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Basic Antenatal Care Approach to Antenatal Care Service Provision

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Abstract

Globally, antenatal care is advocated as the cornerstone for reducing children's deaths and improving maternal health. The basic antenatal care approach is used in the public health institutions in South Africa to provide healthcare services to the pregnant women. The basic antenatal care approach is a modified version of the focused antenatal care approach that was recommended by researchers during 2001 and adopted by the World Health Organisation in 2002 following realisation that traditional antenatal care programmes that were meant for developed countries were poorly implemented and largely ineffective when used in developing countries. The basic antenatal care approach is listed as one of the priority interventions for reducing maternal and child mortality in the country and is recommended as the minimum level of antenatal care that every pregnant woman should receive. Every site where pregnant women make contact with healthcare services should provide antenatal care services daily using this approach so that the first antenatal care visit consultation takes place as soon as the pregnancy has been confirmed or the very first time that a pregnant woman visits a health facility. The introductions of the basic antenatal care approach have been a positive milestone for South Africa.

Keywords: antenatal care, approach to health care, basic antenatal care, pregnancy, pregnancy outcome, South Africa

1. Introduction

Antenatal care (ANC) is an umbrella term used to describe medical care and procedures that are carried out to and for the pregnant women [1]. It is the health care that is rendered to the pregnant women throughout pregnancy until the child's birth and is aimed at detecting the already existing problems and/or problems that can develop during pregnancy, affecting

the pregnant woman and/or her unborn child [2]. The care includes various screening tests, diagnostic procedures, prophylactic treatments, some of which are done routinely, and others are provided to the women based on identified problems and risk factors.

2. Importance of antenatal care

According to Pattinson [2], ANC benefits both the mother and the baby; it assists in screening, diagnosing and managing or controlling the risk factors that might adversely affect the pregnant women and/or the pregnancy outcome. Maternal and perinatal death rates remain the major challenge of health care in South Africa. During 2005–2007, triennium maternal deaths had increased by 20% when comparing them to the 2002–2004 triennium [3]. However, due to changes in the treatment programmes for HIV-positive pregnant women and the focus on reducing deaths in specific categories such as obstetric haemorrhage, a significant fall in both the numbers of maternal deaths and mortality ratios has since been reported in South Africa. An overall reduction of 24% (1152 from 2008–2010 to 2014–2016) has been achieved [4]. Nevertheless, much more still needs to be done for the country to be able to maintain this fall and to obtain an exponential fall. Several major challenges still remain mainly relating to the quality of care, inter-facility transport, and knowledge and skills of health professionals [4]. Furthermore, the majority of preventable deaths during pregnancy and childbirth have been attributed to poor ANC [5]. According to these authors, non-attendance of ANC clinics carries an approximately four times increased risk of maternal deaths compared with the general pregnant population who attend ANC clinics. The provision of adequate ANC is advocated by most authors worldwide as the cornerstone for maternal and perinatal care. The detection of high-risk pregnancies through ANC has been advocated as a good tool for reducing maternal and perinatal mortality rates [6].

The purpose of ANC is to screen, diagnose and manage or control the risk factors that might adversely affect the pregnant woman and/or the pregnancy outcome. Both Pattinson and Snyman [2, 7] attest to this by saying: ‘The quality of health care that a pregnant woman receives during ANC has an impact on the health of the woman and on the outcome of pregnancy’. Ekabua et al. [1] highlight the four major goals of ANC as being (a) promotion and maintenance of the physical and social health of the mother and the baby, (b) detection and management of complications during pregnancy, (c) development of birth preparedness and complication readiness plan and (d) preparation of the women for normal puerperium. The World Health Organisation (WHO) identifies ANC as one of the most widely used strategies to improve maternal and child health [8]. It was also one of the worldwide strategies towards the achievement of millennium development goal (MDGs numbers 4 and 5, which were to reduce child deaths by 75% and improve maternal health by 50% by 2015 [9].

