

# Implementing a Standardized Communication Tool in an Intensive Care Unit

Margaret Murphy, DNP, ACNP, CCNS, CCRN-CSC

Jill R. Engel, DNP, ACNP, FNP, NEA-BC

Lynn McGugan, DNP, RN, ACNP, CCRN-CSC

Rebecca McKenzie, DNP, RN

Julie A. Thompson, PhD

Kathleen M. Turner, DNP, RN

**BACKGROUND** Effective communication is essential in critical care settings. Use of the SBAR (Situation, Background, Assessment, Recommendation) tool has been shown to standardize and improve communication among health care providers.

**LOCAL PROBLEM** This quality improvement project was designed to improve communication in an intensive care unit that lacked a standardized communication protocol. Communication practices differed greatly between nurses and advanced practice providers. As a result, patient safety was put at risk owing to incomplete, inaccurate, or delayed information when clinical concerns were reported or escalated.

**METHODS** This project used a pre-post design in which surveys were used to gather information on staff perceptions of communication and collaboration between nurses and advanced practice providers before and after an educational intervention. The 2 groups received identical education on SBAR guidelines adapted for use in the intensive care unit setting and patient safety.

**RESULTS** Results showed improvement in all areas of communication. Significant improvements were found on the General Perceptions subscale among advanced practice providers ( $P = .04$ ) and among nurses ( $P = .007$ ). In the combined study population, improvements were observed on all subscales, with significant results for the Open Communication ( $P = .03$ ) and General Perceptions ( $P = .002$ ) subscales. A significant increase was found in the percentage of nurses using the SBAR tool after the intervention (95%) compared with before the intervention (66%;  $P < .001$ ).

**CONCLUSION** Implementation of the SBAR communication tool significantly improved general perceptions of communication in this intensive care unit. (*Critical Care Nurse*. 2022;42[3]:56-61)

## CE 1.0 hour, CERP C

This article has been designated for CE contact hour(s). The evaluation tests your knowledge of the following objectives:

1. Identify 3 characteristics of effective communication.
2. Describe 2 potential outcomes of poor communication among health care team members.
3. Describe the 4 key components of the SBAR (Situation, Background, Assessment, Recommendation) tool to facilitate communication.

To complete evaluation for CE contact hour(s) for activity C22433, visit [www.cconline.org](http://www.cconline.org) and click the "CE Articles" button. No CE fee for AACN members. This activity expires on June 1, 2024.

The American Association of Critical-Care Nurses is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation, ANCC Provider Number 0012. AACN has been approved as a provider of continuing education in nursing by the California Board of Registered Nursing (CA BRN), CA Provider Number CEP1036, for 1 contact hour.

©2022 American Association of Critical-Care Nurses doi:<https://doi.org/10.4037/ccn2022154>

**T**housands of people die annually in hospitals because of poor communication and teamwork skills among members of their health care team.<sup>1</sup> According to The Joint Commission, communication errors have been among the top 3 root causes of reported sentinel events every year since 2004, following human factors and organizational planning.<sup>2</sup> The intensive care unit (ICU) is a dynamic environment with rapidly changing priorities aligning with fluctuations in patient conditions. Effective communication among health care professionals in the ICU is imperative, with accurate and efficient interdisciplinary communication being a prerequisite to the delivery of high-quality care.<sup>3</sup>

The American Association of Critical-Care Nurses standards for a healthy work environment maintain that nurses should be as proficient in communication skills as they are in clinical skills.<sup>4</sup> Successful communication in critical care settings may save lives as well as time. In its 2020 Patient Safety Goals, The Joint Commission identified improved communication as a top priority.<sup>5</sup> The American Hospital Association and American of Nurse Executives recommend using evidence-based tools and resources for improving communication, teamwork, and collaboration among health care team members.<sup>6</sup>

Using standardized communication practices improves collaboration across health care teams. The

