30 June 2014, Washington DC

WHO Antenatal Care Guidelines: Background and Approach

A. Metin Gülmezoglu, MD PhD, Özge Tunçalp, MD PhD

Department of Reproductive Health and Research

World Health Organization

hrp UNDP · UNFPA · UNICEF · WHO · World Bank
Special Programme of Research, Development and Research Training in Human Reproduction

Antenatal Care

- Continuum of quality care

- Antenatal period:
  - Health promotion
  - Disease prevention
  - Early detection and treatment for complications
  - Birth preparedness
  - Complication readiness

WHO ANC Model – 1

- Specific evidence-based interventions for all women
- Carried out at four critical times
- Focused Antenatal Care Model (FANC)

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

Background There is a lack of strong evidence on the effectiveness of the content, frequency, and timing of visits in standard antenatal-care programmes. We undertook a systematic review of randomised trials assessing the effectiveness of different models of antenatal care. The main hypothesis was that a model with a lower number of antenatal visits, with or without goal-oriented components, would be as effective as the standard antenatal-care model in terms of clinical outcomes, perceived satisfaction, and costs.

Methods The interventions compared were the provision of a lower number of antenatal visits (new model) and a standard antenatal-visits programme. The selected outcomes were pre-eclampsia, urinary-tract infection, postpartum anaemia, maternal mortality, low birthweight, and perinatal mortality. We also selected measures of women's satisfaction with care and cost-effectiveness. This review drew on the search strategy developed for the Cochrane Pregnancy and Childbirth Group of the Cochrane Collaboration.

Findings Seven eligible randomised controlled trials were identified. 57 418 women participated in these studies: 30 799 in the new-model groups (2
and 26 619 in the standard-mo
outcome data). There was no clinica
reduced number of antenatal visi
pooled for pre-eclampsia (typical
0·66–1·26]), urinary-tract infect
postpartum anaemia (1·01), n
[0·55–1·51]), or low birthweight (1·
of perinatal mortality were similar,
outcome did not allow formal sta
attained. Some dissatisfaction wit
women in more developed countri
new model. The cost of the new m
than that of the standard model.

Interpretation A model with a red
visits, with or without goal-orient
introduced into clinical practice with
but some degree of dissatisfactio
expected. Lower costs can be achie

Lancet 2001; **357:** 1565–70
See Commentary page

Introduction

There is a lack of strong evidence that the content, frequency, and timing of visits in currently recommended "western" programmes for routine antenatal care are effective. Observational studies have consistently shown that groups having more antenatal-care visits have lower maternal, fetal, and neonatal morbidity and mortality than those who have fewer antenatal-care visits. Conversely, randomised comparative trials of differing numbers of visits, reported in the past few years, suggest that a model with a lower number of visits is at least as effective as the standard model. We undertook a systematic review to answer the question of whether a model with a lower number of antenatal visits, with or without goal-oriented components, is at least as effective in clinical terms, satisfaction perceived by women, and costs as the standard model.

Methods

We considered for this review any randomised controlled trial that compared a model of a lower number of antenatal visits with the standard model. The participants in these trials were pregnant women attending antenatal care. We classified as "goal oriented" models in which the

