Using a **Standardized Rounding Tool** to Improve the Incidence of Spontaneous Awakening and Breathing Trials

Billie Lancaster, DNP, AGACNP-BC
Megan M. Shifrin, DNP, ACNP-BC
Sarah Gast, DNP, AGACNP-BC, FNP-BC

Background Spontaneous awakening and breathing trials have been associated with shorter durations of mechanical ventilation and intensive care unit lengths of stay.
Local Problem Inconsistent spontaneous awakening trials and spontaneous breathing trials, mechanical ventilation weaning strategies, and interdisciplinary rounding processes contributed to prolonged mechanical ventilation duration and length of stay in a 44-bed adult medical intensive care unit.
Methods A standardized rounding tool that focused on coordinating spontaneous awakening and breathing trials, and on their outcomes, was integrated into daily multidisciplinary rounds in a medical intensive care unit. Aggregated patient data from the 4-month project implementation phase were compared with historical data collected for 2 months before project implementation.
Results During the 2-month preintervention phase, 613 adult patients were managed in the medical intensive care unit and 41 patients required mechanical ventilation, whereas during the 4-month intervention phase,1271 patients were managed in the unit and 96 patients required mechanical ventilation. The project was associated with a 24% (0.89-day) reduction in the mean length of stay (3.72 vs 2.83 days) and a 46.3% (2.81 day) reduction in mechanical ventilation duration (6.06 vs 3.25 days) when comparing August 2019 to January 2020.
Discussion A standardized rounding tool emphasizing a coordinated process for spontaneous awakening and breathing trials was associated with a shorter length of stay and duration of mechanical ventilation among patients in the medical intensive care unit.
Conclusion An evidence-based approach to weaning from mechanical ventilation and standardized rounding may be a cost-effective way to reduce mechanical ventilation duration and length of stay in a medical intensive care unit. (*Critical Care Nurse*. 2022;42[2]:e1-e9)

In the United States, nearly 5.7 million patients are admitted to intensive care units (ICUs) annually, and more than 30% of them require mechanical ventilation (MV).[1] Patients admitted to ICUs frequently experience discomfort, pain, weakness, oversedation, and delirium, which result in unfavorable physical, neurological, cognitive, and mental health consequences, prolonged MV duration, and a longer hospital length of stay (LOS).[2,3] Several national and international societies and organizations, however, have synthesized guidelines and evidence-based practice bundles to improve outcome metrics among ICU patients. For example, the Society of Critical Care Medicine's ABCDEF bundle provides evidence-based

 doi:https://doi.org/10.4037/ccn2022854

guidance for implementing protocols geared toward overall wellness in the ICU, with emphasis on enhancing MV and ICU liberation while promoting interprofessional teamwork and collaboration.[2,3] Implementation of the ABCDEF bundle has been associated with a shorter duration of MV and ICU LOS, less cognitive impairment after an ICU stay, and lower mortality.[2,3]

Although MV can be lifesaving, its use has also been associated with patient harm.[4,5] Patients who require MV also frequently require pharmaceutical sedation to enhance their synchrony with MV and promote comfort. Pharmaceutical sedation practices may not, however, always be standardized, and the inappropriate use of sedation leads to adverse outcomes including prolonged MV, longer ICU LOS, and higher mortality.[2,3,5]

The orchestration of SATs, SBTs, multimodal pain management, and pharmaceutical sedation associated with MV remains complex and requires interdisciplinary collaboration to optimize patient outcomes.

Delirium, a complication associated with MV and inappropriate sedation practices, is a worldwide phenomenon characterized as acute brain dysfunction exhibited as inattention, disorganized thinking, and an altered level of consciousness.[6] Delirium affects approximately 80% of the adult critical care population and is associated with prolonged MV use, long ICU LOS, complex complications in the ICU, and additional health care–associated expenses.[6,7]

