

Antenatal Care

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Antenatal care (ANC) coverage is a success story in Africa, since over two-thirds of pregnant women (69 percent) have at least one ANC contact. However, to achieve the full life-saving potential that ANC promises for women and babies, four visits providing essential evidence based interventions – a package often called focused antenatal care – are required. Essential interventions in ANC include identification and management of obstetric complications such as pre-eclampsia, tetanus toxoid immunisation, intermittent preventive treatment for malaria during pregnancy (IPTp), and identification and management of infections including HIV, syphilis and other sexually transmitted infections (STIs). ANC is also an opportunity to promote the use of skilled attendance at birth and healthy behaviours such as breastfeeding, early postnatal care, and planning for optimal pregnancy spacing.

Many of these opportunities continue to be missed, even though over two-thirds of pregnant women receive at least one antenatal visit. How can we strengthen ANC to provide the priority interventions, especially given Africa's current critical shortage of human resources for health? Are there particular barriers or challenges to increasing coverage and quality that could be overcome? How can the multiple programmes that rely on ANC – malaria, HIV/AIDS, tetanus elimination, control of STIs – be integrated and strengthen the “vehicle” of ANC, rather than adding to the current overload?



Problem

Good care during pregnancy is important for the health of the mother and the development of the unborn baby. Pregnancy is a crucial time to promote healthy behaviours and parenting skills. Good ANC links the woman and her family with the formal health system, increases the chance of using a skilled attendant at birth and contributes to good health through the life cycle. Inadequate care during this time breaks a critical link in the continuum of care, and affects both women and babies:

Effects on mothers: It has been estimated that 25 percent of maternal deaths occur during pregnancy, with variability between countries depending on the prevalence of unsafe abortion, violence, and disease in the area.¹ Between a third and a half of maternal deaths are due to causes such as hypertension (pre-eclampsia and eclampsia) and antepartum haemorrhage, which are directly related to inadequate care during pregnancy.² In a study conducted in six west African countries, a third of all pregnant women experienced illness during pregnancy, of whom three percent required hospitalisation.³ Certain pre-existing conditions become more severe during pregnancy. Malaria, HIV/AIDS, anaemia and malnutrition are associated with increased maternal and newborn complications as well as death where the prevalence of these conditions is high. New evidence suggests that women who have been subject to female genital mutilation are significantly more likely to have complications during childbirth, so these women need to be identified during ANC.⁴ Gender-based violence and exposure to workplace hazards are additional and often underestimated public health problems. Rates of depression may be at least as high, if not higher, in late pregnancy as during the postnatal period.⁵ Some African societies believe that grieving for a stillborn child is unacceptable, making the death of a baby during the last trimester of pregnancy even harder to process and accept.

Effects on babies: In sub-Saharan Africa, an estimated 900,000 babies die as stillbirths during the last twelve weeks of pregnancy. It is estimated that babies who die before the onset of labour, or antepartum stillbirths, account for two-thirds of all stillbirths in countries where the mortality rate is greater than 22 per 1,000 births – nearly all African countries.^{6,7} Antepartum stillbirths have a number of causes, including maternal infections – notably syphilis – and pregnancy complications, but systematic global estimates for causes of antepartum stillbirths are not available.⁸ Newborns are affected by problems during pregnancy including preterm birth and restricted fetal growth, as well as other factors affecting the baby's development such as congenital infections and fetal alcohol syndrome.

The social, family, and community context and beliefs affect health during pregnancy either positively or negatively. Some cultures promote special foods and rest for pregnant women, but in others, pregnancy is not to be acknowledged. In these cases, women continue to work hard, and nutritional taboos may deprive them of essential nutrients, adding to nutritional deficiencies, particularly iron, protein, and certain vitamins. In one tribe in Nigeria, pregnant women cannot say they are pregnant, and if they feel unwell, they have to say that they have “swallowed a cockroach.”

This chapter will outline the ANC package, highlighting the shift to a four-visit model of focused antenatal care for the majority of women. We describe the current coverage and trends in Africa and explore opportunities to strengthen antenatal care at the health facility, through outreach and in the community. Finally, we suggest practical actions to help address key challenges in providing quality care to mothers and babies during the critical time of pregnancy and integrating the multiple interventions and programmes targeting this time period.

The package

Preventing problems for mothers and babies depends on an operational continuum of care with accessible, high quality care before and during pregnancy, childbirth, and the postnatal period. It also depends on the support available to help pregnant women reach services, particularly when complications occur.⁹ An important

element in this continuum of care is effective ANC. The goal of the ANC package is to prepare for birth and parenthood as well as prevent, detect, alleviate, or manage the three types of health problems during pregnancy that affect mothers and babies:

- complications of pregnancy itself
- pre-existing conditions that worsen during pregnancy
- effects of unhealthy lifestyles



ANC also provides women and their families with appropriate information and advice for a healthy pregnancy, safe childbirth, and postnatal recovery, including care of the newborn, promotion of early, exclusive breastfeeding, and assistance with deciding on future pregnancies in order to improve pregnancy outcomes. An effective ANC package depends on competent health care providers in a functioning health system with referral services and adequate supplies and laboratory support.

