WHO RECOMMENDATIONS

ON

Maternal Health

GUIDELINES APPROVED BY THE WHO GUIDELINES REVIEW COMMITTEE

UPDATED MAY 2017

World Health Organization

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Abbreviations

AIDS	acquired immunodeficiency syndrome
ANC	antenatal care
ART	antiretroviral therapy
ARV	antiretroviral
AZT	zidovudine
CCT	controlled cord traction
EFZ	efavirenz
FTC	emtricitabine
GRADE	Grading of Recommendations, Assessment, Development and Evaluation
GRC	Guidelines Review Committee
GDG	Guidelines Development Group
HIV	human immunodeficiency virus
IM	intramuscular
IV	intravenous
3TC	lamuvidine
NVP	nevirapine
NNRTI	non-nucleotide reverse transcriptase inhibitor
NRTI	nucleotide reverse transcriptase inhibitor
PMTCT	prevention of mother-to-child transmission
PPH	postpartum haemhorrage
TDF	tenofovir
WHO	World Health Organization

Introduction

This publication on WHO recommendations related to maternal health is one of four in a series; the others relate to newborn, child and adolescent health. The objective of this document is to make available WHO recommendations on maternal health in one easy-to-access document for WHO staff, policy-makers, programme managers, and health professionals. The compilation can also help better define gaps to prioritize guideline updates.

This document is meant to respond to the questions:

- What health interventions should be delivered during pregnancy, childbirth and the postnatal period?
- What health behaviours should the women practise (or not practise) during these periods to care for herself and her baby?

WHO produces guidelines according to the highest international standards for guideline development. The main principles are transparency and minimizing bias in every step of the process. The process of developing guidelines is documented in *WHO Handbook for guideline development*.[1] The development process includes the synthesis and assessment of the quality of evidence, and is based on the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach. GRADE categorizes the quality (or certainty) of the evidence underpinning a recommendation as high, moderate, low or very low.

- High: further research is very unlikely to change our confidence in the estimate of effect;
- Moderate: further research is likely to have an impact on our confidence in the effect;
- Low: further research is very likely to have an important impact on our confidence in the effect and is likely to change the estimate of effect;
- Very low: any estimate of effect is very uncertain.

Once the quality of the body of evidence on benefits and harms has been assessed, an expert group formulates the recommendations using a structured evidence to decision framework. When determining whether to recommend an intervention or not, the expert group carefully considers the balance of benefits and harms of an intervention, and other factors such as values and preferences of persons affected by the recommendation, stakeholders' perceptions of the acceptability and feasibility of the options and interventions, resource implications, the importance of the problem, and equity and human rights considerations.

The expert group then decides on the strength of the recommendation – strong or conditional. A strong recommendation is one where the desirable effects of adhering to the recommendation outweigh the undesirable effects. Recommendations that are conditional or weak are made when the expert group is less certain about the balance between the benefits and harms or disadvantages of implementing a recommendation. Conditional recommendations generally

[1] *Handbook for guideline development, 2nd edition*. Geneva, WHO, 2014.

include a description of the conditions under which the end-user should or should not implement the recommendation.

The quality of evidence and strength of the recommendation, as well as the link to the source, are included in this publication. Different expert groups may employ different terminology in the guideline processes. We suggest the Reader refer to the Source where more details are available.

In this publication we have indicated publications which are New – published after 2013 and Update – to indicate that the recommendation has been revised since 2013.

Promote, prevent and protect maternal and perinatal health

NEW

1. ANTENATAL CARE FOR A POSITIVE PREGNANCY EXPERIENCE

Nutrition and nutritional supplements

- Counselling about healthy eating and keeping physically active during pregnancy is recommended for pregnant women to stay healthy and to prevent excessive weight gain during pregnancy. (*Recommended*). Source
- In undernourished populations, nutrition education on increasing daily energy and protein intake is recommended for pregnant women to reduce the risk of low-birth-weight neonates. (*Context-specific recommendation*). Source
- In undernourished populations, balanced energy and protein dietary supplementation is recommended for pregnant women to reduce the risk of stillbirths and small-for-gestational-age neonates. (*Context-specific recommendation*). Source
- In undernourished populations, high-protein supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes. (*Not recommended*). Source

Iron and folic acid supplements

- Daily oral iron and folic acid supplementation with 30 mg to 60 mg of elemental iron and 400 g (0.4 mg) of folic acid is recommended for pregnant women to prevent maternal anaemia, puerperal sepsis, low birth weight, and preterm birth. (*Recommended*). Source
- Intermittent oral iron and folic acid supplementation with 120 mg of elemental iron and 2800 g (2.8 mg) of folic acid once weekly is recommended for pregnant women to improve maternal and neonatal outcomes if daily iron is not acceptable due to side-effects, and in populations with an anaemia prevalence among pregnant women of less than 20%. (*Context-specific recommendation*). Source

Calcium supplements

- In populations with low dietary calcium intake, daily calcium supplementation (1.5–2.0 g oral elemental calcium) is recommended for pregnant women to reduce the risk of pre-eclampsia. (*Context-specific recommendation*). Source

Vitamin A supplements

- Vitamin A supplementation is only recommended for pregnant women in areas where vitamin A deficiency is a severe public health problem, to prevent night blindness. (*Context-specific recommendation*). Source

Zinc supplements

- Zinc supplementation for pregnant women is only recommended in the context of rigorous research. (*Context-specific recommendation/research*). Source

Multiple micronutrient supplements

- Multiple micronutrient supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes. (*Not recommended*). Source

Vitamin B6 (pyridoxine) supplements

- Vitamin B6 (pyridoxine) supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes. (*Not recommended*). Source

Vitamin E and C supplements

- Vitamin E and C supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes. (*Not recommended*). Source

Vitamin D supplements

- Vitamin D supplementation is *not recommended* for pregnant women to improve maternal and perinatal outcomes. (*Not recommended*). Source

Restricting caffeine intake

- For pregnant women with high daily caffeine intake (more than300 mg per day) lowering daily caffeine intake during pregnancy is recommended to reduce the risk of pregnancy loss and low-birth-weight neonates. (*Context-specific recommendation*). Source

Maternal and fetal assessment

Anaemia

- Full blood count testing is the recommended method for diagnosing anaemia in pregnancy. In settings where full blood count testing is not available, on-site haemoglobin testing with a haemoglobinometer is recommended over the use of the haemoglobin colour scale as the method for diagnosing anaemia in pregnancy. (*Context-specific recommendation*). Source

Asymptomatic bacteriuria (ASB)

- Midstream urine culture is the recommended method for diagnosing asymptomatic bacteriuria (ASB) in pregnancy. In settings where urine culture is not available, on-site midstream urine Gram-staining is recommended over the use of dipstick tests as the method for diagnosing ASB in pregnancy. (*Context-specific recommendation*). Source

Gestational diabetes mellitus (GDM)

- Hyperglycaemia first detected at any time during pregnancy should be classified as either gestational diabetes mellitus (GDM) or diabetes mellitus in pregnancy, according to WHO criteria. (*Recommended*). Source