Multidisciplinary critical care rounds are crucial for interdisciplinary communication, patient management coordination, review of prophylactic ICU bundles, and delegation of patient management responsibilities.[8] Simple checklists and rounding tools in critical care environments have been associated with improved patient safety, lower health care costs, and better continuity of patient care, but the interdisciplinary clinical collaboration associated with these rounding tools and checklists are what facilitates improvements in these metrics.[9,10] One important focus during interdisciplinary rounds in the ICU continues to be evaluation of patients requiring MV. The orchestration of spontaneous awakening trials (SATs), spontaneous breathing trials (SBTs), multimodal pain management, and pharmaceutical sedation associated with MV remains complex and requires interdisciplinary collaboration to optimize patient outcomes. Because the use of standardized rounding tools and the collaboration that follows have been associated with reductions of both MV duration and ICU LOS, this element of critical care continues to be a focus for ICU clinicians.[10,11]

Authors

Billie Lancaster is an adult-gerontology acute care nurse practitioner in the medical intensive care unit at Saint Thomas West Hospital, Nashville, Tennessee.

Megan M. Shifrin is an associate professor of nursing at Vanderbilt University School of Nursing, Nashville, Tennessee, and serves as the Intensivist AGACNP Focus Coordinator.

Sarah Gast is an assistant professor at Vanderbilt University School of Nursing.

Corresponding author: Billie Lancaster, DNP, AGACNP-BC, 1221A Battlefield Dr, Nashville, TN 37215 (email: billieklancaster@gmail.com).

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.

Local Problem

A 44-bed medical ICU (MICU) at a privately owned 541-bed hospital in the southeastern United States lacked a standardized tool for use during daily interdisciplinary rounds. This lack was coupled with inconsistently coordinated SATs and SBTs, which resulted in prolonged MV duration and ICU LOS for adult patients in the MICU. The deficit of coordinated SATs and SBTs was thought to be multifactorial; however, the critical care team in the MICU observed that the rounding report format did not foster a coordinated discussion of SATs and SBTs for patients who required MV and did not address nursing and respiratory therapy collaboration for synchronizing SATs and SBTs.

The patients in the MICU had complex medical histories, and most patients in the MICU had been diagnosed with a pulmonary condition. In August 2019, the MICU census ranged from 38 to 42 patients daily. Among all patients admitted to the MICU (those who required MV and those who did not), the median ICU LOS was 2.39 days (mean, 3.72 days). For patients who required MV, the median duration of MV was 5 days (mean, 6.06 days). These data exclude patients who were admitted with a tracheostomy, experienced chronic dependence on MV before admission, or both, and patients who required tracheostomy placement during their MICU stay.

Methods

Project Design

The purpose of this process improvement project was to implement a rounding tool to foster the coordination

of SATs and SBTs for adult patients requiring MV. Our goal was to decrease MV duration and reduce LOS among patients in the MICU. We obtained organizational institutional review board approval (exempt status) before we implemented the project.

Organizational participants who engaged in implementing the standardized rounding tool included full-time, part-time, and as-needed registered nurses (RNs), nurse practitioners, and intensivist physicians who practiced in the MICU. All organizational participants were aged more than 18 years, were employed directly by the hospital or consultant group, and met all current licensing requirements to work in their specific capacity. Participation was not dependent on sex, gender identity, race, ethnicity, religion, or disability; individuals of any sexual and gender orientation and ethnicity could be included in the project. Traveling RNs, RNs in the float pool, and contracted RNs who had worked in the MICU for varying lengths of time were excluded as organizational participants.

Patient participants included all adult patients aged more than 18 years who were admitted to the MICU. Those admitted at the time of the project commonly had diagnoses of respiratory failure, sepsis, and multiorgan system failure. We collected data for patient participants who required MV and did not have a tracheostomy. We excluded patients who had a tracheostomy at admission and were chronically dependent on MV, and patients who received a tracheostomy during the course of their MICU stay, because they were projected to require MV long-term, as their clinical progression was not consistent with that of most patients who require MV. Furthermore, SAT and SBT weaning efforts were not consistent within this subgroup of patients.