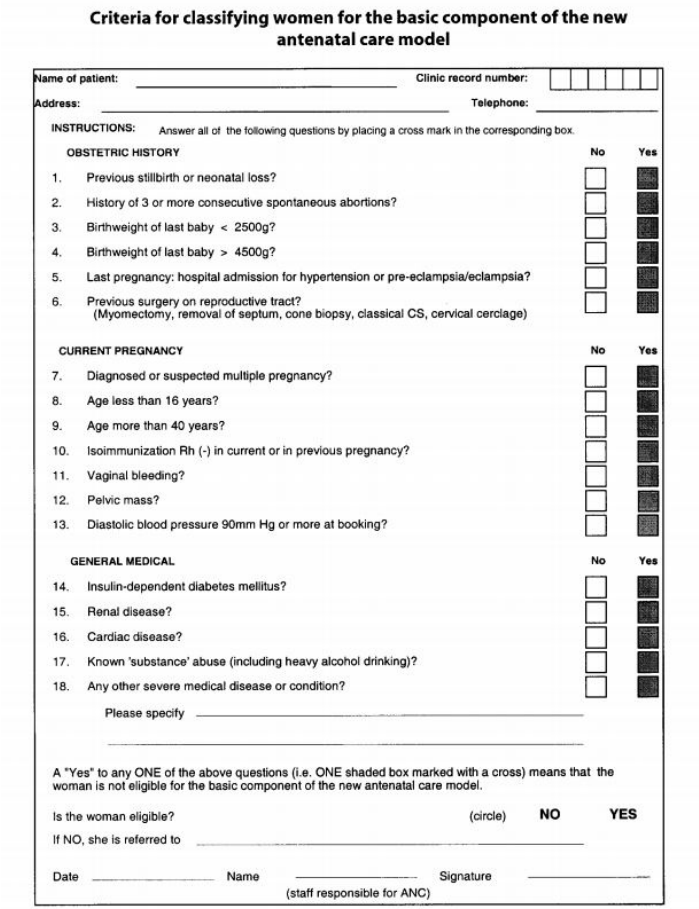
WHO PROGRAMME TO MAP BEST REPRODUCTIVE HEALTH PRACTICES

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

World Health Organization hrp

WHO ANC Model – 2

- Two groups of women
  - Basic component: routine ANC
    - Intended for women who do not have evidence of complications/risk factors.
  - Special care: Women who need additional assessment/care etc.
    - The assumption: 25% of the women – special care
    - Follow specific guidelines



Criteria for classifying women for the basic component of the new antenatal care model

Name of patient: _____ Clinic record number: _____

Address: _____ Telephone: _____

INSTRUCTIONS: Answer all of the following questions by placing a cross mark in the corresponding box.

OBSTETRIC HISTORY	No	Yes
1. Previous stillbirth or neonatal loss?	☐	■
2. History of 3 or more consecutive spontaneous abortions?	☐	■
3. Birthweight of last baby < 2500g?	☐	■
4. Birthweight of last baby > 4500g?	☐	■
5. Last pregnancy: hospital admission for hypertension or pre-eclampsia/eclampsia?	☐	■
6. Previous surgery on reproductive tract? (Myomectomy, removal of septum, cone biopsy, classical CS, cervical cerclage)	☐	■

CURRENT PREGNANCY	No	Yes
7. Diagnosed or suspected multiple pregnancy?	☐	■
8. Age less than 16 years?	☐	■
9. Age more than 40 years?	☐	■
10. Isoimmunization Rh (-) in current or in previous pregnancy?	☐	■
11. Vaginal bleeding?	☐	■
12. Pelvic mass?	☐	■
13. Diastolic blood pressure 90mm Hg or more at booking?	☐	■

GENERAL MEDICAL	No	Yes
14. Insulin-dependent diabetes mellitus?	☐	■
15. Renal disease?	☐	■
16. Cardiac disease?	☐	■
17. Known 'substance' abuse (including heavy alcohol drinking)?	☐	■
18. Any other severe medical disease or condition?	☐	■

Please specify _____

A "Yes" to any ONE of the above questions (i.e. ONE shaded box marked with a cross) means that the woman is not eligible for the basic component of the new antenatal care model.

Is the woman eligible? (circle) **NO** **YES**

If NO, she is referred to _____

Date _____ Name _____ Signature _____

(staff responsible for ANC)

WHO ANC Model – 3

- Critical times:
  - 8-12 weeks
  - 24-26 weeks
  - 32 weeks
  - 36-38 weeks
- Goals and activities:
  - History
  - Examination
  - Screening and tests
  - Treatments
  - Preventive measures
  - Health promotion/counselling

Goals

	First visit 8-12 weeks	Second visit 24-26 weeks	Third visit 32 weeks	Fourth visit 36-38 weeks
	Confirm pregnancy and EDD, classify women for basic ANC (four visits) or more specialized care. Screen, treat and give preventive measures. Develop a birth and emergency plan. Advise and counsel.	Assess maternal and fetal well-being. Exclude PIH and anaemia. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.	Assess maternal and fetal well-being. Exclude PIH, anaemia, multiple pregnancies. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.	Assess maternal and fetal well-being. Exclude PIH, anaemia, multiple pregnancy, malpresentation. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.

