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WHO Guideline on Antenatal Care (2016)

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research for impact
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Outline

- Background
- Development of the WHO ANC guideline
- Recommendations
- What's new – Malaria in the context of ANC

BACKGROUND

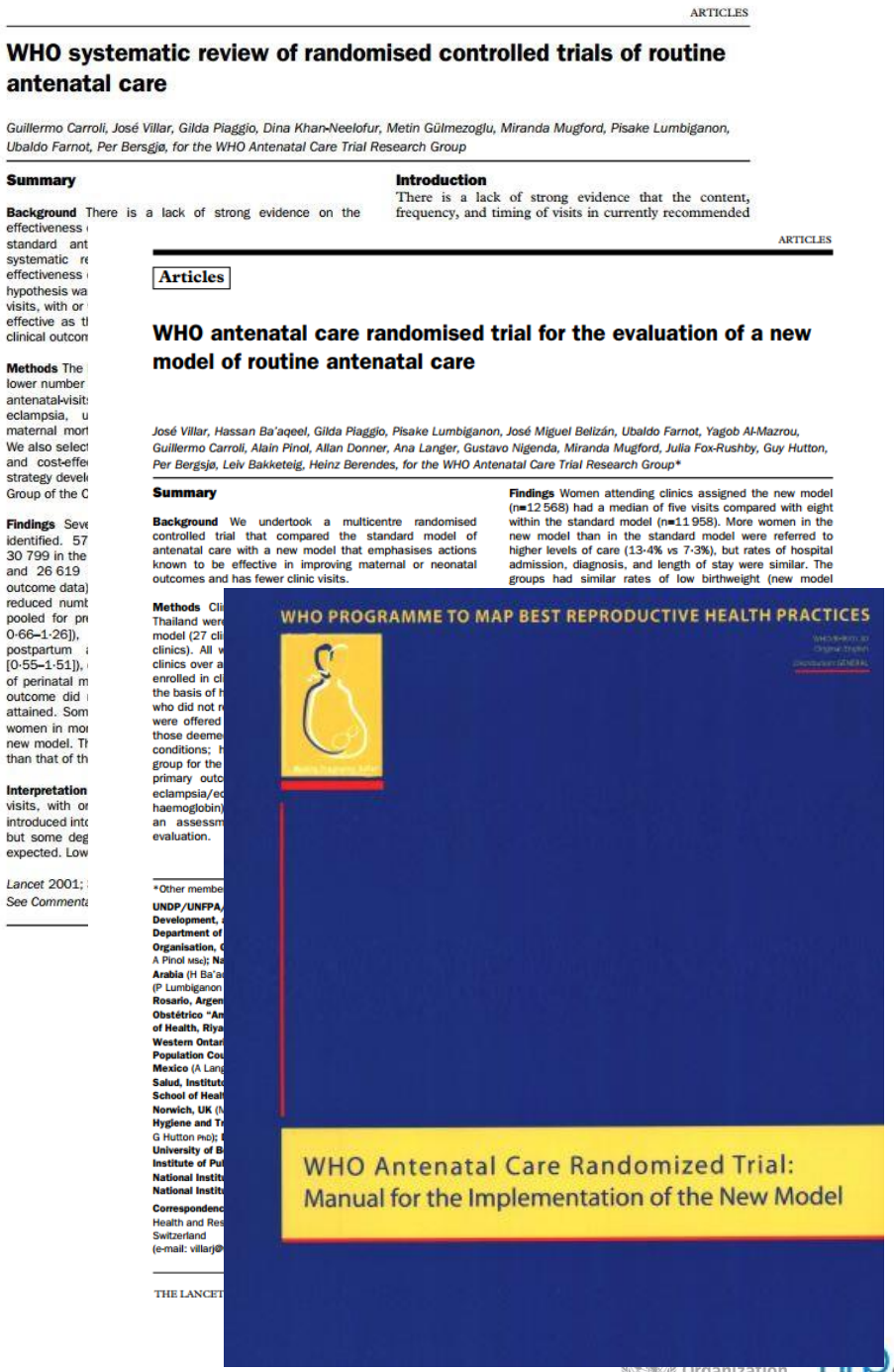
ANC is critical

Through timely and appropriate evidence-based actions related to health promotion, disease prevention, screening, and treatment

