World Health Organization

hrp

WHO recommendations on antenatal care for a positive pregnancy experience

Executive summary

A woman's experience of care is key to transforming antenatal care and creating thriving families and communities.

In 2016, at the start of the Sustainable Development Goals (SDGs) era, pregnancy-related preventable morbidity and mortality remains unacceptably high. While substantial progress has been made, countries need to consolidate and increase these advances, and to expand their agendas to go beyond survival, with a view to maximizing the health and potential of their populations.

Introduction

The World Health Organization (WHO) envisions a world where every pregnant woman and newborn receives quality care throughout the pregnancy, childbirth and the postnatal period. Within the continuum of reproductive health care, antenatal care (ANC) provides a platform for important health-care functions, including health promotion, screening and diagnosis, and disease prevention. It has been established that by implementing timely and appropriate evidence-based practices, ANC can save lives. Crucially, ANC also provides the opportunity to communicate with and support women, families and communities at a critical time in the course of a woman's life. The process of developing these recommendations on ANC has highlighted the importance of providing effective communication about physiological, biomedical, behavioural and sociocultural issues, and effective support, including social, cultural, emotional and psychological support, to pregnant women in a respectful way. These communication and support functions of ANC are key, not only to saving lives, but to improving lives, health-care utilization and quality of care. Women's positive experiences during ANC and childbirth can create the foundations for healthy motherhood.

This is a comprehensive WHO guideline on routine ANC for pregnant women and adolescent girls. The aim is for these recommendations to complement existing WHO guidelines on the management of specific pregnancy-related complications. The guidance is intended to reflect and respond to the complex nature of the issues surrounding the practice and delivery of ANC, and to prioritize person-centred health and well-being – not only the prevention of death and morbidity – in accordance with a human rights-based approach.

The scope of this guideline was informed by a systematic review of women's views, which shows that women want a positive pregnancy experience from ANC. A positive pregnancy experience is defined as maintaining physical and sociocultural normality, maintaining a healthy pregnancy for mother and baby (including preventing or treating risks, illness and death), having an effective transition to positive labour and birth, and achieving positive motherhood (including maternal self-esteem, competence and autonomy).

Recognizing that a woman's experience of care is key to transforming ANC and creating thriving families and communities, this guideline addresses the following questions:

- What are the evidence-based practices during ANC that improve outcomes and lead to a positive pregnancy experience?
- How should these practices be delivered?

Guideline development methods

These ANC recommendations are intended to inform the development of relevant health-care policies and clinical protocols. The guideline was developed using standard operating procedures in accordance with the process described in the *WHO handbook for guideline development*. Briefly, these procedures include: (i) identification of priority questions and outcomes; (ii) evidence retrieval and synthesis; (iii) assessment of the evidence; (iv) formulation of the recommendations; and (v) planning for implementation, dissemination, impact evaluation and updating of the guideline. The quality of the scientific evidence underpinning the recommendations was graded using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) and Confidence in the Evidence from Reviews of Qualitative research (GRADE-CERQual) approaches, for quantitative and qualitative evidence, respectively. Up-to-date systematic reviews were used to prepare evidence profiles for priority questions. The DECIDE (Developing and Evaluating Communication Strategies to support Informed Decisions and Practice based on Evidence) framework, an evidence-to-decision tool that includes intervention effects, values, resources, equity, acceptability and feasibility criteria, was used to guide the formulation and approval of recommendations by the Guideline Development Group (GDG) – an international group of experts assembled for the purpose of developing this guideline – at three Technical Consultations between October 2015 and March 2016.

Recommendations

The WHO Technical Consultations led to the development of 39 recommendations related to five types of interventions: A. Nutritional interventions, B. Maternal and fetal assessment, C. Preventative measures, D. Interventions for common physiological symptoms, and E. Health systems interventions to improve utilization and quality of antenatal care. Interventions were either recommended, not recommended, or recommended under certain conditions based on the GDG's judgements according to the DECIDE criteria, which informed both the direction and context, if any, of the recommendation. To ensure that each recommendation is correctly understood and applied in practice, the context of all context-specific recommendations is clearly stated within each recommendation, and the contributing experts provided additional remarks where needed. Users of the guideline should refer to these remarks, which are presented along with the evidence summaries in the full version of the guideline. In addition, ANC-relevant recommendations from current guidance produced by other WHO departments were systematically identified and 10 such recommendations were consolidated into this guideline for the purpose of providing a comprehensive document for end-users. All 49 recommendations on ANC for a positive pregnancy experience are summarized in Table 1.

