

Nursing hospitals back to health: how mobile technology can help bridge the nurse staffing gap

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“We don’t want to replace human touch at the bedside, but how can we amplify what we have to offer so that we can best care for people, knowing that we don’t have enough nurses to go around? There has to be more opportunity for us to help our patients.”

Kiersten Henry

Nurse practitioner for 25 years



52

The median age of registered nurses in 2020, with more than one-fifth planning to retire within five years.

National Council of State Boards of Nursing; National Forum of State Nursing Workforce Centers survey

Nursing is in crisis

Between 2020 and 2021, the number of working U.S. nurses dropped by more than 100,000, representing the largest single-year decline in four decades, according to an [analysis](#) published last year in Health Affairs. The crisis hasn't abated – the U.S. Department of Health and Human Services [reports](#) that 15% of U.S. hospitals are currently experiencing shortages in critical-care staffing.

And while the nursing workforce is [expected to grow](#) by 6% over the next decade, the U.S. Bureau of Labor Statistics projects 203,200 openings for registering nurses each year through 2031, when retirements and workforce exits are factored into the growing demand.

This unprecedented shortage also coincides with an accelerated pace of technological change, from faster networks to advances in artificial intelligence. These and other technologies, devices and applications can now do more “heavy lifting” of routine tasks, creating greater efficiencies and allowing nurses to spend more time where it matters most – with the patient.

It's clear that nurse staffing shortages are the biggest pain point in the U.S. healthcare industry today. And while there is no single cure for the crisis, technology can serve as powerful medicine to help hospitals extend the reach of short-handed nursing staffs.



1. An urgent crisis with life and death consequences.

Things weren't looking good even before the Covid-19 pandemic. Staffing projections looked bleak, with more nurses aging out and fewer entering the pipeline.

The pandemic made things worse, and fast.

Many healthcare workers burned out because of consistently long hours amid challenging and emotionally draining circumstances. Family members of patients weren't allowed inside hospitals, often making nurses the last people to be with someone when they passed away.

The ripple effects continued and became a tidal wave of challenges. Service lines, care units, even whole hospitals are shutting down because they don't have enough nurses.

"The giant wave has crashed and receded, and now we're seeing the damage," said Kiersten Henry, a nurse practitioner for 25 years in the Maryland area. "The pandemic certainly perpetuated people leaving the bedside, people retiring, people concerned about either their own health or just the hours spent in the PPE (Personal Protective Equipment.)"

"Now we're in a state where we've got this prolonged crisis of not enough nursing resources to meet the patient demand in a lot of places. We're in the long-term aftermath of the acute phase of the crisis – and rebuilding is going to take some time."

"Nurses are the backbone of the (U.S healthcare) system. Without them it could not function."