Intervention

The project comprised 4 phases: (1) rounding tool development; (2) educational preparation; (3) education of organizational participants on the rounding tool and coordinated SATs and SBTs; (4) SAT and SBT implementation guided by the rounding tool. During phase 1, the project team lead (B.L.), guided by key stakeholders, developed a preliminary rounding tool, and the key stakeholders then collaborated to revise the tool. The rounding tool was a 1-page paper worksheet that included areas for the RN to document patient-specific events throughout 24 hours, body system–based physical examination findings, and recent diagnostic data. The rounding tool also specifically incorporated information about the patient's pharmaceutical sedation and pain management regimens and the outcome of the patient's coordinated SAT and SBT for the day. It included a place for the patient's RN to document an unsuccessful SAT or SBT and the reason the trials failed. In addition, the tool allowed the RN to document whether the patient may be a suitable candidate for transfer out of the MICU. The rounding tool template is presented in Figure 1. The project team lead then had nursing administrators and the chief nursing officer at the project site approve the rounding tool.

During phase 2, organizational participant recruitment began with all project team members describing the necessity of the rounding tool. The project team lead (B.L.) hosted informal conversations regarding educational needs with the MICU staff and found that there were educational deficits regarding the coordination of SATs and SBTs. The educational implementation activities themselves were provided during phase 3, beginning with informal educational sessions targeting the bedside RNs. The project team led the educational sessions for small groups of 4 or 5 RNs. These sessions included day and night RN staff during their scheduled shifts. Educational content comprised the background of and indications for the project, the rounding tool and its appropriate use, the SAT and SBT algorithm, and the project's goals. Each RN was given a template of the rounding tool to keep as a reference. The project team gave laminated badge cards that showed the SAT and SBT algorithm, known as "badge buddies," to the bedside RNs during the informal education sessions; these cards served as both a reference and an indication that the RN had completed an educational session.

The rounding tool specifically incorporated information about the patient's pharmaceutical sedation and pain management regimens and the outcome of the patient's coordinated SAT and SBT for the day.

Last, in phase 4, starting on the go-live date (October 1, 2019), each RN on the day shift completed the rounding tool for their designated patient before multidisciplinary rounds began. During rounds, the RN caring for the patient presented the information they had documented on the rounding tool, including the outcome of the attempted coordinated SAT and SBT—or why the patient

MICU Rounding Tool

Name: _____ Age: _____ Attending MD: _____ Consulting MD: _____

Admit date: _____ Primary diagnosis: _____ Code status: _____

Pertinent PMH: _____ _____ _____

Reason for ICU? _____

Pertinent 24-hour events: _____

24-hour fever? _____ Change in hemodynamics? _____

Procedures/planned events: _____

Neurological
CAM-ICU + / –
RASS: _____ Goal _____
Sedating gtts/medications:
_____
_____
_____

Pulmonary
Oxygen therapy: _____
Goal saturation _____%?
Mechanical ventilation
Settings: _____
FIO_2 _____%
SAT: PASS or **FAIL**
why? _____
SBT: PASS or **FAIL**
why? _____

Cardiovascular
HR/rhythm: _____
BP: Stable or Unstable
Vasoactive gtts:
_____
_____
_____
Arterial line: Yes No
CVP: _____

FEN/Gastrointestinal
IVF: _____ @ _____ h
Diet: NPO Eating
If NPO, last PO intake? _____
TF: Yes or No
TPN: Yes or No
NGT: Yes or No
Last BM: _____

Glycemic control:
Blood glucose: <150 >150
Gtts/medications: _____

Genitourinary
24 h I/O: In: _____ Out: _____
Foley catheter: Yes No
Insertion date: _____
Reason for Foley catheter:
Accurate I/O
Retention
Urology patient

Infectious disease
Antibiotics: _____
_____

Skin:
Wounds/wound care: _____
_____

Pertinent abnormal laboratory values:
CBC: _____
BMP: _____

ICU Checklist:

DVT prophylaxis: SCD Heparin Lovenox Other: _____
GI prophylaxis Pepcid Protonix Not indicated
Lines: PIV Port-A-Cath PICC CVC **Insertion date:** _____
Gtts: _____ _____ _____
PT/OT: Yes No Up in chair?
Palliative care following? Yes No
Safe for transfer? Yes No
24-hour goals: _____
Questions for rounding team? _____

Figure 1 Standardized rounding tool for the medical intensive care unit.

