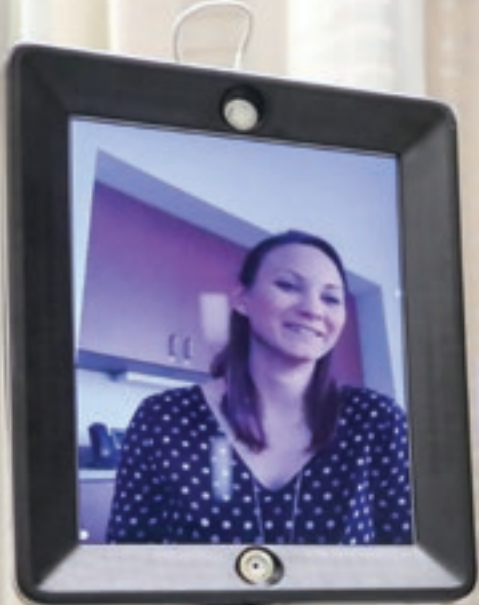


Telepresence Robots |





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New Ways to Engage Student Learning

Two Accelerated Bachelor of Science of Nursing (ABSN) students enter a simulation lab to begin an assessment and treatment of a pediatric patient when the child’s status suddenly changes. As they would in a real-life situation, they summon the on-call provider. Minutes later, the provider, an advanced practice nursing student who knows nothing about the case arrives – but not in the traditional sense. The provider is actually hundreds of miles away and has logged in to JaMMeR – a telepresence robot parked in the Center for Nursing Discovery (CND), and steers it into the simulation room to begin the consultation.

The advanced practice student on JaMMeR is a member of the acute care pediatric nurse practitioner program, taught by **Rémi Hueckel, DNP’11, MSN’96, CPNP-AC, CHSE, FAANP**, assistant professor and lead faculty. Hueckel piloted the new technology in the summer of 2015, when DUSON colleagues Jacqueline Vaughn, BSN, RN, CHSE, clinical instructor; Margie Molloy, DNP, RN, CNE, CHSE, assistant professor and director for the CND; and **Ryan Shaw, PhD’12, RN**, associate professor, first brought the technology to the school.

The JaMMeR, essentially an iPad mounted on a rolling stick, allows Hueckel’s students, all of whom are distance-based, to be present and interact in on-campus simulations. Through JaMMeR, however, her students receive only visual and audible information and never physically touch the patient. One of the things Hueckel has discovered over the past two years using JaMMeR is that it allows the instruction and the students’ learning to focus on what is arguably the most important facet of nursing: communication.

“Patient care is a team sport,” Hueckel says. “Our job as educators is to give people the tools to communicate, to be able to lead teams and get the information they need to make safe decisions for patients...when there are errors in the hospital, those most often come down to miscommunication.”

In the years since DUSON added JaMMeR to its list of classroom technologies, it has developed into an invaluable teaching tool for pre-licensure students as well. Nancy Crego, PhD, RN, CCRN, CHSE, assistant professor in the ABSN program, uses JaMMeR with her students



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in simulation labs at the end of the second semester, when they are just starting to apply their learning in clinical settings.