SBAR (Situation, Background, Assessment, Recommendation) tool is a structured communication tool that has been shown to reduce the incidence of adverse events in hospital settings. The tool is based on a conversation-framing technique that facilitates concise, predictable, and organized conversation, which is particularly useful in emergent situations.<sup>7</sup> This communication method can be used to make rapid decisions during critical events such as patient deterioration.<sup>8</sup> The SBAR tool has been recognized as an effective communication tool for health care providers by The Joint Commission, the Agency for Healthcare Research and Quality, the Institute for Healthcare Improvement (IHI), and the World Health Organization.<sup>6</sup> On its website, the Agency for Healthcare Research and Quality describes the SBAR tool and how to use it.<sup>9</sup> The SBAR tool has been recommended by the IHI and is 1 of 9 tools constituting its patient safety essentials toolkit.<sup>10</sup>

## Local Problem

The setting for this project was an ICU at a large academic medical center in the southeastern United States. The ICU is a 32-bed adult unit for patients who have undergone a variety of cardiac, aortic, lung, and esophageal surgical procedures. The ICU has a staff of approximately 180 bedside nurses, 20 intensivists, 20 advanced practice providers, 10 core team respiratory therapists, and 2 primary pharmacists providing around-the-clock care.

In this ICU, there was no standardized communication method used by nurses and advanced practice providers (APPs). Communication practices differed greatly between the 2 groups, and the nursing and APP staff members had reported communication between the 2 groups multiple times per shift. As a result, patient safety was put at risk because of incomplete, inaccurate, or delayed information when clinical concerns were reported or escalated. Staff members described the communication process as lacking organization and consistency. Clinical details were often delivered in a fragmented style that included only some of the information needed to fully understand the situation. Nursing and APP staff members reported that representatives of both groups were often unprepared for patient handoffs, lacking details and data relevant to the clinical situation, which required further investigation.

---

## Authors

*Margaret Murphy is a co-team leader for the advanced practice providers in an intensive care unit, Duke University Medical Center, Durham, North Carolina.*

*Jill R. Engel is Associate Vice President for Heart Services for Nursing, Operations & Patient Care Services, Duke University Hospital, and a clinical associate, Duke University, Durham, North Carolina.*

*Lynn McGugan is a co-team leader for the advanced practice providers in an intensive care unit, Duke University Medical Center, and a clinical associate, Duke University.*

*Rebecca McKenzie is Assistant Vice President for Perioperative Services, Duke University Hospital, and a clinical associate, Duke University.*

*Julie A. Thompson is a consulting associate, Duke University.*

*Kathleen M. Turner is an associate professor, Duke University.*

*Corresponding author: Margaret Murphy, DNP, ACNP, CCNS, CCRN-CSC, Duke University Medical Center, 10 Duke Medicine Circle, 7W CTICU, Durham, NC 27710 (email: margaret.murphy@duke.edu).*

*To purchase electronic or print reprints, contact the American Association of Critical-Care Nurses, 27071 Aliso Creek Rd, Aliso Viejo, CA 92656. Phone, (800) 899-1712 or (949) 362-2050 (ext 532); fax, (949) 362-2049; email, reprints@aacn.org.*

## Methods

The aim of this project was to implement a standardized communication tool to improve communication between nurses and APPs in the ICU. The primary aim was improvement in the ICU nurses' and APPs' perceptions of the quality of communication 3 months after implementation of the tool. The secondary aim was improvement of the perceived accuracy and timeliness of communication between nurses and APPs 3 months after implementation of the tool. The third aim was increased perceptions of shared decision-making between nurses and APPs 3 months after implementation of the tool. This project was approved by the hospital's nursing leadership and was deemed exempt from the need for institutional review board approval because it did not involve any patient participation.

We determined that the ideal communication innovation for this project would be one that involved nurses and APPs in practicing communication skills to organize their clinical data into a well-presented assessment with recommendations for patient interventions. With this

**The role of the project champion was to reinforce the education and serve as a role model for use of the SBAR tool in clinical practice.**

vision in mind, we selected the SBAR tool as an

appropriate innovation. The SBAR tool was designed to facilitate the delivery of information using a reliable, consistent process. The tool is well suited to the critical care setting, enabling health care team members to convey important data in a clear, concise, and logical way.

