Formosa Journal of Applied Sciences (FJAS)
Vol. 4, No.3 2025: 943-954

Analysis of Patient Safety Program Implementation in OB/GYN Specialist Services at the Inpatient Unit of Khadijah Muhammadiyah General Hospital, North Sumatera

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A R T I C L E I N F O

Keywords: Patient Safety Goals, Obstetrics and Gynecology, Realistic Evaluation

Received : 22, January
Revised : 25, Februay
Accepted: 27, March

A B S T R A C T

The findings indicate that patient identification accuracy is maintained through identification wristbands and double verification before medical procedures, although occasional mismatches still occur. Effective communication is implemented via medical record documentation and a read-back policy, yet challenges remain due to varying levels of understanding and insufficient coordination during shift changes. Medication safety is improved through electronic documentation; however, dosage errors persist and should be minimized through a double-verification system. Surgical site and procedure verification are enforced via site marking, though unconscious patients pose challenges in active verification participation. Infection prevention measures include sterilization procedures, regular training, and infection surveillance, yet stricter monitoring is necessary for optimal program effectiveness.

DOI prefik: https://doi.org/10.55927/fjas.v4i3.81
ISSN-E: 2962-6447
https://srhformosapublisher.org/index.php/fjas

INTRODUCTION

Hospitals provide healthcare services encompassing promotive, preventive, curative, and rehabilitative aspects while ensuring patient safety through risk identification, management, analysis, reporting, and problem-solving (Indonesian Law No. 17 of 2023). Patient safety is an organized effort to reduce risks, prevent avoidable harm, avoid errors, and minimize the impact of adverse events (Juniarti & Mudayana, 2019). Patient safety incidents, such as medication errors, falls, transfusion errors, and nosocomial infections, contribute to global morbidity and mortality rates. WHO reports that 134 million adverse events occur annually in lower-middle-income countries (LMICs), resulting in 2.6 million deaths due to unsafe care. In Indonesia, 7,465 patient safety incidents were recorded in 2019, including 171 deaths and varying degrees of injuries.

A preliminary survey at Muhammadiyah General Hospital, North Sumatra, on September 26, 2024, identified recurring patient safety incidents in the inpatient unit from July to December 2023. These incidents included newborn identification bands detaching during bathing, unauthorized patient departures, difficulties in getting out of bed, and rainwater leakage on patient beds. From January to June 2024, similar cases persisted, including patient falls in bathrooms and dizziness episodes without staff assistance. These findings highlight ongoing patient safety risks, particularly in the Khadijah (postpartum) Inpatient Unit. Despite the frequency of such incidents, no specific studies have been conducted on patient safety in this hospital, forming the basis for this research.

To reduce patient safety incidents, six patient safety goals have been established: accurate patient identification, effective communication, improved safety of high-alert medications, correct surgical site and procedure verification, infection risk reduction, and fall prevention (Indonesian Law No. 17 of 2023). Based on these considerations, this study focuses on analyzing the implementation of the Patient Safety Program in OB/GYN Specialist Services at the Khadijah Inpatient Unit of Muhammadiyah General Hospital, North Sumatra.

LITERATURE REVIEW

Hospitals provide healthcare services encompassing promotive, preventive, curative, and rehabilitative aspects while ensuring patient safety through risk identification, management, analysis, reporting, and problem-solving (Indonesian Law No. 17 of 2023). A preliminary survey at Muhammadiyah General Hospital, North Sumatra, on September 26, 2024, identified recurring patient safety incidents in the inpatient unit from July to December 2023.

METHODOLOGY

This study employs a qualitative approach to analyze the patient safety program in the obstetrics and gynecology specialist services at the Khadijah inpatient unit of Muhammadiyah General Hospital, North Sumatra. Using a descriptive method and the realistic evaluation approach, it assesses program effectiveness through a context-mechanism-outcome (CMO) framework (Auerbach & Silverstein in Sugiyono, 2018; Creswell in Sugiyono, 2018).