Human immunodeficiency virus (HIV) and syphilis

- In high-prevalence settings, provider-initiated testing and counselling (PITC) for HIV should be considered a routine component of the package of care for pregnant women in all antenatal care settings. In low-prevalence settings, PITC can be considered for pregnant women in antenatal care settings as a key component of the effort to eliminate mother-to-child transmission of HIV, and to integrate HIV testing with syphilis, viral or other key tests, as relevant to the setting, and to strengthen the underlying maternal and child health systems. Source

Tuberculosis (TB)

- In settings where the tuberculosis (TB) prevalence in the general population is 100/100 000 population or higher, systematic screening for active TB should be considered for pregnant women as part of antenatal care. (*Context-specific recommendation*). Source

Intimate partner violence (IPV)

- Clinical enquiry about the possibility of intimate partner violence (IPV) should be strongly considered at antenatal care visits when assessing conditions that may be caused or complicated by IPV in order to improve clinical diagnosis and subsequent care, where there is the capacity to provide a supportive response (including referral where appropriate) and where the WHO minimum requirements are met. (*Context-specific recommendation*). Source

Tobacco use

- Health-care providers should ask all pregnant women about their tobacco use (past and present) and exposure to second-hand smoke as early as possible in the pregnancy and at every antenatal care visit. (*Recommended*). Source

Substance use

- Health-care providers should ask all pregnant women about their use of alcohol and other substances (past and present) as early as possible in the pregnancy and at every antenatal care visit. (*Recommended*). Source

Daily fetal movement counting

- Daily fetal movement counting, such as with "count-to-ten" kick charts, is only recommended in the context of rigorous research.(*Context-specific recommendation*/research). Source

Symphysis-fundal height (SFH) measurement

- Replacing abdominal palpation with symphysis-fundal height (SFH) measurement for the assessment of fetal growth is not recommended to improve perinatal outcomes. A change from what is usually practiced (abdominal palpation or SFH measurement) in a particular setting is not recommended. (*Context-specific recommendation*). Source

Antenatal cardiotocography

- Routine antenatal cardiotocography is not recommended for pregnant women to improve maternal and perinatal outcomes. (*Not recommended*). Source

Ultrasound scan

- One ultrasound scan before 24 weeks of gestation (early ultrasound) is recommended for pregnant women to estimate gestational age, improve detection of fetal anomalies and multiple pregnancies, reduce induction of labour for post-term pregnancy, and improve a woman's pregnancy experience. (*Recommended*). Source

Doppler ultrasound of fetal blood vessels

- Routine Doppler ultrasound examination is not recommended for pregnant women to improve maternal and perinatal outcomes. (*Not recommended*). Source

Preventive measures

Antibiotics for asymptomatic bacteriuria (ASB)

- A seven-day antibiotic regimen is recommended for all pregnant women with asymptomatic bacteriuria (ASB) to prevent persistent bacteriuria, preterm birth and low birth weight. (*Recommended*). Source

Antibiotic prophylaxis to prevent recurrent urinary tract infections (RUTI)

- Antibiotic prophylaxis is only recommended to prevent recurrent urinary tract infections in pregnant women in the context of rigorous research. (*Context-specific recommendation*/research). Source

Antenatal anti-D immunoglobulin prophylaxis

- Antenatal prophylaxis with anti-D immunoglobulin in non-sensitized Rh-negative pregnant women at 28 and 34 weeks of gestation to prevent RhD allo-immunization is only recommended in the context of rigorous research. (*Context-specific recommendation*/research). Source

Preventive anthelminthic treatment

- In endemic areas, preventive anthelminthic treatment is recommended for pregnant women after the first trimester as part of worm infection reduction programmes. (*Context-specific recommendation*). Source

Vaccination

- Eligible pregnant women should be routinely immunized at their first contact with antenatal clinics or other health services offering vaccination. Pregnant women with an inadequate or unknown immunization history should always receive 2 doses of tetanus toxoid-containing vaccine: the first dose as early as possible during pregnancy and the second dose at least 4 weeks later. (*Strong recommendation, high quality evidence*). Source
- Pregnant women should be vaccinated with trivalent inactivated influenza vaccine at any stage of pregnancy.*(Strong recommendation, high quality evidence).* Source

Malaria prevention

- In malaria endemic areas, mothers and babies should sleep under insecticide-impregnated bed nets.(*GDG consensus, based on existing WHO guidelines).* Source

Malaria prevention: intermittent preventive treatment in pregnancy (IPTp)

- In malaria-endemic areas in Africa, intermittent preventive treatment with sulfadoxine-pyrimethamine (IPTp-SP) is recommended for all pregnant women. Dosing should start in the second trimester, and doses should be given at least one month apart, with the objective of ensuring that at least three doses are received. (*Context-specific recommendation*). Source

Preventing relapse in *P. vivax* or *P. ovale* malaria

- The G6DP status of patients should be used to guide administration of primaquine to prevent relapse. (*Good Practice Statement*). Source
- To prevent relapse, treat *P. vivax* or *P. ovale* malaria in children and adults (except pregnant women, infants aged <6 months, women breastfeeding infants aged <6 months and people with G6DP deficiency with a 14-day course (0.25–0.5 mg/kg body weight daily) of primaquine in all transmission settings. (*Strong recommendation*, *high quality evidence*). Source
- In people with G6PD deficiency, consider preventing relapse by giving primaquine base at 0.75 mg/kg body weight once a week for 8 weeks, with close medical supervision for potential primaquine-induced haemolysis. (*Conditional recommendation*, *very low-quality evidence*). Source
- When G6PD status is unknown and G6PD testing is not available, a decision to prescribe primaquine must be based on an assessment of the risks and benefits of adding primaquine. (*Good practice statement*). Source

Pre-exposure prophylaxis (PrEP) for HIV prevention

- Oral pre-exposure prophylaxis (PrEP) containing tenofovir disoproxil fumarate (TDF) should be offered as an additional prevention choice for pregnant women at substantial risk of HIV infection as part of combination prevention approaches. (*Context-specific recommendation*). Source

Interventions for common physiological symptoms

Nausea and vomiting

- Ginger, chamomile, vitamin B6 and/or acupuncture are recommended for the relief of nausea in early pregnancy, based on a woman's preferences and available options. (*Recommended*). Source

Heartburn

- Advice on diet and lifestyle is recommended to prevent and relieve heartburn in pregnancy. Antacid preparations can be offered to women with troublesome symptoms that are not relieved by lifestyle modification. (*Recommended*). Source

Leg cramps

- Magnesium, calcium or non-pharmacological treatment options can be used for the relief of leg cramps in pregnancy, based on a woman's preferences and available options. (*Recommended*). Source

Low back and pelvic pain

- Regular exercise throughout pregnancy is recommended to prevent low back and pelvic pain. There are a number of different treatment options that can be used, such as physiotherapy, support belts and acupuncture, based on a woman's preferences and available options. (*Recommended*). Source

Constipation

- Wheat bran or other fibre supplements can be used to relieve constipation in pregnancy if the condition fails to respond to dietary modification, based on a woman's preferences and available options. (*Recommended*). Source

Varicose veins and oedema

- Non-pharmacological options, such as compression stockings, leg elevation and water immersion, can be used for the management of varicose veins and oedema in pregnancy, based on a woman's preferences and available options. (*Recommended*). Source

Health systems interventions to improve the utilization and quality of antenatal care

Woman-held case notes

- It is recommended that each pregnant woman carries her own case notes during pregnancy to improve continuity, quality of care and her pregnancy experience. (*Recommended*). Source

