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| RESEARCH ARTICLE

Streamlining Clinical Endorsement: Electronic Sbar-Integrated Clinical Handover Management Framework

Marc Patrich R. Sanchez
South General Hospital, City of Naga
Corresponding Author: Marc Patrich R. Sanchez**E-mail**: marcpatrich02@yahoo.com

| ABSTRACT

This study aimed to develop an electronic Situation–Background–Assessment– Recommendation (e-SBAR) system framework for nurses at South General Hospital, City of Naga. It employed a descriptive–comparative research design to assess nurses' perceptions and challenges in implementing the manual SBAR tool and to identify key system features necessary for digital transition. The research was conducted at South General Hospital, a tertiary Level II facility under the CebuDoc Group. Using total sampling, the study involved fifty-five (55) nurse respondents across departments, namely Outpatient, Pediatrics, Emergency Room, Operating Room, Medical–Surgical Ward, Intensive Care Unit, and OB-Gyne Ward, along with selected information technology experts. Data were gathered through two researcher-developed instruments the SBAR Perceptions and Challenges Questionnaire and the SBAR System Features Checklist. Findings revealed that while SBAR was moderately practiced across departments, several operational challenges persisted, particularly time pressure, workload, and contextual limitations. The study concluded that digital standardization through an e-SBAR system could improve communication accuracy, patient safety, and workflow efficiency. It was strongly recommended that South General Hospital adopt and implement the proposed electronic SBAR system framework as a hospital-wide tool for clinical handover.

| KEYWORDS

SBAR Communication Tool, Nurse Handover, Patient Safety, Communication Barriers

| ARTICLE INFORMATION

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Introduction

Effective communication is a fundamental requirement in delivering safe, high-quality patient care. In hospital settings, especially during patient handovers, communication errors can result in adverse events, medication mistakes, and reduced patient satisfaction. The SBAR (Situation-Background-Assessment-Recommendation) communication tool has become a globally recognized strategy to improve information transfer by offering a standardized framework that ensures essential data is shared in a concise and structured manner (Muller et al., 2022). Particularly among nurses, the SBAR method supports consistent and clear communication during shift changes, critical incidents, and physician updates (Kwame & Petrucka, 2021).

At South General Hospital in the City of Naga, the traditional manual implementation of SBAR remains the standard practice for nurse handovers. However, global and regional research suggests that manual SBAR documentation can be hindered by various factors such as time constraints, incomplete reporting, and lack of standardization (Caruso et al., 2022). Inconsistencies in handover communication can lead to gaps in patient care, delayed interventions, and increased nurse workload. According to Antony et al. (2023), transitioning from unstructured or semi-structured handover methods to more systematic tools like SBAR significantly reduces information loss and boosts communication accuracy.

Advancements in digital healthcare tools offer opportunities to modernize the SBAR framework through electronic systems. Implementing an electronic SBAR (e-SBAR) can improve clarity, documentation traceability, and integration with hospital information systems (Kavosi et al., 2021). Electronic tools, when designed with clinical workflows in mind, also help nurses save time and reduce cognitive load during patient transitions. For instance, Nguyen et al. (2023) found that digital SBAR tools led to improved documentation quality and handover satisfaction among nurses in a tertiary hospital in Vietnam. However, the successful implementation of digital systems in clinical practice is influenced by multiple factors including staff readiness, digital literacy, perceived usefulness, and system usability (Al-Kahtani et al., 2022). In settings like South General Hospital where digital transformation is emerging but not yet widespread assessing the acceptability and feasibility of e-SBAR is essential. Understanding the perspectives of the nurses, who are the primary users of handover systems, is key to ensuring adoption and sustainability of such tools (Lim et al., 2020).

