Original Article

Evaluation of the Situation-Background-Assessment-Recommendation method in the transfer of patients from the intensive care unit

Avaliação do método *Situation-Background-Assessment-Recommendation* na transferência de pacientes da unidade de terapia intensiva

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ABSTRACT

Objective: to evaluate the completion of the Situation-Background-Assessment-Recommendation tool in the transfer of patients from the intensive care unit to wards. **Methods:** cross-sectional study. Medical records of patients transferred from the intensive care unit to the wards were analyzed. For data analysis, absolute and percentage frequencies, mean, and standard deviation were measured, and Fisher's exact test and Wilcoxon's test were applied. **Results:** 60 medical records were included. It was observed that important information, such as vital signs, presence of invasive devices, and clinical assessment, was often not recorded. Most of the transferred patients had complex conditions such as sepsis and multiple comorbidities, which were related to pending issues at discharge. **Conclusion:** the completion of the Situation-Background-Assessment-Recommendation tool during the transfer of patients from the Intensive Care Unit to the wards revealed gaps, mainly in fields related to vital signs, invasive devices, and pending care. These fields had the highest frequency of incomplete or missing records in the assessments performed. **Contributions to practice:** the findings contribute to clinical practice by highlighting specific areas that require attention, enabling nursing teams to identify and correct communication process flaws.
Descriptors: Nursing, Team; Critical Care; Patient Transfer; Hospital Communication Systems; Patient Safety.

RESUMO

Objetivo: avaliar o preenchimento da ferramenta *Situation-Background-Assessment-Recommendation* na transferência de pacientes da unidade de terapia intensiva para enfermarias. **Métodos:** estudo de corte transversal. Foram analisados prontuários de pacientes transferidos da unidade de terapia intensiva para as enfermarias. Para a análise de dados, foram mensuradas as frequências absolutas e percentuais, média e desvio-padrão. Foram aplicados o teste exato de Fisher e o teste de Wilcoxon. **Resultados:** foram incluídos 60 prontuários. Observou-se que informações importantes, como sinais vitais, presença de dispositivos invasivos e avaliação clínica, frequentemente não eram registradas. A maioria dos pacientes transferidos apresentava condições complexas como sepse e múltiplas comorbidades, o que esteve relacionado a pendências na alta. **Conclusão:** revelou-se que o preenchimento da ferramenta *Situation-Background-Assessment-Recommendation* durante a transferência de pacientes da Unidade de Terapia Intensiva para as enfermarias apresenta lacunas, principalmente nos campos relacionados aos sinais vitais, dispositivos invasivos e pendências assistenciais. Esses campos foram os mais frequentemente incompletos ou ausentes nas avaliações realizadas. **Contribuições para a prática:** os achados contribuem para a prática clínica ao sinalizar pontos específicos que precisam de atenção, possibilitando que as equipes de enfermagem identifiquem e corrijam falhas nos processos de comunicação.
Descritores: Equipe de Enfermagem; Cuidados Críticos; Transferência de Pacientes; Sistemas de Comunicação no Hospital; Segurança do Paciente.

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Introduction

Patient safety is a global public health priority, especially in the Intensive Care Unit (ICU), where interprofessional communication failures are the leading cause of adverse events. In this environment, effective communication is essential to reduce risks, minimize preventable harm, and improve the quality of care[1-5].

Characteristics of the ICU, such as the severity of patients' conditions and the use of complex technologies, can generate communication noise, making the handoff a critical moment. The handoff, or transfer of information, treatment, and responsibility for the patient between healthcare professionals, when performed systematically, promotes patient safety and prevents adverse events[5-7].

To mitigate failures in information transfer, the Situation, Background, Assessment, Recommendation (SBAR) mnemonic tool is widely used. Initially developed by the United States Navy and recommended by the Joint Commission International, SBAR standardizes communication, promoting clarity, accuracy, and consistency in the transfer of information. In addition, it helps overcome communication barriers between different professional and cultural profiles[8-12].

Patients transferred from the ICU have specific needs that require special attention from nurses, and the proper use of SBAR contributes to continuity of care and patient safety[1]. However, there is a lack of studies evaluating the completion of SBAR in this specific process.

