



Ministry of Health Development
Hargeisa
Republic of Somaliland

Evidence-based Guidelines for Antenatal Care in Somaliland

Recommendations for Health Care 2019



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2019



Working group of representatives from MoHD, NUOVONORDIC and THL

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Foreword

Healthy mothers and babies are the foundation of a society. The best way to ensure the health of mothers and babies is to develop universal, well-functioning and high quality antenatal care. National, properly implemented antenatal guidelines represent a fundamental key to this goal. Somaliland's antenatal care is challenged by numerous factors. The Somaliland Ministry of Health Development (MoHD) is doing rigorous work to overcome the challenges, and these new antenatal guidelines are a part of that mission.

Guidelines curated by the MoHD were supported by UNFPA as recently as 2015, but since WHO published a new revised version of the ANC guidelines in 2016, it was considered unfeasible to implement the partly outdated version. These guidelines are based on the latest 2016 WHO recommendations, and the MoHD has curated them with their chosen team of experts to meet the specific needs of Somaliland. The team led by the MoHD consists of local ANC workers, a representative of WHO, INGOs, NGOs, midwifery training institutes, universities – especially Amoud University, Nugaal University and the University of Hargeisa – as well as international experts.

The guidelines are targeted to all ANC professionals, traditional birth attendants and family workers, training institutions, students, INGOs, NGOs, and national/international funders, as well as those planning and developing the ANC services in Somaliland. With these new guidelines, we once again bring evidence-based improvements to ensure safe pregnancy and childbirth to every woman in Somaliland.

Abstract

Evidence-based Guidelines for Antenatal Care in Somaliland. Recommendations for Health Care 2019. The Ministry of Health Development (MoHD), Republic of Somaliland. Supported by the National Institute for Health and Welfare of Finland through the MIDA FINNSOM project. 84 pages. Helsinki, Finland 2019. ISBN 978-952-302-333-5 (printed); ISBN 978-952-302-334-2 (online publication)

Background

One target of the United Nation's Sustainable Development Goals (SDGs) until 2030 is to reduce maternal deaths to under 70 per 100 000 livebirths. A key issue in the prevention of maternal deaths is the ability to use a skilled attendant at birth. In 2016, 78 per cent of live births were skilled-assisted. However, in Sub-Saharan Africa, the rate was only 53 per cent of live births.

Effective interventions at reasonable costs could prevent most maternal deaths, life-threatening morbidity and complications. However, the goal in maternity care is not only to avoid morbidity and mortality, but also improve the health and well-being of girls, women and their families.

In Somaliland, pregnancy, labour and childbirth are considered normal occurrences in the life of women, and events of joy for every family. Most pregnancies end in normal labour and childbirth. However, in some pregnancies (about 15%), life-threatening complications may potentially develop, resulting in maternal/foetal death or the death of both mother and baby. According to estimates, the maternal mortality ratio in Somaliland varied from 732/100,000 to less than 400/100,000 in 2015. The respective ratio for infant mortality was 85/1000, with a neonatal mortality of 40/1000 and a mortality of children under five at 137/1000.

Goals and objectives

The main goal of the ANC guideline and its recommendations is to improve the quality of ANC, maternal, foetal and newborn health related to ANC in Somaliland. The short-term target in Somaliland includes four ANC contacts, but the long-term target is the recommended eight ANC contacts.

Content

The ANC guideline for Somaliland is based on the WHO 2016 ANC guideline, but includes only those elements which are recommended and suitable for Somaliland's context. The recommendations were evaluated by national and international experts in a workshop held in Hargeisa in 2017. Some recommendations based on the best available evidence were later added after careful consideration and consultation with the experts from Somaliland. In total, 44 recommendations are given. The recommendations are mainly under the same topics as WHO ANC 2016 guideline: nutritional interventions (6), maternal and foetal assessment (8), preventive measures (4), interventions for common physiological symptoms (6), and health systems interventions to improve the utilisation and quality of ANC (7). In addition, recommendations for involvement of fathers or partners (1), breastfeeding (1), birth spacing (1) and FGM/C (5) are included, as well as some other recommendations (4) (such as identification of pre-eclampsia, malpositions and malpresentations, multiple pregnancy, imminent pre-term birth).

The ANC guideline for Somaliland focuses on clinical package that all women should receive at routine ANC contacts. The guideline also includes recommendations for referral practices related to common diseases or conditions related to pregnancy. The management of identified complications or conditions that require additional treatment or specialist care and follow-up are not included.

Implementation

The implementation plan for the ANC guideline for Somaliland was made in collaboration with MoHD, the National Institute for Health and Welfare of Finland, representatives of universities of Somaliland and midwifery teaching institutions, representatives of WHO, UNICEF, UNFPA, NAFIS (especially with respect to the FGM/C), IOM, the Somaliland Midwifery Association, health-care professionals of Somaliland, FSN, and NUOVO NORDIC Healthcare Services.

Monitoring

The implementation and impact of the recommendations of this ANC guideline for Somaliland should be monitored by the MoHD. The MoHD will define criteria and indicators that are associated with locally agreed targets. The MoHD will also ensure that the criteria and indicators are known by health-care providers.

As a part of the MIDA FINNSOM project, IOM and THL will plan and IOM will organise, together with MoHD, two missions in 2019 to be able to train more ANC professionals outside of Hargeisa and to be able to monitor the implementation. Afterwards, the MoHD will be responsible for monitoring and evaluating the implementation of the guidelines.

Application for ANC affords the opportunity for systematic data collection and yearly made summary which will enable to monitor maternal morbidity and mortality, infant health and quality of ANC services in Somaliland. This will provide the basis to improve the health and well-being of women, men and children in Somaliland and thereby the health of society as a whole.

Keywords: Antenatal care, guideline, pregnancy, mother, newborn, health, breastfeeding, birth spacing, FGM

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1 Introduction

Maternal and child health is an essential part of sexual and reproductive health and thus also an essential part of public health and well-being. In 2015, the global maternal mortality ratio was 216 maternal deaths per 100,000 live births (UN, 2017). One target of the United Nation's Sustainable Development Goals (SDGs) is to reduce maternal deaths to under 70 per 100 000 livebirths by 2030. A key issue in the prevention of maternal deaths is the possibility to use a skilled attendant at birth. In 2016, 78 per cent of live births were skilled-assisted. However, in Sub-Saharan Africa, the rate was only 53 per cent of live births.

The World Health Organization (WHO) holds a vision of a world where “every pregnant woman and newborn receives quality care throughout the pregnancy, childbirth and the postnatal period” (Tuncalp et al., 2015). However, in many low-resource countries, including Somaliland, pregnancy-related preventable morbidity and mortality are unacceptably high. In Somaliland, the estimated mortality ratio in Somaliland varied from 732/100,000 to fewer than 400/100,000 in 2015. Preventable morbidity and mortality rates are unknown.

Effective interventions at reasonable costs could prevent most maternal deaths, life-threatening morbidity and complications (Campbell and Graham, 2006, Fisk et al., 2011). However, the goal in maternity care is not only to avoid morbidity and mortality but also to improve the health and well-being of girls, women and their families.

Female genital mutilation/cutting (FGM/C) comprises all procedures that involve removal of the external female genitalia, or other injury to the female genital organs for non-medical reasons. The practice is mostly carried out by traditional circumcisers, who often play other central roles in communities, such as attending childbirths.

FMG/C has many serious impacts on health. The most common procedure-related complications are haemorrhage, pain, urine retention, genital tissue swelling, infections, and problems with wound healing. Long-term complications include increased risks of urinary tract infections, bacterial vaginosis, dyspareunia, and obstetric complications. In many settings, health-care providers perform FGM/C due to the erroneous belief that the procedure is safer when medicalised. WHO strongly urges health professionals not to perform such procedures. In Somaliland, 98% of women are circumcised. Preventive work has been done for years, but national guidelines for FGM/C are lacking.

WHO defines antenatal care (ANC) as “the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy” (WHO 2016). ANC include not only risk identification, prevention and management of pregnancy-related or concurred diseases but also health education and promotion. ANC reduces maternal and perinatal morbidity and mortality. This occurs both directly and indirectly. Detection and treatment of pregnancy-related complications belong to the direct prevention of morbidity and mortality. Identification of women and girls at increased risk of developing complications during labour and delivery, followed by ensuring referral to an appropriate level of care, belong to the indirect prevention of morbidity and mortality. Indirect prevention also includes the prevention of indirect causes of maternal morbidity and mortality thorough ANC services; for example, malaria and HIV infections.

In 2002, WHO introduced the so-called FANC, which was basically the ANC model that included four ANC contacts during pregnancy in low- and middle-income countries (WHO 2002, WHO 2006). This model was found to have limitations; thus, WHO updated the ANC guideline in 2016 (WHO 2016). The new guideline offers recommendations on what to do and how to do it. WHO hopes that these two elements make the guideline easier to adapt, adopt and implement. The adoption and implementation of the WHO guideline enable women and adolescent girls to not only have a safe pregnancy and childbirth but also a positive pregnancy experience. According to Downe et al. (2016), a positive pregnancy experience includes maintaining physical and sociocultural normality; a healthy pregnancy for mother and baby; negotiating an effective transition to positive labour and birth; and achieving positive motherhood, including maternal self-esteem, competence and autonomy.

The aim of the WHO 2016 ANC guideline is to provide a clear, evidence-based framework for ANC practices and empower all pregnant women and adolescent girls to access the type of person-centred care that they need, in accordance with a human rights-based approach (WHO 2016).

This national guideline for ANC, breastfeeding and the prevention of female genital mutilation/cutting (FGM/C) in Somaliland is mainly based on the WHO 2016 ANC guideline, WHO FANC guideline 2002, and the WHO guideline for prevention of FGM (WHO 2016, 2008 and 2002). Some essential topics were not included in the WHO ANC 2016 guideline: thus, other evidenced-based literature was used to prepare the national guideline for Somaliland, and the references used are provided.

Not all recommendations in the WHO ANC 2016 guideline were included, because they were not considered essential in Somaliland. The decisions on what to include and exclude were mainly made in a workshop in Hargeisa in autumn 2017, which included participants consisting of maternal health professionals and Ministry of Health and Development (MoHD) personnel in Somaliland. A draft of the guideline was shared for comments by MoHD, a representative of WHO, professionals in maternity health care and from training institutions, and the NAFIS network in July 2018. Afterwards, the draft was modified in accordance with the comments received.

Somaliland has previously had some ANC guidelines – for example, recently in 2015 – but none of them was properly implemented, and for this reason the new, up-dated guideline was developed since the WHO published a new revised version of the ANC guidelines in 2016 and it was considered unfeasible to implement the partly outdated version. The new guideline follows the WHO 2016 ANC guideline giving clear reasons with regard to ANC in terms of why, what and how to implement it, how to encourage breastfeeding, how to counsel for birth-spacing, and how to prevent FGM. The implementation plan of this guideline was prepared by an expert group at a workshop in Hargeisa, 2018. The workshop was organised by MoHD of Somaliland and IOM through the support of Finland's National Institute for Health and Welfare (THL). Participants in the workshop consisted of local ANC workers, a representative from WHO, NGOs, midwifery-training institutes, universities – in particular, Amoud University, Nugaal University and the University of Hargeisa – as well as international experts.

Target groups for the guideline are national and local public health policy makers, implementers and managers of national/local maternal and child health programmes, concerned non-governmental and other organisations, professionals in the planning and management of maternal and child health services, health professionals, and academic staff training health professionals. The guidelines are relevant to all pregnant women and adolescent girls in ANC and their fetuses and newborns, all girls and women at risk for FGM/C, or those suffering health impacts related to FGM/C as well as their families and the communities where they live.

The next chapter presents the recommendations of the ANC guideline: nutritional interventions, maternal and foetal assessment, preventive measures, interventions for common physiological symptoms, and health system interventions to improve the utilisation and quality of ANC. The third chapter includes recommendations for breastfeeding, the fourth chapter birth-spacing, and the fifth chapter prevention of FGM/C. The sixth chapter describes how this guideline should be implemented and evaluated in Somaliland. The seventh chapter includes dissemination and applicability of the guideline.

1.1 Situation of antenatal care in Somaliland

In Somaliland, pregnancy, labour and childbirth are considered normal occurrences in the life of women and events of joy for every family. Most pregnancies end in normal labour and childbirth. However, in some pregnancies (about 15%), life-threatening complications may potentially develop, resulting in maternal or foetal death or the death of both mother and baby (ANC, 2015).

According to the available statistics, the maternal mortality ratio in Somaliland varied from 732/100,000 to fewer than 400/100,000 in 2015 (ANC, 2015). The respective ratio for infant mortality was 85/1000, whereas neonatal mortality was 40/1000 and under age five mortality was 137/1000. Serious injuries may occur during labour, leading to, for example, fistula or other permanent illness and disability. In

Somaliland, it is said that “the riskiest period a woman faces during her life is when she becomes pregnant”.

The Ministry of Health has identified the so-called ‘three delays’ to which most complications of pregnancy, childbirth and maternal deaths are linked (ANC, 2015).

- Delay in recognising and seeking care when problems and complications arise is likely to occur with regard to the mother/family, due to:
 - Lack of awareness and knowledge concerning danger signs and the decision to seek care because of:
 - Inaccessible health facilities or failing to acknowledge the seriousness of the problem or the importance of seeking care at the earliest possibility.
 - Lack of resources to pay for services, medicines and supplies.
- Delay in reaching a health facility due to:
 - Unavailability of transport
 - Inaccessible roads
 - Lack of awareness and informed choice on the part of clients concerning appropriate health facilities, including referral health facilities
- Delay in receiving timely and correct treatment and care within the health facility once the woman has reached it, due to:
 - The lack of the right equipment and medical devices/technologies at the health facilities.
 - The lack of essential and emergency/life-saving drugs and supplies.
 - The shortage of adequately trained personnel who are present 24/7 at the health facility.

These delays were taken into account in preparing this national ANC guideline. MoHD will consider structural hindrances in using care and offering facilities, as well as the lack of training of health-care personnel. The guideline offers knowledge for health-care professionals: not only with regard to what they should do, but also how professionals can increase clients’ knowledge.

1.1.1 Organising antenatal care

In Somaliland, ANC services are offered at Maternal and Child Health Clinics (MCH) and Maternal and Child Health Hospitals. In 2018, there were 178 MCH clinics (or stations) in total. Four of the MCH clinics had the equipment and resources to offer Caesarean sections, but no sections had been performed there. Pregnant women have been transferred to the hospitals. The total number of district level hospitals was six and regional level hospitals five. Hargeisa Group Hospital was the only high-level birthing hospital. In addition, there were 18 private hospitals offering delivery care.

The MoHD has the aim to collect statistics in aggregated form each year, but no individual level data collection exists.

1.1.2 Resources in antenatal care

Antenatal staff

In Somaliland, professionals working in ANC are midwives and doctors, but also traditional birth attendants (TBAs) and other uneducated personnel follow-up pregnant women and assist in deliveries. There is variation in the skills and education of midwives working at MCH stations and birthing hospitals.

In 2018, there were three schools or training institutions for midwives in Somaliland: Hargeisa Institute for Health Science (HIOHS), Burao Institute of Health Science and Lasanbod Institute of Health Science. The midwives are also trained at universities. In 2018, there were five public universities offering midwifery education: Hargeisa University, Amoud University, Burao University, Edna University and Nugaal University. In addition, there were private institutions such as Shifo University, Shaafi University, Addis Abeba Medical University, Golis University, Abroosa University and Hope University offering

midwifery education. The curricula for midwives in public universities were updated and published in 2018 (Midwifery Procedures Manual, 2018). Doctors are trained at medical faculties in the universities.

Available equipment and other resources in antenatal care

Standard of equipment varies between the areas and between the MCH clinics in the areas. In 2018, for example, meters to measure blood pressure were lacking in many MCH clinics, and urine tests were almost unknown. There was lack of many drugs and equipment needed in antenatal care. MCH clinics were typically open only for three hours in the morning thus time per each pregnant woman was sparse, appointments were not made beforehand and queues or waiting-times were typically quite long. Transportation services were also sparse. In 2018, the Ministry of Health Development had 65 ambulances of which 55 were working. Maternity cards were used only in the biggest towns. The cards were held at the clinics to avoid losing the cards. The women were given “an identification number” – a number that she could easily remember. Phone numbers, for instance, were also used as card identification.

1.2 WHO recommendations on antenatal care in 2016

In 2016, the World Health Organization (WHO) published guideline on routine antenatal care (ANC) for pregnant women and adolescent girls (WHO 2016). The guideline is based on systematic reviews to manage pregnancy-related complications but also to prioritise person-centred health and well-being and to offer a positive pregnancy experience.

The guideline answers the questions as to what the evidence-based practices are during ANC that improve outcomes and lead to a positive pregnancy experience and how these practices should be delivered. The guideline includes 41 recommendations under the following topics: nutritional interventions, maternal and foetal assessment, preventive measures, interventions for common physiological symptoms, and health systems interventions to improve the utilisation and quality of ANC. The first four topics answer the question “What are the evidence-based practices during the ANC period for improving outcomes?” and the last one to the question “How should these evidence-based practices be delivered to improve the utilisation and quality of ANC?” The recommendations under these five topics were classified as recommended (19), context-specific recommendation (15), and not recommended (7).

The WHO ANC 2016 guideline focuses on the clinical package that all women should receive upon routine ANC contact. The management of identified complications or conditions that require additional treatment or specialist care and follow-up are not included. WHO recommends eight ANC contacts for a positive pregnancy experience.

2 Recommendations for antenatal care

The ANC guideline for Somaliland is based on the WHO 2016 ANC guideline, but includes only those elements which are recommended and suitable within the context of Somaliland. In total, 44 recommendations are given. The recommendations are mainly under the same topics as the WHO ANC 2016 guideline: nutritional interventions (6), maternal and foetal assessment (8), preventive measures (5), interventions for common physiological symptoms (6), and health system interventions to improve the utilisation and quality of ANC (7). In addition, recommendations for fathers' or partners' involvement (1), breastfeeding (1), birth spacing (1), and FGM/C (5) are included, as well as some other recommendations (4) (such as identification of pre-eclampsia, malpositions and malpresentations, multiple pregnancy, and imminent pre-term birth).

The ANC guideline for Somaliland focuses on the clinical package that all women should receive via routine ANC contacts. The guideline includes also some recommendations for referral practices related to common diseases or conditions related to pregnancy. The management of identified complications or conditions that require additional treatment or specialist care and follow-up are not included. A short-term target in Somaliland is four ANC contacts, but the long-term target in Somaliland as well is the recommended eight ANC contacts.

2.1 Nutritional interventions

2.1.1 Counselling on healthy eating and physical activity

Counselling about healthy eating and keeping physically active during pregnancy is recommended for pregnant women, in order to stay healthy and prevent excessive weight gain during pregnancy (WHO 2016).

What does healthy eating and physical activity mean?

A healthy diet means that pregnant women receive enough energy, protein, vitamins and minerals and consume different kind of foods, including green and orange vegetables, meat, fish, beans, nuts, whole grains and fruit.