This study seeks to evaluate the current practices and challenges of manual SBAR among nurses and assess the potential of transitioning to an e-SBAR framework. By analyzing the demographic profiles, perceptions, and contextual barriers faced by nurses, the study aims to inform the design of a localized, nurse-centered action plan for SBAR system implementation. Such an approach aligns with recent efforts to improve patient safety through technology-driven communication strategies, especially in low- and middle-income healthcare contexts. This research will contribute to improving clinical communication practices in low-resource settings and serve as a reference for similar regional hospitals aiming to implement digital tools. Focusing on both the human factors and systemic factors, the study will help bridge the gap between SBAR theory and sustainable practice. Ultimately, this work aligns with global patient safety goals and WHO recommendations on improving handover communication through structured, reliable methods.

Review of related Literature

Effective communication during patient handovers is a critical determinant of care continuity and patient safety, particularly in nursing practice. The SBAR (Situation-Background-Assessment-Recommendation) framework has been widely adopted as a structured communication tool that enhances information clarity, reduces misunderstandings, and supports clinical decision-making. Evidence from a systematic review by Sundler et al. (2021) emphasized that SBAR improves the quality of verbal communication among nurses by providing a common language for conveying patient conditions, leading to better situational awareness and fewer communication breakdowns. In a randomized controlled trial conducted in Korea, Kim and Yoo (2020) found that nurses trained in SBAR showed significantly higher communication competence and confidence, particularly during emergency situations. Additionally, a qualitative study by Randmaa et al. (2021) reported that SBAR helped improve the safety climate and interpersonal dynamics in surgical departments, although challenges such as time pressure and inconsistent application remained prevalent.

To address these limitations, healthcare institutions have begun integrating SBAR into digital systems, aiming to standardize and automate the handover process. Recent studies have shown that electronic SBAR (e-SBAR) tools contribute to better documentation, streamlined workflows, and improved information retention. For instance, Cato et al. (2021) evaluated the implementation of an e-SBAR application in a U.S. academic medical center and found improvements in the completeness of handoff reports and nurse satisfaction. In a separate study in Malaysia, Zakaria et al. (2022) demonstrated that introducing an electronic nursing handover system using SBAR principles reduced the duration of handovers and increased perceived communication accuracy. However, successful implementation of such systems depends on user acceptance, training, and organizational readiness. A study by Guo et al. (2020) using the Technology Acceptance Model (TAM) framework revealed that nurses' perceived usefulness and ease of use significantly influenced their willingness to adopt digital communication tools in Chinese hospitals. These findings underscore the importance of assessing institutional context and user readiness when transitioning from manual to electronic SBAR systems, especially in low-resource settings.

Methodology

This study employed a descriptive–comparative research design to examine the current manual implementation of the SBAR (Situation–Background–Assessment–Recommendation) handover tool among nurses at South General Hospital. The design aimed to describe existing practices and compare differences in nurses' perceptions and implementation challenges across departments. This design is appropriate for identifying variations among naturally occurring groups without manipulating variables, allowing for meaningful comparisons across organizational units (Polit & Beck, 2021). The respondents were nurses assigned across seven major departments of South General Hospital: The Outpatient Department, Pediatrics Ward, Emergency Room, Operating Room, Medical–Surgical Ward, Intensive Care Unit, and OB-Gyne Ward. The study also included IT experts for input on system design features. Respondent characteristics such as age, gender, educational attainment, years of nursing experience, department assignment, work shift, and SBAR-related training were documented. Two researcher-developed survey instruments were used. One questionnaire gathered nurses' perceptions of manual SBAR practices and implementation challenges, while the second assessed the acceptability and system design requirements for an electronic SBAR (e-SBAR) system, with IT experts responding

specifically to technical dimensions. Both instruments underwent expert validation by professionals in nursing, healthcare management, and information technology to ensure content relevance and clarity. A pilot test was conducted to assess reliability, and feedback informed minor revisions for clarity and accuracy. Data were analyzed using descriptive statistics to summarize responses and inferential statistics (e.g., bivariate correlation and group comparison tests) to identify significant relationships, with all tests conducted at a 0.05 level of significance.