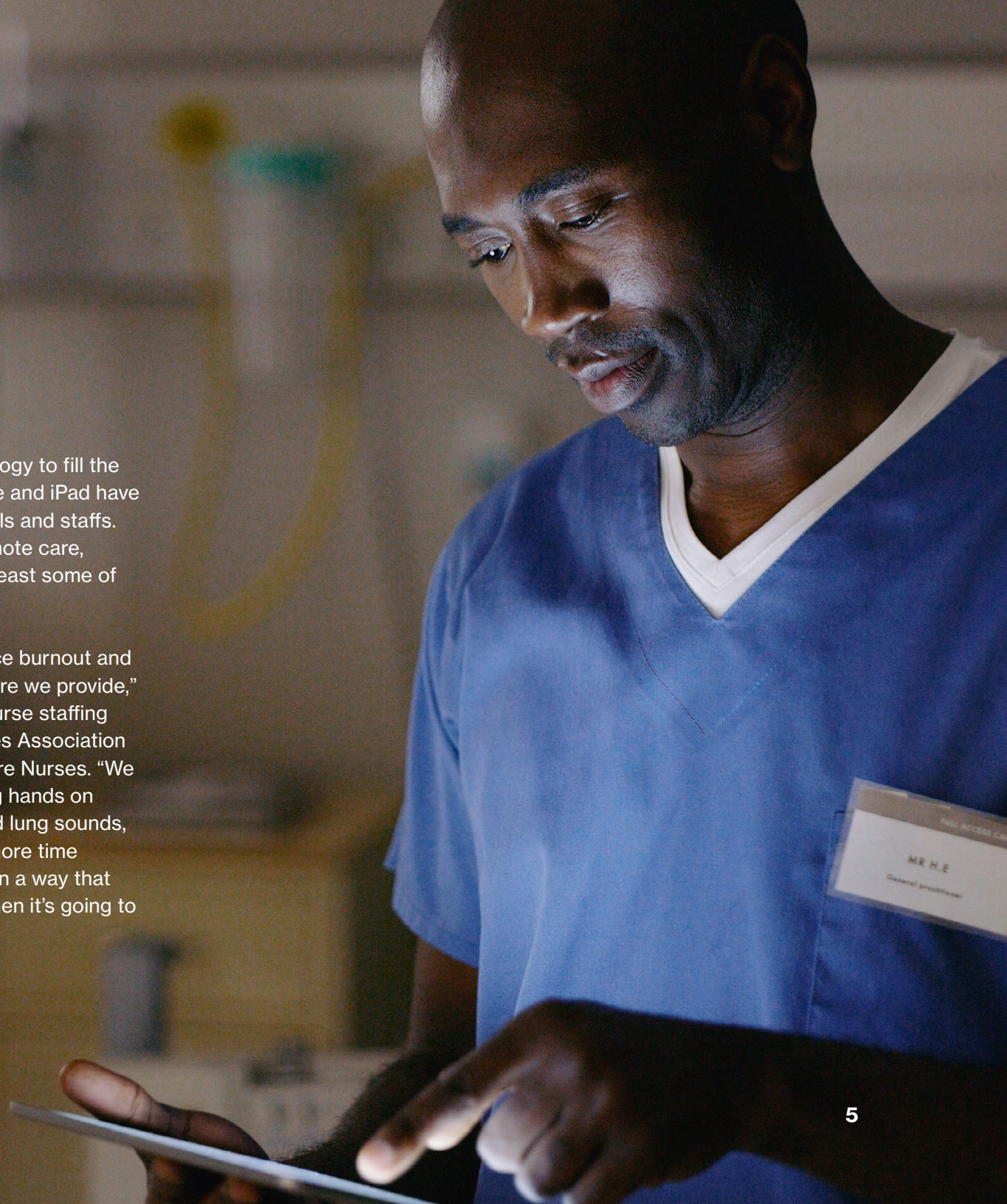
Brett Barganz, Verizon
Senior Principal, Connected Healthcare



Technology as an antidote

The reality – and opportunity – is for technology to fill the staffing gaps. Mobile devices such as iPhone and iPad have already been deployed among many hospitals and staffs. And new innovations in apps, AI, 5G and remote care, among other advances, promise to ease at least some of the staffing pain.

“Our opportunity with technology is to reduce burnout and enhance how we feel about the quality of care we provide,” said Henry, who served as an advisor to a nurse staffing task force that included the American Nurses Association and the American Association of Critical Care Nurses. “We can’t get away from handholding and putting hands on people and listening to the heart sounds and lung sounds, but how can we use technology to give us more time versus less? If you help me use technology in a way that helps me feel like I’m providing good care, then it’s going to be a significant value add.”





2. How technology bridges the gap

Nurses can spend up to a fifth of their day just trying to find the assets they need for patient care – wheelchairs, blood filtering machines and other necessary equipment. But technology can make a huge difference and help save valuable time.

“We could provide a nurse advanced asset tracking on a mobile device so she could easily locate items needed for patient care without needing to search closets, other departments, or other floors,” said Brett Barganz, Verizon’s Connected Healthcare Senior Principal. “Also, when she is caring for multiple patients, and cannot be with each of them at the same time, we could extend her vision with Intelligent Video, alerting her if, for example, an at-risk patient is trying to get out of bed and might fall. These things could improve patient care as well as nurse job satisfaction and productivity.”

Henry agreed that freeing up staff and creating more efficiencies to focus on the patient are key benefits, adding that technology has also made it easier for nurses to connect with patient families, too.

“We will happily dial in a family member on an iPad app so they can hear updates as we do our rounds,” she said. “We did this during the pandemic of course, but it’s a great opportunity moving forward. These devices also allow us to monitor the patient and give them direction remotely if they start to get confused or need some assistance that doesn’t require a staff member going to the room.”

Health Tech in Action: Emory Innovation Club

In 2020, Verizon opened the nation's first 5G healthcare innovation lab at the Emory Healthcare Innovation Hub in Atlanta. The hub focuses on "solving the most pressing problems facing healthcare," leveraging a private Verizon 5G Ultra-Wideband network.

