

## REVIEW ARTICLE

**Improving maternal health quality: reviewing the context and consequences**Anshul Chauhan<sup>1</sup>, Prakash Narayanan<sup>2</sup>, Jyoshma P D'souza<sup>3</sup><sup>1</sup>Research Associate, Department of Pediatrics, Division of Neonatology, PGIMER, Chandigarh<sup>2</sup>Associate Professor, School of Public Health, Manipal University, Manipal, Karnataka<sup>3</sup>District Epidemiologist, Dakshina Kannada, Integrated Disease Surveillance Project, Karnataka

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**Abstract**

**Background:** Approximately 99% of pregnancy-related deaths in developing countries are due to preventable causes related to pregnancy and childbirth which signifies that around 800 women die every day due to such causes. Major causes that lead to maternal deaths are post-partum hemorrhage, infections, high blood pressure and unsafe abortion. There are several facilities being provided for pregnant mothers yet the quality of care needs to be analyzed. **Objectives:** To understand the quality perspective of maternal health services and to review available evidence for strengthening maternal health services. **Material & Methods:** Research studies published between 2006 and 2016 were selected by specific inclusion criteria. Pub Med and Google Scholar were used to search studies on the topic, and few articles were identified through references and citations. **Results:** The result of the review highlighted the evidence of pitfalls, gaps in quality care, and need for interventions and approaches to improve the quality of maternal health care. **Conclusion:** Quality care encompasses various elements which stride towards improving the health of women and the interventions are to be scaled up to improve the quality of care. Generation of public health evidence and uniformity in quality assessments can help interventions to achieve desirable standards.

**Keywords**

Quality Care; Maternal Health Services; Quality Improvement; Developing Countries; India; Asia

**Introduction**

Approximately 99% maternal mortality in developing countries, about 800 deaths daily, are due to avoidable pregnancy and childbirth-related causes and complications. (1)

WHO recognizes antenatal care as an important continuum of care for maternal and child health. Early identification of pregnancy plus at least four visits of ANC are prescribed with a

comprehensive package of prevention, screening and educational interventions. (2)

Most of the motherhood programs often neglect quality of care which is the most important issue. (3) The quality of care has two perspectives - provider and user's perspective. (4,5) Consumers of the services decide the real use of services based on their past experience, views and the second-hand information which they gather from family, friends and relatives. (6,7) Negative perception gained about the quality of services leads to less usage or

impacts the utility of services. (8,9) The dissatisfaction in quality care discourages mothers to access health care in Health. (3)

Certain countries are unable to tackle their MMR in spite of increasing the coverage of services suggesting that quality of care is also a considerable factor. (10) Quality of care has various other dimensions, which includes respectful care are the least addressed aspects. (11)

### Aims & Objectives

1. To understand the quality perspective of maternal health services.
2. To review available evidence for strengthening maternal health services.

### Material & Methods

**Study Type:** Narrative Research

The articles available in English with following criteria were considered:

**Participants:** Health facilities, mothers and staff in developing countries, India and Asia.

**Outcomes:** Assessment of quality, quality improvement, monitoring of services and improved quality of care. This is done by qualitative and quantitative methods.

**Interventions:** Pre- post significant difference in quality of services to improve accessibility and safety

**Study identification:** Keywords, similar terms, subject titles majorly for quality of care, quality improvement, and continuum of care in target countries were developed and the search was done. Pub Med and Google scholar were used to search the studies, the search was limited to studies published during 2006-2016. In addition, the search was expanded using article references and other articles citing them. At last 29 studies were included in the review.

**Inclusion Criteria:**

- Articles and reports published in last 10 years (2006-2016)
- Articles explaining about the Quality of care in maternal health services in developing countries (Asia and India)
- Studies involving Quality management and quality improvements were included
- Perceptual studies associated with quality of care in health facilities
- Studies conducted in Low and middle-income countries

**Exclusion Criteria:**

- Studies prior to 2006 were excluded from the study
- Studies whose free full article was not available
- Studies which did not have quality of care component

### Results

Through the identification of domains from the literature studied 27 studies were finalized for the review which includes following domains were identified. Most of the studies were from developing countries and these studies have analyzed the quality of care from different perspectives and helped in understanding the context of quality of care.