Given this, this study aims to evaluate the completion of the Situation-Background-Assessment-Recommendation tool in the transfer of patients from the intensive care unit to wards.

Methods

Type of study, location, and population

This is a cross-sectional study conducted in the Intensive Care Unit (ICU) of the Walter Cantídio University Hospital, a large tertiary university hospital that provides care, teaching, and research. It is affiliated with the Federal University of Ceará, managed by the Brazilian Hospital Services Company, and part of the Unified Health System. The hospital offers care in various surgical and clinical specialties, such as anesthesiology/pain management, cardiology, general surgery, digestive surgery, neurosurgery, coloproctology, trauma and orthopedics, urology, and ophthalmology, among others. The institution has 197 infirmary beds, 8 operating rooms, 6 recovery rooms, 4-day hospital beds, and 16 ICU beds.

The data were compiled from the medical records of patients aged 18 years or older who were transferred from the ICU to the wards between July 2022 and March 2023. This interval was defined because, previously, the SBAR tool was not completed at the research site. The study was conducted between March and December 2023.

Inclusion and exclusion criteria

The inclusion criteria were medical records of patients aged 18 years or older with the SBAR tool attached, as well as medical records of patients transferred from the clinical ICU to the wards during the specified period. Medical records of patients transferred to another healthcare facility were excluded from the analysis.

Data collection

Information on patients discharged from the ICU between July 2022 and March 2023 was collected by two nurse researchers using a spreadsheet available at the ICU office. Physical and electronic medical records were used to locate the SBAR instrument, group the data, and verify the last nursing assessment of the discharge unit and the first nursing assessment of the destination unit. Additional notes were also reviewed to identify any complications that may have

occurred during transport or upon arrival at the destination unit. The data collection instrument was developed by researchers in a *Microsoft Office Excel* 2019 spreadsheet.

The SBAR tool evaluated is structured based on the following information: 1. Identification (patient name, sector, date of admission, medical record number, date of birth, and age), 2. Situation (hypothesis/diagnosis, type of isolation, medications in use, identification bracelet, neurological assessment, ventilatory support, cardiovascular support, diet, venous access, skin and mucous membranes, bladder and bowel movements), 3. Brief history (background, ongoing cultures, COVID-19 testing, allergies, and presence of yellow bracelet if allergic, hemovigilance, and presence of red bracelet if applicable), sepsis protocol in the last 24 hours, 4. Assessment (hemodynamic stability and vital signs), 5. Recommendations (pending issues). Also, information about the discharge unit and destination, as well as the departure and arrival times, date, and the nurses involved in the process, must be provided.

The following variables from the SBAR instrument were collected: age, gender, length of stay in intensive care, prevalent diagnoses, isolation due to multidrug-resistant organisms, antibiotics, sepsis protocol, ventilatory support, cardiovascular changes, neurological assessment, stability, skin color, diet, venous catheter, hemovigilance, vital signs, pending issues, complications during transport, complications at the destination unit, and number of comorbidities. After collecting the data from the sources, the information was transcribed into the data collection instrument, which contained the variables mentioned above.

Data analysis

The data were analyzed using RStudio software version 2022.07.0, where absolute and relative frequencies, as well as the mean and standard deviation, were measured. In addition, Fisher's exact test and the Wilcoxon-Mann-Whitney test were used to analyze the association between the variables of interest, with a 5% level of statistical significance adopted. The Wilcoxon-Mann-Whitney test was used because the comorbidities variable did not follow a normal theoretical distribution, as determined by the Shapiro-Wilk test.

Ethical aspects

The research followed the recommendations of Resolution No. 466, dated December 12, 2012, on Research Involving Human Beings, issued by the National Health Council. This resolution establishes that all research involving human beings must be submitted to a local Research Ethics Committee for evaluation. Thus, this research was approved by the Ethics and Research Committee of the Walter Cantídio University Hospital of the Federal University of Ceará (Opinion 5,951,356/2023 and Certificate of Ethical Review No. 67622523.0.0000.5045).

Results

Between July 2022 and March 2023, a total of 85 patients were discharged from the intensive care unit. It was observed that in 15 medical records, it was not possible to locate the SBAR tool, even after verification by two independent researchers. Additionally, nine medical records could not be consulted because they were not made available for review by the medical records department, despite multiple requests. One medical record was excluded because the patient was transferred to another hospital. Thus, 60 medical records were included in this study.