The network's lightning-fast speed and low latency allows researchers to explore solutions such as connected ambulances, remote patient monitoring and physical therapy, and next-generation medical imaging. With 5G, doctors could create holographic 3D anatomical renderings that can be studied from every angle, even projected onto the body to help guide surgery.





3. Getting the best devices into the right hands

The best network connectivity paired with the best devices can go a long way toward not just closing the staffing gap, but also toward making life easier for nurses and patients alike. But none of that matters if you can't get the technology where it needs to be.

Many nurses are able to maintain their own work-issued devices instead of sharing. And the more “modern” the device, the better the performance – batteries in most phones and tablets can now last an entire 12-hour shift. Improved cameras and quick

authentication using biometrics also help nurses to be more productive and efficient.

“During the pandemic, there were a couple patients whose families would leave the line open on the tablet all night long,” Henry said. “The patient had the nurses, of course, but also their family to reassure them. Just having that resource available for people was great, and we’ve continued to leverage it even for non-Covid patients.”



4. The next generation of healthcare technology innovation

New technology and applications continue to change the way hospitals care for patients. The list of advances is long and growing, with breakthroughs occurring on an almost regular basis. Here are just some of the ways technology is changing the future of healthcare for the better:

Digital intelligence and patient experience

5G wireless, AI, iPhone/iPad apps, mobile and data access, medication safety

“Medication administration is a big issue,” Moore said. “Rather than going to a workstation, nurses can now scan a patient’s wristband with an iPhone, reducing delays and documentation errors. Organizations like [Butterfly](#) are building ultrasound wands that are powered by iPhone and iPad, so you’re actually able to do an ultrasound at the bedside without having to go find the cart and wheel that into the room. There are a lot of applications like these that are on the cutting edge.”

Security and privacy

Smart ID management, mitigating breaches/ decreasing HIPAA penalties, private cellular networks and fixed wireless access

“The future of what we see for hospitals is private 5G cellular networks on their premises to replace or augment WiFi,” Verizon’s Barganz said. “There are a number of reasons to do this, such as increased reliability, coverage, capacity, performance, and security.”

He added that while 4G works for some simpler applications like asset tracking, in most cases you’re going to want 5G for more data intensive functions like telemedicine and video.

“We are talking with some of the most renowned health systems in the country, because in the near future those applications are going to be essential.”

Brett Barganz, Verizon

Senior Principal, Connected Healthcare

Remote care

Telehealth, iOS devices, Apple HealthKit, Apple Watch

“The shortage of nurses is not just in the hospital, it extends to home health and follow-up programs,” Henry said. “It’s been shown that telemedicine programs for heart failure patients after discharge help decrease their rehospitalization because you’ve got someone checking in with them.”

Training

iOS devices, 5G networks, AR/VR

“Apple devices with apps is a platform for nurses to do continuing education or for reminders on how to use a piece of equipment or perform a particular procedure,” Moore said. “Instead of leaving the floor to find a manual, you can build out a module, app, or another digital asset that is on the same device nurses are using to do their jobs.”





“A culture where technology is leveraged to allow people to do their best work is going to lead to retention and recruitment.”

Kiersten Henry

Nurse practitioner for 25 years



5. Looking ahead: shaping the future with technology and a human touch

The nurse staffing shortage is still a crisis. Technology alone can't solve it – but it's well on its way toward helping nurses, doctors, hospitals and health systems focus on what they do best.

What's needed now is not just a way to fix the problems of the past, but to look ahead and plan for the healthcare needs of the future.

“We cannot just think about how we're going to solve the problems of the past with the solutions of the past, or by simply making incremental improvements,” Barganz said. “We need to think in a completely revolutionary way. And we will need other ecosystem partners like Apple and healthcare systems to work with us to reimagine how healthcare is delivered in the future.

“We do not have all the answers,” he said, “but we can provide the next generation of networks to facilitate any technology that can be imagined.”

For Henry, who still works full-time as an ICU nurse, technology will always have a place at the bedside – to support and not to supplant the work she and her colleagues do every day.

“We don’t want to replace the human touch at the bedside, we want to amplify what we can offer so that we can best support our patients,” Henry said. “There is an important role for technology and we can use it more that we do. There’s a lot more opportunity.”

Kiersten Henry

Nurse practitioner for 25 years

Learn more about what Verizon and Apple are doing to bridge the nurse staffing gap:

- Verizon: [verizon.com/business/solutions/industry/healthcare/](https://www.verizon.com/business/solutions/industry/healthcare/)
- Apple: [apple.com/healthcare/](https://www.apple.com/healthcare/)

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