Results

Table 1. Department Assigned

Department Assigned	Frequency	Percentage	Rank
Outpatient Department	11	20.00%	1
Pediatrics Ward	11	20.00%	1
Emergency Room	9	16.36%	2
Operating Room	7	12.73%	3
Medical–Surgical Ward	7	12.73%	3
Intensive Care Unit	5	9.09%	4
OB-Gyne Ward	5	9.09%	4

Table 1 presents the distribution of respondents based on their department assignment. The highest number of respondents were from the Outpatient Department and Pediatrics Ward, each comprising 20% of the total sample. The Emergency Room followed with 16.36%, while the Operating Room and Medical–Surgical Ward each accounted for 12.73%. The Intensive Care Unit and OB-Gyne Ward had the fewest respondents, both with 9.09%. This distribution indicates a balanced representation across key clinical areas within South General Hospital.

Table 2. Nurses Responses on Clarity of information

	Indicators	Mean	Median	StDev	Interpretation
1.	The SBAR tool helps me present patient information clearly and in an organized manner.	2.91	3.00	0.82	Moderately practiced
2.	SBAR reduces ambiguity and misunderstanding during communication.	3.02	3.00	0.83	Moderately practiced
3.	Using SBAR improves the precision of the information I deliver.	2.84	3.00	0.86	Moderately practiced
4.	SBAR helps me focus only on the most relevant patient details.	2.82	3.00	0.75	Moderately practiced
5.	The information conveyed through SBAR is easy for other healthcare staff to understand.	2.93	3.00	0.77	Moderately practiced
	Aggregate Mean:	2.90	3.00	0.81	Moderately practiced

The data show that nurses perceive the SBAR tool as moderately practiced across various communication indicators. The highest mean score (3.02) was for reducing ambiguity and misunderstanding, indicating that SBAR is valued for improving clarity. Other indicators, such as focusing on relevant patient details (mean = 2.82) and improving information precision (mean = 2.84), were also rated moderately. The aggregate mean of 2.90 confirms that while SBAR is used, there is room to strengthen its consistent application in practice.

Table 3. Nurses Responses on the Accuracy of Handover

	Indicators	Mean	Median	StDev	Interpretation
1.	SBAR helps me provide complete patient information during handovers.	3.02	3.00	0.83	Moderately practiced
2.	The use of SBAR minimizes errors when transferring patient information.	3.02	3.00	0.78	Moderately practiced
3.	SBAR ensures that important patient details are not overlooked.	2.98	3.00	0.81	Moderately practiced
4.	Using SBAR increases the reliability of information shared during shift changes.	3.04	3.00	0.82	Moderately practiced
5.	SBAR supports consistency and correctness in patient handover communication.	3.16	3.00	0.79	Moderately practiced
	Aggregate Mean:	3.04	3.00	0.81	Moderately practiced

Table 3 shows that nurses moderately practice SBAR in ensuring the accuracy of patient handovers, with an aggregate mean of 3.04. The highest-rated item was SBAR's support for consistency and correctness (3.16), while the lowest was its ability to ensure important details are not overlooked (2.98). Nurses also agreed that SBAR helps minimize errors and increase reliability during shift changes. These findings suggest that while SBAR is generally applied, accuracy can be further improved through additional training and consistent reinforcement.

Table 4. Nurses Responses on efficiency of use

	Indicators	Mean	Median	StDev	Interpretation
1.	SBAR helps me communicate patient information more quickly.	2.93	3.00	0.84	Moderately practiced
2.	Using SBAR saves time during patient handovers.	3.07	3.00	0.84	Moderately practiced
3.	SBAR allows me to organize information more efficiently.	2.96	3.00	0.82	Moderately practiced
4.	Using SBAR reduces unnecessary repetition in communication.	2.94	3.00	0.87	Moderately practiced
5.	SBAR streamlines the handover process, making it more effective.	3.00	3.00	0.86	Moderately practiced
	Aggregate Mean:	2.98	3.00	0.85	Moderately practiced

