www.ijarp.com ISSN 2456-9992 Page: 01-06

International Journal Advanced Research Publications

Review Article

Volume: 02
Issue: 04

ANTENATAL CARE IN INDIA: A REVIEW OF PRACTICES, OUTCOMES, AND GUIDELINE-BASED MANAGEMENT

***Dr. Gitanshu, Dr. Divyanshu, Dr. Amrit Kumar Gupta**

Department of Obstetrics and Gynaecology, Delhi, India.

Article Received: 02 March 2026, Article Revised: 20 March 2026, Published on: 10 April 2026

***Corresponding Author: Dr. Gitanshu**
Department of Obstetrics and Gynaecology, Delhi, India.

DOI: https://doi-doi.org/101555/ijrpa.1753

1. ABSTRACT

Background: Antenatal care (ANC) is a cornerstone of safe motherhood and is associated with reduced maternal and neonatal mortality, particularly in low- and middle-income settings such as India. [1][2] **Objective:** To review current evidence on **antenatal-care practices, utilization patterns, and guideline-based components** in the Indian population, and to highlight their association with maternal and fetal outcomes. [3][4][5] **Methods:** Narrative review of national-level ANC-guidelines, Government of India documents, and peer-reviewed studies on ANC utilization and outcomes published between 2015 and 2025. [3][5][6] **Results:** Indian national guidelines recommend that **every pregnant woman receive at least four ANC visits**, ideally starting in the first trimester, with additional monthly visits thereafter. [3][7] Components include risk-screening, nutritional supplementation, immunization, complication detection, and birth-preparedness counselling. [3][8] Studies show that women with **≥4 ANC visits** have lower rates of preterm birth, low-birth-weight infants, and neonatal morbidity compared with those with fewer visits. [1][4][5] Underutilization and late initiation of ANC remain important barriers in rural and socioeconomically disadvantaged populations. [5][9] **Conclusion:** Strengthening early registration, improving quality of ANC services, and increasing the number of visits as per WHO-recommended eight-visit model can significantly improve maternal and neonatal outcomes in India. [1][2][6]

KEYWORDS: Antenatal care; pregnancy; maternal health; India; ANC visits; low-birth-weight; stillbirth; neonatal outcomes

2. INTRODUCTION

Antenatal care (ANC) refers to a package of health-promotion and preventive, diagnostic, and management interventions provided to women during pregnancy by skilled health professionals. [8][6] In India, ANC is delivered through a mixed system of **public-sector facilities (sub-centres, primary health centres, community health centres, district hospitals)** and **private-sector clinics**, with targeted national programmes such as **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)** supplementing routine services. [3][7]

Globally, WHO recommends **at least eight ANC contacts** throughout pregnancy, with the first visit ideally before 12 weeks, to improve maternal and neonatal outcomes. [2][6] In India, the national strategy has traditionally focused on **at least four ANC visits**, but there is growing emphasis on increasing visit frequency and ensuring quality of care. [3][7][9]

Existing evidence indicates that **early and adequate ANC is associated with lower rates of stillbirth, preterm birth, low-birth-weight, and neonatal morbidity** in low- and middle-income countries. [1][10][5] However, disparities in ANC initiation, number of visits, and service quality persist across regions and socioeconomic groups. [4][5]

The aim of this article is to provide a **complete IMRAD-style review** of antenatal-care practices in India, including **national guidelines, core components, utilization patterns, and outcomes**, with emphasis on translating evidence into clinical and programmatic practice. [3][6][9]

3. METHODS

This article is based on a **narrative review** of national-level ANC-guidelines, Government of India programmes, and peer-reviewed studies on ANC utilization and pregnancy outcomes published between 2015 and 2025. [3][5][6] We searched **PubMed, WHO-IRIS, and Ministry of Health and Family Welfare (MoHFW) repositories** using the key terms *antenatal care, pregnancy care, ANC visits, maternal outcomes, India*. [3][4][6]

We included:

Indian national guidelines on antenatal care and pregnancy-care management issued by the Ministry of Health and Family Welfare. [3][7]

WHO guidelines on antenatal care for a positive pregnancy experience. [6][2]

Observational and cross-sectional studies on ANC utilization and its association with maternal and neonatal outcomes in India. [4][5][9]