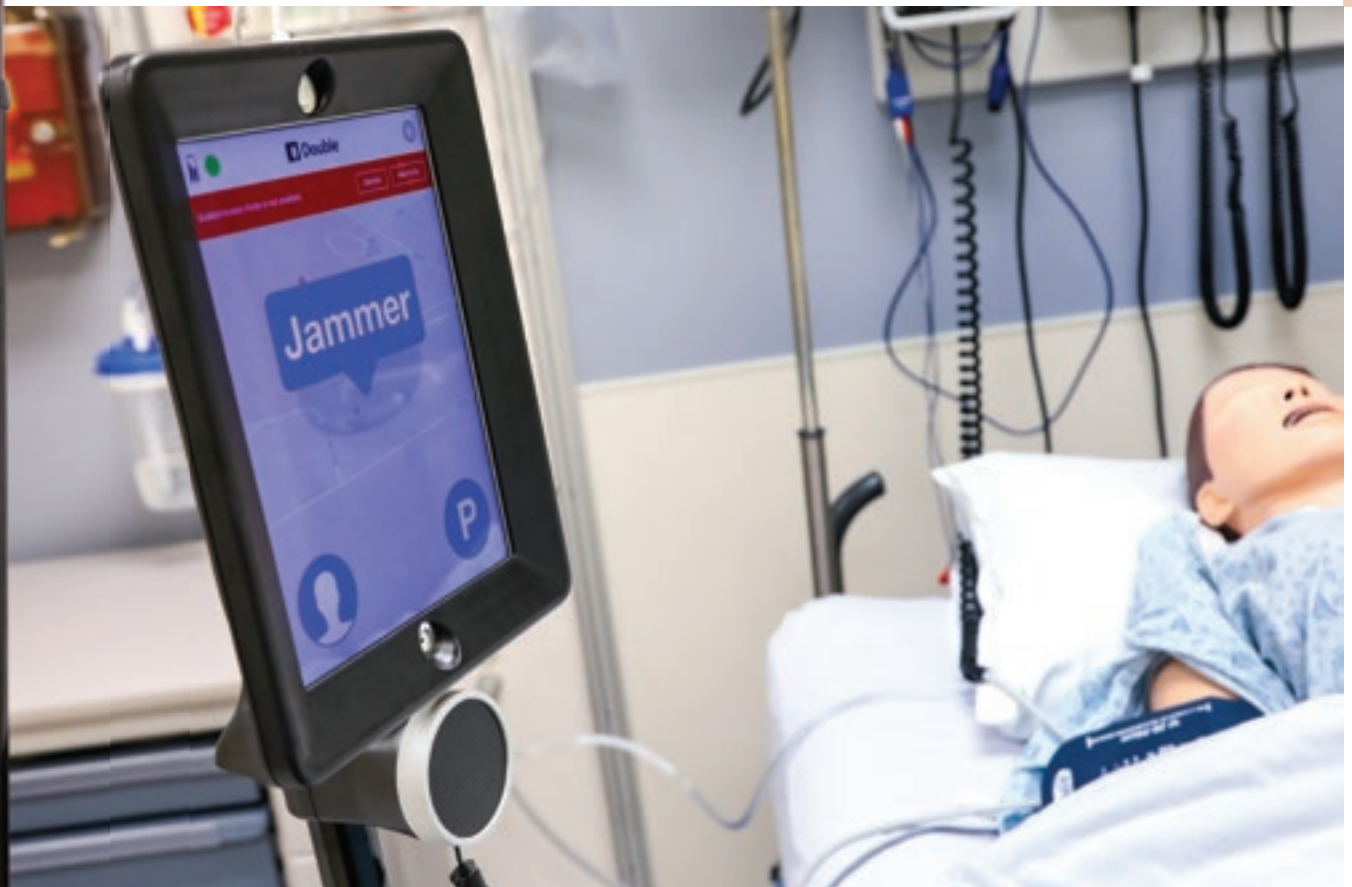
“It has really forced my students to take a hands on approach,” Crego says. Because the on-call provider joins the nurses digitally, Crego’s students are the ones who have to administer the actual nursing care and assessment. “There is nobody who is going to come and double check if they did hear wheezing, or lift the patient and position them correctly. The person [on JaMMeR] can help them through that and provide some guidance, but the onus is on [my students] to do that.”

Accuracy is critical to nursing care, and communicating with another provider digitally requires a heightened attention to detail and verbal clarity. If a problem develops, the advanced practice students can’t just jump into the simulation and

do it themselves, Hueckel says. They have to coach the ABSN students who are physically present in the simulation lab, and make sure their inquiries and directions are communicated accurately and effectively.

“This approach has facilitated learning because what we’ve seen is, as students transition into new and possibly unfamiliar roles, when challenged, they can sometimes fall back into the comfort zone of their previous role,” Hueckel says. Her students having a digital, instead of physical presence that makes that tendency impossible. Even on occasions when her students come to Duke’s campus, Hueckel says she still requires them to use JaMMeR. “I still make them do it remotely because there is value in learning how to verbally coach somebody through something.”

On the other side of JaMMeR’s screen are





Rémi Hueckel, DNP, CPNP-AC, FAANP, assistant professor explains how JaMMeR engages remote learners.

the ABSN students who are in the lab engaging with the distance-based student. These students must find the confidence in this situation to step up to the plate, Crego says. Communication can be even more tricky in pediatric nursing because often there's more than just the patient and provider present, Crego says. There could be parents, grandparents or siblings in the room, and communicating with the patient depends on the developmental stage of the patient. Treating a 2 year-old is very different than treating a 16 year-old.