- Reduces complications from pregnancy and childbirth
- Reduces stillbirths and perinatal deaths
- Integrated care delivery throughout pregnancy

Previously: The 4-visit WHO ANC model

- Involves specific evidence-based interventions for all women
- Carried out at four critical times
- Also known as the Focused Antenatal Care Model (FANC)
- Part of Pregnancy, Childbirth, Postpartum and Newborn Care (PCPNC)



ARTICLES

WHO systematic review of randomised controlled trials of routine antenatal care

Guillermo Carroli, José Villar, Gilda Piaggio, Dina Khan-Neelofur, Metin Gülmezoglu, Miranda Mugford, Pisake Lumbiganon, Ubaldo Farnot, Per Bersgjø, for the WHO Antenatal Care Trial Research Group

Summary

Introduction

There is a lack of strong evidence that the content, frequency, and timing of visits in currently recommended

ARTICLES

Articles

WHO antenatal care randomised trial for the evaluation of a new model of routine antenatal care

*José Villar, Hassan Ba'aqeel, Gilda Piaggio, Pisake Lumbiganon, José Miguel Belizán, Ubaldo Farnot, Yagob Al-Mazrou, Guillermo Carroli, Alain Pinol, Allan Donner, Ana Langer, Gustavo Nigenda, Miranda Mugford, Julia Fox-Rushby, Guy Hutton, Per Bergsjø, Leiv Bakketeig, Heinz Berendes, for the WHO Antenatal Care Trial Research Group**

Summary

Background We undertook a multicentre randomised controlled trial that compared the standard model of antenatal care with a new model that emphasises actions known to be effective in improving maternal or neonatal outcomes and has fewer clinic visits.

Findings Women attending clinics assigned the new model (n=12 568) had a median of five visits compared with eight within the standard model (n=11 958). More women in the new model than in the standard model were referred to higher levels of care (13·4% vs 7·3%), but rates of hospital admission, diagnosis, and length of stay were similar. The groups had similar rates of low birthweight (new model

WHO PROGRAMME TO MAP BEST REPRODUCTIVE HEALTH PRACTICES

WHO Antenatal Care Randomized Trial:
Manual for the Implementation of the New Model

QUALITY throughout the continuum of care

WHO envisions a world where "every pregnant woman and newborn receives quality care throughout the pregnancy, childbirth and the postnatal period".

- Prioritizes **person-centred health and well-being**:
  - Reducing mortality and morbidity
  - Providing respectful care that takes into account woman's views
  - Optimizing service delivery within health systems

Women's views

Women want a

Positive Pregnancy Experience

from ANC

- ✓ A healthy pregnancy for mother and baby (including preventing or treating risks, illness and death)
- ✓ Physical and sociocultural normality during pregnancy
- ✓ Effective transition to positive labour and birth
- ✓ Positive motherhood (including maternal self-esteem, competence and autonomy)

Medical care; relevant and timely information; emotional support and advice

Downe S, Finlayson K, Tunçalp Ö, Metin Gülmezoglu A. What matters to women: a systematic scoping review to identify the processes and outcomes of antenatal care provision that are important to healthy pregnant women. BJOG. 2016 Mar;123(4):529-39.
Abalos E, Chamillard M, Diaz V, Tuncalp Ö, Gülmezoglu AM. Antenatal care for healthy pregnant women: a mapping of interventions from existing guidelines to inform the development of new WHO guidance on antenatal care. BJOG. 2016 Mar;123(4):519-28.

