



THE LEGEND, THE DREAM, The Future

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NEW BUILDING GIVES SIMCENTRAL ENDLESS POSSIBILITIES

The “unknown woman from the Seine” is a familiar face to those involved in CPR training. According to the legend, a woman’s body was found in the water in Paris and, to help identify her, a plaster mask of her face was made and hung in a shop window. Some years later, Asmund Laerdal, the founder of Laerdal Medical, based in Stavanger, Norway, would find inspiration in her face and create “Resusci Annie,” also known as “Rescue Annie.” She’s the pioneer of simulation used in medical training; the value of such an abstract was further proven in 1969 when a group of medical scholars would publish the study, “Effectiveness of a simulation in training anesthesiology residents.”

As simulation became of interest to the medical profession, the concept made its way in the late '90s to East Tennessee State University (ETSU), where the residency program director saw the great potential of simulation in medicine. Since then, that program director, Richard Jordan, MD, now regional dean of the School of Medicine at Amarillo, has kept the incredible possibilities of simulation continually in his line of vision.

“This (SimCentral) has been my priority for 10 years,” Jordan said. “When Steven Berk (TTUHSC executive vice president and provost and dean of the School of Medicine) recruited me from ETSU to Amarillo, I told him that my goal would be to have a state-of-the-art simulation hospital. I have been unwavering in that.”



School of Medicine Regional Dean Richard Jordan, MD, pictured with “Lucina,” a high-fidelity female manikin providing opportunities for students studying gynecology and obstetrics.

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A HOME FOR SIMCENTRAL

And now, Jordan's goal has become a reality. The new SimCentral—made possible by tuition revenue bonds and a gift from the Amarillo Area Foundation and the American Economic Development Corporation—officially opened its doors Sept. 15, with second-to-none equipment designed to fully exploit the potential of simulation training for students in myriad health disciplines. The addition of this building means every TTUHSC campus now has dedicated simulation space.

"The new building is truly amazing," said John Smoot, senior director of SimCentral. "The students are enjoying the additional space, the faculty are still trying to imagine all the possibilities of the things they can do here, and we're still learning it ourselves. The possibilities are endless."

When the first simulation exercise was performed in Amarillo under the auspice of SimCentral it was obvious then that a building fully dedicated to simulation would be needed.

"We were located at the Texas Tech Women's Health and Research Institute (now the Laura W. Bush Institute for Women's Health) before this new building was built, and the space just wasn't big enough," Smoot said. "Our program kept growing, making our space more confined."

That first year, SimCentral served 3,200 students; last year it accommodated more than 7,000. Smoot said the building obviously wasn't designed for simulation, which made schedules and organization a hardship.

"We had to just go wherever there was an empty room or office; we didn't have dedicated clinical space; and we moved equipment over there multiple times throughout the day," he said.

Named by TTUHSC as a "Center for Excellence Simulation Education and Research," SimCentral's new 21,485-square-foot home provides an additional 13,000 square feet with dedicated clinical space, observation rooms and classrooms, along with space for support staff and equipment.

"It's amazing what we can do in SimCentral now," Jordan said. "The wonderful thing about simulation is that we can do invasive procedures on 'patients' with varying medical conditions, emergent and non-emergent, and practice medicine before we treat human beings."



SimCentral opened its doors in September, celebrated by a ribbon cutting and tours given by students from TTUHSC, Amarillo College and West Texas A&M University.



Max White, NP, paramedic and simulation specialist for SimCentral, teaches high school students CPR. MobileSim recently expanded its services and now visits high schools to teach health care classes.

THE PATIENTS

The “patients” at SimCentral are state-of-the-art manikins that suspend a student’s disbelief of dealing with a manikin and not a human being.

“They can breathe, perspire, bleed, have every murmur known to a human,” Jordan said. “They can show signs of pneumonia and congestive heart failure; and the voice simulation is incredibly advanced, as well, allowing those of us in the control room to speak as men, women or children. The simulation manikins, over time, have just gotten more and more complex.”

It’s not just manikins that are “treated” in the new SimCentral facility.

“We have clinical space in our new building that allows our students to practice patient care and interviewing skills,” Jordan said. “This clinical setting gives our students the opportunity to talk to and treat standardized patients (actors), because one of the biggest complaints about doctors is poor bedside manner. We are able to work on professionalism in these clinical rooms. We have standardized patients that are trained (for specific medical scenarios), and the student gains experience in treating the patient. Once the ‘treatment’ is complete, we review how the student could have improved their care of the patient.”

SimCentral continues to go above and beyond with the addition of their virtual simulation. Guy Gilbert, MS, assistant director of SimCentral and the one Jordan refers to as SimCentral’s “MacGyver,” developed virtual simulation programs to further advance student training and education in working with patients.