Three South African reports, namely the Saving Mothers report by the National Committee on Confidential Enquiry into Causes of Maternal Deaths (NCCEMD), Saving Babies report for the Perinatal Problem Identification Programme (PPIP) and Saving Children report for the Child Health Problem Identification Programme (CHPIP), review the health care provided to the mothers, babies and children in South Africa [10]. The findings of these reports highlight

avoidable causes of the deaths of mothers, babies and children and make recommendations to improve the quality of care provided to mothers, babies and children at the time when they need it most. All three committees highlight, in their triennial reports, the importance of ANC for reducing maternal, perinatal and children's deaths. Bradshaw et al. [10] further emphasise that addressing the health challenges should involve strengthening the provision of healthcare packages within the continuum of care and recognise that the effectiveness of each package depends on whether it provides high-impact, evidence-based interventions and also on the coverage and quality of the service rendered. ANC can screen for, detect and thus prevent many maternal complications that might occur before childbirth and could significantly improve the outcomes for unborn infants [2].

The one document by the NCCEMD, which might appear old but which conveys a very important message for South Africa, is the Saving Mothers Policy and Management Guidelines for Common Causes of Maternal Deaths [11]. This policy document highlights that one of the major areas of substandard care identified in South Africa is the poor initial assessment of patients during ANC visits. The authors attribute this to the fact that the midwives are trained in the traditional method of history taking, clinical examination and special investigations when assessing patients. This might make it difficult to assimilate the multiple abnormalities found and to formulate a management plan for a patient with multiple organ disease, the very type of cases described in the maternity mortality reports [12].

South Africa has a burden of high maternal and perinatal mortality rates and therefore needs to work very hard to address this problem. The number of reported maternal mortalities had increased by 20% during the 2005–2007 triennium compared to the 2002–2004 trienniums [3]. The constant rise in maternal and perinatal mortality rates resulted in South Africa's inclusion of the MNCWH programme as one of the priority programmes in the 10-year strategic plan for the country [12]. The majority of the provider-related preventable deaths in South Africa have been attributed to poor ANC.

South Africa can address the problem of the constantly rising maternal and perinatal mortality rates because the majority of avoidable provider-related maternal deaths can be avoided through providing proper and good-quality ANC services [13]. The Saving Mothers Report 2008–2010 indicates that a total of (16.6%, $n = 713$) of women who died during this triennium did not attend ANC clinics and (7.0%, $n = 300$) attended ANC clinics infrequently [14]. The Saving Mothers' Report indicates that the avoidable causes of maternal deaths included a number of health provider-related issues such as poor initial assessments, problems with recognising problems, delays in referring the pregnant women to different healthcare facilities causing pregnant women to be managed at inappropriate healthcare levels, incorrect management, substandard management/care and failure to take actions when abnormalities were found [14].

3. Approaches to antenatal care

Several approaches to ANC are used in different countries including the traditional approach, goal-directed ANC, focussed ANC (FANC) and the basic ANC (BANC) approach. While some

countries structure and develop their own approaches to suit their unique circumstances, other countries might simply adopt an approach existing elsewhere. This could create problems if the situations in the two countries differ. Developing countries (like South Africa, Botswana, Swaziland, Kenya and Zimbabwe) adopted ANC programmes modelled on the approaches used in developed countries [15]. These approaches use risk assessments to identify women who are likely to experience complications during their pregnancies and assume that more clinic visits imply better pregnancy outcomes. In these approaches, scarce resources of developing countries might be devoted to women with high-risk pregnancies, implying that women with low-risk pregnancies might not receive optimal care [16]. This approach has been challenged by the WHO [17]. The Maternal and Neonatal Programme [18] argues that frequent ANC visits are often logically and financially impossible for women to manage and place additional burdens on the healthcare system. Frequent ANC visits do not necessarily improve pregnancy outcomes [1]. The WHO realised that traditional ANC programmes, meant for developed countries, were poorly implemented and largely ineffective when used in developing countries [16].