Abbreviations: BM, bowel movement; BMP, basic metabolic panel; BP, blood pressure; CAM-ICU, Confusion Assessment Method for the ICU; CBC, complete blood cell count; CVC, central venous catheter; CVP, central venous pressure; DVT, deep venous thrombosis; FEN, fluids, electrolytes, nutrition; FIO_2, fraction of inspired oxygen; GI, gastrointestinal; gtts, drips; HR, heart rate; ICU, intensive care unit; I/O, ins and outs; IVF, intravenous fluid; MD, physician; NGT, nasogastric tube; NPO, nothing by mouth; OT, occupational therapy; PICC, peripherally inserted central catheter; PIV, peripheral intravenous; PMH, past medical history; PO, by mouth; PT, physical therapy; RASS, Richmond Agitation-Sedation Scale; SAT, spontaneous awakening trial; SBT, spontaneous breathing trial; SCD, sequential compression device; TF, tube feed; TPN, total parenteral nutrition.

was not a candidate for a coordinated SAT and SBT—and the RN's perspective as to whether the patient may be a suitable candidate for transfer out of the MICU. If the patient had a successful SAT and SBT, they were promptly weaned from MV and then extubated after the multidisciplinary rounds. If the patient met criteria for transfer out of the MICU, a member of the multidisciplinary team entered transfer orders for the patient.

Table 1 Medical intensive care unit length of stay before and after implementation of a rounding tool

	Before implementation of rounding tool		After implementation of rounding tool			
	August 2019	September 2019	October 2019	November 2019	December 2019	January 2020
No. of patients admitted to the MICU	233	380	301	412	308	250
Length of stay, d						
Median	2.39	2.56	2.63	2.31	2.57	2.14
Mean	3.72	4.27	3.89	3.41	3.34	2.83
Minimum	0.01	0.09	0.01	0.02	0.04	0.01
Maximum	18.10	44.10	30.40	28.70	24.11	14.50

Abbreviations: LOS, length of stay; MICU, medical intensive care unit.

Data Collection

Baseline patient data including MV duration and ICU LOS were collected before implementation of the rounding tool for historical comparison. The same data points were collected for 4 months after implementation. Patient data were collected from the electronic health record and deidentified by the organization's information technology department. We then evaluated data sets for inclusion and exclusion criteria. No identifying patient information was extracted for analysis or reported, and all collected data were aggregated for reporting purposes. We analyzed data by means of descriptive statistics. These data were formally analyzed in collaboration with a nonbiased statistician who was not associated with the project site.

The primary end points included (1) median and mean number of days of MV for patients who did not require a tracheostomy and (2) median and mean ICU LOS for all patients—those receiving and those not receiving MV—in the MICU.

Results

Data collected during August and September 2019 served as the preimplementation data set. The postimplementation data set included data collected during the 4 months from October 2019 through January 2020.

MICU LOS

Before implementation, 613 patients were managed in the MICU and included intubated patients requiring MV, patients with a tracheostomy who required MV, and nonintubated patients. Table 1 shows the median and mean MICU LOS during the 2 months of September and October 2019.

During the postimplementation period, 1271 patients were admitted to the MICU. The mean ICU LOS consistently declined following project implementation: when comparing data from August 2019 with data from January 2020, we found that the median ICU LOS had decreased by 0.25 days and the mean by 0.89 days (Table 1 and Figure 2).

Duration of Mechanical Ventilation

During the preimplementation period, 47 patients who were admitted to the MICU required MV. Table 2 describes MV durations during that time. After project implementation, 91 patients who were admitted to the MICU required MV. Similar to the ICU LOS, the mean duration of MV consistently declined during the postimplementation period. When comparing data from August 2019 with data from January 2020, we found a 2.5-day reduction in the median duration of MV, and a reduction of 2.81 days in the mean duration (Table 2 and Figure 3).

