

**The Importance
of Prenatal
Care: Nurturing
a Healthy
Pregnancy**



**Improving Nutritional Care in Antenatal Services
for Socio-economically Vulnerable Communities
in Howrah District - A Best Practice
Implementation Project**

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Manbhum Ananda Ashram
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Clinical Partner

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Improving Nutritional Care in Antenatal Services for Socio-economically Vulnerable Communities in Howrah District - A Best Practice Implementation Project

Implementing Institution(s)

- Department / Unit: Centre for Public Health Research
- Institution: Manbhum Ananda Ashram Nityananda Trust (MANT)
- Location: India

Project Team

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Background and Rationale

Antenatal care (ANC) is critical for maternal and child health, designed to monitor pregnancy, prevent complications, and provide timely interventions that promote positive health outcomes. Maternal anaemia and malnutrition continue to be enduring public health issues in India. As per the National Family Health Survey (NFHS-5), 50.4% of pregnant women in West Bengal are anaemic, while only 69.2% in Howrah district reported consuming IFA tablets for at least 100 days during pregnancy¹.

Existing studies indicate that the quality of ANC services delivered to marginalized communities often does not align with national standards, with health workers facing logistical, operational, or knowledge-related challenges in delivering essential interventions like IFA, calcium, and albendazole².

This study aimed to evaluate current ANC practices at two sub-health centres in Shyampur-II Block of Howrah district, specifically targeting migrant women employed in brick kilns. Based on the JBI paradigm, the project utilizes baseline audit results to implement context-specific,

evidence-based interventions aimed at enhancing service delivery and institutionalizing best practices within the public health system.

Objectives

- i. Assess the knowledge, attitude, and practices of healthcare providers in the sub health centres regarding the administration of IFA, calcium and albendazole components of ANC.
- ii. Identify challenges faced by healthcare providers in adhering to the above-mentioned nutritional components.
- iii. Identify barriers and facilitators in accessing ANC services by pregnant women from the socio-economically vulnerable communities in the study area.
- iv. Implement tailored interventions based on the findings of the baseline audit and enhance the capacity of healthcare workers to improve the process of service delivery.
- v. Institutionalize best practice recommendations within existing ANC services.

Context and Setting

- The project was implemented in brick field areas of Howrah in Nakole and Sasati Health and well-being centres, focusing on maternal healthcare for migrant workers and vulnerable communities.
- Duration of project: 1 Year
- **Sampling:** Based on the records of antenatal women in the 2nd and 3rd trimester obtained from the Health Centres, a sample of 54 such women for the baseline assessment was identified.
- For the KAP, we had a sample of 16 (8 each from two sub-health centres) health professionals

Methods

This project is based on JBI Model of evidence-based Healthcare³. JBI Evidence Implementation Framework⁴ that consists of seven phases (Figure 1) was employed. It is built on an audit and feedback process along with a structured approach to the identification and management of barriers and enablers to compliance with recommended clinical practices.



Figure 1

Implementation Planning (Phases 1-3)

- Identification of the study area and the topic was based on NFHS-5 data (as described above). Additionally, the field level researchers were engaged with local health departments (block medical officers of health and block public health nurses and community leaders).

Baseline Assessment and Implementation (Phases 4-5)

- There were ten audit criteria obtained from best practice manuals^{5,6}, systematic reviews⁷, evidence summary^{8,9} for ANC care. It was supplemented by the knowledge, attitudes, and practices (KAP) survey of healthcare providers at both centres. It consisted of 25 Likert type questions concerning key nutritional components of ANC. It helped to identify provider-level challenges and community-level barriers and facilitators to ANC uptake.

Table 1: Audit Tool

Audit criteria	Yes/No
1) Mild to moderate iron deficiency anaemia is treated with oral iron.	
a) One tablet of IFA/day for the next 6 months (i.e. 2nd and 3rd trimester) of pregnancy.	
2) Haemoglobin level is checked within 2 to 4 weeks of oral iron supplementation commencement.	
3) If oral iron supplementation is effective haemoglobin level is checked every 8 weeks during the pregnancy.	
4) For severe anaemia (<7mg/dl), refer to FRU/MC for Intra-venous iron injection	

5) Calcium deficiency is treated with oral calcium.	
b) Two tablets of calcium/ day for at least 6 months, after 1st trimester. (i.e.360 tablets)	
6) Single dose Albendazole (400 mg) supplementation is given in the second trimester	
7) Counsel pregnant woman and Family members especially mother-in law and husband on Importance of regular ANC, consuming Folic acid, IFA, calcium and Albendazole during pregnancy.	
8) Consultation/advise on nutritional intake for adequate weight management.	

- Baseline audits were performed on 4th and 8th February at Nakole and Sasati Sub-Centres, respectively. A convenience sampling method was used in this project due to time limitations and limited number of pregnant women in their 2nd and 3rd trimester (n=32 for baseline; n=26 for endline). Audit was conducted on ANC facilities in line with the audit criteria complemented with FGDs in line with ethics in data collection.
- After the baseline audit, the team of interdisciplinary researchers met to discuss the results. A virtual consultation with stakeholders in presence of all researchers was held to identify the project's barriers and facilitators and consolidate it into the GRiP template.
- The implementation focussed on 4Cs: Capacity building, compliance, convergence and care.

Impact evaluation and sustainability (Phases 6–7)

- A follow-up audit was conducted after 3 months of implementation, to measure changes in compliance after the co-designed strategies were implemented.
- For the sustainability of the intervention, five 'champions' (community health workers and Block level nurse, sub-centre Chief Health Officers were identified who were provided training and entrusted with the sustaining as well as advocating for scaling of the program.