Physical activity means that women's daily life includes aerobic activity and strength-conditioning exercise so that she has adequate stamina and good physical condition to carry the pregnancy through and give birth.

Why talk about healthy eating and physical activity?

Recent studies have reported a shift in the burden of overweight and obesity from advantaged to disadvantaged populations. Such a trend increases the risk of associated pregnancy complications, as well as cardiometabolic problems, among pregnant women from disadvantaged populations.

Pregnancy is an optimal time for behaviour change interventions among populations with a high prevalence of overweight and obesity or malnutrition.

For example:

- Diet and/or exercise interventions probably prevent hypertension in pregnancy.
- Some evidence suggests that diet and/or exercise interventions may reduce the risk of gestational diabetes mellitus.
- Diet and/or exercise interventions probably prevent neonatal macrosomia particularly in overweight and obese women receiving diet and exercise counselling interventions.
- Some evidence shows that antenatal dietary education may reduce low birth-weight neonates.

Normal weight gain during the pregnancy

Usually most normal gestational weight gain occurs after 20 weeks of gestation.

According to the Institute of Medicine classification:

- women who are underweight at the start of pregnancy (i.e. BMI < 18.5 kg/m²) should aim to gain 12.5–18 kg.
- women who are normal weight at the start of pregnancy (i.e. BMI 18.5–24.9 kg/m²) should aim to gain 11.5–16 kg.
- overweight women (i.e. BMI 25–29.9 kg/m²) should aim to gain 7–11.5 kg.
- obese women (i.e. BMI > 30 kg/m²) should aim to gain 5–9 kg.

2.1.2 Nutrition education

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 (WHO 2016).

What does nutrition education mean?

- Undernourishment is usually defined by low BMI (i.e. being underweight).
- Nutrition education means that the health-care provider educates (give information to) pregnant women (and their spouses) as to what healthy eating during pregnancy means and how to choose – even in low income countries – the best kind of food for the pregnant woman.
- Areas with little access to a variety of foods may wish to consider additional complementary interventions, such as the distribution of balanced protein and energy supplements.

Why educate on nutrition?

- Some evidence shows that antenatal dietary education may reduce low birth-weight neonates.
- Many low-income countries still struggle with widespread poverty and hunger, particularly among rural populations. Some evidence suggests that food supplementation interventions may be associated with better ANC adherence among women with less education but not among those with more education.
- Providing antenatal food supplements could help to address inequalities by improving maternal nutritional status among disadvantaged women.

2.1.3 Balanced energy and protein dietary supplementation

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 (WHO 2016).

What does balanced energy and protein dietary mean?

- Balanced energy and protein dietary mean that the pregnant woman receives enough but not too much different kind of nutrients and energy.
- Undernourishment is usually defined by a low BMI (i.e. being underweight).
- For adults, a 20–39% prevalence of underweight women is considered a high prevalence of underweight and 40% or higher is considered a very high prevalence.
- MUAC may also be useful to identify protein-energy malnutrition in individual pregnant women and to determine its prevalence in the population.

Why is balanced energy and protein dietary needed?

- Some evidence shows that balanced energy and protein supplementation probably reduces SGA neonates.
- Many low-income countries still struggle with widespread poverty and hunger, particularly among rural populations. Some evidence suggests that food supplementation interventions may be associated with better ANC adherence among women with less education but not among those with more education.

Acceptability and feasibility

- Women usually tend to view ANC as an appreciated source of knowledge and information and thus generally appreciate any advice (including dietary or nutritional) that may lead to a healthy baby and a positive pregnancy experience.
- In LMIC settings, providers may feel that a lack of resources may limit implementation of recommended interventions. However, ANC offers good facilities to, for example, organise the distribution of food or energy supplements.
- A continual, adequate supply of supplements is required for programme success. This requires a clear understanding and investment in procurement and supply chain management.
- Each country will need to understand the context-specific aetiology of undernutrition at the national and sub-national levels. A better understanding is needed of whether alternatives to energy and protein supplements – such as cash or vouchers, or improved local and national food production and distribution – can lead to better or equivalent results. Improving delivery, acceptability and utilisation of this intervention by pregnant women (i.e. overcoming supply and utilisation barriers).
- Distribution of balanced energy and protein supplements may not be feasible through the local schedule of ANC contacts alone: additional contacts may need to be scheduled.
- The costs related to these additional contacts should be considered.
- In the absence of antenatal contacts, too few contacts occur, or if the first contact comes too late, consideration should be given to alternative platforms for delivery (e.g. community health workers, task-shifting in specific settings).
- Monitoring and evaluation should include evaluation of household-level storage facilities, spoilage, wastage, retailing, sharing, and other issues related to food distribution.
- Values and preferences related to the types and amounts of balanced energy and protein supplements may vary.
- Providing balanced protein and energy supplements may be associated with logistical issues, as supplements are bulky and require adequate transport and storage facilities to ensure continual supplies.
- In low-income countries, providers may feel that a lack of resources may limit the implementation of balanced energy and dietary supplements.

2.1.4 Iron and folic acid supplementation

Daily oral iron and folic acid supplementation with 30 mg to 60 mg of elemental iron and 400 g (0.4 mg) folic acid is recommended for pregnant women to prevent maternal anaemia, puerperal sepsis, low birth weight, and preterm birth (WHO 2016).

Why do pregnant women need iron and folic acid?

- The human body requires oxygen to function. Oxygen is transported from lungs to tissues with protein called haemoglobin in red blood cells. Iron is an elemental part of haemoglobin. If there is an inadequate amount of red blood cells or haemoglobin in blood, the condition can be referred to as anaemia.
- During pregnancy, the plasma volume (liquid part of the blood carrying the blood cells) increases and haemoglobin concentration decreases to improve the blood flow in the uterus and foetus. This is referred to as physiological anaemia, and usually this does not require treatment.
- Anaemia in pregnancy is a condition where the haemoglobin (Hb) concentration is less than 110 g/L in the first and third trimesters or less than 105 g/L in the second trimester.
- Anaemia is associated with iron, folate and vitamin A deficiencies.
- Maternal anaemia and iron deficiency are associated with increased risks of PPH, low birth weight, small-for-gestational age babies, puerperal sepsis, preterm birth and increased risk for maternal and infant mortality.
- Folate (vitamin B9) deficiency is also associated with neural tube deficiency in addition to anaemia. Vitamin A deficiency is also associated with night time blindness in addition to anaemia. Parasitic infections (ex. malaria, hookworm and schistosomiasis) and chronic infections (ex. tuberculosis and HIV) can be contributory factors to anaemia
- About half of the anaemia found in pregnant women is amenable to iron supplementation

Dosages of daily iron and folic acid supplementation

In Somaliland the estimated prevalence of anaemia is 46.8% of all pregnant women (WHO 2016). Daily oral iron and folic acid supplementation with 60 mg of elemental iron and 400 mcg (0.4 mg) of folic acid is therefore recommended for pregnant women to prevent maternal anaemia (WHO, GHO, 2019).

2.1.5 Calcium supplementation

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 (WHO 2016).

Why do pregnant women need calcium?

Diet during pregnancy should contain an adequate amount of calcium. Calcium is needed for the development of bones and teeth and functioning of muscles and nerves. It is also associated with the development of hypertensive disorders in pregnancy. Calcium must be obtained from food or supplements. Calcium rich foods are, e.g. camel milk, yoghurt, milk, spinach, okra, dates, oranges, and white beans. If calcium intake is low, calcium supplementation is recommended.

Calcium supplementation is especially important for women at a higher risk of developing hypertensive disorder for the prevention of pre-eclampsia. Women are at high risk if they have one or more of the following risk factors:

- obesity
- previous pre-eclampsia
- diabetes

- chronic hypertension
- renal disease
- autoimmune disease
- nulliparity
- advanced maternal age
- adolescent pregnancy
- conditions leading to hyperplacentation and large placentas (e.g. twin pregnancy)

Dosages of daily calcium supplementation

The recommended dose is 1.5–2.0g of elemental calcium per day, divided in three doses.

Supplementation should start from week 20 until the end of pregnancy.

Iron and calcium supplements should be administered several hours apart in order to avoid interactions.

2.1.6 Vitamin A supplementation

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 (WHO 2016).

Do pregnant women need vitamin A?

In some cases, the mother’s diet does not contain enough vitamin A. This can lead to night-time blindness. Vitamin A deficiency also contributes to the development of anaemia (and may be associated with low birth weight).

- Vitamin A deficiency should be avoided with a healthy balanced diet.
- Foods rich in vitamin A are, e.g. carrots, sweet potatoes, liver, beef, and pumpkins.
- In case of night-time blindness, oral supplementation of vitamin A should be considered.
- If vitamin A is a severe public health problem, vitamin A supplementation is recommended. (5% or more 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% or more of pregnant women have a serum retinol level below 0.70 µmol/L)

Dosages of daily vitamin-A supplementation

- Current WHO guidance suggests a dose of up to 10 000 IU vitamin A per day, or a weekly dose of up to 25 000 IU.
- Anaemia should be assessed with full blood count testing. If this is not possible, then on-site haemoglobin testing with a haemoglobinometer is recommended.

2.2 Maternal and foetal assessment

2.2.1 Anaemia

Full blood count testing is the recommended method for diagnosing anaemia during pregnancy. In settings where full blood count testing is unavailable, onsite haemoglobin testing with a haemoglobinometer is recommended over the use of the haemoglobin colour scale as the method for diagnosing anaemia in pregnancy (WHO 2016, GHO, 2017, McClure et al, 2014).

How to diagnose anaemia?

- Either to take a full blood count test or an onsite haemoglobin test
- Anaemia in pregnancy is a condition where the haemoglobin (Hb) concentration is less than 110 g/L in the first and third trimesters or less than 105 g/L in the second trimester

How to treat anaemia?

Severe anaemia

- Haemoglobin less than 0.7g/L and/or severe palmar and conjunctival pallor, or any pallor with breathlessness in rest and/or respiratory rate more than 30 breaths/minute (and/or the mother tires easily)
- Refer urgently to hospital

Moderate anaemia

- Haemoglobin 7-11 g/dl or palmar or conjunctival pallor
- Give 120mg of oral iron and 0.4mg of folic acid daily (or double the dose of combination tablet containing 60mg of iron and 0.4mg of folic acid from one tablet daily to one tablet twice daily) for three months.
- Check the compliance with treatment
- Reassess in 4-6 weeks and if anaemia persists, refer to hospital
- Consider antimalarial and/or anthelmintic treatment.

Parasitic infections affecting anaemia

- Parasitic infections during pregnancy lead directly and indirectly to a spectrum of adverse maternal, foetal and placental effects and to reduced quality of life during or after pregnancy.
- Soil-transmitted helminthiasis is causing an ample amount of anaemia in endemic areas.
- Soil-transmitted helminths are parasitic infections caused mainly by roundworms (*Ascaris lumbricoides*), hookworms (*Necator americanus* and *Ancylostoma duodenale*), and whipworms (*Trichuris trichiura*). These worms cause iron-deficiency anaemia by feeding on blood and causing further bleeding by releasing anticoagulant compounds. They may also reduce the absorption of iron and other nutrients by causing anorexia, vomiting and diarrhoea.

How to diagnose a parasitic infection?

Parasitic infections can be diagnosed by counting the concentration of eggs in the stool.

How to treat a parasitic infection?

Preventive chemotherapy (deworming), using single-dose albendazole (400 mg) or mebendazole (500 mg), is recommended for pregnant women after the first trimester if:

- living in areas where the baseline prevalence of hookworm and/or *T. trichiura* infection is 20% or more among pregnant women, and
- where anaemia is a severe public health problem, with a prevalence of 40% or higher among pregnant women.

In areas where hookworm and/or *T. trichiura* are endemic, it is recommended to periodically treat all pregnant women after the first trimester to reduce the worm burden in those who are moderately to heavily infected. Deworming should be delivered together with health promotion about hygiene, such as hand washing, use of footwear and proper disposal of faeces.

2.2.2 Asymptomatic bacteriuria (ASB)

Midstream urine culture is the recommended method for diagnosing asymptomatic bacteriuria (ASB) in pregnancy. In settings where urine culture is unavailable, on-site midstream urine gram-staining is recommended over the use of dipstick tests as the method for diagnosing ASB in pregnancy (WHO 2016).

How to diagnose ASB?

- Urine testing is important for detecting asymptomatic bacteriuria (ASB) and urinary tract infection (UTI) in pregnancy. They both doubly increase the risk for low birth weight and premature birth, and can lead to more serious infections (e.g. pyelonephritis).
- Asymptomatic bacteriuria among non-pregnant women is generally harmless, but with pregnancy there is increased risk for pyelonephritis.
- Midstream urine culture (preferred) or gram-staining is recommended over the use of dipstick tests. If these are unavailable, the dipstick test should be performed. Elevated protein and/or elevated leucocytes and/or elevated nitrites and/or haemoglobin can indicate ASB/UTI in pregnancy.

How to treat ASB?

- *E. coli* is the most common pathogen. Other pathogens include *Klebsiella* species, *Proteus mirabilis* and group B streptococcus (GBS). Seven-day antibiotic treatment is recommended by WHO.
- Group B streptococcus (GBS) bacteriuria indicates heavy colonisation and may not be eradicated with antibiotics.
- WHO recommends intrapartum antibiotic treatment for women with GBS colonisation in order to prevent early neonatal infection.
- If symptomatic UTI re-occurs after resolution of previous UTI, the situation can be considered as recurrent UTI (RUTI). The evidence of risks and benefits with regard to antibiotic prophylaxis are still under investigation.

2.2.3 Domestic violence

Clinical enquiry about the possibility of domestic violence (DV) should be strongly considered at antenatal care contacts when assessing conditions that may be caused or complicated by DV 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 (WHO 2016, WHO 2014, WHO 2013).

How to identify intimate domestic violence (DV)?

- Examples of conditions during pregnancy that may be caused or complicated by DV include:
 - traumatic injury, particularly if repeated and with vague or implausible explanations
 - intrusive partner or husband present at consultations
 - adverse reproductive outcomes, including multiple unintended pregnancies and/or terminations
 - delay in seeking ANC
 - adverse birth outcome
 - repeated STIs
 - unexplained or repeated genitourinary symptoms
 - symptoms of depression and anxiety
 - alcohol and other substance use
 - self-harm, suicidality, symptoms of depression and anxiety.

- Severe DV in pregnancy (such as being beaten up, choked or burnt on purpose, being threatened with or having a weapon used against her, and sexual violence) is more common among women who are in relationships that have also been severely abusive outside periods of pregnancy.
- The midwife-led continuity of care (MLCC) model may offer a way of achieving a positive, trusting and empathetic relationship with pregnant women and thus also beneficial in identifying and preventing DV.

How to prevent and avoid domestic violence?

- ANC provides an opportunity to enquire about DV among women for whom barriers to accessing health care may exist, and also allows for the possibility for follow-up during ANC with appropriate supportive interventions, such as counselling and empowerment interventions.
- Training and resources in middle and low-resource settings may be best targeted towards first response to DV rather than DV screening.
- A minimum condition for health-care providers to ask women about violence is that it must be safe to do so (i.e. the partner is not present) and that identification of DV is followed by an appropriate response.
- Clinical enquiry about DV can be conducted face-to-face or by providing women with a written or computer-based questionnaire
- Providers often may find it difficult to enquire about DV for the following reasons:
 - they do not feel they have enough knowledge, training or time to discuss DV in a sensitive manner; the presence of the partner acts as a barrier
 - they may have experienced DV themselves
 - they lack knowledge and guidance about the availability of additional support services (counselling, social work, etc.)
- Despite these difficulties, however, providers must be trained to ask questions in the correct way and to respond appropriately to women who disclose violence. Some women may not appreciate enquiries of this nature, particularly those living in male-dominated patriarchal societies where women's financial dependence on their husbands may influence their willingness to discuss DV, especially if the health professional is male.
- Hargeisa Group Hospital has a unit for victims of violence. ANC professionals can refer women who have been exposed to DV to the unit or consult the unit about available services.

2.2.4 Gestational diabetes mellitus (GDM)

Hyperglycaemia first detected at any time during pregnancy should be classified as either gestational diabetes mellitus (GDM) or diabetes mellitus in pregnancy, according to WHO criteria (WHO 2016, WHO 2013, Leeuwen et al. 2011, WHO 2006).

Why and how to diagnose GDM?

- Screening for hyperglycaemia is important, because elevated levels of blood sugar increases risk for pre-eclampsia and macrosomia of newborn.
- Hyperglycaemia first detected at any time during pregnancy should be classified as either **gestational diabetes mellitus (GDM)** or **diabetes mellitus in pregnancy**, depending on the results of a two-hour oral glucose tolerance test (OGTT). The usual window for diagnosing GDM is between 24 and 28 weeks of gestation
- Diabetes mellitus in pregnancy differs from GDM in that hyperglycaemia is more severe and does not resolve after pregnancy as it does with GDM.
- Diagnose by blood sample.
- If there is no possibility for blood glucose monitoring, risk factor screening or glucose in a dipstick may be used to determine the need for an OGTT.

- If an OGTT is not possible, at least the patient's fasting blood glucose level should be tested before week 28 of pregnancy. This should be done with every pregnant woman, but at the very least, with those with risk factors and/or glucosuria.

The risk factors may be:

- BMI >30kg/m²
- Previous GDM
- Previous macrosomia
- Family history of DM
- Glucose ++ or above on one occasion or + in two or more occasions while utilising a urine dipstick

The diagnosis of **gestational diabetes mellitus (GDM)** at any time during pregnancy should be based on any one of the following values:

- Fasting plasma glucose = 5.1-6.9 mmol/l (92 -125 mg/dl)
- 1-h post 75g oral glucose load \geq 10.0 mmol/l (180 mg/dl)
- 2-h post 75g oral glucose load 8.5 – 11.0 mmol/l (153-199 mg/dl)

Diabetes mellitus in pregnancy should be diagnosed by the 2006 WHO criteria for diabetes if one or more of the following criteria are met:

- fasting plasma glucose \geq 7.0 mmol/l (126 mg/ dl)
- 2-hplasma glucose \geq 11.1 mmol/l (200 mg/dl) following a 75g oral glucose load
- random plasma glucose \geq 11.1 mmol/l (200 mg/ dl) in the presence of diabetes symptoms.

How to treat GDM?

- Women suspected of having or detected with hyperglycaemia should be referred to hospital for further examinations and treatment.
- Counsel every pregnant woman on healthy eating and the need for physical activity.