ANC improves the survival and health of babies directly by reducing stillbirths and neonatal deaths and indirectly by providing an entry point for health contacts with the woman at a key point in the continuum of care. A new analysis done for this publication using previously published methodology¹⁰ suggests that if 90 percent of women received ANC, up to 14 percent, or 160,000 more newborn lives, could be saved in Africa. (See data notes on page 226 for more details) Compared with other components of maternal, newborn, and child health (MNCH) packages such as childbirth and postnatal care, the additional lives saved is fewer, partly because ANC already has relatively high coverage and saves many lives already, so the gap between current coverage and full coverage is smaller. However, the benefits of ANC are greater than mortality reduction alone, and given the relatively low cost of ANC, this package is among the most cost effective of any public health package.^{10;11}

ANC indirectly saves the lives of mothers and babies by promoting and establishing good health before childbirth and the early postnatal period – the time periods of highest risk. ANC often presents the first contact opportunity for a woman to connect with health services, thus offering an entry point for integrated care, promoting healthy home practices, influencing care-seeking behaviours, and linking women with pregnancy complications to a referral system. Women are more likely to give birth with a skilled attendant if they have had at least one ANC visit.¹²

Which ANC? While research has demonstrated the benefits of ANC through improved health of mothers and babies, the exact components of ANC and what to do at what time have been matters of debate. In recent years, there has been a shift in thinking from the high risk approach to focused ANC. The high risk approach intended to classify pregnant women as “low risk” or “high risk” based on predetermined criteria and involved many ANC visits. This approach was hard to implement effectively since many women had at least one risk factor,

and not all developed complications; at the same time, some low risk women did develop complications, particularly during childbirth. Focused or goal oriented ANC services provide specific evidence-based interventions for all women, carried out at certain critical times in the pregnancy. The essential elements of this package are outlined in Box III.2.1.^{13;14}

BOX III.2.1 The essential elements of a focused approach to antenatal care

- Identification and surveillance of the pregnant woman and her expected child
- Recognition and management of pregnancy-related complications, particularly pre-eclampsia
- Recognition and treatment of underlying or concurrent illness
- Screening for conditions and diseases such as anaemia, STIs (particularly syphilis), HIV infection, mental health problems, and/or symptoms of stress or domestic violence
- Preventive measures, including tetanus toxoid immunisation, de-worming, iron and folic acid, intermittent preventive treatment of malaria in pregnancy (IPTp), insecticide treated bednets (ITN)
- Advice and support to the woman and her family for developing healthy home behaviours and a birth and emergency preparedness plan to:
 - o Increase awareness of maternal and newborn health needs and self care during pregnancy and the postnatal period, including the need for social support during and after pregnancy
 - o Promote healthy behaviours in the home, including healthy lifestyles and diet, safety and injury prevention, and support and care in the home, such as advice and adherence support for preventive interventions like iron supplementation, condom use, and use of ITN
 - o Support care seeking behaviour, including recognition of danger signs for the woman and the newborn as well as transport and funding plans in case of emergencies
 - o Help the pregnant woman and her partner prepare emotionally and physically for birth and care of their baby, particularly preparing for early and exclusive breastfeeding and essential newborn care and considering the role of a supportive companion at birth
 - o Promote postnatal family planning/birth spacing

Source: Adapted from references^{15;16}

How many visits? A recent multi-country randomised control trial led by the WHO¹⁷ and a systematic review¹³ showed that essential interventions can be provided over four visits at specified intervals, at least for healthy women with no underlying medical problems.¹⁸ The result of this review has prompted WHO to define a new model of ANC based on four goal-oriented visits.^{13;14;17} This model has been further defined by what is done in each visit, and is often called *focused antenatal care*. The optimum number of ANC visits for limited resource settings depends not only on effectiveness, but also on costs and other barriers to ANC access and supply. A recent study from southern Tanzania found that health workers spent an average of 46 minutes providing focused ANC to a first time client, and 36 minutes for a revisiting client. This was thirty minutes more on average than the current practice and poses challenges for service delivery.¹⁹

When? For many of the essential interventions in ANC, it is crucial to have early identification of underlying conditions – for example, prevention of congenital syphilis, control of anaemia, and prevention of malaria complications. Hence the first ANC visit should be as early as possible in pregnancy, preferably in the first trimester. The last visit should be at around 37 weeks or near the expected date of birth to ensure that appropriate advice and care have been provided to prevent and manage problems such as multiple births (e.g. twins), postmaturity (e.g. birth after 42 weeks of pregnancy, which carries an increased risk of fetal death), and abnormal positions of the baby (e.g. breech, where the baby's head is not the presenting part at birth).