Regarding the age group of patients, 27 (45%) were over 60 years old, 19 (32%) were between 41 and 59 years old, and 14 (23%) were up to 40 years old. Among the patients included, 34 (57%) were male. As for the length of stay in the intensive care unit, 31 (52%) patients remained between 11 and 30 days. Regarding the most frequent diagnoses, 25

(42%) patients were diagnosed with sepsis and septic shock, eight (13%) with acute pulmonary edema, and eight (13%) with respiratory failure. Concerning the number of comorbidities, 17 (28%) patients had only one comorbidity, while 12 (20%) had two, and 10 (17%) had three. It is noteworthy that 19 (31.7%) patients had between four and nine comorbidities, and only two (3.3%) had no previous diseases. In addition, 21 (35%) of the patients were isolated due to the presence of multidrug-resistant germs, and 43 (71%) undergoing antibiotic treatment at the time of discharge.

Regarding clinical assessment, 39 (65%) were conscious and oriented, 35 (58%) had standard skin color, and 50 (84%) did not require ventilatory support. In addition, 43 (72%) had no cardiovascular system-related changes, 28 (47%) were fed orally, while 25 (42%) were fed through enteral tubes. It is noteworthy that 46 (77%) patients had a central venous catheter even after discharge from the intensive care unit. Regarding post-transfusion care, only three (4.3%) patients required hemovigilance. It is important to note that no patients were discharged from intensive care with an active sepsis protocol. Only one patient was transferred while using vasoac-tive drugs, as he was in a context of therapeutic limitation, with no indication for dose increase or other invasive interventions.

It was found that 11 (19%) patients had pending issues at the time of discharge from intensive care, including tests, specialist opinions, reports on previous tests, the need for aspiration due to hypersecretion, and blood transfusions. Regarding complications during or after transport, only one occurrence was recorded, representing 1.7% of the total, which was an episode of hypoxemia that required the installation of a Venturi mask for ventilatory support. The variables that characterize the patient who suffered the complication include age over 60 years, length of stay in the ICU between 11 and 30 days, diagnosis of septic shock, presence of three comorbidities, isolation due to multidrug-resistant germs, presence of cardiovascular changes, and zero diet.

The following tables present the statistical tests conducted, relating the instrument variables to the absence of vital sign data and the presence of pending issues. I want to inform you that the varying values of n indicate an incomplete completion of the instrument by the professionals, resulting in different numbers for each variable.

Table 1 – Comparison between Situation-Background-Assessment-Recommendation variables and failure to fill in vital signs. Fortaleza, CE, Brazil, 2025

Variables	Total*	Total	Data not filled in (n=9)	Completed data (n=37)	p-value†
		n (%)	n (%)	n (%)	
Age (years)	46				0.806
>60		20 (43.0)	5 (56.0)	15 (41.0)	
41-59		14 (30.0)	2 (22.0)	12 (32.0)	
Up to 40		12 (26.0)	2 (22.0)	10 (27.0)	
Gender	46				0.464
Female		22 (48.0)	3 (33.0)	19 (51.0)	
Male		24 (52.0)	6 (67.0)	18 (49.0)	
Length of stay in intensive care (days)	46				0.459
1-10		23 (50.0)	6 (67.0)	17 (46.0)	
11-30		23 (50.0)	3 (33.0)	20 (54.0)	
Prevalent diagnoses					
Sepsis	46	13 (28.0)	1 (11.0)	12 (32.0)	0.410
Sepsis + septic shock	46	17 (37.0)	2 (22.0)	15 (41.0)	0.450
Acute pulmonary edema	46	7 (15.0)	2 (22.0)	5 (14.0)	0.609
Multidrug-resistant germ isolation	44	13 (30.0)	1 (13.0)	12 (33.0)	0.402
Antibiotic	45	33(73.0)	8 (89.0)	25 (69.0)	0.407
Sepsis protocol	32	0 (0)	0 (0)	0 (0)	

*Medical records with Situation-Background-Assessment-Recommendation; †Wilcoxon rank sum test

