Monitoring and Evaluation of Malaria in Pregnancy Services
Practical Tips and Recommended Indicators

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Background

• In 2012, WHO updated guidelines on IPTp-SP implementation

• A minimum of 3 doses are recommended over the course of pregnancy

• Many countries have not yet updated their ANC registers and/or electronic data platforms to capture this data routinely

• The data collected is not standardized across countries
Core Areas for Improving IPTp Coverage

- Improving Health Provider Practices & Knowledge
- Improved Social Behavior Change Communication
- Standardization of Data Collection and Management
- Strengthening SP Procurement and Supply Chain
MERG M&E Framework

**Assessment and planning**
- Situation Analysis
  - Response analysis
  - Stakeholder needs
  - Resource/logistics analysis
  - Collaboration plans

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Process</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funds</td>
<td>Services</td>
<td>Services Delivered</td>
</tr>
<tr>
<td>Staff</td>
<td>Education</td>
<td>No. IPTp doses provided</td>
</tr>
<tr>
<td>Materials</td>
<td>Treatments</td>
<td>No. of ITNs distributed to pregnant women during ANC</td>
</tr>
<tr>
<td>Facilities</td>
<td>Interventions</td>
<td>No. of pregnant women tested for malaria</td>
</tr>
<tr>
<td>Health facilities</td>
<td>Trainings-ANC staff</td>
<td>Malaria incidence/prevention</td>
</tr>
<tr>
<td>reporting a stock-out of SP in the past month</td>
<td>trained in the control of MIP in the past 12 months</td>
<td></td>
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- **Outcomes** (Intermediate effects)
  - Coverage (%)
    - IPTp doses 1, 2, 3
    - ITN use among pregnant women
    - Pregnant women tested for malaria
    - Pregnant women treated for malaria

- **Impact** (Long-term effects)
  - Population-based biological, economic, and health impact data
  - Malaria-related morbidity and mortality in pregnant women and newborns (e.g., anemia, low birthweight)
  - Economic impact

Program development and planning data: Program-based data

Operations research: e.g. treatment, efficacy, vector susceptibility, etc.
M&E Data

• Routine indicators- collected from the health facility/ routine data
  • Reflect what happens at facility level (uptake); depending on access to care may provide a biased view of coverage, but if access is very high, then uptake may approximate coverage

• Periodic indicators- collected from household cross sectional surveys
  • Provide a better indication of unbiased community level coverage, but are expensive and only conducted periodically
Understanding different data sources

**WMR**
Modelled coverage
Denominator for IPTp & ANC coverage =
Total number of pregnant women eligible for IPTp, calculated by adding total live births from UN population data + spontaneous pregnancy loss after 1st trimester

71% ANC attendance (2017)

**DHS/ MIS**
Denominator for IPTp & ANC coverage =
Total number of surveyed women with a live birth in the past 3 or 5 years (Excludes women with pregnancy loss who may be less likely to attend ANC/ take IPTp

91% ANC attendance (average over last decade)

**HMIS**
Denominator for IPTp & ANC coverage =
EITHER
estimated number of pregnant women in facility catchment area
OR
pregnant women presenting for ANC1
Overview

• Core Routine Programmatic MiP Indicators
• MiP Monitoring and Evaluation Framework and MiP Indicators
• Data Visualization and Data Use
• Practical Tips for M&E of MiP Programs and Services
Recommended Core Routine MiP Indicators

• Percentage pregnant women attending 1 or more ANC visits
• Percentage pregnant women attending 4 or more ANC visits
• ANC attendance in the first trimester
• Percentage of pregnant women attending ANC who received IPTp1, IPTp2, IPTp3 under direct observation
• Percentage of pregnant women attending ANC who received an ITN
• Percentage of pregnant women tested for malaria who tested positive
• Percentage of pregnant women testing positive for malaria who were treated
ANC Indicators- Routine Data

• **% Any antenatal care attendance (ANC 1+):**
  \[
  \left( \frac{\text{# of pregnant women attending } \geq 1 \text{ ANC visit} \times 100}{\text{estimated number of pregnant women in facility catchment area}} \right)
  \]
  - Indicates proportion of all pregnant women attending ANC
  - ANC1 is the denominator for calculating IPTp uptake

• **% ANC 4+ attendance (ANC 4+):**
  \[
  \left( \frac{\text{# pregnant women attending } \geq 4 \text{ ANC visits} \times 100}{\text{estimated number of pregnant women in facility catchment area}} \right)
  \]
  - Indicates proportion of pregnant women attending four or more ANC visits
  - When compared to ANC1+ attendance, measures retention in ANC

• **% ANC attendance in the first trimester:**
  \[
  \left( \frac{\text{# of pregnant women initiating ANC during first trimester (<12 weeks)} \times 100}{\text{total number of pregnant women who have first ANC contact}} \right)
  \]
IPTp & ITN indicators

