

# Maternal Healthcare



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Mutah University 2025

**RECAP**

# Components of Maternal care



Antenatal  
care services



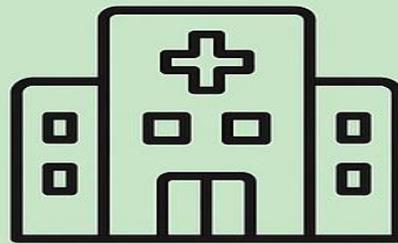
Delivery  
care services



Postnatal  
care services



**ANC**



**Intrapartum**



**PNC**

# Antenatal Care

ANC is Essential



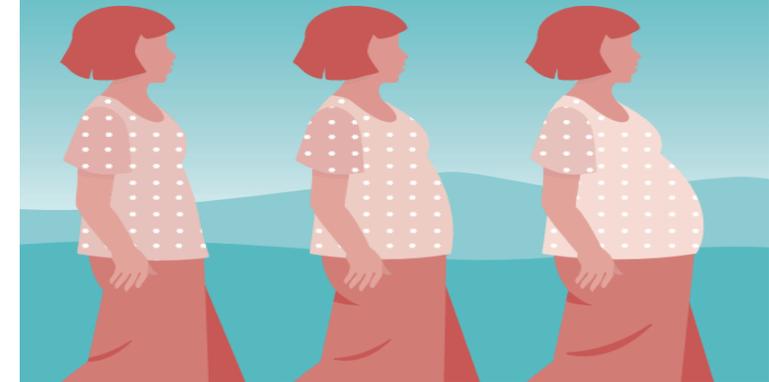
## Antenatal care (ANC)

ANC is the care provided by skilled health-care professionals to ensure the best health conditions for both mother and baby during pregnancy.

- ❑ To identify high risk mothers .
- ❑ To reduce complications, stillbirths and perinatal deaths.
- ❑ To prepare for childbirth and motherhood.

❑ Integrated care delivery throughout pregnancy

WHO recommendations on antenatal care for a positive pregnancy experience



Pregnancy is a normal life event

# Antenatal Care



Women want a  
**Positive  
Pregnancy  
Experience**  
from ANC

## **PPE means:**

- ✓ A **healthy pregnancy** for both mother and baby (preventing or treating risks and illness).
- ✓ **Normal physical and social well-being** during pregnancy.
- ✓ A **smooth and positive transition** to labour and birth.
- ✓ A **confident and supported motherhood**, enhancing self-esteem and autonomy.

**Key components:** Medical care • Information • Emotional support and advice

# Antenatal Care



ARTICLES

## WHO systematic review of randomised controlled trials of routine antenatal care

Guillermo Carroll, José Villar, Gilda Piaggio, Dina Khan-Neelofur, Metin Gülmezoglu, Miranda Mugford, Pisake Lumbiganon, Ubaldino Farnot, Per Bergsjö, 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

### 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

ARTICLES

### Articles

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

José Villar, Hassan Ba'aqel, Gilda Piaggio, Pisake Lumbiganon, José Miguel Bellizán, Ubaldino Farnot, Yagob Al-Mazrou, Guillermo Carroll, Alain Pinal, Allan Donner, Ana Langer, Gustavo Nigenda, Miranda Mugford, Julia Fox-Rushby, Guy Hutton, Per Bergsjö, Leiv Bakkesteig, 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

**Findings** Women attending clinics assigned the new model (n=22 568) 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

➤ **Old model (1990s –FANC)**  
**Four Focused Antenatal Care** visits at critical times. Aimed to provide essential interventions efficiently.

➤ **New model (WHO's 2016 Antenatal Care):**

Evidence showed higher perinatal mortality with only four visits.

More frequent contact improves maternal satisfaction and health outcomes.

