Just-in-Time Training for the Use of ICU Nurse Extenders During COVID-19 Pandemic Response

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ABSTRACT   Landstuhl Regional Medical Center's response to the coronavirus disease 2019 pandemic included a plan to provide just-in-time training for nursing staff and paraprofessionals from throughout the organization in the event that it became overwhelmed with more critically ill patients than the facility was staffed to manage. Training conducted was a combination of online learning from the Society of Critical Care Medicine and the Association of Critical Care Nurses as well as a 2-hour block of hands-on skills. The three competencies for floating staff from Wright's Method for Competency Assessment were utilized in the training process, allowing trainees to (1) learn to fly, (2) market themselves in a positive way, and (3) understand crisis management options. Quick implementation of the plan led to over 125 nurses and paraprofessionals receiving the education and training in preparation for the pandemic response. The article further discusses training topics covered and the competency expectations for non-critical care nurses trained.

In March 2020, the WHO declared a global pandemic due to the novel coronavirus (severe acute respiratory syndrome coronavirus 2). Initial news reports from China and Italy highlighted healthcare systems overwhelmed and struggling to care for patients requiring ventilator support, as well as shortcomings in supplies, equipment, staff, and space for the critically ill.[1–4] Early models for Germany predicted 550,000 cases and 14,000 deaths,[5] suggesting that 16,500 patients would require a higher level of care based on early reports from Italy, where approximately 20% of cases required hospitalization and 3% required intensive care.[5] This led many healthcare organizations, including military treatment facilities like Landstuhl Regional Medical Center (LRMC) in Germany, to begin planning for the implementation of the tiered intensive care unit (ICU) staffing model recommended by the Society of Critical Care Medicine (SCCM)'s Fundamental Disaster Management Plan.[6]

The SCCM's tiered staffing model joins non-intensive care providers and nurses with critical care staff to help manage and care for critically ill patients. The model joins four ICU nurses with 12 non-ICU nurses to provide bedside care for a surge of up to 24 critically ill patients as one team. Using this model as a framework, healthcare facilities raced to provide just-in-time staff training to ensure a safe and effective care environment if the tiered staffing model needed implementation. This article focuses on the considerations for just-in-time training and its implementation for nursing staff at LRMC

in response to the coronavirus disease 2019 (COVID-19) pandemic.

JUST-IN-TIME NURSE TRAINING

As it became clear that Italy was a pandemic hot spot, LRMC began to anticipate a potential increase in COVID-19 patients. Landstuhl Regional Medical Center's beneficiary population of 205,000 spans throughout the European region, the Middle East, and Africa. The facility immediately revisited its expansion plan for critical care capabilities that included nurses from across the medical center. Nurses that could be utilized would be coming from various care environments throughout the 14 specialty clinics in LRMC's organizational footprint, including Red Cross volunteers. Acquisition of additional staff members usually requires multiple months due to the facilities overseas location. Acquisition of additional staff members usually requires multiple months due to its overseas location. The on-boarding process of any newly hired staff would take longer than usual due to the restraints of the pandemic; therefore, preparing the staff on hand became a priority.

To ensure the availability of resources and capacity, outpatient clinics ceased operations, and elective procedures were canceled in anticipation of the surge of COVID-19 patients. Reducing the virus's transmission was a priority, leading to significant changes including social distancing and reducing the total number of staff within the facility. Given these working condition limitations, the utilization of free online resources became the timeliest and most efficient way to provide staff with foundational information related to the care of critically ill patients with respiratory disease. The SCCM's Critical Care for Non-ICU Clinician[7] modules and the American Association of Critical Care Nurses (AACN)'s[8] online COVID training resources were selected. These modules were assigned to nurses working outside of the ICU for baseline knowledge expectations if used as ICU nursing staff extenders under the SCCM staffing model.

The utilization of online modules allows staff to complete training while maintaining social distancing versus training in a traditional classroom setting. Additionally, online training provided flexibility to allow teleworking staff and staff working outside traditional day shift hours to complete this required training. Nursing leadership and clinical nurse specialists (CNSs) completed an assessment of an individual nurse's experience and assigned appropriate modules based upon their clinical background. Each non-ICU nurse completed approximately 6 hours of online educational modules. Learning modules highlighted the basics of respiratory assessment, ventilator management of the critically ill patient, and the treatment of acute respiratory distress syndrome (ARDS). In 5 weeks, 126 non-ICU trained nurses and paraprofessionals from areas such as the Medical/Surgical/Pediatrics Unit, Mother/Baby Unit, and Labor and Delivery completed the online learning in conjunction with a 2-hour hands-on skills session. Those trained included 75 registered nurses, 32 licensed practical nurses, and 19 paraprofessionals. In a 2-week period, 35 ICU nurses also completed training through the AACN as a refresher on respiratory management principles for patients in ARDS. The decision to require this refresher training for ICU nurses was because the majority of LRMC's critical care patient population consisted of patients with trauma and surgical issues rather than medical ICU patients.

