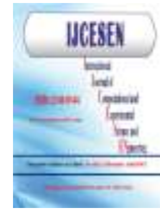
International Journal of Computational and Experimental Science and ENgineering (IJCESEN)

Vol. 10-No.4 (2024) pp. 3712-3718
http://www.ijcesen.com



ISSN: 2149-9144

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Research Article

Impact of Nursing–Midwifery Communication and Handover Quality on Maternal Safety Outcomes in Maternity Units

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Article Info:

DOI: 10.22399/ijcesen.4688
Received : 01 September 2024
Accepted : 30 September 2024

Keywords

Nursing-Midwifery Communication,
Clinical Handover,
Patient Handoff,
Maternal Safety,
Obstetric Safety,
Maternity Unit, Patient Outcomes

Abstract:

The quality of communication and handover processes between nursing and midwifery staff is a fundamental determinant of maternal safety outcomes in maternity units. Effective, structured communication acts as a critical layer of defense within the healthcare system, preventing errors by ensuring accurate information transfer, shared situational awareness, and aligned care plans during the dynamic and high-risk perinatal period. Conversely, failures in this dialogue—such as incomplete handovers, ambiguous messaging, or a culture that stifes psychological safety—create direct pathways to adverse events, including delayed responses to hemorrhage, sepsis, and hypertensive crises. Optimizing this interaction through standardized tools like SBAR, interdisciplinary training, and fostering a culture of open communication is therefore not merely an administrative concern but a vital clinical intervention essential for reducing preventable maternal morbidity and mortality.

1. Introduction

The pursuit of maternal safety represents a fundamental imperative within global healthcare systems, embodying a critical measure of societal progress and equity. Despite significant advancements in medical technology and obstetric knowledge over recent decades, maternal morbidity and mortality remain persistently pressing issues, particularly in complex clinical environments like maternity units. These settings, characterized by the physiological uniqueness of each pregnancy, the potential for rapid, unforeseen deterioration, and the involvement of multidisciplinary teams, are inherently high-risk areas where communication functions as the central nervous system of patient care [1]. The dynamic and often unpredictable nature of childbirth necessitates seamless collaboration, shared mental models, and the flawless transmission of critical information among all caregivers. Within this ecosystem, the synergistic relationship between nursing and midwifery professionals forms the bedrock of continuous, hands-on maternal care. Their communication, both in routine interactions and during structured handover processes, is not merely an administrative task but a pivotal clinical activity with direct and profound consequences for patient outcomes [2].

Maternal safety is narrowly defined as the prevention of errors and adverse effects to mothers associated with healthcare, yet its broader conception encompasses the creation of a culture, environment, and processes where risks are minimized, and the well-being of the woman and newborn is optimized throughout the antenatal, intrapartum, and postnatal continuum. Tragically, a substantial proportion of adverse maternal outcomes, including severe postpartum hemorrhage, hypertensive disorders, sepsis, and venous thromboembolism, are attributable to failures in systems rather than individual clinical incompetence. Among these systemic failures, breakdowns in communication consistently emerge as a predominant contributing factor in root cause analyses of sentinel events [3]. The maternity unit presents a unique communication landscape. It is a place of dual patients—the mother and the fetus—where clinical decisions must balance competing priorities. Shifts are long, workloads are variable and often intense, and the emotional stakes are high. In this context, information must flow accurately and efficiently between professionals working different shifts (shift handovers), between professionals within the same shift (inter-team communication), and during transitions of care across different departments [4].

The professional interface between nurses and midwives is particularly crucial. While scopes of practice may vary by region and healthcare system, both roles are frontline providers, spending the most time at the bedside, monitoring subtle changes, providing psychosocial support, and executing clinical plans. Their communication channel is the most frequently used and must be the most reliable. A lapse in conveying a subtle change in a parturient's vital signs, a misunderstanding regarding the plan of care after a multidisciplinary review, or an incomplete handover regarding a woman's psychosocial risks can create latent conditions for error. Therefore, the quality of nursing-midwifery dialogue acts as either a powerful safeguard or a dangerous vulnerability within the safety net designed to protect mothers [5].

2.Communication as a Cornerstone of Safe Healthcare Systems

To appreciate the profound impact of communication on maternal safety, one must first situate it within established theoretical frameworks of safety science. The transition from a model of individual blame to a systems-oriented understanding of error has been pivotal. James Reason's "Swiss Cheese Model" of accident

causation provides a powerful lens. In this model, each layer of defense in a complex system (e.g., protocols, training, supervision, team communication) contains holes, or latent weaknesses. An adverse event occurs when the holes in successive layers momentarily align, allowing a trajectory of accident opportunity to reach the patient [6- 8]. In a maternity unit, nursing-midwifery communication constitutes one of the most critical layers of defense. A strong, effective communication culture acts as a thick slice of cheese with few or small holes, preventing nascent problems—like a slowly rising blood pressure or a patient's unreported allergy—from penetrating through to cause harm. Conversely, weak communication represents a slice riddled with gaps, dramatically increasing the likelihood that latent conditions (e.g., fatigue, high workload, ambiguous protocols) and active failures (e.g., a missed observation) will converge with tragic results [9, 10].