Discussion

The purpose of this project was to implement a standardized rounding tool to improve the communication of key patient information during interdisciplinary rounds, foster the coordination of SATs and SBTs, reduce MV duration, and shorten MICU LOS among patients who did not require critical care management or services. The project involved a large sample of adult patients given the project's duration, and we captured data points that are representative of and valuable to patient outcomes. The data indicate that the implantation of this standardized

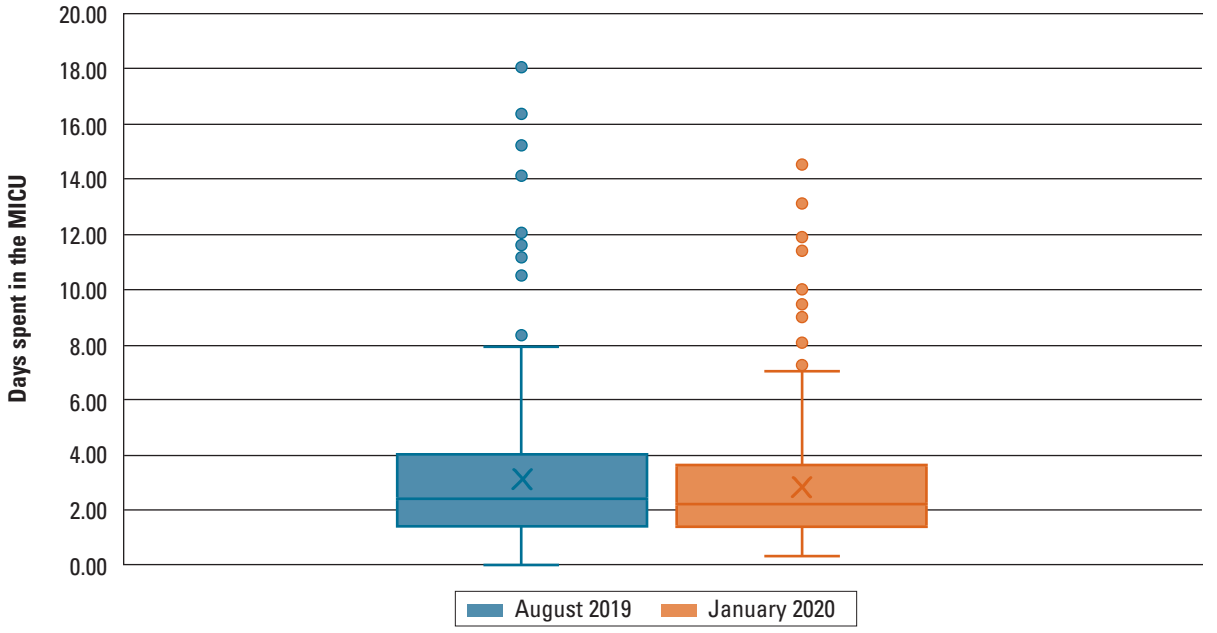

Figure 2 Medical intensive care unit (MICU) length of stay before (August 2019) and after (January 2020) implementation of a standardized rounding tool.

Table 2 Duration of mechanical ventilation in the medical intensive care unit before and after implementation of a rounding tool

	Before implementation of rounding tool		After implementation of rounding tool			
	August 2019	September 2019	October 2019	November 2019	December 2019	January 2020
No. of patients requiring MV who met inclusion criteria	18	29	23	20	27	21
Reasons for exclusion, No. of patients						
Preexisting tracheostomy and chronic use of MV	1	3	2	1	3	3
Tracheostomy placement during MICU stay	2	4	2	2	1	2
MV duration, d						
Median	5	3	2	2.5	2	2.5
Mean	6.06	4.14	3.22	4.65	4.40	3.25
Minimum	1	1	1	1	1	1
Maximum	15	12	14	16	15	10

Abbreviations: MICU, medical intensive care unit; MV, mechanical ventilation.

rounding format was associated with a markedly shorter ICU LOS. Moreover, standardizing the approach to the daily implementation and discussion of SATs and SBTs was associated with a reduction in MV duration for patients who met the project's inclusion criteria.