The WHO designed and tested an FANC package that included only counselling, examinations and tests serving an immediate purpose and having a proven health benefit as an ideal approach to be used by developing countries [19]. In the FANC approach, the WHO recommends reducing the number of ANC visits to four, and this has not been found to pose risks to the health of mothers or babies [19]. The FANC approach recognises that every pregnant woman is at risk of experiencing complications and therefore emphasises that all pregnant women should receive the same basic care and monitoring for complications [18]. However, the WHO emphasises that once a pregnant woman has been identified to have high-risk factors, she should be referred to a higher level of care [18]. The WHO therefore advocates that after the initial assessment, pregnant women should be categorised into two groups: those who have low-risk factors who should follow the FANC reduced number of ANC visits approach and those who have high-risk factors who should be referred for hospital management of their pregnancies [19]. The Maternal, Child and Women's Health Unit of the KwaZulu-Natal (KZN) Department of Health reviewed and revised its ANC guidelines on the basis of the WHO's model of FANC to improve the quality of ANC provided at the clinics in the KZN province [20].

According to the MNH Programme [18], the FANC approach is one of several essential maternal and neonatal care interventions that are evidence-based and that build on global lessons learned about saving the lives of mothers and newborn babies. The FANC approach also includes a classifying form designed to assist ANC health-care providers to identify women who have conditions requiring treatment and more frequent monitoring. It also includes classifying forms needed to implement the package and instructions for its use [19].

The WHO provided key recommendations which form standards for maternal and neonatal care service delivery, providing guidance for assisting countries to improve the health and survival of women and newborn babies during pregnancy, childbirth and the postnatal period and can be modified to suit the circumstances of a specific country [21]. These WHO provisions allow each country, intending to adopt the FANC approach, to modify the guidelines to

suit the circumstances of the specific country. The WHO indicates that it might be necessary, when introducing the FANC package in practice (depending on the specific country), that the country's national clinical standards and guidelines for ANC might require updating, the pre-service training curricula in ANC and in-service training for ANC providers and their supervisors might need to be modified, and a plan for implementing changes with regard to medications, equipment and supplies to implement the package should be assessed [21].

4. Approaches to antenatal care services in South Africa

Until 2007, South Africa used the traditional approach to ANC. Historically, this traditional ANC service model was developed in the early 1900s. This model assumed that frequent ANC visit, and classifying pregnant women into low- and high-risk groups by predicting potential obstetric complications, was the best way to care for the mother and the foetus [22]. The use of the traditional ANC approach in South Africa was prescribed by the South African Nursing Council (SANC) in the scope of practice for midwives [23]. The SANC prescribed that the midwives should ensure that pregnant women attend ANC clinics once a month until 28 weeks' gestation and thereafter every fortnight until 36 weeks' gestation. Thereafter, a pregnant woman should continue attending the clinic at PHC level every week until her baby is born or until she reached 42 weeks' gestation whichever comes first. Should the woman not give birth by 42 weeks' gestation, she had to be referred for hospital management [23]. With the traditional approach, a pregnant woman could have up to 12 ANC visits conducted at a PHC clinic level during one pregnancy. This is one of the aspects that have been challenged by the WHO [24].

The traditional ANC approach was replaced by the FANC approach which is a goal-oriented ANC approach that was recommended by researchers during 2001 and adopted by the WHO in 2002 [21]. The NDoH identified BANC as the ideal approach to ensure that quality and effective ANC is provided [25]. According to the Saving Babies Report 2008–2009, improvement in access to good-quality ANC services could make a major contribution towards reducing perinatal and child deaths [26].

South Africa adopted and modified the FANC model to suit the South African circumstances and referred to it as the BANC approach [27, 28]. This followed the realisation by the NDoH that the traditional ANC approach was not working well for South Africa. Midwives, the key providers of ANC services, requested for a programme based on the principles used in the Integrated Management of Childhood Illnesses (IMCI) programme with flow diagrams and protocols [2]. In 2007, the NDoH advised that all health facilities providing ANC services had to adopt the BANC approach by the end of 2008 [29]. The BANC approach is used in the public health institutions of South Africa to provide healthcare services to pregnant women and is listed as one of the priority interventions for reducing maternal and child mortality in this country [25]. South Africa's NDoH introduced the BANC approach in 2007 and advised that all health facilities providing antenatal care (ANC) services should have adopted this approach by the end of 2008 [29]. The NDoH provided training for the lead trainers from all

the provinces and made available various documents such as a handbook, guidelines and guides for facility managers [2, 28, 29]. The lead trainers were expected to cascade the training into their respective provinces and to institute and facilitate the implementation of the BANC approach.

5. The basic antenatal care (BANC) approach

Pattinson [28] describes the BANC approach as the minimum level of ANC that every pregnant woman should receive. Every aspect of the BANC approach has been developed from the best research evidence, and the only aspects of ANC that have been shown to be effective are included in the BANC approach [28]. The BANC approach does not intend to replace any existing programme but aims to combine all resources and to facilitate their use [28]. The BANC approach was introduced as a quality improvement strategy based on the belief that good-quality ANC could reduce maternal and perinatal mortalities and improve maternal health, aiming to achieve MDGs 4 and 5 [30]. This then led to the introduction of the BANC approach in the PHC clinics. Thus, the BANC was an approach being used in South Africa to render ANC services during the time of this study.

The BANC approach has been simplified to the bare minimum so that ANC services can be provided by every PHC clinic's midwives [28]. Because the BANC approach is a modified version of the FANC approach, it has many characteristics similar to the FANC approach. These include the approach focusing on early ANC attendance by all pregnant women and on limiting the total number of ANC visits to a minimum of four or five visits per pregnancy for low-risk women. This requires that ANC services should be provided daily at every facility frequented by pregnant women so that the first ANC visit takes place as soon as the pregnancy has been confirmed or the very first time that a pregnant woman visits a health facility [28]. If a pregnant woman is brought into the health system early, her health problems could be detected and managed or controlled early and treatment then has a greater chance of success. Pattinson [28] also states that all pregnant women with high-risk factors should be referred to the next level of care so that nurses at PHC level have sufficient time to attend to women with low-risk factors. Every site where pregnant women make contact with health services should be utilised because if all PHC clinics are providing BANC, then ANC could be started as soon as the pregnancy had been confirmed [2].

The BANC approach requires that two sets of checklists be used for recording purposes during ANC visits: one checklist to record the first visit and the other to use during subsequent follow-up visits. Pattinson [28] recommends that before commencing implementation of the BANC approach, each facility has to develop its own specific protocols for the management of obstetric conditions which must be in line with the South African National Maternity Care Guidelines and should be displayed in the facility. All the protocols should be counter-signed by the head of the obstetric unit from the hospital to which the facility refers the women with high-risk factors or complications during pregnancy. The protocols should be reviewed annually. Regular auditing of the ANC service should be an on-going process to ensure continuous improvement based on identifying and addressing potential shortcomings [2].

The BANC approach focuses on the quality rather than on the quantity of visits, with special emphasis on the fact that every visit should be goal directed [31]. The approach is included in the list of strategies provided by the NDoH to achieve MDGs 4 and 5 which are to reduce perinatal deaths and improve maternal health by 2015 [32]. A baseline audit of the ANC service and an analysis of the strengths, weaknesses, opportunities and threats (SWOT) of the facility should be conducted before commencing the implementation of the BANC approach. This enables the midwives to compile a realistic plan and process map for the implementation of the BANC approach [2]. Documents such as the handbook, guidelines and facility manager's guides are available to be used by the midwives during the implementation of the BANC approach [2]. According to the BANC handbook, each clinic should have one or more supervisors to perform the clinical supervision and the administrative tasks [2]. The manager is responsible for providing supportive supervision to the staff members in order to ensure that the clinic's programmes are implemented successfully [2].

6. Provision of antenatal care services according to the basic antenatal care approach

While the BANC approach is adapted from the WHO's FANC model, it is also designed similar to the IMCI programme [2]. This decision was taken in response to the midwives' request for an ANC programme that has flow diagrams and protocols similar to the IMCI programme. The midwives hoped that having such a programme would assist them to render safer and better quality health care to the pregnant women [2]. It is for this reason that the BANC approach is sometimes referred to as the integrated management of pregnancy and childbirth [2, 33].

