Caring for the Caregiver: How Tele-ICUs Are Improving the Provider Experience

This is Part II of a three-part series on the growing use of telemedicine in care delivery. Part III will appear in the July issue of Industry Edge.

By Audrey Doyle

“Take care of yourself first or you’ll have nothing left to give others.”

This idiom, while applicable to medical professionals throughout the continuum of care, is particularly relevant to the intensivists, critical-care nurses and other health care specialists who attend to the complex needs of patients in the intensive care unit (ICU). Patients in this setting are critically ill, and they require close observation, rigorous monitoring and immediate care should their fragile conditions suddenly deteriorate. The high level of stress inherent in working in this environment can lead to such adverse caregiver outcomes as burnout, disengagement and post-traumatic stress disorder (PTSD), among a host of others.

By incorporating telemedicine programs into their ICUs, however, health systems can complement the care provided by their bedside staffs. This extra layer of support can improve the caregiver experience in myriad ways.

For the bedside ICU staff, a tele-ICU can

■ Improve quality of life and reduce burnout
■ Reduce staff turnover and increase job satisfaction and engagement
■ Supplement clinical experience and education

For the tele-ICU staff, it can

■ Increase job satisfaction and engagement
■ Provide exposure to new clinical areas and equipment
■ Offer a way to apply critical-care skills without incurring the physical and emotional impact of working at the bedside

Extra Eyes and Ears

ICUs became common in U.S. hospitals in the 1950s as a response to the polio epidemic. Today there are approximately 6,600 ICUs in the United States providing specialized treatment to patients suffering from acute or life-threatening conditions such as sepsis, stroke, heart failure, respiratory failure, renal failure and trauma.

To increase patient safety in the ICU, the Leapfrog Group made around-the-clock ICU physician staffing (IPS) a Safety Standard against which payers measure hospital performance, stating that high-intensity staffing is associated with a 40% reduction in ICU mortality. Consequently, the organization said, nearly 55,000 ICU deaths per year could be avoided if the IPS Safety Standard were implemented in all urban hospitals with ICUs in the United States.¹

¹ www.hospitalsafetyscore.org/media/file/IPS.pdf
However, an ongoing shortage of intensivists has made it nearly impossible for hospitals to meet this staffing criterion. Furthermore, over 5 million patients are admitted to ICUs in the United States each year, and as baby boomers continue to age, it’s predicted that the volume and severity of ICU cases will increase. These factors, along with continual exposure to patient morbidity and mortality and the need to constantly monitor and manage patients’ complex and rapidly changing medical conditions, are taking an emotional toll on ICU staffs, resulting in job dissatisfaction, high staff turnover and poor quality of life.

This is where the use of telemedicine in ICU settings—or the tele-ICU—is helping. Telemedicine is the use of advanced, secure telecommunications technology to evaluate, diagnose and treat patients, regardless of where they’re located. As we reported in the May issue of Industry Edge, a growing number of health care facilities are leveraging the benefits of telemedicine to provide safe, high-quality care to patients.

With a tele-ICU, the care provided to ICU patients by the bedside staff is supplemented with care provided by off-site intensivists, critical-care nurses and other health care professionals. In addition to improving patient outcomes, this care model is improving the experience of caregivers both at the bedside and in the tele-ICU.

Most tele-ICU programs feature a support center that’s developed and maintained by a large hospital system to provide assistance to ICUs in the system’s network. The support center typically is equipped with high-resolution monitors, automated alert mechanisms and telecommunications software, and is staffed around-the-clock by intensivists, critical-care nurses and support staff. The patients’ rooms have wall- or ceiling-mounted high-resolution cameras that the tele-ICU clinicians can control so that they can round and check on the patients; and high-resolution videoconferencing systems through which the patients, their families and the ICU clinicians can communicate with the tele-ICU clinicians.

The tele-ICU equipment continuously analyzes patients’ physiological data and provides clinicians with real-time access to medical records, lab results, radiographic images and telemetry information such as oxygen saturations, ventilator settings and blood pressure readings. This enables them to detect subtle changes in patients’ conditions, immediately alert the bedside team if a patient’s condition deteriorates and collaborate with them to remedy the situation. Likewise, if a bedside clinician needs immediate assistance from an intensivist or critical-care nurse, they can summon help from the tele-ICU.