These data are consistent with the findings of other studies that have implemented SAT and SBT bundles.[12-15] The primary end points of this project were shorter ICU LOS and shorter duration of MV, but the literature reflects that the SAT and SBT processes have reduced the incidence of other common ICU complications such as ventilator-associated pneumonia, gastrointestinal bleeding, nosocomial infections, barotrauma, and thromboembolic events.[16,17] This project was associated with an

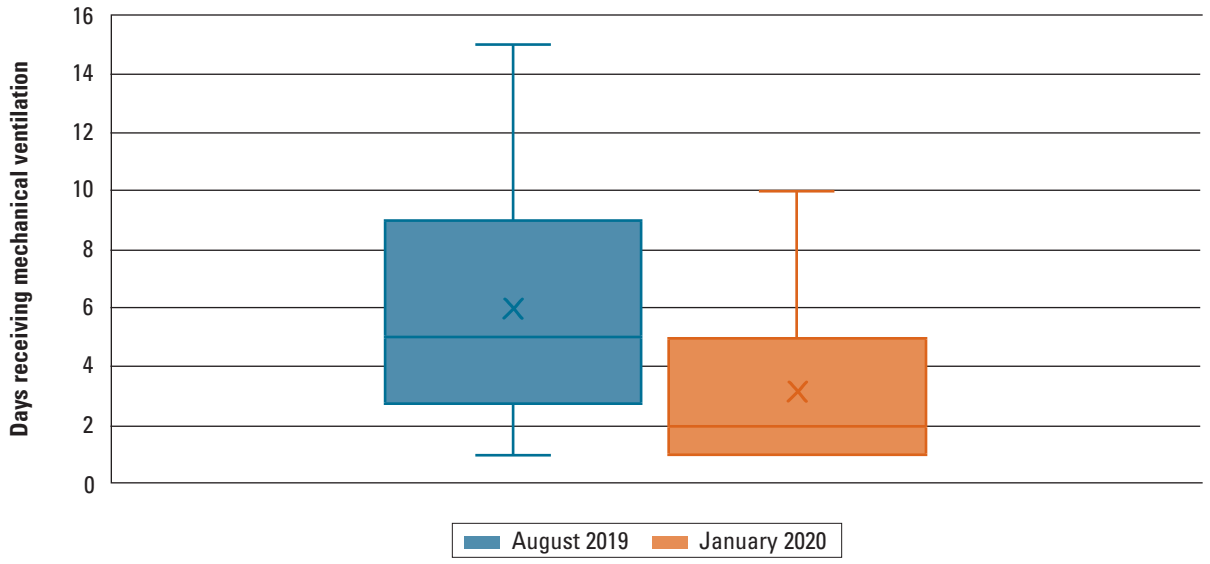

Figure 3 Duration of mechanical ventilation in the medical intensive care unit before (August 2019) and after (January 2020) implementation of a standardized rounding tool.

increased awareness of necessary ICU processes such as coordination of SATs and SBTs, and it illuminated that improved communication among multidisciplinary critical care teams is an essential aspect of enhancing collaborative patient care in an ICU. The project revealed that many patients remained in a critical care environment unnecessarily and that unwarranted ICU services could be reduced. These findings were evidenced by a decrease in ICU LOS for all patients in the MICU, not just those requiring MV, when the rounding tool was implemented. Last, this study had an intentionally simplistic design and was cost-effective—project planning and implementation costs totaled $110.00—yet it yielded outcomes that are associated with significant reductions in organizational costs.

Limitations

Despite the strengths of this scholarly project, it has some limitations. An unexpected aspect was the duration of multidisciplinary rounds, which varied dramatically throughout the project. Historically, rounds of the entire MICU typically have lasted approximately 2 hours; since implementing use of the rounding tool, however, rounds have occasionally surpassed that time frame, likely because of many factors that we did not formally investigate during this project. We hypothesize, though, that multidisciplinary rounds have become more consistently comprehensive for each patient. Despite the MICU patient census and the acuity and complexity of those patients, the interdisciplinary team has adapted to the duration of rounds given the associated positive change in patient metrics.

