

Talking Robots Advance Medical Training

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Tulane University School of Medicine has opened its new Tulane Center for Advanced Medical Simulation and Team Training, a \$3 million, 14,000-square-foot facility dedicated to improving patient safety and preventing medical errors through comprehensive training for healthcare professionals in a realistic environment.



Dr. Jim Korndorffer, left, medical director of the center, instructs surgery residents in the new Tulane Center for Advanced Medical Simulation and Team Training in the School of Medicine. (Photo by Paula Burch-Celentano)

The center replicates a hospital setting with a fully equipped emergency room, intensive care unit, operating room, clinical exam rooms, hospital patient rooms, nurses station and labor and delivery suite to give healthcare providers—physicians, nurses and pharmacists as well as medical students and residents—a real-world environment to learn and practice the latest techniques for patient care.

The center also features high-fidelity, life-sized robotic patients that can mimic ailments and symptoms hospital staff see on a daily basis. The manikins, which are in adult, toddler and infant sizes, breathe, move their eyes, speak and have a variable pulse and heart rate. They react to doses of medication, receive intravenous therapy and can even go into cardiac arrest and expire.

While the center features the latest in industry-standard equipment, what sets it apart from other medical simulation centers is its emphasis on inter-professional team training. Instructors will use techniques developed in the military and aviation sectors to teach healthcare trainees and professionals to respond as a team to different scenarios and problems. The center will incorporate TeamSTEPPS, which stands for Team Strategies and Tools to Enhance Performance and Patient Safety. The program is a system for training healthcare providers in better teamwork practices using standardized communications strategies and protocol. The guiding philosophy is that effective teamwork is vital to reducing medical errors.

“Despite the fact that most health care today is delivered by teams, healthcare professionals are rarely training together,” says Dr. Benjamin Sachs, senior vice president and dean of Tulane University School of Medicine. “The center, which is one of the few in the country with medical simulators and team training, will provide physicians and students the opportunity to learn first-

hand the benefits of working together to reduce medical errors in a realistic environment.”

The center will allow students to follow a patient's journey from an initial diagnosis in a doctor's office to being rushed into an operating room for life-saving treatment. Instructors will integrate standardized patients, who are live actors trained to follow a scripted set of symptoms, with robotic manikins to mimic the full continuum of care a patient would receive in a clinic or hospital.

To maximize the lessons learned in training, the center has an integrated network of 42 cameras and numerous microphones to record all aspects of procedure simulation. A team of healthcare trainees can spend the morning performing laparoscopic surgeries in one room and enter a debriefing room immediately after where an instructor can screen a DVD of their work to assess their skills. This monitoring system can link off-site classrooms to live simulation sessions so medical students can observe residents or others in training; two-way microphones allow classroom facilitators to ask instructors questions as sessions are in progress.

“Having the ability to review web-based video of the simulation event is a tremendous asset for participants, who can assess their work and reinforce the techniques they practiced,” says Dr. James Korndorffer Jr., medical director for the center. “This greatly enhances the educational opportunity of the simulation training.”

The center is located on the third floor of the Murphy Building at 131 S. Robertson St. in New Orleans' downtown medical district. While one of its primary functions will be training Tulane students and residents, it has a broader mission to serve as a best-practices training and certification resource for healthcare providers throughout the region and any other industries that benefit from a simulated medical environment.