DEVELOPMENT OF THE GUIDELINE

The 2016 ANC guideline

- Essential core package of ANC that all pregnant women and adolescent girls should receive
- With the flexibility to employ different options based on the context of different countries
  - What is the content of the model/package?
  - Who provides care?
  - Where is the care provided?
  - How is the care provided to meet the needs of the users?
- Complement existing WHO guidance on complications during pregnancy

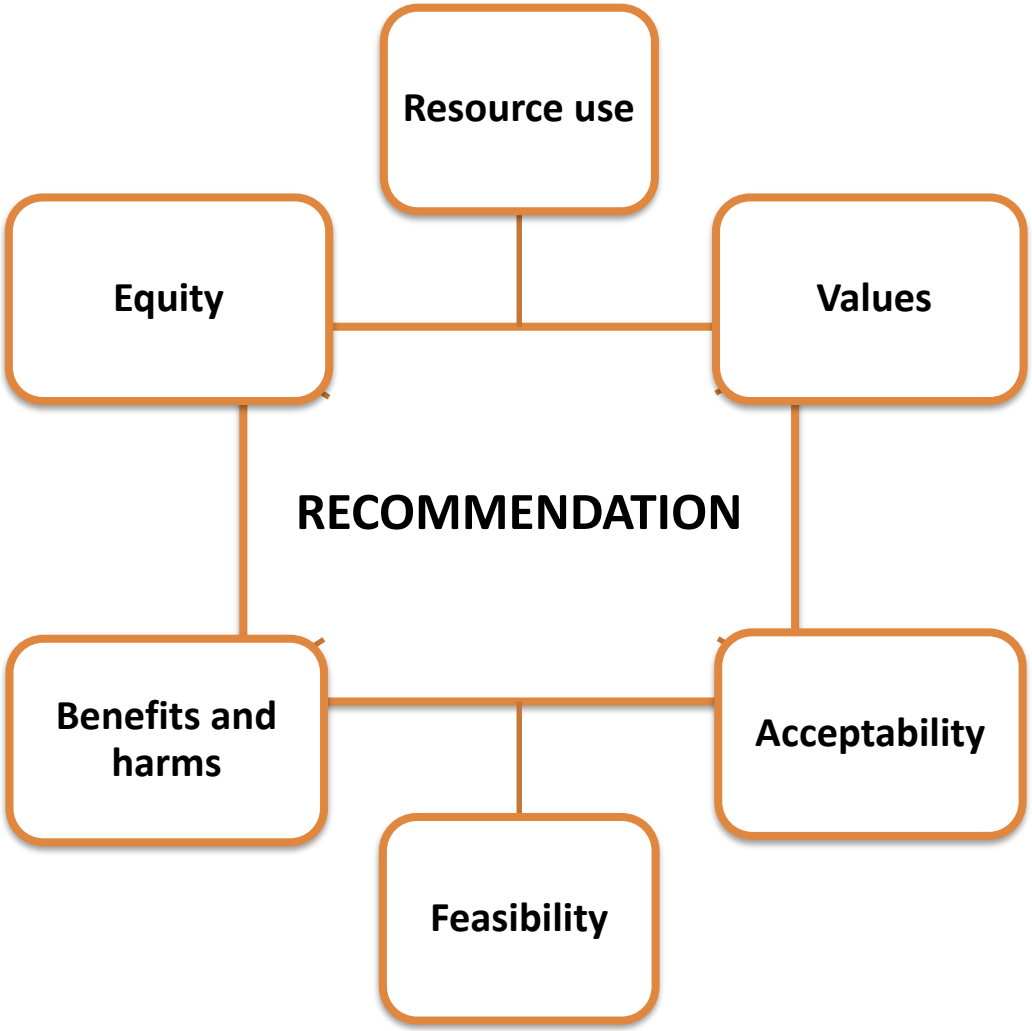
Overarching questions

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

Methodology and assessment of evidence

Work streams	Methodology	Assessment of evidence
Individual interventions for clinical practices *(n=37)*	Effectiveness reviews, systematic reviews	GRADE
Antenatal testing *(n=2)*	Test accuracy reviews	GRADE
Barriers and facilitators to access to and provision of ANC *(n=2)*	Qualitative evidence synthesis	GRADE-CERQual
Health systems interventions to improve the utilization and quality of ANC *(n=6)*	Effectiveness reviews	GRADE
Large scale WHO ANC model (4-visit) case studies	Mixed-methods review, focusing on contextual and health system factors affecting implementation	N/A

The DECIDE framework



- Three technical consultations with guideline development group (October 2015-March 2016)
- Collaborative effort between WHO departments, methodologists and different groups of experts

http://ietd.epistemonikos.org/

Types of recommendations

- We recommend the option
- We recommend this option under certain conditions
  - Only in the context of rigorous research
  - Only with targeted monitoring and evaluation
  - Only in specific contexts
- We do not recommend this option

Recommendations on ANC

49 recommendations were grouped into five topic areas:

A. Nutritional interventions **(14)**
B. Maternal and fetal assessment **(13)**
C. Preventive measures **(7)**
D. Interventions for common physiological symptoms **(6)**
E. Health systems interventions to improve the utilization and quality of ANC **(9)**

Including **10** recommendations relevant to routine ANC from other WHO guidelines

RECOMMENDATIONS

A. Nutritional interventions - 1

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.	**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**

A. Nutritional interventions -2

A.2.1: **Daily oral iron and folic acid supplementation** with 30 mg to 60 mg of elemental iron and 400 µg (0.4 mg) of folic acid is recommended for pregnant women to prevent maternal anaemia, puerperal sepsis, low birth weight, and preterm birth.	**Recommended**
A.2.2: **Intermittent oral iron and folic acid supplementation** with 120 mg of elemental iron 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%.	**Context-specific recommendation**
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.	**Context-specific recommendation**
A.4: **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**

Nutritional interventions - 3