Midwife-led continuity of care

- Midwife-led continuity-of-care models, in which a known midwife or small group of known midwives supports a woman throughout the antenatal, intrapartum and postnatal continuum, are recommended for pregnant women in settings with well-functioning midwifery programmes. (*Context-specific recommendation*). Source

Group antenatal care

- Group antenatal care provided by qualified health-care professionals may be offered as an alternative to individual antenatal care for pregnant women in the context of rigorous research, depending on a woman's preferences and provided that the infrastructure and resources for delivery of group antenatal care are available. (*Context-specific recommendation/research*). Source

Facilitated participatory learning and action (PLA) cycles with women's groups

- The implementation of community mobilization through facilitated participatory learning and action (PLA) cycles with women's groups is recommended to improve maternal and newborn health, particularly in rural settings with low access to health services. Participatory women's groups represent an opportunity for women to discuss their needs during pregnancy, including barriers to reaching care, and to increase support to pregnant women. (*Context-specific recommendation*). Source

Community mobilization and antenatal home visits

- Packages of interventions that include household and community mobilization and antenatal home visits are recommended to improve antenatal care utilization and perinatal health outcomes, particularly in rural settings with low access to health services. (*Context-specific recommendation*). Source

Task shifting components of antenatal care delivery

- Task shifting the promotion of health-related behaviours for maternal and newborn health ad to a broad range of cadres, including lay health workers, auxiliary nurses, nurses, midwives and doctors is recommended. (*Recommended*). Source
- Task shifting the distribution of recommended nutritional supplements and intermittent preventive treatment in pregnancy (IPTp) for malaria prevention to a broad range of cadres, including auxiliary nurses, nurses, midwives and doctors is recommended. (*Recommended*). Source

Recruitment and retention of staffing rural and remote areas

- Policy-makers should consider educational, regulatory, financial, and personal and professional support interventions to recruit and retain qualified health workers in rural and remote areas. (*Context-specific recommendation*). Source

Antenatal care contact schedules

- Antenatal care models with a minimum of eight contacts are recommended to reduce perinatal mortality and improve women's experience of care. (*Recommended*). Source

2. PREVENTION OF PRE-ECLAMPSIA AND ECLAMPSIA

- In populations with low dietary calcium intake, daily calcium supplementation (1.5–2.0 g oral elemental calcium) is recommended for pregnant women to reduce the risk of pre-eclampsia. (*Context-specific recommendation*). Source
- Low-dose acetylsalicylic acid (aspirin, 75 mg) is recommended for the prevention of pre-eclampsia in women at high risk of developing the condition. (*Strong recommendation, moderate quality evidence*). Source
- Low-dose acetylsalicylic acid (aspirin, 75 mg) for the prevention of pre-eclampsia and its related complications should be initiated before 20 weeks of pregnancy. (*Weak recommendation, low quality evidence*). Source
- Women with severe hypertension during pregnancy should receive treatment with antihypertensive drugs. (*Strong recommendation, very low quality evidence*). Source
- Advice to rest at home is not recommended as an intervention for the primary prevention of pre-eclampsia and hypertensive disorders of pregnancy in women considered to be at risk of developing those conditions. (*Weak recommendation, low quality evidence*). Source
- Strict bed rest is not recommended for improving pregnancy outcomes in women with hypertension (with or without proteinuria) in pregnancy. (*Weak recommendation, low quality evidence*). Source

- Restriction in dietary salt intake during pregnancy with the aim of preventing the development of pre-eclampsia and its complications is not recommended. (*Weak recommendation, moderate quality evidence*). Source
- Diuretics, particularly thiazides, are not recommended for the prevention of pre-eclampsia and its complications. (*Strong recommendation, low quality evidence*). Source

3. INTERVENTIONS TO IMPROVE PRETERM BIRTH OUTCOMES

NEW

Antenatal corticosteroids to improve newborn outcomes

- Antenatal corticosteroid therapy is recommended for women at risk of preterm birth from 24 weeks to 34 weeks of gestation when the following conditions are met:
  - gestational age assessment can be accurately undertaken;
  - preterm birth is considered imminent;
  - there is no clinical evidence of maternal infection;
  - adequate childbirth care is available (including the capacity to recognize and safely manage preterm labour and birth);
  - the preterm newborn can receive adequate care if needed (including resuscitation, thermal care, feeding support, infection treatment and safe oxygen use). (*Strong recommendation based on moderate-quality evidence for newborn outcomes and low quality evidence for maternal outcomes*). Source
- For eligible women, antenatal corticosteroid should be administered when preterm birth is considered imminent within 7 days of starting treatment, including within the first 24 hours. (*Strong recommendation based on low-quality evidence*). Source
- Antenatal corticosteroid therapy is recommended for women at risk of preterm birth irrespective of whether a single or multiple birth is anticipated. (*Strong recommendation based on low-quality evidence*). Source
- Antenatal corticosteroid therapy is recommended in women with preterm prelabour rupture of membranes and no clinical signs of infection. (*Strong recommendation based on moderate-quality evidence for newborn outcomes and low-quality evidence for maternal outcomes*). Source
- Antenatal corticosteroid therapy is not recommended in women with chorioamnionitis who are likely to deliver preterm. (*Conditional recommendation based on very low-quality evidence*). Source
- Antenatal corticosteroid therapy is not recommended in women undergoing planned caesarean section at late preterm gestations (34–36+6 weeks). (*Conditional recommendation based on very low-quality evidence*). Source
- Antenatal corticosteroid therapy is recommended in women with hypertensive disorders in pregnancy who are at risk of imminent preterm birth. (*Strong recommendation based on moderate-quality evidence for newborn outcomes and low quality evidence for maternal outcomes*). Source

- Antenatal corticosteroid therapy is recommended for women at risk of imminent preterm birth of a growth restricted fetus. (*Strong recommendation based on very low-quality evidence*). Source
- Antenatal corticosteroid therapy is recommended for women with pre-gestational and gestational diabetes who are at risk of imminent preterm birth, and this should be accompanied by interventions to optimize maternal blood glucose control. (*Strong recommendation based on very low-quality evidence*). Source
- Either intramuscular (IM) dexamethasone or IM betamethasone (total 24 mg in divided doses) is recommended as the antenatal corticosteroid of choice when preterm birth is imminent. (*Strong recommendation based on low-quality evidence*). Source
- A single repeat course of antenatal corticosteroid is recommended if preterm birth does not occur within 7 days after the initial dose, and a subsequent clinical assessment demonstrates that there is a high risk of preterm birth in the next 7 days. (*Conditional recommendation based on moderate-quality evidence for newborn outcomes and low-quality evidence for maternal outcomes*). Source

Tocolytics for inhibiting preterm labour

- Tocolytic treatments (acute and maintenance treatments) are not recommended for women at risk of imminent preterm birth for the purpose of improving newborn outcomes. (*Conditional recommendation based on very low-quality evidence*). Source

Magnesium sulfate for fetal protection against neurological complications

- The use of magnesium sulfate is recommended for women at risk of imminent preterm birth before 32 weeks of gestation for prevention of cerebral palsy in the infant and child. (*Strong recommendation based on moderate-quality evidence*). Source

