Hospitals see the potential in virtual nursing, but are still learning how to use it

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Philadelphia-area hospitals are rolling carts outfitted with video screens and virtual cameras into patient rooms with the hope that remote nurses can reduce patients' risk of falling, pulling out tubes, or hurting

themselves another way.

One remote nurse can do the work of up to a dozen in-person staffers by watching a bank of cameras stationed in patient rooms, and sometimes interacting with patients via video. Research has found these so-called virtual sitters can help reduce patient falls, because the nurses on the other end of the camera are not moving from room to room, but solely dedicated to watching patients' every move.

But virtual sitters can also introduce their own safety risks: Jefferson Abington Hospital was cited by state inspectors in March for using virtual monitors in behavioral health patient rooms, which hospitals are required to keep free of anything that patients could use to hurt themselves, such as shade pulls, extra bedding, and power cables. Inspectors said that patients could have used the virtual monitors' 8-foot-long power cords to strangle themselves.

Jefferson hospitals follow national guidelines that deem virtual sitters acceptable in behavioral health units, a spokesperson for the 18-hospital system said. Still, Abington administrators removed the carts and assigned staffers to watch the patients, making the incident a teaching moment.

Elsewhere in the region, health systems are also learning through experience how to best use virtual sitters and nurses—technology that rose in popularity during the COVID-19 pandemic, when hospitals needed to limit interaction and staff were stretched thin.

Penn Medicine nurses have found the effort required to maneuver the bulky equipment sometimes offsets the time that virtual nurses would save for on-the-floor staff. And in South Jersey, Virtua Health is testing whether its virtual nurses can take on more of the duties typically assigned to in-person nurses.

"Everyone is trying to figure out how to use the technology to improve patient care and safety, and we're all learning as we go," said Bill Hanson, Penn's chief medical information officer.

Penn: Hype meets reality

Penn initially hoped mobile virtual sitters would reduce the need to assign staff to one-on-one observation duties, said Ann Huffenberger, a nurse and the director of the Penn Center for Connected Care. Penn has six hospitals, from its flagships in Philadelphia to medical centers in Lancaster and Princeton, and each has 12 virtual sitters.

"Everyone is thinking the technology is going to create such efficiency. We bought into the hype," she said. "It didn't really work out for us in that manner."

Nurses found that patients requiring one-on-one observation weren't a good fit for a virtual sitter. Many of these patients are disoriented or prone to confusion and less likely to take direction from the virtual nurse, whose voice may even leave them more agitated, said Huffenberger.

Patients admitted for behavioral health concerns also get in-person sitters, instead of virtual sitters, because they may act suddenly and endanger themselves. Staff can respond to an alert from the virtual nurse within seconds, she said, "but even in 20 seconds, it might be too late, if they're high risk."

The mobile units are helping to monitor less risky patients who can still benefit from a closer watch.

Virtual sitters work well for patients at risk of falling or trying to remove a wire or tube, but who will follow instructions from a voice coming

from the screen, Huffenberger said. For instance, if a patient at risk of falling starts to get out of bed, the virtual nurse could ask them to remain in bed, then call the nurses' station for help.

Huffenberger said Penn is considering transitioning its mobile virtual sitters to wall-mounted screens. Nurses often lose time troubleshooting connectivity problems, tracking down fresh batteries, or simply locating a cart that's not in use.

Installing permanent, wall-mounted virtual sitters has its own logistical challenges. It would require construction in patient rooms that are always in use, and regulatory approval.

Virtua: From sitter to admin work

Virtua Health uses mobile virtual sitters to monitor patients at risk of falling or pulling out service lines. Staff who were spending hours watching just one patient can now take care of multiple patients in the unit, said Catherine Hughes, the New Jersey health system's chief nurse officer.

Now, Virtua is testing whether virtual nurses can take over some of the administrative tasks nurses do, such as interviewing patients when they're admitted, reviewing medications, and giving discharge instructions.

The virtual nursing pilot at Virtua's Our Lady of Lourdes Hospital in Camden and Willingboro Hospital in Burlington County also makes it possible for family members to virtually attend meetings about discharge or medication instructions that they may otherwise miss, Hughes said.

Through the pilot, Virtua learned that clearly explaining the virtual monitors to patients is critical. Once families learned they could ask

questions through the virtual nurse, they were less likely to call the nurse station and reported feeling more involved in their family member's care.

Jefferson: Virtual knocks and other tweaks

Jefferson has also found that its virtual nursing program works best when patients and families feel connected to the nurse at the other end of the camera.

When Abington Hospital tested out a new virtual nurse program last year, the health system found that small tweaks to the technology made patients more comfortable. The cameras were programmed to turn toward the wall when not in use, so patients wouldn't wonder whether it was constantly watching them. And instead of just flashing on without notice, programmers added a "virtual knock," similar to a provider knocking on the door before entering.

Jefferson plans to extend the program to more of its hospitals this year.

Such expansion will help patients at Jefferson's smaller hospitals to access specialists without being transferred to another hospital in the system, said Colleen Mallozzi, a senior vice president and chief nurse informatics officer at Jefferson.

Jefferson's hospitals also use virtual sitters—the mobile carts with screens that can be used to monitor patients remotely—but they don't help with medications, check-ins, or discharge.

The incident at Abington Hospital has been a reminder that each patient's needs are different, and the best way to keep each safe may vary, Mallozzi said. Behavioral health patients, in particular, may have complex mental and physical health needs.

"What we're finding is there's no replacement for the humans where the humans are needed," she said.