Complementing this is the concept of High-Reliability Organizations (HROs), such as aviation or nuclear power, which operate consistently safely in hazardous conditions. HRO principles, when applied to healthcare, emphasize preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience, and deference to expertise. Effective communication is the mechanism through which these principles are enacted. For instance, "sensitivity to operations" requires that frontline staff like nurses and midwives have a shared, accurate picture of the current state of all patients, which is only possible through continuous, clear communication. "Deference to expertise" means that during an emergency, the person with the most relevant experience, regardless of hierarchy, must be heard; this demands a communication climate of psychological safety where a midwife can assertively voice concerns to a senior obstetrician or a nurse can question a plan without fear [11].

Furthermore, TeamSTEPPS (Team Strategies and Tools to Enhance Performance and Patient Safety), a widely adopted framework, identifies communication as one of its four core competencies (along with leadership, situation monitoring, and mutual support). It provides specific, evidence-based tools—such as SBAR (Situation-Background-Assessment-Recommendation), call-outs, check-backs, and handoffs—designed to standardize and fortify information exchange. The theoretical strength of such models lies in their recognition that communication is a skill that can be taught, measured, and improved, moving it from an innate, interpersonal attribute to a learnable, clinical procedure essential for safe care delivery in the interdependent environment of a maternity unit [12, 13].

3. Modes and Models of Nursing-Midwifery Communication in Maternity Care

Communication between nursing and midwifery staff in a maternity unit occurs through multiple, interconnected channels, each serving a distinct purpose and carrying specific risks. The first is **synchronous, face-to-face communication**. This includes brief updates at the bedside, collaborative patient assessments, and real-time discussions during shifts. This mode is rich in nonverbal cues—tone, facial expression, gesture—which can convey urgency, concern, or reassurance. It allows for immediate clarification and feedback, making it ideal for managing evolving situations. For example, a midwife discussing a laboring woman's progress with the nurse taking over postnatal care can immediately point to the partogram and discuss fetal heart rate patterns. However, this channel is vulnerable to interruptions, which are endemic in busy units, and to environmental noise, which can lead to mishearing or distraction [14].

The second, and arguably most risk-laden, channel is the **structured clinical handover** (or handoff). This is the formal process of transferring professional responsibility and accountability for patient care. In maternity units, handovers occur at shift changes, when patients are transferred between wards (e.g., from labor ward to postnatal ward), and during breaks. The handover is not merely an information dump; it is a cognitive ritual where the outgoing caregiver synthesizes and prioritizes data, and the incoming caregiver constructs a mental model of the patient and plan. Poor handover is a notorious point of failure. Common pitfalls include omission of key information (e.g., a history of postpartum hemorrhage), inclusion of irrelevant detail, disorganization, distraction, lack of a standardized structure, and failure to identify the "sick" or at-risk patient. When a nurse hands over a complex patient to a midwife without highlighting a critical laboratory result, the safety net develops a tear at the very moment of transition [15, 16].

The third channel is **asynchronous communication**, primarily through documentation in the patient's medical record. This includes nursing and midwifery notes, flowcharts, and electronic health records (EHRs). Documentation serves as a permanent ledger of care and a communication tool for others not present during verbal exchanges. The adage "if it wasn't documented, it wasn't done" underscores its

medico-legal importance. However, poor documentation—being incomplete, illegible, ambiguous, or delayed—creates a dangerous information vacuum. If a midwife fails to document a detailed assessment of a woman's perineum following a difficult delivery, the nurse on the next shift may miss early signs of a developing hematoma. Furthermore, the rise of EHRs has introduced new challenges, such as alert fatigue, cumbersome interfaces that detract from face-to-face time, and the copying-and-pasting of outdated information, which can perpetuate inaccuracies [17, 18].

4. The Anatomy of a High-Quality Handover: Standards and Strategies

Given its critical role, defining the components of an effective handover is essential for improving safety. Research and safety organizations have converged on several key principles for a high-quality handover, which can be specifically adapted to the maternity context. Firstly, **standardization** is paramount. Using a consistent, logical structure ensures comprehensiveness and reduces reliance on memory. The SBAR (Situation-Background-Assessment-Recommendation) tool is highly applicable. For a handover of a postpartum patient: *Situation*: "This is Sarah Jones in bed 5, day 1 post-cesarean section." *Background*: "She's a 32-year-old G2P2, with no significant past medical history. The surgery was for failure to progress, estimated blood loss was 800ml." *Assessment*: "Over the last two hours, her heart rate has trended up from 90 to 110, and she's reporting increased abdominal pain. Her lochia is moderate but fresh. I'm concerned about possible secondary hemorrhage or infection." *Recommendation*: "She needs vital signs hourly, a full blood count now, and the doctor should be informed of her tachycardia." This structure forces a concise, relevant summary [19, 20].