The research site was selected due to recurring patient safety incidents, including baby wristbands detaching, unauthorized patient departures, and medication errors. Despite accreditation, these incidents persist annually, with eight cases recorded between July 2023 and June 2024. The study, conducted from September 2024 onward, involves six primary informants (obgyn specialists and nurses) and three triangulation informants (unit head nurse, patient safety committee head, and subcommittee head).

Data collection follows Sugiyono (2018), incorporating triangulation through participant observation, in-depth interviews, and documentation. Passive observation allows behavioral insights, while semi-structured interviews facilitate open discussions. Data analysis, using the 5W1H method and realistic evaluation, identifies patterns and themes to assess program effectiveness. Findings are presented through narrative text, charts, and matrices, ensuring conclusions are supported by valid field evidence. This study aims to enhance patient safety implementation and inform future hospital policies.

RESEARCH RESULT AND DISCUSSION

The study was conducted at RSU Muhammadiyah Sumut, initially established in 1974 as Siti Khadijah Maternity Hospital and transitioned into a general hospital in 2007. A major renovation in 2017–2018 expanded its facilities. The Obstetrics and Gynecology (Obgyn) department, located in the Khadijah Inpatient Ward, provides comprehensive maternal and reproductive health services, emphasizing patient comfort, nutrition, pharmaceutical care, and religious guidance.

Patient safety culture is a core focus, integrating open communication, teamwork, and structured incident reporting, assessed across five safety maturity levels. Compliance metrics show steady improvements, with 100% adherence in incident reporting, medication storage, and the Surgical Safety Checklist. SBAR implementation in patient handovers rose from 85% in October to 94.7% in December. Hand hygiene compliance consistently met 100%, while fall prevention efforts improved from 85.4% to 93.4%, requiring further enhancements.

Nine informants participated: six primary informants (three Obgyn specialists and three nurses) and three triangulation informants (head nurse, KMKP chairperson, and patient safety sub-unit chairperson). Patient safety measures focus on six objectives: accurate identification, effective communication, medication safety, correct procedures, infection prevention, and fall risk reduction. Implementing wristbands, electronic medical records, and double verification enhances safety, with continuous staff training ensuring

protocol adherence. Despite progress, ongoing evaluation is needed to optimize patient care.

Patient identification accuracy is crucial for ensuring safe and effective healthcare services. This process involves verifying essential patient information such as name, date of birth, medical record number (MR), and national identification number (NIK) before administering any medical treatment. Proper patient identification follows several steps, including asking the patient to state their name and date of birth while matching them with medical records and ID numbers. This prevents errors, especially among patients with similar names. Mistakes in this process can lead to severe consequences, such as incorrect treatment or life-threatening situations.

> *"Ensuring correct patient identification is crucial because mistakes can disrupt healthcare services. If identification is accurate, I can provide the right medication and treatment. But if it's wrong, patients might receive inappropriate care..." (Informant 2)*

> *"Accurate patient identification reduces risks in healthcare services. With correct identification, medical staff can access patient records and provide safer, more appropriate care." (Informant 1)*

A real-life case illustrates this issue. Informant 4 recounted an incident where a newborn's identification bracelet fell off during bathing. Although unintentional, swift action was necessary to prevent misidentification. The staff immediately retrieved the bracelet and confirmed the baby's identity to prevent mix-ups.

> *"We always ensure baby ID bracelets stay on because they're crucial for identification. But once, while cleaning a newborn, the bracelet suddenly fell off. The staff quickly retrieved it and verified the baby's identity to prevent any confusion." (Informant 4)*

Proper patient identification is crucial in maternity wards to prevent errors like baby mix-ups or incorrect medication administration. Asmoro (2022) emphasized its importance in labor wards, while WHO highlighted effective identification systems for improving safety (Ningtias & Sundari, 2024). Barcode systems linking newborns to mothers help minimize errors (Scalise & Piech, 2019). Regular staff training also plays a key role, as Sundoro (2020) noted that continuous education reduces identification errors and enhances safety. Despite advancements, challenges persist, including high workloads, staff noncompliance, and poor communication during shift changes (Sundoro, 2020). Hospitals must conduct evaluations, provide leadership support, and enforce strict monitoring. The Realistic Evaluation (RE) approach, using the Context-Mechanism-Outcome (CMO) framework, analyzes factors affecting identification. High workloads and emergencies impact the process, while training, barcode technology, and communication improve safety, leading to reduced errors and better patient trust. Continuous evaluation is essential. The baby bracelet incident underscores the need for secure identification methods. Hospitals must strengthen procedures, ensure ID tools are secure, and maintain

clear communication. Routine monitoring and training help minimize errors, reinforcing the commitment to patient safety and improved healthcare services.