What? The first assessment in ANC is to distinguish pregnant women who require standard care, such as the four-visit model, from those requiring special attention and more visits. Depending on the setting, approximately 25-30 percent of women will have specific risk factors which require more attention. These women need more than four visits. Table III.2.1 contains an overview of the interventions at each ANC visit based on the four-visit model as applied in focused ANC. Most of the interventions recommended in the table are supported by scientific evidence, are low cost, and can be implemented in first level facilities in all countries in Africa. The research model used urine dipsticks to check for bacteriuria at every visit, but this intervention is currently not included in WHO *Pregnancy, Childbirth, Postpartum, and Newborn Care: a guide to essential practice*, which presents recommendations applicable at the first level of care.²⁰ In referral hospitals or settings with additional capacity, however, this intervention may be considered because of the effect on reducing preterm birth and neonatal sepsis.¹⁰

Records held by women: A number of studies have shown the benefits of home-based ANC records, including the plan for birth and emergency preparedness.^{21;22} Women who hold their own records are

more likely to keep follow up appointments, ask questions about their health, and feel in control of their pregnancy. In designing their own ANC records, countries should ensure that all essential information is readily available to the caregiver. A prototype form is included in the new WHO model of ANC, together with the relevant information for implementing quality ANC services.¹⁷ In most sub-Saharan African countries, the ANC record is part of a complete pregnancy record that covers childbirth and postnatal care as well as family planning.

The role of the community: Family and community involvement is crucial for healthy home behaviours during pregnancy and has been shown to be a major determinant of use of ANC services. Establishing links between the community and the facility can increase utilisation of services, including ANC, and impact maternal and neonatal mortality as well as stillbirths.²³ The male partner or the mother or mother in law should be welcome to attend an ANC session with the woman. Their support can help the woman follow the ANC recommendations, encourage shared decision making, and improve the health for both mother and newborn. Unsupported pregnant women, especially adolescents, need services that are specifically targeted to their needs. Service providers should do all they can to seek out women unable or unwilling to attend a clinic and take the services to them. Community health workers (CHW) can play a key role by identifying all pregnant women in the community and provide counselling on healthy lifestyles, birth planning, complication readiness, and the need for ANC and skilled care at birth. This helps create links between the community and the healthcare system, and reinforcing these health messages can take some of the burden off service providers in ANC clinics.



TABLE III.2.1 Focused antenatal care (ANC): The four-visit ANC model outlined in WHO clinical guidelines

Goals				
	First visit 8-12 weeks	Second visit 24-26 weeks	Third visit 32 weeks	Fourth visit 36-38 weeks
	Confirm pregnancy and EDD, classify women for basic ANC (four visits) or more specialized care. Screen, treat and give preventive measures. Develop a birth and emergency plan. Advise and counsel.	Assess maternal and fetal well-being. Exclude PIH and anaemia. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.	Assess maternal and fetal well-being. Exclude PIH, anaemia, multiple pregnancies. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.	Assess maternal and fetal well-being. Exclude PIH, anaemia, multiple pregnancy, malpresentation. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.
Activities				
Rapid assessment and management for emergency signs, give appropriate treatment, and refer to hospital if needed				
History (ask, check records)	Assess significant symptoms. Take psychosocial, medical and obstetric history. Confirm pregnancy and calculate EDD. Classify all women (in some cases after test results)	Assess significant symptoms. Check record for previous complications and treatments during the pregnancy. Re-classification if needed	Assess significant symptoms. Check record for previous complications and treatments during the pregnancy. Re-classification if needed	Assess significant symptoms. Check record for previous complications and treatments during the pregnancy. Re-classification if needed
Examination (look, listen, feel)	Complete general, and obstetrical examination, BP	Anaemia, BP, fetal growth, and movements	Anaemia, BP, fetal growth, multiple pregnancy	Anaemia, BP, fetal growth and movements, multiple pregnancy, malpresentation
Screening and tests	Haemoglobin Syphilis HIV Proteinuria Blood/Rh group* Bacteriuria*	Bacteriuria*	Bacteriuria*	Bacteriuria*
Treatments	Syphilis ARV if eligible Treat bacteriuria if indicated*	Anthelmintic**, ARV if eligible Treat bacteriuria if indicated*	ARV if eligible Treat bacteriuria if indicated*	ARV if eligible If breech, ECV or referral for ECV Treat bacteriuria if indicated*
Preventive measures	Tetanus toxoid Iron and folate+	Tetanus toxoid, Iron and folate IPTp ARV	Iron and folate IPTp ARV	Iron and folate ARV
Health education, advice, and counselling	Self-care, alcohol and tobacco use, nutrition, safe sex, rest, sleeping under ITN, birth and emergency plan	Birth and emergency plan, reinforcement of previous advice	Birth and emergency plan, infant feeding, postpartum/postnatal care, pregnancy spacing, reinforcement of previous advice	Birth and emergency plan, infant feeding, postpartum/postnatal care, pregnancy spacing, reinforcement of previous advice