Secondly, the handover must be **interactive and allow for verification**. It should not be a one-way monologue. The receiver should actively listen, ask clarifying questions, and "check back" by summarizing their understanding. For instance, the incoming midwife might say, "So to confirm, for Sarah Jones, my priorities are hourly obs, send the FBC, and bleep the doctor about the rising HR. Is that correct?" This closed-loop communication ensures shared understanding. Thirdly, **face-to-face handover in a dedicated, quiet space**, free from interruptions, is ideal. This allows for visual aids (the partogram, the medication chart) and the reading of nonverbal cues. The **inclusion of the patient and family** where appropriate, a concept known as "bedside handover," can enhance safety by allowing the woman to contribute to or correct information, fostering transparency and partnership in her care [21, 22].

Finally, the handover should **include a clear statement of contingency plans**. "If X happens, then do Y." For a woman with pre-eclampsia, this might be: "Her BP is currently 145/95 on labetalol. If it rises above 160/110, administer the nifedipine per protocol and call the registrar immediately." This prepares the incoming team for potential scenarios and reduces decision-making latency in a crisis. Implementing these standards requires training, leadership support, and a cultural shift from viewing handover as a passive clerical task to recognizing it as an active, clinical safeguard [23].

5. Consequences of Communication and Handover Failures: A Direct Link to Adverse Outcomes

The link between suboptimal communication and tangible patient harm is not theoretical but empirically established. In the context of maternity care, failures manifest in several direct and indirect pathways leading to adverse maternal outcomes. The most direct pathway is through **errors of omission and commission in clinical management**. An incomplete handover may lead to a missed dose of a critical medication, such as antibiotics for Group B Streptococcus prophylaxis or magnesium sulfate for eclampsia prevention. Miscommunication regarding a patient's allergy status can result in the administration of a contraindicated drug. A hurried, disjointed update might fail to convey the subtle, early signs of sepsis—like mild tachycardia or confusion—delaying diagnosis and the initiation of life-saving treatment by several hours. Studies have repeatedly correlated poor handovers with increased medication errors, delayed diagnoses, and inappropriate treatments [24, 25].

Indirectly, poor communication erodes **situational awareness**—the perception of elements in the environment (Level 1), the comprehension of their meaning (Level 2), and the projection of their status in the near future (Level 3). A maternity team with poor situational awareness is like an orchestra playing without a conductor or sheet music. If the midwife is unaware of a consultant's concern about a possible placenta accreta discussed during a handover she missed, she may not be mentally or physically prepared for a catastrophic hemorrhage when it occurs. The team's shared mental model is fractured, leading to uncoordinated, reactive responses during emergencies rather than proactive, synchronized action. This directly compromises the

management of time-critical emergencies like umbilical cord prolapse, uterine rupture, or shoulder dystocia [26, 27].

Furthermore, dysfunctional communication fuels a **culture of low psychological safety**. When nurses and midwives fear reprisal, humiliation, or dismissal for speaking up with concerns or questions, they become silent. In maternity care, where intuition and subtle observation are vital, this silence is deadly. A junior midwife who notices a senior colleague misinterpreting a cardiotocograph (CTG) trace but says nothing due to a hierarchical culture is complicit in a potential safety breach. A culture where communication is blunt, disrespectful, or punitive leads to burnout, staff turnover, and further degradation of team cohesion, creating a vicious cycle that undermines the entire safety infrastructure of the unit. This environment is fertile ground for errors to proliferate undetected [28, 29].

6. Barriers and Challenges to Optimal Communication in the Maternity Context

Multiple, often interrelated, barriers impede ideal communication between nursing and midwifery staff. **Human factors** play a significant role. Fatigue from long and irregular shifts, cognitive overload from managing multiple complex patients, and inherent human limitations in memory and attention all degrade communication performance. Under stress, individuals revert to automatic behaviors and may skip steps in communication protocols. **Hierarchical structures**, though often unintentional, can stifle the open dialogue necessary for safety. If midwives are perceived as subordinate to obstetricians, or if senior nurses dismiss the inputs of junior staff, critical information is lost. The "authority gradient" can prevent a nurse from calling out a potential error during a surgical procedure or questioning a plan she believes is unsafe [30, 31].