Effective communication involves delivering timely, accurate, complete, clear, and easily understood information. In patient safety, proper communication reduces errors and enhances care quality. Various methods, including electronic, verbal, and written communication, facilitate this process. Interviews with informants revealed frequent communication issues among nurses in hospital inpatient units. These lapses often lead to errors affecting patient safety, such as inaccurate care plans, medication mistakes, or improper procedures. These errors are often due to human mistakes or fatigue caused by high workloads.

> "*Once, I was checking on a mother about to give birth, and her family mentioned she had a history of high blood pressure. However, when I reported this to the attending nurse, the information wasn't fully acknowledged. As a result, she was given furosemide instead of nifedipine, which would have been more appropriate. Fortunately, she only experienced mild symptoms, but such mistakes could be dangerous...*" (Informant 3)

A lack of medical staff training contributes to poor communication, limiting patient involvement and increasing safety risks (Lippke et al., 2021; Rance et al., 2013). Complex medical terms and dismissive attitudes can discourage patients from voicing concerns (M'Rithaa et al., 2015). Hospitals should prioritize open dialogue, as organizational changes fostering two-way communication are more effective than individual training alone (Derksen et al., 2022). Enhancing provider-patient communication during labor improves maternal safety and care quality. Digital interventions and direct seminars strengthen interactions, with face-to-face training proving most effective (Kötting et al., 2023). Effective communication, including empathy and active listening, correlates with better maternal outcomes (Agbi et al., 2023). Strategies like TeamSTEPPS improve collaboration and reduce maternal mortality (Walker, 2016; Brennan & Keohane, 2016). Despite progress, systemic barriers remain. Ongoing research and combining technology with interpersonal skills are essential. At the Khadijah Inpatient Unit, informants stressed the importance of clear, accurate information exchange and double-checking treatment plans.

> "*If we are more disciplined in ensuring all information is clearly communicated, patient safety improves. For instance, before shift changes, there should be a thorough review of patient conditions and care plans to prevent oversight. More time should be allocated for medical teams to communicate to avoid misunderstandings.*" (Informant 1)

Another significant issue is patients leaving the hospital prematurely. Informant 5 described a case where a patient, feeling better, left the hospital despite an unstable medical condition.

> "*A patient once left the ward despite extra supervision. They felt well enough to go home, but their condition wasn't stable. This caused concern since complications could arise outside the hospital. As soon as we realized they were gone, we contacted their family immediately. Moving forward, we must*

be more vigilant, especially for patients whose conditions may fluctuate." (Informant 5)

Effective communication and strict supervision are crucial for patient safety, particularly in inpatient units. Clear, accurate, and disciplined communication prevents medical errors, such as miscommunication-related medication mistakes. Proper documentation is essential, as undocumented verbal communication increases risks. For example, a hypertensive pregnant woman experienced a medication error due to unrecorded medical history. Immediate documentation policies after patient interactions can mitigate such risks. Standardized communication tools like SBAR improve clarity and efficiency in handovers (Haig et al., 2006). Continuous training, including workshops and interdisciplinary team exercises, enhances collaboration and shared responsibility for safety (O'Daniel & Rosenstein, 2008). Technology, such as electronic health records (EHR) and real-time messaging, facilitates seamless information sharing but requires clear usage protocols. A supportive hospital culture that encourages open communication and feedback without fear of reprimand fosters safety. Leadership must actively promote transparency and address systemic communication barriers. A multifaceted approach—combining disciplined documentation, standardized protocols, training, and technology—can reduce errors, enhance patient safety, and improve healthcare quality.