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

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

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

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

+Should also be prescribed as treatment if anaemia is diagnosed



Coverage and trends

In terms of global coverage, ANC is a success story. Currently, 71 percent of women worldwide receive any ANC; in industrialised countries, more than 95 percent of pregnant women have access to ANC. In sub-Saharan Africa, 69 percent of pregnant women have at least one ANC visit, more than in South Asia, at 54 percent. Coverage for ANC is usually expressed as the proportion of women who have had at least one ANC visit. However, coverage of at least four ANC visits is lower at 44 percent, as shown on the country profiles. Trends indicate slower progress in sub-Saharan Africa than in other regions, with an increase in coverage of only four percent during the past decade.^{1,24}

Inequity in ANC persists. In Africa, 80 percent of women in the richest quintile have access to three or more ANC visits, while only 48 percent of the poorest women have the same level of access. A similar disparity exists between urban and rural women. Within the continuum of care, however, there is a smaller gap between the rich and the poor in ANC than in skilled attendance during childbirth, which is available to only 25 percent of the poorest women in sub-Saharan Africa, while reaching 81 percent of the richest.²⁵

Coverage of four or more ANC visits as well as the number of visits disaggregated by trimester is important to assess, because the effectiveness of certain ANC interventions such as tetanus vaccination, IPTp for malaria, and prevention of mother-to-child transmission (PMTCT) of HIV depend on repeated visits and the trimester in which they occur. In Africa, the proportion of pregnant women who attended the recommended four or more visits increased by six percent over 10 years. Similarly, the proportion of women who received ANC in the first six months of pregnancy increased by 10 percent over 10 years, faster than the increase of overall ANC coverage.²⁶

Measuring coverage alone does not provide information on quality of care, and poor quality in ANC clinics, correlated with poor service utilisation, is common in Africa. This is often related to an insufficient number of

skilled providers (particularly in rural and remote areas), lack of standards of care and protocols, few supplies and drugs, and poor attitudes of health providers. An assessment conducted in Tanzania found twice as many poorly qualified health workers in rural facilities than in urban facilities.²⁷ In addition, there is not wide consensus on the indicators for quality of ANC care. Possible indicators include assessment of the coverage of four or more ANC visits and measurement of the coverage of essential interventions delivered through ANC, with attention to missed opportunities – a gap between those attending and those receiving key interventions for example syphilis treatment. These are considered in more detail at the end of this chapter.

Barriers to the access and uptake of ANC are financial and cultural. Women and their families incur substantial opportunity costs when ANC requires travel and waiting long hours. Knowledge about community needs and behaviours as well as formal links with the community via gatekeepers, such as village health committees, is critical, especially for strengthening the household-to-hospital continuum. Replacing user fees with alternative financing mechanisms should be seen as an effective first step towards improving access to health care for pregnant mothers (Section IV). In South Africa, ANC consultations increased by 15 percent in the years following the removal of user fees on all primary health care services.²⁸

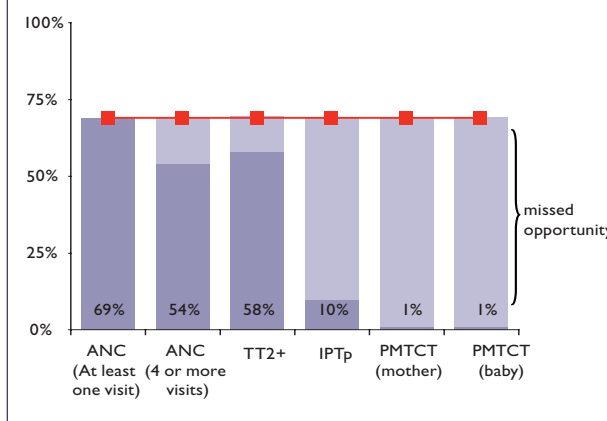
Opportunities to strengthen ANC to save mothers and newborns

The high coverage of ANC and repeated contacts between the woman and the health services offer many opportunities for providing evidence based interventions likely to affect maternal, fetal, and neonatal health and survival.