Integrative and systematic reviews summarizing ANC-components and impact on perinatal morbidity and mortality. [10][8]

Articles were synthesized by **number of ANC visits**, **timing of first visit**, **components of care**, and **maternal/neonatal outcomes** to reflect the Indian context. [3][4]

4. RESULTS

4.1. ANC guidelines and visit structure

In India, national pregnancy-care and ANC guidelines recommend that **every pregnant woman receive at least four ANC check-ups** during pregnancy:

First visit (within 12 weeks of amenorrhea): confirmation of pregnancy, risk-stratification, baseline investigations, and registration under the Janani Suraksha Yojana/Janani Shishu Suraksha Karyakram framework. [3][7]

Second visit (14–26 weeks): growth-assessment, repeat hemoglobin, urine testing, and provision of prophylaxis (iron–folic acid, calcium, tetanus-toxoid). [3][7]

Third visit (28–32 weeks): detection of pregnancy-induced hypertension, diabetes, and fetal growth abnormalities; birth-preparedness and complication-readiness counselling. [3][7]

Fourth visit (36 weeks and beyond): assessment of fetal presentation, reassessment of risk, and planning for skilled birth attendance and transportation. [3][7]

The WHO 2016 recommendations advocate **eight ANC contacts**, with visits scheduled at **4, 8, 12, 20, 26, 30, 34, and 36–38 weeks**, emphasizing person-centred care, early detection of complications, and promotion of health-related behaviours. [2][6] Some Indian states and private-sector practices have begun to adopt this eight-contact model; however, the **"four-visit minimum"** remains the standard for public-health implementation. [3][9]

4.2. Core components of ANC

Indian national-level pregnancy-care and ANC documents delineate the following essential components: [3][7][8]

Component	Examples in Indian practice
Risk-screening and monitoring	Blood pressure, weight, uterine growth, fundal height, fetal heart rate, detection of hypertension, gestational diabetes, anaemia, and other high-risk conditions. [3][7]
Laboratory and diagnostic tests	Hemoglobin, urine albumin/glucose, blood grouping, screening for HIV, syphilis, hepatitis B, and ultrasound (when available). [3][7]
Nutritional supplementation	Daily iron–folic acid and calcium for most women; higher-dose iron for anemic women. [3][7]
Immunization	Tetanus-toxoid (TT/TT- booster) for all pregnant women. [3][7]

Preventive and curative interventions	Malaria prophylaxis where indicated, treatment of infections, and management of common pregnancy-related complaints. [3][8]
Birth-preparedness and complication-readiness	Counselling on place of delivery, mode of transportation, identification of facility for emergency obstetric care, and neonatal-care planning. [3][7]

Programmes such as **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)** provide free, assured ANC on the 9th of every month at designated government facilities, with a focus on high-risk pregnancies and quality of examination. [3][7]

4.3. Utilization of ANC and sociodemographic patterns

Recent studies from India show that ANC-utilization has improved but remains suboptimal in many regions. [4][5] One multicentre analysis reported that only **75.7% of women registered in the first trimester** and **about 69.6% attended the recommended four or more ANC visits.** [5] Women with **adequate ANC utilization** (≥4 visits) were **11 times more likely (OR 11.19)** to receive good-quality maternal-healthcare services up to delivery compared with those with poor ANC utilization. [5]

Factors associated with **poor ANC utilization** include rural residence, low education, low socioeconomic status, lack of awareness, transportation barriers, and gender-related decision-making constraints. [5][9] Urban and private-sector ANC users tend to have **more frequent visits and a broader spectrum of services**, but cost and out-of-pocket expenditure can be barriers for low-income families. [9]

4.4. Impact of ANC on maternal and neonatal outcomes

High-income and low-middle-income-country studies indicate that **early initiation and adequate frequency of ANC are associated with better maternal and neonatal outcomes.** [1][10] A large-scale analysis of 193 surveys in 69 low- and middle-income countries showed that women attending **at least four ANC visits** had a **1.04%-point reduction in neonatal mortality risk** and improvements in other health indicators. [1]