“We can have two students working together in a virtual world. In one scenario, for example, one student plays the role of a physician and the other a schizophrenic. The physician sees a normal doctor’s office in his or her virtual world, whereas the schizophrenic is experiencing

MobileSim Serves the Panhandle

Roughly four years into the simulation business, TTUHSC at Amarillo saw the need for a mobile simulation unit.

“We kept seeing that regional hospitals and regional medical facilities had simulation needs that couldn’t be met,” said John Smoot, senior director of SimCentral. “It was difficult for facilities in Hereford and Dumas to get to us so we decided to take simulation to them.”

Made possible by grants from the Laura W. Bush Institute for Women’s Health and the Children’s Miracle Network, along with a collaborative effort between some of the flight services in Amarillo, TTUHSC and some area colleges, the MobileSim division of SimCentral, further enhances the services made possible by simulation.

Max White, NP, paramedic and simulation specialist for SimCentral, is the mobile lab coordinator.

“MobileSim provides great opportunities to regional medical facilities and hospitals,” White said. “We provide continuing education classes for these rural areas and help health professionals enhance their skills using simulation.”

The use of MobileSim recently expanded and is now utilized in teaching high school health care classes.

“I teach the high school classes and help them earn certifications before they start college, and it’s a good course for high school students to determine if they really want to be in the health care industry,” White said.

The MobileSim vehicle comes fully equipped for high- and low-fidelity simulation exercises and can also be used as a clinic and for telemedicine. White said the unit engages in rural community outreach regularly, where it has been used across the Panhandle for cancer screenings and routine well checks.

audible and visual symptoms of the disease process. This helps the physician see inside the mind of a patient with this type of mental illness. This program is unique to SimCentral. There may be some training facilities with virtual simulation, but ours is much more immersive than the typical virtual simulation.”

And that’s not all that Gilbert has created for SimCentral.

“There was some funding given to the pediatric department, which was used for training that the pediatric faculty wanted for their students; however, nothing was on the market in terms of newborn pediatric manikins for the training they wanted, so I created a newborn torso that allowed students to practice performing several invasive procedures,” Gilbert said. “We’ve been using it for three years now, and there’s still really nothing on the market like it.”

However, simulation isn’t just to practice medical procedures on manikins, standardized and virtual patients; it’s also to practice working together.

“Simulation really allows our students to practice teamwork,” Jordan added. “In these acute care situations when someone has respiratory or cardiac arrest, it’s the team that saves that person’s life. The nurse has to know exactly what to do, the doctor has to know what to order, etc. Teamwork saves lives by saving seconds, and sometimes seconds makes the difference in the patient living or dying.”


The interprofessional aspect of SimCentral enhances education, training and preparation for fieldwork. The new SimCentral building serves pharmacy students, with its own incomparable pharmacy clinic, as well as medical students and nursing students—and not just those of TTUHSC at Amarillo.

“We have a unique and stimulating partnership with West Texas A&M University nursing students and Amarillo College nursing and allied health students,” Smoot said. “We share resources, operational costs and have formed a mutually beneficial alliance that has worked exceptionally well, not only impacting Amarillo, but the entire Panhandle as well.”

Simulation has shaken up the medical training industry and enhanced it significantly.

“We can use simulation to diagnose cases, like tricuspid insufficiency (a valvular heart disease referring to the failure of the heart’s tricuspid valve to close properly during systole), which is a case I would have waited my entire residency to see,” Jordan said. “Now, our students go into their residencies and clinical fellowships already having seen just about everything in the simulation setting with an increased confidence in their skillset. This significantly advances our education for students because it compresses the training time for that health professional by exposing them to extremely rare cases before they ever come across it in their actual careers.”

From 10 years ago, when the simulation concept was just a seed in a few brilliant minds, to now with the new SimCentral building, the sophistication and advancement of education in health care will only continue to improve.

“The sophistication of these manikins and simulation in general is not going to stop, and I just hope I’m around 10 years from now so I can see just how great that advancement is,” Jordan said. “Simulation will improve safety and overall efficiency in every way, which is why I’ve always been so passionate about it and why I’m excited for the future.” 

SIMULATION ISN'T JUST TO PRACTICE MEDICAL PROCEDURES ON MANIKINS, STANDARDIZED AND VIRTUAL PATIENTS; IT'S ALSO TO PRACTICE WORKING TOGETHER.



Guy Gilbert, MS, assistant director of SimCentral, Richard Jordan, MD, regional dean for the School of Medicine in Amarillo, and John Smoot, senior director for SimCentral are pictured with a high-fidelity manikin.