1. Assessment of quality of care and services: Quality assessment was categorized into different domains according to the literature search.

**Infrastructure:** Health facilities lack basic infrastructure most of them were usually old buildings which do not have hand washing facilities, toilets, clean drinking water, patients have to carry their drinking water from their home. Labor room lacks delivery kits and fetal Doppler. (12,13,14)

**Staff availability:** Shortage of staff shortage was a serious matter of concern which hinders the process of quality of care and staff absenteeism further worsens the situation. Women coming for checkup at the facilities avoid the care as they feel uncomfortable in exposing their body parts. (12,13,14)

**Delivery of Services:** An attempt to assess the quality of care was done through 20 intrapartum/immediate postpartum and essential newborn care indicators which are achievable and attainable. The index developed clearly distinguishes between poorly and well-performed deliveries. (15) Counseling regarding risk factors and birth preparedness was poorly done and skipped certain essential tests during ANC checks and follow up. (13) The quality of care also depends on the socioeconomic conditions and education of women. Studies revealed that Utilization of Antenatal services increased when the quality of care was improved (16) and also decreased the odds of still births almost by half. (17) Measurement of the quality varies as the standards of implementation vary invariably. (18) Kenya has developed an Integrated Quality Management System which uses

Likert scale to measure the clinical care services, quality and safety to measure these domains. Guidelines for infection control, laboratory, emergency management were developed to measure quality and safety. (19)

**Other factors:** Financial constraints were another reason why women could not avail the services at health facilities, as the ladies have to leave their home and loose time as they have to go the facility. (12) Women with high economic status prefer to avoid the services as they perceive that services at public health facilities are not up to the mark and always takes time. The language barrier in communication between patient and doctor, the power difference between users and providers was a major indicator which hinders quality of care. (20) Even sociocultural expectations for comfortability, respectful treatment and safe care also hinders from availing the services of public health facilities. (18)

2. **Quality Improvement:** In situations with minimum resources interventions like emergency care services for Mothers and neonates is effective and promotes Maternal and neonatal health. (21)

**Interventions in Quality Improvement:** In 2008, a facility-based intervention was adopted in 2008. A survey done on the implementation of services revealed certain gaps which were mainly due to resource scarcity and health care providers that lack competency. The interventions were included to focus on Promotion of Hands-on skill training of Health care providers, development of a standard protocol for diagnosis and management of premature rupture of membrane (PROM) that occurs at term and implementation of this protocol.

In 2013 a survey conducted showed the presence of facilities like uninterrupted water supply, access to telephone, logbooks and partograph. Half of the health centres had 24 hours ambulance service. Consistent supply of drugs aiding delivery was reported in Health centers in 2013 and was 100% than compared to 85% in 2008. Health providers had insufficient knowledge and no improvement in their competency on Post-partum hemorrhage management and essential newborn care. (22)

A pre-post intervention study was done in sub-district in Karnataka. Health workers were the focus of the study, the plan was to involve health workers who had attended 300 deliveries, and then monitoring health workers who will attend 300

deliveries after the intervention. Learning session was introduced through one day session through lectures, written materials, videos, and hands on simulation. Observation of health workers was done with reviewing of birth registers. The introduction of Checklist brought in a significant increase in the number of deliveries from 624 to 889. Major practices like aseptic technique, hand washing, observation of uterotonic contractions were observed during the study. (23)

The intervention study in Burkina Faso, Ghana and Tanzania showed different results. Six interventions and six non-intervention health facilities were considered for the study from each country. Quality was assessed in each of them through direct observation, surveys, interviews, hospital records. For this a WHO standard tool for good quality care on antenatal care, and child birth was used for pre and post assessment. No significant score difference was observed during pre and post intervention in the interventional and non-interventional health facilities. (24)

**Competency based training:** This was another initiative by JHPIEGO, which involves acquiring clinical skills through repetitive hands-on training. It involved programmed texts, modeling and self-assessment at the end of the training. (25)

**HMIS:** Increasing evidence for the quality improvement is an important step and we will try to understand that how it can be useful for decision making. Health planning and evaluation in most of the countries is facilitated by management information system (HMIS) as the primary data source. (26) But completeness, timeliness and correctness of the data are the challenges faced in HMIS.

