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Case Report

Community Based Maternal Death Review (CB-MDR) In Rural Assam: A Case Analysis

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Abstract

Objective

The purpose of this study is to delve into a specific case from a rural community in Assam to gain a comprehensive understanding of the myriad challenges associated with maternal health. Through this examination, the research aims to provide tailored suggestions to improve the prevailing maternal healthcare landscape.

Case Report

A detailed examination of a tragic instance involving a 40-year-old woman from a rural part of Assam, a region with India's highest Maternal Mortality Ratio (MMR). Despite the advancements in medical science, the woman faced multiple challenges within the healthcare system, leading to her unfortunate demise. This specific case aptly demonstrates the "three delays model", elucidating the barriers women face in accessing obstetric care. These barriers include the delay in making the decision to seek care, the delay in reaching an appropriate healthcare facility, and the delay in receiving necessary care once at the facility. The application of a human rights framework further highlights the existing gaps in the availability, accessibility, acceptability, and quality of maternal health services in the region.

Conclusion

The presented case underscores the dire need for a comprehensive and holistic approach in Assam to improve maternal health. Recommendations call for strategies extending from primary to tertiary prevention levels, with a focus on enhancing healthcare infrastructure, intensifying training, bolstering community awareness, understanding and addressing socio-cultural nuances, and establishing robust financial support mechanisms. Such concerted efforts aim to ensure that every woman in Assam receives the quality care she rightfully deserves during her pregnancy and childbirth.

Keywords: Health care delivery; Health Disparities; Maternal and child health; Prevention; Rural Health

Abbreviations

ANC: Antenatal care

CB-MDR: Community-based maternal death review

FLW: Front line worker

MMR: Maternal Mortality Ratio

SDG: Sustainable Development Goals

WHO: World Health Organization

Objective

The purpose of this study is to delve into a specific case from a rural community in Assam to gain a comprehensive understanding of the myriad challenges associated with maternal health. Through this examination, the research aims to provide tailored suggestions to improve the prevailing maternal healthcare landscape.

Case Report

Addressing maternal mortality necessitates an in-depth grasp of the intricate challenges, unforeseen delays, and overlooked opportunities within healthcare provision. A community-based maternal death review (CB MDR) of a 40-year-old woman from a rural sector in Assam, identified as G4P3L2 (Gravida 4, Para 3, Living 2), Hindu by religion, educated up to the 8th standard and worked as a non-agricultural daily wage earner, was conducted. As per the Institutional Ethics Committee (H), Assam Medical College, Dibrugarh (No.2023/AMC/EC/5129); this study wasn't required to obtain ethical approval, as it was conducted as a routine maternal death review. Written informed consent in the local language was secured from the deceased's husband.

Chronological chain of events related to the case is mentioned below:

Symptom Onset: The initial symptoms manifested as headaches and fever followed by self-medication using over-the-counter drugs over 2 days.

Unnoticed Complications: She experienced vaginal bleeding, but alarmingly, this crucial symptom was overlooked. The absence of awareness of her pregnancy by her attendants deprived her of early and potentially life-saving ANC.

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Primary Healthcare Interaction: Deciding to seek medical intervention, she was taken to a nearby healthcare facility, a journey taking over an hour. Upon evaluation, her haemoglobin levels were alarmingly low (4g/dl), necessitating a blood transfusion. Yet, the facility lacked the means for this vital procedure and missed out on performing a pregnancy test due to unavailability of urine pregnancy testing kit.

Secondary Healthcare Referral: Facing limitations in resources and treatments, the patient was referred to a secondary healthcare centre located 50 kms away, resulting in another 1.5 hours of travel.

Further Treatment and Continued Oversights: While she received oxygen support and conservative treatments at the secondary centre, the facility confronted challenges in administering the critical blood transfusion. The cumulative delays in receiving essential care, coupled with missed diagnostic opportunities, further endangered her life.

Tertiary Healthcare Referral: Observing the gravity of her condition, a referral was made to a tertiary institution; however, the delays didn't cease. An hour was lost in merely securing transportation. Subsequent travel consumed another 1.5 hours.

Final Diagnosis and Outcome: Upon arrival, she received injectables, conservative treatment, and consultation from Obstetrics and Gynaecology department in the emergency room. A urine pregnancy test was conducted during the consultation and her pregnancy was finally detected. Though she was subjected to specialized care soon after, she tragically succumbed to septic abortion compounded with septic shock a few hours later.

The emotional toll on the family was compounded by the financial strain, as the entire ordeal, primarily dominated by transportation expenses, amounted to significant borrowing and community fundraising.

However, specific documents related to medications, investigations, and medical advice were not available for review.

Discussion

The health of mothers reflects a society's values and priorities and signifies the robustness of healthcare, socio-economic progress, and women's rights realization [1]. 88% to 98% of maternal deaths can be prevented, underscoring its recognition as a human rights concern [2,3]. "Target 3.1" of the SDG aims to bring down the global MMR to below 70 per 100,000 live births, signifying a global commitment to improving maternal health [4]. In 2020, 95% of maternal deaths occurred in low and lower-middle-income countries [5]. India, accounting for a fifth of global maternal deaths, holds the title of the highest maternal mortality globally [6]. India's national MMR is 97, surpassing the SDG target; whereas in Assam, standing at 195, highest in the country, almost double the national average, underscoring the immediate necessity for specialized healthcare interventions [4]. In India, pregnancy is shaped not only by medical perspectives but also by social structures, recognized as 'social and structural determinants of health,' including cultural, traditional, and spiritual beliefs which can sometimes overshadow vital maternal health needs [7]. Despite commendable strides in maternal care, India still faces inconsistency and inequity in providing essential maternal and reproductive health care to all women [8]. Rural landscapes, in particular, confront issues of accessibility, service quality, and optimal utilization.