Organizational and systemic factors are equally potent. Chronic understaffing and high patient acuity create a rushed environment where taking time for a thorough handover feels like a luxury. Frequent interruptions—from phone calls, alarms, and other staff—fragment attention and break the flow of information transfer. Inadequate physical environments, such as noisy nurseries or lack of private rooms for handover, compromise confidentiality and clarity. Furthermore, the absence of standardized tools, training in communication skills, and consistent leadership emphasis on its importance relegates communication to an afterthought. The lack of feedback loops also means that poor handovers are rarely identified or corrected until after an adverse event occurs [32, 33].

Professional **role ambiguity and interprofessional tensions** can also arise. In some settings, overlapping scopes of practice between nurses and midwives can lead to confusion about who is responsible for communicating what information. Unresolved historical or professional rivalries can create silos, where information is hoarded rather than shared freely. Effective communication requires not just the transfer of data but a foundation of mutual respect and a shared goal of patient-centered care, which can be eroded by these underlying tensions [34].

7. Strategies for Improvement: Building a Culture of Communication Excellence

Enhancing communication and handover quality is a multi-faceted endeavor requiring interventions at the individual, team, and organizational levels. The first and most foundational strategy is **mandatory, simulation-based training in communication skills**. Moving beyond lectures, immersive simulation allows nursing and midwifery staff to practice tools like SBAR, call-outs, and structured handovers in realistic, high-stakes scenarios—managing a postpartum hemorrhage, a neonatal resuscitation, or a hypertensive crisis. Debriefing after simulation focuses not just on clinical actions but explicitly on communication effectiveness, fostering reflection and skill development in a safe learning environment. Training should also cover non-technical skills like assertion, advocacy, and conflict resolution to empower staff to speak up [35, 36].

At the team level, **implementing and rigorously adhering to standardized handover protocols** is non-negotiable. This involves co-designing a unit-specific handover checklist or template (based on SBAR or a similar model) for different scenarios (shift change, ward transfer). Leadership must then ensure its consistent use, perhaps by making structured handover sheets part of the permanent record. Incorporating **interdisciplinary ward rounds or "huddles"** at key times can synchronize the entire team. A morning safety huddle involving the charge midwife, charge nurse, obstetrician, and anesthesiologist can quickly identify at-risk patients and align plans, preventing information from getting lost in parallel conversations [37, 38].

Technological solutions, when designed thoughtfully, can be powerful enablers. **Well-designed Electronic Health Records (EHRs)** can support handovers by providing structured fields for "key concerns" and "contingency plans" that are prominently displayed. However, technology must

serve communication, not hinder it. Policies should discourage copy-pasting and encourage concise, analytical narrative notes. The use of **closed-loop communication tools** for critical results and orders within EHRs can also prevent messages from falling through the cracks [39].

Ultimately, sustainable improvement depends on cultivating the right **safety culture**. Leadership must explicitly and consistently champion communication as a clinical priority. This includes rewarding good communication practices, conducting fair and blameless analyses of communication-related near-misses, and actively seeking frontline input on system flaws. Leaders must role-model vulnerability, openness, and active listening. Creating forums for regular, structured interdisciplinary dialogue can break down silos and build trust. When nurses and midwives feel psychologically safe, valued, and equipped with the right tools, they are empowered to create the seamless communication web that is the hallmark of a truly safe maternity unit [40, 41].

8. Conclusion

In conclusion, the journey through pregnancy and childbirth, while a natural process, is fraught with potential hazards that require vigilant, coordinated care. The maternity unit is a complex sociotechnical system where the quality of interaction between its human elements—specifically between nursing and midwifery professionals—is a decisive factor in determining outcomes.

The evidence is clear: investing in the robustness of nursing-midwifery communication is investing in maternal safety itself. This requires a deliberate, multi-pronged strategy encompassing standardized tools like SBAR, immersive team training, supportive technology, and, most crucially, the cultivation of a just culture of psychological safety where every voice is heard and valued. By reconceptualizing communication from a soft skill to a critical, hardwired component of the clinical workflow, maternity units can significantly strengthen their defenses against preventable harm. The goal of zero avoidable maternal morbidity and mortality is ambitious, but it is unattainable without first securing the lines of communication that form the lifeline of safe care. Ensuring that every handover is complete, every concern is voiced, and every team shares a single, accurate story of the patient is not just good practice—it is an ethical imperative for protecting those who bring new life into the world.

Author Statements:

- **Ethical approval:** The conducted research is not related to either human or animal use.
- **Conflict of interest:** The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper
- **Acknowledgement:** The authors declare that they have nobody or no-company to acknowledge.
- **Author contributions:** The authors declare that they have equal right on this paper.
- **Funding information:** The authors declare that there is no funding to be acknowledged.
- **Data availability statement:** The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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