Global Antenatal Care Coverage and Content

Dilly OC Anumba and Shamanthi M. Jayasooriya

1 Background Information

Common global risk factors for neonatal deaths include preterm births, birth complications, and infections such as tetanus, sepsis, and pneumonia, all of which disproportionately affect low- and middle-income countries (LMICs). These risk factors can be minimised or prevented through the delivery of high-quality antenatal care (ANC) [1]. ANC encompasses health promotion, education, disease screening, diagnoses, treatments, and interventions to ensure a good pregnancy outcome. Optimum ANC requires promptly initiated sustained care between the mother and usually a health-care professional, culminating in a safe birth experience and a good outcome for both mother and her baby.

The World Health Organisation (WHO) recommendation for effective ANC services, specific- to low-income countries, is four or more ANC visits [2], requiring each of the first two ANC visits to take place in the first two pregnancy trimesters and the last two visits to happen in the last trimester. Generic guidance for ANC is well documented by the WHO [3], as well as other published literature. These various guidelines seek to improve ANC globally in all settings, thereby mitigating adverse pregnancy outcomes, especially neonatal deaths from preterm birth, birth complications, and infections.

Despite the availability of guidance regarding the frequency and content of ANC, there has remained a paucity of literature addressing the gap in knowledge of

D. O. Anumba (✉)
Academic Unit of Reproductive and Developmental Medicine, University of Sheffield, Sheffield, UK
e-mail: d.o.c.anumba@sheffield.ac.uk

S. M. Jayasooriya
Academic Unit of Primary Medical Care, University of Sheffield, Sheffield, UK
e-mail: s.jayasooriya@sheffield.ac.uk

D. O. Anumba, S. M. Jayasooriya (eds.), *Evidence Based Global Health Manual for Preterm Birth Risk Assessment*,
https://doi.org/10.1007/978-3-031-04462-5_1

prenatal risk factors for preterm birth, especially in LMICs and how to apply that knowledge to improve care aimed at prevention. Health-care professionals providing ANC should be aware of the well-evidenced risk factors as well as principles of care that mitigate against preterm birth that should form part of routine antenatal care. In view of this need, we provide in this chapter a brief summary of global ANC coverage and standards, thereby setting the scene for the subsequent chapters in this manual aimed at outlining guidance for early antenatal risk assessment of preterm birth globally, but with emphasis on practice in LMICs where the burden of preterm birth is often disproportionately high.

2 WHO Recommendations/Standards

The historical, basic, four-visit-focused global ANC model was replaced by the current WHO model in 2016 [3]. The latter recommends that interventions are delivered through a minimum of eight antenatal contacts. While continuing to monitor the number of visits or contacts pregnant women have, the 2016 WHO guidance also emphasises the importance of the quality and content of care received. In order to implement the WHO antenatal care model, a monitoring framework has been developed which includes the following three aspects of ANC: the organisation of health systems, the content of care, and the women's experience of care [4].

Programmatic assessment of the effectiveness of health systems to provide good quality ANC relies on the development of suitable content of care indicators. The WHO has therefore recommended a universally relevant list of nine core global and national indicators of ANC, to be measured and monitored by all countries [1]. These nine core indicators are shown in Table 1.

3 Global Variation in Skill of ANC Providers

Central to the provision of ANC is its delivery by skilled health-care professionals [3]. The benefits of ANC for the mother and child have been shown repeatedly to be higher when ANC is administered by trained health-care professionals, practice which also influences the standard of delivery and postnatal care [5]. There are also context-specific variations in access to, and availability of, technical equipment (such as ultrasound scans for dating and monitoring pregnancies) and biomedical engineering support for maintenance of hospital equipment.

Table 1 Global indicators of antenatal care standards

	Global indicators of antenatal care
1.	Percentage of pregnant women with first antenatal contact in the first trimester (before 12 weeks of gestation)
2.	Percentage of pregnant women who received iron and folic acid supplements for 90+ days
3.	Percentage of pregnant women screened for syphilis during antenatal care
4.	Percentage of pregnant women with at least four antenatal contacts Percentage of pregnant women with a minimum of eight antenatal contacts
5.	Percentage of pregnant women who were told about pregnancy danger signs during antenatal care
6.	Percentage of pregnant women with at least one blood pressure measurements during antenatal care. Percentage of pregnant women with at least one blood pressure measure in the third trimester during antenatal care
7.	Percentage of pregnant women whose baby's heartbeat was listened to at least once during antenatal care
8.	Percentage of pregnant women with an ultrasound scan before 24 weeks
9.	Experience of care (e.g. waiting time and support received during antenatal care contacts)

4 Global Situation of Implementation of ANC Monitoring Frameworks

Despite these published frameworks, there remains marked global variations in antenatal care coverage and standards. A full discussion of these global variations is outside the scope of this book. However, it is acknowledged that these variations are largely due to inequities regarding coverage, as well as standards and quality of ANC.