Antibiotics for preterm labour

- Routine antibiotic administration is not recommended for women in preterm labour with intact amniotic membranes and no clinical signs of infection. (*Strong recommendation based on moderate-quality evidence*). Source
- Antibiotic administration is recommended for women with preterm prelabour rupture of membranes. (*Strong recommendation based on moderate-quality evidence*). Source
- Erythromycin is recommended as the antibiotic of choice for prophylaxis in women with preterm prelabour rupture of membranes. (*Conditional recommendation based on moderate-quality evidence*). Source
- The use of a combination of amoxicillin and clavulanic acid ("co-amoxiclav") is not recommended for women with preterm prelabour rupture of membranes. (*Strong recommendation based on moderate-quality evidence*). Source

Optimal mode of delivery

- Routine delivery by caesarean section for the purpose of improving preterm newborn outcomes is not recommended, regardless of cephalic or breech presentation. (*Conditional recommendation based on very low-quality evidence*). Source

4. PREVENTION OF MATERNAL PERIPARTUM INFECTIONS

NEW

- Routine perineal/pubic shaving prior to giving vaginal birth is not recommended. (*Conditional recommendation based on very low-quality evidence*). Source
- Digital vaginal examination at intervals of four hours is recommended for routine assessment of active first stage of labour in low-risk women. (*Strong recommendation based on very low-quality evidence*). Source
- Routine vaginal cleansing with chlorhexidine during labour for the purpose of preventing infectious morbidities is not recommended. (*Strong recommendation based on moderate-quality evidence*). Source
- Routine vaginal cleansing with chlorhexidine during labour in women with group B Streptococcus (GBS) colonization is not recommended for prevention of early neonatal GBS infection. (*Conditional recommendation based on very low-quality evidence*). Source
- Intrapartum antibiotic administration to women with group B Streptococcus (GBS) colonization is recommended for prevention of early neonatal GBS infection. (*Conditional recommendation based on very low-quality evidence*). Source
- Routine antibiotic prophylaxis during the second or third trimester for all women with the aim of reducing infectious morbidity is not recommended. (*Strong recommendation based on very low-quality evidence*). Source
- Routine antibiotic administration is not recommended for women in preterm labour with intact amniotic membranes. (*Strong recommendation based on moderate-quality evidence*). Source
- Antibiotic administration is recommended for women with preterm prelabour rupture of membranes. (*Strong recommendation based on moderate-quality evidence*). Source
- Routine antibiotic administration is not recommended for women with prelabour rupture of membranes at (or near) term. (*Strong recommendation based on low-quality evidence*). Source
- Routine antibiotic administration is not recommended for women with meconium-stained amniotic fluid. (*Conditional recommendation based on low-quality evidence*). Source
- Routine antibiotic prophylaxis is recommended for women undergoing manual removal of the placenta. (*Strong recommendation based on very low-quality evidence*). Source
- Routine antibiotic prophylaxis is not recommended for women undergoing operative vaginal birth. (*Conditional recommendation based on very low-quality evidence*). Source
- Routine antibiotic prophylaxis is recommended for women with a third- or fourth-degree perineal tear. (*Strong recommendation based on very low-quality evidence*. Source
- Routine antibiotic prophylaxis is not recommended for women with episiotomy. (*Strong recommendation based on consensus view*). Source
- Routine antibiotic prophylaxis is not recommended for women with uncomplicated vaginal birth. (*Strong recommendation based on very low-quality evidence*). Source
- Vaginal cleansing with povidone-iodine immediately before caesarean section is recommended. (*Conditional recommendation based on moderate-quality evidence*). Source

- The choice of an antiseptic agent and its method of application for skin preparation prior to caesarean section should be based primarily on the clinician's experience with that particular antiseptic agent and method of application, its cost and local availability. (*Conditional recommendation based on low-quality evidence*). Source
- Routine antibiotic prophylaxis is recommended for women undergoing elective or emergency caesarean section. (*Strong recommendation based on moderate-quality evidence*). Source
- For caesarean section, prophylactic antibiotics should be given prior to skin incision, rather than intraoperatively after umbilical cord clamping. (*Strong recommendation based on moderate-quality evidence*). Source
- For antibiotic prophylaxis for caesarean section, a single dose of first-generation cephalosporin or penicillin should be used in preference to other classes of antibiotics. (*Conditional recommendation based on very low-quality evidence*). Source

5. LABOUR AND CHILDBIRTH[2]

Induction of labour

When induction of labour may be appropriate

- Induction of labour is recommended for women who are known with certainty to have reached 41 weeks (>40 weeks + 7 days) of gestation. (W*eak recommendation, low quality of evidence*). Source
- Induction of labour is not recommended in women with an uncomplicated pregnancy at gestational age less than 41 weeks. (*Weak recommendation, low quality of evidence*). Source
- If gestational diabetes is the only abnormality, induction of labour before 41 weeks of gestation is not recommended. (*Weak recommendation, very low quality evidence*). Source
- Induction of labour at term is not recommended for suspected fetal macrosomia. (*Weak recommendation, low quality evidence*). Source
- Induction of labour is recommended for women with prelabour rupture of membranes at term. (*Strong recommendation, high quality evidence*). Source

Methods of induction of labour

- If prostaglandins are not available, intravenous oxytocin alone should be used for induction of labour. Amniotomy alone is not recommended for induction of labour. (*Weak recommendation, moderate quality evidence*). Source
- Oral misoprostol (25 µg, 2-hourly) is recommended for induction of labour. (*Strong recommendation, moderate quality evidence*). Source
- Low-dose vaginal misoprostol (25 µg, 6-hourly) is recommended for induction of labour. (*Strong recommendation, moderate quality evidence*). Source
- Misoprostol is not recommended for induction of labour in women with previous caesarean section. (*Strong recommendation, low quality evidence*). Source
- Low doses of vaginal prostaglandins are recommended for induction of labour. (*Strong recommendation, moderate quality evidence*). Source

[2] Intra partum care guidelines for a positive childbirth experience are currently under development and will be issued by end of 2017.

- Balloon catheter is recommended for induction of labour. (*Strong recommendation, moderate quality evidence*). Source
- The combination of balloon catheter plus oxytocin is recommended as an alternative method of induction of labour when prostaglandins (including misoprostol) are not available or are contraindicated. (*Weak recommendation, low quality evidence*). Source
- In the third trimester, in women with a dead or an anomalous fetus, oral or vaginal misoprostol is recommended for induction of labour. (*Strong recommendation, low quality evidence*). Source
- Sweeping membranes is recommended for reducing formal induction of labour. (*Strong recommendation, moderate quality evidence*). Source

Management of adverse events related to induction of labour

- Betamimetics are recommended for women with uterine hyperstimulation during induction of labour. (*Weak recommendation, low quality evidence*). Source

Setting for induction of labour

- Outpatient induction of labour is not recommended for improving birth outcomes. (*Weak recommendation, low quality of evidence*). Source

Diagnosis of delay in the first stage of labour

NEW

- Active phase partograph with a four-hour action line is recommended for monitoring the progress of labour. (*Quality of evidence low, Strength of recommendation strong*). Source
- Digital vaginal examination at intervals of four hours is recommended for routine assessment and identification of delay in active labour. (*Quality of evidence very low, Strength of recommendation weak*). Source