In hospitals that don’t have an ICU, a mobile cart outfitted with monitoring equipment and two-way audio and video links can be wheeled to the bedside. The tele-ICU team can then assist the bedside team in assessing the patient and providing additional support if needed.

**Energize, Engage and Educate**

The first tele-ICU was deployed in 2000 by Sentara Norfolk General Hospital. Today approximately 55 tele-ICU support centers are up and running in the United States, providing assistance to an estimated 15% of the nation’s ICUs.

Two health care networks with highly successful tele-ICU programs in place are Advocate Health Care and Geisinger Health System. Although initially deployed to improve the patient experience, their tele-ICUs have been instrumental in improving the caregiver experience, as well.

Advocate started its tele-ICU program in 2003. According to Cindy Welsh, RN, vice president of Adult Critical Care and Medical Professional Affairs, Advocate provides 24/7 tele-ICU support to all the ICUs within its system and to two outreach hospitals; it also provides 7 p.m. to 7 a.m. support seven days per week to two additional hospitals that are outside the Advocate network, bringing the total number of ICU beds in the program to 397. Advocate staffs its tele-ICU with board-certified intensivists (two during the day and three at night), seven or eight critical-care nurses and two health care assistants.

Geisinger went live with its program in 2010. According to Janet Rushing, RN, operations director for the tele-ICU program in Geisinger’s Center for Telehealth, Geisinger monitors the 124 ICU beds within its system and an additional 12 ICU beds in three outside hospitals. Geisinger staffs its tele-ICU with one board-certified intensivist from 7 p.m. to 7 a.m., three critical-care nurses around-the-clock and one unit desk clerk per shift.

Welsh and Rushing state that their tele-ICUs provide an extra layer of support for bedside intensivists/physicians and critical-care nurses, thereby reducing burnout and stress and enhancing quality of life. “Burnout and stress are significant problems in critical care,” Welsh said. “Studies have shown that up to 50% of ICU physicians and nurses suffer from burnout, stress or PTSD.”

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In addition, Welsh and Rushing say that access to the tele-ICU intensivist when the bedside intensivist is with another patient or off-site enables their bedside nurses to more easily and quickly resolve complex patient situations, which has increased job satisfaction.

For residents at the bedside, the tele-ICU provides a way to gain clinical experience and additional education, as well as proper oversight. “At some of our sites, when a resident admits a patient they call an intensivist in the tele-ICU to discuss the case. This allows the resident to ask questions and establish a care plan, so it becomes a small teaching case,” said Dr. Michael Ries, medical director of Adult Critical Care and eICU® at Advocate. (eICU is a registered trademark of Philips Healthcare and the name of the tele-ICU program that Advocate and Geisinger employ.)

The opportunity for additional education doesn’t stop at 7 p.m. “For problems that occur at night, residents don’t have to wake their attending or worry whether the problem is significant enough to wake them,” Dr. Ries said. “There’s always someone in the tele-ICU who’s awake and anxious to assist and educate, whether it’s about managing a ventilator issue, reviewing an X-ray, determining what tests to order for a patient whose condition is declining or considering alternative diagnoses or therapeutic interventions.”

Dr. Ries adds that one of the outreach hospitals in the Advocate tele-ICU program doesn’t have an intensivist on staff. “They have hospitalists, so for every patient admitted there, the hospitalists have a mini consult with the tele-ICU intensivist and round every morning with them to review the patient’s care plan, which provides additional educational value to the hospitalists.”

Also providing educational value is Advocate’s nurse mentoring program, in which tele-ICU nurses mentor nurses who are new to the ICU. This augments the ICU nurses’ clinical experience significantly, said Welsh. In addition, it improves the quality of information communicated to the physician regarding the patient’s clinical status, said Dr. Ries.

According to Rushing, having access to the tele-ICU intensivist at night has had a big impact on the morale of Geisinger’s ICU caregivers. “Our ICUs don’t have intensivists at the bedside at night, so it’s great that our bedside staff can collaborate with our tele-ICU intensivist during those hours,” she said. “It also gives the providers in the ICU comfort in knowing that, in their absence, an intensivist is available to give guidance, insight, orders, et cetera, and keep that coordinated patient care going.”