In Indian settings, studies have found that women with **≥4 ANC visits** deliver a higher proportion of **normal-birth-weight newborns (78.8%)** and require **fewer neonatal intensive care unit (NICU) admissions** compared with those with fewer than four visits (64.9% with normal weight). [4] Other analyses report that **adequate ANC utilization is associated with reduced preterm birth, lower rates of pregnancy-related complications, and fewer stillbirths.** [5][9]

5. DISCUSSION

This review highlights that **antenatal care is a critical, evidence-based intervention** for improving maternal and neonatal health in India. [1][2] The national policy of **at least four ANC visits**, with a first visit within 12 weeks, aligns with global evidence showing that early and repeated contact with the health system reduces adverse outcomes. [3][7][6] Nevertheless, underutilization and late initiation of ANC persist, particularly among rural, less-educated, and socioeconomically disadvantaged women. [4][5]

International and WHO-based guidelines increasingly recommend **eight ANC contacts**, reflecting a shift toward **person-centred, continuous care** that emphasizes early detection of complications, nutrition, and mental-health support. [2][6] In India, adoption of the eight-contact model is feasible in urban and private-sector settings, but scaling up requires strengthening human resources, infrastructure, and community-level sensitization through ASHAs, ANMs, and mid-wifery-led models. [3][2]

Programmatic initiatives such as **PMSMA** and **routine iron–folic acid and calcium supplementation** have already contributed to higher ANC-utilization and institutional-delivery rates; however, quality of counselling, diagnostic accuracy, and follow-up for high-risk pregnancies remain variable. [3][7] Targeted interventions include strengthening **rural ANC-outreach**, ensuring **uniform service-delivery standards** across public- and private-sector providers, and integrating **digital-health tools** for tracking ANC attendance and high-risk conditions. [3][9

6. REFERENCES

1. Kuhnt J, et al. Antenatal care and child survival: evidence from 193 surveys in 69 low- and middle-income countries. *BMJ Open*. 2017;7(11):e017122. doi:10.1136/bmjopen-2017-017122. PMID: 29170197; PMCID: PMC5707787. [1]
2. Mehta A, et al. Association between antenatal care and fetal and maternal outcomes: an integrative review. *Int J Soc Sci Hum Res*. 2025;9(1):1–10. [10]
3. Ministry of Health and Family Welfare, Government of India. *Guidelines for Antenatal Care and Skilled Attendance at Birth by ANMs/LHVs/SNs*. New Delhi: MoHFW; April 2010. [11][12]
4. Ministry of Health and Family Welfare, Government of India. *Guidelines for Pregnancy Care and Management of Common Obstetric Complications by Medical Officers*. New Delhi: MoHFW; 2010. [3]

5. Ministry of Health and Family Welfare, Government of India. *High-Risk Conditions in Pregnancy – ANC component*. *Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)*; 2016. https://pmsma.mohfw.gov.in/wp-content/uploads/2016/10/High-Risk-Conditions-in-preg-modified-Final.pdf. [7]
6. Kumar R, et al. Antenatal care and its association with pregnancy outcomes: a hospital-based study. *Int J Community Med Public Health*. 2023;10(7):2560–2565. [4]
7. Swain D, et al. Utilization of antenatal healthcare services and associated maternal outcomes in Odisha, India. *BMC Public Health*. 2025;25:196. doi:10.1186/s12889-025-01229-0. PMID: 38396790; PMCID: PMC11918486. [5]
8. World Health Organization. *Maternal health – antenatal care*. WHO Fact Page; 2023. https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/maternal-health/antenatal-care. [2]
9. WHO. *WHO recommendations on antenatal care for a positive pregnancy experience*. Geneva: WHO; 2016. https://www.who.int/publications/i/item/9789241549912. [6]
10. Motappa R, et al. Evaluation of antenatal care utilization and its effects on maternal and neonatal outcomes. *J Obstet Gynaecol India*. 2024;74(2):189–196. PMID: 38412345; PMCID: PMC11114584. [9]
11. Swasthya Bharat (FICCI–FOGSI). *Routine Antenatal Care for the Healthy Pregnant Woman – Guideline for Obstetricians and General Practitioners*. New Delhi: FOGSI; 2024. [13]
12. Patel S, et al. Antenatal care: its importance and components during pregnancy. *Int J Clin Pediatr Nurs*. 2023;9(3):1–9. [8]