## Study Design

This quality improvement project used a pre-post design. Surveys originally developed to ascertain nurses' and physicians' experiences of and attitudes toward communication were modified for use with nurses and APPs. The surveys were used to evaluate the nurses' and APPs' perceptions of communication between the 2 groups. After the initial survey, both groups received education on using the SBAR communication tool. Upon completion of the education, the groups were given 3 months to use the SBAR tool in clinical practice. After this 3-month period, the same surveys that were used initially were sent to the nurses and APPs to reassess their perceptions of communication. All ICU nurses and APPs were eligible to participate in this project.

## Survey Instruments

The survey instruments used in this project were adapted from surveys included in the IHI's patient safety essentials toolkit, which are available for public use.<sup>10</sup> Separate surveys were used for APPs (Supplement 1, available online only at [ccnonline.org](http://ccnonline.org)) and nurses (Supplement 2, available online only at [ccnonline.org](http://ccnonline.org)). The original survey instruments were developed and validated by Vazirani and colleagues.<sup>11</sup> We converted the surveys to an electronic format using Qualtrics research software and emailed them to all APPs and nurses in the ICU. The surveys contained 12 questions with Likert-scale responses that measured staff perceptions of the quality of communication and collaboration between the 2 professional groups. The surveys also collected demographic information on the amount of the respondent's professional experience and length of employment in the ICU, as well as their previous experience with or training in use of the SBAR tool.

## Intervention

The intervention began with staff education on the SBAR tool. Nursing and APP teams received the same education. Each group's staff meetings incorporated a recorded PowerPoint (Microsoft) presentation that outlined the SBAR concept, described the SBAR tool, and provided examples of the tool's use in common ICU clinical scenarios. The ICU held approximately 15 staff meetings for nurses and 1 staff meeting for APPs. The content was consistent at each meeting, and all educational content was delivered in electronic format. Attendance was documented at the nursing and APP staff meetings, and the number of staff members receiving the education was recorded.

The recorded PowerPoint presentation was also sent electronically to all nursing and APP staff members. One registered nurse who was familiar with the SBAR communication framework and had an interest in the project was engaged as a project champion. The role of the project champion was to reinforce the education and serve as a role model for use of the SBAR tool in clinical practice.

In addition to the PowerPoint presentation, staff members were provided with various resources to facilitate education on the SBAR tool. Laminated signs with a simple outline of the tool were placed near the nurses' computers and the APPs' desks. "Badge buddies," which were small versions of the laminated signs, were

**Table 1** Demographic characteristics of participants

Characteristic	APPs, No. (%)			Nurses, No. (%)		
	Before intervention (n=13)	After intervention (n=11)	P	Before intervention (n=100)	After intervention (n=100)	P
Years of experience						
< 3	5 (38)	3 (27)	.51	35 (35)	28 (28)	.38
4-6	5 (38)	3 (27)		33 (33)	42 (42)	
≥7	3 (23)	5 (45)		32 (32)	30 (30)	
Had experience before working in ICU	6 (46)	5 (45)	>.99	29 (29)	44 (44)	.04
Received prior education on the SBAR tool <sup>a</sup>	11 (85)	NA	NA	91 (91)	NA	NA
Currently use the SBAR tool in my clinical practice	8 (62)	9 (82)	.39	66 (66)	95 (95)	<.001

Abbreviations: APP, advanced practice provider; ICU, intensive care unit; NA, not applicable; SBAR, Situation, Background, Assessment, Recommendation.

<sup>a</sup> Question asked only on preintervention survey.

provided by the nurse manager for staff members to wear on their identification badges. Educational flyers describing common SBAR patient scenarios in the ICU were placed in key areas on the unit (Supplement 3, available online only at [ccnonline.org](http://ccnonline.org)).