2.2.5 Hypertension and pre-eclampsia-eclampsia

Blood pressure and proteinuria should be measured or tested during each ANC contact to detect hypertension and pre-eclampsia. The guidelines should be followed depending on the results (follow-up on ANC or referral to hospital) as well as the woman educated to follow the critical signs of pre-eclampsia to avoid maternal deaths. (WHO 2016, ACOG 2013)

- Antenatal screening for hypertensive disorders is an essential part of antenatal monitoring. Since approximately one quarter of maternal deaths and near misses are caused by pre-eclampsia and eclampsia, blood pressure and proteinuria must be checked at every routine ANC contact.
- The type of hypertensive disorders in pregnancy depends on the onset, accompanying the findings and severity of the findings. Recognising the type of hypertensive disorder is important, because they are often managed differently.
- Diagnose hypertension in pregnancy if, on two consecutive readings taken four hours or more apart, systolic blood pressure (SBP) is 140 mmHg or higher and/or diastolic blood pressure (DBP) is 90 mmHg or higher.
- Blood pressure is in the severe range if the systolic blood pressure (SBP) is 160 mmHg or higher and/or diastolic blood pressure (DBP) is 110 mmHg or higher and immediate actions are advised. If the initial systolic blood pressure (SBP) is 160mmHg or higher and/or diastolic blood pressure (DBP) is 110mmHg or higher, the next measurement can be repeated in a few minutes.

The hypertensive disorders of pregnancy include:

- 1) chronic hypertension
- 2) gestational hypertension;
- 3) chronic hypertension with superimposed pre-eclampsia.
- 4) pre-eclampsia-eclampsia

Elevated blood pressure without accompanying findings:

This is likely to be either 1) **chronic hypertension** or 2) **gestational hypertension**. In this case, the **classification depends on the onset**.

-If hypertension occurs before 20 weeks of gestation, it is most likely 1) chronic hypertension

-If hypertension occurs for the first time after 20 weeks of gestation, during labour and/or within 48 hours of giving birth, it is most likely 2) gestational hypertension

Because some women's blood pressure may not be measured before 20 weeks of gestation, chronic hypertension may be identified for the first time during pregnancy after 20 weeks of gestation. Chronic hypertension will persist beyond 12 weeks postpartum.

Management depends on the severity of hypertension

- If the systolic blood pressure (SBP) is 160 mmHg or higher and/or the diastolic blood pressure (DBP) is 110 mmHg or higher, antihypertensive medications should be started immediately, and the woman should also be referred right away to a hospital.
- If systolic blood pressure (SBP) is below 160 mmHg AND diastolic blood pressure (DBP) below 110mmHg AND there are no signs of severe foetal growth restriction or foetal compromise, there is no need to send the woman to a hospital.
- Blood pressure should not be lowered below its pre-pregnancy level.
- Blood pressure, urine for proteinuria and foetal condition should be monitored weekly.
- Pre-eclampsia is often asymptomatic, so continuous monitoring for additional findings with regard to a pregnant woman with hypertension is necessary to ensure early detection of a worsening condition.
- If blood pressure worsens or the woman develops features of pre-eclampsia, manage as pre-eclampsia.
- If there are signs of severe foetal growth restriction or foetal compromise, admit the woman to the hospital for assessment and possible expedited birth.
- Educate the woman and her family with regard to the signs indicating severe pre-eclampsia or eclampsia.
- If all observations remain stable, allow to proceed with spontaneous labour and childbirth.

Elevated blood pressure associated with other findings

If hypertension is associated with symptoms such as headache, blurred vision, convulsions, loss of consciousness, epigastric pain, breathing difficulties or any laboratory findings such as proteinuria, elevated liver enzymes, elevated creatinine or thrombocytopenia, the possibility for 3) **chronic hypertension with superimposed pre-eclampsia** or 4) **pre-eclampsia-eclampsia** must be taken into consideration.

The management of these two conditions is analogous and depends on the **severity** of the symptoms.

Mild pre-eclampsia is often an asymptomatic condition where:

- there are two readings four hours apart
- SBP is 140 mmHg or higher but lower than 160 mmHg and/or
- DBP is 90 mmHg or higher but lower than 110 mmHg after 20 weeks of gestation
- Proteinuria 2+ on dipstick

If blood pressure and signs of pre-eclampsia remain unchanged or normalised, there is no need to send the woman to a hospital.

- Monitor blood pressure, symptoms indicating for severe pre-eclampsia and foetal condition twice a week.
- It is important to remain vigilant, because pre-eclampsia may progress rapidly to severe pre-eclampsia.
- Counsel the woman and her family about danger signs associated with severe pre-eclampsia or eclampsia.
- Do not administer anticonvulsants or antihypertensives unless clinically indicated.
- Do not administer diuretics. Diuretics are harmful and only indicated for use in women with pre-eclampsia who have indications for a diuretic (such as pulmonary oedema).
- As long as the well-being of the mother and foetus remains stable, the goal is for the woman to reach 37 + 0/7 weeks of gestation. If follow-up as an outpatient is not possible, admit the woman to the hospital.
- In women with mild pre-eclampsia at term (37 + 0/7 weeks or more), induction of labour is recommended.

Suspect severe pre-eclampsia if the patient presents with:

- SBP 160 mmHg or higher and/or
- DBP 110 mmHg or higher after 20 weeks of gestation and/or
- Proteinuria 2+ on dipstick and/or ANY of the following symptoms:
 - Headache (increasing frequency, unrelieved by regular analgesics)
 - Vision changes (e.g. blurred vision)
 - Oliguria (passing less than 400 mL urine in 24 hours)
 - Upper abdominal pain (epigastric pain or pain in right upper quadrant)
 - Difficulty breathing (rales on auscultation of lungs due to fluid in lungs)
 - Nausea and vomiting
 - Hyperreflexia or clonus

If further laboratory analyses are available, severe findings can include:

- Proteinuria – at least 300 mg of protein in a 24-hour urine sample; or a urinary protein/creatinine ratio of 0.3 or greater
- Liver enzymes (transaminases) more than twice the normal range
- Serum creatinine higher than 1.1 mg/dL or a doubling of serum creatinine in the absence of other renal disease
- Platelets less than 100,000 cells/mcL ($100 \times 10^9/L$)

If a woman has any one of the symptoms or signs listed for severe pre-eclampsia (with the exception of proteinuria 2+ on the dipstick), suspect severe pre-eclampsia; even if the blood pressure is normal. Women suspected of severe pre-eclampsia need to be managed with hospital-level care.

- Convulsions with signs of pre-eclampsia indicate eclampsia.
- Convulsions can occur regardless of the severity of hypertension.
- Treat all pregnant women with convulsions as if they have eclampsia until another diagnosis is confirmed.
- Convulsions represent a medical emergency which need to be treated immediately on-site.

Proteinuria is diagnosed by taking two urine dipstick measurements of at least ++ (30 mg per dL), taken six hours apart.

It is important to rule out pre-eclampsia-eclampsia with pregnant women having elevated blood pressure before assessing for alternative aetiologies for proteinuria.

- For example, a urinary tract infection, severe anaemia, heart failure and difficult labour may all cause proteinuria.
- Also, blood in urine due to trauma, schistosomiasis and contamination from vaginal blood can provide false positive results.
- Moreover, some conditions such as epilepsy, meningitis, encephalitis, epilepsy, head injury, and complicated malaria can cause neurological symptoms and hypertension, and should be kept in mind when diagnosing the patient.
- All women with convulsions should be treated as if they have eclampsia until another diagnosis is confirmed.

2.2.6 Preterm birth

Identification and prevention of imminent pre-term births reduce long-term health effects and perinatal deaths related to pre-term birth. By careful follow-up of imminent pre-term birth in ANC, pre-term births and risks of pre-term births can be reduced. (WHO 2015, WHO 2017).

What does preterm birth mean?

- Preterm birth is defined as babies born alive before 37 weeks of pregnancy are completed.
- Sub-categories of preterm birth, based on gestational age, are extremely preterm (less than 28 weeks), very preterm (28 to 32 weeks), and moderate to late preterm (32 to 37 weeks).
- Globally, prematurity is the second leading cause of death in children under the age of five years.
- Prematurity can cause lifelong physical, neurological, or educational disability.
- More than three quarters of premature babies can be saved with feasible, cost-effective care, such as essential care during childbirth and in the postnatal period for every mother and baby, provision of antenatal steroid injections, kangaroo mother care and antibiotics to treat newborn infections.

How to identify an imminent preterm birth?

- Common causes of preterm birth include multiple pregnancies, infections and chronic conditions, such as diabetes and high blood pressure.
- There could also be a genetic influence.
- Often no cause is identified.
- Women with suspected or detected imminent preterm birth should be referred to hospital for further studies and treatment.

How to prevent an imminent preterm birth?

Interventions to help prevent preterm birth:

- during pregnancy, a minimum of eight contacts with health professionals to identify and manage risk factors such as infections
- foetal measurements manually and by ultrasound to help determine gestational age and detect multiple pregnancies
- counselling on healthy diet

Antenatal corticosteroid therapy is recommended for women at risk of preterm birth from 24 weeks to 34 weeks of gestation when the following conditions are met:

- gestational age has been accurately assessed
- preterm birth is imminent
- there is no clinical evidence of maternal infection

- adequate childbirth care is available (including the capacity to recognise and safely manage preterm labour and birth)
- the preterm newborn can receive adequate care (including resuscitation, thermal care, feeding support, infection treatment and safe oxygen use)
- for women at risk of preterm birth, regardless of whether the pregnancy is single or multiple
- preterm rupture of membranes and no clinical signs of infection
- imminent preterm birth of a growth-restricted foetus
- women with pre-gestational and gestational diabetes who are at risk of imminent preterm birth

Dosage of corticosteroid therapy

- Either intramuscular (IM) dexamethasone or IM betamethasone (total 24 mg in divided doses) is recommended as the antenatal corticosteroid of choice when preterm birth is imminent.
- A single repeat course of antenatal corticosteroid is recommended if preterm birth does not occur within seven days after the initial dose, and a subsequent clinical assessment demonstrates that there is a high risk of preterm birth during the next seven days.

Other recommended treatment for imminent pre-term birth or in the event of preterm birth

- The use of magnesium sulphate is recommended for women at risk of imminent preterm birth before 32 weeks of gestation, to prevent preterm birth-related neurologic complications.
- Antibiotic administration is recommended for women with preterm prelabour rupture of membranes.
- The use of a combination of amoxicillin and clavulanic acid (“co-amoxiclav”) is not recommended for women with preterm prelabour rupture of membranes, as it increases the risk of necrotising enterocolitis.
- Kangaroo mother care is recommended for the routine care of newborns weighing 2000 g or less at birth, and should be initiated in health-care facilities as soon as the newborns are clinically stable.
- Unstable newborns weighing 2000 g or less at birth, or stable newborns weighing less than 2000 g who cannot be given kangaroo mother care, should be cared for in a thermo-neutral environment, either under radiant warmers or in incubators.
- Continuous positive airway pressure therapy is recommended for the treatment of preterm newborns with respiratory distress syndrome, and it should be started as soon as the diagnosis is made.

2.2.7 Malpositions and malpresentations

Careful vaginal or abdominal palpation or ultrasound, if available, in ANC should be used to identify malpositions and malpresentations to reduce difficult deliveries, maternal mortality and perinatal mortality by enabling the planning of the place of birth and the urgent need for a skilled birth attendant during childbirth. (IJOG 2017, WHO 2017, NICE 2017).

What do malpositions and malpresentations mean?

- Malpositions are abnormal positions of the vertex of the foetal head relative to the maternal pelvis.
- Malpresentations are all presentations of the foetus other than vertex.
- If the foetus is in an abnormal position or presentation, pregnancy may result in prolonged or obstructed labour.
- Predisposing factors to malpresentation include prematurity, multiple pregnancy, abnormalities of the uterus, partial septate uterus, abnormal foetus, placenta praevia and primiparity.
- Breech presentation occurs when the buttocks and/or the feet are the presenting parts and it appears in 3–4% of term deliveries.
- Breech presentation is more common in nulliparous women.
- Breech presentation has a significant recurrence risk.

- Term babies presenting by the breech have worse outcomes than cephalic ones, irrespective of the mode of delivery.
- Transverse lie and shoulder presentation occur when the long axis of the foetus is transverse. The shoulder is typically the presenting part.

How to diagnose a malposition or malpresentation?

Malpositions and malpresentations can be detected on vaginal and abdominal examination.

Breech presentation: On abdominal examination, the head is felt in the upper abdomen and the breech in the pelvic brim. Auscultation locates the foetal heart higher than expected with a vertex presentation. On vaginal examination during labour, the buttocks and/or feet are felt; and thick, dark meconium is normal.

Transverse lie and shoulder presentation: On abdominal examination, neither the head nor the buttocks can be felt at the symphysis pubis, and the head is usually felt in the flank. On vaginal examination, a shoulder may be felt, but not always. An arm may prolapse; and the elbow, arm or hand may be felt in the vagina.

What to do with a malposition or malpresentation?

- Delivery with a foetus in a malposition or malpresentation should take place in a hospital with the ability to perform an emergency caesarean.
- The presence of a skilled birth attendant is essential for safe vaginal breech birth.

Attempt external cephalic version if:

- breech presentation is present at or after 37 weeks
- vaginal birth is possible
- facilities for emergency caesarean are available
- membranes are intact and amniotic fluid is adequate
- there are no complications (e.g. foetal growth restriction, uterine bleeding, previous caesarean birth, foetal abnormalities, twin pregnancy, hypertension, foetal death)

If external version is successful, proceed with normal childbirth. If the external version fails, proceed with vaginal breech birth or caesarean section.

2.2.8 Multiple pregnancies

Careful vaginal or abdominal palpation or ultrasound, if available, in ANC should be used to identify multiple pregnancies to reduce obstetric complications by enabling skilled follow-up of pregnancy, planning the place of birth, and the urgent need for a skilled birth attendant during childbirth. (Vogel et al. 2013, Santana et al. 2016, NICE 2013)

What does multiple pregnancy mean?

- Multiple pregnancy is a pregnancy with two or more foetuses (twins, triplets, quadruplets, etc.).
- Multiple pregnancies are associated with greater severe maternal morbidity and maternal/perinatal mortality due to obstetric complications, such as pre-eclampsia, post-partum haemorrhage, and preterm birth.

How to diagnose a multiple pregnancy?

- Symptoms of multiple pregnancy are:
 - Uterus is larger than expected for the pregnancy weeks
 - Excessive weight gain, especially in early pregnancy

- Foetal movements felt in different parts of abdomen at same time
- Increased morning sickness
- Increased appetite
- Multiple pregnancy can be diagnosed by ultrasound. High levels of human chorionic gonadotrophin (hCG) and Alpha-fetoprotein are signs of multiple pregnancy.

What to do with multiple pregnancy?

- Antenatal care of multiple pregnancy should be handled in the hospital, and timely access to safe caesarean section is required to reduce risk to mother and newborn.
- Women with a multiple pregnancy should be offered a first trimester ultrasound scan to estimate gestational age and determine chorionicity. The largest baby should be used to estimate gestational age in multiple pregnancy in order to avoid the risk of estimating it from a baby with early growth pathology.
- Women with multiple pregnancy should be given the same advice about diet, lifestyle and nutritional supplements as in routine antenatal care.
- Women should be informed that about 60% of twin pregnancies result in spontaneous birth before 37 weeks 0 days, and that with triplet pregnancies about 75% of triplet pregnancies result in spontaneous birth before 35 weeks 0 days.
- The higher incidence of anaemia should be taken into consideration in women with multiple pregnancy, compared with women with singleton pregnancy.
- Women with multiple pregnancy should be subjected to a full blood count at 20–24 weeks in order to identify women who need early supplementation with iron or folic acid, and this should be repeated at 28 weeks, as in routine antenatal care.

2.2.9 HIV and syphilis

In high-prevalence settings, provider-initiated testing and counselling (PITC) for HIV should be considered a routine component of the package of care for pregnant women in all antenatal care settings. In low-prevalence settings, PITC can be considered for pregnant women in antenatal care settings as a key component of the effort to eliminate mother-to-child transmission of HIV, and to integrate HIV testing with syphilis, viral or other key tests as relevant to the setting, and to strengthen the underlying maternal and child health systems. (WHO 2016, WHO 2016b, WHO 2006)

How to diagnose HIV and syphilis?

- HIV can be identified with a screening test.
- The availability of HIV testing at ANC services is responsible for the high level of knowledge concerning HIV status among women in many countries. This allows women and infants to benefit from ART (Antiretroviral Therapy).
- Syphilis can be diagnosed by screening test.
- All pregnant women should be screened for syphilis at the first trimester (and again in late pregnancy), and women who do not have test results at delivery should be tested or retested to reduce maternal morbidity, foetal loss, and neonatal mortality/morbidity due to syphilis.

What to do with HIV and syphilis?

- WHO recommends that ART should be initiated in all pregnant women diagnosed with HIV, because it improves individual health outcomes, prevents mother-to-child transmission of HIV, and prevents horizontal transmission of HIV from the mother to an uninfected sexual partner.
- Initiatives should be put in place to enforce privacy protection and institute policy, laws and norms that prevent discrimination, and to promote tolerance and acceptance towards people living with HIV.

- Women testing positive for syphilis should be treated with penicillin, and their partners should be tested and treated with penicillin if needed.
- Women and men should be educated on how to prevent re-infection.

2.2.10 Tuberculosis (TB)

In settings where the prevalence of tuberculosis (TB) 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. (WHO 2010, WHO 2016)

Why and when to screen TB?

- TB increases the risk of preterm birth, perinatal death and other pregnancy complications.
- TB symptoms include, for example, a cough lasting longer than two weeks, haemoptysis, weight loss, fever, and night sweats.
- TB can be screened during the pregnancy.

How to screen and treat TB?

- By chest radiography, because there is no significant risk. Notice: national guidelines for the use of radiography should still be followed.
- If TB is diagnosed, all household contacts and other close contacts should also be systematically screened for TB.
- People living with HIV should also be systematically screened for active TB at each contact with the health-care facility.
- Systematic screening for active TB may also be considered for other subpopulations that have very poor access to health care: such as people living within urban slums; homeless people; people living in remote areas with poor access to health care; and other vulnerable or marginalised groups, including indigenous populations, migrants and refugees.
- Pregnant women with TB should be treated with antibiotics. With the exception of streptomycin, the first line anti-TB drugs are safe for use in pregnancy: streptomycin is ototoxic to the foetus and should not be used during pregnancy.
- Pyridoxine supplementation is recommended for all pregnant or breastfeeding women taking isoniazid for TB.

2.2.11 Symphysis-fundal height measurement and abdominal palpation

Replacing abdominal palpation with symphysis-fundal height (SFH) measurement for the assessment of foetal growth is recommended. (WHO 2016, Workshop in Hargeisa 2018)

Why to measure symphysis-fundal height (SFH)?

- SFH measurement is routinely practised in many antenatal care settings, also in Somaliland.
- SFH is used to assess foetal growth, and at the same time the nurse can check the position of the foetus (normal or breech position).
- If the SFH result differs from the average level, this may indicate a growth abnormality of the foetus.

How to measure symphysis-fundal height or palpate abdomen?

1. SFH measure and palpation:

- The mother should be in a semi-recumbent position (45-degree angle) on a firm surface, with an empty bladder, and expose enough of the abdomen to allow a thorough two-handed palpation.