**m- health:** The definitive aim of the m-health application was to enhance the utilization of maternal health and neonatal services. Cost effectiveness, impact assessments are some of the issues that need assessment so that the application can be scaled up to a larger extent in India. Interest was put forth by Prinja *et al.* in cost assessment, Impact assessment for improvement of maternal health services. (27)

But some challenges were even observed in m health application in Bangladesh, which includes a considerable planning for the sustainability of the program, whereas HMIS use is constricted to only monitor implementation. Other challenge includes

experience sharing and capacity building very few people are trained in m-health. (28)

**Monitoring of services provided:** Audits and periodic analysis play an important role in the monitoring of the services provided hence can be used as evidence to improve the quality of services. Monitoring of an indicator includes passive identification and notification of deaths with a network connecting local to central platform. (29)

**Audits:** The key challenges faced in the effective audit system were a lack of leadership and there was no guideline to complete the audit process, so developing the guidelines was another issue. Keeping implementation of strategy as a focus, scaling up of the activities is required to gain attention towards quality. (30)

**Periodic analysis:** Will also play a role in better understanding about the factors causing maternal deaths. A retrospective study in North-Western Tanzania by Magoma *et al.* was done to analyze the reasons causing maternal deaths and it was found that most deaths were from direct obstetric causes like eclampsia, severe pre-eclampsia, sepsis, abortion and anesthetic complications. In only 36.2% of the cases, ANC attendance was recorded. Mode of delivery, place of delivery and attendants name was also mentioned. (31)

#### **Quality enablers:**

##### **a. Public-private partnership:**

1. **Chiranjeevi Yojana in the State of Gujarat:** This scheme was implemented in 2005 in Gujarat in 5 districts Bansakantha, Dahod, Kutch, Panchmahals and Sabakantha. This scheme was focused on providing free care to women living below, below the poverty line. The women could avail the facilities in both public and private facilities free of cost. The outcome of the scheme was good. For this, a network of private partners was established. The practitioners participated in the scheme were given Rs. 179,500 for a batch of 100 deliveries. As a result, institutional deliveries in the five states increased from 38% to 59%. No maternal deaths and only 13 infant deaths were recorded. Only 4.7% caesarean operations as compared to average of 15% were recorded. (25)

2. **Rajiv Aarogyasri community health insurance scheme:** This scheme runs in partnership with a private sector insurance company, the State pays an insurance premium of Rs. 210 per household per annum and each of the households can claim health expenses in relation to certain critical diseases

(such as heart and cancer treatment, neurosurgery, renal diseases, etc) up to Rs. 200,000 for clinical procedures and medical expenses. (25)

##### **b. Social Franchising:**

It is one of the essential aspects of health care. A study by Beyeler *et al.* to understand the Impact of Clinical Social Franchising on Health Services in low and middle-income countries (LMICs). The results varied widely in outcomes and programs. Social franchising showed a positive correlation with increased client volume and client satisfaction. Cost-effectiveness and equity, social franchises were found to have poor outcomes. (32)

An example from India about social franchising is franchising program Surya, which is running in Bihar, Jharkhand and UP. Under this scheme products and services are provided through DKT clinics and rural medicine practitioners. Condoms, oral contraceptives, intra uterine devices are sold under brand name Surya since 2000 in these 3 states. Sterilization is done free of cost even the government does sterilization at subsidized rates. (33)

## **Discussion**

It is evident from the literature search that numerous studies have been done on quality of care from various perspectives. Exploring various studies and their distribution into various domains provided a clear understanding of the scope of the study and also its limitations. These limitations could pave a way for future studies and generate more evidence in support of maternal health services. A planned analysis of all the barriers and factors has been done during literature search. Various assessment studies revealed that infrastructure, staff, language barriers, socio-cultural expectations were the problems which hinder the quality of care in the health facilities. But on the other health service utilization and expansion also does not also ensure quality care. (34)

There is an inadequate and low level of evidence linking monitoring of services to improved maternal health services and its outcome. Increased number of intervention and implementation without proper monitoring might not prove to be helpful. Factors hindering the quality of care need to be identified.