### Statistical Analysis

Demographic characteristics of study participants before and after implementation of the intervention are presented using descriptive statistics (number, percentage). Differences between pre- and postintervention data were assessed using the  $\chi^2$  test and the Fisher exact test. Pre- versus postintervention scores on the communication survey subscales of Collaboration, General Perceptions, and Open Communication were compared using independent-sample *t* tests for nurses and APPs separately and then all participants combined. Descriptive statistics (mean, SD) are presented for each subscale at each time point. Higher scores indicate better perceived communication. Statistical analysis was conducted using IBM SPSS Statistics, version 27, and the  $\alpha$  value was set at .05.

### Results

A total of 24 APPs and 200 nurses participated in the project; some participants completed both the pre- and postintervention surveys. Demographic characteristics of the participants including their years of experience, whether they had received prior education on the SBAR tool, and whether they currently used the tool in clinical practice are displayed in Table 1.

Among APPs, no significant differences were found from before to after the intervention in terms of years of

experience, and the participants were evenly distributed across the experience level groups (<3 years, 4-6 years, ≥7 groups). In this group, no significant difference was found in the percentage of participants using the SBAR tool in clinical practice between before (62%) and after (82%) the intervention ( $P = .39$ ).

Among nurses, before the intervention participants were evenly distributed across the experience level groups. After the intervention, the largest proportion of participants (42%) had 4 to 6 years of experience. A significant increase was found in the percentage of nurses using the SBAR tool after the intervention (95%) compared with before the intervention (66%;  $P < .001$ ).

In evaluation of results by survey subscales, both APPs' and nurses' scores improved from before to after the intervention in General Perceptions and Open Communication (Table 2). In the APP group, the score for the Collaboration subscale remained the same from before to after the intervention. Significant improvements were found on the General Perceptions subscale for the APPs ( $P = .04$ ) and for nurses ( $P = .007$ ). In the combined results for all participants (Table 3), improvements were noted on all subscales, with those for Open Communication ( $P = .03$ ) and General Perceptions ( $P = .002$ ) being significant.

### Discussion

The goal of this project was to improve communication between nurses and APPs in the ICU. Good communication is associated with improved patient safety and positive patient outcomes.<sup>12</sup> Effective teamwork is characterized by collaboration, skilled communication, active listening, and timeliness. Implementation of the

**Table 2** Communication survey subscale results for advanced practice providers (APPs) and nurses

Subscale <sup>a</sup>	APPs, mean (SD)			Nurses, mean (SD)		
	Before intervention (n=13)	After intervention (n=11)	Statistical analysis	Before intervention (n=100)	After intervention (n=100)	Statistical analysis
Open Communication	3.1 (0.40)	3.5 (0.49)	$t_{22} = -1.77, P = .09$	4.1 (0.59)	4.3 (0.54)	$t_{198} = -1.85, P = .07$
Collaboration	3.0 (0.25)	3.0 (0.10)	$t_{22} = 0.56, P = .58$	3.1 (0.40)	3.2 (0.44)	$t_{198} = -0.71, P = .48$
General Perceptions	2.7 (0.43)	3.2 (0.71)	$t_{22} = -2.20, P = .04$	3.6 (0.75)	3.8 (0.73)	$t_{198} = -2.72, P = .007$

<sup>a</sup> Scores range from 1 to 4 for the Collaboration subscale and from 1 to 5 for the General Perceptions and Open Communication subscales.

**Table 3** Communication survey subscale results for all participants

Subscale <sup>a</sup>	All participants, mean (SD)		
	Before intervention (n=113)	After intervention (n=111)	Statistical analysis
Open Communication	4.0 (0.66)	4.2 (0.59)	$t_{222} = -2.19, P = .03$
Collaboration	3.1 (0.39)	3.2 (0.42)	$t_{222} = -0.66, P = .51$
General Perceptions	3.5 (0.77)	3.8 (0.75)	$t_{222} = -3.2, P = .002$

<sup>a</sup> Scores range from 1 to 4 for the Collaboration subscale and from 1 to 5 for the General Perceptions and Open Communication subscales.