2. SFH measure:

- Use a non-elastic centimetre tape, which should be reversed to avoid the centimetre scale influencing the clinician
 - Following the palpation, start the measurement from the top of the symphysis pubis.
 - Run the tape along the longitudinal axis of the uterus (not correcting to the midline) to the highest point of the uterus, which is the fundus.
 - Measure once, and mark down the number in whole centimetres
 - When using customised growth charts, the curves do not flatten towards term; uncompromised babies should continue growing until delivery. Measure in the same way, and if there is static/slow growth, referral should be made to obtain an ultrasound scan. If a growth problem is identified, the measurement should not be repeated or checked by another clinician: instead, there should be a direct referral to obtain an ultrasound scan.
- Due to a lack of clear evidence of accuracy or superiority of either SFH measurements or clinical palpation to assess foetal growth, according to WHO there is no need to change the practice at the moment, and both practices can be used.
 - However, because SFH measuring is already practised in many ANC clinics in Somaliland, it is recommended that the measuring practices are standardised. It is also recommended that midwifery students be trained to measure SFH.
 - It is important to remember that in some settings women experience a sense of shame during physical examinations, and this needs to be sensitively addressed by health-care providers.

2.2.12 Ultrasound scan

One ultrasound scan before 24 weeks of gestation (early ultrasound) is recommended for pregnant women to estimate gestational age, improve detection of foetal anomalies and multiple pregnancies, reduce induction of labour for post-term pregnancy, and improve a woman's pregnancy experience overall. (WHO 2016)

Why use ultrasound scan?

With ultrasound, it is possible to:

- estimate gestational age
- improve detection of foetal anomalies
- improve detection of multiple pregnancies
- reduce induction of labour for post-term pregnancies
- improve a woman's pregnancy experience overall

Early vs. late ultrasound scan

- If the ultrasound is done before 24 weeks of gestation, additional late ultrasound is not recommended, because the above-mentioned benefits cannot be improved or replicated.
- If no ultrasound is done before 24 weeks of gestation, a late ultrasound may be considered in order to find out the number of foetuses, presentation, and placental location.

Organising ultrasound scans

- Antenatal ultrasound is an intervention that can potentially be task-shifted from trained sonographers and doctors to trained nurses, midwives and clinical officers, provided that ongoing training, staff retention, quality improvement activities and supervision are ensured.
- Stakeholders may be able to offset/reduce the cost of antenatal ultrasound if the ultrasound equipment is also used for other indications (e.g. obstetric emergencies) or by other medical departments.

- The implementation and impact of this recommendation on health outcomes, facility utilisation and equity should be monitored at the health service and on the regional and country levels, based on clearly defined criteria and indicators associated with locally agreed targets.

2.3 Preventive measures

2.3.1 Antibiotics for ASB (asymptomatic bacteriuria)

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. (WHO 2016)

What does ASB mean?

- ASB means that the woman has a real bacteriuria but no specific symptoms of acute urinary tract infection.
- ASB is common in pregnancy, with rates as high as 74% reported in some low and middle income countries.
- If untreated, up to 45% of pregnant women with ASB may develop stasis in the urinary tract, which increases the likelihood of acute pyelonephritis, associated with an increased risk of preterm birth.

How to diagnose ASB?

- ASB is diagnosed by midstream urine culture (preferred) or gram-staining with more than 100 000 bacteria/mL culture.
- If these tests are unavailable, then dipstick testing should be performed.

How to treat ASB?

- ASB is treated with antibiotics (sulfonamides, ampicillin, or nitrofurantoin) for seven days.

2.3.2 Preventive anthelmintic treatment

In endemic areas (more than 20% prevalence), preventive anthelmintic treatment is recommended for pregnant women after the first trimester as part of worm infection reduction programmes. (WHO 2016, WHO 2016b)

What does preventive anthelmintic treatment mean?

- Preventive anthelmintic treatment means that in areas where prevalence of hookworm and *T.trichiura* infection is higher than 20% and where anaemia is a severe public health problem (40% or higher), pregnant women are treated with antibiotics, in order to reduce hookworm and *T.trichiura* infections.

How to prevent?

- Give a single-dose albendazole (400 mg) or mebendazole (500 mg) for pregnant women in the second and third trimester.

How does anthelmintic treatment benefit pregnant women?

- Two doses of anthelmintic treatment reduce infant and maternal mortality.
- Preventive anthelmintic treatment reduces the burden of other infections, e.g. HIV, malaria and TB.

2.3.3 Tetanus toxoid vaccination

Tetanus toxoid vaccination is recommended for all pregnant women, depending on previous tetanus vaccination exposure, in order to prevent neonatal mortality from tetanus (WHO 2016).

What does tetanus vaccination mean?

- Tetanus is a life-threatening disease caused by bacteria (*Clostridium tetani*).
- Tetanus can affect both mothers and neonates.
- There is no cure for the tetanus but there is a vaccination to prevent the infection.
- Vaccination of mother with tetanus toxoid (TT) protects the child from infection for the first weeks as well.
- According to a June 2017 WHO report, maternal and neonatal tetanus (MNT) has not yet been thoroughly eliminated in Somaliland.

How and when to vaccinate?

- The immunisation status should be checked at the first antenatal contact.
- Standard WHO recommendation is:
 - First three childhood DTP/Pentavalent TT vaccines series at 6 weeks, 10 weeks and 14 weeks.
 - Fourth vaccination at 4–7 years
 - Fifth vaccination at 12–15 years
 - One dose during the first pregnancy
- If the mother has not been vaccinated in accordance with this protocol or if the vaccination status is unknown, give one dose of vaccine immediately and the second dose in four weeks' time.
- The following scheme is recommended:
 - First vaccination (TT1) at first contact with woman of reproductive age or at first ANC contact, as early as possible.
 - Second vaccination (TT2) at least four weeks after TT vaccination 1 (at next ANC contact).
 - Third vaccination (TT3) At least six months after TT2.
 - Fourth vaccination (TT4) at least one year after TT3 or at subsequent pregnancy
 - Fifth vaccination (TT5) at least one year after TT4 or at subsequent pregnancy

2.3.4 Malaria prevention

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. (WHO 2016)

What does malaria prevention mean?

- Malaria infection during pregnancy is a major public health problem, with substantial risks for the mother, her foetus, and the new-born.
- WHO recommends a package of interventions for preventing and controlling malaria during pregnancy, which includes promotion and the 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.

How and when to prevent?

- Evidence 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 with two doses only.
- IPTp-SP treatment should be started as early as possible in the second trimester. The health-care system should be in contact with women at 13 weeks of gestation.
- 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.
- 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).

2.3.5 Pre-exposure prophylaxis (PrEP) for HIV prevention

Oral pre-exposure prophylaxis (PrEP) containing tenofovir disoproxil fumarate (TDF) should be offered as an additional prevention choice for pregnant women at substantial risk of HIV infection, as part of combination prevention approaches. (WHO 2016)

What does pre-exposure prophylaxis for HIV prevention and “women at substantial risk” mean?

- “Substantial risk” is provisionally defined as HIV incidence greater than 3 per 100 person-years in the absence of PrEP, but individual risk varies within this group depending on individual behaviour and the characteristics of sexual partners.
- Thresholds for offering PrEP may vary depending on a variety of considerations, including resources, feasibility and demand.
- Local epidemiological evidence concerning risk factors and HIV incidence should be used to inform implementation. The level of protection is strongly correlated with adherence.

2.4 Interventions for common physiological symptoms

Women’s bodies undergo substantial changes during pregnancy, which are brought about by both hormonal and mechanical effects. These changes lead to a variety of common symptoms – including nausea and vomiting, low back and pelvic pain, heartburn, varicose veins, constipation and leg cramps – that in some women cause severe discomfort and negatively affects their pregnancy experience.

2.4.1 Nausea and vomiting

Ginger, chamomile, vitamin B6 and/or acupuncture are recommended for the relief of nausea in early pregnancy, based on a woman’s preferences and available options. (WHO 2016)

Why and how to advise?

- Non-pharmacological options (for example, ginger, chamomile, mint oil and lemon oil) are unlikely to have harmful effects on mother and baby (in the absence of stronger evidence).
- Women should be informed that symptoms of nausea and vomiting usually resolve during the second half of pregnancy (after pregnancy week 20).
- Sometimes eating small meals regularly throughout the day may help with pregnancy nausea (especially before pregnancy week 13). A small snack or glass of juice in the morning before rising can help in avoiding morning nausea.

- Pharmacological treatments for nausea and vomiting (for example, doxylamine and metoclopramide), should be reserved for those pregnant women experiencing distressing symptoms who are not relieved by non-pharmacological options, and under the supervision of a medical doctor.

2.4.2 Heartburn

Advice on diet and lifestyle is recommended to prevent and relieve heartburn in pregnancy. Antacid preparations can be offered to women with troublesome symptoms that are not relieved by lifestyle modification. (WHO 2016)

Why and how to advise?

- Lifestyle advice to prevent and relieve symptoms of heartburn includes, e.g. avoidance of large, fatty meals and raising the head of the bed in order to sleep.
- Antacids (e.g. magnesium carbonate and aluminium hydroxide preparations) are probably unlikely to cause harm at the recommended dosages.
- There is no evidence that preparations containing more than one antacid are better than simpler preparations.
- Antacids may impair absorption of other drugs, and therefore should not be taken within two hours of iron and folic acid supplements.

2.4.3 Leg cramps

Magnesium, calcium or non-pharmacological treatment options can be used for the relief of leg cramps in pregnancy, based on a woman's preferences and available options. (WHO 2016)

Why and how to advise?

- There is little evidence on the effect of magnesium and calcium. However, they are unlikely to be harmful in the right doses (for example, 300–360 mg magnesium per day in two or three divided doses).
- There is no evidence on the effect of non-pharmacological therapies such as muscle stretching, relaxation, heat therapy, dorsiflexion of the foot and massage.

2.4.4 Low back and pelvic pain

Regular exercise throughout pregnancy is recommended to prevent low back and pelvic pain. There are a number of different treatment options that can be used, such as physiotherapy, support belts and acupuncture, based on a woman's preferences and available options. (WHO 2016)

Why and how to advise?

- Exercise to prevent low back and pelvic pain in pregnancy can take place on land or in water. Whilst exercise may also be helpful to relieve low back pain, it could exacerbate pelvic pain associated with symphysis pubis dysfunction and is not recommended for this condition.
- Pregnant women with low back and/or pelvic pain should be informed that symptoms usually improve during the months after birth.

2.4.5 Constipation

Wheat bran or other fibre supplements can be used to relieve constipation in pregnancy if the condition fails to respond to dietary modification, based on a woman's preferences and available options. (WHO 2016)

Why and how to advise?

- Dietary advice to reduce constipation during pregnancy should include promoting adequate intake of water and dietary fibre (found in vegetables, nuts, fruit and whole grains).
- For women with troublesome constipation not relieved by dietary modification or fibre supplementation, stakeholders may wish to consider intermittent use of poorly absorbed laxatives.

2.4.6 Varicose veins and oedema

Non-pharmacological options – such as compression stockings, leg elevation and water immersion – can be used for the management of varicose veins and oedema in pregnancy, based on a woman's preferences and available options. (WHO 2016)

Why and how to advise?

- Women should be informed that symptoms associated with varicose veins may worsen as pregnancy progresses, but that most women will experience some improvement within a few months of giving birth.
- Rest, leg elevation and water immersion are low-cost interventions that are unlikely to be harmful.

2.5 Health systems

Different kind of interventions can be employed to improve the utilisation and quality of ANC, depending on the context and setting. The WHO ANC 2016 guideline includes seven interventions, of which six have been chosen for the Somaliland ANC guideline. The midwife-led continuity of the care model was not considered feasible within the present context of Somaliland. ANC contact schedule with eight ANC contacts was defined as a long-term target, and the FANC model with at least four contacts as the short-term target. In addition, the MoHD asked to add a recommendation about fathers' or partners' role in ANC. This recommendation was taken from the WHO 2010 recommendations.

The following interventions were chosen:

- Women-held case notes (home-based records)
- Group ANC
- Women's groups
- Home visits
- Task-shifting
- Recruitment and retention of staff
- Fathers'/partners' role in ANC
- ANC contact schedules

2.5.1 Woman-held case notes

It is recommended that each pregnant woman carries her own case notes during pregnancy to improve continuity, quality of care and pregnancy experience (WHO 2016).

What are case notes?

- Women-held case notes mean that every pregnant woman carries notes on her background information which is important for pregnancy and information on follow-up to do with her pregnancy.
- Content can vary but could include, for example, the number and outcome of previous pregnancies (live birth(s), stillbirth(s), miscarriage(s), etc.), chronic diseases or conditions (diabetes, malnutrition, etc.) she has or has had, follow-up of the pregnancy by each contact (gestational weeks, blood pressure, haemoglobin, urine tests, glucose tests, ultrasound scans, nutrition, advice given, weight gain during pregnancy, foetal situation, etc.).
- Notes can be presented either on paper or electronically.
- It is important that the woman carries her notes with her at all times and especially if referring to hospital or other health-care facilities for special care or for delivery.

Importance of the case notes

- Case notes are important for the follow-up of pregnancy.
- Case notes may represent the only available medical records, and thus the only way to share information between different health-care settings.
- The case notes are often important also for the pregnant women: women carrying their own notes are more likely to feel in control of their pregnancy experience than women whose records are facility-held.

How to implement case notes?

- Health system planners should consider the content of the notes in order to have all important information in the notes but to avoid stigma and discrimination within certain contexts and settings.
- Health system planners should ensure that every pregnant woman receives the notes but also ensure that admission to hospital or other health-care facilities do not depend on women presenting their notes.
- Health system planners should consider which form the women-held case notes should take: electronic or paper-based; whether whole sets of case notes will be held by women, or only specific parts of them; and how copies are to be kept by the health-care facilities.
- If paper-based notes are chosen, health system planners need to ensure that case notes are durable and transportable.
- If the electronic-based notes are chosen, health system planners must ensure that all pregnant women have access to the appropriate technology and that attention is paid to data security.
- Health system planners must ensure that the contents of the case notes are accessible to all pregnant women through the use of appropriate, local languages and the appropriate levels. In areas with low literacy rates, the use of different kinds of illustrations should be considered.

2.5.2 Group antenatal care

Group antenatal care provided by qualified health-care professionals may be offered as an alternative to individual antenatal care for pregnant women within 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. (WHO 2016)

What does group antenatal care mean?

- Group antenatal care means that the first contact is an individual contact, and subsequent contacts have a part in individual check-up but are then integrated into a group ANC session.
- Group sessions typically include health education, and offer peer support for pregnant women.
- Group antenatal contact may take longer than the individual contact, but waiting times may be shorter and women subsequently do not need to reserve more time for their contacts than usually.

Importance of group antenatal care

Group ANC

- may increase women's satisfaction
- may reduce preterm-birth and perinatal mortality
- may improve women's pregnancy experience and providers' experiences, and potentially improve health outcomes in low-income settings, due to improved health literacy and better engagement of pregnant women with ANC
- may have an impact on, e.g. breastfeeding initiation, by improving communication and social support related to healthy behaviours
- enables education of an amount of women at one lesson instead of educating each woman separately
- may reduce health inequalities by improving maternal health literacy among disadvantaged women
- may help to reduce inequalities by facilitating the development of peer support networks
- may be a feasible way of improving ANC quality in settings where relatively few providers attend to relatively large numbers of women under limited time conditions in which effective communication can be challenging
- may be a sustainable way of providing care continuity

How to implement group antenatal care?

- Health-care facilities need to have appropriate facilities to deal with group sessions, including access to large, well-ventilated rooms or sheltered spaces with adequate seating. A private area should be available for examinations, and opportunities should be given for private conversations.
- Health-care providers should be able to offer a variety of time slots for group sessions (morning, afternoon, evening) and should consider making individual care available as well.
- Health-care providers should be offered training and supervision to be able to conduct group-based ANC.

2.5.3 Women's groups

The implementation of community mobilisation through facilitated participatory learning and action (PLA) cycles with women's group is recommended to improve maternal and newborn health, particularly in rural settings with minimal access to health services. Participatory women's groups represent an opportunity for women to discuss their needs during pregnancy, including barriers to accessing care, and to increase support to pregnant women. (WHO 2016)

What do women's groups mean in ANC?

Women's groups in ANC mean that the community organises groups of pregnant women in which women can discuss their needs during pregnancy and receive support, as well as in which women can increase their knowledge on their health during pregnancy, childbirth and postpartum, as well as the health and needs of newborn infants.

Importance of women's group

Women's groups

- may reduce maternal mortality
- may reduce perinatal mortality
- may reduce neonatal mortality
- improve the health of newborn infants
- may increase ANC coverage of at least one contact

How and where to implement women's groups?

- Women's groups have been found to be especially effective in rural settings.
- High quality facilitators are key issues in establishing and maintaining groups and helping them to be effective; good training and support of facilitators are therefore essential.
- The period of women's groups should be at least three months in order to be effective.
- Health-care planners should also consider groups for fathers (male involvement).
- Women's groups must be supported by appropriate structures, systems and processes. For example, each facilitator should be responsible for no more than 8-10 groups per month to act effectively, and resources must be in place to support this.
- Implementation should include awareness of the potential harm (gender-based violence, conflict with health providers or other community members, etc). Potential harm should be monitored throughout implementation so that it can be managed.
- Political support (national and local level) is essential.
- Women's groups must be adapted to reflect each country's context, specific capacities and constraints.
- Implementing the women's groups as part of national community health developmental strategies/plans or other community development structures is likely to enhance coverage and sustainability.
- Women's groups should not operate in isolation. To be effective, they need the co-operation of other social groups, e.g. recognising the value of maternal and newborn health as well as providing responsive and accountable health services. Co-operation from non-health sectors may be crucial for the implementation of group plans, e.g. road maintenance.

2.5.4 Home visits

Packages of interventions that include household and community mobilisation and antenatal home visits are recommended to improve antenatal care utilisation and perinatal health outcomes, particularly in rural settings with minimal access to health services. (WHO 2016)

What do home visits mean?

Home visits mean that a health-care provider visits pregnant woman (and her family) at her home.

Importance of home visits

- Home visits may reduce perinatal mortality.
- Home visits and community mobilisation improve the ANC coverage of at least one visit.
- Home visits increase the use of skilled antenatal, childbirth and postnatal care, at least of adolescents.
- Home visits and community mobilisation ensure women's voices.

How and where to implement home visits?

- Home visits are especially recommended in low resource settings and among adolescent pregnant women.
- Home visits are recommended in partnership with traditional birth attendances (TBAs). Where TBAs are the main providers of care at birth, dialogue with TBAs, women, families, communities and service providers is recommended, in order to define and agree on alternative roles for TBAs, recognising the important role they can play in supporting the health of women and newborns.
- Engaging male partners/husbands/fathers and others in the community to support women to make healthy choices for themselves and their children may help in addressing inequality and increase ANC coverage. It is still important to consider women's preferences, as including male partners could also have negative effect for women who would prefer to address pregnancy-related and other matters without their partner's involvement.