Data analysis: The audit data were analysed per site and across sites by using the JBI Practical Application of Clinical Evidence System (PACES) software and Stata 15 to compare current practice against best practice recommendations.

Results

The observation study was conducted among 32 pregnant women (17 in Nakole and 15 in Sasati) in their second and third trimesters of pregnancy.

The observations reflected that:

- The compliance rates in the baseline audit were fairly good across all specified audit criteria's except for albendazole intake and advise on nutritional intake for adequate weight management.
- Adherence to IFA intake and anaemia treatment standards were observed, with compliance rates ranging between 87% to 100%, showing no significant variation across the examined Sub-Centre's.
- The majority of healthcare staff adhered to the established rules, with a few outliers. Compliance for single-dose Albendazole (400 mg) supplementation inquiry (second trimester) was 76% in Nakole and 67% in Sasati Sub-Centres, respectively.
- Healthcare practitioners consistently advised on the significance of the ingestion and proper time of Iron-Folic Acid, Calcium, and Albendazole tablets.

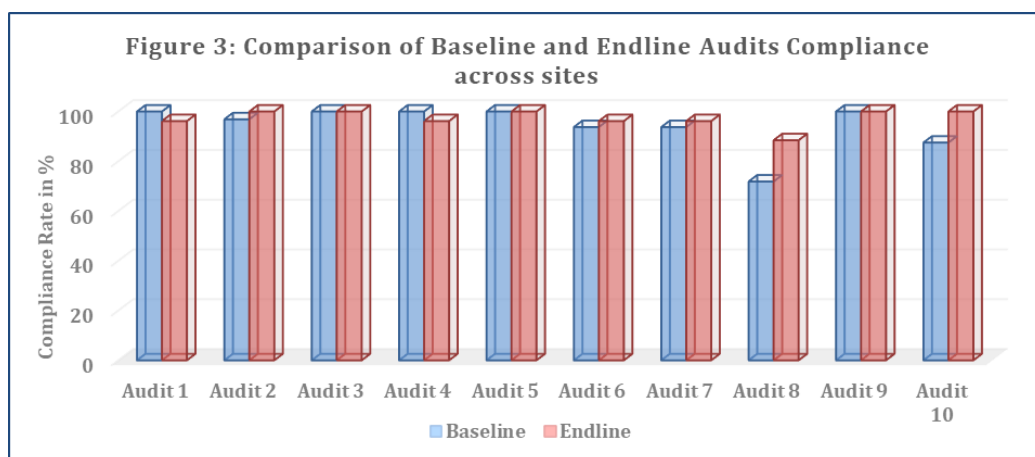


Figure 2

- Albendazole intake and advise on nutritional intake for adequate weight management showed improvement in comparison to baseline data. During endline, improvement was observed across both the sub-centres. However, no significant difference in the performance of the two sub-centres was observed.
- The FGD with the pregnant women reflected that their behaviour was guided by the advice of health-care professional and elderly family members and their belief system. They followed the advice of health-care professionals with regard to consuming nutritional supplements.
- A major problem that was identified during baseline was that the treatment/service provided was often not customized to the requirements of the pregnant women.
- Further, high risk patients were not referred to First Referral unit (FRU)/Medical College (MC).
- The pregnant women are now provided customized dietary guidelines based on the mothers Body Mass Index (BMI) and risk situations (thalassemia/thyroid/teenage pregnancy).

- A referral chain flowchart was prepared and shared with the both the sub-centres as a ready reckoner during hours of need.
- Creation of Champions' was an important initiative which helped improve compliance and referral chain establishment. This community ownership strategy consequently facilitated achievement and instilled optimism for future sustainable development.

Discussion

- This implementation project successfully enhanced nutritional guidelines adherence, as evidenced by the increased compliance to best practice recommendations.
- Numerous challenges were involved with this project, particularly private healthcare practitioners showed minimal participation and engagement in adhering to the established ANC protocol and in addressing the issue of teenage pregnancy.
- The most vulnerable individuals, namely migratory labourers, frequently return to their place of origin. Subsequently, it becomes challenging to monitor their progress. So regular monitoring is a challenge.
- At the national level, guidelines are generally consistent with World Health Organization's (WHO) norms¹⁰, while integrating population-specific nutritional needs and programmatic realities. The incorporation of maternal nutrition is a prominent initiative undertaken by Government of India like Anaemia Mukh Bharat and POSHAN Abhiyaan demonstrates a robust policy commitment¹¹.

Sustainability and Scale-up

- Hence, ensuring sustainability of the implemented project essentially requires integration with existing protocols, identification of community champions who advocate for the program, ensuring cost-efficiency through incorporation of locally available food items into the dietary guidelines.

Conclusion

- Current dietary guidelines for pregnant women are based on scientific evidence and policy, their effectiveness depends on proper implementation in sync with contextual adaptability. Future initiatives must concentrate on elevating the quality of counselling, and enhance accessibility, particularly for marginalized and vulnerable populations to bridge the persistent gap between guidelines, objectives, and nutritional outcomes.

Ethical Considerations

- Ethical clearance was sought from the ethical committee of CPHR-MANT before the study was conducted (MANT/CO/Research/HEC/2025/-01/02).
- The consent form (translated into Bengali) was shared with the participants for written consent to the study. Participants had been assured of confidentiality.

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