WEBINAR: MiP M&E brief

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Surveillance Team, WHO/GMP
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Global Malaria Programme
World Health Organization
Burden of malaria in pregnancy

Malaria infection during pregnancy has substantial risks for the pregnant woman, her foetus and the new born child.

- Severe disease and death of the mother
- Parasite sequestration can lead to increase maternal anemia with a increase in risk of death after delivery
- Important contributor to stillbirth and preterm birth
- Placental infection can lead to a child growth retardation and poor cognitive outcomes
- It is a major risk factor for perinatal, neonatal and infant mortality.
Estimated prevalence of exposure to malaria infection during pregnancy

In 2019, in 33 moderate to high transmission countries in the WHO African Region, there were an estimated 33.2 million pregnancies, of which 35% (11.6 million) were exposed to malaria infection (Fig. 3.10). By WHO subregion, Central Africa had the highest prevalence of exposure to malaria during pregnancy (40%) closely followed by West Africa (39%), while prevalence was 24% in East and Southern Africa.

Source: World malaria report 2020
Estimated number of low birthweights due to exposure to malaria infection during pregnancy

It is estimated that malaria infection during pregnancy in these 33 countries resulted in 822,000 children with low birthweight (Table 3.8) with almost half of these children (49%) being in the subregion of West Africa (Table 3.8, Fig. 3.11).

In the 33 countries, on average, 80% of all pregnant women visited ANC clinics at least once during their pregnancy, 62% received at least one dose of IPTp, 49% received at least two doses of IPTp and 34% received at least three doses of IPTp (Section 7.4). At current levels of IPTp coverage across all doses, an estimated 426,000 low birthweights were averted in 2019.

Source: World malaria report 2020
WHO policy brief for the implementation of intermittent preventive treatment of malaria in pregnancy using sulfadoxine-pyrimethamine (IPTp-SP)

• The World Health Organization (WHO) recommends a package of interventions for controlling malaria and its effects during pregnancy, which includes:

  • The promotion and use of insecticide-treated nets (ITNs),
  • The administration during pregnancy of intermittent preventive treatment with sulfadoxine-pyrimethamine (IPTp-SP), and
  • Appropriate case management through prompt and effective treatment of malaria in pregnant women (1).

Source: WHO/HTM/GMP/2014.4 policy brief
Estimated percentage of pregnant women attending an ANC clinic at least once and receiving IPTp, by dose

To date, 33 African countries have adopted IPTp to reduce the burden of malaria during pregnancy. These countries reported routine data from health facilities in the public sector on the number of women visiting ANC clinics, and the number receiving the first, second, third and fourth doses of IPTp (i.e. IPTp1, IPTp2, IPTp3 and IPTp4). Using annual expected pregnancies as the denominator (adjusted for fetal loss and stillbirths), the percentage of IPTp use by dose was computed. Despite a slight increase in IPTp3 coverage from 31% in 2018 to 34% in 2019, coverage remains well below the target of at least 80% and underscores the substantial number of missed opportunities, given that 62% of women receive IPTp1.

Source: World malaria report 2020
 Estimated number of low birthweights averted

![Chart showing estimated number of low birthweights averted in different regions.]

- **Central Africa**: 127,129
- **East and Southern Africa**: 104,473
- **West Africa**: 194,793
- **Total**: 426,395

- Additional low birthweights averted if IPTp1 matches ANC1 coverage: 55,586

**Source**: World Malaria Report 2020

**ANC**: antenatal care; **ANC1**: first ANC visit; **IPTp**: intermittent preventive treatment in pregnancy; **IPTp1**: first dose of IPTp; **WHO**: World Health Organization.

80% of pregnant women visiting ANC clinics at least once during pregnancy received a single dose of IPTp, assuming they were all eligible, an additional 56,000 low birthweights would be averted, representing a significant missed opportunity under current levels of ANC use. Urgent attention is clearly needed to optimize these missed opportunities while at the same time ensuring high coverage of subsequent doses of IPTp. It is hoped that the recent call from the RBM Partnership to End Malaria to leaders and health policymakers to increase protection of mothers and newborn children will result in an accelerated increase in IPTp coverage.