Crego says her students really rely on the guidance from the pediatric nurse practitioner students, who have real experience as nurses treating pediatric patients. Hueckel says it gives her students the opportunity to use that knowledge in a consulting role. "These are students teaching students," Hueckel says. "It's a place where they can ask questions they might not ask if faculty

were in the room. And it's empowering for the nurse practitioner students because they gain confidence."

Currently, these pediatric simulations are the only time the telepresence robot is used as a virtual provider. Crego says she runs about four simulations a day with JaMMeR for a two-to-three week period at the end of her students' second semester.

One of the most invaluable benefits of JaMMeR simulations has been the debrief Crego says, when the student on JaMMeR virtually joins the ABSN students in the room after the simulation. In addition to the normal clinical questions, Crego says the ABSN students ask the nurse practitioner (NP) student more subtle questions about how to deal with uncomfortable situations such as when a parent keeps interjecting and won't allow the child patient to speak for themselves. The NP student can share personal nursing experiences with the

pre-licensure students, and Crego believes those go a long way.

"It's taken in a different light when it's a clinical practitioner who they don't know is sharing with them that type of information," Crego says. "We can tell them, but they might be a little skeptical." This type of student-to-student interaction is a huge plus, she says.

Hueckel agrees and adds that JaMMeR frees the instructor to observe the simulation, without interjecting himself or herself into the case. "It does allow me to see the bigger picture of what's going on. I don't have to play the role of the provider and simulate managing the patient as well," Hueckel says. "That has allowed me to identify communication as a primary goal of the education."

For Crego's students, when some of them first hear about JaMMeR, they can be skeptical of it being too fake. But they come back and say they love it, Crego says, and that it



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feels more real in some ways. The JaMMeR goes beyond someone being on Skype or FaceTime because the student logged in to JaMMeR can steer him or herself around the simulation lab, raising and lowering the screen, moving in close or backing up. The mobility allows for autonomy. Hueckel says because her students are distance-based, they are comfortable logging in to listen to a lecture, or have a group chat. They love the added dimension that JaMMeR offers.

“They have a physical presence with this. They’re not lost in the room,” Hueckel says, noting that because the remote person isn’t at the mercy of whomever is holding the device, it changes the dynamic. For example, in one simulation, one of the individuals acting as the mother of the patient was becoming stressed. The nurse practitioner student on JaMMeR rolled in closer and lowered the monitor so she was eye level with the actor playing the mother. Hueckel says in the debrief the ABSN students were amazed at how the acting NP was able to model that important behavior, realizing they had all been standing over the mother and patient.

With any technological tool, problems arise, Crego says, but they are minor glitches, like dropped internet service or a drained battery, which can make the device “pass out.” But those instances are few and far between. One limitation of the device is that it can’t bend over to look at something from the top, so students have to make adjustments sometimes. Overall, however, the challenges are minimal.

Both faculty members say the potential of the technology far outweighs the challenges. Hueckel says she would love for her students to be able to participate via JaMMeR in

some of the opportunities in other schools on campus, specifically interdisciplinary clinics with the School of Medicine, and the Physician Assistant and Physical Therapy programs at Duke. “There are options we are looking into in order to have more of a school of nursing presence in some of these situations where we haven’t before,” Hueckel says.

Crego says JaMMeR has enabled her to interact with many of the master’s level students and instructors, which enriches her own teaching and perspective. Crego says she sees lots of opportunities to use JaMMeR outside of the simulation labs, such as in hospital settings for children with long-term illnesses who would be able to “attend” classes. Professionally, Crego says it is great for colleagues that can’t come to campus to be able to use JaMMeR to participate in an event or meeting.

Currently, DUSON has two JaMMeRs, the second used as a backup, but more would be welcomed.

As the future of healthcare includes more and more technology, educating students using the telepresence robot prepares them even more thoroughly for nursing careers, Hueckel says. “Increasing access to care sometimes means that you can’t put a provider everywhere,” she says, noting that many practices now use telemedicine or telehealth technologies. Digital healthcare in general is not just the wave of the future, but happening right now, Crego says, and JaMMeR gives students one more way to be on the cutting edge. “I see it helping students — whether they’re pre-licensure or advanced practice — to be comfortable with all these things that are going to become more readily available and that our patients are going to expect.” ■