In accordance with WHO guideline development standards, these recommendations will be reviewed and updated following the identification of new evidence, with major reviews and updates at least every five years. WHO welcomes suggestions regarding additional questions for inclusion in future updates of the guideline.

At the Technical Consultations, the implementation considerations of individual recommendations and of the guideline as a whole were discussed. The GDG, emphasizing the evidence indicating increased fetal deaths and lesser satisfaction of women with the four-visit model (also known as focused or basic ANC), decided to increase the recommended number of contacts between the mother and the health-care providers at time points that may facilitate assessment of well-being and provision of interventions to improve outcomes if problems are identified (see Recommendation E.7 in Table 1). The recommendations in this guideline should be implemented alongside other quality-improvement activities. Derivative products of this guideline will include a practical implementation manual for health-care practitioners, which will incorporate ANC recommendations and established good clinical practices. Table 1 summarizes the list of all interventions evaluated by the guideline panels and therefore includes interventions that are recommended, only recommended under certain conditions (including research), and interventions that are not recommended.

Table 1: Summary list of WHO recommendations on antenatal care (ANC) for a positive pregnancy experience

These recommendations apply to pregnant women and adolescent girls within the context of routine ANC

A. Nutritional interventions	Recommendation	Type of recommendation
Dietary interventions	**A.1.1:** 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.[1]	Recommended
	A.1.2: 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
	A.1.3: 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
	A.1.4: In undernourished populations, high-protein supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes.	Not recommended
Iron and folic acid supplements	**A.2.1:** Daily oral iron and folic acid supplementation with 30 mg to 60 mg of elemental iron[2] and 400 µg (0.4 mg) of folic acid[3] is recommended for pregnant women to prevent maternal anaemia, puerperal sepsis, low birth weight, and preterm birth.[4]	Recommended
	A.2.2: Intermittent oral iron and folic acid supplementation with 120 mg of elemental iron[5] and 2800 µg (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%.[6]	Context-specific recommendation
Calcium supplements	**A.3:** 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.[7]	Context-specific recommendation
Vitamin A supplements	**A.4:** Vitamin A supplementation is only recommended for pregnant women in areas where vitamin A deficiency is a severe public health problem,[8] to prevent night blindness.[9]	Context-specific recommendation

[1] A healthy diet during pregnancy contains adequate energy, protein, vitamins and minerals, obtained through the consumption of a variety of foods, including green and orange vegetables, meat, fish, beans, nuts, whole grains and fruit.

[2] The equivalent of 60 mg of elemental iron is 300 mg of ferrous sulfate hepahydrate, 180 mg of ferrous fumarate or 500 mg of ferrous gluconate.

[3] Folic acid should be commenced as early as possible (ideally before conception) to prevent neural tube defects.

[4] This recommendation supersedes the previous WHO recommendation *(1)*.

[5] The equivalent of 120 mg of elemental iron equals 600 mg of ferrous sulfate heptahydrate, 360 mg of ferrous fumarate or 1000 mg of ferrous gluconate.

[6] This recommendation supersedes the previous WHO recommendation *(2)*.

[7] This recommendation is consistent with the 2011 WHO recommendations on pre-eclampsia and eclampsia *(3)* and supersedes the 2013 WHO recommendation on calcium supplementation *(4)*.

[8] Vitamin A deficiency is a severe public health problem if ≥ 5% of women in a population have a history of night blindness in their most recent pregnancy in the previous 3–5 years that ended in a live birth, or if ≥ 20% of pregnant women have a serum retinol level < 0.70 µmol/L. Determination of vitamin A deficiency as a public health problem involves estimating the prevalence of deficiency in a population by using specific biochemical and clinical indicators of vitamin A status.

[9] This recommendation supersedes the previous WHO recommendation *(5)*.

Zinc supplements	**A.5:** Zinc supplementation for pregnant women is only recommended in the context of rigorous research.	Context-specific recommendation (research)
Multiple micronutrient supplements	**A.6:** Multiple micronutrient supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes.	Not recommended
Vitamin B6 (pyridoxine) supplements	**A.7:** Vitamin B6 (pyridoxine) supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes.	Not recommended
Vitamin E and C supplements	**A.8:** Vitamin E and C supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes.	Not recommended
Vitamin D supplements	**A.9:** Vitamin D supplementation is not recommended for pregnant women to improve maternal and perinatal outcomes.[10]	Not recommended
Restricting caffeine intake	**A.10:** For pregnant women with high daily caffeine intake (more than 300 mg per day),[11] lowering daily caffeine intake during pregnancy is recommended to reduce the risk of pregnancy loss and low-birth-weight neonates.	Context-specific recommendation

B. Maternal and fetal assessment[12]	Recommendation	Type of recommendation
B.1: Maternal assessment		
Anaemia	**B.1.1:** 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
Asymptomatic bacteriuria (ASB)	**B.1.2:** 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
Intimate partner violence (IPV)	**B.1.3:** 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.[13] [14]	Context-specific recommendation

[10] This recommendation supersedes the previous WHO recommendation *(6)*.