Source: World Malaria Report 2020
**Recommended indicators for monitoring malaria programs and implementation of the GTS**

Indicators highly relevant in high transmission intensity, and potentially relevant in low and very low transmission intensity, using Routine reporting system and/or Household surveys

<table>
<thead>
<tr>
<th>No</th>
<th>Indicator name</th>
<th>Numerator</th>
<th>Denominator</th>
</tr>
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<tbody>
<tr>
<td><strong>OUTCOME INDICATORS</strong></td>
<td></td>
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<tr>
<td>3.1</td>
<td>Proportion of pregnant women who received three or more doses of IPTp</td>
<td>Number of pregnant women who received three or more doses of IPTp</td>
<td>Number of expected pregnancies</td>
</tr>
<tr>
<td>3.2</td>
<td>Proportion of pregnant women who received two doses of IPTp</td>
<td>Number of pregnant women who received two doses of IPTp</td>
<td>Number of expected pregnancies</td>
</tr>
<tr>
<td>3.3</td>
<td>Proportion of pregnant women who received one dose of IPTp</td>
<td>Number of pregnant women who received one dose of IPTp</td>
<td>Number of expected pregnancies</td>
</tr>
<tr>
<td>3.4</td>
<td>Proportion of pregnant women who attended antenatal care at least once</td>
<td>Number of first antenatal clinic visits</td>
<td>Expected number of pregnancies</td>
</tr>
</tbody>
</table>

Source: WHO. Malaria surveillance monitor & evaluation: A reference manual
Identifying bottlenecks in malaria programmes

Coverage of malaria interventions

It is useful to determine intervention coverage by geographical area or population risk group, to assess whether interventions have been targeted appropriately. It is also useful to examine different stages in the delivery of interventions to identify any bottlenecks that hinder service provision. In the two scenarios shown in Fig. 28, the proportions of pregnant women receiving four or more doses of intermittent preventive treatment are the same – and low, but the reasons for the low coverage differ. In the scenario on the left, although use of antenatal care services is good, women do not receive multiple doses of preventive treatment, suggesting that the services offered at antenatal clinics should be improved. In the second scenario, use of antenatal clinics is poor, suggesting that more fixed or mobile antenatal clinics should be provided. Information on the coverage of malaria interventions can be obtained from routine reporting systems, household surveys and health facility surveys.

Source: WHO. Malaria surveillance monitor & evaluation: A reference manual
Today's Technical Webinar: MiP M&E Brief

- **Barbara Rawlins, USAID**

**Opening Remarks**

- **Lia Florey, PMI**
  - Malaria technical advisor for USAID – PMI

**Global relevance**

- **Lolade Oseni, Jhpiego**
  - Senior advisor, Actionable measurement & learning at Jhpiego

**Country-level application**
Presentation of the Malaria in Pregnancy Monitoring and Evaluation Brief: Purpose, Background, and Collaborators

Barbara Rawlins, Senior Implementation Research Advisor
USAID | Office of Maternal and Child Health and Nutrition
Research & Policy Division
January 21, 2021
Purpose of the Brief

• To provide malaria endemic countries, particularly country-level government and private-sector stakeholders and policymakers, with practical guidance on monitoring and evaluation (M&E) of malaria in pregnancy (MiP) services

Photo Credit: Jhpiego/Allan Gichigi
Background

- MiP is a major public health problem in malaria endemic countries, contributing to preventable morbidity and mortality among pregnant mothers and their babies.
- Ministries of health (MOHs) require timely and high-quality information to inform program planning and management for the provision of MiP interventions, and to track progress toward national and global goals.
Rationale for the Brief