Table 4 shows that nurses moderately practice SBAR in promoting efficiency during patient handovers, with an aggregate mean of 2.98. The highest-rated item was that SBAR saves time during handovers (3.07), suggesting that nurses recognize its value in streamlining shift transitions. This was followed by SBAR's role in organizing information efficiently (2.96) and reducing unnecessary repetition (2.94). Nurses also moderately agreed that SBAR helps in communicating patient information more quickly (2.93) and making the handover process more effective (3.00). These findings indicate that SBAR contributes to improving workflow and reducing time spent during handovers. However, to maximize its benefits, hospitals may consider reinforcing proper usage through structured training and regular evaluation of SBAR application in clinical settings.

Table 5. Nurses Responses on Impact on Patient Safety

Indicators	Mean	Median	StDev	Interpretation
1. SBAR reduces the risk of errors that may compromise patient safety.	2.98	3.00	0.83	Moderately practiced
2. The use of SBAR promotes safer transitions of care between nurses.	3.09	3.00	0.80	Moderately practiced
3. SBAR helps prevent miscommunication that can affect patient outcomes.	3.11	3.00	0.85	Moderately practiced
4. Using SBAR improves patient safety during handovers.	3.00	3.00	0.79	Moderately practiced
5. SBAR enhances communication accuracy, leading to safer clinical practice.	2.98	3.00	0.87	Moderately practiced
Aggregate Mean:	3.03	3.00	0.83	Moderately practiced

Table 5 shows that nurses moderately practice SBAR in relation to its impact on patient safety, with an aggregate mean of 3.03. The highest-rated item was SBAR's ability to prevent miscommunication that can affect patient outcomes (3.11), followed by its promotion of safer transitions of care between nurses (3.09). The use of SBAR to improve patient safety during handovers (3.00) and reduce the risk of errors (2.98) was also acknowledged. Additionally, nurses agreed that SBAR enhances communication accuracy, contributing to safer clinical practices (2.98). These findings suggest that while SBAR is seen as beneficial in maintaining patient safety, there is a need for continuous training and reinforcement to ensure more consistent and effective implementation across all departments.

Table 6 indicates that nurses moderately practice SBAR in terms of ease of use, with an aggregate mean of 3.12. The highest-rated item was the statement "I find SBAR easy to understand and follow" (3.33), suggesting strong agreement on its clarity and user-friendliness.

Table 6. Nurses Responses on Ease of Use

Indicators	Mean	Median	StDev	Interpretation
1. SBAR is simple to apply during patient handovers.	3.07	3.00	0.81	Moderately practiced
2. I find SBAR easy to understand and follow.	3.33	3.00	0.70	Highly practiced
3. Using SBAR does not add unnecessary difficulty to my work.	3.13	3.00	0.82	Moderately practiced
4. SBAR can be easily adapted to different clinical situations.	3.09	3.00	0.78	Moderately practiced
5. The SBAR format is practical and user-friendly for daily practice.	3.00	3.00	0.79	Moderately practiced
Aggregate Mean:	3.12	3.00	0.78	Moderately practiced

Other indicators, such as SBAR not adding unnecessary difficulty (3.13), its adaptability to clinical situations (3.09), and simplicity during handovers (3.07), were also moderately rated. The item "The SBAR format is practical and user-friendly for daily practice" received a slightly lower but still moderate score (3.00). Overall, these findings imply that SBAR is generally perceived as an accessible and manageable tool, though further support and orientation may enhance its consistent use across clinical settings.