Activities

Rapid assessment and management for emergency signs, give appropriate treatment, and refer to hospital if needed

History (ask, check records)	Assess significant symptoms. Take psychosocial, medical and obstetric history. Confirm pregnancy and calculate EDD. Classify all women (in some cases after test results)	Assess significant symptoms. Check record for previous complications and treatments during the pregnancy. Re-classification if needed	Assess significant symptoms. Check record for previous complications and treatments during the pregnancy. Re-classification if needed	Assess significant symptoms. Check record for previous complications and treatments during the pregnancy. Re-classification if needed
Examination (look, listen, feel)	Complete general, and obstetrical examination, BP	Anaemia, BP, fetal growth, and movements	Anaemia, BP, fetal growth, multiple pregnancy	Anaemia, BP, fetal growth and movements, multiple pregnancy, malpresentation
Screening and tests	Haemoglobin Syphilis HIV Proteinuria Blood/Rh group* Bacteriuria*	Bacteriuria*	Bacteriuria*	Bacteriuria*
Treatments	Syphilis ARV if eligible Treat bacteriuria if indicated*	Antihelminthic**, ARV if eligible Treat bacteriuria if indicated*	ARV if eligible Treat bacteriuria if indicated*	ARV if eligible If breech, ECV or referral for ECV Treat bacteriuria if indicated*
Preventive measures	Tetanus toxoid Iron and folate+	Tetanus toxoid, Iron and folate IPTp ARV	Iron and folate IPTp ARV	Iron and folate ARV
Health education, advice, and counselling	Self-care, alcohol and tobacco use, nutrition, safe sex, rest, sleeping under ITN, birth and emergency plan	Birth and emergency plan, reinforcement of previous advice	Birth and emergency plan, infant feeding, postpartum/postnatal care, pregnancy spacing, reinforcement of previous advice	Birth and emergency plan, infant feeding, postpartum/postnatal care, pregnancy spacing, reinforcement of previous advice

Record all findings on a home-based record and/or an ANC record and plan for follow-up

Acronyms: (EDD=estimated date of delivery; BP=blood pressure; PIH=pregnancy induced hypertension; ARV=antiretroviral drugs for HIV/AIDS; ECV= external cephalic version; IPTp=intermittent preventive treatment for malaria during pregnancy; ITN=insecticide treated bednet)

*Additional intervention for use in referral centres but not recommended as routine for resource-limited settings

** Should not be given in first trimester, but if first visit occurs after 16 weeks, it can be given at first visit

+Should also be prescribed as treatment if anaemia is diagnosed

WHO ANC Model – 4

- Rwanda
- Kenya
- Mozambique
- Madagascar
- Ethiopia
- Uganda
- Thailand
- Philippines
- Cambodia
- China
- Papua New Guinea
- Afghanistan
- Djibouti
- Egypt
- Iraq
- Morocco
- Pakistan
- Somalia
- Sudan
- Yemen
- Armenia
- Kyrgyzstan

WHO ANC Model – 5

- Updated Cochrane review and secondary analysis of the WHO trial suggest fewer visits may be associated with increased fetal death

- Actual content of and the demand for antenatal care is at best variable in different settings
  - DHS analysis (41 countries): Quality coverage gaps for recommended elements of care for most countries, with the exception of BP measurement

Hodgins S, D'Agostino A. The quality-coverage gap in antenatal care: toward better measurement of effective coverage. Glob Health Sci Pract. First published online April 8, 2014.