Another consideration in this study is the months during which data were collected. The preimplementation data were collected during August and September 2019, when the MICU was likely to have patients with lower acuity. Historically, the fall and winter months (October through February) often have the highest acuity at the project site because of the increased spread of infectious respiratory droplets during this time of the year. Therefore, the potential value of the project within the organization may have been underestimated due to the seasonal timing of the project.

The simple implementation of a rounding tool has improved daily discussion of ICU patient metrics, including SATs and SBTs, and has greatly reduced the LOS and duration of MV for patients in this MICU.

Conclusion

Although multiple ongoing international initiatives and efforts focus on improving patient outcomes in critical care environments, this project indicates that using best-practice standards in a cost-effective way can reduce

metrics associated with morbidity and mortality. The simple implementation of a rounding tool has improved daily discussion of ICU patient metrics, including SATs and SBTs, and has greatly reduced the LOS and duration of MV for patients in this MICU. Furthermore, this project reflects the importance of ongoing collaboration and communication among multidisciplinary critical care team members. Further research should evaluate whether rounding tools might also be associated with reductions in other adventitious patient complications such as delirium, nosocomial infections, and duration of invasive catheter placement. CCN

Financial Disclosures
None reported.

See also

To learn more about components in the ABCDEF bundle, read "Implementing the ABCDE Bundle, Critical-Care Pain Observation Tool, and Richmond Agitation-Sedation Scale to Reduce Ventilation Time" by Bardwell et al in *AACN Advanced Critical Care,* 2020;31(1):16-21. Available at **www.aacnacconline.org.**

References

1. Society of Critical Care Medicine. ICU liberation bundle (A-F). Accessed March 20, 2019. http://www.sccm.org/ICULiberation/ABCDEF-Bundles
2. Barnes-Daly MA, Pun BT, Harmon LA, et al. Improving health care for critically ill patients using an evidence-based collaborative approach to ABCDEF Bundle dissemination and implementation. *Worldviews Evid Based Nurs.* 2018;15(3):206-216. doi:10.1111/wvn.12290
3. Boehm LM, Vasilevskis EE, Dietrich MS, et al. Organizational domains and variation in attitudes of intensive care providers toward the ABCDE Bundle. *Am J Crit Care.* 2017;26(3):e18-e28. doi:10.4037/ajcc2017297
4. Parrillo JE, Dellinger RP. *Critical Care Medicine: Principles of Diagnosis and Management in the Adult.* 5th ed. Elsevier; 2018.
5. Minhas MA, Velasquez AG, Kaul A, Salinas PD, Celi LA. Effect of protocolized sedation on clinical outcomes in mechanically ventilated intensive care unit patients: a systematic review and meta-analysis of randomized controlled trials. *Mayo Clinic Proc.* 2015;90(5):613-623. doi:10.1016/j.mayocp.2015.02.016
6. Vasilevskis EE, Han JH, Hughes CG, Ely EW. Epidemiology and risk factors for delirium across hospital settings. *Best Pract Res Clin Anaesthesiol.* 2012;26(3):277-287. doi:10.1016/j.bpa.2012.07.003
7. Reade MC, Finfer S. Sedation and delirium in the intensive care unit. *N Engl J Med.* 2014;370(5):444-454. doi:10.1056/nejmra1208705
8. Gurses AP, Xiao Y. A systematic review of the literature on multidisciplinary rounds to design information technology. *J Am Med Inform Assoc.* 2006; 13(3):267-276. doi:10.1197/jamia.m1992
9. Bosk CL, Dixon-Woods M, Goeschel CA, Pronovost PJ. Reality check for checklists. *Lancet*. 2009;374(9688):444-445. doi:10.1016/s0140-6736(09)61440-9
10. Collins S, Hurley AC, Chang FY, et al. Content and functional specifications for a standards-based multidisciplinary rounding tool to maintain continuity across acute and critical care. *J Am Med Inform Assoc.* 2014; 21(3):438-447. doi:10.1136/amiajnl-2013-001949
11. Stollings JL, Foss JJ, Ely EW, et al. Pharmacist leadership in ICU quality improvement. *Ann Pharmacother.* 2015;49(8):883-891. doi:10.1177/1060028015582050
12. Girard TD, Kress JP, Fuchs BD, et al. Efficacy and safety of a paired sedation and ventilator weaning protocol for mechanically ventilated patients in intensive care (Awakening and Breathing Controlled trial): a randomised controlled trial. *Lancet*. 2008;371(9607):126-134. doi:10.1016/s0140-6736(08)60105-1
13. Ely EW, Baker AM, Dunagan DP, et al. Effect on the duration of mechanical ventilation of identifying patients capable of breathing spontaneously. *N Engl J Med.* 1996;335(25):1864-1869. doi:10.1056/nejm199612193352502
14. Kallet RH, Zhuo H, Yip V, Gomez A, Lipnick MS. Spontaneous breathing trials and conservative sedation practices reduce mechanical ventilation duration in subjects with ARDS. *Respir Care.* 2017;63(1):1-10. doi:10.4187/respcare.05270
15. Kress JP, Pohlman AS, O'Connor MF, Hall JB. Daily interruption of sedative infusions in critically ill patients undergoing mechanical ventilation. *N Engl J Med.* 2000;342(20):1471-1477. doi:10.1056/nejm200005183422002
16. Lee Y-LL, Sims KD, Butts CC, et al. The combination of SAT and SBT protocols may help reduce the incidence of ventilator-associated pneumonia in the burn intensive care unit. *J Burn Care Res.* 2017;38(2):e574-e579. doi:10.1097/bcr.0000000000000451
17. Schweickert WD, Gehlbach BK, Pohlman AS, Hall JB, Kress JP. Daily interruption of sedative infusions and complications of critical illness in mechanically ventilated patients. *Crit Care Med.* 2004;32(6):1272-1276. doi:10.1097/01.ccm.0000127263.54807.79