Prevention of delay in the first stage of labour

NEW

- A package of care for active management of labour for prevention of delay in labour is not recommended. (*Quality of evidence low, Strength of recommendation weak*). Source
- The use of early amniotomy with early oxytocin augmentation for prevention of delay in labour is not recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source
- The use of oxytocin for prevention of delay in labour in women receiving epidural analgesia is not recommended. (*Quality of evidence low, Strength of recommendation weak*). Source
- The use of amniotomy alone for prevention of delay in labour is not recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source
- The use of antispasmodic agents for prevention of delay in labour is not recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source

- Pain relief for preventing delay and reducing the use of augmentation in labour is not recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source
- The use of intravenous fluids with the aim of shortening the duration of labour is not recommended. (*Quality of evidence very low, Strength of recommendation strong*). Source
- For women at low risk, oral fluid and food intake during labour is recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source
- Encouraging the adoption of mobility and upright position during labour in women at low risk is recommended. (*Quality of evidence very low, Strength of recommendation strong*). Source
- Continuous companionship during labour is recommended for improving labour outcomes. (*Quality of evidence moderate, Strength of recommendation strong*). Source
- Administration of enema for reducing the use of labour augmentation is not recommended. (*Quality of evidence very low, Strength of recommendation strong*). Source

Treatment of delay in the first stage of labour with augmentation

NEW

- The use of oxytocin alone for treatment of delay in labour is recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source
- Augmentation with intravenous oxytocin prior to confirmation of delay in labour is not recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source
- High starting and increment dosage regimen of oxytocin is not recommended for labour augmentation. (*Quality of evidence very low, Strength of recommendation weak*). Source
- The use of oral misoprostol for labour augmentation is not recommended. (*Quality of evidence very low, Strength of recommendation strong*). Source
- The use of amniotomy alone for treatment of delay in labour is not recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source
- The use of amniotomy and oxytocin for treatment of confirmed delay in labour is recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source

Care during labour augmentation

- The use of internal tocodynamometry, compared with external tocodynamometry, with the aim of improving outcomes for augmented labour is not recommended. (*Quality of evidence very low, Strength of recommendation weak*). Source

6. PREVENTION OF POSTPARTUM HAEMORRHAGE (PPH)

- The use of uterotonics for the prevention of PPH during the third stage of labour is recommended for all births. (*Strong recommendation, moderate quality evidence*). Source
- Oxytocin (10 IU, IV/IM) is the recommended uterotonic drug for the prevention of PPH. (*Strong recommendation, moderate quality evidence*). Source
- In settings where oxytocin is unavailable, the use of other injectable uterotonics (if appropriate ergometrine/methylergometrine or the fixed drug combination of oxytocin

and ergometrine) or oral misoprostol (600 µg) is recommended. (*Strong recommendation, moderate quality evidence*). Source

- In settings where skilled birth attendants are not present and oxytocin is unavailable, the administration of misoprostol (600 µg PO) by community health care workers and lay health workers is recommended for the prevention of PPH. (*Strong recommendation, moderate quality evidence*). Source
- In settings where skilled birth attendants are available, controlled cord traction (CCT) is recommended for vaginal births if the care provider and the parturient woman regard a small reduction in blood loss and a small reduction in the duration of the third stage of labour as important. (*Weak recommendation, high quality evidence*). Source
- In settings where skilled birth attendants are unavailable, CCT is not recommended. (*Strong recommendation, moderate quality evidence*). Source
- Late cord clamping (performed after 1 to 3 minutes after birth) is recommended for all births while initiating simultaneous essential newborn care. (*Strong recommendation, moderate quality evidence*). Source
- Early cord clamping (<1 minute after birth) is not recommended unless the neonate is asphyxiated and needs to be moved immediately for resuscitation. (*Strong recommendation, moderate quality evidence*). Source
- Sustained uterine massage is not recommended as an intervention to prevent PPH in women who have received prophylactic oxytocin. (*Weak recommendation, low quality evidence*). Source
- Postpartum abdominal uterine tonus assessment for early identification of uterine atony is recommended for all women. (*Strong recommendation, very low quality evidence*). Source
- Oxytocin (IV or IM) is the recommended uterotonic drug for the prevention of PPH in caesarean section. (*Strong recommendation, moderate quality evidence*). Source
- CCT is the recommended method for removal of the placenta in caesarean section. (*Strong recommendation, moderate quality evidence*). Source

7. POSTNATAL CARE

Timing of discharge from the health facility

- After an uncomplicated vaginal birth in a health facility, healthy mothers and newborns should receive care in the facility for at least 24 hours after birth. (*Weak recommendation, low quality evidence)*. Source

Timing and number of postnatal contacts

- If birth is in a health facility, mothers and newborns should receive postnatal care in the facility for at least 24 hours after birth. Source
- If birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth. Source
- At least three additional postnatal contacts are recommended for all mothers and newborns, on day 3 (48–72 hours), between days 7–14 after birth, and six weeks after birth.

  Strong recommendation based on moderate quality evidence for newborns and low quality evidence for mothers. Source

Home visits for postnatal care

- Home visits in the first week after birth are recommended for care of the mother and newborn. (*Strong recommendation, low to moderate quality evidence).* Source

Content of postnatal care for the mother

Assessment of the mother

First 24 hours after birth

All postpartum women should have regular assessment of vaginal bleeding, uterine contraction, fundal height, temperature and heart rate (pulse) routinely during the first 24 hours starting from the first hour after birth. Blood pressure should be measured shortly after birth. If normal, the second blood pressure measurement should be taken within six hours. Urine void should be documented within six hours. (*GDG consensus based on existing WHO guidelines).* Source

Beyond 24 hours after birth

At each subsequent postnatal contact, enquiries should continue to be made about general well-being and assessments made regarding the following: micturition and urinary incontinence, bowel function, healing of any perineal wound, headache, fatigue, back pain, perineal pain and perineal hygiene, breast pain, uterine tenderness and lochia.

Breastfeeding progress should be assessed at each postnatal contact. (*GDG consensus based on existing WHO guidelines).* Source

At each postnatal contact, women should be asked about their emotional well-being, what family and social support they have and their usual coping strategies for dealing with day-to-day matters. All women and their families/partners should be encouraged to tell their health care professional about any changes in mood, emotional state and behaviour that are outside of the woman's normal pattern. (*GDG consensus based on existing WHO guidelines).* Source

At 10–14 days after birth, all women should be asked about resolution of mild, transitory postpartum depression ("maternal blues"). If symptoms have not resolved, the woman's psychological well-being should continue to be assessed for postnatal depression, and if symptoms persist, evaluated. (*GDG consensus based on existing WHO guidelines).* Source

Women should be observed for any risks, signs and symptoms of domestic abuse. (*GDG consensus based on existing WHO guidelines).* Source

Women should be told whom to contact for advice and management. (*GDG consensus based on existing WHO guidelines).* Source

All women should be asked about resumption of sexual intercourse and possible dyspareunia as part of an assessment of overall well-being two to six weeks after birth. (*GDG consensus based on existing WHO guidelines).* Source

If there are any issues of concern at any postnatal contact, the woman should be managed and/or referred according to other specific WHO guidelines. (*GDG consensus based on existing WHO guidelines).* Source

Counselling

All women should be given information about the physiological process of recovery after birth, and that some health problems are common, with advice to report any health concerns to a health care professional, in particular:

Signs and symptoms of PPH: sudden and profuse blood loss or persistent increased blood loss, faintness, dizziness, palpitations/tachycardia.