New WHO ANC Guidelines

- To capture and examine the complex nature of the issues surrounding the ANC period within the context of health systems and continuum of care
- Technical Working Group
  - Work as part of "Adding content to contact (ACC)"
    - barriers to antenatal care and implications for care delivery, experiences with implementation of care
    - integration of antenatal care with other health services (HIV, malaria, syphilis programs, etc)
  - Technical Working Group Meeting (22-23 April)

Purpose of ANC

- **Individual versus public health imperatives**
  - **Why** women attend / do not attend ANC?
  - ANC as means of **reducing adverse outcomes**

Overarching Questions

- **What** are the evidence-based practices during ANC period for improving outcomes?

- **How** should these practices be delivered to improve outcomes?

Focus

- Essential core package of ANC that all women should receive

- With the flexibility to employ different options based on the context of the individual country
  - 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?

Work Streams

- Individual Interventions
- Antenatal testing
- Barriers and facilitators to access to and provision of care
- Large-scale programme evaluation
- Health system and community level interventions
- Modeling

Approach – 1

- DECIDE Framework
  - **D**eveloping and **E**valuating **C**ommunication strategies to support **I**nformed **D**ecisions and practice based on **E**vidence
  - 5 year EU project that aims to support evidence based decision making
  - To help decision makers consider a range of relevant criteria when making decisions, including:

Resource use

Benefits + harms

Equity

Feasibility

Acceptability

Approach – 2

	Work Streams	Methodology
1	**Individual Interventions**	• Effectiveness reviews • Systematic reviews • Diagnostic accuracy • Economic Evaluations ➢ GRADE – tool to assess certainty of evidence on effect
2	**Antenatal Testing**	

Approach – 3

	Work Streams	Methodology
3	**Barriers and facilitators to access to and provision of care**	• Meta-synthesis of qualitative studies • Women • Providers ➢ CERQual – newly developed tool to assess confidence in findings across qualitative studies

Approach – 4

	Work Streams	Methodology
4	**Programmes**	• Analysis of selected large-scale country ANC programmes • Contextual and health system factors affecting the implementation • Mixed methods ➢ SURE Framework: factors affecting the implementation of health interventions

