SAEM Simulation

A Collaboration between the SAEM Simulation Interest Group and the Technology in Medical Education Committee

Submit an Article!

Deadline:

December 1, 2007

Next Issue:

January 1, 2008

Simulation in Chicago

Ernest Wang, MD, Interest Group Chair and Newsletter Editor

It was great seeing all of you at the SAEM meeting in Chicago. As evidenced by the standing room only situation in the room, enthusiasm for simulation in our specialty continues to grow.

This issue will highlight the news from the Annual meeting, the upcoming 2008 AEM Consensus Conference, and the area of education.

It is clear that simulation is now entering the next phase of maturation, no longer a "novel" teaching method. It is up to us as a group to demonstrate, in a quantifiable manner, what we intuitively believe – that simulation, properly utilized, is an effective tool for learning and training.

Simulation Selected as Conference Topic

The big story in simulation at the meeting was the announcement that simulation was selected as the topic for the 2008 Academic Emergency Medicine Consensus Conference in Washington DC.

The proposal, spearheaded by James A. Gordon, MD, MPA, and jointly sponsored by the SAEM Simulation Task Force (now the Technology in Medical Education Committee) and the SAEM Simulation Interest Group, is titled "Simulation in Healthcare: Defining and Developing Clinical Expertise."

On behalf of the Task Force, Bond et al. have recently outlined avenues of investigation for simulation in their recent paper, "The Use of Simulation in Emergency Medicine: A Research Agenda" (AEM 2007;14:353-64). The report argues that advanced simulation technologies will fundamentally alter the landscape of medical education and practice. It suggests that in the future, physicians (much like airline pilots) will not be able to practice medicine without having trained and demonstrated their expertise in a simulated environment.

The Consensus conference proposal outlined three tracks, each designed to concentrate on a key area of simulation and clinical expertise: individual cognition and critical thought; team performance and communication; and technical/action skills. **MANUSCRIPT SUBMISSIONS FOR THE AEM SPECIAL TOPIC ISSUE ARE TYPICALLY DUE BY MARCH 1.**

Highlight: Education

> *"The weight of the evidence suggests that high-fidelity medical simulation facilitates learning *under the right conditions.*"*
>
> *- William C. McGaghie, PhD*

William C. McGaghie, PhD, from the Office of Medical Education and Faculty Development, Northwestern University, was the featured speaker at the interest group meeting, and also was the keynote at the Didactic Session on performance metrics (see below).

Dr. McGaghie's lecture, entitled "What are the features and uses of high-fidelity medical simulations that lead to effective learning? A BEME systematic review," reviewed the article of the same name (Medical Teacher, 2005) and provided a historical review and synthesis of the high-fidelity simulation literature over a 34-year period.

According to Dr. McGaghie, the three most important conditions that facilitate effective learning are:
1) Feedback is provided during the learning experience
2) Learners engage in repetitive practice
3) Simulation is integrated into the overall curriculum

The authors further reviewed a subset of the articles in the BEME review with adequate data for quantitative analysis (McGaghie et al. Medical Education, 2006) and discovered that a dose-response relationship exists between hours of simulation-based practice and standardized learning outcomes.

CORD Meeting Simulation

Dr. Teresa S. Wu and **Dr. