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Literature Review

Policy Analysis of Integrated Antenatal Care in Indonesia: An Application of the Policy Triangle Framework

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Abstract. Background: *Integrated Antenatal Care (ANC) is an important public health intervention to reduce maternal and infant mortality rate. In Indonesia, integrated ANC implementation requires a comprehensive policy analysis to identify gaps between policy design and the implementation.* ***Method:*** *This study uses a descriptive analytical narrative review approach using the Policy Triangle Framework. The analysis was conducted on integrated ANC policies using secondary data obtained from national regulations, technical guidelines, monitoring and evaluation reports, and relevant scientific evidence published since 2020. Policy documents and supporting literature were analysed thematically across four domains: actors, content, context, and processes.* ***Results:*** *The findings show that, in terms of policy content, integrated ANC in Indonesia has developed comprehensively, characterized by an increase in the minimum number of visits from four to six (K6) and the integration of 10T service standards. However, significant challenges still remain in the realm of actors, especially the uneven distribution of health workers, workload and the shortage of general practitioners trained in obstetric ultrasound, especially in Papua. From a contextual perspective, geographical barriers and sociocultural factors remain the main determinants of the sharp differences between provinces in K6 coverage, ranging from 4.77% to 95%.* ***Conclusion:*** *Integrated ANC policies have strong content but are hampered by uneven distribution of actors and geographic access. Policy innovations are needed in the form of task shifting, strengthening telemedicine, equitable distribution of doctors and midwives and strengthening family support systems to overcome sociocultural barriers in remote areas and a more comprehensive antenatal class.*

Keywords: *Policy Analysis; Triangle Framework; Maternal Health; Integrated Antenatal Care; Primary Health Care*

Key Messages

- The implementation of Indonesia's integrated antenatal care (ANC) policy remains structurally unequal due to shortagand a more comprehensive class of pregnant women.es and maldistribution of midwives and physicians, particularly those trained in obstetric ultrasound, resulting in wide regional disparities in K6 coverage (4.77%–95%).

- This study applies the Policy Triangle Framework to Indonesia's integrated ANC policy, identifying workforce related policy gaps, especially in obstetric ultrasound provision and the role of task shifting in improving ANC equity.
- The Ministry of Health should promote equitable workforce distribution by optimizing local midwives and physicians and enabling trained midwives, in addition to doctors, to perform early ultrasound screening supported by telemedicine.

1. Introduction

The maternal mortality rate (MMR) in Indonesia still requires special attention. In 2010, AKI was recorded at 240 per 100,000 live births, and in 2020 it dropped to 189 per 100,000 live births. This decline shows that the government's efforts to improve maternal and child health services have been getting better. Nevertheless, efforts to reduce AKI must continue to be carried out to achieve the target of 70 maternal deaths per 100,000 live births based on *The Sustainable Development Goals* (SDGS). This must be achieved by 2030 [1].

One of the maternal and child health policies that the government focuses on so that the maternal and infant mortality rate can decrease is to organize *Integrated Antenatal Care* or called integrated ANC. This integrated ANC service is a comprehensive set of activities carried out for pregnant women starting from conception to before childbirth (Ministry of Health of the Republic of Indonesia, 2020). Antenatal Care (ANC) services are an important form of health intervention in reducing maternal and infant mortality. The *World Health Organization* (WHO) recommends an integrated ANC approach as a global service standard to ensure that pregnant women receive comprehensive and evidence-based health services. In Indonesia, policies related to ANC are regulated in the Minister of Health Regulation Number 21 of 2021 which provides new guidelines regarding the frequency of visits, risk checks, and the provision of other health services [2].

The integrated ANC service aims to ensure that all pregnant women can get comprehensive and quality services so that mothers are able to go through the pregnancy and childbirth process more safely, comfortably, and with minimal trauma. This is the basis or foundation to reduce morbidity and mortality of mothers and babies. Integrated ANC services are prepared so that mothers are completely ready to conceive, give birth, and care for the baby.

The success of integrated ANC policies is greatly influenced by various aspects. Therefore, it is necessary to conduct policy analysis from various aspects to determine the dynamics of integrated ANC implementation in Indonesia using the *Policy Triangle Framework* model approach which involves interaction between actors, content and context, and policy processes. In the context of an integrated ANC, the actors involved include the government, health workers, and the community. The content or content of the policy includes regulations, service standards, and technical guidelines. Meanwhile, the context includes the social, cultural, economic, and political factors that affect the implementation of policies on the ground while the process includes how the process of the policy runs.

This analysis aims to analyze the gap between integrated ANC policy and implementation in Indonesia. By understanding the interaction between actors, content, context and processes, it is hoped that opportunities for improvement and strategic recommendations can be identified to improve the quality and scope of ANC services in Indonesia [3].

2. Methods

The method used in this study is an analytical descriptive method through document studies or narrative review. The main framework used is the *Policy Triangle Framework*. This analysis was carried out on integrated antenatal care policies. This analysis aims to provide an overview of the extent to which integrated ANC adjustments have been made and how the picture of its implementation in the field by understanding the interaction between actors, policy content, context and processes.

Data Sources and Search Strategies

The data sources used are secondary data obtained through the study of related official documents and literature studies. The main data sources include: Rules, policies, and guidelines related to Integrated Antenatal Care. Literature review is carried out non-systematically (narrative review). The databases used in the search and literature study include: the official website of the Ministry of Health of the Republic of Indonesia, Google Scholar, and other relevant official databases. The keywords used include: Antenatal, Integrated, Puskesmas, Indonesia, Policies, Rules, Guidelines, Pregnant Women, Primary Services.

Inclusion and Exclusion Criteria

Inclusion Criteria**:** National policy documents, technical guidelines, evaluation reports and relevant scientific evidence published since 2014 (since the enactment of the latest ANC policy), and publication between 2014-2025 .Exclusion Criteria**:** Articles or reports published before 2014 and not related to ANC policies at the Primary health care level.

Screening and Data Extraction

The found policy documents and articles were then selected based on inclusion criteria. For research articles, titles and abstracts were screened, and the full text of potentially relevant studies were reviewed for eligibility.

Data Analysis

Data analysis was carried out using thematic mapping techniques using a descriptive analytical approach using the Policy Triangle Framework theory by categorizing data into 4 elements of the Policy Triangle Framework which include: Analysis of Actors, Content, Context, and Processes. Empirical evidence from previous studies and monitoring reports served to illustrate the implementation gap between written policies and field practices, integrated into the four domains of the framework.

3. Results and Discussion

The policy documents selected for this analysis include: Regulation of the Minister of Health of the Republic of Indonesia Number 21 of 2021; the 2010, 2015, and 2020 editions of the Integrated Antenatal Care Guidelines; and relevant monitoring and evaluation reports. After an extensive literature search, a total of eight key policy documents and 19 supporting scientific articles were analysed to provide a comprehensive overview of Integrated Antenatal Care (ANC) in Indonesia **Table 1**.

Table 1. Documents Analyzed

Document Categories	**Quantity**	**Data Source Description**
National Regulations & Guidelines	4	PMK No. 21/2021, Integrated ANC Guidelines 2010, 2015, and 2020 Editions
Statistics & Public Data Reports	2	Indonesia Health Profile 2024 and BPS Health Worker Data 2023.
International Organization Guidelines	2	WHO recommendations related to positive pregnancy, maternal health
Scientific Articles	19	Research related to midwife performance, husband support, sociocultural, urban-rural disparity, and *task shifting review*.
Total Documents	**27**	

Actor analysis

The actors referred to here are key components in the formulation, implementation, and evaluation of integrated ANC policies. Actors involved in this policy include the government, health workers, the community, international organizations, as well as the policy targets themselves, namely pregnant women and families. At the national level, the Ministry of Health of the Republic of Indonesia plays a key role in the formulation and determination of integrated ANC policies as a strategy to reduce the Maternal Mortality Rate (MMR) and Infant Mortality Rate (AKB). and implemented through provincial and district/city health offices at primary health care facilities. In addition to the government, the World Health

Organization (WHO) plays a role in the development of ANC policies globally and provides a reference for ANC policies in Indonesia [4],[5].

At the service implementation level, midwives, doctors, and supporting health workers such as laboratory analysts and nutritionists are involved in integrated ANC service delivery. Midwives are the main actors in ANC services with responsibility for implementing 10 ANC service standards (10T). The number of midwives in Indonesia is recorded at 344,928 people, but their distribution remains uneven across regions. Some provinces have a high ratio of midwives, while the eastern region of Indonesia, especially Papua, still experiences a shortage of midwives, which has an impact on the inequality of access to ANC services. As many as 58.0% of midwives have good interpersonal communication skills and this affects maternal compliance in conducting ANC. Skills, both hard skills and soft skills are important in supporting the success of the integrated ANC program [6].

The results of the study showed that the attitude, motivation, and competence of midwives were significantly related to the performance of midwives in providing ANC services. However, a number of obstacles are still faced by midwives in the practice of ANC services. These obstacles include limited resources, lack of adequate facilities and infrastructure, as well as challenges in achieving service standards such as ANC 10T. In addition, there are still health workers who carry out dual roles with inadequate facilities [7]. Problems with the bureaucratic system and policy implementation at the facility level are also obstacles in optimizing the role of midwives in integrated ANC services [8],[9].

In addition to midwives, doctors have a role in examining pregnant women, including performing ultrasonography (ultrasound) at least twice during pregnancy for early detection of risks and complications. However, the availability of doctors at health centres is not evenly distributed. In 2024, the provinces with the highest percentage of health centers without doctors were Highland Papua (62.57%), Central Papua (45.6%), and South Papua (32.94%). Furthermore, not all doctors at these health centers possessed the competence to perform obstetric ultrasounds. Data indicates that as of 2024, only 51.7 % of health centers met the national standard of having nine types of health workers [1]. Given these limitations among medical actors, the literature suggests a significant potential for task shifting [2]. The WHO recommends task shifting in maternal and new born health interventions as a strategy to expand access to services in resource-constrained regions, which includes the possibility of transferring antenatal ultrasound screening tasks to other health workers who receive adequate training and supervision [10].

Family support, particularly from husbands, significantly influences maternal compliance with ANC services. Husbands play a vital role in supporting mothers physically and emotionally, rather than solely providing financial assistance. This support system ensures that pregnant women complete all stages of integrated ANC.

However, studies indicate that paternal support remains limited, with social factors continuing to be primary determinants in the utilization of services. Recent research confirms that few husbands currently provide the necessary level of engagement, reinforcing the fact that social aspects remain a critical barrier to ANC compliance [11].

Support from international organizations such as WHO, UNFPA, and UNICEF affects regulatory standards and strengthening the capacity of health workers through *the Better and Sexual Reproductive Health and Rights for All in Indonesia* (BERANI) program, one of which is the strengthening of health workers [12]. Academics and researchers play a role in providing scientific evidence as well as evaluating integrated ANC policies and supporting the strengthening of integrated ANC programs through the latest evidence base.

Content Analysis

The integrated ANC policy in Indonesia has undergone several changes from 2010, 2015, and 2020. Based on a review of the latest policy documents, several changes were found. The new policy is in line with WHO's global recommendations that emphasize comprehensive service standards to ensure pregnant women have a "Positive Pregnancy Experience". This includes an enjoyable, rewarding experience, as well as early detection of pregnancy, childbirth, and postpartum risks. There was an increase in the minimum standard of visits from 4 times to 6 times (K6). K6 includes: 2 times in the first trimester. 1 time in the second trimester and 3 times in the third trimester. Pregnant women are required to have contact with a doctor at least 2 times (1st and 3rd trimester). Doctors are responsible for conducting high-risk screening using Ultrasound equipment.

If an ultrasound facility is not available, then a referral procedure must be performed. The latest policy raises the service standard from 7T to 10T. Three additional standards include: Triple elimination laboratory tests (HIV, Hepatitis B, and Syphilis) and other supporting tests; case management according to scope of practice; and Counselling. Other specific changes include the addition of records of potential blood donors (from 2 to 4), mandatory preeclampsia screening at first contact (preferably <20 weeks), as well as the use of pregnancy evaluation charts and weight gain charts [4],[13],[14].

Every meeting according to the integrated ANC guidelines for mothers is advised to follow the pregnancy if possible. The pregnant women's class is designed as a group educational activity to improve maternal health knowledge, readiness, and behavior during pregnancy to childbirth. The learning approach used is generally still conventional, with one-way lecture methods and the dominance of medical materials. The psychological and emotional aspects of pregnant women have not been optimally accommodated, so the goal of building mental readiness and reducing anxiety before childbirth has not been fully achieved The existing class of pregnant women is in accordance with the goals set in the current guidelines for pregnant women, but it is not comprehensive in facilitating the needs of mothers in facing their childbirth [15].

Context Analysis

Policy context refers to external factors influencing policy formulation, implementation, and evaluation. Influencing factors include: These include social, cultural, economic, political, geographical, technological, and historical factors.

1. Social and Cultural Context

In some areas, cultural norms, traditional beliefs, and the influence of extended family still play a role in decision-making related to pregnancy and childbirth. In addition, the involvement of husbands and families in assisting pregnant women is not evenly distributed, although integrated ANC policies have emphasized the importance of psychosocial support and the role of companions. These social factors are an important context that affects the effectiveness of the implementation of integrated ANC policies at the community level. Apart from family support, the literature also mentions that traditional cultural practices and beliefs can influence the use of maternal services, including the ANC. Studies in Indonesia show that traditional practices and the presence of traditional birth attendants as well as cultural beliefs related to pregnancy can hinder the use of modern maternal services, including ANC, as mothers prefer traditional practices [16],[17],[18].

2. Political and Policy Context

The high level of AKI in Indonesia has prompted the government to issue policies to deal with AKI, especially by implementing integrated ANC-related policies. An integrated ANC was established based on the Regulation of the Minister of Health of the Republic of Indonesia Number 21 of 2021. The updated WHO recommendations, which advocate for increased contact between pregnant women and healthcare providers, prompted the Indonesian government to revise its national strategy. These changes are technically formalized in the 3rd edition of the Integrated ANC Guidelines (2020), which mandates a minimum of six ANC visits—an increase from the previous four-visit standard. Although this policy has been in effect since 2020, its implementation is managed by regional Health Offices and local governments, often resulting in significant capacity gaps between regions in executing these health programs [4].

3. Geographical Context

Implementation in the field certainly has many obstacles. Geographically, the technical implementation of integrated ANC cannot be the same in all regions. The implementation of Integrated ANC in areas with inadequate geographical conditions, such as remote areas, inadequate road access, far from health centers, and the completeness of services, facilities, and human resources in health centers is related to compliance with ANC visits [19],[20].

4. Economic Context

ANC services have been guaranteed by the National Health Insurance (JKN). However, financial barriers still arise for underprivileged families in the form of transportation costs to health facilities. Pregnant women in urban areas were recorded to have a 1,255 times greater chance of completing the minimum visit than mothers in rural areas [21],[22].

5. Technology/innovation context

The use of technology includes the use of ultrasound in health centers, Integrated Nutrition Information System (SIGIZI), and digital program-based reporting. Research shows that the use of *telemedicine* is effective in increasing knowledge and facilitating consultation between village midwives and specialist doctors [23],[24].

In a global context, evidence from some low- and middle-income countries (such as Uganda, Tanzania, Kenya, and Ethiopia) suggests that training midwives to perform *basic obstetric ultrasound* can improve early detection of pregnancy risks and accuracy of referrals, especially in remote areas experiencing a physician staffing crisis [25],[26],[27],[28].

Process Analysis

Policy process analysis focuses on how policies are created, implemented, monitored, and evaluated. The following are the results of the analysis of the Integrated ANC policy process in Indonesia:

1. Problem Identification

The results of the document review show that the integrated ANC policy was developed based on maternal health problems that have not met the national target. National data shows that the Maternal Mortality Rate (AKI) is still above the RPJMN target, with the cause of maternal mortality shifting from bleeding to non-obstetric complications and hypertension in pregnancy, childbirth, and postpartum [29].

2. Policy Formulation

Based on these problems, the government continues to strive to improve policies, especially policies related to the revision of the integrated ANC guidelines, from the 2nd edition of the integrated ANC to the 3rd edition of the integrated ANC issued in 2020. This guideline was prepared with reference to the WHO recommendation in 2016, with adjustments to the national context in the form of determining a minimum of six ANC visits and a minimum of two contacts with doctors. The policy revision also includes an increase in antenatal service standards from 7T to 10T as well as the addition of several pregnancy recording and monitoring components. This policy is outlined in the Regulation of the Minister of Health of the Republic of Indonesia Number 21 of 2021 [2],[4],[14].

3. Policy Implementation/Implementation

The implementation of integrated ANC policies is carried out in stages through provincial and district/city health offices, and is carried out in first-level health service facilities, especially health centers. The implementation of integrated ANC services refers to the national guidelines that have been set.

Recording and reporting of ANC services using existing forms, namely: Mother's Card or other medical records, Mother's cohort, KIA Book (Mother's sheet). Recording of existing programs (immunization, malaria, nutrition, family planning, TB, triple elimination and others).

The disparity in services between urban and rural areas is also a significant issue. The data shows that the number of ANC coverage that meets the standards is still uneven, particularly in remote areas and areas with limited access to healthcare [19],[21]. About 26.4% of pregnant women in rural areas and 18.2% in urban areas do not receive complete ANC services. This inequality indicates that although regulations are clear, the implementation of policies has not been evenly distributed at all levels of society [30].

4. Monitoring and Evaluation

The results of the analysis show that the monitoring and evaluation of the implementation of integrated ANC is carried out through indicators of service coverage and routine reporting. Based on the 2024 Indonesian Health Profile, ANC's service coverage four times (K4) and six times (K6) has not reached the national target. There is considerable variation in achievement between provinces, with some provinces meeting the target, while others showing low achievement. This data illustrates the inequality in the achievement of the implementation of integrated ANC policies between regions.

Based on Indonesia's health profile in 2024, health services for pregnant women (K4) have only reached 80.1 of the target of 95% and (K6) has only reached 75.64% of the target of 100%. The 2 provinces that achieved the target were DKI Jakarta and Banten Provinces. In addition to access to health service facilities, the obstacles faced in the implementation of health services for pregnant women are the need to improve the quality of services, including the fulfillment of all components of pregnant women's health services that must be provided during the visit, and the need for a review related to the equitable distribution of competent health workers throughout Indonesia, especially in the Papua region.

Mountainous Papua only reached 4.77%. This indicates a substantial interprovincial gap, even in large provinces such as West Sumatra it has only reached 64.3% (K6), [29].

Discussion

Based on the results of the integrated ANC policy analysis, it was found that the content of the ANC is strong and comprehensive, but there are still some obstacles that need to be adjusted. In terms of actors, especially midwives and doctors, the distribution is still uneven, there is still significant inequality between regions, especially in the Papua region. Because the availability of ultrasound-trained physicians is limited and uneven, the achievement of ultrasound examinations among pregnant women remains far below policy targets. This indicates that a uniform national policy design has not fully accounted for Indonesia's diverse geographical and health system capacities [29],[19],[20].

In addition to workforce shortages and unequal distribution, high workload among midwives represents a critical challenge in the implementation of integrated ANC. Midwives in primary care settings are required to manage multiple responsibilities, including routine antenatal visits, implementation of expanded K6 and 10T service standards, health education activities, community outreach, and administrative reporting. The increased complexity of integrated ANC services has not always been accompanied by proportional adjustments in staffing or workload management, particularly in resource-limited and remote areas. As a result, excessive workload may compromise service quality and hinder full compliance with integrated ANC standards [7].

In addition to providing ultrasound equipment to the Health Center, it is essential to ensure that general practitioners possess certified competency in obstetric ultrasound**.** In areas that are severely understaffed, incentive schemes and the placement of doctors remain a top priority to fill vacancies in Papua and other remote areas. In a number of countries with limited doctors, such as Uganda, Tanzania, Zambia, Malawi, Kenya, and Ethiopia, midwives have been trained to perform basic obstetric ultrasound for pregnancy screening and early risk detection. WHO recommends task shifting in maternal and newborn health interventions as a strategy to expand access to services in resource-constrained settings, the delegation of antenatal ultrasound screening to trained non-physician health workers under appropriate supervision [10]. Evidence from some low- and middle-income countries suggests that training midwives to perform basic obstetric ultrasound improves early risk detection and referral accuracy, particularly in remote areas [25],[26],[27].

To address physician shortages in remote areas, the implementation of basic obstetric ultrasound task shifting to midwives may be considered, as practiced in several African countries. This approach has demonstrated improvements in referral accuracy and access to ANC services in underserved areas and holds potential as a policy innovation for Indonesia, provided it is accompanied by clearly defined scopes of practice, certified training, structured supervision, ethical safeguards, patient safety standards, and integration within referral systems [28].

Challenges in implementing integrated ANC policies are strongly influenced by contextual factors. Pregnant women in urban areas are 1.255 times more likely to complete recommended ANC visits compared to those in rural areas. While medical costs are largely covered by the National Health Insurance (JKN), transportation expenses remain a major economic barrier for underprivileged pregnant women. Furthermore, limited paternal involvement in psychosocial support, combined with persistent cultural norms and traditional beliefs, continues to hinder the utilization of formal maternal health services [21],[22].

In this context, the maternal class is intended as a key educational strategy within the integrated ANC policy to address gaps in maternal knowledge, preparedness, and family involvement. However, evidence from implementation studies indicates that maternal classes are often inconsistently delivered, particularly in rural and remote areas, due to limited time, competing service demands, and high workload among midwives. As a result, maternal classes are frequently merged with routine ANC visits or reduced to brief counselling sessions, limiting their effectiveness in improving maternal readiness and health literacy. This implementation gap weakens the potential role of maternal classes as a mechanism to strengthen family support, promote positive health behaviours, and reduce sociocultural barriers to complete ANC utilization. Educational strategies should be strengthened through group-based education that actively involves husbands and family members. building household level support systems, ensuring that health-seeking decisions are not constrained by misinformed cultural norms or traditional practices [17],[31],[32],[33].

Actors in integrated ANC policies include government institutions, health workers, communities, the private sector, academics, and international organizations, each playing interconnected roles in ensuring effective implementation. By understanding these roles, more targeted and context-sensitive implementation strategies can be developed. Key priorities include strengthening policy oversight, optimizing supervision mechanisms, ensuring equitable workforce distribution particularly in Papua enhancing clinical competencies in obstetric ultrasound, considering evidence-based task shifting, and improving health service management. Continued collaboration with international organizations remains important to support the sustainability and effectiveness of integrated ANC programs.

This policy analysis contributes to primary health services. Applying the Policy Triangle Framework, this study highlights how the gap between national policy design and primary care capacity particularly labor distribution, diagnostic capabilities, and sociocultural determinants shapes ANC performance. The findings underscore the importance of adaptive primary care strategies, including task shifting, digital innovation, and equitable workforce distribution, to strengthen maternal health services in resource-constrained and geographically diverse settings.

4. Conclusion

Based on the analysis, Indonesia's integrated ANC policy demonstrates robust and comprehensive content aligned with WHO recommendations while being adapted to national conditions. Key advancements include the transition from a four-visit standard to a six-visit (K6) model and the integration of 10T service standards. However, actor analysis reveals persistent inequalities in health workforce distribution. Midwives remain unevenly distributed across regions, particularly in Papua, and implementation is further constrained by the limited availability of physicians and inadequate competency in performing obstetric ultrasound in these areas.

From a sociogeographical perspective, disparities between urban and rural areas remain pronounced. Limited physical access, high transportation costs, cultural factors, and low health literacy in remote regions continue to pose major barriers for pregnant women in completing the full ANC schedule. Regarding monitoring and evaluation, findings from 2024 indicate that national K6 coverage reached only 75.64%, falling considerably short of the 100% target and reflecting extreme performance gaps between provinces.

In this context, evidence-based adaptive approaches are essential to bridge the gap between policy and implementation. One of the relevant strategies is the implementation of controlled task shifting, especially training of midwives to perform basic obstetric ultrasound with limited authority, certified training, clear clinical supervision, and integration with the referral system. This approach has been applied in various countries with limited resources and shows potential in improving early detection of pregnancy risks as well as accuracy of referrals.

Overall, the successful implementation of integrated ANC depends not only on the strength of regulatory frameworks but also on the health system's capacity to adapt to local contexts. Strengthening primary care through equitable workforce distribution, enhanced service competencies, technological innovation, and evidence-based task-shifting policies represents a strategic pathway to improving ANC effectiveness and sustainability in Indonesia.

Future research should include qualitative studies exploring legal, ethical, and readiness aspects of obstetric ultrasound task shifting among midwives in remote settings. Additionally, evaluative studies are needed to assess the effectiveness of telemedicine integration in improving early risk detection in primary care facilities with limited specialist availability and a more comprehensive antenatal class.

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