The NDoH also identified BANC as an ideal approach to ensure that quality and effective ANC is provided [25]. The implementation of BANC is seen as a positive measure to improve the quality of ANC in PHC clinics [7]. Effective and quality ANC could assist South Africa to address the problem of constantly increasing maternal and perinatal mortalities. Snyman [6] stated that the BANC quality improvement package is designed to assist ANC-related clinical management and decision-making at PHC level. This author conducted a qualitative study to assess the effectiveness of the BANC package for improving the quality of ANC services rendered at PHC facilities. With the implementation of the BANC approach, the organisational changes required at the facility level for the improvement of ANC services are facilitated with tools like the integrated flow charts for pregnant women's management, referral protocols and checklists. This could potentially have a positive impact on the outcomes of pregnancies [7].

Guidelines on how to conduct ANC visits are detailed in the Basic Antenatal Care Principles of Good Care and Guidelines [28]. These guidelines have been adapted from a guide for essential practice by the WHO titled 'Pregnancy, Childbirth, Postpartum and Newborn Care' [28]. According to the BANC Principles of Good Care and Guidelines, the principles of good care include communication, workplace and administrative procedures, universal precautions, and cleanliness and organisation of ANC visits [28].

It is stated in the guidelines that communication, privacy and confidentiality during examination and counselling should be ensured at each ANC visit [28]. The importance of service hours, the availability of equipment and drugs, record keeping, and infection prevention and control are highlighted as part of the workplace and administrative procedures [28]. The guidelines describe how the ANC visits should be organised, highlighting that ANC should always begin with rapid assessment and management. All pregnant women, except those with high-risk factors, should have four to five routine ANC visits.

A pregnancy status and birth plan chart, which should be used to assess the pregnant women at each of the four ANC visits, are provided [28]. The chart is used during the first ANC visit to prepare the birth and emergency plan and reviewed and modified according to the need at each subsequent ANC visit. 'Ask, check, look listen and feel' criteria should always be followed during assessments of pregnant women. All pregnant women should be screened for preeclampsia, anaemia, foetal growth and post-maturity at all ANC visits [28]. All women should also be screened for syphilis, Human Immunodeficiency Virus (HIV) and Rhesus factor (RH) [28]. All routine investigations, including the rapid plasma reagent (RPR) test, haemoglobin (Hb) level test, HIV and RH tests should be done using rapid test kits. The guidelines highlight the importance of responding to observed signs and/or problems reported by the pregnant women and contain a guide on how to respond to these signs [28].

Standard preventative therapy, including tetanus toxoid injections, iron preparations and calcium supplements, should be issued to all pregnant women at each ANC [28]. A guide is included on how to advise women about nutrition and self-care [28]. The guidelines highlight the importance of preparing individualised ANC and delivery plans for each woman at the first ANC visit and that the plans should be reviewed during each subsequent visit and adjusted based on the identified needs. The plan should be prepared in consultation with the woman concerned. This ensures that the woman is involved in her own care. The plans should also include transport arrangements, infant feeding options and future contraception. A description of how the first and the follow-up visits should be conducted is provided [28].

The guidelines state that the first ANC visit should take place as early in pregnancy as possible, before 12 weeks' gestation, preferably at the confirmation of pregnancy [28]. During the first ANC visit, all women should be classified for BANC using the classifying form/first visit checklist provided. Only women with low-risk factors should follow the BANC approach. All women with risk factors should either be referred to an appropriate level of care or follow a specially prepared schedule based on the risk factors identified. Four follow-up visits should be scheduled at 20, 26, 32 and 38 weeks' gestation. Specific times are scheduled for performing repeat routine tests such as Hb, HIV and RPR, and these times coincide with specific routine follow-up visits. It is therefore important to schedule the follow-up visits as specified by the BANC guidelines in order to ensure the correct timing of repeat tests.