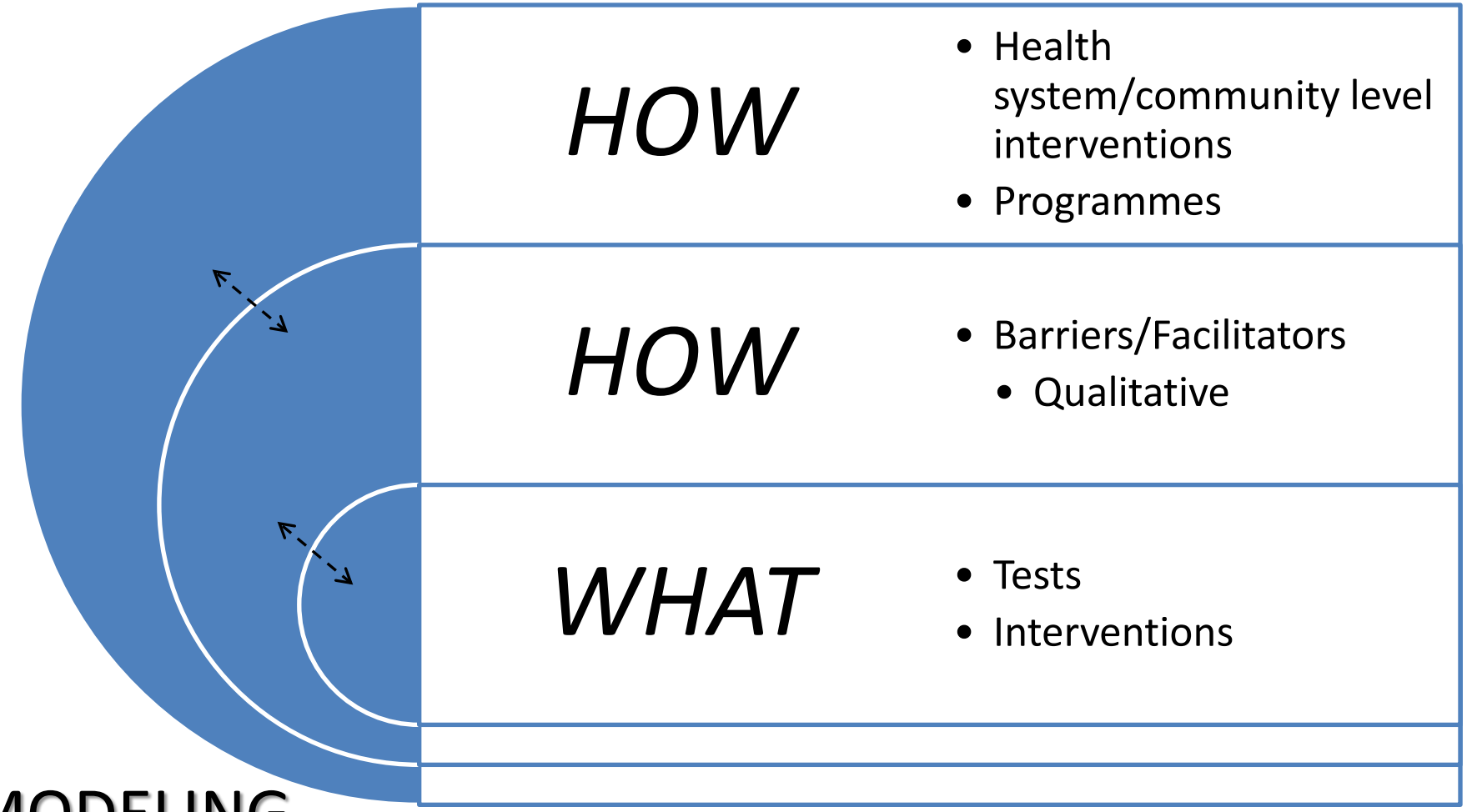
Approach – 5

	Work Streams	Methodology
5	**Health system level interventions**	• Interventions to improve access to and provision of ANC services o Reorganization of health services (i.e., integration) o Financial incentives o Health worker focused interventions • Systematic reviews

Approach – 6

	Work Streams	Methodology
6	**Modeling**	• Systems dynamics simulation model • Inform and facilitate the recommendations related to the models of antenatal care in terms of optimization of the set of practices and the timing of delivery of these services. • Provide flexibility to incorporate contextual factors