Table 2 – Comparison between Situation-Background-Assessment-Recommendation variables and failure to fill in vital signs. Fortaleza, CE, Brazil, 2025

Variables	Total*	Total	Data not filled in (n=9)	Completed data (n=37)	p-value†
		n (%)	n (%)	n (%)	
Ventilatory support	44	8 (18.0)	0 (0)	8 (22.0)	0.318†
Cardiovascular changes	46	12 (26.0)	0 (0)	12 (32.0)	0.086†
Neurological assessment	46				0.530†
Stability	45	45 (100.0)	8 (100.0)	37 (100.0)	
Skin color	40				0.707‡
Hypo colored		17 (43.0)	3 (33.0)	14 (45.0)	
Norm colored		23 (58.0)	6 (67.0)	17 (55.0)	
Diet	43				0.172†
Enteral		18 (42.0)	1 (13.0)	17 (49.0)	
Parenteral		4 (9.3)	1 (13.0)	3 (8.6)	
Oral		20 (47.0)	6 (75.0)	14 (40.0)	
Zero		1 (2.3)	0 (0)	1 (2.9)	
Venous catheter	46				0.677†
Central		36 (78.0)	7 (78.0)	29 (78.0)	
Peripheral		7 (15.0)	1 (11.0)	6 (16.0)	
No venous catheter		1 (2.2)	0 (0)	1 (2.7)	
Not filled		2 (4.3)	1 (11.0)	1 (2.7)	
Hemovigilance	35	2 (5.7)	0 (0)	2 (6.7)	>0.999†

*Medical records with *Situation-Background-Assessment- Recommendation*; †Fisher's exact test; ‡Wilcoxon rank sum test

Table 3 – Comparison between the Situation-Background-Assessment-Recommendation variables and the existence of pending issues. Fortaleza, CE, Brazil, 2025

Variables	Total*	Total	Data not filled in (n=48)	Completed data (n=11)	p-value†
		n (%)	n (%)	n (%)	
Age (years)	59				0.164
>60		26 (44.0)	20 (42.0)	6 (55.0)	
41-59		19 (32.0)	18 (38.0)	1 (9.1)	
Up to 40		14 (24.0)	10 (21.0)	4 (36.0)	
Gender	59				>0.999
Female		26 (44.0)	21 (44.0)	5 (45.0)	
Male		33 (56.0)	27 (56.0)	6 (55.0)	
Length of stay in intensive care (days)	59				0.287
1-10		29 (49.0)	22 (46.0)	7 (64.0)	
11-30		30 (51.0)	26 (54.0)	4 (36.0)	
Prevalent diagnoses	59				
Sepsis	46	18 (31.0)	13 (27.0)	5 (45.0)	0.284
Sepsis + septic shock	46	24 (41.0)	19 (40.0)	5 (45.0)	0.745
Acute pulmonary edema	46	8 (14.0)	6 (13.0)	2 (18.0)	0.635
Multidrug-resistant germ isolation	56	19 (34.0)	17 (37.0)	2 (20.0)	0.467
Antibiotic	57	41 (72.0)	35 (76.0)	6 (55.0)	0.260
Sepsis protocol	42	0 (0)	0 (0)	0 (0)	

*Medical records with Situation-Background-Assessment-Recommendation; †Wilcoxon rank sum test

Table 4 – Comparison between the Situation-Background-Assessment-Recommendation variables and the existence of pending issues. Fortaleza, CE, Brazil, 2025

Variables	Total*	Total	Data not filled in (n=48)	Completed data (n=11)	p-value†
		n (%)	n (%)	n (%)	
Ventilatory support	57	9 (16.0)	7 (15.0)	2 (18.0)	>0.999†
Cardiovascular changes	59	17 (29.0)	11 (23.0)	6 (55.0)	0.062†
Neurological assessment	59				0.227‡
Stability	55	55 (100.0)	44 (100.0)	11 (100.0)	
Skin color	53				0.140†
Hypo colored		22 (42.0)	16 (36)	6 (67.0)	
Norm colored		31 (58.0)	28 (64)	3 (33.0)	
Diet	56				
Enteral		24 (43.0)	20 (44.0)	4 (36.0)	
Parenteral		4 (7.1)	3 (6.7)	1 (9.1)	
Oral		26 (46.0)	20 (44.0)	6 (55.0)	
Zero		2 (3.6)	2 (4.4)	0 (0)	
Venous catheter	59				0.677†
Central		46 (78.0)	38 (79.0)	8 (73.0)	
Peripheral		10 (17.0)	7 (15.0)	3 (27.0)	
No venous catheter		1 (1.7)	1 (2.1)	0 (0)	
Not filled		2 (3.4)	2 (4.2)	0 (0)	
Hemovigilance	46	2 (4.3)	1 (2.8)	1 (10.0)	0.391†

