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Helping Providers Diagnose and Treat Malaria in Pregnancy: MIP Case Management Job Aid

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Presentation Outline

- Discuss challenges in diagnosis and treatment of women of reproductive age who present with fever
- Outline the development and field testing of the case management job aid
- Review the algorithm and treatment information in the case management job aid
- Describe next steps to finalize and disseminate the case management job aid

Challenges in diagnosis and treatment of malaria

- 25% of the population consists of women of reproductive age; up to 14% of them could be pregnant at a given time.
- Certain medications are contraindicated especially in the first trimester of pregnancy; thus:

  Health workers should establish the pregnancy status (and gestational age, if applicable) of all women of reproductive age presenting with fever!

Challenges in diagnosis and treatment of malaria job aid (2)

- A study in Kenya showed that health workers asked about women's pregnancy status only half the time*

*Riley C, Dellicour S, Ouma P, Kioko U, ter Kuile FO, Omar A, et al. (2016) Knowledge and Adherence to the National Guidelines for Malaria Case Management in Pregnancy among Healthcare Providers and Drug Outlet Dispensers in Rural, Western Kenya. PLoS ONE 11(1): e0145616. doi:10.1371/journal.pone.0145616.

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Development of the MIP CM job aid

- Job aids synthesize national policies and guidelines and are "the tools to provide just the help a performer needs to do a job, just when the performer needs it, and in just the form it is needed"**

**Elsenheimer J. 1998. Job aids in the technology age. Performance Improvement (37)8:32-35

Development of the MIP CM job aid (2)

- With support from PMI, USAID, CDC, WHO and MCSP field partners, MCSP led the development of a job aid for treatment of uncomplicated malaria among women of reproductive age, including MIP, at all types of health facilities in areas at risk of malaria.
- The purpose was to consolidate information from the 2012 WHO guidelines on IPTp and the 2015 WHO treatment guidelines into a simple tool that could be used by health workers in different levels of the health system.

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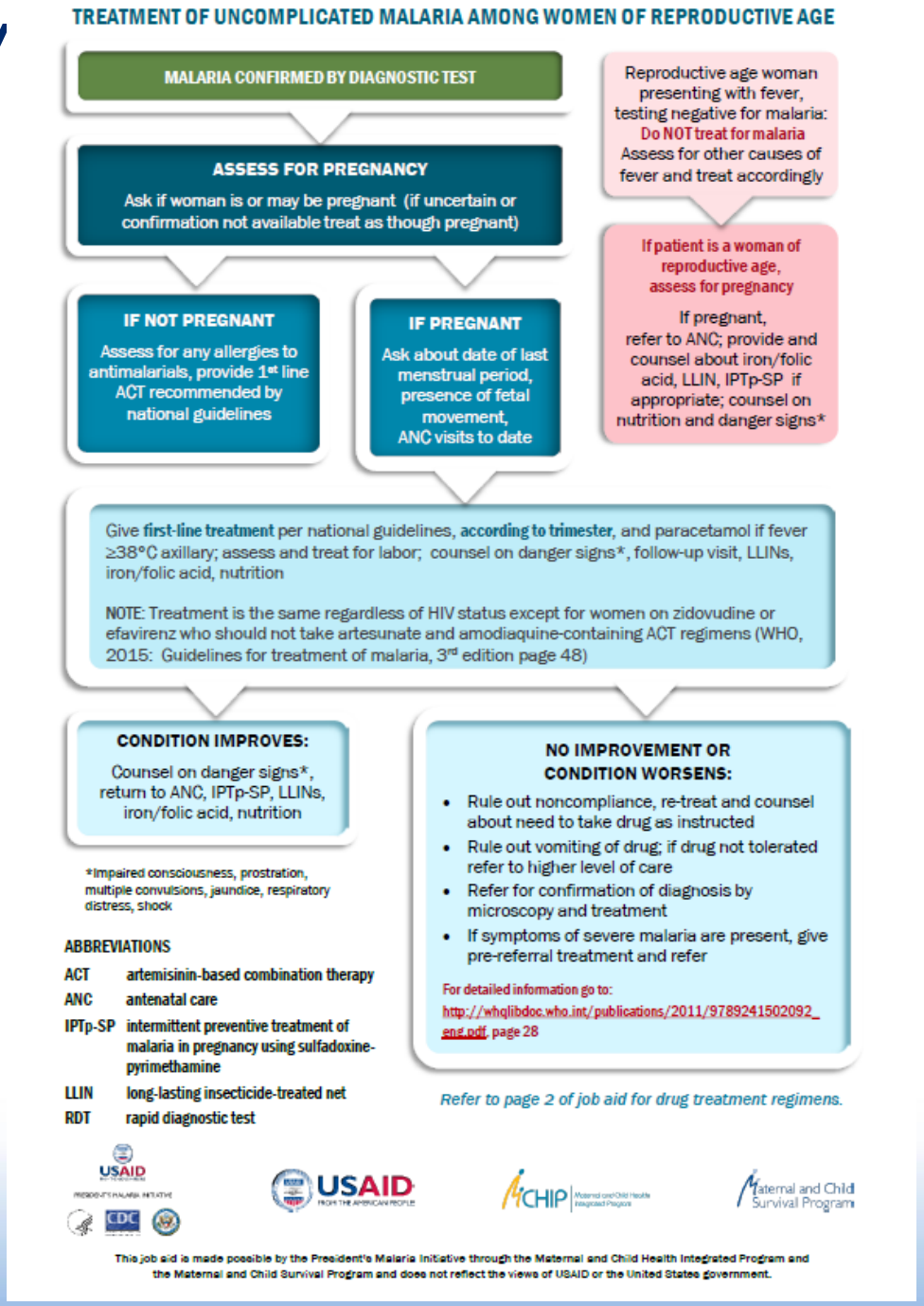