“Advocate has found great value in the collaborative culture of our tele-ICU program,” added Dr. Ries. “The ICU intensivists know that when they write orders, make diagnoses and establish therapeutic goals and care plans, the delivery of that care is being carried out in the fastest way possible, without any omissions or variations. They’re still the captains of the ship; the tele-ICU just helps them to consistently and efficiently deliver high-quality care to the patient, and gives them peace of mind that their patients are receiving the best care possible.”

Rushing points to the timely review of lab work as a good example of how the Geisinger tele-ICU provides peace of mind to bedside caregivers. When an ICU intensivist orders lab work on a patient, the results are sent to the caregiver at the bedside and in the tele-ICU. If the results indicate a problem—a dangerously low potassium level, for instance—and the bedside caregiver hasn’t had a chance to review the results, the tele-ICU caregiver can access the patient’s medication administration record to review the intensivist’s instructions, then can alert the bedside caregiver so that the instructions can be followed in a timely manner. If the instructions don’t address the problem at hand, the tele-ICU caregiver can offer to contact the ICU intensivist for guidance on next steps.

Since timeliness and efficiency go hand-in-hand in ICU care, the fact that tele-ICU nurses can sign off on procedures requiring two nurse signatures, such as blood administration and administration of high-alert medications like insulin and heparin, means bedside nurses don’t have to spend time tracking down an on-site nurse for a second signature. Likewise, if a patient’s condition suddenly deteriorates, the bedside nurse can continue caring for the patient while someone in the tele-ICU alerts the patient’s physician and additional specialists. “This efficiency really reduces the stress level in crisis situations,” said Rushing.

For tele-ICU caregivers, meanwhile, Rushing cites the ability to triage patients as an important benefit at Geisinger. “Our tele-ICU team supports several ICUs, and they can look at all of those ICU patients and decide which ones they should focus on first based on the patients’ needs, not on which ICU they’re in, which has increased job satisfaction and engagement,” she said. “Also, our tele-ICU software lets them choose in what order they want to visually assess patients based on type—for example, the sickest patients first, then the vented patients—essentially develop a workflow based on what’s happening in the ICUs at that time, which is a huge staff satisfier.”

Many caregivers at Geisinger and Advocate have transitioned to the tele-ICU after years of working in the ICU, which is enabling them to continue using their experience and critical-thinking skills while avoiding the physical and emotional stress associated with working at the bedside. “The benefit here goes both ways: They’re extending their careers, and they’re sharing their years of experience with the tele-ICU and ICU teams,” Dr. Ries said.
A win-win for the tele-ICU and ICU teams at Geisinger, meanwhile, is the network’s shared staffing model, which enables its critical-care nurses to “keep one foot in each world,” said Rushing. “Several of our nurses work in the ICU and in the tele-ICU, so they’re learning procedures and using equipment they wouldn’t have access to if they only worked in one of those settings,” she said. “This keeps both teams engaged and is a great model in terms of collaboration and teamwork.”

The list of benefits to ICU and tele-ICU caregivers is long and varied, but that doesn’t mean tele-ICUs don’t come with their own challenges. For instance, with initial equipment and labor costs typically reaching several million dollars, tele-ICUs are very expensive to deploy. Furthermore, tele-ICU services aren’t covered by insurance. (Tele-ICU services at Advocate and Geisinger are provided at no additional cost to patients. Any costs that aren’t reimbursed through contracts with outside hospitals participating in the programs are covered by the health systems themselves.)

Getting Clinicians on Board

Another challenge can be acceptance of the tele-ICU services by the bedside staff. In fact, both Advocate and Geisinger initially experienced some pushback from their ICU clinicians.

“Some nurses were concerned that their role would be diminished—is Big Brother now going to tell us what to do? And some physicians were concerned that the tele-ICU clinicians would try to tell them how to manage their patients,” said Dr. Ries. Advocate and Geisinger alleviated these fears through continual communication and education on the benefits of a tele-ICU, and by inviting the ICU teams to visit their tele-ICUs to see how they function.

Once the ICU teams understood that the purpose of the tele-ICU is to complement the care they provide and not replace it, they recognized how the tele-ICU is instrumental to their care delivery so that they can more effectively provide safe, high-quality care to their patients. “Now it is the bedside clinicians who are frequently asking the tele-ICU program to help with the more efficient delivery of evidence-based best practices to each patient,” said Dr. Ries.

“In this way, a tele-ICU is invaluable,” concluded Rushing.