

## Quality Gaps in Focused Antenatal Care: Coverage, Implementation, and Determinants at the Banconi University Community Health Center (CSCOMU), Mali

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### Abstract

### Original Research Article

**Background:** Focused Antenatal Care (FANC) aims to improve maternal and neonatal outcomes through targeted, high-quality interventions. Despite global recommendations, its effective implementation remains limited in many low resource settings. This study assessed the coverage, quality, and determinants of FANC at the CSCOMU of Banconi, Mali. **Methods:** A cross-sectional analytical study was conducted from January to June 2023 among 515 postpartum women and antenatal care providers. Data were collected through structured interviews and review of antenatal care records. Quality was evaluated using predefined performance thresholds for coverage and essential interventions. **Results:** Only 40.78% of women completed at least four antenatal visits. Initiation of care was predominantly late, with 86.41% attending their first visit after the first trimester. Knowledge gaps were substantial: 70.68% of women did not know the recommended number of visits, significantly reducing the likelihood of completing adequate care. Implementation of essential interventions was suboptimal, including incomplete tetanus vaccination, iron supplementation, intermittent preventive treatment for malaria, and HIV screening. Financial barriers led to missed laboratory tests in 96.05% of cases. Documentation quality was poor, with 93.20% of antenatal records inadequately completed. Factors associated with low-quality FANC included low education level, multiparity, poverty, late initiation of care, long waiting times, poor provider-patient interactions, and inadequate service organization. Providers reported needs for training, equipment, and improved patient education tools. **Conclusion:** FANC coverage and quality at CSCOMU Banconi remain insufficient, with major gaps in timely attendance, preventive interventions, and documentation. Improving FANC requires integrated strategies addressing financial accessibility, health literacy, service organization, and continuous provider training. **Keywords:** Focused antenatal care; maternal health; quality of care; Mali; prenatal services; determinants; service delivery.

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## INTRODUCTION

Refocused Prenatal Consultation (CPN-R), also known as *Focused Antenatal Care*, is a model of prenatal follow-up recommended by the World Health Organization (WHO) aimed at improving the quality of care as well as maternal and neonatal outcomes. In contrast to the traditional model based on a large number

of standardized visits, the CPN-R recommends a minimum of four antenatal visits, supplemented today by eight contacts, each structured around targeted clinical and educational interventions adapted to the stage of pregnancy (World Health Organization, 2016). This model focuses on personalizing care, strengthening the

engagement of pregnant women, and improving accessibility to health services.

Effective prenatal consultation is the sum of medical, preventive and educational care received by a woman during her pregnancy, aimed at ensuring the survival and well-being of the mother and newborn (World Health Organization, 2016). It plays a critical role in promoting health-promoting behaviors, including adequate nutrition, prevention and early detection of pathologies, and raising awareness about family planning and gender-based violence.

In Mali, the situation remains worrying: about 35% of pregnant women complete the four recommended antenatal visits, reflecting low coverage and limited effectiveness of the ANC-R despite the efforts made (INSTAT *et al.*, 2018).

Despite international recommendations, the effective implementation of the ANC-R faces several obstacles, including difficulties in accessing health services, inadequacies in the training of providers and low patient adherence linked to sociocultural and economic factors. These constraints compromise not only the quality of antenatal care but also maternal and newborn health outcomes.

What are the shortcomings related to the quality of refocused prenatal consultations (CPN-R) at the CSCOM-U in Banconi?

## OBJECTIVES

To measure the coverage and effectiveness of ANC-R through the number and periodicity of antenatal consultations.

Assess the level of implementation of essential ANC-R interventions, including preventive measures, screening, and health education.

To identify factors associated with the quality of ANC-R, including patient characteristics and provider practices.

## METHODOLOGY

### Type and scope of the study

This was a cross-sectional study with an analytical focus, with a descriptive component, conducted at the University Community Health Center (CSCOM-U) in Banconi, Mali. The study took place over a six-month period, from January 1 to June 30, 2023.