2.5.5 Task-shifting

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. (WHO 2016)

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. (WHO 2016)

What does task-shifting mean?

- Task-shifting means that in low-resource settings in particular, all available resources should be integrated in improving maternal and child health.
- Tasks are shared by various health-care providers and lay people.

How and where to implement task-shifting?

- Even though task-shifting has an important role in health-care delivery, policy makers need to work towards midwife-led care for all women.
- Lay health workers need to be recognised as integrated into the system, and not be working alone, i.e. task-shifting needs to occur within a team approach.
- The mandate of all health workers involved in task-shifting programmes needs to be clear.
- It may be feasible to task-shift antenatal ultrasound to midwives with the appropriate training, staffing, mentoring and referral systems in place.

2.5.6 Recruitment and retention of staff in rural and remote areas

Policy makers should consider educational, regulatory, financial, and personal and professional support interventions to recruit and retain qualified health workers in rural and remote areas. (WHO 2016)

What does this mean?

- This means that policy makers should ensure that rural and remote areas also have qualified health workers.

How to implement recruiting and retain qualified health workers in rural and remote areas?

- Use targeted admission policies to enrol students with a rural background in education programmes for various health disciplines and/or establish a health-care professional school outside of major cities.
- Revise undergraduate and postgraduate curricula to include rural health topics and clinical rotations in rural areas, so as to enhance the competencies of health-care professionals working in rural areas.
- Improve the living conditions for health workers and their families, and invest in infrastructure and services (sanitation, electricity, telecommunications, schools, etc.).
- Provide a good and safe working environment, including appropriate equipment and supplies, supportive supervision and mentoring.
- Identify and implement appropriate outreach activities to facilitate co-operation between health workers from better-served areas and those in under-served areas and, where feasible, use tele-health services to provide additional support.
- Develop and support career development programmes and provide senior posts in rural areas so that health workers can move up the career path as a result of gained experience, education and training, without necessarily leaving rural areas.

- Support the development of professional networks, rural health-care professional associations, rural health journals, etc., to improve the morale and status of rural providers and reduce feelings of professional isolation.
- Adopt public recognition measures such as rural health days, awards and titles at local, national and international levels to lift the profile of working in rural areas.

2.5.7. The role of fathers/partners in antenatal care

Fathers/partners should support and encourage women throughout pregnancy, labour and delivery and postnatal period. Promotion of the role of men as partners and fathers is essential for their involvement and support. (WHO 2010)

What does it mean?

Men should have an opportunity to have active and informed involvement in maternity, childbirth and childcare.

How to support men?

- Health services should consider convenient hours for men so that, when feasible, women can be encouraged to invite their partners to accompany them for care or fathers can be allowed to attend deliveries for support.
- Men need to understand the needs, risks and danger signs of pregnancy, childbirth and postpartum periods to support women.
- Providers need the interpersonal skills to work with men to support them in their roles.

2.5.8 Antenatal care contact schedules

As a short-term target for Somaliland, the so-called FANC model with at least four contacts at ANC is recommended. However, the long-term target also in Somaliland is a positive pregnancy experience with eight contacts. (WHO 2002, WHO 2016, Workshops in Hargeisa in 2017 and 2018)

Short-term target for Somaliland: ANC with four contacts (FANC)

- WHO no longer recommends the FANC model, because it does not offer women adequate contact with health-care practitioners.
- Because FANC with four contacts has not yet been properly implemented in Somaliland, FANC was chosen as a short-term target in Somaliland.

Scheduled contacts:

1. 12 weeks
2. 26 weeks
3. 32 weeks
4. 36–38 weeks

Content of the contacts with four contacts

1st Contact at 12 weeks

Basic information and counselling

- Mother: name, age, phone number, town/village
- Medical history of the mother: existing medical conditions, medications, number of pregnancies and births, problems with previous pregnancies, FGM
- Current pregnancy: last periods, trimester of first contact, EDD (estimated date of delivery), planned place for delivery, place for emergency delivery
- Nutritional counselling
- Iron and folic acid supplementation
- Assessment of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulties, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, mental well-being
- Information about DV (domestic violence)
- Psychosocial support

Clinical examinations

- Height
- Weight
- Calculate BMI (kg/m²)
- Blood pressure mmHg
- Fasting blood glucose test or OGTT (contact 1, 2 or 3 according to findings)
- Urine dipstick
- Haemoglobin (g/dl)
- HIV-ART, syphilis, tetanus vaccination
- Ultrasound
- Abdominal palpation: size of uterus, scars on abdomen, pains with palpation

2nd Contact at 26 weeks

Counselling

- Nutritional counselling
- Iron, folic acid, calcium supplementation
- HIV-ART
- Anthelmintic treatment
- Assessment of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt, mental well-being
- Information about DV (domestic violence)
- Breastfeeding counselling
- Psychosocial support

Clinical examinations

- Weight
- Blood pressure mmHg
- Fasting blood glucose test or OGTT (If not done during 1st or 2nd contact or hyperglycaemia has been detected at these contacts)
- Urine dipstick
- Haemoglobin (g/dl)
- SFH measure: size of uterus, growth of the baby
- Abdominal palpation: size of uterus, scars on abdomen, pains with palpation

3rd Contact at 32 weeks

Counselling

- Nutritional counselling
- Iron, folic acid, calcium supplementation
- HIV –ART
- Intent to breastfeed and counselling
- Anthelmintic treatment
- Assessment of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt, mental well-being
- Information about DV (domestic violence)
- Psychosocial support

Clinical examinations

- Weight
- Blood pressure mmHg
- Urine dipstick
- SFH measure: size of the uterus, growth of the baby
- Abdominal palpation: growth of the baby, position of the baby: cephalic/breach/unknown, scars on abdomen, pains with palpation

4th contact at 36 weeks

Counselling

- Nutritional counselling
- Iron, folic acid, calcium supplementation
- HIV –ART
- Assessment of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt, maternal well-being
- Information about DV (domestic violence)
- Breastfeeding counselling
- Counselling for birth preparedness
- Counselling for importance of postpartum contacts
- Psychosocial support

Clinical examinations

- Weight
- Blood pressure mmHg
- Urine dipstick
- Haemoglobin (g/dl)
- SFH measure: size of uterus, growth of the baby)
- Abdominal palpation: growth and position of the baby: cephalic/breach/unknown, scars on abdomen, pains with palpation

If the first ANC contact is later than at 12 weeks, the collection of basic information and the performance of clinical examinations generally planned for the first contact should be done then, in addition to what is planned for the weeks the contact occurs. Counselling should also cover all aspects that would have been dealt with starting from 12 weeks.

Long-term target for Somaliland: a positive pregnancy experience with eight contacts

Scheduled contacts:

1. 12 weeks
2. 20 weeks
3. 26 weeks
4. 30 weeks
5. 34 weeks
6. 36 weeks
7. 38 weeks
8. 40 weeks

Why eight contacts?

- improve safety during pregnancy through increased frequency of maternal and foetal assessment to detect problems
- improve health system communication and support around pregnancy for women and families
- improve quality of care
- may improve women's satisfaction
- four is not enough – more perinatal deaths compared to eight contacts
- eight is enough - no important differences in maternal and perinatal health outcomes between ANC models that included at least eight contacts and ANC models that included more (11–15) contacts
- more and better-quality contact especially in low-income countries may help to address health inequalities
- more contact between pregnant women and knowledgeable, supportive and respectful health-care practitioners is more likely to lead to a positive pregnancy experience

Checklist of the eight contacts

1st Contact at 12 weeks

Basic information and counselling

- Mother : name, age, phone number, town/village
- Medical history of mother: existing medical conditions, medications, number of pregnancies and births, problems with previous pregnancies, FGM
- Current pregnancy: last periods, trimester of first contact, EDD, planned place of birth, place for emergency childbirth
- Nutritional counselling

- Iron and folic acid supplementation
- Assessment of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, mental well-being
- Information about DV (domestic violence)
- Psychosocial support

Clinical examinations

- Height
- Weight
- Calculate BMI (kg/m²)
- Blood pressure mmHg
- Fasting blood glucose test or OGTT (contact 1, 2 or 3 according to findings)
- Urine dipstick
- Haemoglobin (g/dl)
- HIV-ART, syphilis, tetanus vaccination
- Ultrasound
- Abdominal palpation (size of uterus, scars on abdomen, pains with palpation)

2nd Contact at 20 weeks

Counselling

- Nutritional counselling
- Iron, folic acid, calcium supplementation
- HIV –ART
- Anthelmintic treatment
- Assessment of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt, mental well-being
- Information about DV (domestic violence)
- Psychosocial support

Clinical examinations

- Weight
- Blood pressure mmHg
- Fasting blood glucose test or OGTT (contact 1, 2 or 3 according to findings)
- Urine dipstick
- Ultrasound if not done at the first contact
- SFH measure: size of the uterus, growth of the baby
- Abdominal palpation: size of the uterus and growth of the baby, scars on abdomen, pains with palpation

3rd Contact at 26 weeks

Counselling

- Nutritional counselling
- Iron, folic acid, calcium supplementation
- HIV –ART
- Anthelmintic treatment
- Assessment of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt, mental well-being

- Information about DV (Domestic violence)
- Psychosocial support

Clinical examinations

- Weight
- Blood pressure mmHg
- Fasting blood glucose test or OGTT (If not done during 1st or 2nd contact or hyperglycaemia has been detected at these contacts)
- Urine dipstick
- Haemoglobin (g/dl)
- SFH measure: size of the uterus, growth of the baby
- Abdominal palpation: size of the uterus and growth of the baby, scars on abdomen, pains with palpation

4th Contact at 30 weeks

Counselling

- Nutritional counselling
- Iron, Folic acid, calcium supplementation
- HIV –ART
- Intent to breastfeed and counselling
- Assessment of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt, mental well-being
- Information about DV (domestic violence)
- Psychosocial support

Clinical examination

- Weight
- Blood pressure mmHg
- Urine dipstick
- SFH measure: size of the uterus, growth of the baby
- Abdominal palpation: growth and position of the baby: cephalic/breach/unknown, scars on abdomen, pains with palpation

5th Contact at 34 weeks

Counselling

- Nutritional counselling
- Iron, Folic acid, calcium supplementation
- HIV, ART
- Assessment and counselling of significant symptom: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt, mental well-being
- Information about DV (domestic violence)
- Counselling for breastfeeding
- Psychosocial support

Clinical examinations

- Weight
- Blood pressure mmHg
- Urine dipstick

- Haemoglobin (g/dl)
- SFH measure: size of the uterus, growth of the baby
- Abdominal palpation: position of the baby: cephalic/breach/unknown, scars on abdomen, pains with palpation

6th Contact at 36 weeks

Counselling

- Nutritional counselling
- Iron, folic acid, calcium supplementation
- HIV-ART
- Assessment and counselling of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt, mental well-being
- Information about DV (domestic violence)
- Counselling for breastfeeding
- Counselling for birth preparedness
- Counselling for importance of post-natal contacts
- Psychosocial support

Clinical examinations

- Weight
- Blood pressure mmHg
- Urine dipstick
- SFH measure: size of the uterus, growth of the baby
- Abdominal palpation: growth and position of the baby: cephalic/breach/unknown, scars on abdomen, pains with palpation

7th Contact at 38 weeks

Counselling

- Nutritional counselling
- Iron, folic acid, calcium supplementation
- HIV -ART
- Assessment and counselling of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt
- Information about DV (Domestic violence)
- Counselling for breastfeeding
- Counselling for birth preparedness
- Counselling for importance of post-natal contacts
- Psychosocial support

Clinical examinations

- Weight
- Blood pressure mmHg
- Urine dipstick
- SFH measure: size of the uterus, growth of the baby
- Abdominal palpation: growth and position of the baby: cephalic/breach/unknown, scars on abdomen, pains with palpation

8th Contact at 40 weeks

Counselling

- Nutritional counselling
- Iron, folic acid, calcium supplementation
- HIV -ART
- Assessment and counselling of significant symptoms: overall impression, pains, vision changes, urinary problems, breathing difficulty, nausea and vomiting, heartburn, vaginal bleeding, vaginal discharge, leg cramps, oedema, severe itching, foetal movements felt, mental well-being
- Information about DV (domestic violence)
- Counselling for breastfeeding
- Counselling for birth preparedness
- Counselling for importance of post-natal contacts
- Psychosocial support

Clinical examinations

- Weight
- Blood pressure mmHg
- Urine dipstick
- SFH measure: size of the uterus, growth of the baby
- Abdominal palpation: growth and position of the baby: cephalic/breach/unknown, scars on abdomen, pains with palpation

3 Breastfeeding

Exclusive breastfeeding for the first six months and breastfeeding until two years are recommended to improve the health of the newborn infant. (WHO 2013, WHO and UNICEF, 2018)

Active support is needed for establishing and sustaining appropriate breastfeeding practices, already during pregnancy. Women should be informed, empowered and supported to breastfeed in order to accomplish the benefits extending to their children, themselves and society as a whole. WHO and UNICEF have launched the *Baby-friendly Hospital Initiative* (BFHI) to help motivate facilities providing maternity and newborn services worldwide as a means to implement the Ten Steps to Successful Breastfeeding.

What does exclusive breastfeeding mean?

- Exclusive breastfeeding means that the baby is fed only by breast milk without any additional food or drink, not even water.
- Exclusive breastfeeding is recommended until the baby is six months old.

What are the benefits of exclusively breastfeeding and why is breastfeeding recommended until two years?

- Breastfeeding provides all the energy and nutrients that the baby needs for the first months of life, and up to half or more of a child's nutritional needs during the second half of the first year, and up to one-third during the second year of life.
- Breastmilk promotes sensory and cognitive development.
- Breastfeeding reduces child mortality, because it protects the infant against infectious diseases such as diarrhoea or pneumonia and has health benefits that extend into adulthood.
- Breastfeeding helps for a quicker recovery during illness.
- Breastfeeding has health benefits that extend into adulthood for example to decrease the risk of heart disease and type 2 diabetes.
- Breastfeeding improves also maternal health and well-being. It helps to protect against post-partum haemorrhage, postpartum depression and it reduces the risk of ovarian cancer and breast cancer.
- Breastfeeding is a safe way of feeding, adds family and national resources, and is safe for the environment.

How to enable exclusive breastfeeding for six months?

- Initiation of breastfeeding within the first hour of life
- Breastfeeding on demand - that is, as often as the child wants, day and night
- No use of bottles, teats or pacifiers

What should government and health authorities do to support breastfeeding?

- Increasing funding and awareness to raise breastfeeding rates from birth through two years.
- Enacting paid family leave and workplace breastfeeding policies, including paid breastfeeding breaks.
- Enacting legal measures to regulate the marketing of infant formula and other breastmilk substitutes, bottles and teats, in line with the International Code of Marketing of Breast-milk Substitutes and relevant World Health Assembly resolutions.
- Developing, implementing and enforcing policies to ensure that mothers receive skilled breastfeeding counselling when they attend health facilities.
- Implementing the **Ten Steps** to Successful Breastfeeding developed by UNICEF and WHO in all maternity facilities and providing breastmilk for sick newborns.
- Strengthening links between health facilities and communities, to ensure continued support for breastfeeding.
- Improving monitoring systems to track improvements in policies and programmes, and in breastfeeding practices.

WHO and UNICEF: Ten Steps to Successful Breastfeeding

Critical management procedures:

- 1a. Comply fully with the International Code of Marketing of Breast-milk Substitutes and relevant World Health Assembly resolutions.
- 1b. Have a written infant feeding policy that is routinely communicated to staff and parents.
- 1c. Establish ongoing monitoring and data-management systems.
2. Ensure that staff has sufficient knowledge, competence and skills to support breastfeeding.

Key clinical practices:

3. Discuss the importance and management of breastfeeding with pregnant women and their families.
4. Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.
5. Support mothers to initiate and maintain breastfeeding and manage common difficulties.
6. Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.
7. Enable mothers and their infants to remain together and practice rooming-in 24 hours a day.
8. Support mothers to recognise and respond to their infants' cues for feeding.
9. Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.
10. Co-ordinate discharge so that parents and their infants have timely access to ongoing support and care.

What can be done at ANC to encourage pregnant women to breastfeed?

- Ask about the intention to breastfeed and counsel on the benefits of breastfeeding.
- Consider the “Ten Steps” and follow them.

4 Birth spacing

Information on birth spacing and various birth-spacing methods should be available for families in need. Birth spacing can be discussed already at antenatal period (WHO 2018a,b).

Promoting birth spacing and ensuring access to preferred contraceptive methods for women and couples exert a direct impact on well-being. They also support the health and development of communities. Birth spacing plays a major role in reducing maternal and newborn morbidity and mortality. It also improves family health (WHO 2018b).

Benefits of birth spacing

If a woman has the possibility to choose if and when she is pregnant, it has direct impact on her health and well-being. Birth spacing allows the spacing of pregnancies and limits the size of families when needed or wished. It can also help young women who are at increased risk of health problems and death from early childbearing. Birth spacing also prevents unintended pregnancies, including those of older women who face increased risks related to pregnancy (WHO 2018a).

Birth spacing also allows people to make informed choices about their sexual and reproductive health. It represents an opportunity for women to aim at additional education and participate in public life, including paid employment in non-family organisations. Many adolescent girls who become pregnant must leave school, which results in long-term impacts for them as individuals as well as for their families and communities. Also, arranging birth spacing enables parents to invest more in each child (WHO 2018a).

Birth spacing also has an effect on infant mortality rates, because it can prevent closely-spaced and ill-timed pregnancies and births. The infants of mothers who die as a result of giving birth also have greater risk of death and poor health. Pregnant adolescents are more likely to have preterm or low birth-weight babies, which causes higher rates of neonatal mortality among them (WHO 2018a).

Birth spacing also reduces the risk of unintended pregnancies among women living with HIV. This has an impact on the number of infected babies and orphans (WHO 2018a).

Birth-spacing methods

Choosing the right method for a woman depends on her health situation: e.g. high blood pressure, diabetes, and migraine, as well as the woman's current breastfeeding. Another significant issue is, for instance, smoking habits (WHO 2018c).

There are various birth-spacing methods; both modern and traditional ones (Tables 1 and 2). Modern methods include pills, implants, injections, patches and intrauterine devices. One example of the traditional method is the calendar method (WHO 2018a). Birth-spacing methods cause some side effects and contraindicators (Tables 3 and 4).

Table 1. Modern Birth-spacing methods (Modified, WHO 2018)

<i>Method</i>	<i>Description</i>	<i>How it works</i>	<i>Effectiveness to prevent pregnancy</i>	<i>Comments</i>
Combined oral contraceptives (COCs) or “the pill”	Contains two hormones (oestrogen and progestogen).	Prevents the release of eggs from the ovaries (ovulation).	>99% with correct and consistent use. 92% as commonly used.	Reduces the risk of endometrial and ovarian cancer.