**WHO now recommends a minimum of eight ANC contacts.**

From 4 visits → to 8 contacts — towards a *Positive Pregnancy Experience* (WHO, 2016)

## WHO PROGRAMME TO MAP BEST REPRODUCTIVE HEALTH PRACTICES



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

# Antenatal Care



## 2016 WHO ANC model



WHO FANC model	2016 WHO ANC model
<i>First trimester</i>	
Visit 1: 8-12 weeks	Contact 1: up to 12 weeks
<i>Second trimester</i>	
Visit 2: 24-26 weeks	Contact 2: 20 weeks Contact 3: 26 weeks
<i>Third trimester</i>	
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

If no spontaneous labor by 41 weeks → assess for induction



# Antenatal Care should be:

- Person-centred health care: responds to women's preferences, needs, and values.
- Adaptable and flexible: the recommendations can be adopted to each country's situation (disease burden, social and economic, and health-system structure).

*This to ensure that every woman, everywhere 🌍, can receive quality ANC appropriate to her circumstances*



## WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience (2016 global recommendations)

### Care during First ANC Contact (up to 12 weeks):-

- 1. Early registration and comprehensive assessment:** within the first 12 weeks:
  - Health history (obstetric & medical)
  - Physical and general examination
  - Laboratory tests (blood, urine)
- 2. Immunization:** tetanus toxoid as per schedule, Other vaccines (e.g., influenza, hepatitis B, pertussis) may be offered based on country.
- 3. Health education:** Healthy diet and nutrition+ encourage physical activity and self-care during pregnancy.



## WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience (2016 global recommendations)

### 4. Supplements:

For all pregnant women:

- **Daily 30–60 mg elemental iron** : prevents maternal anemia and low birth weight.
- **Daily Folic acid (400 µg)**: prevents neural tube defects NTD and supports anemia prevention.
- **Folic acid** should start **before conception** and continue throughout pregnancy
- **Iron** should start **once pregnancy is confirmed** and continue daily until delivery.





## WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience (2016 global recommendations)

### 5. Lifestyle Counselling during ANC:

- ✓ **Smoking & Alcohol:** avoid both — increase risk of IUGR, stillbirth. Ask about tobacco use (past and present) and exposure to second-hand smoke as early as possible in pregnancy and at every ANC visit.
- ✓ **Caffeine:** limit intake to < 300 mg /day.
- ✓ **Medications:** take only drugs prescribed by a qualified provider.





## WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience (2016 global recommendations)

### 6. Environmental & Infection Protection:

- ✓ **Radiation:** Avoid X-rays (especially abdominal) unless essential.
- ✓ **Protect from infections:** measles, varicella, rubella German Measles), syphilis, Group B Streptococcus (GBS): can cause spontaneous miscarriages, malformation or birth defects.

Table 2. Radiation and the fetus.

Radiation hazard	Dose
Permanent sterility (adult)	5 Gy
Embryonic death	100–500 mGy
Maximum permitted dose for the fetus of a pregnant worker	0.5 mSv/month (50 mrem)
Total gestational dose equivalent	5 mSv (500 mrem)
Risk of a congenital malformation/developing malignancy after irradiation <i>in utero</i>	120 (0.024% risk) to 1 rem (0.2% risk)

*Adapted with permission from [52].*



## WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience (2016 global recommendations)

### 7. Reporting alarming sign and symptoms:

#### When to seek immediate help

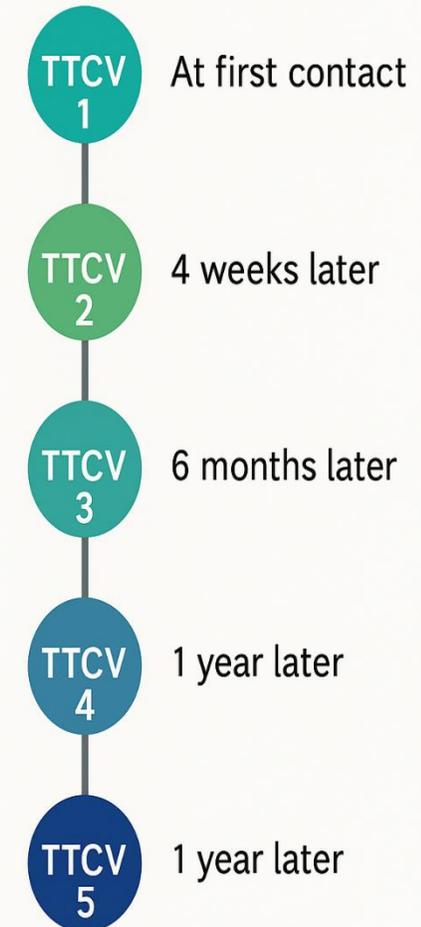
- ✓ Unusual pain or bleeding
- ✓ Swelling of hands/face
- ✓ Severe headache or blurred vision
- ✓ High fever
- ✓ Decreased fetal movement