### Study population

The study population consisted of two groups: recent births (within 24 hours of postpartum) and providers involved in the provision of antenatal consultations (ANCs).

Included were postpartum women who consented to participate in the study as well as providers practicing at the CSCOM-U during the study period. Providers who were not qualified for ANC and postpartum recipients who refused to participate were excluded.

### Sampling and sample size

Systematic sampling was used, including all eligible participants during the study period.

The minimum sample size was estimated using Schwartz's formula ( $Z = 1.96$ ;  $p = 0.80$ ;  $i = 0.04$ ), with a 5% increase to account for non-response.

### Data collection

Data were collected using a structured questionnaire administered in an individual interview, supplemented by the use of prenatal consultation booklets.

In addition, exchanges with providers and postpartum women made it possible to identify the perceptions and difficulties related to the implementation of the refocused ANC.

### Variables studied

#### Variables included:

- the socio-demographic characteristics of women who have given birth;
- prenatal follow-up indicators (number and periodicity of ANCs);
- essential ANC interventions (prevention of malaria and anaemia, tetanus vaccination, HIV testing, health education, family planning and delivery planning).

### Operational definition

The quality of ANC was assessed according to performance thresholds:  $\geq 80\%$  (good), 60–79% (acceptable) and  $< 60\%$  (insufficient), applied to key coverage and intervention indicators.

### Data analysis

Data were captured and analyzed using Epi Info software version 7.2.5.0. The analyses focused on the descriptive statistics of the variables studied.

### Validity and Limitations

A pre-test of the questionnaire was carried out and data were collected within 24 hours of the postpartum period in order to limit memory biases.

However, the study did not take into account certain dimensions such as childbirth follow-up, postpartum or family influence, which may limit the overall assessment of refocused ANC.

### Ethical considerations

Informed consent from the participants was obtained after explanation of the objectives of the study.

Anonymity and confidentiality of information were respected throughout the process.

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## RESULTS

### Coverage and effectiveness of the NPC-R

Of the 515 postpartum women included, 40.78% had at least four antenatal consultations, in accordance with the recommendations. The remainder performed three ANC (33.01%), two ANCs (15.92%) or a single ANC (10.29%). No woman was completely unfollowed.

The first consultation was mostly late: only 13.59% of women initiated it in the first trimester, compared to 54.17% in the second trimester and 32.23% in the third.

Regarding knowledge, 70.68% of the women who gave birth were unaware of the recommended number of ANC-R. A statistically significant association was observed between knowledge of the number of ANCs and their actual performance ( $\chi^2 = 54.33$ ;  $p < 0.001$ ). Lack of awareness increased the risk of not performing a full ANC by 6.49 times.

### Implementation of critical interventions of the NPC-R

#### Preventive measures

Non-adherence to preventive interventions was common.

- For tetanus vaccine (TD), 113 women had not received both doses, mainly due to the delay of the first ANC (82.30%).
- For iron supplementation, 102 women were non-adherent, 71.57% of whom were due to a late start of follow-up.
- For MS, 117 women had not received the recommended doses, mainly due to non-compliance with appointments (73.50%).
- The non-use of IBD affected 65 women, mainly due to late receipt (43.08%).

#### Screenings and check-ups

HIV testing was not carried out on 47 women, of whom 44.68% said they already knew their status and 25.53% mentioned a lack of information. Laboratory tests were not carried out in 228 women, mainly for financial reasons (96.05%).

#### Quality of tracking and traceability

The quality of the notebooks was generally low: 93.20% were incorrectly filled. The most commonly

missing information were gestational age (480 cases), treatments (473 cases), and ultrasound results (42 cases).

### Factors associated with the quality of ANC-R

#### Factors related to patient characteristics

Several variables were significantly associated with the delay in the first ANC: age  $\geq 20$  years, multiparity ( $\geq 2$  children), low economic level, non-schooling, household occupation. In contrast, marital status and distance were not significantly associated.