Progestogen-only pills (POPs) or "the minipill"	Contains only progestogen hormone, not oestrogen.	Thickens cervical mucous to block sperm and egg from meeting, and prevents ovulation.	99% with correct and consistent use. 90–97% as commonly used.	Can be used whilst breastfeeding; must be taken at the same time each day.
Implants	Small, flexible rods or capsules placed under the skin of the upper arm; contains progestogen hormone only.	Thickens cervical mucous to block sperm and egg from meeting and prevents ovulation.	>99%	A health-care provider must insert and remove; can be used for 3–5 years depending on implant; irregular vaginal bleeding common during the first six months, but is not harmful.
Progestogen-only injectables	Injected into the muscle or under the skin every two or three months, depending on the product.	Thickens cervical mucous to block sperm and egg from meeting, and prevents ovulation.	>99% with correct and consistent use. 97% as commonly used.	Delayed return to fertility (about 1–4 months on the average) after use; irregular vaginal bleeding common, but not harmful.
Monthly injectables or combined injectable contraceptives (CIC)	Injected monthly into the muscle, contains oestrogen and progestogen.	Prevents the release of eggs from the ovaries (ovulation).	>99% with correct and consistent use. 97% as commonly used.	Irregular vaginal bleeding common, but not harmful.
Combined contraceptive patch and combined contraceptive vaginal ring (CVR)	Continuously releases two hormones – a progestin and an oestrogen – directly through the skin (patch) or from the ring.	Prevents the release of eggs from the ovaries (ovulation).	The patch and CVR are new, and research on their effectiveness is limited. Effectiveness studies report, however, that it may be more effective than COCs, both as commonly and consistently or correctly used.	The patch and CVR provide a comparable safety and pharmacokinetic profile to COCs with similar hormone formulations.

Intrauterine device (IUD): copper containing	Small flexible plastic device containing copper sleeves or wire, inserted into the uterus.	The copper component damages sperm and prevents it from meeting the egg.	>99%	Longer and heavier periods during first months of use are common but not harmful; can also be used as an emergency birth-spacing method.
Intrauterine device (IUD) levonorgestrel	A T-shaped plastic device inserted into the uterus that steadily releases small amounts of levonorgestrel daily.	Thickens cervical mucous to block sperm and egg from meeting.	>99%	Decreases amount of blood lost with menstruation over time; reduces menstrual cramps and symptoms of endometriosis; amenorrhea (no menstrual bleeding) in a group of users.
Male sterilisation (vasectomy)	Permanent birth-spacing method to block or cut the vas deferens tubes that carry sperm from the testicles.	Keeps sperm out of ejaculated semen.	>99% after three months of semen evaluation. 97–98% with no semen evaluation.	Three months' delay in taking effect while stored sperm still present; does not affect male sexual performance; voluntary and informed choice essential.
Female sterilisation (tubal ligation)	Permanent birth-spacing method to block or cut the fallopian tubes.	Eggs are blocked from meeting sperm.	>99%	Voluntary and informed choice is essential.
Lactational amenorrhea method (LAM)	Temporary birth-spacing method for new mothers whose monthly bleeding has not returned; requires exclusive or full breastfeeding day and night of an infant less than six months old.	Prevents the release of eggs from the ovaries (ovulation).	99% with correct and consistent use. 98% as commonly used.	A temporary birth-spacing method, based on the natural effect of breastfeeding on fertility.

Standard Days Method or SDM	Women track their fertile periods (usually days 8 to 19 of each 26 to 32 day cycle) using cycle beads or other aids.	Prevents pregnancy by avoiding unprotected vaginal sex during the most fertile days.	95% with consistent and correct use. 88% with common use.	Can be used to identify fertile days both by women who want to become pregnant and women who want birth spacing. Correct, consistent use requires partner co-operation.
Basal Body Temperature (BBT) Method	Woman takes her body temperature at the same time each morning before getting out of bed, watching for an increase of 0.2 to 0.5 degrees C.	Prevents pregnancy by averting unprotected vaginal sex during fertile days.	99% effective with correct and consistent use. 75% with typical use of FABM.	If the BBT has risen and has stayed higher for three full days, ovulation has occurred and the fertile period has passed. Sex can resume on the 4th day until her next monthly bleeding.
Two-Day Method	Women track their fertile periods by observing the presence of cervical mucus (if any type, colour or consistency).	Prevents pregnancy by avoiding unprotected vaginal sex during the most fertile days.	96% with correct and consistent use. 86% with typical or common use.	Difficult to use if a woman has a vaginal infection or another condition that changes cervical mucus. Unprotected coitus may be resumed after two consecutive dry days (or without secretions).
Sympto-thermal Method	Women track their fertile periods by observing changes in the cervical mucus (clear texture), body temperature (slight increase) and consistency of the cervix (softening).	Prevents pregnancy by avoiding unprotected vaginal sex during the most fertile days.	98% with correct and consistent use. Reported 98% with typical use.	May have to be used with caution after an abortion, during menarche or menopause, and under conditions where body temperature may increase.

Table 2. Traditional birth-spacing methods (Modified, WHO 2018)

<i>Method</i>	<i>Description</i>	<i>How it works</i>	<i>Effectiveness to prevent pregnancy</i>	<i>Comments</i>
Calendar or rhythm method	Women monitor their pattern of menstrual cycle over a period of six months, subtracting 18 from the shortest cycle length (estimated first fertile day), and subtracting 11 from the longest cycle length (estimated last fertile day).	The couple prevents pregnancy by avoiding unprotected vaginal sex during the first and last estimated fertile days, by abstaining.	91% with correct and consistent use. 75% with common use.	May need to delay or use with caution when using drugs (such as anxiolytics, antidepressants, NSAIDs, or certain antibiotics) which may affect timing of ovulation.
Withdrawal (coitus interruptus)	Man interrupts the coitus and ejaculates outside the vagina, keeping semen away from woman's external genitalia.	Tries to keep sperm out of the woman's body, preventing fertilisation.	96% with correct and consistent use. 73% as commonly used.	One of the least effective methods, because proper timing of withdrawal is often difficult to determine, leading to the risk of ejaculating while inside the vagina.

Table 3. Side effects and contraindicators of modern methods (Modified, WHO 2018)

<i>Method</i>	<i>Side effects</i>	<i>Contraindicators</i>
Combined oral contraceptives (COCs) or “the pill”	<ul style="list-style-type: none"> - Changes in bleeding patterns (lighter or irregular bleeding or no monthly bleeding) - Headaches - Dizziness - Nausea - Breast tenderness - Weight change - Mood changes - Acne (can improve or worsen, but usually improves) 	<ul style="list-style-type: none"> - If a woman fully breastfeeds and baby is under six months old. - If a woman is 35 years of age or older and smokes. - If a woman reports serious liver disease (such as severe cirrhosis or liver tumour), acute or flare-up of viral hepatitis, or has ever had jaundice while using COCs. - High blood pressure (160/100 mm Hg or higher) - Diabetes for over 20 years. - Gallbladder disease currently, or takes medication for gallbladder disease. - Has ever had a stroke, blood clot in the leg or lungs, heart attack, or other serious heart problems. - If a woman has or has ever had breast cancer. - Has had migraine aura at any age. If migraine headaches without aura and woman is 35 or older, do not provide COCs. - Takes medications for seizures. - Takes rifampicin or rifabutin for tuberculosis or other illness.
Progestogen-only pills (POPs) or “the minipill”	<ul style="list-style-type: none"> - Women who are not breastfeeding may have frequent or irregular bleeding for the first several months, followed by regular bleeding or continued irregular bleeding. - Headaches - Dizziness - Breast tenderness 	<ul style="list-style-type: none"> - If a woman has severe cirrhosis or severe liver tumour (such as liver cancer). - If a woman reports a current blood clot in a leg (affecting deep veins, not superficial veins) or in a lung. - If a woman is taking barbiturates, carbamazepine, oxcarbazepine, phenytoin, primidone, topiramate, rifampicin, or rifabutin. - If a woman has or ever had breast cancer.

Implants	<ul style="list-style-type: none"> - Headaches - Abdominal pain - Acne (can improve or worsen) - Weight change - Breast tenderness - Dizziness - Mood changes - Nausea - Changes in bleeding patterns for the first several months to a year (lighter or irregular bleeding or no monthly bleeding). - After a year: changes in bleeding (lighter bleeding and fewer days of bleeding, irregular or infrequent bleeding or no monthly bleeding) 	<ul style="list-style-type: none"> - If a woman reports severe cirrhosis or severe liver tumour. - If a woman reports a current blood clot in legs (affecting deep veins, not superficial veins) or in a lung, and she is not on anticoagulant therapy. - If a woman has unexplained vaginal bleeding that suggests pregnancy or an underlying medical condition, implants could make diagnosis and monitoring of any treatment more difficult. - If a woman has or has ever had breast cancer.
Progestogen-only injectables	<ul style="list-style-type: none"> - Weight gain - Headaches - Dizziness - Abdominal bloating and discomfort - Mood changes - Less sex drive First 3 months: <ul style="list-style-type: none"> - Irregular bleeding - Prolonged bleeding At one year: <ul style="list-style-type: none"> - No monthly bleeding - Infrequent bleeding - Irregular bleeding 	<ul style="list-style-type: none"> - If a woman reports severe cirrhosis or severe liver tumour (such as liver cancer) - High blood pressure (over 160/100 mm Hg or higher) - If a woman reports a heart attack, heart disease due to blocked or narrowed arteries, or stroke. - If a woman has unexplained vaginal bleeding that suggests pregnancy or an underlying medical condition, progestin-only injectables could make diagnosis and monitoring of any treatment more difficult. - If a woman has or has ever had breast cancer. - If a woman has several conditions that could increase chances of heart disease (coronary artery disease) or stroke, such as high blood pressure and diabetes.

<p>Monthly injectables or combined injectable contraceptives (CIC)</p>	<ul style="list-style-type: none"> - Changes in bleeding patterns (lighter bleeding and fewer days of bleeding, irregular or infrequent or prolonged bleeding, or no monthly bleeding) - Weight gain - Headaches - Dizziness - Breast tenderness 	<ul style="list-style-type: none"> - If a woman fully or nearly fully breastfeeds and the baby is under six months. - If a woman is 35 years of age or older and smokes more than 15 cigarettes a day. - If a woman reports active hepatitis, severe cirrhosis, or a liver tumour. - High blood pressure (over 140/90 mm Hg or higher). - Diabetes for more than 20 years. - If a woman reports a heart attack, heart disease due to blocked or narrowed arteries, or stroke. - If a woman has or has ever had breast cancer. - Has had migraine aura at any age. - If migraine headaches occur without aura and the woman is 35 or older. - If a woman is planning major surgery that will keep her from walking for one week or more. - If a woman has several conditions that could increase her chances of heart disease (coronary artery disease) or stroke; such as older age, smoking, high blood pressure, or diabetes. - If a woman is taking lamotrigine.
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<p>Combined contraceptive patch and combined contraceptive vaginal ring (CVR)</p>	<p>PATCH</p> <ul style="list-style-type: none"> - Skin irritation or rash where the patch is applied - Changes in bleeding patterns (lighter bleeding and fewer days of bleeding, irregular or infrequent/prolonged bleeding or no monthly bleeding) - Headaches - Nausea - Vomiting - Breast tenderness and pain - Abdominal pain - Flu symptoms/upper respiratory infection - Irritation, redness, or inflammation of the vagina (vaginitis) <p>VAGINAL RING:</p> <ul style="list-style-type: none"> - Changes in bleeding patterns (lighter bleeding and fewer days of bleeding, irregular or infrequent or prolonged bleeding or no monthly bleeding) - Headaches - Irritation, redness, or inflammation of the vagina (vaginitis) - White vaginal discharge 	<p>PATCH + VAGINAL RING</p> <ul style="list-style-type: none"> - If a woman fully breastfeeds and the baby is under 6 months. - If a woman is 35 years of age or older and smokes. - If she reports serious liver disease (such as severe cirrhosis or liver tumour), acute or flare of viral hepatitis, or has ever had jaundice while using COCs. - High blood pressure (160/100 mm Hg or higher) - Diabetes over 20 years. - Gallbladder disease currently, or takes medication for gallbladder disease. - Has ever had a stroke, blood clot in the leg or lungs, heart attack, or other serious heart problems. - If a woman has or has ever had breast cancer. - Has had migraine aura at any age. - If migraine headaches occur without aura and the woman is 35 or older. - Taking medications for seizures. - Taking rifampicin or rifabutin for tuberculosis or other illness.
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<p>Intrauterine device (IUD) containing copper</p>	<p>Changes in bleeding patterns especially during the first three to six months (prolonged and heavy monthly bleeding, irregular bleeding, more cramps and pain during monthly bleeding)</p>	<ul style="list-style-type: none"> - If a woman has given birth more than 48 hours ago but less than four weeks ago. - If a woman currently has infection of the reproductive organs during the first six weeks after childbirth (puerperal sepsis), or has just had an abortion-related infection in the uterus (septic abortion). - If a woman has unexplained vaginal bleeding that suggests pregnancy or an underlying medical condition, use of an IUD could make diagnosis and monitoring of any treatment more difficult. - If a woman has current cervical, endometrial, or ovarian cancer; gestational trophoblast disease; pelvic tuberculosis. - If a woman has HIV infection with severe or advanced clinical disease. - If a woman has very high individual likelihood of STI infection, she should not have an IUD inserted unless gonorrhoea and chlamydia are ruled out by lab tests.
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Intrauterine device (IUD) levonorgestrel	<ul style="list-style-type: none"> - Changes in bleeding patterns (lighter bleeding and fewer days of bleeding, irregular or infrequent or prolonged bleeding or no monthly bleeding) - Acne - Headaches - Breast tenderness or pain - Nausea - Weight gain - Dizziness - Mood changes 	<ul style="list-style-type: none"> - If a woman has given birth more than 48 hours ago but less than four weeks ago. - If a woman currently has infection of the reproductive organs during the first six weeks after childbirth (puerperal sepsis), or she just had an abortion-related infection in the uterus (septic abortion). - If a woman was recently diagnosed with a blood clot in the legs (affecting deep veins, not superficial veins) or in a lung, and she is not on anticoagulant therapy. - If a woman reports severe cirrhosis or severe liver tumour (such as liver cancer). - If a woman has or has ever had breast cancer. - If a woman has unexplained vaginal bleeding that suggests pregnancy or an underlying medical condition, use of an IUD could make diagnosis and monitoring of any treatment more difficult. - If a woman has current cervical, endometrial, or ovarian cancer; pelvic tuberculosis; or gestational trophoblastic disease. - If a woman has HIV infection with severe or advanced clinical disease. - If a woman has very high individual likelihood of STI infection, she should not have an IUD inserted, unless gonorrhoea and chlamydia are ruled out by lab tests.
Male sterilisation (vasectomy)	None	No medical conditions prevent a man from having a vasectomy.
Female sterilisation (tubal ligation)	None	No medical conditions prevent a woman from having female sterilisation.

Lactational amenorrhea method (LAM)	None. Any problems are the same as for other breastfeeding women.	All breastfeeding women can safely use LAM, but a woman in the following circumstances may want to consider other contraceptive methods: - Has HIV infection. - Is using certain medications during breastfeeding (including mood-altering drugs, reserpine, ergotamine, anti-metabolites, cyclosporine, high doses of corticosteroids, bromocriptine, radioactive drugs, lithium, and certain anticoagulants). - The newborn has a condition that makes it difficult to breastfeed (including being small-for-date or premature and needing intensive neonatal care, unable to digest food normally, or having deformities of the mouth, jaw, or palate).
Standard Days Method or SDM	None	No medical conditions prevent the use of this method, but some conditions can make them harder to use effectively (for example, if menstrual cycles are irregular).
Basal Body Temperature (BBT) Method	None	No medical conditions prevent the use of these methods, but some conditions can make them harder to use effectively.
Two-Day Method	None	No medical conditions prevent the use of this method, but some conditions can make them harder to use effectively (for example, if menstrual cycles are irregular).
Sympto-thermal Method	None	No medical conditions prevent the use of this method, but some conditions can make them harder to use effectively (for example, if menstrual cycles are irregular).

Table 4. Side effects and contraindicators of traditional methods (Modified, WHO 2018)

<i>Method</i>	<i>Side effects</i>	<i>Contraindicators</i>
Calendar method or rhythm method	None	No medical conditions prevent the use of this method, but some conditions can make them harder to use effectively (e.g. if menstrual cycles are irregular)
Withdrawal (coitus interruptus)	None	No medical conditions prevent its use.

Who provides birth spacing?

Birth spacing information is supposed to be easily accessible and widely available through midwives and other trained health-care workers. It is recommended to train midwives and other trained health workers to provide (where authorised) locally available and culturally acceptable birth-spacing methods. Other trained health workers such as community health workers could also provide counselling and some birth-spacing methods (e.g. pills). Methods such as sterilisation need to be referred to a clinician. (WHO 2018a)

5 Female genital mutilation or cutting (FGM/C)

To improve maternal and newborn health and to protect girls from infancy to adulthood, the knowledge, attitudes and skills of health-care providers in preventing and managing the complications of FGM/C should be strengthened.

Community participatory learning, multifaceted discussion groups, and action cycles with women's groups should be provided as part of education and communication interventions with regard to the health risks and violation of human rights related to FGM/C.

All girls and women who have undergone FGM/C should be offered psychological support and sexual counselling for preventing and treating emotional and psychosocial difficulties and sexual dysfunction.

Performing FGM/C by health-care providers or reinfibulation should not be done in any case.

Women with FGM/C should be offered quality health care and opportunity for defibulation with local anaesthesia, to enable the prevention and treatment of urologic and obstetric complications, either antepartum or intrapartum.

Female genital mutilation/cutting (FGM/C) includes all procedures that intentionally cause injury to the female genital organs for non-medical reasons.

WHO has classified female genital mutilation into four major types (for example, WHO 2018). In parenthesis are descriptions used in Somaliland (ActionAID report, 2016):

- Type 1 (also known as “the sunna” in Somaliland): Often referred to as clitoridectomy, this is the partial removal of the clitoris (a sensitive and erectile part of the female genitals), and in very rare cases, only the prepuce (the fold of skin surrounding the clitoris).
- Type 2 (also known as “sunna 2/intermediate” in Somaliland): Often referred to as excision, this is the partial or total removal of the clitoris and the labia minora (the inner folds of the vulva), with or without excision of the labia majora (the outer folds of skin of the vulva).
- Type 3 (also known as “pharaonic” in Somaliland): Often referred to as infibulation, this is the narrowing of the vaginal opening through the creation of a covering seal. The seal is formed by cutting and repositioning the labia minora, or labia majora, sometimes through stitching, with or without removal of the clitoris (clitoridectomy).
- Type 4: This includes all other harmful procedures to the female genitalia for non-medical purposes, e.g. pricking, piercing, incising, scraping and cauterising the genital area.