1. ANC represents an important entry point for different programmes and provision of integrated care.

Pregnancy often represents the first opportunity for a woman to establish contact with the health system. As Figure III.2.1 illustrates, there is a large gap between a single antenatal visit and optimum ANC, which would require follow up visits and several preventive interventions. Several conditions that are prevalent in Africa, such as malaria, STIs, maternal and neonatal tetanus, HIV, tuberculosis (TB), and some nutritional deficiencies, can be addressed during ANC care. If not effectively managed, most of these conditions interact during pregnancy and may worsen pregnancy outcomes, especially HIV and malaria (Section III.7, 8). Thus, ensuring the integration of ANC with other programmes can be particularly beneficial, both for the woman and her baby, who can receive better care, and for the health system, as missed opportunities and programme costs can be reduced.

FIGURE III.2.1 Missed opportunities to save lives and promote health through antenatal care in sub-Saharan Africa



Acronyms: ANC = antenatal care; TT2+ = two or more doses of tetanus toxoid vaccine given to pregnant women; IPTp = intermittent preventive treatment for malaria in pregnancy; PMTCT = prevention of mother-to-child transmission of HIV/AIDS. Source: This figure is part of the profile for sub-Saharan Africa (See dates notes on page 226). Country-specific data is available on the 46 country profiles.

2. ANC offers an opportunity to develop a birth and emergency preparedness plan.

WHO recommends that all pregnant women have a written plan for dealing with birth and any unexpected adverse events, such as complications or emergencies that may occur during pregnancy, childbirth, or the immediate postnatal period. Women should discuss and review this plan with a skilled attendant at every ANC assessment and one month before the expected date of birth.^{16;17;20} A birth and emergency preparedness plan includes identification of the following elements: the desired place of birth; the preferred birth attendant; the location of the closest appropriate care facility; funds for birth-related and emergency expenses; a birth companion; support in looking after the home and children while the woman is away; transport to a health facility for the birth; transport in the case of an obstetric emergency; and identification of compatible blood donors in case of emergency. Although little evidence exists to show the direct correlation between birth preparedness and reducing morbidity or mortality for mothers and babies, small-scale studies show that there is considerable benefit to be gained from this intervention. For instance, the adoption of new practices associated with planning (such as setting aside money for the birth, transport arrangements, and the use of a birth plan) at family and community levels is encouraging. The presence of a person of the woman's choice to provide social support during childbirth has also been shown to have a positive effect.^{16;29}

3. ANC visits provide opportunities to promote lasting health, offering benefits that continue beyond the pregnancy period.

This includes birth preparedness, but also extends to cover health information and counselling for pregnant women, their families, and communities. Relevant information, education, and advice regarding appropriate nutrition and rest, promotion of early and exclusive breastfeeding and feeding options for HIV-positive women, smoking cessation, avoidance of alcohol and drugs, and parenting skills should be made available to the woman and family. Guidance on family planning and pregnancy spacing, seeking necessary care, and caring for the newborn baby are also important components of ANC.

These interventions integrate prevention and detection of some direct and indirect causes of maternal and newborn death that begin during pregnancy. Other key areas for integration are discussed in Box III.2.2. The effectiveness of ANC in reducing mortality depends on successful integration of services as well as addressing challenges such as the availability of a functioning referral system and emergency obstetric care services.



BOX III.2.2 Antenatal care is a vehicle for multiple interventions and programmes

Prevention of maternal and neonatal tetanus (Section III chapter 9) Tetanus kills an estimated 70,000 newborns in Africa every year (about six percent of all neonatal deaths) and is the cause of an unknown number of maternal deaths each year. In Africa, neonatal tetanus deaths have been halved during the 1990s, partly due to increased tetanus toxoid immunisation. Seven countries in sub-Saharan Africa have eliminated neonatal tetanus. ANC services provide an opportunity to vaccinate pregnant women with the recommended two doses of tetanus toxoid vaccination. Where ANC coverage is low, or misses certain populations mass immunisation of women of childbearing age is an alternative option.

Prevention and case management of maternal malaria (Section III chapter 8) In Africa, at least 25 million pregnancies are threatened by malaria each year, resulting in an estimated 2-15 percent of maternal anaemia. In areas of high and moderate (stable) malaria transmission, adult women acquire immunity, and most malaria infections in pregnant women are asymptomatic. Nevertheless, these asymptomatic infections of the placenta result in anaemia for the mother and contribute to low birthweight (LBW) and preterm birth, which lead to higher infant mortality and impaired development of the child. Maternal malaria infection accounts for almost 30 percent of all the causes of LBW that can be prevented during pregnancy.

In most settings, coverage of intermittent preventive treatment in pregnancy for malaria (IPTp) at 10 percent and insecticide treated bednets (ITN) at 5-23 percent are both significantly lower than coverage of at least one antenatal visit (see profile for sub-Saharan Africa). Hence ANC offers a “vehicle” to increase coverage of these key interventions. ITN and IPTp are more effective and cheaper than case management of malaria in pregnancy. However, women should be made aware of the danger signs of malaria, and ANC providers need the knowledge and skills to treat women with uncomplicated malaria and refer those with complicated malaria.