Table 7. Nurses Responses on Confidence in Communication

	Indicators	Mean	Median	StDev	Interpretation
1.	Using SBAR increases my confidence when delivering patient information.	2.84	3.00	0.88	Moderately practiced
2.	SBAR helps me communicate more assertively with other healthcare professionals.	3.07	3.00	0.88	Moderately practiced
3.	I feel more prepared and assured when using SBAR during handovers.	2.86	3.00	0.85	Moderately practiced
4.	SBAR strengthens my ability to convey critical information clearly.	2.93	3.00	0.88	Moderately practiced
5.	I am more confident in my communication skills when applying SBAR.	2.78	3.00	0.85	Moderately practiced
	Aggregate Mean:	2.90	3.00	0.87	Moderately practiced

Table 7 shows that nurses moderately practice SBAR in relation to improving their confidence in communication, with an aggregate mean of 2.90. The highest-rated item was that SBAR helps nurses communicate more assertively with other healthcare professionals (3.07), indicating that the tool supports professional interactions. Other indicators, such as strengthening the ability to convey critical information clearly (2.93) and feeling more prepared during handovers (2.86), were also rated moderately. The lowest score was for the statement "I am more confident in my communication skills when applying SBAR" (2.78). These findings suggest that while SBAR positively influences communication confidence, ongoing support and targeted training may be necessary to further strengthen nurses' assurance when using the tool in practice.

Table 8. Challenges of Nurses in Implementing SBAR Tool

	Indicators	Mean	Median	StDev	Interpretation
A.	Time Pressure	2.47	2.40	0.52	Less problematic
B.	Workload	2.57	2.80	0.52	Moderately problematic
C.	Unfamiliarity	2.57	2.60	0.55	Moderately problematic
D.	Resistance to Change	2.57	2.60	0.53	Moderately problematic
E.	Contextual Limitations	2.97	3.00	0.80	Moderately problematic
	Aggregate Mean:	2.97	3.00	0.80	Moderately problematic

Table 8 presents the challenges nurses face in implementing the SBAR tool. The results show that most challenges were perceived as moderately problematic, with an aggregate mean of 2.97. The most notable challenge was contextual limitations (2.97), indicating that environmental and institutional factors may hinder effective SBAR usage. Workload, unfamiliarity, and resistance to change each had identical mean scores (2.57), suggesting these are common but moderate barriers. In contrast, time pressure was perceived as the least problematic factor (2.47), indicating that nurses may still manage SBAR use within limited time. Overall, while SBAR is practiced, its implementation is affected by several organizational and behavioral challenges, highlighting the need for structural support and continuous professional development initiatives.

	Indicators	Mean	Median	StDev	Interpretation
A.	Documentation and Time Management Issues	3.37	3.00	0.81	High
B.	Communication Gaps	3.05	3.00	0.83	Moderate
C.	Human Behavior Factors	2.94	3.00	0.81	Moderate
D.	Systemic and Institutional	3.03	3.00	0.81	Moderate

	Constraints				
E.	Patient Safety Implications	2.97	3.00	0.80	Moderate
	Aggregate Mean:	3.07	3.00	0.81	Moderate

Table 9. Issues of Nurses in Implementing the Manual SBAR Tool

Table 9 highlights the issues encountered by nurses in implementing the manual SBAR tool, with an aggregate mean of 3.07, indicating a moderate level of concern overall. The most prominent issue was documentation and time management (3.37), suggesting that manual SBAR processes may add to nurses' workload and time pressure. Other issues such as communication gaps (3.05), systemic and institutional constraints (3.03), patient safety implications (2.97), and human behavior factors (2.94) were all rated as moderately problematic. These findings suggest that while SBAR is beneficial, its manual implementation is hindered by both individual and systemic factors. Addressing these concerns is essential to improve the efficiency and safety of handover practices, especially before transitioning to an electronic SBAR system.

