2,096

- **Q1 2014**: 3,069
- **Q2 2014**: 2,055
- **Q3 2014**: 1,993
- **Q4 2014**: 

- **Q1 2015**: 
- **Q2 2015**: 
- **Q3 2015**: 
- **Q4 2015**: 

- **Q1 2016**: 
- **Q2 2016**: 
- **Q3 2016**: 
- **Q4 2016**: 

**Note:** The graph shows the trend in TB notifications from Q1 2013 to Q4 2016, comparing the evaluation and control areas during both the historical/baseline and intervention periods.
Calculating Additional Notifications

**Figure:**

- **Historical/Baseline Period**
- **Intervention Period**

**Graph:**
- People treated for TB and reported to NTP (TB Case Notifications)
- Q1 to Q4, 2013 to 2016
- Evaluation Area: Intervention Period
- Control Area: Intervention Period
- Evaluation Area: Historical/Baseline Period
- Control Area: Historical/Baseline Period

**Data Points:**
- Q1 2013: Evaluation Area = 2,952, Control Area = 2,076
- Q2 2013: Evaluation Area = 3,100, Control Area = 2,096
- Q3 2013: Evaluation Area = 3,069, Control Area = 2,055
- Q4 2013: Evaluation Area = 2,916, Control Area = 1,993
- Q1 2014: Evaluation Area = 3,937, Control Area = 1,914
- Q2 2014: Evaluation Area = 4,252, Control Area = 1,952
- Q3 2014: Evaluation Area = 4,209, Control Area = 1,912
- Q4 2014: Evaluation Area = 4,293, Control Area = 1,950

**Legend:**
- Red squares: Evaluation Area: Intervention Period
- Blue diamonds: Control Area: Intervention Period
- Red diamonds: Evaluation Area: Historical/Baseline Period
- Blue circles: Control Area: Historical/Baseline Period
Calculating Additional Notifications

**Historical / Baseline Period**

- People treated for TB and reported to NTP (TB Case Notifications)

**Intervention Period**

- Evaluation Area: Intervention Period
- Control Area: Intervention Period
- Evaluation Area: Historical/Baseline Period
- Control Area: Historical/Baseline Period
- Direct Yield

![Graph showing trends in TB case notifications over time](image)
## Calculating Additional Notifications

### Baseline/Historical Period

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>Sum (BP)</th>
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<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
</tr>
<tr>
<td><strong>Evaluation Area</strong></td>
<td>2,952</td>
<td>3,100</td>
</tr>
<tr>
<td><strong>Direct Yield</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Control Area</strong></td>
<td>2,076</td>
<td>2,096</td>
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</tbody>
</table>

### Intervention Period

<table>
<thead>
<tr>
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<th>2016</th>
<th>Sum (IP)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
</tr>
<tr>
<td><strong>Evaluation Area</strong></td>
<td>3,937</td>
<td>4,252</td>
</tr>
<tr>
<td><strong>Direct Yield</strong></td>
<td>1,107</td>
<td>1,294</td>
</tr>
<tr>
<td><strong>Control Area</strong></td>
<td>1,914</td>
<td>1,952</td>
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</tbody>
</table>

### Additional Notifications

\[
[IIP-BP \ (IP/BP)]
\]

<table>
<thead>
<tr>
<th></th>
<th>Additional Notifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Evaluation Area</strong></td>
<td>4,654 (+38.7%)</td>
</tr>
<tr>
<td><strong>Control Area</strong></td>
<td>-492 (-6.0%)</td>
</tr>
</tbody>
</table>

Note that the control area notifications declined by -6.0%
Trend-Adjusted Additional Notifications

Historical / Baseline Period vs. Intervention Period

- **Evaluation Area:** Intervention Period
- **Control Area:** Intervention Period
- **Evaluation Area:** Historical/Baseline Period
- **Control Area:** Historical/Baseline Period
- **Historical/Baseline Period Trend Regression**
- **Direct Yield**

*People treated for TB and reported to NTP (TB Case Notifications)*

Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4
---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---
2013 | 2,952 | 2,916 | 2,569 | 2,076 | 2,096 | 2,055 | 1,993 | 1,912 | 1,950 | 1,914 | 1,952 | 1,907 | 1,547 | 1,294 | 1,281 | 1,547
2014 | 3,100 | 2,916 | 2,569 | 2,076 | 2,096 | 2,055 | 1,993 | 1,912 | 1,950 | 1,914 | 1,952 | 1,907 | 1,547 | 1,294 | 1,281 | 1,547
2015 | 3,100 | 2,916 | 2,569 | 2,076 | 2,096 | 2,055 | 1,993 | 1,912 | 1,950 | 1,914 | 1,952 | 1,907 | 1,547 | 1,294 | 1,281 | 1,547
2016 | 3,937 | 4,252 | 4,209 | 4,293 | 4,293 | 4,293 | 4,293 | 4,293 | 4,293 | 4,293 | 4,293 | 4,293 | 4,293 | 4,293 | 4,293 | 4,293