Prevention of maternal anaemia and malnutrition (Section III chapter 6) Anaemia affects nearly half of all pregnant women in the world and is a risk factor for maternal morbidity and mortality. For the mother, anaemia during pregnancy increases the risk of dying from haemorrhage, a leading cause of maternal death. Anaemia in pregnancy is also associated with an increased risk of stillbirth, LBW, prematurity, and neonatal death. In addition to health promotion activities, the strategies for control of anaemia in pregnancy include iron and folic acid supplementation, de-worming for intestinal infestations, malaria prevention, improved obstetric care, and management of severe anaemia. Antenatal services can integrate advice on nutrition including supplementation in settings with micronutrient deficiencies, and can encourage breastfeeding practices.

Prevention of Sexually Transmitted Infections (STIs) and Mother-to-Child Transmission of HIV (Section III chapter 7) Reproductive tract infections such as syphilis, gonorrhoea, and chlamydia can be identified and treated through ANC. Although estimates vary, at least 50 percent of women with acute syphilis suffer adverse pregnancy outcomes. The more recent the maternal infection, the more likely the infant will be affected. Most sub-Saharan African countries have high rates of syphilis infection. WHO recommends that all pregnant women should be screened for syphilis at the first ANC visit in the first trimester and again in childbirth. Women testing positive for syphilis should be treated and informed of the importance of being tested for HIV infection. Their partners should also be treated, and plans should be made to treat their babies after birth.

Syphilis control in pregnant women through universal antenatal screening and treatment of positive cases has been established as a feasible and cost effective intervention – syphilis complications are severe, yet therapy is cheap and effective. Nevertheless, many women attending ANC are not screened or treated for syphilis, resulting in avoidable stillbirths and neonatal deaths. One important constraint is the lack of

supplies for testing. Simple and effective screening tests for syphilis are now available, which can be used on site at even the lowest levels of service delivery.³⁰

ANC is the key entry point for prevention of mother-to-child transmission of HIV (PMTCT) services, though the missed opportunity between the two services is quite large, as shown on the country profiles in this publication and in Figure III.2.1. To increase the number of women who are tested, many countries have adopted the “opt-out system,” whereby all pregnant women are offered counselling and testing during ANC. Despite current low levels of coverage, strong political commitments, increased resources allocated to PMTCT, and increased focus on integrated care from the same provider all represent good opportunities for strengthening ANC, particularly birth preparedness, use of skilled attendants at birth, and information and counselling on infant feeding options.

Additional ANC interventions Other effective interventions that can be added to ANC require a higher level of health system complexity but have been shown to improve maternal and/or neonatal health and survival. These include calcium supplementation in settings with low calcium intake, treatment of bacteriuria, antenatal steroids for preterm labour, and antibiotics for prolonged rupture of membranes. These are becoming available in teaching hospitals and private ANC clinics.

Challenges

To respond to the needs of pregnant women, ANC must address multiple conditions directly or indirectly related to pregnancy, including malaria, nutrition deficiencies, STIs, HIV, and TB. ANC should also provide required information and advice on pregnancy, childbirth, and the postnatal period, including newborn care. The most effective way to do this is through integration of programmes and availability of health care providers with a wide range of skills. But integration is easier to say than to do and adding more interventions has implications for this programme which is often already overloaded and under funded (See Section IV).

While lack of infrastructure affects ANC less than other services along the continuum of care, ANC shares with other components overarching challenges that are influenced by supply and demand: general health system weaknesses and social, economic, and cultural barriers.

Supply factors

Many countries are struggling to achieve quality ANC provision, particularly in rural and peri-urban areas. Competition for staff and money as well as poor communication with other programmes or components (malaria, HIV, emergency obstetric care) can be found at different levels of the health system, particularly where policies are ill defined. National and sub-national level health budgets may be too small and heavily dependent on donor funding. As a relatively low-profile service, ANC may not receive enough funding. Low managerial capacity is common at district level, and poorer districts may face difficulties in raising the funds for conducting essential ANC activities or in attracting and retaining

staff in the absence of incentives. Additionally, lack of up-to-date standards and protocols, poorly defined roles among programmes or staff, and weak monitoring systems contribute to low quality ANC. Poor regulatory mechanisms or insufficient capacity to enforce regulations contribute to the difficulty in assessing quality of care in public and private ANC clinics. Establishing and sustaining a functional health system that can provide universal coverage of quality ANC (at least four visits at the correct times during pregnancy) is a challenge for many countries in Africa.