• % pregnant women receiving IPTp doses 1-3:

\[
\left( \frac{\text{# of pregnant women who received the specific IPTp dose (1, 2, or 3)}}{\text{total # of clients attending 1\textsuperscript{st} ANC visit during the same time period}} \right) \times 100
\]

• % pregnant women receiving an ITN at ANC

\[
\left( \frac{\text{# of pregnant women who received an ITN during ANC}}{\text{total # of clients attending 1\textsuperscript{st} ANC visit during the same period}} \right) \times 100
\]
IPTp & ITN indicators

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\]

• **% pregnant women receiving an ITN at ANC**

\[
\left( \frac{\text{# of pregnant women who received an ITN during ANC} \times 100}{\text{total # of clients attending 1st ANC visit during the same period}} \right)
\]

**Discussion point:** Some countries use estimated number of pregnant women in facility catchment area as the denominator, rather than ANC1 attendance.
Discussion: Proc and Cons of Estimated Pregnant Women vs ANC1 as denominator

Pros of ANC1
• Measured number without estimation error
• Provides an accurate reflection of uptake at HF level

Pros of Estimated Denominator
• Provides a better reflection of overall coverage at community level, not just uptake

• ???
IPTp & ITN indicators

• **% pregnant women receiving IPTp doses 1-3:**

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• **% pregnant women receiving an ITN at ANC**

\[
\left( \frac{\text{# of pregnant women who received an ITN during ANC}}{\text{total # of clients attending 1st ANC visit during the same period}} \times 100 \right)
\]

**Discussion point:** Not all countries collect all doses of IPTp in the HMIS- ie., some countries report on IPTp1 and 3 only. What are the reasons for this? How can we advocate for collection of all doses?
Case Management Indicators

• **Malaria test positivity rate for pregnant women**: % of pregnant women at the health facility who tested positive for malaria
  
  \[
  \left( \frac{\text{# of pregnant women at the health facility who tested positive for malaria} \times 100}{\text{total # of pregnant women at the health facility tested for malaria}} \right)
  \]

• **Treatment of malaria in pregnancy**:  
  
  • % of pregnant women at the health facility who tested positive for malaria who received treatment  
  
  \[
  \left( \frac{\text{# of pregnant women at the HF who tested (+) for malaria & received treatment} \times 100}{\text{total number of pregnant women at the health facility who tested (+) for malaria}} \right)
  \]
Case Management Indicators

- **Malaria test positivity rate for pregnant women**: % of pregnant women at the health facility who tested positive for malaria

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  \left( \frac{\text{# of pregnant women at the health facility who tested positive for malaria} \times 100}{\text{total # of pregnant women at the health facility tested for malaria}} \right)
  \]

- **Treatment of malaria in pregnancy**: % of pregnant women at the health facility who tested positive for malaria who received treatment

  \[
  \left( \frac{\text{# of pregnant women at the HF who tested (+) for malaria & received treatment} \times 100}{\text{total number of pregnant women at the health facility who tested (+) for malaria}} \right)
  \]

**Discussion point**: Where are the data on treatment of pregnant women captured? Only at ANC, or also in OPD register? Feasibility of capturing data from multiple places?
Data Visualization

Uptake of IPTp Doses 1-3 during Antenatal Care Services Over a Six Month Period in (Facility or District) X

Percentage of ANC Clients

Month and Year

IPTp 1  IPTp 2  IPTp 3
Data Visualization

ANC Clients who Received an ITN during ANC Over a Six Month Period in (Facility or District)
Data Visualization

Testing and Treatment for Malaria in Pregnancy Over a Six Month Period in (Facility or District)

Percentage of Pregnant Women at the Facility

Month and Year

- % of pregnant women tested for malaria who tested positive
- % of pregnant women who tested positive for malaria who were treated
Practical Tips: Indicator definitions, disaggregation and calculation

• The denominator for calculating provision of IPTp doses will be different for longitudinal and cross-sectional ANC registers
  • For cross-sectional registers, ANC 1 is used as a proxy for eligible pregnant women.
• OPD registers need to capture if patients diagnosed with and treated for malaria are pregnant
• Countries with sub-national implementation of IPTp should limit calculation of IPTp coverage to the eligible areas.
Practical Tips: Data review and interpretation

• Managers must ensure that there are regular formalized opportunities for review of routine malaria data, including surveillance system data

• Since malaria increases during the rainy season, implementers should expect the number of cases diagnosed and treated among pregnant women to also increase seasonally

• IPTp coverage estimates derived from routine data may not approximate coverage estimates derived from household surveys due to differences in denominators (women attending ANC vs. all women)

• Improved tracking of IPTp, and testing and treatment of malaria in pregnant women can help with forecasting of MiP commodities
Practical Tips: Data quality and completeness considerations

- IPTp3 should always be lower than IPTp2, which should be lower than IPTp1
- Private sector facility reporting practices around MiP data are important to understand, especially if the private sector provides a substantial proportion of the services accessed by pregnant women