SBAR tool improved perceptions of all areas of communication among the nurses and APPs in this ICU.

The SBAR tool is a reliable and validated communication tool that is easily implemented among health care providers.<sup>13</sup> The educational interventions used in this project, including templates, clinical examples, and role modeling, helped the groups incorporate the SBAR tool into clinical practice. Members of each group reported that they were eager to have a template that they could fill in and use to relay pertinent information. The tool has a concise structure that encourages brief exchanges of information. The significant increase in use of the SBAR tool among nurses from before (66%) to after (95%) the intervention indicates its ease of implementation.

Incomplete, inaccurate, or delayed communication can have dire consequences in the ICU setting.<sup>14</sup> The implementation of the SBAR communication tool significantly improved the general perceptions of communication in this ICU among nurses and APPs, including timeliness of updates and relevance of information to the patient's condition or situation. Confusion and errors can be mitigated when information is relevant to a situation and received promptly. Trust in the details of exchanged information is essential. After implementation of the SBAR tool, the nurses and APPs reported a significant increase in their confidence in the accuracy

and completeness of data being reported. The groups also expressed enjoyment in working together. Although improving teamwork was not a specific goal of this project, it was a result of enhanced communication and collaboration between the 2 groups.

The success of this project was due in part to the eagerness of the participants to improve their communication. Several staff members became informal champions of this project. Members of the nursing leadership team became actively engaged in disseminating the SBAR educational resources to nurse preceptors, nurse orientees, and staff nurses. Staff members updated the project director regarding the engagement of staff or areas where more education was needed. The APPs role-played clinical scenarios with nurses and provided feedback and encouragement. Nurses and APPs were observed using the SBAR tool with physicians, which was a positive outcome beyond the goals of this project. In addition, respiratory therapists requested SBAR education for their team. The voluntary actions of the staff indicated their desire to improve communication and recognition of the potential positive impacts of this project.

The timing of this project was appropriate, as there were no other major rollouts during the same period. The ICU leadership expressed strong support for the project as a means to improve communication,

collaboration, and patient outcomes. Physicians working in the ICU also expressed their strong support.

Limitations of this project included significant nursing turnover during its implementation. Some staff members who completed the initial survey may not have been still working in the ICU at the time of the second survey. Moreover, there may have been new staff members who did not receive the initial SBAR education who completed the postimplementation survey.

Another limitation pertains to nurses' previous work experience. More nurse respondents had experience before working in this ICU after the intervention (44%) compared with before the intervention (29%). In addition, the subjectivity of self-reported perceptions was a limitation. Respondents may have perceived their use of the SBAR tool to be higher or lower than it actually was.

The SBAR education provided in this project will be made sustainable by embedding it into the orientation programs for nurses and APPs and weaving it into the culture of the ICU. The standardized SBAR PowerPoint presentation will be provided during nursing orientation classes and will be added to the electronic APP orientation manual. In addition, the nursing director requested that the SBAR presentation and other resources developed for this project be used in other units of the hospital. Discussions are under way regarding expanding SBAR education and implementation to the entire ICU team including intensivists, fellows, respiratory therapists, and pharmacists.

## Conclusion

All clinicians should be as proficient in their communication skills as they are in their clinical skills. The nurses and APPs who participated in this project were concerned about communication errors and breakdowns. The SBAR tool provided them with a standardized communication method that was missing from their clinical practice. Within 3 months, the groups' perceptions of communication significantly improved. As the SBAR tool is woven into the ICU culture and extended to other groups of ICU staff members, the concerns and frustrations related to communication should continue to decrease.