Pattinson [2] suggests that each PHC clinic should have one or more people in the role of ANC supervisor to ensure clinical and administrative supervision. The clinical supervisor should be the person with most ANC skills and should check each pregnant woman's ANC card at the first visit and again at the 32 weeks' visit to ensure that the clinic provides adequate care [2].

All information regarding pregnancy and consultation should be recorded in an ANC card which should not be filed at the clinic but which should be kept by the pregnant woman. The woman is advised to always carry the ANC card with her, wherever she goes, and to produce the card each time she visits any health-care institution. This practice facilitates communication between the different health-care providers involved in the care of women during pregnancy and childbirth [2].

7. Discussion

Several factors have been identified to be positively influencing the implementation of the BANC approach. These include the availability and accessibility of BANC services, policies, guidelines and protocol; various means of communication; a comprehensive package of and the integration of primary healthcare services; training and in-service education; human and material resources; the support and supervision offered to the midwives by the primary health-care supervisors; supervisors' understanding of the approach and the levels of experience of midwives involved in the implementation of the BANC approach [34]. Nevertheless, evidence still shows that not all PHC clinics have been able to successfully implement and sustain the BANC approach [35]. Ngxongo [35] discovered that out of 59 Municipal PHC clinics in eThekweni District in KwaZulu-Natal, 46% ($n = 27$) were successfully implementing the BANC approach. Midwives face various challenges during the implementation of the BANC approach which has resulted in some PHC clinics abandoning the BANC approach and reverting to the traditional approach to ANC [35]. These challenges include shortage of staff, lack of cooperation from referral hospitals, lack of in-service training, problems with transportation of specimens to laboratories, lack of material resources, unavailability of Basic Antenatal Care programme guidelines and lack of management support [35].

Although the BANC approach emphasises quality over quantity of visits [36], reducing the number of ANC visits has posed numerous challenges in the pregnancy outcomes. According to Hofmeyr and Mentrop [37], too few visits and the long interval between routine ANC visits in late pregnancy in the BANC approach have been responsible for a number of maternal and perinatal deaths. Hofmeyr and Mentrop [37] argue that the more frequent and closely spaced ANC visits as pregnancy advances in the traditional approach assisted in early diagnosis and management of selected ANC problems such as preeclampsia, foetal growth impairment and others and that too few visits result in missed opportunities to detect and treat asymptomatic pregnancy complications. These authors recommend modification of the BANC approach into what they call 'BANC plus'. Their proposal is that a reasonable compromise for a middle-income country such as South Africa would be to continue to implement the WHO BANC approach with reduced, goal-orientated visits up to 32 weeks' gestation and thereafter to revert to routine visits every 2–36 or 38 weeks, followed by weekly checks.

The international evidence supports a more regular contact between healthcare workers and pregnant women. Therefore, South Africa is gradually switching to an eight-contact model

(three more visits than the current five contact Basic Antenatal Care (BANC) policy) [38]. It is envisaged that this intervention will improve the pregnancy experience as well as the outcomes of pregnant women and their babies in South Africa. The BANC + continues to emphasise the importance of conducting the first visit as early as possible, with the next visit scheduled at 20 weeks and then repeat visits at 26 weeks. The adjustments include the 30 weeks and 34 weeks and then a 2-week visit until delivery. An audit of the current BANC system has shown that two important principles of good care were often missing: a plan for further antenatal care and the delivery plan (including delivery at the appropriate level of care or hospital). Therefore, appropriate planning for the pregnancy as well as for the delivery, based on information obtained and correctly interpreted at every visit, will ensure that women and their families are ready and prepared when the big day arrives. The purpose of BANC+ is not just to increase the number of visits but also an opportunity to look again at how that care is given [38].

8. Conclusion

The introduction of the BANC approach has been a positive milestone for South Africa. Studies show that many African countries such as Ghana, Kenya, Tanzania and others have seen positive results with the implementation of the WHO FANC model [1, 8, 17]. Although South Africa is still experiencing numerous challenges with the BANC approach, there is hope that this country will also achieve positive results as the country continues to adjust and improve the BANC approach to suit its circumstances.

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Conflict of interest

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