5 Global Inequity in Antenatal Care Coverage

Antenatal care coverage in LMCIs is currently described by limited data sets from population-based surveys such as Demographic and Health Surveys (DHS). The lowest levels of ANC, based on data reporting a minimum of four visits, are observed in sub-Saharan Africa and South Asia [6]. The proportion of women receiving at least four antenatal care visits varies greatly, ranging from 13% in countries in sub-Saharan Africa to over 90% in other countries in Latin America, the Caribbean, and European regions (UNICEF data). Although improvement has been recorded in the global coverage of early (starting at <12 weeks' gestation) antenatal care in the last two decades, the poorest women in LMICs often still do not have access to high-quality antenatal care [7].

6 Global Variations in the Content of Antenatal Care

It has also been acknowledged through several studies that even among women with patterns of care that complied with global recommendations, the content of care was poor, emphasising the need for efficient and effective action to improve care quality. One report surveyed 10 LMICs as illustrative examples and reported that receipt of the six routine components of ANC (measurement of blood pressure, urine sample, blood sample, tetanus protection, iron supplementation and receipt of information on potential pregnancy complications) varied widely [8]. Furthermore, it showed that even among the subset of women starting ANC in the first trimester and receiving over four visits, the percentage receiving all six routinely measured ANC components was low, ranging between 10% and 50%.

7 Antenatal Care Coverage and Preterm Birth

Given that global attainment of ANC quality indices is highly variable, with LMICs demonstrating lower attainment than high-income countries (HICs), it is highly likely that a similar picture exists when the focus is mitigating risk of PTB. Indicators of high-quality ANC may serve as suitable proxies for assessing ANC standards to mitigate PTB. Early ANC in the first trimester enables prompt risk assessment for preterm birth, earlier screening for infections which may be associated with PTB (such as urinary tract infections, HIV, malaria), prompt initiation of routine micronutrient supplements (including iron and folic acid), and, importantly, accurate pregnancy dating. Chapter "Pregnancy Dating Guidance" of this manual describes in-depth pregnancy dating guidance taking into account capacity limitations in LMICs. In addition, early establishment of baseline blood pressure will improve the initiation of preventative treatment where needed, the diagnosis of gestational hypertension, as well as on-going management of hypertension improving pregnancy outcomes by reducing the need for physician-indicated (iatrogenic) prematurity.

In subsequent chapters, this guidance summarizes the evidence for effective ANC screening and intervention for PTB. Many of these align with high-quality ANC, and their application has the potential to improve maternal and child health.

References

1. Lincetto O, Mothebesoane-Anoh S, Gomez P, et al. Antenatal care. In: Lawn J, Kerber K, editors. Opportunities for Africa's newborns: practical data, policy, and programmatic support for newborn care in Africa. Cape Town: Partnership for Maternal, Newborn and Child Health; 2006. p. 51–62.

2. WHO antenatal care randomized trial: manual for the implementation of the new model. Geneva: World Health Organization; 2002. http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/RHR_01_30/en/. Accessed 28 June 2021.
3. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: World Health Organization; 2016. https://www.who.int/publications/i/item/9789241549912. Accessed 28 June 2021.
4. Lattof SR, Moran AC, Kidula N, et al. Implementation of the new WHO antenatal care model for a positive pregnancy experience: a monitoring framework. BMJ Glob Health. 2020;5
5. Chukwuma A, Wosu AC, Mbachu C, et al. Quality of antenatal care predicts retention in skilled birth attendance: a multilevel analysis of 28 African countries. BMC Pregnancy Childbirth. 2017;17:152.
6. UNICEF Data: Monitoring the situation of children and women. Antenatal care. April 2021.
7. Moller AB, Petzold M, Chou D, Say L. Early antenatal care visit: a systematic analysis of regional and global levels and trends of coverage from 1990 to 2013. Lancet Glob Health. 2017;5:e977–e83.
8. Benova L, Tunçalp Ö, Moran AC, et al. Not just a number: examining coverage and content of antenatal care in low-income and middle-income countries. BMJ Glob Health. 2018;3:e000779. https://doi.org/10.1136/bmjgh-2018-000779.