Proper medication management is essential for patient safety, especially in obstetrics and gynecology (obgyn) services. High-alert medications, which have a high risk of causing serious harm, require extra vigilance. A key strategy to minimize errors is the double-check system, where two healthcare professionals verify the drug name, dosage, route, timing, and appropriateness before administration. Look-Alike Sound-Alike (LASA) medications, also known as Nama Obat, Rupa, dan Ucapan Mirip (NORUM), pose risks due to their similar names or appearances. Preventive measures such as clear labeling, separate storage, and double verification help mitigate errors. The WHO provides a list of high-risk medications to improve safety. Strict medication management, healthcare worker education on high-alert drugs, and enforcing double-check procedures are crucial for optimizing patient safety.

In the hospital's obgyn unit, factors like time pressure, incomplete medication histories, and potential errors in drug selection or dosage increase risks. Preventive measures include verifying medication information, ensuring proper dosing, and cross-checking between nurses administering and recording medication. The hospital's EMR system records all prescribed medications, ensuring compliance and facilitating monitoring. Informant 5 stated:

"At the hospital, we use an electronic medical record system. Every pregnant patient has a record detailing all administered medications, making it easier to verify prescriptions and prevent dosage errors." (Informant 5)

"It's easier to monitor and check given medications, especially for laboring mothers. Without caution, errors like incorrect dosage or medication type can occur, which is why reviewing medical records before administration is crucial." (Informant Triangulation 2)

Despite existing safety measures, challenges remain, including underreporting of medication errors, which limits awareness of potential hazards (Sharpe et al., 2024). Informant 6 emphasized the importance of verification:

> *"We ensure that the prepared medication matches the doctor's prescription. One staff member prepares it, and another verifies it before administration to prevent errors."* (Informant 6)

A lack of safety data on certain medications used in pregnancy further complicates decision-making (Honein et al., 2013). Additionally, access to resources for evaluating teratogenic risks is limited, leading to inconsistent practices across hospitals (Honein et al., 2013).

> *"We regularly conduct training on safe medications, particularly for labor. We also educate patients and families on potential side effects to ensure preparedness."* (Informant 4)

Ensuring medication safety in the obgyn unit requires effective communication among doctors, nurses, and pharmacists. Clear patient information prevents errors, but systemic issues like staff shortages, lack of training, and weak leadership oversight contribute to unsafe practices, especially in resource-limited hospitals (Zuhana et al., 2024). WHO emphasizes that many medication errors result from flawed systems rather than individual negligence (Webster, 2022).

Medication safety is crucial for maternal and neonatal health, with challenges including errors, stock shortages, and systemic limitations. To address these, the hospital has implemented an EMR system, improved pharmacy coordination, enforced double-check procedures, and provided continuous staff training. Future efforts should focus on strengthening policies and resources to enhance medication safety during labor.

Ensuring correct surgical procedures is crucial to preventing wrong-site, wrong-procedure, and wrong-patient errors, which often result from communication failures and lack of standardized verification protocols. Patient involvement in site marking and clear protocols can minimize these risks. At the Khadijah Inpatient Unit of Muhammadiyah General Hospital North Sumatra, site marking has been integrated into patient safety measures, particularly for procedures involving symmetrical body parts. While unnecessary for obstetric procedures like cesarean sections, this practice aligns with WHO patient safety standards. Open communication between patients and medical staff further enhances accuracy and confidence in surgical procedures. The hospital remains committed to minimizing procedural errors and ensuring safer maternal and infant healthcare.

> *"At Muhammadiyah Hospital North Sumatra, we have implemented a site marking system. Before surgery, especially in childbirth-related procedures, we ensure the correct site, patient, and procedure. The entire medical team is involved in this process. If there is any doubt, we conduct a cross-check to prevent errors that could harm the patient. We also ensure that essential medications for childbirth are available, so nothing is missed or incorrect..." (Informant 1)*

> *"We also ensure proper site marking. Before surgery, we double-check every step to prevent mistakes. It's not just about medication but also about the site and procedure. This is crucial to avoid patient harm and ensure smooth procedures. Every medical team member must be involved and attentive to every detail..." (Triangulation Informant 2)*

Medical teams have integrated site marking into their routine for all surgical patients, especially expecting mothers. Despite their familiarity, challenges remain, such as dealing with sedated or unconscious patients. In these situations, extra caution is required to ensure all procedures are executed accurately, maintaining patient safety and preventing errors. Medical teams hope for increased training and system advancements to enhance verification efficiency and ensure smooth, error-free procedures. Additionally, maintaining effective communication among medical teams is crucial to preventing mistakes that could endanger patients. By improving systems and communication, patient care can become safer and more efficient while minimizing risks.