## Tetanus Toxoid Vaccination (WHO 2016)

- Recommended for all pregnant women to prevent neonatal tetanus.
- If unvaccinated or status unknown → give 2 doses of tetanus toxoid-containing vaccine (TTCV) 4 weeks apart (protection for 1–3 years).
- Third dose: given 6 months after the second dose → extends protection to 5 years.
- Two additional doses should be administered in the two subsequent years or during two subsequent pregnancies to complete the full 5-dose schedule.
- If a woman has received 1–4 previous TTCV doses, give one booster dose in each subsequent pregnancy until a total of 5 doses is reached.
- Five doses → protection throughout all childbearing years.





## for women of childbearing age

Dose	When to give	Expected duration of protection
TT 1	at first contact or as early as possible in pregnancy	none
TT 2	at least 4 weeks after TT 1	1 - 3 years
TT 3	at least 6 months after TT 2	5 years
TT 4	at least one year after TT 3 or during subsequent pregnancy	10 years
TT 5	at least one year after TT 4 or during subsequent pregnancy	All childbearing years

## Anemia in pregnancy:



- **Haemoglobin (Hb) < 110 g/L (11 g/dL)**
- **Main causes:**
- **↑ Iron requirements:** due to expanded maternal blood volume and fetal growth.
- **low iron intake:** Poor diet or Vegetarian/vegan diet (non-heme iron less absorbed) or low absorption (PICA, excessive vomiting, celiac disease, IBD).
- **Short birth intervals:** insufficient time to restore iron stores.
- **Previous anemia or blood loss:** depletes iron stores.





## Complications of severe anemia:

### Maternal complications :

1. Fatigue and weakness
2. Cardiac failure (The heart has to work harder to compensate for the reduced oxygen-carrying capacity of the blood)
3. ↑ Risk of ante-/post-partum haemorrhage
4. ↓ Immunity → ↑ Infection risk

### Fetus / newborn complications:

1. Preterm birth, low birth weight, IUGR
2. Stillbirth
3. ↑ Perinatal mortality

#### Types of IUGR Cases



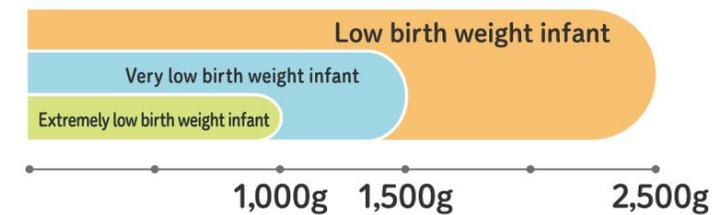
Appropriately Grown

Symmetric IUGR

Asymmetric IUGR

Symmetric (or primary): Each fetal body part is tiny in size. This accounts for up to 30% of all IUGR patients.  
Asymmetric (or secondary): Only the fetus's abdomen measures small. The head and brain have the proper sizes. This represents up to 80% of all IUGR cases.

