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/Jack- son Memorial Hospital Center for Pa- tient Safety gathered closer around extra video monitors that had been set up so they could watch the simulated emer- gency 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 con- ference table on the hospital’s renovated fourth floor for a debriefing of their per- formance.

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 en- gineering, ergonomic design, and high- tech monitoring and recording.

Akin to a flight simulator for airline pi- lots, 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 facili- ty will be used to provide courses to en- hance clinical, communication, and team- work skills for health care professionals at all levels of training. The simulation facil- ity currently trains medical students and anesthesiology residents.

Courses are planned for multidiscipli- nary team training of residents and nurses in internal medicine, pedia- trics, emergency medi- cine, obstetrics, and oth- er specialties. “It’s a dream come true after 10 years,” said Paul Barach, M.D., di- rector of the Center for Patient Safety.

The center is innova- tive for bringing togeth- er 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 insti- tutions in the United States have some features of the pro- gram, he said, the center at the Universi- ty of Miami is the only one that combines skill assessments simulation, an inves- tigative team to debrief participants, a hu- man factors and usability lab, and a strat- egy for promoting patient safety policies in Miami, the state of Florida, and, even- tually, nationwide.

The center’s immediate goals include developing and disseminating training programs for physicians, nurses, pharma- cists, and risk managers, enhancing re- search on patient safety; and working with medical device companies to use better de- sign and ergonomics to make their prod- ucts safer.

Backed by an initial $5 million in fund- ing 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 busi- ness, as well as from experts outside of the university.

Dr. Barach’s drive to establish the cen- ter stemmed in part from a medical error he experienced as a medical student.

“I was told to do a central line proce- dure, 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 Asso- ciation, 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. Gal- lagher said. The intention of the center directors is to solve prob- lems, not to point fingers or as- sign blame when a medical error occurs.

“The debriefing is really the heart of the center. It is where we try to make sense of what happened in the ICU or emergency room chaos.” Par- ticipants review recorded ac- tions, discuss what happened, suggest what they would do dif- ferently in the future, and, if an error occurs, explain how they would inform a patient or fam- ily.

“At the end of the day, this is about 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 stu- dents but are more complicated for expe- rienced physicians, Dr. Barach said. “The long-term goals are to get the center to be a vital part of the communi- ty,” he said.

“We want to get throughput from med- ical students, practicing physicians, and nurses. We also want patient safety to be- come 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 sys- tem reduced the mean length of visits at five outpatient clinics by 4 minutes per patient, a differ- ence that was not statistically sig- nificant but that should allay physicians’ fears that the tech- nology might be a burden, Lisa Pizziferri said.

The results come from a time- motion study in which observers shadowed primary care physi- cians before and after implemen- tation of the electronic health records (EHR) system and timed their activities, she said in a poster presen- tation at the triennial con- ference of the International Medical Informatics Association.

They studied 20 physicians be- fore EHR implementation, 16 of those after adoption of the sys- tem, and 4 newly recruited physi- cians after EHR implementation, for a total of 28 physicians before and after the system change. The urban and suburban outpatient clinics included neighborhood health centers, hospital-based practices, and community prac- tices.

Talking to or examining a pa- tient (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 in- volved reading, writing, or other tasks in support of direct patient care, took 9 minutes before EHR and 10 minutes after EHR. Physi- cians spent about half a minute reviewing schedules before EHR and 1 minute with EHR. Time spent eating, walking, or per- forming 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 in- dependently, not by adding up the times of indirect tasks, she said. During an average 4-hour observation period per physician, physicians saw 9 patients while using paper records and 10 pa- tients 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 commu- nication a four. “Physicians rec- ognized the quality improvement achieved by the EHR,” Dr. Pizziferri said.

The physicians rated the im- pact 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 clini- cal data, computerized decision support, reminders for health maintenance, and tools for chart- ing, order entry, and manage- ment of results or referrals.

E-mail surveys of the physi- cians suggested that the time they spent on documentation outside of clinic hours increased from 9 to 10 minutes per estab- lished patient after EHR. Future research should study the impact of EHR on nonclinical time, she said.