Strategies like public-private partnerships and social franchising could be given more importance. Public-private partnership influences

the health infrastructure, health education, health services and utilization of services.

Many reviews shared the importance of HMIS as an intervention for quality improvement provided it is complete, timely sent and correctly filled. (35) But the studies failed to appreciate the need of skilled computer operators who handle the data. Inadequate training for computerized handling of data and Internet connectivity could also be a problem.

Social Franchising, on the other hand, lacks evidence. There is a dearth of evidence in support of social franchising as an approach to improve quality care. More research is required to generate evidence in support of social franchising as an important enabler for achieving quality of care and improve access to services. (36)

Technology is an advantage in the health sector, during the review it was found that m-health application is still a challenge as we lack technically sound persons to operate it. Health workers need to be trained properly about the usage of applications so that it becomes a handy and effective tool in data collection. Availability of a rationalized, comprehensive and standardized validated index is required so that quality assessment is uniform because the index varies from country to country. (37)

Death reviews related to mother and child should involve a comprehensive documentation of relevant information including actions taken to identify weakness. The risk of developing an infection in the hospital setting, medications errors/use can act as a base for future studies by keeping quality of care as a locus and on the other hand strategize quality collection of data with limited resources. (38)

## Conclusion

The quality of care as a whole is a very extensive and needs specifications and distinction apart from general medical care. The vision is that every woman receives the quality of care through pregnancy, childbirth and postnatal period. Maternal care also has its determinants which need to be addressed and acknowledged to mark the improvement. Quality care encompasses various elements which stride towards improving the health of women and the interventions are to be scaled up to improve the quality of care. Generation of public health evidence in support of various elements of care can help in

focusing the interventions at the desirable stage. Technology plays a vital role in monitoring the interventions from time to time and scaling up the efforts where ever needed.

## Recommendation

An essential component was missing out of all the literature search is the administrative component. Taking into consideration the stakeholders who are involved in decision making is an important step to improve the quality. Conducting in-depth interviews with the key stakeholders who are involved in the decision making would be helpful in understanding the relative factors that control provision and use of maternal health services, with the objective of escalation of understanding of quantitative outcomes so that perspective of quality care at policy level could be understood.

## Limitation of the study

The study was limited to a small sample size due to the paucity of time, so the literature search could not include the studies explaining the role of the private sector (private nursing home) where the mother could possibly go for the diagnoses and treatment purposes. So, the issues related to the quality of care for maternal health in private sector were left unaddressed.

## Relevance of the study

In the light of current evidence, we can prioritize the need-based action plans to improve the quality of care and focus and channelize the resources according to the strategy.

## Authors Contribution

AC conceptualized the idea, conducted literature search, analyzed and prepared the manuscript. PN and JD provided inputs in study design, supported the analysis and critically revised the manuscript. All authors read and approved the final manuscript.

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## Tables

**TABLE 1 THROUGH THE IDENTIFICATION OF DOMAINS FROM THE LITERATURE STUDIED 27 STUDIES WERE FINALIZED FOR THE REVIEW WHICH INCLUDES FOLLOWING DOMAINS WERE IDENTIFIED:**

| Sr No | Domains Identified                | No of studies |
|-------|-----------------------------------|---------------|
| 1     | Assessment of Quality of services |               |
|       | Infrastructure                    | 3             |
|       | Staff availability                | 3             |
|       | Delivery of services              | 6             |
|       | Other factors                     | 2             |
| 2     | Quality Improvement Interventions |               |
|       | Pre -post intervention studies    | 3             |
|       | Competency based training         | 1             |
|       | HMIS                              | 1             |
|       | m Health                          | 2             |
| 3     | Monitoring of services            |               |
|       | Audits                            | 1             |
|       | Periodic Analysis of data         | 1             |
| 4     | Quality enablers                  |               |
|       | Public-private partnership        | 2             |
|       | Social franchising                | 2             |

**Figures**

**FIGURE 1 CONCEPTUAL FRAMEWORK SHOWING QUALITY DOMAINS AND THEIR OUTCOME AND IMPACT**