TREATMENT OF UNCOMPLICATED MALARIA AMONG WOMEN OF REPRODUCTIVE AGE

MALARIA CONFIRMED BY DIAGNOSTIC TEST

ASSESS FOR PREGNANCY

Ask if woman is or may be pregnant (if uncertain or confirmation not available treat as though pregnant)

Reproductive age woman presenting with fever, testing negative for malaria: Do NOT treat for malaria
Assess for other causes of fever and treat accordingly

If patient is a woman of reproductive age, assess for pregnancy

If pregnant, refer to ANC; provide and counsel about iron/folic acid, LLIN, IPTp-SP if appropriate; counsel on nutrition and danger signs*

IF NOT PREGNANT

Assess for any allergies to antimalarials, provide 1st line ACT recommended by national guidelines

IF PREGNANT

Ask about date of last menstrual period, presence of fetal movement, ANC visits to date

Give **first-line treatment** per national guidelines, **according to trimester**, and paracetamol if fever ≥38°C axillary; assess and treat for labor; counsel on danger signs*, follow-up visit, LLINs, iron/folic acid, nutrition

NOTE: Treatment is the same regardless of HIV status except for women on zidovudine or efavirenz who should not take artesunate and amodiaquine-containing ACT regimens (WHO, 2015: Guidelines for treatment of malaria, 3rd edition page 48)

CONDITION IMPROVES:

Counsel on danger signs*, return to ANC, IPTp-SP, LLINs, iron/folic acid, nutrition

NO IMPROVEMENT OR CONDITION WORSENS:

- Rule out noncompliance, re-treat and counsel about need to take drug as instructed
- Rule out vomiting of drug; if drug not tolerated refer to higher level of care
- Refer for confirmation of diagnosis by microscopy and treatment
- If symptoms of severe malaria are present, give pre-referral treatment and refer

For detailed information go to: http://whqlibdoc.who.int/publications/2011/9789241502092_eng.pdf, page 28

*Impaired consciousness, prostration, multiple convulsions, jaundice, respiratory distress, shock

ABBREVIATIONS

ACT	artemisinin-based combination therapy
ANC	antenatal care
IPTp-SP	intermittent preventive treatment of malaria in pregnancy using sulfadoxine-pyrimethamine
LLIN	long-lasting insecticide-treated net
RDT	rapid diagnostic test

Refer to page 2 of job aid for drug treatment regimens.