Signs and symptoms of pre-eclampsia/eclampsia: headaches accompanied by one or more of the symptoms of visual disturbances, nausea, vomiting, epigastric or hypochondrial pain, feeling faint, convulsions (in the first few days after birth).

Signs and symptoms of infection: fever, shivering, abdominal pain and/or offensive vaginal loss.

Signs and symptoms of thromboembolism: unilateral calf pain, redness or swelling of calves, shortness of breath or chest pain.

Women should be counselled on nutrition.

Women should be counselled on hygiene, especially handwashing.

Women should be counselled on birth spacing and family planning. Contraceptive options should be discussed, and contraceptive methods should be provided if requested.

Women should be counselled on safer sex including use of condoms.

In malaria endemic areas, mothers and babies should sleep under insecticide impregnated bed nets.

All women should be encouraged to mobilize as soon as appropriate following the birth. They should be encouraged to take gentle exercise and make time to rest during the postnatal period. (*GDG consensus based on existing WHO guidelines)*. Source

Nutrition

Nutrition counselling and supplementation

- Women should be counselled on nutrition. (*GDG consensus based on existing WHO guidelines)*. Source

Iron supplementation in postpartum women

- Iron and folic acid supplementation should be provided for at least three months.(*GDG consensus, based on existing WHO guidelines)*. Source

Vitamin A supplementation in postpartum women

- Vitamin A supplementation in postpartum women is not recommended as a public health intervention for the prevention of maternal and infant morbidity and mortality.(*Strong recommendation, very low to high quality evidence*). Source

Psychosocial support

- Psychosocial support by a trained person is recommended for the prevention of postpartum depression among women at high risk of developing this condition. (*Weak recommendation, very low quality evidence)*. Source
- The GDG considers that there is insufficient evidence to recommend routine formal debriefing to all women to reduce the occurrence/risk of postpartum depression. (*Weak recommendation based on low quality evidence)*. Source

- The GDG also considers that there is insufficient evidence to recommend the routine distribution of, and discussion about, printed educational material for prevention of postpartum depression. (*Weak recommendation based on very low quality evidence)*. Source
- Health professionals should provide an opportunity for women to discuss their birth experience during their hospital stay. (*GDG consensus, based on existing WHO guidelines)* . Source
- A woman who has lost her baby should receive additional supportive care. (*GDG consensus, based on existing WHO guidelines*. Source
- Women should be counselled on birth spacing and family planning. Contraceptive options should be discussed, and contraceptive methods should be provided if requested.(*GDG consensus, based on existing WHO guidelines)*. Source
- Women should be counselled on safer sex including use of condoms.(*GDG consensus, based on existing WHO guidelines)*. Source

Counselling on Infection prevention

- Women should be counselled on hygiene, especially handwashing. (*GDG consensus, based on previous guidelines)* (*GDG consensus based on existing WHO guidelines)*. Source

Mobilization, rest and exercise

- All women should be encouraged to mobilize as soon as appropriate following the birth. They should be encouraged to take gentle exercise and make time to rest during the postnatal period.(*GDG consensus based on existing WHO guidelines)*. Source

8. HEALTH PROMOTION FOR MATERNAL AND NEWBORN HEALTH

NEW

Birth Preparedness and Complication Readiness

- Birth Preparedness and Complication Readiness interventions are recommended to increase the use of skilled care at birth and to increase the timely use of facility care for obstetric and newborn complications. (*Strong recommendation, very low quality of evidence*). Additional research is required. Source

Male involvement interventions for MNH

- Interventions to promote the involvement of men during pregnancy, childbirth and after birth are recommended to facilitate and support improved self-care of the woman, improved home care practices for the woman and newborn, and improved use of skilled care during pregnancy, childbirth and the postnatal period for women and newborns. (*Strong recommendation, very low-quality evidence*)
  - These interventions are recommended provided that they are implemented in a way that respects, promotes and facilitates women's choices and their autonomy in decision-making and supports women in taking care of themselves and their newborns. In order to ensure this, rigorous monitoring and evaluation of implementation is recommended. Source

Maternity waiting homes (MWHs)

- Maternity waiting homes are recommended to be established close to a health facility, where essential childbirth care and/or care for obstetric and newborn complications is provided, to increase access to skilled care for populations living in remote areas or with limited access to services. (*Conditional recommendation, very low-quality evidence*). Source

Community-organized transport schemes

- Community-organized transport schemes are recommended in settings where other Sources of transport are less sustainable and not reliable. However, measures should be taken to ensure the sustainability, efficacy and reliability of these schemes while seeking long term solutions to transport. (*Conditional recommendation, very low-quality evidence*). Source

Partnership with Traditional Birth Attendants (TBAs)

- Where TBAs remain the main providers of care at birth, dialogue with TBAs, women, families, communities and service providers is recommended in order to define and agree on alternative roles for TBAs, recognizing the important role they can play in supporting the health of women and newborns. (*Strong recommendation, very low-quality evidence*).
- The GDG also endorsed the recommendations from the existing WHO guideline WHO OptimizeMNH. The use of lay health workers including trained TBAs is recommended for promoting the uptake of a number of maternal and newborn-related health care behaviours and services, providing continuous social support during labour in the presence of a skilled birth attendant and administering misoprostol to prevent postpartum haemorrhage. Source

Providing culturally appropriate skilled maternity care

- Ongoing dialogue with communities is recommended as an essential component in defining the characteristics of culturally appropriate, quality maternity care services that address the needs of women and newborns and incorporate their cultural preferences. Mechanisms that ensure women's voices are meaningfully included in these dialogues are also recommended. (*Strong recommendation, very low-quality evidence*). Source

Companion of choice during labour and childbirth for improved quality of care

- Continuous companionship during labour is recommended for improving labour outcomes. Source
- Continuous companionship during labour and birth is recommended for improving women's satisfaction with services. Source

Community mobilization through facilitated participatory learning and action cycles with women's groups

- Implementation of community mobilization through facilitated participatory learning and action cycles with women's groups is recommended to improve maternal and newborn health, particularly in rural settings with low access to health services. (*Strong recommendation, moderate quality evidence*). Source

Community participation in quality improvement processes

- Community participation in quality-improvement processes for maternity care services is recommended to improve quality of care from women's, communities' and health care providers' perspectives. Communities should be involved in jointly defining and assessing quality. Mechanisms that ensure women's voices are meaningfully included are also recommended. (*Strong recommendation, low-quality evidence*). Source

Community participation in programme planning and implementation

- Community participation in programme planning, implementation and monitoring is recommended to improve use of skilled care during pregnancy, childbirth and the postnatal period for women and newborns, increase the timely use of facility care for obstetric and newborn complications and improve maternal and newborn health. Mechanisms that ensure women's voices are meaningfully included are also recommended.(*Strong recommendation, very low-quality evidence*). Source

Community participation in Maternal Death Surveillance and Response (MDSR)

- Because of the paucity of evidence available, additional research is recommended. The GDG affirms as a matter of principle the importance of sharing information on pregnancy related deaths with communities including discussion of the different factors causing these deaths and affecting access to skilled care. Source