[11] This includes any product, beverage or food containing caffeine (i.e. brewed coffee, tea, cola-type soft drinks, caffeinated energy drinks, chocolate, caffeine tablets).

[12] Evidence on essential ANC activities, such as measuring maternal blood pressure, proteinuria and weight, and checking for fetal heart sounds, was not assessed by the GDG as these activities are considered to be part of good clinical practice.

[13] Minimum requirements are: a protocol/standard operating procedure; training on how to ask about IPV, and on how to provide the minimum response or beyond; private setting; confidentiality ensured; system for referral in place; and time to allow for appropriate disclosure.

[14] This recommendation is consistent with the 2013 WHO clinical and policy guidelines *(7)*.

Recommendations integrated from other WHO guidelines that are relevant to ANC maternal assessment		
Gestational diabetes mellitus (GDM)	**B.1.4:** 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.[15]	Recommended
Tobacco use	**B.1.5:** 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.[16]	Recommended
Substance use	**B.1.6:** 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.[17]	Recommended
Human immuno-deficiency virus (HIV) and syphilis	**B.1.7:** In high-prevalence settings,[18] 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.[19]	Recommended
Tuberculosis (TB)	**B.1.8:** 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.[20]	Context-specific recommendation
B.2: Fetal assessment		
Daily fetal movement counting	**B.2.1:** 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)
Symphysis-fundal height (SFH) measurement	**B.2.2:** 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

[15] This is not a recommendation on routine screening for hyperglycaemia in pregnancy. This recommendation has been adapted and integrated from the 2013 WHO publication *(8)*, which states that GDM should be diagnosed at any time in pregnancy if one or more of the following criteria are met:

- fasting plasma glucose 5.1–6.9 mmol/L (92–125 mg/dL)
- 1-hour plasma glucose ≥ 10.0 mmol/L (180 mg/dL) following a 75 g oral glucose load
- 2-hour plasma glucose 8.5–11.0 mmol/L (153–199 mg/dL) following a 75 g oral glucose load.

Diabetes mellitus in pregnancy should be diagnosed if one or more of the following criteria are met:

- fasting plasma glucose ≥ 7.0 mmol/L (126 mg/dL)
- 2-hour plasma glucose ≥ 11.1 mmol/L (200 mg/dL) following a 75 g oral glucose load
- random plasma glucose ≥ 11.1 mmol/L (200 mg/dL) in the presence of diabetes symptoms.

[16] Integrated from the 2013 WHO recommendations *(9)*.

[17] Integrated from the 2014 WHO guidelines *(10)*.

[18] High-prevalence settings are defined as settings with greater than 5% HIV prevalence in the population being tested. Low-prevalence settings are those with less than 5% HIV prevalence in the population being tested *(11)*. In settings with a generalized or concentrated HIV epidemic, retesting of HIV-negative women should be performed in the third trimester because of the high risk of acquiring HIV infection during pregnancy.

[19] Adapted and integrated from WHO’s *Consolidated guidelines on HIV testing services (11)*.

[20] Adapted and integrated from the 2013 WHO recommendations *(12)*.

Antenatal cardiotocography	**B.2.3:** Routine antenatal cardiotocography[21] is not recommended for pregnant women to improve maternal and perinatal outcomes.	Not recommended
Ultrasound scan	**B.2.4:** 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
Doppler ultrasound of fetal blood vessels	**B.2.5:** Routine Doppler ultrasound examination is not recommended for pregnant women to improve maternal and perinatal outcomes.[22]	Not recommended
C. Preventive measures	**Recommendation**	**Type of recommendation**
Antibiotics for asymptomatic bacteriuria (ASB)	**C.1:** 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
Antibiotic prophylaxis to prevent recurrent urinary tract infections	**C.2:** Antibiotic prophylaxis is only recommended to prevent recurrent urinary tract infections in pregnant women in the context of rigorous research.	Context-specific recommendation (research)
Antenatal anti-D immunoglobulin administration	**C.3:** Antenatal prophylaxis with anti-D immunoglobulin in non-sensitized Rh-negative pregnant women at 28 and 34 weeks of gestation to prevent RhD alloimmunization is only recommended in the context of rigorous research.	Context-specific recommendation (research)
Preventive anthelminthic treatment	**C.4:** In endemic areas,[23] preventive anthelminthic treatment is recommended for pregnant women after the first trimester as part of worm infection reduction programmes.[24]	Context-specific recommendation
Tetanus toxoid vaccination	**C.5:** Tetanus toxoid vaccination is recommended for all pregnant women, depending on previous tetanus vaccination exposure, to prevent neonatal mortality from tetanus.[25]	Recommended

[21] Cardiotocography is a continuous recording of the fetal heart rate and uterine contractions obtained via an ultrasound transducer placed on the mother's abdomen.