Human resources are a major challenge. Deployment of staff to rural areas can be a real difficulty, particularly where there are not economic or career incentives to deploy and retain staff in less favourable conditions. Staff may not have the required skills to provide all components of ANC or may not receive the support they need. ANC can be the platform to support special groups such as adolescents, female victims of domestic violence, and single mothers, among others, as these groups have a higher risk of stillbirth, preterm birth, low birthweight (LBW), and child abandonment and neglect. However, this is difficult for a lot of already overburdened ANC providers, who often struggle just to provide the basic health promotion messages with limited resources and heavy caseloads. A recent study found that providing focused ANC was thirty minutes more on average than the current practice. The time required for each focused ANC visit has implications for staffing levels and opportunity costs for both clinics and the women attending.¹⁹ Some practical steps to anticipate and avoid this overload are detailed below.

Shortage of supplies, drugs and basic equipment can compromise the quality of care, motivation of staff, and the utilisation of services. Weak health referral systems to support case management of complications of pregnancy inevitably reduces the overall impact of ANC.

Social, economic, and cultural barriers

ANC coverage is lower among women who need it the most: those who are poor, less educated, and living in rural areas. An important barrier is the inability to pay for ANC or the treatment prescribed in ANC, where user fees are in place and safety nets for the poor do not exist. Conflict or poor communication among formal health care providers, traditional birth attendants (TBA) and other CHWs may be the cause of low utilisation of ANC services in certain communities. As pregnancy is perceived as a natural process of life, women, families

and communities may underestimate the importance of ANC. In addition, many may simply lack knowledge about danger signs in pregnancy and will not know how to seek care when a complication occurs during pregnancy. Finally, a lack of awareness exists about the extent and impact of traditional household and community beliefs and customs, such as suboptimal maternal nutrition and infant feeding practices. The attitudes and behaviours of health care providers in ANC clinics compound this problem by failing to respect the privacy, confidentiality, and traditional beliefs of the women. This may negatively influence the use of ANC as well as MNCH services at large.

Box III.2.3 gives the example of Tanzania moving forward to strengthen ANC.

BOX III.2.3 Scaling up focused antenatal care within the health system in Tanzania

Tanzania, with support from partners has developed a national package of essential reproductive and child health interventions as a part of health sector reform to strengthen maternal and newborn health. One key component is focused antenatal care (ANC) such as intermittent preventive treatment for malaria in pregnancy (IPTp), nutritional counselling and supplementation, and screening and management of syphilis. Over 90 percent of pregnant women in Tanzania attend at least one antenatal visit, yet coverage drops for the essential interventions that can be delivered with more ANC visits and continuity of care. A number of partners are working together to address the multi-sectoral task of increasing availability and demand for focused ANC services. Three strategies used to reduce maternal and newborn morbidity and mortality are policy and advocacy, capacity building, and quality and performance improvement.

Policy and advocacy: A collaborative process was undertaken to develop and disseminate necessary guidelines outlining key reproductive and child health activities, necessary inputs to undertake these activities, and expected outputs for each level of the health services delivery system. These provided the foundation to define desired performance and quality targets. Registration forms used during ANC visits have been adapted, and in-service training and pre-service education curricula have been standardised to develop the ANC skills of a core group of trainers.

Capacity building: Capacity building was undertaken including development of educational materials and building the capacity of pre-service faculty and in-service trainers to update student and provider knowledge for the skills necessary to provide ANC services.

Quality and performance Improvement: Factors affecting performance were identified within facilities and by community partners in four Tanzanian districts early in 2001. These findings guided interdisciplinary teams of key stakeholders, including district and regional health management teams, to identify service gaps. Based on the gaps identified, priorities were agreed and targeted interventions implemented focusing on a range of performance factors such as supervision; knowledge and skills; motivation; and availability of key resources, supplies and equipment. Facilities meeting quality standards will ultimately receive accreditation, thereby generating greater community demand for their services. Ongoing in-service training and replication of this initiative will ensure sustainability and long-term results.

These activities are currently supported by the ACCESS program, led by JHPIEGO

Source: Adapted from reference³¹

Practical steps for strengthening antenatal care

Given the challenges outlined above, efforts to strengthen ANC in order to achieve better maternal and newborn health are listed below.

1. Establish or strengthen national policies

A national policy and locally adapted guidelines must be in place to protect the rights of all women, regardless of their socioeconomic status or place of residence, to access ANC services. There is a need for evidence-based guidelines at the national level detailing the essential minimum components of ANC, in line with the country epidemiological profile and country priorities and based on WHO guidelines and recommendations.