> *"We hope for more training and advanced systems to facilitate verification and ensure all procedures run smoothly. Moreover, communication within the team must be maintained to prevent errors that could harm patients..." (Informant 3)*

> *"Training should be enhanced, and more sophisticated systems should be implemented to simplify verification. Communication among teams must also be maintained, as it is key to ensuring smooth operations and avoiding errors that could negatively impact patients..." (Triangulation Informant 2)*

Systemic issues, communication failures, and non-compliance with protocols contribute to errors in maternal healthcare. Inadequate verification protocols pose patient safety risks (Frarey, 2018), while unnecessary interventions, such as excessive cesarean sections, increase procedural errors (Salgado et al., 2017). Ineffective shift-change communication and incomplete informed consent further compromise patient safety (Moturu et al., 2018; Clarke et al., 2007). Non-compliance with safety procedures, like skipping the surgical time-out, heightens risks (Clarke et al., 2007). However, training and safety checklists have improved patient safety. At Muhammadiyah General Hospital North Sumatra, site marking enhances procedural verification and patient identification. Clear communication and patient involvement are essential, though challenges arise with unconscious patients. Future efforts will integrate advanced technology for more precise verification, further strengthening patient safety and healthcare quality.

Infection prevention and control are essential efforts by medical professionals to minimize the risk of infection transmission in healthcare services. Infections acquired during medical care can lead to complications, prolonged treatment, increased disability risks, and higher medical costs. At Rumah Sakit Umum Muhammadiyah Sumatera Utara, patient safety efforts focus on reducing infection risks, particularly for inpatients undergoing childbirth and medical procedures. Infection risks stem from factors such as medical equipment use (e.g., IVs, catheters) and non-sterile procedures. The hospital enforces strict infection prevention measures, including hygiene protocols, routine medical staff training, and appropriate personal protective equipment (PPE) use. Regular evaluations ensure infection prevention measures remain effective. As Informant 5 states:

> *"We prioritize hygiene and sterilization in every medical procedure, especially for expectant mothers. We ensure no unnecessary risks increase infection chances. Regular training for medical staff on hygiene and PPE use is essential to keep patients safe from unwanted infections..." (Informant 5).*

> *"Hygiene and sterilization are our top priorities, particularly for childbirth. We conduct routine training on hygiene, PPE use, and proper medical procedures to ensure patient safety..." (Informant Triangulation 3).*

Despite advancements, infection control in labor and delivery (L&D) remains challenging due to emergency situations and bodily fluid exposure (Lea et al., 2024). The absence of standardized protocols, cultural and systemic barriers, and inadequate hand hygiene practices increase infection risks (Nazarko, 2013). Training gaps and resource limitations further hinder prevention efforts (Lea et al., 2024). Rumah Sakit Muhammadiyah Sumatera Utara follows WHO Patient Safety guidelines, enforcing strict hand hygiene, sterilization, and infection surveillance. Using a realistic evaluation approach, the hospital assesses infection prevention effectiveness. Continuous monitoring, staff commitment, and protocol enforcement help reduce risks and improve patient safety, especially for expectant mothers.

Reducing patient fall risk is crucial in the Khadijah inpatient unit of Muhammadiyah General Hospital North Sumatra, especially for pregnant women undergoing medical procedures. Falls may result from physical weakness, medication side effects, or mobility instability. To address this, the hospital conducts fall risk assessments, trains nurses to identify high-risk patients, and enhances supervision. Bed safety measures, including proper arrangements and side rails, help prevent falls, while continuous monitoring ensures their effectiveness. Family involvement further supports awareness and prevention efforts. Through these initiatives, the hospital enhances patient safety, particularly for pregnant women, improving service quality and reducing risks.

