Interdisciplinary medical simulation center opens in Las Vegas

Another step in the march toward the integration of interdisciplinary health sciences learning in Nevada opened Dec. 2 with the official unveiling of the Clinical Simulation Center of Las Vegas, a Nevada System of Higher Education initiative.

The facility, on the University of Nevada, Las Vegas Shadow Lane campus, serves as the premier training facility in southern Nevada for the next generation of University of Nevada School of Medicine-educated physicians and surgeons, as well as nurses from UNLV and Nevada State College.

“This facility is a credit to the institutions involved and the tireless efforts of their leaders’ work and commitment to make this dream come true,” says Maurizio Trevisan, executive vice chancellor and chief executive officer of the Nevada System of Higher Education’s health sciences system, at the grand opening.

The 31,000-square-foot center offers the latest in health care training with five high-fidelity simulation rooms, two clinical skills labs, a surgical simulation suite, 12 standardized patient rooms, a hospital ward, four multi-purpose classrooms and administrative spaces. The facility is fully integrated by a computerized audio and video system.

The simulation rooms are equipped with specialized mannequins representing adult and pediatric patients that allow students to take vital signs and make assessments while practicing their communication skills, team management, task performance and decision-making. Faculty can monitor performance via one-way mirrors and dynamically alter patient physiology, dialogue and behavior in real time. Scenarios are streamed in real time in debriefing rooms and can be digitally recorded for playback and discussion.

The 1,150 square-foot surgical skills lab, utilized by School of Medicine students and general surgery residents, features a wide range of training modules.

“The simulation center is a wonderful opportunity to take training of residents and students to the next level,” says Dr. Miriam Bar-on, associate dean for graduate medical education at the School of Medicine and the school’s representative to the administrative team. “They will be better prepared to provide safe and effective care to patients following learning experiences in the various areas of the center.”

For the grand opening, nursing and medical students, along with residents, demonstrated the center’s capabilities for the public.

In the maternity ward, fourth-year medical student Daphne Scott “delivered” a baby for a “pregnant” mannequin patient as first-semester nursing students Lindsey Barron and Health Rabben helped the patient with breathing and pushing exercises. Short of an actual delivery, this is as real as it gets.

By practicing on mannequins, nursing and medical students learn communication skills and quality of patient care while working together in a simulated environment before moving into real-life team situations as health care professionals.

According to Dr. Paul Stumpf, chair of the school’s obstetrics and gynecology department, who oversaw the simulated delivery, patient safety is greatly improved because the quality of care increases as health care professionals learn to work together to reduce hierarchy and become more efficient.

In another room, third-year medical students Ashley Feis and Ryan Hafen set about trying their hand at suturing and surgical stapling on rubber “skin.” Both had just finished their 12-week surgical rotation and were in the center for the first time to practice what they had observed in their rotation.

Collaborating with nursing
Carolyn Yucha, dean of the UNLV nursing school, says her students have been using the center daily since it opened for academic instruction last fall.

“Educating physicians and nurses together is critical,” she says. “This training is being created together with scenarios relating to patient cardiac arrest.”

She says if the nursing and medical schools had not worked together over the last three years, a state-of-the-art facility would not have been able to be created. “We have more space, more open labs and more flexibility than before.”

Shirlee Snyder, Nevada State College interim dean of nursing, says her school’s curriculum has been developed concurrently with the center’s design taking into account the new skills labs it now offers her students.

While the nursing schools teach some initial skills within their own institutional walls, Snyder says they start training students together at the center.

Snyder added that the collaboration of the three organizations to create the center is fairly unique in her experience.

“This is an outstanding opportunity for Las Vegas in nursing and medical education as we use this facility to stay competent using reality-based simulations,” she says.

Surgical skills lab
In the surgical skills lab area of the center, surgical residents use high fidelity software and video monitors to practice laparoscopic procedures in what looks like a video game, but considering the seriousness of the training, is anything but child’s play.

At one station, surgical resident Dr. Jennifer
Freeman, tries her suturing technique on the laparoscopic monitor, which is set to a gall bladder removal program.

Dr. Shawn Tsuda, chief of minimally invasive and bariatric surgery and director of the surgical skills and simulation laboratory, demonstrates a colonoscopy as the video screen moves through a “patient’s” colon. As he moves along, he points out polyps and other significant finds.

“The old teaching model of ‘see-do-teach’ has transitioned to this new model of ‘practice makes perfect.’ We can do the practice with these virtual simulation systems and offer procedure-based training,” he says.

The laparoscopic simulator tests the surgeon’s dexterity and hand-eye coordination, which are vital to the modern practice of surgery.

Other skills learned include delivering bad news to patients, obtaining informed consent, placing wound-care surgical drains, inserting chest tubes and practicing patient interaction in a team setting.

Back at the monitor with the gall bladder removal program, surgical resident Dr. Michael Russo carefully holds aside the gall bladder on the video screen as he prepares to clip the “neck” before cutting the organ out.

“The surgical skills lab offers me the unique advantage of being able to hone my surgical skills in a simulated environment,” he says. This benefits both the resident and patient alike by ensuring that, once in the actual operating room, the resident performs the tasks at hand with a high level of skill, he adds, noting that without the surgical skills lab facility, he would not have an equivalent opportunity to practice.

“The lab gives me the opportunity to make mistakes with no risk, giving me the ability to learn from my errors without endangering patients’ well-being,” Russo says.

The Clinical Simulation Center employs a director, two simulation technicians, a lab assistant and an administrative assistant whose salaries are paid by the School of Medicine, UNLV and Nevada State College, which also have designated representatives to a management group charged with overseeing the entire operation. The School of Medicine funds the salary for the surgical skills lab technician. Future plans are to hire a standardized patient coordinator.

The facility was built with nearly $16 million in state funding and support from the Nevada congressional delegation, including U.S. Sen. Harry Reid, who provided nearly $2 million in federal funding, and The Lincy Foundation, which provided a $5 million grant to the health sciences system.