CriticalCareNurse
The journal for high acuity, progressive, and critical care nursing

Using a Standardized Rounding Tool to Improve the Incidence of Spontaneous Awakening and Breathing Trials

Inconsistent spontaneous awakening trials (SATs) and spontaneous breathing trials (SBTs), mechanical ventilation (MV) weaning strategies, and interdisciplinary rounding processes contributed to prolonged MV duration and length of stay in a 44-bed adult medical intensive care unit (ICU). The purpose of this process improvement project was to implement a rounding tool to foster the coordination of SATs and SBTs for adult patients requiring MV. The goal was to decrease MV duration and reduce length of stay (LOS) among patients in the medical ICU.

- The project comprised 4 phases: (1) rounding tool development; (2) educational preparation; (3) education of organizational participants on the rounding tool and coordinated SATs and SBTs; (4) SAT and SBT implementation guided by the rounding tool.
- Baseline patient data including MV duration and ICU LOS were collected before implementation of the rounding tool for historical comparison. The same data points were collected for 4 months after implementation.
- The data indicate that the implantation of this standardized rounding format was associated with a markedly shorter ICU LOS. Moreover, standardizing the approach to the daily implementation and discussion of SATs and SBTs was associated with a reduction in MV duration for patients who met the project's inclusion criteria.
- The primary end points of this project were shorter ICU LOS and shorter duration of MV, but the literature reflects that the SAT and SBT processes have reduced the incidence of other common ICU complications such as ventilator-associated pneumonia, gastrointestinal bleeding, nosocomial infections, barotrauma, and thromboembolic events.
- This project was associated with an increased awareness of necessary ICU processes such as coordination of SATs and SBTs, and it illuminated that improved communication among multidisciplinary critical care teams is an essential aspect of enhancing collaborative patient care in an ICU.
- The project revealed that many patients remained in a critical care environment unnecessarily and that unwarranted ICU services could be reduced. These findings were evidenced by a decrease in ICU LOS for all patients in the medical ICU, not just those requiring MV, when the rounding tool was implemented.
- Last, this study had an intentionally simplistic design and was cost-effective—project planning and implementation costs totaled $110.00—yet it yielded outcomes that are associated with significant reductions in organizational costs. CCN

Lancaster B, Shifrin MM, Gast S. Using a standardized rounding tool to improve the incidence of spontaneous awakening and breathing trials. *Critical Care Nurse*. 2022;42(2):e1-e9.