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Malaria in Pregnancy Case Management Job Aid: Page 2

SIGNS AND SYMPTOMS OF MALARIA

UNCOMPLICATED MALARIA	SEVERE MALARIA: One or more of the following clinical features or laboratory findings in the presence of malaria parasitemia or positive RDT:	
One or more of the following clinical features in the presence of malaria parasitaemia or positive RDT: Axillary temperature ≥37.5°C, and/or history of recent fever, and/or presence of anemia	Clinical Features: • Impaired consciousness/coma • Prostration/generalized weakness • Multiple convulsions (>2 within 24 hours) • Deep breathing/respiratory distress • Acute pulmonary edema • Circulatory collapse/shock (systolic BP <80 mm Hg) • Acute kidney injury • Clinical jaundice + evidence of other vital organ dysfunction • Significant bleeding	Laboratory Findings: • Hypoglycaemia (blood glucose <2.2 mmol/l or <40 mg/dl) • Metabolic acidosis (plasma bicarbonate <15 mmol/l); hyperlactatemia (lactate >5 mmol/l) • Severe normocytic anemia (Hb < 7 g/dl, packed cell volume <20%) • Hemoglobinuria • Hyperparasitemia* • Renal impairment (serum creatinine >265 µmol/l) • Pulmonary edema (radiologic) • Plasma or serum bilirubin >50 µmol/L (3 mg/dL) with a parasite count >100,000/µL)

Please note: uterine cramping or contractions can occur in pregnant women with both severe and uncomplicated malaria, and should be managed per RH guidelines.

*Hyperparasitemia is defined as parasite densities >100,000/microliter (or >2.5% of RBC parasitized) in low transmission areas or 250,000/ microliter (or >5% of RBC parasitized) in areas of high stable malaria transmission. (Management of severe malaria: a practical handbook, 3rd edition. WHO 2012)

TREATMENT FOR UNCOMPLICATED MALARIA[a]

	1ST TRIMESTER	2ND AND 3RD TRIMESTERS / NON-PREGNANT ADULTS [a,c]
FIRST-LINE DRUGS[a]	Oral quinine salt 10 mg/kg every 8 hours for 7 days, PLUS, if available, + clindamycin 10 mg/kg orally twice daily for 7 days ACT is indicated only if this is the only treatment immediately available, or if treatment with 7-day quinine plus clindamycin fails	• Artemether + lumefantrine, OR • Artesunate + amodiaquine[d], OR • Artesunate + mefloquine, OR • Dihydroartemisinin + piperaquine, OR • Artesunate + sulfadoxine-pyrimethamine (SP)[e] Doses of most commonly used ACTs in pregnancy: Artemether/lumefantrine (Coartem): 20 mg/120 mg, 4 tablets orally every 12 hours for 3 days (to be taken after a fat-containing meal or drink); the first 2 doses should, ideally, be given 8 hours apart OR Artesunate/amodiaquine (AS/AQ): 100 mg/270 mg, 2 tablets orally daily for 3 days[d]
SECOND-LINE DRUGS[a]	Artesunate + clindamycin[b] for 7 days OR ACTs recommended as first-line drugs for 2nd and 3rd trimesters if oral quinine is not available or treatment fails	

Abbreviation: ACT, artemisinin-based combination therapy.

a. Refer to country guidelines for first- and second-line drugs.

b. No blister co-packaged forms of artesunate + clindamycin are available. To ensure high adherence to treatment, artesunate and clindamycin should be administered under observation to pregnant women who have failed other ACTs.

c. WHO, 2015:.Guidelines for the treatment of malaria, 3rd edition, pp. 33-34.

d. Avoid prescribing amodiaquine-containing ACT regimens, if possible, to HIV-infected patients on zidovudine or efavirenz. (WHO, 2015: Guidelines for treatment of malaria, 3rd edition p. 48.)

e. Artesunate + SP is an approved drug but is not a fixed-dose formulation, and likelier to be ineffective in areas of high SP resistance. Avoid prescribing artesunate + SP to HIV-infected patients receiving co-trimoxazle. (WHO, 2015: Guidelines for treatment of malaria, 3rd edition p. 48, p. 54.)