*Medical records with *Situation-Background-Assessment- Recommendation*; †Wilcoxon rank sum test; ‡Fisher's exact test

Table 5 – Comparison between Situation-Background-Assessment-Recommendation variables and failure to fill in vital signs/existence of pending items. Fortaleza, CE, Brazil, 2025

Variables	Total*	Total	Data not filled in (n=9)	Completed data (n=37)	p-value
		n (%)	n (%)	n (%)	
Lack of completion of vital signs					
Pending issues	46	9 (20.0)	1 (11.0)	8 (22.0)	0.664†
Transportation complications	46	0 (0)	0 (0)	0 (0)	
Complications at the destination unit	46	1 (2.2)	0 (0)	1 (2.7)	>0.999‡
Number of comorbidities	46	3.0 ~ 4.0§	5.0 ~3.0§	2.5 ~ 3.0§	0.117†
Pending||					
Vital signs	46	37 (80.0)	29 (78.0)	8 (89.0)	0.664†
Transportation complications	59	1 (1.7)	1 (2.1)	0 (0)	>0.999‡
Complications at the destination unit	59	1 (1.7)	1 (2.1)	0 (0)	>0.999‡
Number of comorbidities	59	3 ~ 2.5§	2.5 ~ 3.0§	4.0 ~ 3.5§	0.035†

*Medical records with Situation-Background-Assessment- Recommendation; †Wilcoxon rank sum test; ‡Fisher's exact test; §Median ~ Interquartile range; ||n=11 for filled data and n=48 not filled in

It was found that, in 14 cases, vital signs were not recorded by the patient's discharge unit. Table 5 shows that the variable "number of comorbidities" was statistically significant (p=0.035). Patients with pending issues had more comorbidities compared to those without pending issues. The group with pending issues had an average of 49.6 posts, while the group without pending issues had an average of 25.5 posts. These data indicate a higher prevalence of comorbidities in patients with incomplete records.

Discussion

In this study, we evaluated the completion of the SBAR tool in transferring patients from the ICU to the wards. The analysis of Tables 1, 2, and 5 revealed flaws in the recording of some variables, primarily vital signs, which were a recurring issue in the medical records. This data is concerning, considering that intra-hospital transport represents a critical moment with potential for complications in 40-70% of cases. Therefore, proper verification and recording of vital signs before transfer are essential for predicting complications and legally protecting the professionals involved. Furthermore, these complications are less frequent in institutions where trained intensive care nurses coordinate patient transport[13-15].

In addition, the length of stay of patients in the ICU ranged from 11 to 30 days, which corroborates information reporting averages between 11 and 23 days. This data reinforces the importance of SBAR as a tool to support epidemiological analysis and clinical decision-making, aiming, for example, to reduce the length of hospital stay. It is worth noting that both the average length of stay and the bed turnover rate are key indicators of hospital performance. Prolonged stays in intensive care can have negative consequences, including an increased risk of infections and other complications[13-14].

Diagnoses, sepsis, and septic shock were the main reasons for admission to the ICU. This finding is consistent with national data, where mortality from sepsis can reach 55%, making it the leading cause of death in intensive care units. In addition, in the United States, sepsis surpasses acute myocardial infarction and stroke in the number of hospitalizations, accounting for up to half of ICU deaths and occupying approximately one-third of intensive care beds[16].

Another relevant aspect was the statistically significant association between the number of comorbidities and the presence of pending issues in completing the SBAR. Evidence shows that comorbidities such as advanced age, clinical severity, changes in level of consciousness, and the need for intensive support therapies are related to worse outcomes after discharge from the ICU. Given this, it is reinforced that the moment of the handoff is crucial, as it allows the team that will admit the patient to build an individualized care plan tailored to the needs of each patient[17].