Interventions to promote awareness of human, sexual and reproductive rights and the right to access quality skilled care

- Because of the paucity of evidence available, additional research is recommended. The GDG affirms as a matter of principle the importance for MNH programmes to inform women about their right to health and to access quality skilled care and to continue to empower them to access such care. Source

Management of maternal conditions

9. TREATMENT OF POSTPARTUM HAEMORRHAGE[3]

- Intravenous oxytocin alone is the recommended uterotonic drug for the treatment of PPH. (*Strong recommendation, moderate quality evidence*). Source
- If intravenous oxytocin is unavailable, or if the bleeding does not respond to oxytocin, the use of intravenous ergometrine, oxytocin-ergometrine fixed dose, or a prostaglandin drug (including sublingual misoprostol, 800 µg) is recommended. (*Strong recommendation, low quality evidence*). Source
- The use of isotonic crystalloids is recommended in preference to the use of colloids for the initial intravenous fluid resuscitation of women with PPH. (*Strong recommendation, low quality evidence*). Source
- The use of tranexamic acid is recommended for the treatment of PPH if oxytocin and other uterotonics fail to stop bleeding or if it is thought that the bleeding may be partly due to trauma. (*Weak recommendation, moderate quality evidence*). Source
- Uterine massage is recommended for the treatment of PPH. (*Strong recommendation, very low quality evidence*). Source
- If women do not respond to treatment using uterotonics, or if uterotonics are unavailable, the use of intrauterine balloon tamponade is recommended for the treatment of PPH due to uterine atony. (*Weak recommendation, very low quality evidence*). Source
- If other measures have failed and if the necessary resources are available, the use of uterine artery embolization is recommended as a treatment for PPH due to uterine atony. (*Weak recommendation, very low quality evidence*). Source
- If bleeding does not stop in spite of treatment using uterotonics and other available conservative interventions (e.g. uterine massage, balloon tamponade), the use of surgical interventions is recommended. (*Strong recommendation, very low quality evidence*). Source
- The use of bimanual uterine compression is recommended as a temporizing measure until appropriate care is available for the treatment of PPH due to uterine atony after vaginal delivery. (*Weak recommendation, very low quality evidence*). Source
- The use of external aortic compression for the treatment of PPH due to uterine atony after vaginal birth is recommended as a temporizing measure until appropriate care is available. (*Weak recommendation, very low quality evidence*). Source

[3] A recommendation on the use of tranexamic acid for the treatment of Ppst partum haemorrhage will be issued by end of 2017.

- The use of non-pneumatic anti-shock garments is recommended as a temporizing measure until appropriate care is available. (*Weak recommendation, low quality evidence*). Source
- The use of uterine packing is not recommended for the treatment of PPH due to uterine atony after vaginal birth. (*Weak recommendation, very low quality evidence*). Source
- If the placenta is not expelled spontaneously, the use of IV/IM oxytocin (10 IU) in combination with controlled cord traction is recommended. (*Weak recommendation, very-low-quality evidence*). Source
- The use of ergometrine for the management of retained placenta is not recommended as this may cause tetanic uterine contractions which may delay the expulsion of the placenta. (*Weak recommendation, very low quality evidence*). Source
- The use of prostaglandin E2 alpha (dinoprostone or sulprostone) for the management of retained placenta is not recommended. (*Weak recommendation, very low quality evidence*). Source
- A single dose of antibiotics (ampicillin or first-generation cephalosporin) is recommended if manual removal of the placenta is practised. (*Weak recommendation, very low quality evidence*). Source

10. INTERVENTIONS FOR TREATMENT OF PRE-ECLAMPSIA AND ECLAMPSIA

- The choice and route of administration of an antihypertensive drug for severe hypertension during pregnancy, in preference to others, should be based primarily on the prescribing clinician's experience with that particular drug, its cost and local availability. (*Weak recommendation, very low quality evidence*). Source
- Magnesium sulfate is recommended for the prevention of eclampsia in women with severe pre-eclampsia in preference to other anticonvulsants. (*Strong recommendation, high quality evidence*). Source
- Magnesium sulfate is recommended for the treatment of women with eclampsia in preference to other anticonvulsants. (*Strong recommendation, moderate evidence*). Source
- The full intravenous or intramuscular magnesium sulfate regimens are recommended for the prevention and treatment of eclampsia. (*Strong recommendation, moderate quality evidence*). Source
- For settings where it is not possible to administer the full magnesium sulfate regimen, the use of magnesium sulfate loading dose followed by immediate transfer to a higher level health-care facility is recommended for women with severe pre-eclampsia and eclampsia. (*Weak recommendation, very low quality evidence*). Source
- Induction of labour is recommended for women with severe preeclampsia at a gestational age when the fetus is not viable or unlikely to achieve viability within one or two weeks. (*Strong recommendation, very low quality evidence*). Source
- In women with severe pre-eclampsia, a viable fetus and before 34 weeks of gestation, a policy of expectant management is recommended, provided that uncontrolled maternal hypertension, increasing maternal organ dysfunction or fetal distress are absent and can be monitored. (*Weak recommendation, very low quality evidence*). Source

- In women with severe pre-eclampsia, a viable fetus and between 34 and 36 (plus 6 days) weeks of gestation, a policy of expectant management may be recommended, provided that uncontrolled maternal hypertension, increasing maternal organ dysfunction or fetal distress are absent and can be monitored. (*Weak recommendation, very low quality evidence*). Source
- In women with severe pre-eclampsia at term, early delivery is recommended. (*Strong recommendation, low quality evidence*). Source
- In women with mild pre-eclampsia or mild gestational hypertension at term, induction of labour is recommended. (*Weak recommendation, moderate quality evidence*). Source
- In women treated with antihypertensive drugs antenatally, continued antihypertensive treatment postpartum is recommended. (*Strong recommendation, very low quality evidence*) Source
- Treatment with antihypertensive drugs is recommended for severe postpartum hypertension. (*Strong recommendation, very low quality evidence*). Source
- The use of corticosteroids for the specific purpose of treating women with HELLP syndrome is not recommended. (*Weak recommendation, very low quality evidence*). Source

11. TREATMENT OF MATERNAL PERIPARTUM INFECTIONS

NEW

- A simple regimen such as ampicillin and once-daily gentamicin is recommended as first-line antibiotics for the treatment of chorioamnionitis. (*Conditional recommendation based on very low-quality evidence*). Source
- A combination of clindamycin and gentamicin is recommended as first-line antibiotics for the treatment of postpartum endometritis. (*Conditional recommendation based on very low-quality evidence*). Source

12. HIV INFECTION DURING PREGNANCY

HIV diagnosis

- Couples and partners in antenatal care settings should be offered voluntary HIV testing and counselling with support for mutual disclosure. (*Strong recommendation, low quality evidence*). Source

Generalized epidemics

- Provider-initiated testing and counselling is recommended for women as a routine component of the package of care in all antenatal, childbirth, postpartum and paediatric care settings. (*No strength, no quality of evidence*). Source quoted also in Source
- Re-testing is recommended in the third trimester, or during labour or shortly after delivery, because of the high risk of acquiring HIV infection during pregnancy. (*No strength, no quality of evidence*). Source quoted also in Source