#### Classification by birth weight



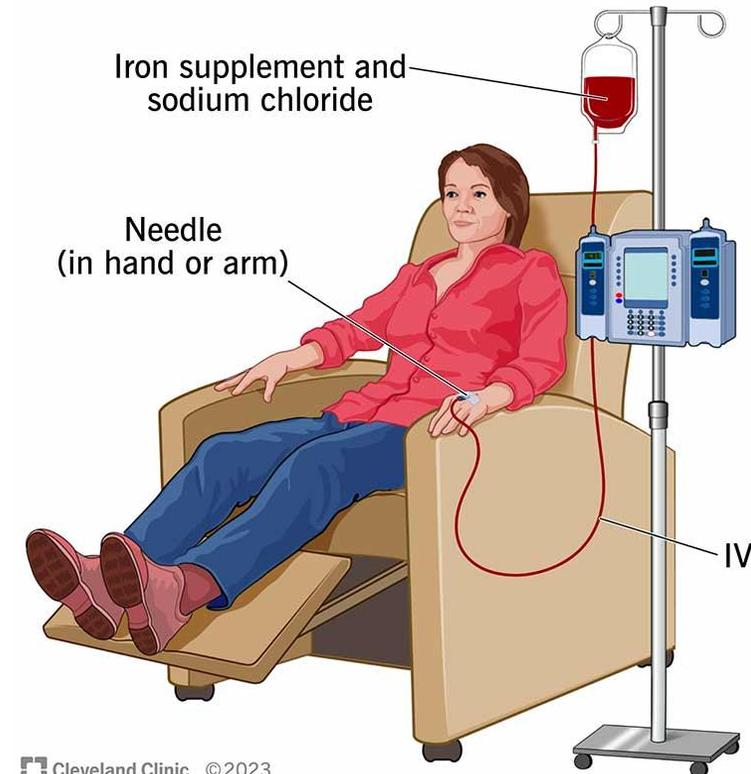
## Management of Iron-Deficiency Anemia

- Screen: Hb at booking and 28 weeks.
- Diet: advise on iron-rich foods and absorption enhancers (vitamin C).
- Supplement: All women → 30–60 mg iron daily.  
**IDA cases → 100–200 mg iron daily.**
- *Refer: if Hb < 7 g/dL, > 34 weeks, or poor response to oral iron.*
- Continue: for ≥ 3 months after Hb normalization and ≥ 6 weeks postpartum to refill iron stores.



### Iron infusion

*Intravenous iron supplementation*



### Ultrasound scan during pregnancy

- One ultrasound (U/S) scan **before 24 weeks' gestation (early ultrasound)** is recommended for all pregnant women to:
  - ❖ estimate gestational age
  - ❖ detect fetal anomalies & multiple pregnancies
  - ❖ improve a woman's pregnancy experience
- **Late ultrasound scans** (after 24 weeks) are not recommended as a routine component of antenatal care. Performed **when specific indications are present.**





## Intrapartum (delivery) care for a positive childbirth experience

- **1. Respectful maternity care** – maintains their dignity, privacy & confidentiality, ensures freedom from harm & mistreatment, & enables informed choice & continuous support during labour & childbirth.
- **2. Effective communication** between maternity staff & women in labour. (simple & culturally acceptable methods).
- **3. A companion of choice** is recommended throughout labour and childbirth.
- **4. Pain relief strategies:** depending on a woman's preferences
- **5. Encouraging the adoption of mobility & an upright position during labour in women at low risk.**

ALL WOMEN HAVE A RIGHT TO A POSITIVE  
CHILDBIRTH EXPERIENCE THAT INCLUDES:

- Respect and dignity
- A companion of choice
- Clear communication by maternity staff
- Pain relief strategies
- Mobility in labour and birth position of choice



World Health  
Organization



Water  
Birth

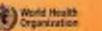


Mobility in labour and upright  
positions can reduce pain and  
support a healthy delivery.



Trusted midwives can  
help you find positions  
that work for you during  
labour and birth.

Invest in midwifery care



World Health  
Organization



## Post-Natal Care (PNC)



- The *postnatal period* is the **first 6 weeks (42 days) after birth** — a critical phase for both the mother and newborn.
- Many maternal and newborn deaths occur during this time, especially **in the first week.**



# Schedule of PNC Visits (WHO 2018)

- Focuses on **monitoring recovery and early detection of complications** after birth.
- Aims to **protect the mother, support breastfeeding, promote family planning, and ensure newborn well-being.**
- After an uncomplicated vaginal birth in a health facility, healthy mothers & newborns should stay for at least 24 hours after birth.
- **Day 1: within 24 hours of birth.**
- **Day 3: (48–72 hours).**
- **Between days 7–14.**
- **At 6 weeks after birth.**

👉 Extra visits if complications (e.g., LBW, infection, HIV).