A.5: **Zinc supplementation** for pregnant women is only recommended in the context of rigorous research.	**Context-specific recommendation (research)**
A.6: **Multiple micronutrient supplementation** is not recommended for pregnant women to improve maternal and perinatal outcomes.	**Not recommended**
A.7: **Vitamin B6 (pyridoxine) supplementation** is not recommended for pregnant women to improve maternal and perinatal outcomes.	**Not recommended**
A.8: **Vitamin E and C supplementation** is not recommended for pregnant women to improve maternal and perinatal outcomes.	**Not recommended**
A.9: **Vitamin D supplementation** is not recommended for pregnant women to improve maternal and perinatal outcomes.	**Not recommended**
A.10: For pregnant women with high daily caffeine intake (more than 300 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**

B.1. Maternal assessment - 1

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**
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**
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.	**Context-specific recommendation**

B.1. Maternal assessment - 2

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.	**Recommended**
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.	**Recommended**
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.	**Recommended**
B.1.7: 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.	**Recommended**
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.	**Context-specific recommendation**

B.2.Fetal assessment

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)**
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**
B.2.3: Routine **antenatal cardiotocography** is not recommended for pregnant women to improve maternal and perinatal outcomes.	**Not recommended**
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**
B.2.5: Routine **Doppler ultrasound** examination is not recommended for pregnant women to improve maternal and perinatal outcomes.	**Not recommended**

C. Preventive measures - 1

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**
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)**
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)**
C.4: 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**
C.5: **Tetanus toxoid vaccination** is recommended for all pregnant women, depending on previous tetanus vaccination exposure, to prevent neonatal mortality from tetanus.	**Recommended**

C. Preventive measures - 2

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.	**Context-specific recommendation**
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.	**Context-specific recommendation**

D. Common physiological symptoms

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**
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**
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**
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**
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**
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**