Table 10. Significant Mean Difference When Grouped by Nurses' Department of Assignment

Significant Mean Difference When Grouped by Nurses' Department of Assignment	F-Value	P-Value	Significance	Result
Perceptions of Manual Practices of the SBAR Tool	1.14	0.35	Not significant	Ho accepted
Degree of Challenges the Respondents' Experience in the Implementation of the SBAR Tool	0.41	0.87	Not significant	Ho accepted

Table 10 presents the test of significant mean differences in nurses' perceptions and challenges regarding SBAR implementation when grouped by department of assignment. Results show that there was no statistically significant difference in the perceptions of manual SBAR practices across departments, with an F-value of 1.14 and a p-value of 0.35. Similarly, the degree of challenges experienced also showed no significant difference ($F = 0.41$; $p = 0.87$). In both cases, the null hypothesis was accepted, indicating that regardless of their clinical area, nurses shared similar experiences and views on SBAR use. This suggests that challenges and perceptions of the manual SBAR system are consistent throughout the hospital and are not influenced by departmental assignment.

Table 11. Acceptability of the SBAR System

	Indicators	Mean	Median	StDev	Interpretation
A.	Perceived Ease of Use	3.48	3.40	0.51	Strongly agree
B.	Perceived Usefulness	3.56	3.80	0.51	Strongly agree
C.	Attitude Towards Using the SBAR System Implementation	3.36	3.20	0.48	Strongly agree
	Aggregate Mean :	3.47	3.47	0.50	Strongly agree

The results show that nurses expressed a high level of acceptability toward the implementation of the SBAR system, with an aggregate mean of 3.47, interpreted as "strongly agree." The highest-rated dimension was Perceived Usefulness (3.56), indicating that nurses recognize the potential of the SBAR system to enhance communication and patient safety. Perceived Ease of Use also received a strong rating (3.48), reflecting confidence in the system's usability. Additionally, nurses demonstrated a positive attitude toward SBAR implementation (3.36), suggesting strong support for integrating the tool into their daily workflow. These findings highlight a readiness among nurses to adopt an electronic SBAR system, provided it aligns with their workflow and is supported through appropriate training and system integration.

Discussions

The findings of this study reveal that nurses moderately practice the SBAR communication tool in various aspects of clinical handover. SBAR was found to be particularly helpful in enhancing the accuracy of information exchange, promoting consistency, and minimizing errors during shift transitions. While nurses acknowledged its usefulness in organizing and conveying critical patient information, the tool was not consistently applied across all areas of practice. Its ease of use was generally affirmed, with respondents indicating that SBAR is simple, understandable, and adaptable to different clinical situations. However, confidence in communication, while supported by SBAR, remained moderate, suggesting that some nurses may still require further training to

fully utilize the tool in a way that builds assertiveness and assurance during handovers. Challenges in implementing the SBAR tool were mostly perceived as moderately problematic, with contextual and institutional limitations emerging as key barriers. Nurses cited issues related to time management, documentation workload, and systemic constraints as factors that hinder the optimal use of SBAR. Despite these challenges, no significant differences were found in the perceptions and experiences of nurses across various departments, indicating that the concerns surrounding SBAR are consistent throughout the hospital. This uniformity suggests a need for a system-wide response. Strengthening SBAR implementation through continuous training, streamlined documentation processes, and the development of an electronic SBAR (e-SBAR) system may help address existing limitations and enhance communication effectiveness, ultimately contributing to safer and more efficient patient care.

Conclusion

Based on the findings, it was concluded that the manual Situation–Background– Assessment–Recommendation (SBAR) system used by nurses at South General Hospital remained an effective tool for ensuring clear, accurate, and organized communication during patient handovers; however, its manual implementation was hindered by recurring challenges such as time constraints, heavy workload, unfamiliarity, and inconsistent unit practices. These barriers limited the tool's efficiency and sustainability, particularly in high-acuity departments. The study therefore affirmed the necessity of developing an electronic SBAR (e-SBAR) system framework to enhance communication efficiency, promote data accuracy, strengthen patient safety, and reduce documentation burden. By integrating usability, interoperability, and privacy- by-design principles, the proposed e-SBAR framework was envisioned as a practical solution to standardize handover practices and support a culture of safe, seamless, and technology-driven clinical communication across the hospital.

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