An Innovative Approach to Patient Safety

CENTER FOR PATIENT SAFETY
University of Miami Miller School of Medicine - Jackson Memorial Hospital
“When I first envisioned the Center for Patient Safety, my goal was to establish a simulation facility for anesthesia residents. The center has become so much more. Emphasizing communication skills, crisis management, and teamwork, physician trainees and nurses are empowered to do the right thing. Above all, the center has made healthcare safer for our patients.”

—David A. Lubarsky, M.D., M.B.A., Emanuel M. Papper Professor and Chair of Anesthesiology; Senior Associate Dean for Quality Safety and Risk Reduction

“Nothing matters more than the safety of our patients. That’s why the center is committed to arming our medical students, residents, attending physicians, and nurses with the tools they need to improve outcomes and to prevent patient harm. Our exciting research and training initiatives reflect a leap forward in transforming the landscape of medical education and creating a culture of patient safety.”

—David J. Birnbach, M.D., M.P.H., Professor of Anesthesiology and Public Health; Director, UM-JMH Center for Patient Safety

Simulation training, a cornerstone of the UM-JMH Center for Patient Safety, allows healthcare professionals to build clinical skills, improve teamwork, and strengthen confidence and competence. (Opposite) Center for Patient Safety director David J. Birnbach, M.D., M.P.H. (center), and colleagues monitor a simulation session from the center’s control room.
Making Major Strides in Improving Patient Safety

Physicians and scientists, especially at academic medical centers, have made dramatic strides in treating and preventing disease. However, patient safety in the U.S. continues to be jeopardized by medical errors that can lead to death or severe injury to as many as 100,000 patients annually—not to mention “near misses” in which tragic consequences are narrowly avoided.

At the University of Miami Miller School of Medicine-Jackson Memorial Hospital Center for Patient Safety (CPS), we provide a comprehensive approach to preventing medical errors and improving patient safety.

OUR MISSION IS TO BUILD SAFER HEALTHCARE BY:

- Harnessing the power of simulation to enhance medical education and prevent patient harm
- Discovering pathways to ensure patient safety through innovative research
- Becoming a leading resource for designing safer hospitals and healthcare facilities
A Comprehensive Approach to Meet a Complex Challenge

Momentary misjudgments, unclear orders, and avoidable infections all represent medical errors that can compromise patient safety.

To effectively address these complex challenges, the UM-JMH Center for Patient Safety works to improve patient safety in the following areas of vulnerability:

- Bedside procedures
- Communication and teamwork
- Crisis management
- Safe use of diagnostic and therapeutic technologies
- Hand hygiene
- Order writing
- Patient confidentiality

These strategies to protect patients have also been successfully incorporated into educational programs for practicing professionals ranging from in-hospital teams and emergency responders to pharmacists and risk managers.

CPS programs have been integrated into the training of physicians and nurses in almost all specialties, including anesthesiology, emergency medicine, internal medicine, military medicine, critical care, obstetrics and gynecology, forensic science, and pediatrics.

CPS collaborates with quality, risk management, and educational teams throughout the University of Miami and Jackson Health Systems. As new challenges are identified, we work to find solutions leading to continued improvement in the care and safety of patients.
During clinical simulation sessions, sometimes conducted with actors playing patients (above and below), trainees develop abilities to interact with patients, diagnose conditions accurately, and provide therapeutic interventions correctly.

**DYNAMIC TRAINING FOR FUTURE DOCTORS**

Enhanced teamwork, communication, and professionalism are the goals of the annual Interns Course. The UM-JMH Center for Patient Safety provides this essential training, attended by 300 residents, interns, and fellows. Mandated by Jackson Memorial Hospital, one of the few hospitals in the country requiring participation in such a program, and supported by UHealth/Miller School of Medicine, the course trains all new healthcare providers before they have patient encounters.

Utilizing simulations of challenging clinical scenarios, CPS provides essential instruction on patient safety, communication skills and team building, and medical error prevention. Follow-up sessions ensure that these dynamic lifesaving lessons are reinforced throughout the trainees' education and beyond.
Maximizing the Potential of Simulation-Based Education

The cornerstone of the UM-JMH Center for Patient Safety curriculum is simulation-based education—a powerful approach that allows trainees to test and hone their abilities in scenarios that range from routine exams to medical emergencies. More than 20 CPS training programs blend simulation with didactic education, case review and discussion, standardized patients, and other techniques and tools that reinforce key concepts while strengthening skills.

The center's 8,000-square-foot facility comprises more than 2,000 square feet of space dedicated to simulation-based training activities and research. Simulation labs replicate patient care settings such as an operating room, emergency room, intensive care unit, radiology suite, hospital patient room, cardiac catheterization lab, and ambulatory clinic.

Within our simulation facilities, as many as six patient simulators can be used simultaneously.

A nursing trainee gains hands-on experience in critical care with a high-fidelity simulator.

The simulators may be controlled from the bedside for informal teaching or from the center's control room for full-scale, team-based simulations. The control room also includes video and audio production equipment and software to create materials for off-site learning. Our expert use of these technologies ensures that the educational potential of every one of our training activities is utilized to the fullest.
THE VALUE OF MEDICAL SIMULATION

Medical simulation is the enactment, observation, and debriefing of a medical event used specifically to educate and improve a healthcare provider’s ability to handle critical situations. Numerous studies have established the effectiveness of simulation training in building clinical decision making and communication skills.