HANDS-ON SKILLS

After completing the online training modules, staff attended a 2-hour hands-on skills session at the hospital. The healthcare staff trained to assist the critical care team with ICU and COVID patients included registered nurses, licensed practical nurses, army medics, and air force technicians. Initial skills covered in the session included items related to the management of mechanically ventilated patients (e.g., oral care, in-line suction, and alarm management), hemodynamic monitoring (e.g., arterial line management, assessment related to vasoactive medications, and effects of sedation), and manual prone positioning. Army medics and Air Force technicians were trained on the skills to their full scope of practice as outlined in the Army's Individual Critical Task Lists and Air Force's Comprehensive Medical Readiness Program. Additionally, trainees had the opportunity to spend a shift precepting with an ICU nurse caring for the first critically ill COVID-19 patient admitted. After a non-ICU member's shift, the CNSs would solicit feedback to adapt the hands-on skills training based on staff responses. The staff feedback aligned with the hands-on training program objectives; therefore, the skills session components remained consistent for the training duration.

Although hosting in-person hands-on skills sessions was a risk during the pandemic, the difference in learning styles preferred by nurses and the positive impact that tactile learning can have on some learners' retention were considered.[9]

Leadership and CNSs determined that with appropriate mitigation strategies, the benefit of a ready healthcare team outweighed the risk. Several measures were taken to decrease the risk of staff exposure during the hands-on skills sessions, such as limiting the group size to six trainees per session, maintaining hand hygiene, and wearing masks as per the Command Team's implemented facility policy.

PERSONAL PROTECTIVE EQUIPMENT CONSIDERATIONS

Additional staff training took place regularly in the form of hands-on personal protective equipment (PPE) donning and doffing adapted to the on-hand PPE supply. Additionally, PPE observers were trained to ensure staff maintained safe donning and doffing practices while working with COVID-19-positive patients. The CNSs immediately began to assist in staff training to include the development of a learning video for staff to watch, which outlines the various pieces of PPE available to staff and their safe utilization. A system to closely monitor PPE usage rates was also implemented and managed by a facility CNS to ensure the ordering of adequate supplies for the immediate time frame and predictive values based on potential caseloads. Pertinent information regarding PPE use was continuously emphasized with staff during a hands-on skills station.

NOVICE VERSUS COMPETENT

Training was only designed to orient non-critical care staff to the extender role. These individuals would not be assigned primary care roles of ICU patients. This approach was adopted from Wright's Method for Competency Assessment.[10] According to Wright, there are three competencies for floating staff to unfamiliar areas within a medical facility: (1) learning to fly, (2) marketing yourself in a positive way, and (3) understanding crisis management options. The training provided hands-on experience to simulate the clinical cases emerging in the literature that would help determine the care required for COVID-19 patients and to encourage mastery of the three floating competencies.[10] A description of the impact and utilization of the three float competencies during hands-on training can be found in Table I.

Hands-on skills training for ICU skills offered nurses the opportunity to embrace the first float competency of learning to fly. The staff recognized their knowledge and competency level for each skill. They were encouraged to ask questions that would assist in the comprehension of the education provided. They experienced the process of tactile learning as they physically performed the skill. Resources for future use were made available at this time, such as quick reference guides for common ICU medications and documentation requirements, as well as a prone positioning checklist. Non-ICU staff were reassured during the training that they would be working in a team environment when supporting the ICU nurses and that resources were available.