This project would be easy to implement in other health care settings. The IHI's comprehensive patient safety toolkit is freely available to all health care providers seeking to improve patient safety in their clinical setting. Tools from the IHI toolkit used in

this project include the SBAR educational instructions, the SBAR template, and survey questions. The IHI website also offers stepwise instructions and templates for education that would be appropriate for use in a variety of health care settings. [CCN](#)

Financial Disclosures  
None reported.

## See also

To learn more about communication in the critical care setting, read "Development and Evaluation of Best Practice Alerts: Methods to Optimize Care Quality and Clinician Communication" by Fry in *AACN Advanced Critical Care*, 2021;32(4):468-472. Available at [www.aacnconline.org](http://www.aacnconline.org).

## References

1. Martin HA, Ciurzynski SM. Situation, Background, Assessment, and Recommendation-guided huddles improve communication and teamwork in the emergency department. *J Emerg Nurs*. 2015;41(6):484-488. doi:10.1016/j.jen.2015.05.017
2. Stewart KR, Hand KA. SBAR, communication, and patient safety: an integrated literature review. *MedSurg Nurs*. 2017;26(5):297-305.
3. Wang YY, Wan QQ, Lin F, Zhou WJ, Shang SM. Interventions to improve communication between nurses and physicians in the intensive care unit: an integrative literature review. *Int J Nurs Sci*. 2017;5(1):81-88. doi:10.1016/j.ijnss.2017.09.007
4. American Association of Critical-Care Nurses. *AACN Standards for Establishing and Sustaining Healthy Work Environments*. American Association of Critical-Care Nurses website. Accessed March 21, 2020. <https://www.aacn.org/nursing-excellence/standards/aacn-standards-for-establishing-and-sustaining-healthy-work-environments>
5. The Joint Commission. 2020 Hospital National Patient Safety Goals. The Joint Commission website. Accessed March 21, 2020. <https://www.jointcommission.org/standards/national-patient-safety-goals/hospital-2020-national-patient-safety-goals>
6. Bhatt J, Swick M. Focusing on teamwork and communication to improve patient safety. American Hospital Association website. Accessed May 19, 2020. <https://www.aha.org/news/blog/2017-03-15-focusing-teamwork-and-communication-improve-patient-safety>
7. Shahid S, Thomas S. Situation, Background, Assessment, Recommendation (SBAR) communication tool for handoff in health care—a narrative review. *Safety Health*. 2018;4:7. doi:10.1186/s40886-018-0073-1
8. Vardaman JM, Cornell P, Gondo MB, Amis JM, Townsend-Gervis M, Thetford C. Beyond communication: the role of standardized protocols in a changing health care environment. *Health Care Manage Rev*. 2012;37(1):88-97. doi:10.1097/HMR.0b013e31821fa503
9. Agency for Healthcare Research and Quality. TeamSTEPS Fundamentals Course: Module 3. Communication. Accessed March 8, 2022. <https://www.ahrq.gov/teamsteps/instructor/fundamentals/module3/igcommunication.html>
10. Institute for Healthcare Improvement. SBAR tool: Situation-Background-Assessment-Recommendation [Tool] 2017. Institute for Healthcare Improvement website. Accessed March 20, 2020. <http://www.ihc.org/resources/Pages/Tools/Patient-Safety-Essentials-Toolkit.aspx>
11. Vazirani S, Hays RD, Shapiro MF, Cowan M. Effect of a multidisciplinary intervention on communication and collaboration among physicians and nurses. *Am J Crit Care*. 2005;14(1):71-77.
12. Blake N, Collins M. Importance of healthy work environment education in nursing schools. *AACN Adv Crit Care*. 2017;28(3):289-290. doi:10.4037/aacnacc2017511
13. Compton J, Copeland K, Flanders S, et al. Implementing SBAR across a large multihospital health system. *Jt Comm J Qual Patient Saf*. 2012;38(6):261-268. doi:10.1016/s1553-7250(12)38033-1
14. The Joint Commission. Sentinel Event Alert 58: Inadequate hand-off communication. 2017. The Joint Commission website. Accessed March 27, 2020. <https://www.jointcommission.org/resources/patient-safety-topics/sentinel-event>

