

Great Evidence in Medical education Summary (GEMeS)

Summary by: Stephen Miller



Education Question or Problem	Can simulation-based medical education (SBME) with mastery learning provide higher quality learning outcomes and result in improvements in patient care and patient safety?
Bottom Line – 1 sentence	A critical review of the literature reveals evidence showing that when selected skills and procedures are learned via SBME with attention to mastery learning there are translational outcomes which lead to improved safety in performing selected skills and procedures, in addition to improvements in patient care techniques and improved patient outcomes. This can be a powerful pedagogical method.
Why is its relevant to Emergency Medicine Education?	Simulation has become a staple as a learning method in teaching both faculty and learners in emergency medicine, as well as other disciplines. With an increased focus on patient safety and reducing patient harms, it is important that the techniques we utilize have translational outcomes that support the time, effort, and cost that these teaching methods demand.
Study Design	This is a qualitative synthesis of SBME that have reported translational science research over a 7-year period (2006-2013). A critical review approach was undertaken. This approach reviews a variety of literature and identifies well established knowledge. It identifies gaps in understanding, and suggests some means for the further understanding of these gaps. It differs from a systematic review in that it does not purely rely on numbers and data, but assesses context, and educational interventions from the most compelling studies that satisfy the search terms and strategy.
Funding sources	This work was supported in part by the Gordon Center for Research in Medical Education at the University of Miami Miller School of Medicine.
Setting	Institute for Medical Education, Loyola University Chicago, Stritch School of Medicine; Gordon Center for Research in Medical Education at the University of Miami Miller School of Medicine; Department of Medicine, Feinburg School of Medicine, Northwestern University.
Level of Learning (Undergrad, Postgrad, CME, General / multiple)	UGME, PGME, CPD
Synopsis of Study (250 words max). Include significant results or findings that support the bottom line.	<p>This important review of SBME and translational outcomes was performed with rigor by some of the leading educational experts on SBME in North America. The emphasis was on reviewing those medical education studies that used mastery-learning methods in SBME and measured translational outcomes.. Mastery learning in medical education is a stringent form of competency-based education. It encompasses a baseline assessment, clear learning objectives and engagement in educational activities with a fixed passing standard. Formative assessment and feedback is required, in addition to summative assessment in order to succeed to the next level of training or skill. The goal of mastery learning is that all learners reach all educational objectives within a variable time requirement.</p> <p>Improved translational outcomes have been described in SBME with mastery learning. These effects occur in a graduated fashion in a medical simulation lab, in patient care practices, in real patient outcomes and in collateral educational effects (cost savings, skill retention, etc.). These studies are difficult to design and translational science educational outcomes require multiple studies from integrated educational and health research programs. Better patient care practices and better patient outcomes are the current focus of SBME research.</p>

Reference (include DOI or PMID please)	McGaghie, W. C., Issenberg, S. B., Barsuk, J. H., & Wayne, D. B. (2014). A critical review of simulation-based mastery learning with translational outcomes. <i>Medical Education</i> , 48(4), 375-385.
Hyperlink to PubMed link or Journal Link (not all Education Journals are pubmed)	McGaghie, W. C., Issenberg, S. B., Barsuk, J. H., & Wayne, D. B. (2014). A critical review of simulation-based mastery learning with translational outcomes. <i>Medical Education</i> , 48(4), 375-385.

[Stephen G Miller](#),

BSc, MD, CCFP(EM), FCFP, MEd (Acadia'14)

Queen Elizabeth II Health Sciences Center

Assistant Professor, Medical Director EM Simulation, Dalhousie University Department of Emergency Medicine and Division of Medical Education, Halifax, NS

smiller@dal.ca