> *"So, the patient was trying to get off the bed, but her feet didn't reach the floor, and she suddenly lost balance and fell. We immediately helped her and ensured she was okay. This incident reminded us of how crucial cleanliness and caution are, especially for patients who are already in an unstable condition. We need to be more careful so that such incidents don't happen again..." (Informant 6)*

Informant 4 suggested a common solution to reduce fall risks for patients whose feet do not reach the floor while in bed. A small, movable step stool is a useful aid, allowing patients to get down safely without the risk of falling. However, in the incident described, the step stool was not used properly, potentially increasing the fall risk. This highlights the importance of ensuring that available assistive devices, like the step stool, are correctly utilized and readily accessible. Neglecting these tools can lead to preventable incidents. Therefore, healthcare workers must ensure that all safety equipment, including step stools, is used appropriately, particularly for patients who require extra support when getting out of bed safely.

> *"Usually, there is a small, movable step stool under the bed, so if a patient's feet don't reach the floor, they can use it to get down safely. But at that time, it wasn't used..." (Informant 4)*

According to Informant 5, one incident was caused by a wet bed due to rainwater leakage. The patient's mother attempted to shift her position to avoid the wet area, but this movement inadvertently increased her risk of falling due to an unstable posture. This highlights the importance of keeping the sleeping environment safe and dry to prevent risky movements that could lead to falls. The informant added that as soon as the medical staff recognized the potential fall risk, they promptly intervened to ensure the mother remained comfortable and safe. This incident serves as a reminder that attention to details, such as bed conditions and overall cleanliness, is essential in preventing falls, particularly for vulnerable patients.

> *"This happened when the mother was in bed, and because the bed got wet from rainwater leakage, she started shifting her position to avoid the wet spot. But the problem was, this made her posture unstable and increased her risk of falling. We immediately helped her to ensure she remained safe and comfortable..." (Informant 5)*

Informant 4 identified key challenges in reducing fall risks in the Khadijah inpatient unit. The primary issue is patients' unstable physical condition, particularly pregnant women unaware of their fall risk. For example, attempting to shift positions during an incident involving rainwater leakage increased their risk. Another challenge is the lack of assistive devices, such as small step stools, which help patients get out of bed safely. When unavailable, staff must provide additional assistance. Staff shortages further complicate fall prevention, as high patient loads make it difficult to give each patient adequate attention.

> *"One challenge we face is when a patient's physical condition is unstable, such as in pregnant women or those with poor balance. This is difficult because they often don't realize their posture can put them at risk of falling. For example, when a bed is wet from rain leakage, the patient may shift their body to avoid the wet spot, but this makes them unstable and increases the risk of falling..." (Informant 4)*

Reducing fall risks in pregnant patients during labor faces challenges related to assessment tools, environmental safety, and staff engagement. Fall risk prediction models are widely used but lack strong hospital-based evidence, causing confusion among medical staff (Teixeira, 2023). The unclear distinction between assessments and prediction tools further complicates implementation (Teixeira, 2023). Inadequate infrastructure, such as unsafe beds and lack of non-slip footwear, directly contributes to fall risk (Sanjaya et al., 2018). Resource limitations and poor communication also hinder prevention efforts (Gading, 2018). While safety measures are in place, further improvements are needed to reduce fall risks effectively.

CONCLUSIONS AND RECOMMENDATIONS

The patient safety program at Muhammadiyah General Hospital, North Sumatra, still faces challenges, particularly in patient identification, communication, and fall prevention. Issues such as detached newborn wristbands, medication errors, and patient elopement highlight gaps in supervision and coordination. While infection control is well-implemented, improvements are needed in medication administration accuracy and environmental safety to reduce fall risks. Strengthening SOP adherence, staff training, and supervision is essential to enhance overall patient safety.

ADVANCED RESEARCH

Still conducting further research to find out more about Analysis of Patient Safety Program Implementation in OB/GYN Specialist Services at the Inpatient Unit of Khadijah Muhammadiyah General Hospital, North Sumatera

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