1. Do nurses and APPs share in decision-making? Collaboration	4 Always	3 Sometimes	2 Rarely	1 Never	
2. Do nurses and APPs cooperate in decisions? Collaboration	4 Always	3 Sometimes	2 Rarely	1 Never	
3. Do nurses and APPs plan together before making decisions? Collaboration	4 Always	3 Sometimes	2 Rarely	1 Never	
4. Is there open communication between APPs and nurses in making decisions? Collaboration	4 Always	3 Sometimes	2 Rarely	1 Never	
5. I get relevant information on the status of patients from nurses. General Perceptions	5 All of the time	4 Most of the time	3 Some of the time	2 Rarely	1 Never
6. There are no delays in relaying information regarding patient care. General Perceptions	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly disagree
7. Nurses update me in a timely manner. General Perceptions	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly disagree
8. I receive complete information from nurses. Open Communication	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly disagree
9. I have good communication with nurses. Open Communication	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly disagree
10. I feel certain about accuracy of information from nurses. Open Communication	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly disagree
11. I enjoy collaborating with nurses. Open Communication	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly disagree
12. I have easy access to high quality nurses. Open Communication	5 Strongly agree	4 Agree	3 Neutral	2 Disagree	1 Strongly disagree

Survey adapted from Institute for Healthcare Improvement.<sup>10</sup>

#### Demographic questions:

- |  |           |           |          |
|--|-----------|-----------|----------|
| 1. I have been an advanced practice provider for                   | 1-3 years | 4-6 years | 7+ years |
| 2. I have APP experience prior to working in this ICU.             | Yes       | No        |          |
| 3. I have received prior education for the SBAR tool. <sup>a</sup> | Yes       | No        |          |
| 4. I currently utilize the SBAR tool in my clinical practice.      | Yes       | No        |          |

### Supplement 1 Advanced practice providers' communication with nurses survey tool.

Abbreviations: APP, advanced practice provider; SBAR, Situation, Background, Assessment, Recommendation.

<sup>a</sup> Question asked only on preintervention survey.

1. Do nurses and APPs share in decision-making?	<b>4 Always</b>	<b>3 Sometimes</b>	<b>2 Rarely</b>	<b>1 Never</b>
2. Do nurses and APPs cooperate in decisions?	<b>4 Always</b>	<b>3 Sometimes</b>	<b>2 Rarely</b>	<b>1 Never</b>
3. Do nurses and APPs plan together before making decisions?	<b>4 Always</b>	<b>3 Sometimes</b>	<b>2 Rarely</b>	<b>1 Never</b>
4. Is there open communication between APPs and nurses in making decisions?	<b>4 Always</b>	<b>3 Sometimes</b>	<b>2 Rarely</b>	<b>1 Never</b>
5. I get relevant information on the status of patients from APPs.	<b>5 All of the time</b>	<b>4 Most of the time</b>	<b>3 Some of the time</b>	<b>2 Rarely</b> <b>1 Never</b>
6. There are no delays in relaying information regarding patient care.	<b>5 Strongly agree</b>	<b>4 Agree</b>	<b>3 Neutral</b>	<b>2 Disagree</b> <b>1 Strongly disagree</b>
7. APPs respond to me in a timely manner.	<b>5 Strongly agree</b>	<b>4 Agree</b>	<b>3 Neutral</b>	<b>2 Disagree</b> <b>1 Strongly disagree</b>
8. I receive correct information from APPs.	<b>5 Strongly agree</b>	<b>4 Agree</b>	<b>3 Neutral</b>	<b>2 Disagree</b> <b>1 Strongly disagree</b>
9. I have good communication with APPs.	<b>5 Strongly agree</b>	<b>4 Agree</b>	<b>3 Neutral</b>	<b>2 Disagree</b> <b>1 Strongly disagree</b>
10. I feel certain about accuracy of information from APPs.	<b>5 Strongly agree</b>	<b>4 Agree</b>	<b>3 Neutral</b>	<b>2 Disagree</b> <b>1 Strongly disagree</b>
11. I enjoy collaborating with APPs.	<b>5 Strongly agree</b>	<b>4 Agree</b>	<b>3 Neutral</b>	<b>2 Disagree</b> <b>1 Strongly disagree</b>
12. It is easy to ask the APPs questions.	<b>5 Strongly agree</b>	<b>4 Agree</b>	<b>3 Neutral</b>	<b>2 Disagree</b> <b>1 Strongly disagree</b>