[22] Doppler ultrasound technology evaluates umbilical artery (and other fetal arteries) waveforms to assess fetal well-being in the third trimester of pregnancy.

[23] Areas with greater than 20% prevalence of infection with any soil-transmitted helminths.

[24] Consistent with the 2016 WHO guideline *(13)*.

[25] This recommendation is consistent with the 2006 WHO guidelines *(14)*. The dosing schedule depends on the previous tetanus vaccination exposure.

Recommendations integrated from other WHO guidelines that are relevant to ANC		
Malaria prevention: intermittent preventive treatment in pregnancy (IPTp)	**C.6:** 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.[26]	Context-specific recommendation
Pre-exposure prophylaxis (PrEP) for HIV prevention	**C.7:** 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.[27]	Context-specific recommendation

D. Interventions for common physiological symptoms	**Recommendation**	**Type of recommendation**
Nausea and vomiting	**D.1:** 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
Heartburn	**D.2:** 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
Leg cramps	**D.3:** 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
Low back and pelvic pain	**D.4:** 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
Constipation	**D.5:** 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
Varicose veins and oedema	**D.6:** 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

[26] Integrated from the 2015 WHO guidelines, which also state: "WHO recommends that, in areas of moderate-to-high malaria transmission of Africa, IPTp-SP be given to all pregnant women at each scheduled ANC visit, starting as early as possible in the second trimester, provided that the doses of SP are given at least 1 month apart. WHO recommends a package of interventions for preventing malaria during pregnancy, which includes promotion and use of insecticide-treated nets, as well as IPTp-SP" *(15)*. To ensure that pregnant women in endemic areas start IPTp-SP as early as possible in the second trimester, policy-makers should ensure health system contact with women at 13 weeks of gestation.

[27] Integrated from the 2015 WHO guidelines *(16)*. Substantial risk of HIV infection is defined by an incidence of HIV infection in the absence of PrEP that is sufficiently high (> 3% incidence) to make offering PrEP potentially cost-saving (or cost–effective). Offering PrEP to people at substantial risk of HIV infection maximizes the benefits relative to the risks and costs.

E: Health systems interventions to improve utilization and quality of antenatal care	Recommendation	Type of recommendation
Woman-held case notes	**E.1:** 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
Midwife-led continuity of care	**E.2:** 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
Group antenatal care	**E.3:** 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)
Community-based interventions to improve communication and support	**E.4.1:** 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.[28] 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
	E.4.2: 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
Task shifting components of antenatal care delivery[29]	**E.5.1:** Task shifting the promotion of health-related behaviours for maternal and newborn health[30] to a broad range of cadres, including lay health workers, auxiliary nurses, nurses, midwives and doctors is recommended.	Recommended
	E.5.2: 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
Recruitment and retention of staff in rural and remote areas[31]	**E.6:** 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
Antenatal care contact schedules	**E.7:** Antenatal care models with a minimum of eight contacts are recommended to reduce perinatal mortality and improve women's experience of care.	Recommended

[28] Integrated from the 2014 WHO recommendations *(17)*.

[29] Recommendations adapted and integrated from the 2012 WHO OptimizeMNH guideline *(18)*.

[30] Including promotion of the following: care-seeking behaviour and ANC utilization; birth preparedness and complication readiness; sleeping under insecticide-treated bednets; skilled care for childbirth; companionship in labour and childbirth; nutritional advice; nutritional supplements; other context-specific supplements and interventions; HIV testing during pregnancy; exclusive breastfeeding; postnatal care and family planning; immunization according to national guidelines.

[31] Recommendation adapted and integrated from the 2010 WHO global policy recommendations *(19)*.