2. Strengthen the quality of ANC services

This includes promoting evidence based guidelines and standards for focused ANC:

- Training should be reviewed to incorporate focused antenatal care protocols and new competences (on-site RPR tests for syphilis, IPTp and ITN, ARVs, counselling skills, setting and auditing standards). Staff should rotate between services. The attitude and motivation of health care providers is crucial.
- Time for service delivery. In some countries where many women attend ANC more than four times, the visits saved by reverting to four visits would allow for longer, high quality content at each visit. In addition, some tasks could be delegated to other cadres, for example, paperwork and weighing could be delegated to more administrative staff, saving the time of more senior staff for skilled, higher impact tasks. Such delegation may require some policy changes. In addition, women's groups and CHW can be valuable in giving this counselling in the community, along with regular input, supervision, and appropriate referral services from skilled care providers at the health care facility level.
- Supplies and logistics are an important aspect of effective ANC, including regular availability of syphilis and HIV testing kits and essential drugs and equipment.
- Quality improvement approaches and tools help identify and overcome local constraints to providing client-orientated, effective ANC and ensure that women return after their first ANC visit.

3. Improve integration with other programmes

To maximise opportunities for pregnant women, ANC services should take advantage of existing programmes, especially those with outreach activities targeting women of childbearing age. This is especially important in settings where ANC coverage is low. National strategies for malaria, HIV, syphilis, and nutrition need to be better integrated into ANC.

4. Harmonise activities by multiple partners through effective partnership

A number of regional and national strategies offer opportunities to strengthen programmes in countries. Professional associations and non-governmental organisations involved with women and children should be sensitised on the importance of ANC within the continuum of care.

5. Reduce barriers to accessing care and reach out to women without access

Utilisation of ANC services should be encouraged by reducing barriers to access, such as user fees, limited opening hours, long travel distances and waiting times, and dehumanisation of care.

Strategies should be developed for empowering communities to overcome obstacles to care and reach the missing 30 percent of women not receiving ANC. These may include using community channels to identify pregnant women, targeting those more likely to be non-users, such as adolescents and women who are poor and single, and making the services more responsive to the needs of women.

6. Use data effectively to monitor and improve ANC coverage and quality

Data do exist, particularly from Demographic and Health Surveys, and health management information systems, but it is not always effectively used by policy makers and programmers to improve quality of care (See Section I). The country profiles in this publication indicate such missed opportunities in ANC as the gap between pregnant women receiving one and four ANC visits. Citing other missed opportunities, such as the gap in access to care between the rich and poor can supply evidence to advocate for more resources and improve care.



BOX III.2.4 Indicators for antenatal care

- Proportion of pregnant women who have at least one antenatal clinic visit[#]
- Proportion of pregnant women who have at least four ANC visits
- Tetanus protection at birth^{*}
- The percentage of pregnant women who receive IPTp for malaria according to the national protocol of IPTp
- Antiretroviral course for PMTCT of HIV^{*}
- Prevalence of syphilis in pregnant women[#]
- The proportion of pregnant women with a written birth and emergency plan by 37 weeks of pregnancy

^{*}Key newborn and child indicators in Countdown to 2015 Child Survival process

[#]Core WHO reproductive health indicators

For complete list of indicators, see Section IV.

Possible indicators to improve programmatic monitoring of ANC are highlighted in Box III.2.4 and include coverage of four or more ANC visits and coverage of key ANC interventions (tetanus vaccination, IPTp, testing and treatment for syphilis, and PMTCT, iron and folate supplementation, de-worming). Process indicators will vary with the specific programme but may include the competency of the staff to treat maternal complications and perform newborn resuscitation, availability of basic equipment, laboratory test, drugs and supplies, implementation of health promotion activities, clinic open hours, record keeping; respect of privacy and confidentiality, and implementation of infection control procedures. Process indicators should also assess the quality of communication, such as the proportion of pregnant women with a written birth and emergency plan by 37 weeks of pregnancy.

Conclusion

ANC in Africa has reached more than two thirds of pregnant women, with reported increases in the coverage of the recommended four ANC visits and increases in the coverage of a first trimester ANC visit. Multiple vertical programmes rely on ANC to deliver their interventions, representing both a challenge and an opportunity. As a critical link in the continuum of care, ANC offers tremendous opportunities to reach a large number of women and communities with effective clinical and health promotion interventions. However, inequity exists, and young, rural, poor, and less educated women may not benefit from ANC services or may drop out due to access barriers and low quality services. Efforts to strengthen ANC should focus on universal coverage by addressing financial and cultural barriers to reaching vulnerable groups, quality improvement to increase women's satisfaction and reduce drop out, and integration of programmes to maximise the contact between the woman and the health services.



Priority actions for strengthening antenatal care

- Improve quality of ANC services
 - Revise in-service and pre-service training for ANC providers to include the essential components and new competencies required
 - Improve supplies and logistics
- Develop linkages with other programmes, especially traditionally vertical interventions, such as malaria and HIV
- Harmonise activities through effective partnership
- Reduce barriers to accessing care and reach out to women not accessing care
- Make better use of data to monitor and improve ANC coverage and quality