• Lack of global consensus and consolidated guidance on standard indicators for tracking progress toward meeting national and global targets for preventing and managing MiP
• With the release by WHO of revised global policies for control of MiP in 2013, previous global MiP M&E guidelines were not up to date
• Better monitoring and control of MiP is critical for accelerating progress towards both global malaria and maternal and newborn health goals
Development of the Brief

- USAID’s Maternal and Child Survival Program (MCSP) and Jhpiego led a consultative development process with key stakeholder groups, including the U.S. President’s Malaria Initiative (PMI), the Roll Back Malaria (RBM) MiP working group, the RBM Monitoring and Evaluation Reference Group and the WHO
- We reviewed and built upon existing global malaria M&E guidance documents that included MiP
- We identified a core set of recommended routine indicators that would be useful for both programmatic decision-making at sub-national and national levels and global monitoring
Acknowledgments
Thank You

Photo Credit: Jhpiego/Allan Gichigi
Global Relevance and MiP Indicators

Lia Florey, USAID/PMI
Relevance of MiP data for global level

1. WHO’s Global Technical Strategy
2. Assessing progress towards global objectives
   - World Malaria Report 2020
Pillars of WHO’s Global Technical Strategy (GTS)

Maximize impact of today’s life-saving tools

• Pillar 1. Ensure universal access to malaria prevention, diagnosis and treatment
• Pillar 2. Accelerate efforts towards elimination and attainment of malaria-free status
• Pillar 3. Transform malaria surveillance into a core intervention
PILLAR 1. ENSURE UNIVERSAL ACCESS TO MALARIA PREVENTION, DIAGNOSIS AND TREATMENT

- Vector Control
  - ITN access and ITN use by pregnant women

- Chemoprevention
  - Especially for the most vulnerable groups including pregnant women (IPTp)

- Universal diagnostic testing of all suspected malaria cases
  - Including pregnant women

WHO Global Technical Strategy for Malaria 2016-2030
PILLAR 3. TRANSFORM MALARIA SURVEILLANCE INTO A CORE INTERVENTION

Strong malaria surveillance enables NMCPs to:

- advocate for investments commensurate with the malaria disease burden
- target resources to populations most in need to achieve the greatest possible public health impact;
- assess progress and facilitate adjustments to programming;
- permit analyses of value for money;
- evaluate programme objectives and empower the design of efficient and effective programmes

WHO Global Technical Strategy for Malaria 2016-2030
MiP data from the 2020 WMR

2020 World Malaria Report:  
https://www.who.int/publications/i/item/9789240015791
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

80% ANC attendance (2019)

**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

Credit: Julie Gutman, CDC
Standard MiP Indicators

Recommended Core Routine MiP Indicators

- Percentage of pregnant women attending one or more antenatal care (ANC) visits
- Percentage of pregnant women attending four or more ANC visits
- Percentage of women attending eight or more ANC visits
- Percentage of pregnant women attending ANC in the first trimester
- Percentage of pregnant women attending ANC who received (one/two/three) doses of intermittent preventive treatment in pregnancy (IPTp1, IPTp2, IPTp3, IPTp4)
- Percentage of pregnant women attending ANC who received an insecticide-treated net during ANC
- Percentage of pregnant women with suspected malaria tested for malaria who tested positive
- Percentage of pregnant women with suspected malaria who tested positive for malaria who were treated
Evolution of MiP Indicators

Past reliance on national household survey data to track MiP indicators

Advantages and challenges to using routine health information systems

Feasibility of Tracking Recommended Core Routine MiP Indicators versus Additional Routine and Periodic Indicators

- The recommended core routine MiP indicators are already widely collected across countries and can be analyzed and used for decision-making on a regular basis. They can be easily integrated into HMISs if not already present.
- The recommend additional routine and periodic MiP indicators consist of a mix of indicators to be collected through national HMISs and household surveys (e.g., Demographic and Health Survey and Malaria Indicator Survey) and are generally more difficult to collect than the core MiP indicators. Further, as survey data are only collected every few years, they are not positioned to drive ongoing program management decisions.
THANK YOU
The RBM Partnership to End Malaria - Malaria in Pregnancy (MiP) M&E Brief Webinar