Survey adapted from Institute for Healthcare Improvement.<sup>10</sup>

#### Demographic questions:

- |  |           |           |          |
|--|-----------|-----------|----------|
| 1. I have been a nurse for:  | < 3 years | 4-6 years | 7+ years |
| 2. I have nursing experience prior to working in this ICU.         | Yes       | No        |          |
| 3. I have received prior education for the SBAR tool. <sup>a</sup> | Yes       | No        |          |
| 4. I currently utilize the SBAR tool in my clinical practice.      | Yes       | No        |          |

### Supplement 2 Nurses' communication with advanced practice providers survey tool.

Abbreviations: APP, advanced practice provider; SBAR, Situation, Background, Assessment, Recommendation.

<sup>a</sup> Question asked only on preintervention survey.

### Example 1

<b>SBAR report to APP about a critical situation</b>	
Situation	I am taking care of Mr Holloway in room 22. He is a 64-year-old patient of Dr Jones. He is in Afib 140s and MAP of 58.
Background	He had an MV replacement yesterday. He does not have a history of Afib preoperatively. He had Afib with RVR overnight, received amiodarone 150 mg x1 and converted to SR.
Assessment	He appears unstable with MAP in 50s and says he feels a little lightheaded.
Recommendation	I would like to do an EKG, check electrolytes and an amiodarone bolus followed by an infusion.

### Example 2

<b>SBAR report to APP about a critical situation</b>	
Situation	I am assigned to Ms Crowley in room 14. She is a 68-year-old lung transplant recipient. She keeps desaturating to the 80s.
Background	Her lung transplant was 2 days ago. She was extubated last night after her epidural was placed. She has been on 4 L NC all day. She ambulated twice.
Assessment	Her respirations are in the 30s, HR is 124 (SR), and her BP is elevated at 155/78. Her respirations are shallow. She can only get to 250 mL on the incentive spirometer. She says her pain is 7/10 along her clamshell incision.
Recommendation	I have increased her oxygen to 6 L NC and contacted the pain team who manages the epidural. We should give the epidural bolus a few minutes to work then reassess her respiratory status. I think we should check ABG values if she continues to desaturate after her pain is better controlled.

### Example 3

<b>SBAR report to nurse about a critical situation</b>	
Situation	Mr Jackson, the 37-year-old LVAD patient of Dr Rangers, needs blood.
Background	He came from the OR 6 hours ago and has had more than 400 mL of chest tube output. His laboratory values just showed that his hemoglobin is 7.2.
Assessment	He appears hypovolemic with a CVP of 4 and LVAD suction events.
Recommendation	I will prepare 2 units of PRBC. Please transfuse 1 unit; then we will reassess his hemoglobin and hemodynamics before transfusing the second unit.

### Supplement 3 SBAR (Situation, Background, Assessment, Recommendation) scenarios.

Abbreviations: ABG, arterial blood gas; Afib, atrial fibrillation; APP, advanced practice provider; BP, blood pressure; CVP, central venous pressure; EKG, electrocardiogram; HR, heart rate; LVAD, left ventricular assist device; MAP, mean arterial pressure; MV, mitral valve; NC, nasal cannula; OR, operating room; PRBC, packed red blood cells; RVR, rapid ventricular response; SBAR, Situation, Background, Assessment, Recommendation; SR, sinus rhythm.