LSUHSC simulation or team training improves performance and patient safety

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A study conducted by an inter-professional team of LSU Health Sciences Center New Orleans faculty found that simulation-based operating room team training of medical and nursing students resulted in more effective teamwork by improving attitudes, behaviors, interaction and overall performance leading to potential increased patient safety and better clinical outcomes. The study is published online November 1, 2013, in the *Journal of the American College of Surgeons*.

"Effective teamwork in the operating room is often undermined by the 'silo mentality' of the differing professions," says lead author John T. Paige, MD, Associate Professor of Clinical Surgery and Director of Applied Surgical Simulation at LSU Health Sciences Center New Orleans School of Medicine. "Such thinking is formed early in one's professional experience and is fostered by undergraduate medical and nursing curricula lacking inter-professional education."

Sixty-six students (18 undergraduate nursing students, 28 fourth-year medical students, and 20 nurse anesthesia students), divided into ten groups, trained over a one-month period at the Russell Klein Center for Advanced Practice at the LSU Health Sciences Center New Orleans School of Medicine. Each two-hour training session used two standardized, authentic scenarios. The first scenario involved a life-threatening intra-abdominal hemorrhage from a stab wound. The second scenario involved local anesthetic toxicity from a regional upper arm block. The scenarios utilized a software algorithm designed to respond to team actions and decisions. At least three faculty instructors facilitated

each session. One operated the human patient simulator, and two served as debriefing facilitators. Trained observers rated student team-based behavior.

Each OR team had two medical students (surgeon and first assistant roles), two undergraduate nursing students (circulating and scrub nurse roles), and two nurse anesthesia students (primary and secondary anesthetist roles). Students switched roles within their discipline (e.g., an undergraduate nurse moving from scrub nurse to circulating nurse) for the second scenario. In cases where more than two students from a particular profession were present, two students would participate in the first scenario and the other two would observe. Students then would switch for the second scenario. A structured debriefing followed each scenario.

"Frequently, failed communication, ineffective inter-personal skills, inter-professional tension, poor team interaction and divergent inter-professional interpretations of the quality of collaboration combine to impact both patient care processes and outcomes," notes John T. Paige, MD, who also serves as Director of the American College of Surgeons Comprehensive Accredited Education Institute at LSU Health Sciences Center New Orleans School of Medicine.. "In this study, a single session of high fidelity simulation-based inter-professional OR team training resulted in immediate improvement of students' team-based attitudes and behaviors." The LSUHSC research team also included Deborah D. Garbee, PhD, Associate Professor and Associate Dean for Undergraduate Nursing, Laura Bonanno, DNP, Director of the Nurse Anesthesia Program, and Lyubov Kozmenko, BSN, Simulation Lab Instructor, in the School of Nursing, Valeriy Kozmenko, MD, formerly of the Department of Anesthesia, Tong Yang, MD, Department of Pathology, William Swartz, PhD, Professor of Cell Biology and Anatomy, and Qingzhao Yu, PhD, Associate Professor of Biostatistics in the School of Public Health.

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