E. Health systems interventions to improve the utilization and quality of ANC – 1

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**
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**
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)**

E. Health systems interventions to improve the utilization and quality of ANC – 2

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. 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**

E. Health systems interventions to improve the utilization and quality of ANC – 3

E.5.1: **Task shifting the promotion of health-related behaviours** for maternal and newborn health 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 preventative treatment in pregnancy (IPTp) for malaria prevention** to a broad range of cadres, including auxiliary nurses, nurses, midwives and doctors is recommended.	**Recommended**
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**

E. Health systems interventions to improve the utilization and quality of ANC – 4

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**

WHAT'S NEW?

MALARIA IN THE CONTEXT OF ANC

ANC models with a minimum of 8 contacts

WHO FANC model	2016 WHO ANC model
First trimester	
Visit 1: 8–12 weeks	Contact 1: up to 12 weeks
Second trimester	
Visit 2: 24–26 weeks	Contact 2: 20 weeks Contact 3: 26 weeks
Third trimester	
Visit 3: 32 weeks Visit 4: 36–38 weeks	Contact 4: 30 weeks Contact 5: 34 weeks Contact 6: 36 weeks Contact 7: 38 weeks Contact 8: 40 weeks
Return for delivery at 41 weeks if not given birth.	

- E.7: Antenatal care models with a minimum of eight contacts are recommended to reduce perinatal mortality and improve women's experience of care.

Contact versus visit

- The guideline uses the term '**contact**' - it implies an active connection between a pregnant woman and a health care provider that is not implicit with the word 'visit'.
  - **quality** care including medical care, support and timely and relevant information

- In terms of the operationalization of this recommendation, 'contact' can take place at the facility or at community level
  - be adapted to local context through health facilities or community outreach services

- 'Contact' helps to facilitate context-specific recommendations
  - Interventions (such as malaria, tuberculosis)
  - Health system (such as task shifting)

ANC model – positive pregnancy experience

Overarching aim

To provide pregnant women with *respectful, individualized, person-centred care* at every contact, with implementation of effective **clinical practices** (interventions and tests), and provision of relevant and timely **information**, and psychosocial and emotional **support**, by *practitioners with good clinical and interpersonal skills* within a **well functioning health system.**

Effective implementation of ANC requires

- Health systems approach and strengthening
  - Continuity of care
  - Integrated service delivery
  - Improved communication with, and support for women
  - Availability of supplies and commodities
  - Empowered health care providers
    - Recruitment and retention of staff in rural and remote areas
    - Capacity building

C.6: Intermittent preventive treatment of malaria in pregnancy (IPTp)

RECOMMENDATION 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. *(Context-specific recommendation)*

Remarks

- This recommendation has been integrated from the WHO *Guidelines for the treatment of malaria* (2015), where it is considered to be a strong recommendation based on high-quality evidence *(153)*.
- Malaria infection during pregnancy is a major public health problem, with substantial risks for the mother, her fetus and the newborn. WHO recommends a package of interventions for preventing and controlling malaria during pregnancy, which includes promotion and use of insecticide-treated nets, appropriate case management with prompt, effective treatment, and, in areas with moderate to high transmission of *Plasmodium falciparum*, administration of IPTp-SP *(153)*.
- The high-quality evidence supporting this recommendation was derived from a systematic review of seven RCTs conducted in malaria-endemic countries, which shows that three or more doses of sulfadoxine-pyrimethamine (SP) is associated with reduced maternal parasitaemia, fewer low-birth-weight infants and increased mean birth weight compared with two doses only *(154)*.
- The malaria GDG noted that most evidence was derived from women in their first and second pregnancies; however, the limited evidence on IPTp-SP from women in their third and subsequent pregnancies was consistent with benefit *(153)*.
- 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. Policy-makers could also consider supplying women with their first SP dose at the first ANC visit with instructions about the date (corresponding to 13 weeks of gestation) on which the medicine should be taken.
- SP acts by interfering with folic acid synthesis in the malaria parasite, thereby inhibiting its life-cycle. There is some evidence that high doses of supplemented folic acid (i.e. 5 mg daily or more) may interfere with the efficacy of SP in pregnancy *(155)*. Countries should ensure that they procure and distribute folic acid supplements for antenatal use at the recommended antenatal dosage (i.e. 0.4 mg daily).
- The malaria GDG noted that there is insufficient evidence on the safety, efficacy and pharmacokinetics of most antimalarial agents in pregnancy, particularly during the first trimester *(153)*.
- Detailed evidence and guidance related to the recommendation can be found in the 2015 guidelines *(153)*, available at: http://www.who.int/malaria/publications/atoz/9789241549127/en/