Different Dimensions – What and How



MODELING

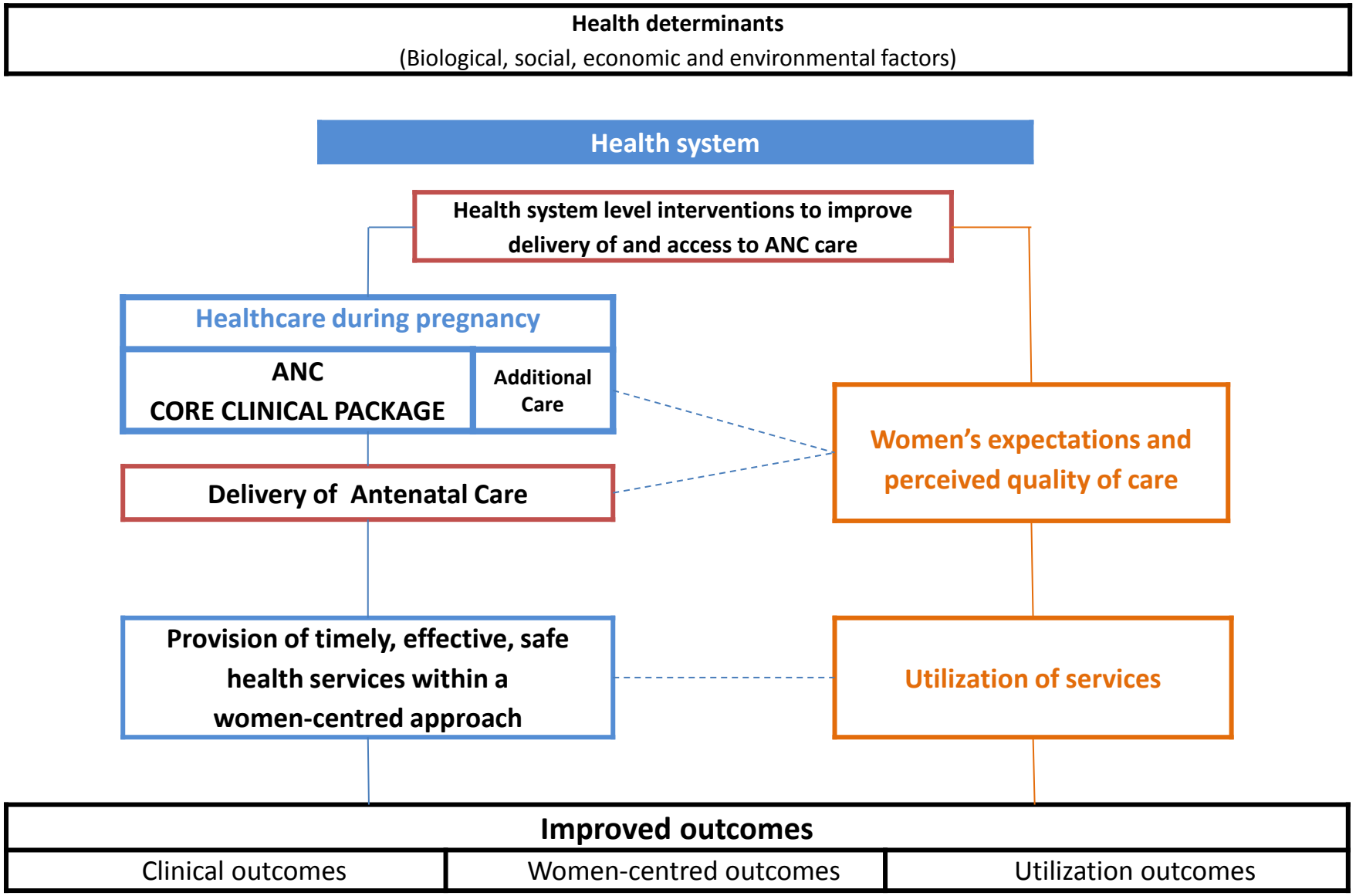
Critical Outcomes

MATERNAL
Infections
Anemia
Preeclampsia/Eclampsia
Gestational DM
Hypothyroidism

FETAL/NEONATAL
Neonatal Infections
Small for gestational age
Preterm birth
Low birth weight
Congenital anomalies

MATERNAL Morbidity and Mortality
FETAL/NEONATAL Morbidity and Mortality

- Clinical end-points
- Lack of women-centred outcomes


Health determinants
(Biological, social, economic and environmental factors)
Health system
Health system level interventions to improve delivery of and access to ANC care
Healthcare during pregnancy
ANC
CORE CLINICAL PACKAGE
Additional Care
Delivery of Antenatal Care
Provision of timely, effective, safe health services within a women-centred approach
Women's expectations and perceived quality of care
Utilization of services
Improved outcomes
Clinical outcomes
Women-centred outcomes
Utilization outcomes

Thank you!

- USAID
- Adding Content to Contact Project
  - Maternal Health Task Force, Harvard School of Public Health
  - Integrare ICS

WHO ANC Technical Working Group:

Edgardo Abalos,
Rifat Atun,
Chompilas Chongsomchai,
Virginia Diaz,
Soo Downe,
Kenny Finlayson,
Claire Glenton,
Ipek Gurol-Urganci,
Sonja Henderson,
Frances Kellie,
Khalid Khan,
Simon Lewin,
Pisake Lumbiganon,
Ewelina Rogozinska,
Inger Scheel,
Marita Sporstol,
Matthews Mathai,
Özge Tunçalp,
A. Metin Gülmezoglu