FGM/C is deeply rooted in cultural and social factors (Balogun et al., 2013). The tradition has been practiced before Christianity and Islam for over 2000 years. FGM/C is mentioned in Islamic spoken tradition, though Koranic teachings do not include it. Religious leaders have recently emphasised that FGM/C is against Islam, which has supported the reduction of the most radical types of FGM/C. Recently the Ministry of Religious affairs in Somaliland produced a ‘Fatwa’ outlawing any form of cutting and stitching and applying punishment and compensation for circumcisers involved in such cases. However, the Shafi'i school of thought, for instance, considers the sunna cut as subject to guidance, with the predominant way of thinking considering it as “honourable” or preferred, rather than obligatory (ActionAID report, 2016).

Sheikh Almis Yahye Ibrahim, the head of International Horn University, is one of six sheikhs in the Arab region who have formed a network to fight FGM. He preaches about the harms of FGM at the

Ibrahim Dheere Mosque. He has told that none of his three daughters have been cut. “I wouldn’t want to destroy anything about them. They should remain the way Allah created them,” he has said, according to UNFPA news (UNFPA, 2018).

Other reasons for FGM/C are that it is seen as a social convention enforced by local structures and the passage from childhood to adulthood, ensuring premarital virginity and marital fidelity, and acting as a sign of cleanliness and beauty. Other reasons are that FGM/C provides protection for girls against any premarital sex, as well as to protect her if she faces rape (mostly in rural areas).

Traditionally, most girls and women in Somaliland have undergone the pharaonic cut (WHO type III) with a very small number of girls undergoing the sunna, which involves no stitches (WHO type I) (SOFHA, 2017). Recently, the use of the intermediate cut, often referred to as sunna2 (WHO type II), has increased. Sunna2 is seen as causing less damage than the pharaonic cut, yet still partially closes the vaginal orifice with two or three stitches.

A survey done by SOFHA, Somaliland Family Health Association, found that 99% of a total of 881 women, across the 22 target communities in the five regions of Awdal, Maroodi Jeex, Saanag, Saaxil and Togdheer, were cut (SOFHA, 2017). The prevalence rate was the same for young (15–24 years) and older women. Almost 90% of women aged over 25 years underwent the pharaonic cut and less than 40% of women aged less than 25 years. Effect of the change from pharaonic to intermediate (sunna2) and sunna can be seen in re-opening for marriage; almost all (97%) of women over 40 years old were cut open for marriage, as opposed to 71% of girls and women aged 15–24. Most women were cut by traditional cutters or TBAs. In rural villages, where health facilities are limited, only 5% of cutting is performed by health professionals, as opposed to 11% in cities.

5.1 Health effects

All types of FGM/C (the sunna and pharaonic) have no known health benefits. There are several short-term and long-term risks of FGM/C. There is clear evidence that FGM/C entails harm to women’s physical health throughout their life. The most common procedure-related complications are haemorrhage, pain, urine retention, genital tissue swelling, infections and problems with wound healing. Long-term complications include increased risk of urinary tract infections, bacterial vaginosis, dyspareunia and obstetric complications. (Berg et. al., 2014)

5.1.1 Consequences on mental health

FGM/C is a strongly traumatic experience which can leave a long-lasting psychological mark and injuriously impact mental health. Women with FGM/C may have various emotional and psychosocial difficulties, e.g. post-traumatic stress disorder, anxiety, somatisation phobia, and low self-esteem. Childbirth can activate the negative feelings that FGM/C has caused. This fact should be considered when treating pregnant women who have undergone FGM/C.

5.1.2 Consequences on pregnancy and labour

FGM/C is a risk for pregnancy and labour especially in the developing world where women have poor obstetric outcomes for multiple reasons. Miscarriage is a common event, especially in early pregnancy. Women with FGM/C, especially with type III as they have small introitus, may face problems in the event of miscarriage. Small introitus can make monitoring the progress, surgical and medical management of the miscarriage difficult or impossible. FGM/C increases the risk of retained products of conceptions, pelvic infections and vaginal infections. The difficulty in performing vaginal examinations during the pregnancy or delivery on women, who have undergone FGM/C, is a risk factor, because it can generate delay in the diagnosis of obstetric complications and result in delayed treatment. All types of FGM/C can cause risk for prolonged and obstructed labour.

Urinary tract infections (UTI) represent the most common bacterial infections during pregnancy, and studies have shown that women with FGM/C are in greater risk of having UTIs. UTIs and acute antepartum pyelonephritis are proven to be associated with adverse perinatal outcomes, and it is an independent risk factor for preterm delivery, IUGR and low birth weight.

Postpartum haemorrhage is a significant cause of maternal deaths globally. According to WHO, the deliveries of women with FGM/C were more likely to be complicated by postpartum haemorrhage than women without FGM/C. Risk for having extended maternal hospital stay, resuscitation of the infant, and inpatient perinatal death are also significantly higher in women with FGM/C. Risk for obstetric problems was greater with more extensive FGM/C. Some research results indicate that FGM/C has a strong relationship with foetal complications; FGM/C was linked with higher risk of fresh stillbirth, foetal distress and caput of the foetal head.

5.2 Prevention and care

WHO recommends implementation of community participatory learning and action cycles with women's groups. This improves maternal and newborn health, particularly in rural settings with minimal access to health services. In many countries, the systematic co-operation between the key players from the grassroots level to the health-care sector is important. Considering the fact stated, FGM/C prevention work should be done on the grassroots level. Also, providing opportunities for young women and young men, parents, health-care workers, teachers and others to exchange opinions and discuss the dilemmas they face seems to be effective approach (SOFHA, 2017). Sometimes hearing other people's views or having their own views challenged may change their view about FGM/C (Action AID report, 2016).

There are serious risks associated with all forms of FGM/C, including medicalised FGM/C. Trained health professionals who perform female genital mutilation are violating girls' and women's rights to life, physical integrity and health and the fundamental medical ethic to "do no harm." When medical personnel perform FGM, they wrongly legitimise the practice as medically sound or beneficial for girls and women's health. Because medical personnel often hold power, authority and respect in society, it can also further institutionalise the procedure. Some health-care professionals who perform medicalised FGM/C explain that they do so in order to avoid more damage being done by the girls being cut by non-health-care workers (SOFHA, 2017). There is evidence of health workers being involved in cutting, although most say they would decline if asked to cut a girl (Action AID report, 2016). However, a third of health workers include providing a safe cutting service as one of the responsibilities of health facilities. All TBAs and 83% of health specialists intend to have their own daughters cut in the future, with all health specialists and half the TBAs interviewed intending to approach a health professional to cut their daughters. Midwives and other health-care professionals are facing the contradiction between their professional preference, their understanding of their professional role and the pressure they feel to minimise the harm done to an individual girl. However, WHO strongly urges health professionals not to perform such procedures.

Defibulation is a procedure which cut open the sealed vaginal opening in a woman who has been infibulated. This is often necessary for improving the woman's health and well-being as well as to allow intercourse or facilitate childbirth. Defibulation can prevent and treat obstetric and urologic complications such as urinary tract infection and urinary retention. It also improves women's health and well-being. It eases daily functions such as urination and menstruation. It also facilitates medical examinations and childbirth. There is still research going on about the best timing of defibulation for childbirth in women with type III FGM/C (pharaonic), because researchers have not found consensus on the timing. Some countries recommend defibulation before possible pregnancy; or in the case that the woman is already pregnant, after pregnancy week 20.

Reinfibulation is the practice of sewing the external labia back together after defibulation. The procedure recreates the same problems of gynaecological, sexual and reproductive health, including difficulties associated with childbirth and the need for further surgeries that the original infibulation had created. Reinfibulation should not be performed in any event.

What can be done at ANC to prevent FGM/C and improve the health and well-being of women with FGM/C?

- Provide information on health impacts from FGM/C to women and men
- Organise group sessions to wider audiences than just pregnant women and their husbands to inform and educate about FGM/C
- Give psychosocial support
- Do not perform FGM/C or reinfibulation
- Offer a possibility for defibulation
- Take care of female infants' rights by providing counselling on the health effects of FGM/C and female infants' right to have intact genitals and no harm caused by FGM/C

6 Implementation

The main goal of the ANC guideline and its recommendations is to improve the quality of ANC, maternal, foetal and newborn health related to ANC in Somaliland. Carefully planned implementation is the only way to do this properly and successfully. In Somaliland, the implementation of the guideline needs collaboration between MoHD; health-care planners; health-care providers; training institutions; national representatives of WHO; religious leaders; local, national and international NGOs; donors; TBAs; and women, men and their families.

6.1 Considerations in general

WHO ANC 2016 guideline includes considerations for health policy, health system or the organisational and user levels (WHO 2016). The considerations are presented below to advise in preparing the implementation plan for the ANC Guideline in Somaliland.

6.1.1 Health policy considerations

- There needs to be a firm commitment by the government to scale up implementation of ANC services to achieve national coverage at health-care facilities: national support must be secured for the whole package rather than for specific components, to avoid fragmentation of services.
- In low-income countries, donors may play a significant role in scaling up the implementation of the model. Sponsoring mechanisms that support domestically driven processes to scale up the whole model are more likely to be helpful than mechanisms that support only part of the package.
- To set the policy agenda, secure broad anchoring and ensure progress in policy formulation and decision-making, stakeholders should be targeted among both elected and bureaucratic officials. In addition, representatives of training facilities and the relevant medical specialties should be included in participatory processes at all stages, including those prior to actual policy decisions, in order to secure broad support for scaling-up.
- To facilitate negotiations and planning, information on the expected impact of the model on users, providers (e.g. workload, training requirements) and costs should be assessed and disseminated.
- The model must be adapted to local contexts and service-delivery settings.

6.1.2 Health system or organisational-level considerations

- Introduction of the model should involve pre-service training institutions and professional bodies, so that training curricula for ANC can be updated as quickly and smoothly as possible.
- Long-term planning is needed for resource generation and budget allocation to strengthen and sustain high-quality ANC services.
- In-service training and supervisory models will need to be developed in accordance with health-care providers' professional requirements, considering the content, duration and procedures for the selection of providers for training. These models can also be explicitly designed to address staff turnover, particularly in low-resource settings.
- Standardised tools will need to be developed for supervision, ensuring that supervisors are able to support and enable health-care providers to deliver integrated, comprehensive ANC services.
- A strategy for task-shifting may need to be developed to optimise the use of human resources.
- Tools or "job aids" for ANC implementation (e.g. ANC cards) will need to be simplified and updated with all key information in accordance with the model.
- Strategies will need to be devised to improve supply chain management according to local requirements, such as developing protocols for the procedures of obtaining and maintaining the stock of supplies, encouraging providers to collect and monitor data on the stock levels, and strengthening the

provider-level co-ordination and follow-up of medicines as well as health-care supplies required for implementation of the ANC model.

6.1.3 User-level considerations

- Community-sensitising activities should be undertaken to disseminate information about the importance of each component of ANC, and pregnant women's right to attend ANC for their health and the health of their unborn baby. This information should provide details about the timing and content of the recommended ANC contacts, and about the expected user fees.
- It may be possible to reduce waiting times by reorganising ANC services and/or client flow.

6.2 Identified benefits and considerations in implementing the guidelines in Somaliland

The implementation plan for the ANC guideline for Somaliland was made in collaboration with MoHD, representatives of universities of Somaliland and midwifery teaching institutions, representatives of WHO, UNICEF, UNFPA, NAFIS (especially regarding the FGM/C), IOM, Somaliland Midwifery Association, health-care professionals, NUOVO NORDIC (especially regarding the application for ANC), FSN (the Finnish Somali Network), and the National Institute for Health and Welfare of Finland (THL). A two-day workshop was organised to plan the implementation in Hargeisa, October 2018. In the workshop, participants identified not only the benefits of adapting the new guidelines but also the possible risks and hindrances in implementing the guidelines

6.2.1 Benefits

In the 2018 implementation workshop, a considerable number of benefits in adopting the new ANC guidelines were identified by the participants:

- improved ANC with evidence-based recommendations and, thereby, increased use of ANC and trust in ANC
- documentation of the care provided is facilitated by the guidelines and this will improve the follow-up of high-risk mothers
- better diagnosis of problems
- health education and counselling
- nutritional interventions
- the need to update existing guidelines
- the need to harmonise the guidelines: equal maternal assessment and treatment during pregnancy, also in rural areas
- the need to exchange information between MCHs and hospitals
- the need to reduce maternal mortality and stillbirths
- the need to monitor and evaluate, also in rural areas
- the guidelines are comprehensive, easy-to-follow and easily adoptable
- the guidelines offer good tools for implementation
- the guidelines are already supported by many different sides
- can be used as a country guide in planning ANC services

6.2.2 Health policy considerations

1) A firm commitment from the MoHD

The MoH/MoHD was already involved in the planning phase of the fourth part of the MIDA FINNSOM project in 2016. During that period, it was agreed by the MoH that the ANC guidelines for Somaliland would be prepared as based on the WHO 2016 guidelines as a part of the MIDA FINNSOM project.

Representatives of MoHD participated in the training mission/workshop in 2017 and in the implementation workshop in 2018. In 2018, at the end of the workshop, a written, signed agreement of commitment was received from the MoHD regarding the implementation of the guidelines. At the workshop, all identified considerations were reviewed while the representatives of MoHD attended the workshop.

As planned in the MIDA FINNSOM project, the National Institute for Health and Welfare (THL) from Finland, together with the International Organization of Migration (IOM), will support the MoHD in planning the implementation, training of key persons regarding the guideline, and developing a booklet or pocket version (very brief version) of the guideline (translated in Somali), to be shared with every antenatal care worker in Somaliland. The MoHD will plan and organise training and booklet sharing. Further training and monitoring missions will be organised in 2019 in order to estimate how well the implementation is going on.

2) Financial issues and role of donors

The lack of human and other resources, together with financial problems and the lack of equipment were identified as hindrances to implementing the guidelines in the implementation workshop in 2018. Representatives of INGOs such as UNFPA and UNICEF were invited into the workshop, and they participated in the implementation workshop in 2018. The role of INGOs and MoHD in offering financial support and organising care were discussed in the workshop.

It was agreed that the role of MoHD rests in co-ordination and organising services, UNFPA's role lies in offering the needed equipment and other resources, and the task of UNICEF rests in offering the required medicines. It was agreed that the list of needed equipment will be added to the ANC guidelines to facilitate financing and increase equality in the distribution of equipment throughout Somaliland. Before every MCH station has the needed equipment, the guidelines will be followed as far as possible with the available equipment and skills. Ultrasound scans can be centralised in some MCH stations and refer pregnant women to these stations for their scans: thus, ultrasound apparatus is not needed at every MCH station. The referral system must be organised by MoHD.

Equipment needed at every MCH station to be able to follow the guidelines:

- Water and soap (to wash hands before meeting each patient)
- Disinfection liquid for hands (to be used before taking the measures and giving treatment)
- Medical gloves (latex or nitrile)
- Non-sterile gauze swab
- Lancets
- Blood pressure meter
- Pinard stethoscope
- Weight scale (analogue or digital)
- Height-measuring tape (on the wall)
- Tape measure
- Urine test strips
- Plastic cups (for urine)
- Blood-glucose meter
- Blood-glucose test strips
- Haemoglobin meter (ex. HemoCue)
- Haemoglobin test strips

- Ultrasound apparatus (if ultrasound scans are centralised and the referral system organised, this is not needed at every station)
- Medicines:
 - Antibiotics for asymptomatic bacteruria and urinary tract infection (nitrofurantoin, pivmecillinam, cefalexin)
 - Oral iron and folic acid supplement
 - Long-acting calcium channel blocker
 - Aspirin

3) Wider commitment and support

To be able to have wider commitment and support for the implementation of the guidelines as well as adaptation within the local context and service-delivery settings, representatives of MoHD as well as representatives of the training facilities and relevant medical specialties were invited to and attended the implementation workshop in 2018. They participated in the group work and helped in planning the implementation.

6.2.3 Health system or organisational-level considerations

The participants of the implementation workshop in 2018 identified the following negative health system or organisational-level considerations in Somaliland:

- Lack of skills and knowledge about the guidelines
- Lack of training of midwives and nurses
- Inadequate training of the entire MCH staff
- Lack of motivation of staff at MCH stations
- Use of TBAs
- Lack of or poor relationship between community leaders and MCH stations
- Poor communication in ANC
- Lack of relation between the private sector and MCH stations
- Poor referral system
- Transportation
- Poor monitoring
- Lack of documentation

1) Training

Involving training institutions and professional bodies

Representatives of Amoud, Nugaal and Hargeisa University, Hargeisa Institute for Health Sciences (HIOHS) and the Somaliland Midwifery Association (SLNMA) participated in the implementation workshop in 2018. Hargeisa University recently launched a new curriculum for midwifery training (Midwifery Procedures Manual, 2018). There is no discrepancy between the curricula or manual and new ANC guidelines: the guidelines offer a national, evidence-based framework for ANC, and the manual a tool for everyday practice on how to meet and care for clients. The guidelines and the manual complement each other.

It was agreed that universities and HIOHS will follow the guidelines in the training of midwives and doctors. The representatives of Amoud, Nugaal and Hargeisa University will inform other universities of the new ANC guidelines and HIOHS other midwifery schools. The students will inform and support the personnel at the MCH stations to follow the guidelines and advise the personnel using the ANC application during their practical training at the MCH stations. The booklets will also be shared with the training institutions. The Somaliland Midwifery Association (SLNMA) and Somaliland Nursing Association will spread the information on the ANC guidelines among midwives and nurses.

Training of trainees

THL has already trained trainees during the workshops in 2017 and 2018. It was agreed that everyone participating in the workshops are responsible for training their colleagues, or at least to share the information that new guidelines will be available in 2019. It was also decided that to be able to follow up how many of the MCH staff have already been trained, the MCH team leaders will send the information on the number of trained staff to community health service directorate and/or the Somaliland Midwifery Association (SLNMA). The SLNMA and community health service directorate will inform the MoHD about the numbers. Dr Ali Omar from the MoHD will organise the list-keeping.

Together with universities, IOM and THL, the MoHD will further develop in-service training and training of trainees to the health-care providers' professional requirements, considering the content, duration and procedures for the selection of providers for training.

Together with funders and INGOs the MoHD should make long-term planning for resource generation and budget allocation to strengthen and sustain high-quality ANC services following the new guidelines. This includes the fact that the already trained midwives have not received positions – they need to be employed. In particular, remote areas have an urgent need for trained staff. The MoHD together with the funders and INGOs should offer the positions and motivate the trained staff to go back to their villages to offer ANC services.

The MoHD has had a policy to train the TBAs as health promoters but this would need incentives and organisation by the MoHD. At the moment, some family health workers in communities encourage women to go to the facilities and provide health promotion, but this practice is based on a separate project and should be common-practice supported as well as organised and financed by the MoHD and funders.

Lack of communication between the private sector, MCH stations and hospital was a common concern at the implementation workshop in 2018. It was decided that the MoHD would share the ANC guidelines and booklets also with the private MCH stations and hospitals.

Tools for implementation

The ANC application developed by NUOVO NORDIC Healthcare Services will be used to train the staff at MCH stations in adapting the ANC guidelines. It was decided to select four MCH stations for the piloting of the application: one from Borama and three from Hargeisa. The piloting will be made together with NUOVO NORDIC, Hargeisa and Amoud University, the FSN and IOM. One diaspora expert from IOM will train the MCH staff for the pilot.