Implementing Malaria in Pregnancy Programs in the Context of World Health Organization Recommendations on Antenatal Care for a Positive Pregnancy Experience

Topics highlighted

- Training of IPTp-SP
- 2016 ANC model contact schedule with timelines for implementation of Mip interventions
- Frequency of IPTp-SP
- Sourcing of quality assured SP
- ITN use
- Effective case management
- Women living with HIV
- Iron and folic acid supplementation

Dissemination, implementation, research

- Development of tools to support adaptation and implementation at the country level
- Development of indicators
- Implementation research/design of ANC in countries
- Living guideline/online

- **Regional workshops**
  - 17 November 2016: West & Central Africa (Burkina Faso)
  - 27-28 April 2017: Eastern Europe & Central Asia (Georgia)
  - 28-30 June 2017: South and East Africa (Rwanda)
  - January 2018: SEARO (planned)
- Translation of the guideline (Russian, French ongoing)

Relevant links – 1

About the guidelines:

www.who.int/reproductivehealth/news/antenatal-care/en/index.html

South Africa story from the field:

www.who.int/reproductivehealth/news/antenatal-care-south-africa/en/index.html

The guideline

www.who.int/reproductivehealth/publications/maternal_perinatal_health/anc-positive-pregnancy-experience/en/

Press release

www.who.int/entity/mediacentre/news/releases/2016/antenatal-care-guidelines/en/index.html

New guidelines on antenatal care for a positive pregnancy experience

7 NOVEMBER 2016 | GENEVA – The World Health Organization has issued a new series of recommendations to improve quality of antenatal care to reduce the risk of stillbirths and pregnancy complications and give women a positive pregnancy experience. By focusing on a positive pregnancy experience, these new guidelines seek to ensure not only a health pregnancy for mother and baby, but also an effective transition to positive labour and childbirth and ultimately to a positive experience of motherhood.

A community health worker checks a pregnant woman's health condition at her home,

Sexual and reproductive health

Decreasing deaths during pregnancy in South Africa by improving antenatal care

When Nokuthula discovered that she was pregnant with her second child she was excited but also worried. Her first child was stillborn. That first delivery was a traumatic experience and she still did not understand what happened, as her baby was still alive when she attended the clinic four weeks earlier. Her blood pressure was very high during the delivery and she had to stay in hospital for 6 days. Nokuthula was therefore afraid to go to the antenatal clinic initially as she was worried that her baby may die again. She is HIV positive but has been taking her medication regularly since the last delivery. She eventually attended the antenatal clinic and was found to be 14

Relevant links – 2

Infographics

www.who.int/reproductivehealth/publications/maternal_perinatal_health/ANC_infographics/en/index.html

Many thanks to…

- **WHO Steering Group**
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"To achieve the Every Woman Every Child vision and the Global Strategy for Women's Children's and Adolescents' Health, we need innovative, evidence-based approaches to antenatal care. I welcome these guidelines, which aim to put women at the centre of care, enhancing their experience of pregnancy and ensuring that babies have the best possible start in life."

Ban Ki-moon, UN Secretary-General

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