## Mother Care During PNC

- **Monitor:** bleeding, temperature, general condition.
- **Support breastfeeding:** teach proper technique, watch for mastitis.
- **Treat anemia if present.**
- **Tetanus booster if needed.**
- **Ask about mood changes or mild or transient postpartum depression (“baby blues”)** At 10–14 days after birth.



Early days of mastitis. Warm, hard, red, splotchy streaks.



Getting worse. Warm, hard, red, and swollen.

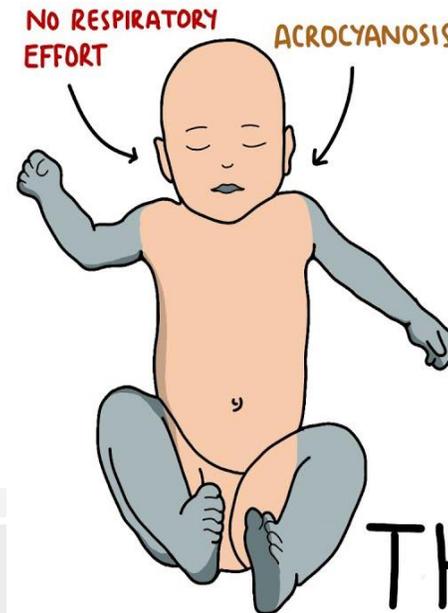
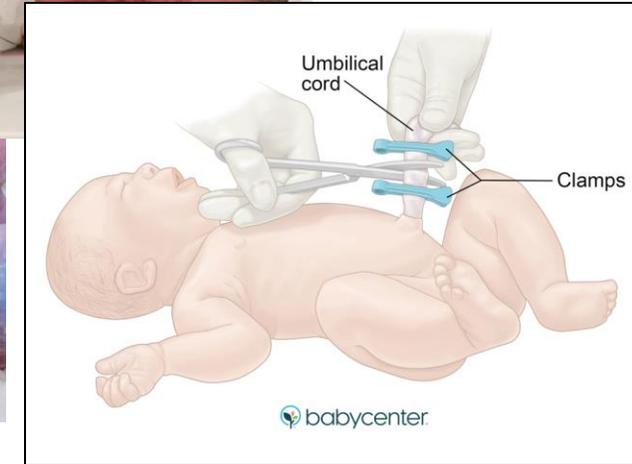


Even worse. An abscess has formed a lump which is protruding from the already swollen breast tissue in upper middle section of the photo.



## Newborn Care During PNC

- Ensure breathing and Apgar score assessment at 1 & 5 minutes.
- Keep the baby warm: dry, wrap, skin-to-skin contact within the first hour to support warmth and breastfeeding.
- Breastfeed within the first hour.
- Delay cord clamping 1–3 min (unless resuscitation needed).
- Vitamin K & Hepatitis B vaccine within 24 hours.
- Preserve the vernix on the baby's skin for at least 6 hours, ideally up to 24 hours, to protect the skin.



CRITERIA	0	1	2
<u>A</u> PPEARANCE (SKIN COLOUR)	BLUE / PALE	BLUE EXTREMITIES (ACROCYANOSIS)	NO CYANOSIS
<u>P</u> ULSE RATE	<60	60-100	>100
<u>G</u> RIMACE	NO RESPONSE	AGGRESSIVE STIMULATION FOR CRY	CRIES ON STIMULATION
<u>A</u> CTIVITY (TONE)	ABSENT / FLOPPY	SOME FLEXION	FLEXES + RESISTS EXTENSION
<u>R</u> ESPIRATORY EFFORT	ABSENT	WEAK / GASPING	STRONG CRY

# THE APGAR SCORE



# In Jordan, (Population and Family Health Survey 2023)



- **Antenatal Care (ANC):** 97% of women aged 15–49 who had a live birth in the last two years received care from a skilled provider (doctor, nurse, or midwife), with 64% completing eight or more ANC visits
- **Tetanus Protection:** Only 18% of women had their most recent birth protected against neonatal tetanus
- **Delivery Care :** 99% of live births were delivered in a health facility
- **Postnatal Care:** 83% of mothers and 87% of newborns received a postnatal check within the first two days after birth



THANK YOU