Amoud University is also a partner in the Hiil hooyo maternal health-care project managed by FSN, Finland, and the Hiil hooyo project also aligns its in-service training to MCH workers with the updated ANC guidelines. The Hiil hooyo project is ready to support the implementation of the ANC guidelines and introduction of the ANC applications (by NUOVO NORDIC and UNICEF), eventually also in other regions where the Hiil hooyo project is being implemented.

A short version of the ANC guidelines including the content of each ANC contact will be created by the international experts. The booklet will be sent for comments to MoHD, training institutions of Somaliland and ANC experts. After being accepted, it will be translated into Somali and printed. MoHD will organise the sharing of the booklets with every MCH station and every health-care professional in Somaliland. The booklet should help in adapting and implementing the new ANC guidelines.

Together with universities and INGOs, the MoHD will develop other standardised tools for supervision, ensuring that supervisors are able to support and enable health-care providers to deliver integrated, comprehensive ANC services. The MoHD will develop a strategy for task-shifting, to be developed to optimise the use of human resources. Tools or “job aids” for ANC implementation will need to be simplified and updated with all key information in accordance with the ANC model. It was agreed in the implementation workshop in 2018 that either MoHD together with the staff at MCH stations or the students with the staff of MCH stations will develop posters on key points of ANC guidelines to be hanged on the walls at MCH stations.

Co-operation and communication

The MoHD, INGOs, NGOs and head of the MCH stations and delivery hospitals will organise regular meetings to improve and strengthen co-operation and communication including health-care providers at private sector. Together they will also develop strategies to be devised to improve supply chain management according to local requirements, such as developing protocols for the procedures of obtaining and maintaining the stock of supplies, encouraging providers to collect and monitor data on the stock levels and strengthening the provider-level co-ordination and follow-up of medicines as well as health-care supplies required for implementation of the ANC model.

2) Referral system and transportation

The participants at the implementation workshop in Hargeisa 2018 identified the unstructured referral system, lack of functional ambulances and poor road system in Somaliland as hindrances in implementing the ANC guidelines and in general to the improvement of ANC and maternal/infant health in Somaliland. It was agreed that the MoHD together with training institutions and health-care providers will develop the national referral system of maternity care.

The MoHD will ascertain the regions where the need for ambulances is most urgent and try to organise funding there to supply ambulances. Amoud University has good experience in how to keep ambulances well-functioning, i.e. choosing drivers carefully.

3) Monitoring and documentation

Lack of documentation and poor monitoring/evaluation were identified as challenges in implementing the ANC guidelines in Somaliland. All MCH stations and delivery hospitals have the responsibility to collect data on ANC contacts and deliveries and to send the data to MoHD. However, the data collection has not been totally without gaps. The MoHD is developing its health-care information and management systems (HIMS), and as a part of this development the data collection on maternal care will also be developed.

Women-held case notes – i.e. maternity cards – have been used in some cities in Somaliland, but not in rural areas. The participants find proper cards to be significant tools for documentation and information-sharing between antenatal care and hospitals. The problem has been that women have lost their cards, thus they have not been available when needed. In some MCH stations, the cards have been kept in the facility, and each woman has had “an identification number”: for example, the mobile phone number with which the cards could have been identified. The evidence presented in WHO ANC recommendations show that women-held case notes could be an effective tool towards improving health awareness and client-provider communication. Because inadequate infrastructures and resources often hamper efficient record-keeping, the recommendations suggest that personally held case notes may be less likely to get lost.

The maternity card can also be an electronic “card”. ANC application developed by NUOVO NORDIC Healthcare Services can also be used as an electronic maternity card. In Somaliland, it should be considered whether the electronic version of the maternity card, which is also used by mobile phone, would be the better option than a paper-based maternity card. In addition, the ANC application provides the opportunity for systematic data collection and an annually compiled summary which will enable the monitoring of maternal morbidity and mortality, infant health and quality of ANC services in Somaliland. This monitoring and evaluation shall be discussed more in Chapter 7.

6.2.4 User-level considerations

As user-level considerations, the participants of the 2018 implementation workshop identified the poor knowledge of mothers, lack of awareness and lack of women empowerment, as well as language barriers and culture-related issues.

As solutions for these concerns, it was agreed that MoHD, after publishing the guidelines, and together with the MCH stations, should organise an awareness-raising campaign to inform about the guidelines in radio, TV and social media. The MCH stations should also spread the information and consider the

methods of how to empower women to participate in ANC services and also inform their husbands about the importance of ANC services for their pregnant wives.

In the campaign, the key message is that by using the new guidelines MoHD ensures that quality of ANC services will be improved by offering health education, enough contacts in ANC (four to eight contacts), skilful personnel, and well-functioning referral mechanisms. This will ensure safe pregnancy and childbirth for families participating in ANC.

It should also be considered as to which kinds of other interventions can be combined within ANC services, e.g. food supply, to encourage women to come to the MCH stations. The possibility to share baby-boxes or baby-kits for those women having had four contacts and institutional level or facility-based delivery was also discussed. Both UNICEF and IOM have baby-kits to share and will make a plan on how to share the kits. If the baby-kit project is successful, it would be useful to consider sharing baby kits as a usual practice, as a means to encourage women to use ANC care.

No cultural-related barriers beliefs were identified which would prevent the implementation of the guidelines. The MoHD has planned a survey of the beliefs related to the use of ANC, but it was agreed that the survey and implementation of the guidelines can be done simultaneously. The guidelines will be translated in Somali, which may help in counselling the women and men.

6.3. Key bodies in implementation

6.3.1 Role of the Ministry of Health Development (MoHD) of Somaliland

The Ministry of Health and Development has the most significant role in the implementation of the ANC guidelines. As written above, the MoHD has a role in

- organising ANC services, also in rural and remote areas
- organising health-care personnel, also for rural and remote areas
- organising national referral system and safe transportation
- co-ordination of funding and co-operation with funders
- communication between MoHD, health-care professionals in the public and private sectors, NGOs, INGOs, and training institutions
- organising training and keeping a list of trained personnel
- sharing the guidelines with every MCH station and distributing booklets to all health-care personnel in ANC
- supporting the data collection by using the ANC application and developing a well-functioning annual data collection system
- organising an awareness campaign to inform about ANC guidelines in radio, TV and social media

6.3.2 Role of the training institutions

The training institutions have a significant role in training the health-care personnel. It is very important that the new ANC guidelines are included in the curricula of universities and midwifery and nursing schools. The representatives of Hargeisa, Amoud and Nugaal universities as well as HIOHS were present at the implementation workshop in Hargeisa in 2018. It was agreed that the representatives will share the information on new ANC guidelines with all other universities and training institutions. Furthermore, it was agreed that university students will train ANC staff to use the ANC application and thus participate in the implementation of the guidelines.

6.3.3 Role of the NGOs and INGOs

The MoHD will co-ordinate each NGO and INGO working in the area of sexual and reproductive health including antenatal care to ensure that they are familiar with the new guidelines and follow them. The

INGOs have a significant role in employing staff for MCH stations and hospitals as well as funding equipment and medicines needed in ANC, and they therefore need to be aware of the national guidelines.

6.4 Timetable of the implementation

As a part of the MIDA FINNSOM project, IOM and THL will plan and IOM will organise, together with MoHD, two missions in 2019 to be able to train more ANC professionals outside of Hargeisa and be able to monitor the implementation. Afterwards, the MoHD will be responsible for monitoring and evaluating implementation of the guidelines.

7 Dissemination and applicability

7.1 Dissemination

This guideline will be available online for download and also as a printed publication. The online version will be both in English and Somali.

In addition, a brief version of the guideline will be available in English and in Somali. The Somali version will also be available as a printed version, which will be distributed to every MCH professional by the MoHD.

The MoHD will organise a media campaign for awareness-raising and add a link to the online guidelines on MoHD's webpages.

7.2 Applicability

Effective implementation of the recommendations in this guideline will likely require the organisation and re-organisation of care and distribution as well as redistribution of health-care resources in Somaliland.

The potential barriers to implementation, as presented in the WHO ANC 2016 guideline, include the lack of the following:

- human resources with the necessary expertise and skills to implement, supervise and support recommended practices, including client counselling;
- infrastructures to support interventions, e.g. lack of resources to support ultrasound equipment;
- physical space to conduct individual or group-based counselling;
- community understanding of the new model of care, particularly as based on the contact schedule and potentially longer wait times;
- physical resources, e.g. equipment, test kits, supplies, medicines and nutritional supplements;
- effective referral mechanisms and care pathways for women identified as needing additional care;
- understanding of the value of newly recommended interventions among health-care providers and system managers.
- health information management systems (HMISs) designed to document and monitor recommended practices (e.g. client cards, registers, etc.).

These barriers were discussed in the implementation workshop in Hargeisa in 2018, and solutions for them are described in Chapter 6.

7.3 Monitoring and evaluating the impact of the guideline

The implementation and impact of the recommendations of this ANC guideline for Somaliland should be monitored by the MoHD. The MoHD will define criteria and indicators that are associated with locally agreed targets. The MoHD will ensure that the criteria and indicators are known by the health-care providers.

The MoHD will organise systematic data collection on ANC with an ANC application developed by the NUOVO NORDIC Health Care services and UNICEF. Systematic data collection and an annual summary of the same will enable monitor maternal morbidity and mortality, infant health, and the quality of ANC services in Somaliland. This will provide the basis to improve health and well-being of women, men and children in Somaliland – and subsequently the health of society as a whole.

Some of the recommendations are long-term targets, and thus their impact can be evaluated in the future. However, most recommendations are ready to be implemented and their impact can be evaluated in the near future. The MoHD will plan a schedule for both interim and long-term evaluation.

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Appendix

Summary of MoHD recommendations 2019

MoHD Recommendations 2019	Key considerations
Nutritional interventions	
Counselling on healthy eating and physical activity	Important to avoid under nourishment and obesity.
Nutrition education	Antenatal dietary education may reduce low birth-weight neonates and also lead to better ANC adherence among women with less education.
Balanced energy and protein dietary supplementation	Reduces small for gestation neonates.
Iron and folic acid supplementation	Daily oral iron and folic acid supplementation with 60 mg of elemental iron and 400 mcg (0.4 mg) of folic acids. If pregnant woman has been diagnosed with anaemia, daily dose of 120 mg of oral iron and 0.4 mg of folic acid is recommended.
Calcium supplementation	If dietary calcium intake is low and especially if there's an increased risk for pre-eclampsia, it is recommended to take 1.5–2.0 g of elemental calcium per day starting from the pregnancy week 20 until the end of pregnancy.
Vitamin A supplementation	A dose of up to 10 000 IU vitamin A per day, or a weekly dose of up to 25 000 IU if woman has night blindness in the current pregnancy or if 5% or more of women in a population have history of night blindness in the pregnancy.
Maternal and foetal assessment	
Anaemia	<p>Full blood count testing (or on-site haemoglobin testing with a haemoglobinometer) is recommended for diagnosing anaemia during pregnancy weeks 12, 26 and 36.</p> <p>Limits for diagnosing anaemia:</p> <ul style="list-style-type: none"> • pregnancy week 12: less than 110 g/l • pregnancy week 26: less than 105 g/l • pregnancy week 36: less than 110 g/l

<p>Asymptomatic bacteriuria (ASB) Urinary tract infection (UTI)</p>	<p>Midstream urine culture (or on-site urine gram-staining) for diagnosing asymptomatic bacteriuria (ASB) or urinary tract infection (UTI) at first ANC contact and in case UTI symptoms. In case of unavailability, a dipstick test can also be used for the diagnosis.</p> <p>Antibiotic treatment is recommended after detecting ASB/UTI.</p>
<p>Domestic violence</p>	<p>Counselling of domestic violence (DV) is recommended in every ANC contact.</p>
<p>Gestational diabetes mellitus (GDM)</p>	<p>Screen for risk factors for diabetes and test for hyperglycaemia. In the presence of risk factors and/or hyperglycaemia, testing glucose levels with oral glucose tolerance test (OGTT) before pregnancy week 28 is recommended. If OGTT is not possible, then at least the fasting blood glucose level should be tested before pregnancy week 28.</p>
<p>Hypertension and pre-eclampsia</p>	<p>Blood pressure and proteinuria should be measured or tested during each ANC contact to detect hypertension and pre-eclampsia.</p> <p>The mother should be educated to know the critical signs of pre-eclampsia: headache, blurred vision, convulsions, loss of consciousness, epigastric pain, breathing difficulties.</p> <p>Blood pressure is considered as elevated if: Systolic blood pressure is equal or higher than 140mmHg OR Diastolic blood pressure equal to or higher than 90mmHg. Elevated blood pressure needs to be monitored more intensively or immediately lowered depending on the severity of the findings.</p>
<p>Pre-term birth</p>	<p>Identification and prevention of imminent pre-term births reduce long-term health effects and perinatal deaths related to pre-term birth.</p> <p>Antenatal corticosteroid therapy is recommended for women at risk of preterm birth from 24 weeks to 34 weeks of gestation.</p>

Malpositions and malpresentations	Careful vaginal or abdominal palpation or ultrasound, if available, to identify malpositions and malpresentations to reduce difficult deliveries, maternal mortality and perinatal mortality and planning of the place of birth and the urgent need for a skilled birth attendant.
Multiple pregnancies	Careful vaginal or abdominal palpation or ultrasound, if available, to identify multiple pregnancies to reduce obstetric complications by enabling skilled follow-up of pregnancy, planning the place of birth, and the urgent need for a skilled birth attendant.
HIV and syphilis	Provider-initiated testing and counselling (PITC) for HIV 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.
Tuberculosis (TB)	Systematic screening and treatment for active TB.
Symphysis-fundal height measurement and abdominal palpation	Abdominal palpation or symphysis-fundal height (SFH) measurement for the assessment of foetal growth.
Ultrasound scan	One ultrasound scan before 24 weeks of gestation (early ultrasound) to estimate gestational age, improve detection of foetal anomalies and multiple pregnancies, reduce induction of labour for post-term pregnancy, and improve a woman's pregnancy experience overall
Preventive measures	
Antibiotics for ASB (asymptomatic bacteriuria)	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.
Preventive anthelmintic treatment	Preventive anthelmintic treatment for pregnant women in endemic areas after the first trimester as part of worm infection reduction programmes
TT Vaccination	Tetanus toxoid vaccination depending on previous tetanus vaccination exposure, in order to prevent neonatal mortality from tetanus

Malaria	Intermittent preventive treatment for all pregnant women in malaria-endemic areas
Interventions for common physiological symptoms	
Nausea and vomiting	Ginger, chamomile, vitamin B6, and/or acupuncture for relief of nausea in early pregnancy
Heartburn	Advice on diet and lifestyle to prevent and relieve heartburn in pregnancy, antacid preparations for women with troublesome symptoms not relieved by lifestyle changes
Leg cramps	Magnesium, calcium, or nonpharmacological treatment options for relief of leg cramps in pregnancy
Low back/pelvic pain	Regular exercise throughout pregnancy to prevent low back/pelvic pain; different treatment options can be used, such as physiotherapy, support belts, and acupuncture
Constipation	Fibre supplements to relieve constipation in pregnancy if the condition fails to respond to dietary modification
Varicose veins and oedema	Compression stockings, leg elevation and water immersion can be used for the management of varicose veins and oedema in pregnancy.
Health systems	
Woman-held case notes	Each pregnant woman carries her own case notes during pregnancy to improve continuity, quality of care and a positive pregnancy experience.
Group antenatal care	Group care provided by qualified health-care professionals may be offered as an alternative to individual antenatal care for pregnant women.
Women's groups	An opportunity for women to discuss their needs during pregnancy, including barriers to accessing care, and to increase support among pregnant women.

Home visits	Improving antenatal care utilisation and perinatal health outcomes, particularly in rural settings with minimal access to health services.
Task-shifting	Task-shifting the promotion of health-related behaviours for maternal and newborn health and distribution of recommended nutritional supplements and intermittent preventive treatment in pregnancy (IPTp) for malaria prevention to a broad range of cadres.
Recruitment and retention of staff in rural and remote areas	Considering educational, regulatory, financial, and personal and professional support interventions to recruit and retain qualified health workers in rural and remote areas.
The role of fathers/partners in antenatal care	Fathers/partners should support and encourage women throughout pregnancy, labour and delivery and postnatal period.
ANC care contacts schedule <i>Short-term target</i>	At least four ANC contacts at 8-12 weeks, 24-26 weeks, 32 weeks and 36-38 weeks to improve maternal and child health and avoid maternal, perinatal and infant deaths.
ANC care contacts schedule <i>Long-term target</i>	Eight ANC contacts at up to 12 weeks, 20 weeks, 26 weeks, 30 weeks, 34 weeks, 36 weeks, 38 weeks and 40 weeks to improve maternal and child health, avoid maternal, perinatal and infant deaths, and to have a positive pregnancy experience.
Breastfeeding	Exclusive breastfeeding for the first six months and breastfeeding until two years are recommended to improve the health of the child.
Birth spacing	Information on birth spacing and various birth-spacing methods should be available for families in need. Birth-spacing methods can be discussed and chosen already during the antenatal period.
Female Genital Mutilation	
Awareness raising on FGM	Community participatory learning, multifaceted discussion groups, and action cycles with women's groups should be provided as part of education and communication interventions with regard to the health risks and violation of human rights related to FGM.

Psychological support for survivors of FGM	All girls and women who have undergone FGM should be offered psychological support and sexual counselling for preventing and treating emotional and psychosocial difficulties and sexual dysfunction.
Ending FGM in the health sector	FGM by health-care providers or reinfibulation should not be performed in any case.
High quality care and defibulation for survivors of FGM	Women with FGM should be offered quality health care and opportunity for defibulation with local anaesthesia, to enable the prevention and treatment of urologic and obstetric complications, either antepartum or intrapartum.

Working group of representatives
from MoHD, NUOVONORDIC and THL

Evidence-based Guidelines for Antenatal Care in Somaliland Recommendations for Health Care 2019



Healthy mothers and babies are the foundation of a society. The best way to ensure the health of mothers and babies is to develop universal, well-functioning and high quality antenatal care (ANC). National, properly implemented ANC guidelines represent a fundamental key to this goal. Somaliland's ANC is challenged by numerous factors. The Somaliland Ministry of Health and Development (MoHD) is doing rigorous work to overcome the challenges, and these new ANC guidelines are a part of that mission.

The guidelines are based on the latest 2016 WHO recommendations. The MoHD has curated them with their chosen team of experts to meet the specific needs of Somaliland. The team led by the MoHD consisted of local ANC workers, a representative of WHO, INGOs, NGOs, midwifery training institutes, universities as well as international experts.

The guidelines are targeted to all ANC professionals, traditional birth attendants and family workers, training institutions, students, INGOs, NGOs, and funders, as well as those planning and developing the ANC services in Somaliland. With these new guidelines, we once again bring evidence-based improvements to ensure safe pregnancy and childbirth to every woman in Somaliland.



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