#### Factors related to the organization of services and the practices of providers

Organizational factors also influenced the quality of the CPN-R: lack of awareness, lack of privacy, and an unsatisfactory caregiver-patient relationship. Women also reported long waits (68.35%), unaffordable costs (95.53%), unclean toilets (62.72%) and a high number of agents in the room (55.15%).

#### Provider knowledge and needs

Providers were generally familiar with the standards and procedures of the CPN-R, but gaps persisted in interviewing and recording. They expressed needs for equipment, awareness-raising tools, continuous training and strengthening of patients' literacy.

## DISCUSSION

The objective of this study was to evaluate the effectiveness of the refocused prenatal consultation (RNCP), to assess the implementation of essential interventions and to identify the factors associated with the quality of the CRC at the Banconi CSCOMU. The results are in line with trends observed in several countries in sub-Saharan Africa, where the quality and accessibility of antenatal care remain major challenges.

### 1. Coverage and effectiveness of the CPNR

The proportion of women who have benefited from effective ANC (40.78%) remains below the standards recommended by WHO. This is consistent with recent analyses conducted in several African countries, where the overall quality of ANC remains low despite relatively high service take-up (Ameyaw *et al.*, 2024; Tessema *et al.*, 2020).

The late initiation of the first ANC, observed in 86.41% of women, is a major obstacle. Recent studies show that the delay in the first consultation is one of the most critical determinants of the low effectiveness of the NPC, particularly in contexts where socioeconomic, cultural and geographical barriers persist (Benova *et al.*, 2018; Kanyangara *et al.*, 2019).

The factors associated with the delay in ANC in our study low educational attainment, multiparity, poverty, lack of information, poor caregiver relationship are consistent with the determinants identified in recent

multinational analyses (Afulani *et al.*, 2019; Ameyaw *et al.*, 2024).

## 2. Implementation of the CPNR's core interventions

The implementation of essential interventions (tetanus vaccination, iron supplementation, SP, IBD, laboratory tests, HIV testing) remains incomplete. This is widely documented in the recent literature, which highlights persistent gaps in antenatal service delivery, despite the existence of clear and up-to-date WHO guidelines (World Health Organization, 2024).

Even when women do use services, the quality of interventions received varies greatly depending on the context, the resources available and the training of staff. (Ameyaw *et al.*, 2024). Similarly, it is noted that preventive interventions are often undermined by factors such as lack of resources, low health literacy, and inequities in access to care (Lateef *et al.*, 2024).

The poor quality of the follow-up records (93.20%) also reflects a structural problem of documentation, identified as a major obstacle to continuity of care in several African countries (Kyei-Nimakoh *et al.*, 2017).

## 3. Factors associated with the quality of the NRC

The factors associated with the quality of the CRC in our study socioeconomic characteristics, organization of services, caregiver relationship are perfectly consistent with the determinants identified in recent work.

### Multinational analyses show that:

- Educational attainment is a major determinant of the quality of the NPC (Afulani *et al.*, 2019)
- women with  $\geq 4$  visits are significantly more likely to receive quality ANC (Tessema *et al.*, 2020)
- Community factors account for up to 36% of the variation in the quality of ANC (Ameyaw *et al.*, 2024)

The barriers reported in our study poverty, long waits, lack of privacy, lack of information, and previous bad experience are consistent with the determinants identified in the recent literature (Moyer & Mustafa, 2013) (Bohren *et al.*, 2019).

Finally, the needs expressed by providers (continuous training, improvement of the technical platform, awareness-raising tools) are in line with current WHO recommendations aimed at strengthening the capacity of health systems to improve the quality of ANC.

## CONCLUSION OF THE DISCUSSION

The study highlights insufficient coverage of ANC, partial implementation of essential interventions and several individual, organizational and relational

factors influencing the quality of antenatal care. Improving the CPNR requires an integrated approach combining financial accessibility, strengthening health education, improving reception conditions and continuing training for providers.

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