*Legend*
- **Evaluation Area: Intervention Period**
- **Control Area: Intervention Period**
- **Evaluation Area: Historical/Baseline Period**
- **Control Area: Historical/Baseline Period**
- **Historical/Baseline Period Trend Regression**
- **Direct Yield**
Trend-Adjusted Additional Notifications

Historical / Baseline Period

Control Area: Historical/Baseline Period

Evaluation Area: Historical/Baseline Period

Historical/Baseline Period Trend Regression

Direct Yield

Intervention Period

Evaluation Area: Intervention Period

Control Area: Intervention Period

Trend Expected Notifications During Intervention Period

People treated for TB and reported to NTP (TB Case Notifications)
Trend-Adjusted Additional Notifications

(TB Case Notifications)

Evaluation Area: Intervention Period
Control Area: Intervention Period
Evaluation Area: Historical/Baseline Period
Control Area: Historical/Baseline Period
Historical/Baseline Period Trend Regression
Trend Expected Notifications During Intervention Period
Direct Yield
# Trend-Adjusted Additional Notifications

<table>
<thead>
<tr>
<th></th>
<th><strong>Baseline/Historical Period</strong></th>
<th><strong>Trend-Expected Notitions</strong></th>
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<tbody>
<tr>
<td></td>
<td><strong>2015</strong></td>
<td><strong>2016</strong></td>
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<tr>
<td>[IP-BP (IP/BP)]</td>
<td>[IP-TEN (IP/TEN)]</td>
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Other Notifications

• The same methods can be used to evaluate additional notifications for MDR-TB and TB infection

• For interventions (e.g. screening of children or people with HIV, roll out of universal DST, etc) it could be important to measure other notification gains
More Reading

International Health

A pragmatic approach to measuring, monitoring and evaluating interventions for improved tuberculosis case detection

Lucie Blok, Jacob Creswell, Robert Stevens, Miranda Brouwer, Oriol Ramis, Olivier Weill, Paul Klatser, Suvanand Sahu and Mirjam I. Bakker

Link to PDF of manuscript.
Section 2
Improving TB treatment adherence and outcomes
Selecting Evaluation and Control Areas/Populations

- Selection of areas can be similar to the description on slides 4-8

- However, the selection could be more sophisticated – randomizing health facilities or patients within a given facility, etc
  - No need to include non-intervention health facilities in your evaluation area

- Interventions will almost certainly need to collect patient-level data as aggregate NTP data come with a 1 year delay
It is not possible to define a single set of process indicators for all people treated for TB (TB infection, drug-susceptible TB and drug-resistant TB).

Informative indicators are highly dependent on the prescribed regimen and follow-up care practices.

The following slide presents an indicator framework for treatment of drug-susceptible TB:

- Additional steps in cascade could be added and measured based on local follow-up practices.
- Reporting could be disaggregated by quarterly patient cohorts, gender, treatment sites, etc.
**Sample Process Indicators for Drug-Susceptible TB**

**TB treatment cascade for drug-susceptible TB**

1. **Starting treatment**
2. **2 Month Follow Up**
3. **4 Month Follow Up**
4. **6 Mo FU – Final Outcome**

**Persistence** measures (early) loss to follow up for any reason in the treatment cascade

Number patients still on treatment at the 2 (or 4) month follow up
\[
\text{Patients started on treatment (≥2 (or 4) months ago)} \times \%
\]

**Conversion** measures changes in bacteriological status following testing with smear or culture

Number Bac+ patients started on treatment, now Bac- at the 2 (or 4) month follow up
\[
\text{Number Bac+ patients started on treatment (≥2 (or 4) months ago)} \times \%
\]

**Treatment Success** measures how many patients completed treatment or were cured

Number patients completing treatment or cured at 6 month follow up
\[
\text{Number patients started on treatment (≥6 months ago)} \times \%
\]
Sample Process Indicators for Other Types of TB Treatment

Drug-resistant TB
• TB REACH project timelines are just 18 months, so consider choosing a standard interim milestone at which to measure outcomes, unless you are evaluating the short regimen

TB Infection
• Not possible to measure conversion or cure, so focus should be on persistence and treatment completion
Measuring Gains

• All projects in this category of funding will be evaluated by measuring gains in final TB treatment outcomes
  ▪ Final outcomes defined by WHO
  ▪ Other than MDR-TB: see previous slide

• Should also consider evaluating impact on early loss to follow up (persistence)