When filling out the tool, it was also noteworthy that central venous catheters remained in place in 77% of patients discharged from the ICU. Several complications are associated with this device, including bloodstream infections, bleeding, and lumen obstruction. Thus, detailed recording of catheter-related information in SBAR, such as insertion time and adverse events, can contribute to the early identification of risks and the review of protocols and clinical practices, with a focus on patient safety[18-19].

In addition to clinical aspects, the importance of safe communication between healthcare teams during the transition of care is highlighted. When flaws exist in the standardization of the process and gaps occur in the completion of the SBAR, the risk of adverse events increases, and the continuity of care is compromised. In this sense, the use of the tool enhances the exchange of information between professionals and is associated with greater satisfaction with institutional guidelines and a lower incidence of complications[4,20].

Regarding complications during patient transport, the most frequent were related to the airways, including respiratory changes, hemodynamic changes, increased secretions, blockages or kinks in orotracheal and tracheostomy tubes, and the absence of complete clinical information. Such occurrences highlight the need for accurate and complete records at the time of transfer[21-22].

Additionally, it is essential to recognize that patients transferred from the ICU to the wards require more complex care than other hospitalized patients. It is well known that transfers carried out during the night or to unprepared sectors significantly increase the risk of readmissions and hospital mortality. In these situations, ward nurses report feeling insecure and stressed due to work overload, a lack of resources, and skill differences between sectors[23].

Thus, it is emphasized that the proper per-

formance of the handoff, even before the patient is transported, allows the receiving team to prepare in line with the needs of each case, ensuring better bed organization and greater safety in the process. Finally, the application of SBAR proves helpful in structuring and clarifying the information passed on, contributing to patient safety, the development of critical thinking among nurses, and the optimization of time during patient transfers from the ICU to the wards[24-25].

Study limitations

The limitations of this study are related to its cross-sectional design, which means that it was not possible to establish cause-and-effect relationships between the completion of the SBAR tool and the potential clinical outcomes of the patients. In addition, as the analysis was based exclusively on documentary records, there was a direct dependence on the quality of the records made by the nursing team. This may have resulted in incomplete or underreported information.

Another important point concerns the sample size, which was relatively small. For this reason, we chose not to perform prevalence measures or confidence interval estimates, as these calculations in contexts with little data could lead to inaccurate or biased statistical interpretations. To minimize potential distortions, data collection adhered to standardized criteria, with double-checking of information, and analysis was conducted independently by nurse researchers. Nevertheless, as this study was conducted in a single institution, the results should be interpreted with caution regarding their applicability in other settings.

Contributions to practice

The results of this study highlight weaknesses in the completion of the SBAR tool during patient transfers from the ICU to the wards, particularly in documenting information on critically ill patients. These findings contribute to clinical practice by identifying specific areas that require attention, enabling nursing teams to pinpoint and correct communication process flaws. By highlighting these gaps, the study provides support for improvements in institutional protocols, reinforcing the importance of systematic communication as a strategy to promote continuity and safety of care across different levels of care.

Conclusion

The present study revealed that the completion of the Situation, Background, Assessment, and Recommendation tool during the transfer of patients from the Intensive Care Unit to the wards presents gaps, mainly in fields related to vital signs, invasive devices, and pending care. These fields were the most frequently incomplete or missing in the assessments performed. It was also observed that incomplete completion was related to the number of comorbidities.

These findings indicate that, in the transfers evaluated, the *Situation, Background, Assessment, Recommendation* tool was not completed in full according to its structural components, which made it possible to identify weaknesses in intersectoral communication at the time of patient transfer from the Intensive Care Unit to the wards.

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Authors' contribution

Conception and design or analysis and interpretation of data; Writing of the manuscript or critical review of the intellectual content; Final approval of the version to be published; Agreement to be responsible for all aspects of the manuscript related to

accuracy or integrity being investigated and resolved appropriately: Lima DR, Holanda DRAR, Martins HKA, Soares CRS, Santos CPRS, Silva VM.

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