

Adding High-Fidelity Simulation to Medical Student and Resident Training: Curriculum, Evaluation and Lessons Learned

Alice L. Landrum, M.D., Robin L. Wootten, R.N., Joel O. Johnson, M.D., Ph.D.

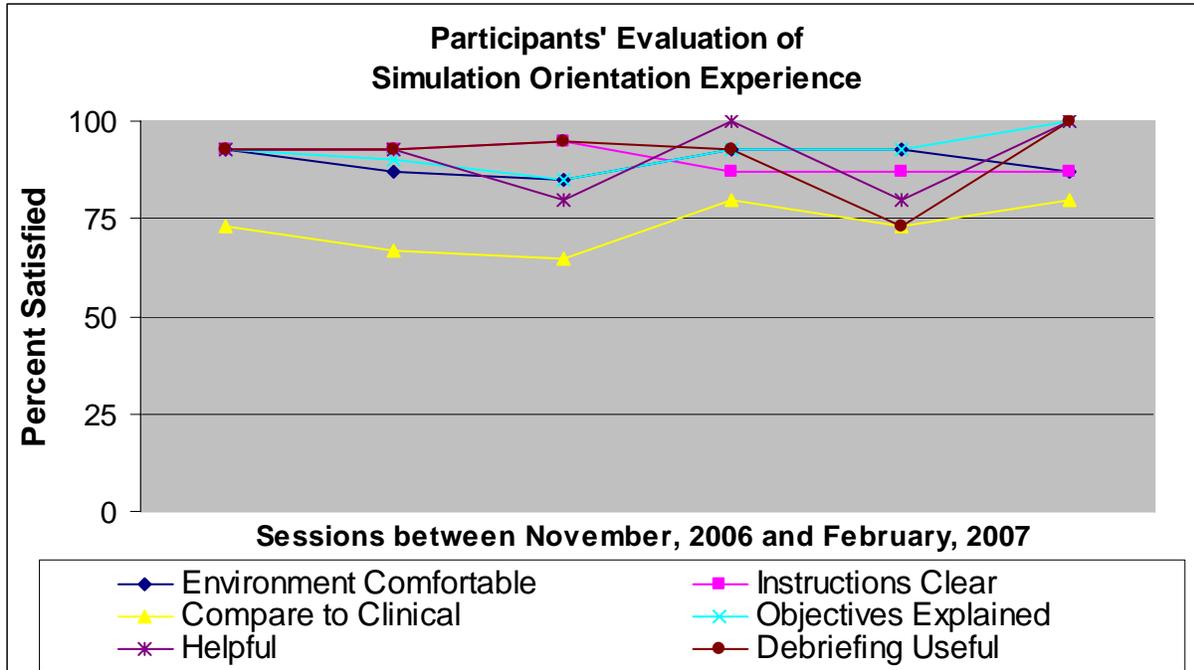
University of Missouri School of Medicine, Columbia, Missouri

Learner audience: Anesthesia and Surgical Residents, Medical Students, Faculty, Simulation Directors

Needs Assessment: Traditional methods of medical education include “see one, do one, teach one” methodology. This is being replaced by structured practice and skill validation through simulation prior to direct care. The ACGME core competencies require educators to teach and evaluate communication and professionalism as well as technical skills. Simulation can validate these competencies in a safe, realistic environment. In addition, the Joint Commission is requiring teamwork education by hospitals to help prevent medical errors.

Curriculum: High fidelity simulation with the METI simulator allows residents to practice patient care skills of induction, intubation and emergence for a healthy adult patient with a full stomach who needs an emergency appendectomy. The anesthesia resident, surgery resident and medical student improve their teamwork skills as they play roles in the OR scenario that require communication skills and professional behavior. Reflection during the debrief at the end of the session provides an opportunity for practice-based learning and improvement. Goals for our curriculum are to provide a safe realistic environment, to incorporate training in the core competencies, and to provide training and evaluation in teamwork while managing crises. Methods include a round table introduction with goals and objectives, a 30 minute scenario followed by a debrief and an evaluation by the participants. Participants rate the experience on a 1-5 scale. See figure and table.

Impact: Most rate the overall experience highly; however, comparison to the real clinical situation was ranked lower during earlier sessions but has improved during more recent sessions. Future improvements in realism include a move to a permanent site that will allow scavenging and suction. After the introductory phase is completed, an evaluation system will provide for assessment of teamwork skills including communication, delegation and professional behavior during management of crises such as malignant hyperthermia.



Evaluation questions	1 Poor Not at all	2 Fair Some	3 Unsure	4 Good Very Much	5 Outstanding Exactly like it
Did you find the lab environment comfortable?				10	9
Did the instructors give clear instructions prior to the start of the session?				9	10
How does this simulation experience compare to clinical experience in operating room?		1	5	13	
Were key learning objectives clearly explained?				7	11
Did you find this session to be helpful?		1	1	4	13
Was the debriefing session helpful in meeting objectives?			1	6	12