MiP M&E Brief: Country-level Practical Application

Lolade Oseni
Malaria M&E Lead, Jhpiego

January 21, 2021
Recap of rationale for development of the MiP M&E brief

Particularly, at country level to:

- Provide guidance on tracking progress toward national and global targets for preventing and managing MiP.
- Encourage uniform recording of MiP data to minimize variability across countries.
- Serve as a guide for improving quality and use of routine MiP indicators
Usefulness at Country Level

- Detailed matrix of recommended core indicators and additional routine and periodic MiP indicators – including operational definition, data source, frequency of collection, and important notes.
- The focus is primarily on routine indicators captured through HMIS and used for monitoring within countries at all levels of health system.

MiP Indicator Reference Guide

- Customized to show select routine and periodic MiP indicators along the impact pathway

MiP M&E Framework

- Recommended data visualizations for MiP indicators.
- Data interpretation and use to inform decisions when actions are needed by facility/district staff to improve quality of care.

Data Visualization and Interpretation

- WHO guidance for malaria program managers
- 2018 malaria SME guidelines;
- WHO MiP M&E guidelines from 2007

Consolidates all previous MiP M&E guidance in one doc
Introduction of the MiP Brief at Country Level – how to foster uptake

National level:
- Awareness and discussion at level of NMCP leadership and Reproductive Health Directorate leadership
- Presentation to MiP and SME TWGs
- Engage HMIS department to ensure tools are modified to capture the full set of core indicators
  » update to HMIS forms, registers to capture newer indicators – e.g. 8 ANC contacts, IPTp 3, 4, MiP case management

District and Facilities:
- Orientation on core MiP indicators, e.g. addendum to MiP training package
- Reference the brief during MiP onsite trainings and supervision visits to facilities
- Develop job aids for the re-orientation of particular training modules
Challenges & best practices associated with application and use of MiP indicators
## Indicator challenges and best practices (1) – ANC Contacts

<table>
<thead>
<tr>
<th>Indicator Name</th>
<th>Potential Challenges to Collecting, Using &amp; Reporting</th>
<th>Best Practices for improving indicator use and performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of pregnant women attending one or more antenatal care (ANC) visits (<strong>ANC 1+</strong>)</td>
<td>Health facility data may not be representative of the general population if health care is sought at facilities that do not report into the HMIS, e.g. private facilities.</td>
<td>Promote private facilities reporting practices around MiP data, especially if the private sector provides a substantial proportion of the services accessed by pregnant women.</td>
</tr>
<tr>
<td>% of pregnant women attending 4 or more ANC visits (<strong>ANC 4+</strong>)</td>
<td></td>
<td>Useful to triangulate with IPTp3/4 uptake to identify possible missed opportunities. Ideally IPTp3 &gt;= ANC4.</td>
</tr>
<tr>
<td>% of pregnant women attending 8 or more ANC visits (<strong>ANC 8+ visits/contacts</strong>)</td>
<td>Not tracked by some HMIS tools</td>
<td>Revise HMIS reporting form to include ANC 8 field</td>
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</tbody>
</table>
## Indicator challenges and best practices (2) – ANC Contact cont’d

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<tr>
<th>Indicator Name</th>
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<th>Best Practices for improving indicator use and performance</th>
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</table>
| % of pregnant women who have first ANC contact in the 1\textsuperscript{st} trimester (less than 12 weeks) *(ANC initiation in 1\textsuperscript{st} trimester)* | Cut-off gestational age for early initiation varies across countries HMIS tools – 12 weeks, 16 weeks, 20 weeks | Revise HMIS reporting forms to capture 12 weeks  
Need for harmonization for accurate reporting.  
Triangulate with IPTp uptake  
Compare with ITN uptake to estimate duration of protection during pregnancy |
## Indicator challenges and best practices (3) – MiP Prevention

