University Opens First Center for Patient Safety

Simulation facility will be used to provide courses for health care professionals at all levels of training.

BY DAMIAN McNAMARA
Miami Bureau

MIAMI — The blades roared overhead as the Miami-Dade rescue helicopter approached the rooftop of University of Miami/Jackson Memorial Hospital shortly after dark.

Through the rain, emergency medical technicians rushed a pregnant woman injured in a car crash on Interstate 95. Doctors delivered the distressed baby via emergency cesarean section. An ob.gyn. administered oxygen, and the hypoxic newborn's color turned from blue to pink.

But these moments of high medical drama were not real. "Give the mother a fatal heart rhythm, and let's see how they respond," said Chris Gallagher, M.D., of the department of anesthesiology at the University of Miami. He was addressing a technician in a control room separated from the activity in the emergency room by a one-way mirror.

The large crowd attending the grand opening of the University of Miami/Jackson Memorial Hospital Center for Patient Safety gathered closer around extra video monitors that had been set up so they could watch the simulated emergency unfold.

The "bloody" actress on the gurney was deftly switched for one of the new, state-of-the-art mannequins that are kept in residence at the new center. After the crew had stabilized both the mother and baby mannequins, they gathered around a conference table on the hospital's renovated fourth floor for a debriefing of their performance.

The emergency scenario was staged as a kickoff for the first patient safety center of its kind in the United States, one that combines simulation with elements of engineering, ergonomic design, and high-tech monitoring and recording.

Akin to a flight simulator for airline pilots, the emergency care component of the Center for Patient Safety challenges physicians and other health care workers in a realistic but safe environment where no patient is harmed.

The 2,000-square-foot simulation facility will be used to provide courses to enhance clinical, communication, and teamwork skills for health care professionals at all levels of training. The simulation facility currently trains medical students and anesthesiology residents.

Courses are planned for multidisciplinary team training of residents and nurses in internal medicine, pediatrics, emergency medicine, obstetrics, and other specialties.

"It's a dream come true after 10 years," said Paul Barach, M.D., director of the Center for Patient Safety.

The center is innovative for bringing together all of the major elements of patient safety. "I'm most proud of the integration," said Dr. Barach, also of the department of anesthesiology at the university.

Although other institutions in the United States have some features of the program, he said, the center at the University of Miami is the only one that combines skill assessments simulation, an investigative team to debrief participants, a human factors and usability lab, and a strategy for promoting patient safety policies in Miami, the state of Florida, and, eventually, nationwide.

The center's immediate goals include developing and disseminating training programs for physicians, nurses, pharmacists, and risk managers; enhancing research on patient safety; and working with medical device companies to use better design and ergonomics to make their products safer.

Backed by an initial $5 million in funding from federal, state, and private sources, the center has 18 projects underway. (For more details, visit www.patientsafety.med.miami.edu.)

The patient safety center was developed with input from the university's schools of engineering, design, nursing, and business, as well as from experts outside of the university.

Dr. Barach's drive to establish the center stemmed in part from a medical error he experienced as a medical student.

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Dr. Paul Barach (left), director of the university's Center for Patient Safety, instructs registered nurse-anesthetist Jesus Del Risco.

"I was told to do a central line procedure, but not told how to do it. The intern just told me to do it. I was just out of the military and did not question orders," he said. "The patient suffered a hemothorax, was intubated, went to the ICU, and she died 4 days later."

The experience haunted him for years, he said.

Although the mannequins are the focal point in each of the five skills assessment areas—three exam rooms, an operating room, and a room that can function as an ICU, emergency room, or ward room, "the focus is not on simulation, the focus is on the patient," John C. Nelson, M.D., president of the American Medical Association, said during the center's opening celebration.

"Patient safety has to be much more on the minds of all of us," Dr. Nelson said. "This is what our patients expect and our profession demands."

Patient-centered goals of the center staff include developing better ways to disclose medical errors to patients and their families. Another goal is to identify the factors that patients consider when choosing a hospital, and how these may differ by cultural or ethnic identity, Dr. Barach explained.

"Despite our best intentions, we make mistakes," Dr. Gallagher said. The intention of the center directors is to solve problems, not to point fingers or assign blame when a medical error occurs.

"The debriefing is really the heart of the simulation. It is where we try to make sense of what happened in the ICU or emergency room chaos." Participants review recorded actions, discuss what happened, suggest what they would do differently in the future, and, if an error occurs, explain how they would inform a patient or family.

"At the end of the day, all this is about is changing the culture to help people to do the right thing," Dr. Barach said.

The University of Miami added a 4-year curriculum on patient safety for medical students. The simulation challenges are designed to be relatively simple for students but are more complicated for experienced physicians, Dr. Barach said.

"The long-term goals are to get the center to be a vital part of the community," he said.

"We want to get throughput from medical students, practicing physicians, and nurses. We also want patient safety to become part of the certification process."■

Using Electronic Health Records System Not Burdensome

BY SHERRY BOSCHERT
San Francisco Bureau

SAN FRANCISCO — Adopting an electronic health records system reduced the mean length of visits at five outpatient clinics by 4 minutes per patient, a difference that was not statistically significant but that should allay physicians' fears that the technology might be a burden, Lisa Pizziferri said.

The results come from a time-motion study in which observers shadowed primary care physicians before and after implementation of the electronic health records (EHR) system and timed their activities, she said in a poster presentation at the triennial congress of the International Medical Informatics Association.

They studied 20 physicians before EHR implementation, 16 of those after adoption of the system, and 4 newly recruited physicians after EHR implementation, for a total of 20 physicians before and after the system change. The urban and suburban outpatient clinics included neighborhood health centers, hospital-based practices, and community practices.

Talking to or examining a patient (direct patient care) took about 14 minutes in the pre-EHR era of paper-based records and 13 minutes using EHR, said Ms. Pizziferri of Partners HealthCare System Inc., Wellesley, Mass.

Indirect patient care, which involved reading, writing, or other tasks in support of direct patient care, took 9 minutes before EHR and 10 minutes after EHR. Physicians spent about half a minute reviewing schedules before EHR and 1 minute with EHR. Time spent eating, walking, or performing other miscellaneous tasks decreased from 4 minutes to 3 minutes per patient after EHR implementation.

The mean overall time spent with each patient decreased by 4 minutes, and was calculated independently, not by adding up the times of individual tasks, she said. During an average 4-hour observation period per physician, physicians saw 9 patients while using paper records and 10 patients while using EHR.

Asked to rate their experiences with the EHR system on a five-point scale (with five being the best), physicians rated its impact on quality, access, and communication a four. "Physicians recognized the quality improvement achieved by electronic health records," Ms. Pizziferri said.

The physicians rated the impact of EHR on workload at 3 and overall satisfaction at 4.

Partners HealthCare designed the Web-based EHR system, called the Longitudinal Medical Record. It includes patient clinical data, computerized decision support, reminders for health maintenance, and tools for charting, order entry, and management of results or referrals.

E-mail surveys of the physicians suggested that the time they spent on documentation outside of clinic hours increased from 9 to 10 minutes per established patient after EHR. Future research should study the impact of EHR on nonclinic time, she said. ■

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