Dissecting the delays and missed opportunities

The "three delays model" offers a holistic perspective on the barriers faced when seeking obstetric care, contributing to maternal mortality. This model identifies 3 main delays: delay in the decision to seek care (Delay 1), delay in reaching a healthcare facility (Delay 2), and delay in getting adequate care once at the facility (Delay 3) [9]. The model underscores the intricate web of factors that hinder pregnant women and their families from accessing quality maternal care, playing a pivotal role in maternal deaths [10]. Delays and missed opportunities related to the case are mentioned below:

Bridging Gaps (Role of Frontline workers): Through regular home visits, a fundamental community process, FLWs could have swiftly identified pregnancy indicators, educated the woman and her kin, and facilitated immediate medical actions at the very initial stage, countering the sequential setbacks.

Delay in decision making and seeking medical care (Delay 1): The decision to self-medicate, possibly due to a lack of awareness or accessibility to medical advice, resulted in lost crucial hours; marked the beginning of a series of delays and missed opportunities. Early intervention during the onset of symptoms could have altered the course of events.

Delay in reaching the healthcare facility (Delay 2): The considerable distances between healthcare facilities and delays in arranging transport significantly extended the patient's wait for comprehensive care which emphasize the need for a robust, responsive healthcare transportation system.

Delay in receiving appropriate and necessary medical intervention (Delay 3): Not recognizing the pregnancy especially with a history of vaginal bleeding at multiple touchpoints until the tertiary facility was a sequence of missed opportunities that, if seized, might have altered the course of events.

Infrastructure Gaps: The primary and secondary healthcare facility's inability to provide blood transfusion and crucial diagnostic tests underscore the challenges of infrastructure and resource availability.

Economic Strain: This case highlights the profound emotional and financial strain families face when navigating health crises. Transporting a critically ill patient between multiple facilities presents both logistical challenges and emotional turmoil. The financial burden evidenced by borrowing and community fundraising, amplifies the family's distress.

Societal and Cultural Nuances: The late discovery of her pregnancy by her attendants highlights broader societal issues related to stigma, education gaps, or cultural practices, which can jeopardize timely medical care.

Elements of the human rights framework

The factors contributing to the delays identified in our study can be mapped to the elements of the human rights framework for maternal health are illustrated in Table 1.

Components of human rights approach to maternal health	Factors contributing the delays	Delays
Availability:	Lack of essential drugs leading to self-medication. No urine pregnancy testing kit at primary healthcare. Absence of blood transfusion facilities in both the primary and secondary healthcare centres.	Delay 1 and Delay 3
Accessibility:	Reliance on self-medication. Long distances and and time taken to move between primary, secondary, and tertiary facilities. Physical and economic barriers.	Delay 1 and Delay 2
Acceptability:	Cultural/societal reasons kept pregnancy unknown. Possible cultural stigmas or unawareness.	Delay 1
Quality:	Primary and secondary facilities lacked critical treatments. Missed diagnosis of pregnancy at multiple touchpoints.	Delay 3

Table 1: Elements of a human rights approach to maternal health and Factors contributing to the delays.

Conclusion

This tragic case from Assam highlights the deep challenges women from remote areas of India face when accessing healthcare. Tackling maternal mortality is not just about medical solutions; it's vital to understand the broader system's barriers affecting healthcare access and quality. Furthermore, this case not only highlights healthcare infrastructure and procedural shortcomings but also accentuates deeper socio-cultural factors that can impact healthcare outcomes. The encountered delays – from seeking medical advice, diagnosis, and transportation – unveil critical systemic challenges. India's maternal deaths exceeding the SDG target highlights the urgent need to address these challenges and local disparities with a tailored approach. Economic and emotional challenges faced by families further emphasize the need for financial support mechanisms and post-crisis intervention. To enhance maternal health, recommendations extend from primary to tertiary preventive measures. Primary prevention should underscore community education against self-medication, stress the value of prompt care, advocate for initial ANC consultations, oversee over-the-counter drug usage, embed reproductive health topics in educational curricula, and utilize telemedicine for informative purposes. Secondary strategies entail refining healthcare infrastructure, amplifying professional capacity-building, using telemedicine for swift detection, fortifying the role of community health agents, optimizing referral protocols, and committing to sustained patient engagements. Tertiary initiatives involve a streamlined process for urgent referrals, support after traumatic events, and ongoing patient check-ins. Furthermore, overarching solutions include offering financial assistance for maternal health and initiating gender-awareness campaigns to diminish reproductive health stigma and encourage transparent discussions. Thus, to truly tackle maternal mortality, India must adopt a multi-pronged approach that incorporates medical, societal, and logistical strategies, ensuring every woman has access to quality care in her critical journey of motherhood.

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Any conflicts of interest

None

Ethical approval

As per the Institutional Ethics Committee (H), Assam Medical College, Dibrugarh (No.2023/AMC/EC/5129); this study wasn't required to obtain ethical approval, as it was conducted as a routine maternal death review as per Govt. order (No. 2023/AMC/SPM(CM)/640).

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