TABLE I. Utilization of Wright's Float Competencies in LRMC's Just-in-Time Hands-on Training

Wright's method for competency assessment float competencies[10]		
Learning to fly	Marketing yourself in a positive way	Understanding crisis management options
– Attendees were able to identify knowledge deficits and ask questions	– Attendees were able to share clinical strengths with critical care team	– Facilitated attendee's understanding of the proposed staffing model
– Provided opportunity to practice unfamiliar hands-on skills	– Attendees had the opportunity to demonstrate skill	– Facilitated attendee's understanding of their role in the pandemic response
– Training in environment allowed attendees to identify available resources	– Attendees had opportunity to share experience and begin building relationships	– Attendees were able to make recommendations for workable solutions in crisis management

Staff were also encouraged to market themselves positively when operating as an extender. Staff acting as extenders in unfamiliar environments who verbalize their skills and competencies upfront can be utilized more effectively, leading to a fulfilling and productive experience for all involved.[10] This goes hand-in-hand with the third competency of understanding crisis management options. Activation of the SCCM's staffing model for pandemic response means the facility is truly operating in a crisis mode. Critical care nurses are aware that their nurse extender counterparts may have no critical care background and expect an initial period of added support for extenders to become competent in critical care nursing skills. Staff extenders must exhibit a positive attitude and confidence in what skills they do possess. This allows critical care staff to utilize the extenders for their strengths and focus any orientation time on known areas of knowledge or skill gaps. During the period of just-in-time training, teamwork and communication of extenders with the ICU staff were critical for maximizing their skills while building working relationships that ultimately benefit the patient.

OPPORTUNITIES FOR IMPROVEMENT AND SUSTAINMENT

Initial information about COVID-19 evolved as the scientific community learned more about the virus and how it impacted patients. The rapid guidance changes were a source of anxiety among the nurses within the facility. The SCCM online modules provided baseline information on the pandemic staffing model to be utilized, but it was critical for leadership to communicate the expectations of their role in the pandemic response.

The development of facility-specific Clinical Practice Guidelines for pandemic response included considerations specific to the care of COVID-19 patients, with the resources available in LRMC's overseas location. One example of the facility-specific guidelines is the utilization of manual patient proning as Rotoprone beds (mechanical beds designed for the proning of patients) are not available in Germany. Another example relates to patients from areas of operation outside the LRMC footprint, making distance and time differences challenging for loved ones. Telehealth was included in the plan to encourage patients to connect with loved ones, as they were hundreds of miles apart. A third example is the utilization of continuous glucose monitors for the COVID-19 patients to allow nurses to decrease exposure time and PPE use while continuously monitoring the critically ill patients' blood glucose levels. Updates made to the existing emergency operation plans related to the tiered response plan for the expansion of beds. Guidance was also developed to use critical resources and how staff would be utilized as extenders at all levels of care (nurses, providers, and mid-level providers). These updates will help guide future responses based on lessons learned during this current pandemic.

Fortunately, to date, there has been no need for LRMC to implement the SCCM staffing model. However, in anticipation of a second wave of COVID-19 patients, the facility performs regular monthly simulation sessions to validate skills. These monthly sessions were originally designed to validate the Army Nurses Individual Critical Task Lists (ICTL). The Army Nurse ICTL list for preparedness of critical care nurses for wartime missions encompasses many of the skills required for the care of the COVID-19 patient So the monthly training was utilized as refresher training available to all nurses (military and civilian), medics, and technicians within the facility. Additional follow-up training for nursing staff consisted of two skills fairs that focus on skills commonly required for the critically ill COVID-19 patient. Non-ICU nurses also continue to float shifts into the ICU to work with experienced ICU nurses caring for critically ill patients. This allows nurses to gain competency in critical care without the fear/risk of exposure to COVID and the added complexity of caring for ICU patients while wearing PPE. Finally, in preparing to shift additional staff from units to support the critical care team, nurses in administrative roles were trained using similar methods, increasing the total number of bedside staff available for units other than ICU.

CONCLUSION

During the pandemic's rapid escalation, nursing leadership and CNSs within LRMC quickly identified and responded to issues that arose during the pandemic. The early identification of possible staffing and clinical skills issues allowed for quick implementation of a training program for critical care nurse extenders as necessary. CNSs were indispensable in evaluating staff skill, experience, and training, ensuring that hospital leadership's pandemic expansion plan could be implemented safely and efficiently. Staff utilization of the free online learning modules offered by professional organizations

and the hands-on skills sessions allowed 126 staff members' expeditious training. The measures incorporated to maintain safe practices helped mitigate the spread of the virus among the healthcare staff. With the pandemic ongoing, the facility's leadership focus for the facility is now on sustainment of the education and skills gained by staff related to the care of the COVID-19 patients to ensure preparedness for future waves.

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DISCLAIMER

CONFLICT OF INTEREST STATEMENT

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