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<tbody>
<tr>
<td>% of pregnant women who received an insecticide-treated net (ITN) during ANC</td>
<td>Sometimes value is &gt; 100% when ITN given in subsequent ANC visits ITN uptake does not reflect use</td>
<td>Review during MiP supervision visit and DQA/data validation visit</td>
</tr>
<tr>
<td>% of pregnant women attending ANC who received (one/two/three/four) doses of intermittent preventive treatment in pregnancy (IPTp1, IPTp2, IPTp3, IPTp4)</td>
<td>Some ANC registers and reporting forms don’t capture IPTp3 or 4 IPTp3 or IPTp4 &gt; IPTp2 IPTp2, 3, 4 &gt; 100% in some months Assumes direct observation is enforced at the ANC</td>
<td>Update HMIS tools to capture IPTp3, IPTp4 Record each IPTp dose (1, 2, 3, 4) in a separate column in ANC register; extra column can be drawn to capture IPTp4 (if not already provided) If HMIS summary form is designed to only capture 3 doses - only summarize IPTp1, IPTp2 and IPTp3 Do not add up 3, 4, 5 as 3+ To avoid &gt;100% - quarterly analyses increase the chances of numerator to be a part of the denominator</td>
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</table>
## Indicator challenges and best practices (4) – Case Management

<table>
<thead>
<tr>
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<th>Best Practices for improving indicator use and performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of pregnant women with suspected malaria tested for malaria who tested positive (Test positivity rate)</td>
<td>Not routinely tracked at ANC as pregnant women visit OPD when sick</td>
<td>Inclusion of MiP case management indicators/data in routine analysis and visualization at all levels</td>
</tr>
<tr>
<td>% of pregnant women with suspected malaria who tested positive for malaria who were treated (Treatment of MiP)</td>
<td>Some OPD registers don’t disaggregate by pregnancy status</td>
<td>- Update HMIS tools to disaggregate malaria testing and treatment data by pregnancy;</td>
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<td></td>
<td></td>
<td>- Lessons could be learnt from countries implementing ANC surveillance</td>
</tr>
</tbody>
</table>
Practical Tips for M&E of MiP Programs and Services (1)

Indicator Definitions, Disaggregation, and Calculation

• Denominator for calculating IPTp data is different for longitudinal and cross-sectional ANC registers.
  › For cross-sectional registers, ANC 1 is used as a proxy for eligible pregnant women. Measures quality of services at ANC (operational coverage).
  › 2018 WHO malaria SME manual recommends “number of expected pregnancies”. Included in the brief as a recommended additional denominator for population-based coverage.

• OPD registers need to disaggregate confirmed and treated malaria cases by pregnancy status
  › to help understand disease burden and management practices among pregnant women, and
  › to monitor quality of care for MiP
Practical Tips for M&E of MiP Programs and Services (2)

Data Review and Interpretation

• A schedule of meetings should be established at different levels (facility, district, national levels) to review malaria data (including MiP and surveillance data)
  › To provide insight needed for program managers to direct support, when coverage is below target
  › Sample dashboard templates included in the brief

• Expect seasonal patterns in the number of cases diagnosed and treated among pregnant women.

• Improved tracking of IPTp and testing and treatment of malaria in pregnant women can help with forecasting of MiP commodities

• Remember, 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) and should not be directly compared.
Practical Tips for M&E of MiP Programs and Services (3)

Data Quality and Completeness Considerations

- IPTp4 < IPTp3 < IPTp2 < IPTP1 when examined on a quarterly or longer period of time.

- In areas of high HIV prevalence, expect lower IPTp coverage as cotrimoxazole prophylaxis is a contraindication for IPTp-SP

- Ideally IPTp3 >= ANC4, if there are no missed opportunities

- Interrogate ITN uptake if >100%

- Reporting from private facilities need to encouraged if the private sector provides a substantial proportion of the services accessed by pregnant women.
THANK YOU!