References

1. Guideline: daily iron and folic acid supplementation in pregnant women. Geneva: World Health Organization; 2012 (http://www.who.int/nutrition/publications/micronutrients/guidelines/daily_ifa_supp_pregnant_women/en/, accessed 28 September 2016).
2. Guideline: intermittent iron and folic acid supplementation in non-anaemic pregnant women. Geneva: World Health Organization; 2012 (http://apps.who.int/iris/bitstream/10665/75335/1/9789241502016_eng.pdf, accessed 28 September 2016).
3. WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia. Geneva: World Health Organization; 2011 (http://apps.who.int/iris/bitstream/10665/44703/1/9789241548335_eng.pdf, accessed 29 September 2016).
4. Guideline: calcium supplementation in pregnant women. Geneva: World Health Organization; 2013 (http://apps.who.int/iris/bitstream/10665/85120/1/9789241505376_eng.pdf, accessed 28 September 2016).
5. Guideline: vitamin A supplementation in pregnant women. Geneva: World Health Organization; 2011 (http://apps.who.int/iris/bitstream/10665/44625/1/9789241501781_eng.pdf, accessed 29 September 2016).
6. Guideline: vitamin D supplementation in pregnant women. Geneva: World Health Organization; 2012 (http://apps.who.int/iris/bitstream/10665/85313/1/9789241504935_eng.pdf, accessed 4 October 2016).
7. Responding to intimate partner violence and sexual violence against women: WHO clinical and policy guidelines. Geneva: World Health Organization; 2013 (http://apps.who.int/rhl/guidelines/9789241548595/en/, accessed 29 September 2016).
8. Diagnostic criteria and classification of hyperglycaemia first detected in pregnancy. Geneva: World Health Organization; 2013 (WHO/NMH/MND/13.2; http://www.who.int/diabetes/publications/Hyperglycaemia_In_Pregnancy/en/, accessed 29 September 2016).
9. WHO recommendations for the prevention and management of tobacco use and second-hand smoke exposure in pregnancy. Geneva: World Health Organization; 2013 (http://www.who.int/tobacco/publications/pregnancy/guidelinestobaccosmokeexposure/en/, accessed 29 September 2016).
10. Guidelines for the identification and management of substance use and substance use disorders in pregnancy. Geneva: World Health Organization; 2014 (http://www.who.int/substance_abuse/publications/pregnancy_guidelines/en/, accessed 29 September 2016).
11. Consolidated guidelines on HIV testing services 2015. Geneva: World Health Organization; 2015 (http://apps.who.int/iris/bitstream/10665/179870/1/9789241508926_eng.pdf, accessed 29 September 2016).
12. Systematic screening for active tuberculosis: principles and recommendations. Geneva: World Health Organization; 2013 (http://www.who.int/tb/publications/Final_TB_Screening_guidelines.pdf, accessed 29 September 2016).
13. Guideline: preventive chemotherapy to control soil-transmitted helminth infections in high-risk groups. Geneva: World Health Organization; 2016 (in press).
14. Maternal immunization against tetanus: integrated management of pregnancy and childbirth (IMPAC). Standards for maternal and neonatal care 1.1. Geneva: Department of Making Pregnancy Safer, World Health Organization; 2006 (http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/immunization_tetanus.pdf, accessed 28 September 2016).
15. Guidelines for the treatment of malaria, third edition. Geneva: World Health Organization; 2015 (http://apps.who.int/iris/bitstream/10665/162441/1/9789241549127_eng.pdf, accessed 28 September 2016).
16. Guideline on when to start antiretroviral therapy and on pre-exposure prophylaxis for HIV. Geneva: World Health Organization; 2015 (http://apps.who.int/iris/bitstream/10665/186275/1/9789241509565_eng.pdf, accessed 29 September 2016).
17. WHO recommendations on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health. Geneva: World Health Organization; 2014 (http://www.who.int/maternal_child_adolescent/documents/community-mobilization-maternal-newborn/en/, accessed 29 September 2016).
18. WHO recommendations: optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting. Geneva: World Health Organization; 2012 (http://apps.who.int/iris/bitstream/10665/77764/1/9789241504843_eng.pdf, accessed 28 September 2016).
19. Increasing access to health workers in remote and rural areas through improved retention: global policy recommendations. Geneva: World Health Organization; 2010 (http://www.who.int/hrh/retention/guidelines/en/, accessed 28 September 2016).

WHO/RHR/16.12 © World Health Organization 2016

All rights reserved. Publications of the World Health Organization are available on the WHO website (www.who.int) or can be purchased from WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel.: +41 22 791 3264; fax: +41 22 791 4857; email: bookorders@who.int). Requests for permission to reproduce or translate WHO publications – whether for sale or for non-commercial distribution – should be addressed to WHO Press through the WHO website (www.who.int/about/licensing/copyright_form/en/index.html).

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

For more information, please contact: Department of Reproductive Health and Research, World Health Organization, Avenue Appia 20, CH-1211 Geneva 27, Switzerland

Email: reproductivehealth@who.int Website: www.who.int/reproductivehealth