Today’s computer-controlled full-body patient simulators (also known as high-fidelity simulators) present realistic vital signs and respond appropriately to clinical interventions. The lifelike experiences provided by these simulators allow trainees to practice new skills—and make mistakes—without any risk to actual patients. In some scenarios, CPS uses actors to play the role of patients, further maximizing the experience of an authentic patient encounter.

Debriefing is arguably the most important step in simulation education. During these sessions, trainees have the opportunity to review their performance and reflect on what they would do differently in the future.
Implementing Insights at Every Stage of Care

The UM-JMH Center for Patient Safety addresses patient safety issues through a variety of projects funded by both governmental agencies on the state and federal levels and by private sources. Key areas include:

Hospital redesign: According to the Institute of Medicine, flaws in the layout of healthcare facilities contribute to medical errors. CPS uses unique simulation methods to evaluate designs for safety features prior to construction or renovation.

Hospital-acquired infection (HAI): Hand hygiene is the single most effective measure for reducing hospital-acquired infections, which kill thousands of patients each year. The hand hygiene program developed by the center includes an educational film, slide presentations, skills testing, and long-term monitoring. The center has also created a Web-based e-learning program to help disseminate hand hygiene awareness and skills.

A key target of patient safety training is infections caused by bacteria that may be transmitted above) at various sites in a hospital room or (left) on contaminated hands.

Reporting near misses: Narrowly avoided medical errors can provide extremely useful clues to improving healthcare training and practice. The center is developing voluntary, Web-based data collection and analysis tools to gather and evaluate near misses in hospitals and surgical and birthing centers throughout Florida.
Lieutenant Colonel Donald W. Robinson, D.O. (above right), leads a simulation training session designed to help members of a U.S. Army Forward Surgical Team prepare for the extreme stresses and medical challenges they will face in the field.

MOBILIZING MILITARY TEAMWORK

The intense stresses, extreme challenges, and rapid pace of combat medicine make superb teamwork a lifesaving necessity. Building this teamwork is the purpose of the CPS simulation training program for the U.S. Army's Forward Surgical Teams, who learn and practice teamwork skills for managing trauma patients in the simulated conditions of a field hospital. The Ryder Trauma Center on the UM/Jackson campus has been chosen by the Department of Defense for this vital role.

To encourage safer patient care and promote a positive safety culture within Army Reserve Medical Corps teams, CPS is working with Eduardo Salas, Ph.D., and his team from the University of Central Florida to evaluate team training exercises conducted at the U.S. Army Trauma Training Center.
Expert Leadership to Advance the Field

David J. Bimbach, M.D., M.P.H., director of the Center for Patient Safety, brings a wealth of knowledge and expertise to the field of patient safety. Our team includes physicians, nurses, a simulation engineer, and administrative support staff. Instructors from every clinical department on campus collaborate with us to develop specialty-specific training programs.

In addition, the center has a video production expert on staff, enabling our team to create training videos dramatizing medical scenarios.

CPS faculty and staff also work closely with experts at schools and colleges within the University of Miami as well as with other academic institutions. Our relationships with Professor Eduardo Salas, Ph.D., a world-renowned teamwork expert at the University of Central Florida in Orlando, and Captain William Rutherford, M.D., a United Airlines simulation expert who now teaches at Western Michigan University, have produced several highly-productive, ongoing collaborations. In addition, Paul Gluck, M.D., the past chair of the National Patient Safety Foundation Board of Directors, has recently joined the Center for Patient Safety team and will enhance our national and international efforts.

Led by David J. Bimbach, M.D., M.P.H. (above left), the CPS team includes (above right) associate director Joshua Lenkus, D.O., R.Ph., F.A.C.P. (Below) A key strategy utilized by CPS to minimize medical errors is root cause analysis, here being taught to medical residents at Jackson Memorial Hospital.
Support the Center for Patient Safety

The Center for Patient Safety is dedicated to making healthcare safer. Through our comprehensive approach, we train professionals in a wide spectrum of specialties including anesthesiology, internal medicine, pediatrics, trauma, obstetrics and gynecology, and emergency medicine. We reach thousands of patients by arming healthcare providers with code blue training, standardized procedural training, strategies to reduce hospital-acquired infections, and improved teamwork and communication skills.

To fully fund and expand our training programs, the UM-JMH Center for Patient Safety needs your support. To make a contribution, please send your check or money order, made payable to “Center for Patient Safety.” Please feel free to include any comments or stories regarding patient safety that you would like to share. Donations to the center are tax-deductible to the extent allowed by law.
For More Information

The UM-JMH Center for Patient Safety welcomes your inquiries about patient safety.

Our simulation center is also available to manufacturers seeking to improve the safety and usability of new medical drugs and devices and to clinicians who wish to evaluate new techniques and equipment before using them on actual patients.

To schedule a tour, speak to one of our experts, or learn more about the UM-JMH Center for Patient Safety, please contact us at:

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