STABILIZATION[a] AND PREREFERRAL TREATMENT FOR SEVERE MALARIA[b]

	ALL TRIMESTERS / NON-PREGNANT ADULTS
FIRST-LINE DRUG	Parenteral artesunate 2.4 mg/kg IV bolus ('push') injection or IM injection as loading dose
SECOND-LINE DRUG	If artesunate is unavailable, intramuscular artemether should be given, and if this is unavailable then parenteral quinine should be started immediately until artesunate is obtained[c]

a. Treat shock: ensure airway; position on side with legs elevated; ensure warmth; start IV infusion; perform relevant laboratory tests; treat convulsions and fever (refer to WHO IMPAC manual Managing Complications in Pregnancy and Childbirth: a guide for midwives and doctors).

b. WHO recommends artesunate as first-line drug to treat severe malaria in all trimesters). A job aid on administering IV artesunate is available at http://www.mmv.org/access/injectable-artesunate-tool-kit.

c. WHO, 2015: Guidelines for treatment of malaria, 3rd edition p. 87.

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Field testing of the MIP CM job aid

- The field test took place in15 facilities in 10 LGAs in Ebonyi State, Nigeria and assessed whether the job aid is feasible to implement and acceptable to health workers, i.e. clear, correctly understood, and useful in providing care.
- Additionally, MCSP tested the job aid to determine if its use helped health workers identify women who are pregnant and reminded them how to diagnose and treat MIP.

Field testing of the MIP CM job aid (2)

- Included 1 hospital; 5 primary health centers; 5 health centers; 2 faith-based and 2 private facilities.
- 34 providers were trained on the tool and subsequently interviewed: 4 doctors/medical officers; 7 nurse-midwives; 7 nurses and 16 CHEWs.

Field testing of the CM job aid (3)

Results of the field test:

- A half-day workshop on the job aid's use was sufficient for providers already trained in MIP; providers were comfortable orienting their colleagues on the job aid.
- Providers were able to assess for pregnancy at the OPD unit and diagnose and treat malaria before referring pregnant women to ANC because of the job aid, strengthening OPD/ANC clinic integration.
- All health workers said that the job aid was helpful in reminding them to provide guidance and counseling on drug compliance and adverse reactions to women receiving treatment for malaria, and how to further prevent malaria

Field testing of the CM job aid (4)

- 100% said it helped them remember to ask women about potential pregnancy, and to use RDTs to diagnose malaria
- 88% said they used the job aid in providing services all or most of the time: "The job aid guides us to provide pre-referral treatment, which is written at the bottom of the job aid".
- All health workers interviewed said they would recommend the job aid to their colleagues.
- The major changes suggested were to increase the font size, and to consider creating a wall-poster that would be easier to read.

Next steps to finalize and disseminate the job aid

- Disseminated in Nigeria to National Malaria Elimination Program, PMI Malaria Advisors, other stakeholders
- Broad Dissemination planned as package of MiP resources, including:
  - Toolkit to Improve Early and Sustained IPTp Uptake
  - MiP Briefer on new WHO ANC recommendations
  - Jhpiego MiP Learning Resource Package

<u>Planned dissemination outlets</u>:

- Webinar on ANC and MiP Resources
- Relevant listservs, including:

  Roll Back Malaria MiP Working Group, PMI Resident Advisors, MCSP Country Representatives

Next steps to finalize and disseminate the job aid

- Targeted dissemination planned for several countries in 2017, likely to include Mozambique, Madagascar and Nigeria
- Targeted dissemination to include support for national level meetings of reproductive health and malaria control programs, in collaboration with MCSP country-level staff
  - Orientation of key stakeholders to new materials
  - Discussions of strategic planning for program adaptation and launch of new materials

Don't forget: monitoring and evaluation!

- MIP diagnosis and treatment data should be captured at all facilities providing these services and an MIP indicator should be established for tracking and reporting MIP cases.
- Referrals of women with MIP from OPD to either ANC or hospital should also be captured to ensure quality of care

Many thanks

For more information, please visit

www.mcsprogram.org

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