Low-level and concentrated epidemics

- Provider-initiated testing and counselling should be considered for pregnant women. Many countries prioritize provider-initiated testing and counselling in antenatal care as a key component of their effort to eliminate the mother-to-child transmission of HIV and are effectively bundling HIV testing with syphilis screening, hepatitis testing or other key tests relevant to the setting as well as strengthening the underlying maternal and child health system. (*No strength, no quality of evidence*). Source quoted also in Source

When to start antiretroviral therapy (ART) in pregnant and breastfeeding women

- All pregnant and breastfeeding women infected with HIV should initiate triple ARVs (ART), which should be maintained at least for the duration of mother-to-child transmission risk. Women meeting treatment eligibility criteria should continue lifelong ART. (*Strong recommendation, moderate quality evidence*). Source
- For programmatic and operational reasons, particularly in generalized epidemics, all pregnant and breastfeeding women infected with HIV should initiate ART as lifelong treatment. (*Conditional recommendation, low quality evidence*). Source
- In some countries, for women who are not eligible for ART for their own health, consideration can be given to stopping the ARV regimen after the period of mother-to-child transmission risk has ceased. (*Conditional recommendation, low quality evidence*). Source

Special considerations for the care and management of pregnant women living with HIV

General guidance

- Pregnant women with HIV should receive at least the minimum package of recommended antenatal visits and pregnancy care, and additional interventions such as screening for sexually transmitted infections, nutritional support and infant feeding and family planning counselling should be considered. (*No strength, no quality of evidence*). Source
- There is a high risk of HIV transmission during labour and delivery. This risk can be minimized by following several key principles and practices, including reinforcing recommended antenatal clinic visits, especially high-risk management in the late third trimester; promoting facility-based delivery by trained skilled birth attendants; avoiding unnecessary instrumentation and premature rupture of membranes by using a partograph to monitor stages of labour; and non-invasive suction of nasogastric secretions and washing away blood in the newborn. (*No strength, no quality of evidence*). Source

Additional measures to reduce HIV transmission include:

- The early identification of mothers with HIV and providing ARV drugs to both the mother and the newborn baby are essential.(*No strength, no quality of evidence*). Source
- For mothers presenting at labour with unknown HIV status, rapid HIV testing should be done during labour or immediately postpartum. (*No strength, no quality of evidence*). Source
- For women testing positive, ARV drugs should be provided to both the mother and child in accordance with current treatment recommendations and with consideration of extended prophylaxis to the infant. (*No strength, no quality of evidence*). Source
- Health care workers should follow universal precautions for all deliveries, including those involving mothers with HIV. (*No strength, no quality of evidence*). Source

- Special efforts should be made to ensure that delivery care is provided in a nonstigmatizing and supportive manner. (*No strength, no quality of evidence*). Source
- Although caesarean section has been shown to protect against HIV transmission, especially in the absence of ARV drugs or in the case of high viral load, WHO does not recommend it in resource-limited settings specifically for HIV infection; rather it is recommended for obstetric and other medical indications. (*No strength, no quality of evidence*). Source
- Women with HIV and women of unknown HIV status who deliver outside health facilities should be encouraged to be medically assessed at a maternal and child health facility as soon as possible after delivery and to begin or continue appropriate HIV interventions. (*No strength, no quality of evidence*). Source
- Providing follow-up, linkages to care and treatment and postpartum care are especially important for women with HIV and their HIV-exposed infants. Initial care of the child is usually scheduled at the first immunization visit at four to six weeks, including reinforcement of safe feeding practices, review of ARV coverage and early infant diagnosis testing. Follow-up care for the mother should ideally be scheduled at the same time and should include a postpartum check, family planning counselling, review of ARV regimen and adherence support. (*No strength, no quality of evidence*). Source

First-line ART for pregnant and breastfeeding women and ARV drugs for their infants

- A once-daily fixed-dose combination of TDF + 3TC (or FTC) + EFV is recommended as first-line ART in pregnant and breastfeeding women, including pregnant women in the first trimester of pregnancy and women of childbearing age. The recommendation applies both to lifelong treatment and to ART initiated for PMTCT and then stopped. (S*trong recommendation, low to moderate quality evidence*). Source
- Infants of mothers who are receiving ART and are breastfeeding should receive six weeks ofinfant prophylaxis with daily NVP. If infants are receiving replacement feeding, they should be given four to six weeks of infant prophylaxis with daily NVP (or twice-daily AZT). Infant prophylaxis should begin at birth or when HIV exposure is recognized postpartum. (*Strong recommendation, moderate quality evidence for breastfeeding infants; strong recommendation, low quality evidence for infants receiving only replacement feeding*). Source
- Mothers known to be HIV-infected should be provided with lifelong ART or ARV prophylaxis interventions to reduce HIV transmission through breastfeeding according to WHO recommendations. *(Strong recommendation, high quality of evidence).* Source

Vitamin A supplementation in pregnancy for reducing the risk of mother-to-child transmission of HIV

- Vitamin A supplementation in HIV-positive pregnant women is not recommended as a public health intervention for reducing the risk of mother-to-child transmission of HIV. (S*trong recommendation, very low to moderate quality evidence*). Source

13. MALARIA DURING PREGNANCY

NEW

Treating uncomplicated P. falciparum malaria in special risk groups

First trimester of pregnancy

- Treat pregnant women with uncomplicated P. falciparum malaria during the first trimester with 7 days of quinine + clindamycin. (*Strong recommendation*). Source

Pregnant and breastfeeding women

- In women who are pregnant or breastfeeding, consider weekly chemoprophylaxis with chloroquine until delivery and breastfeeding are completed, then, on the basis of G6PD status, treat with primaquine to prevent future relapse. (*Conditional recommendation, moderate-quality evidence*). Source

14. TUBERCULOSIS DURING PREGNANCY

NEW

Nutritional Care and support for patients with tuberculosis

- Pregnant women with active TB and moderate undernutrition, or with inadequate weight gain, should be provided with locally available nutrient rich or fortified supplementary foods, as necessary to achieve an average weekly minimum weight gain of approximately 300 g in the second and third trimesters. (*Strong recommendation, very low quality of evidence*)
- Patients with active multidrug-resistant TB and moderate undernutrition should be provided with locally available nutrient-rich or fortified supplementary foods, as necessary to restore normal nutritional status. (*Strong recommendation, very low quality of evidence*). Source

Micronutrient supplementation:

- A daily multiple micronutrient supplement at 1×recommended nutrient intake should be provided in situations where fortified or supplementary foods should have been provided in accordance with standard management of moderate undernutrition but are unavailable. (*Conditional recommendation, very low quality of evidence*)
- All pregnant women with active TB should receive multiple micronutrient supplements that contain iron and folic acid and other vitamins and minerals, according to the United Nations Multiple Micronutrient Preparation, to complement their maternal micronutrient needs. (*Conditional recommendation, very low quality of evidence*)
- For pregnant women with active TB in settings where calcium intake is low, calcium supple–mentation as part of antenatal care is recommended for the prevention of pre-eclampsia, particularly among those pregnant women at higher risk of developing hypertension, in accordance with WHO recommendations. (*Strong recommendation, very low quality of evidence*)

- All lactating women with active TB should be provided with iron and folic acid and other vitamins and minerals, according to the United Nations Multiple Micronutrient Preparation, to complement their maternal micronutrient needs. (*Conditional recommendation, very low quality of evidence*). Source

World Health Organization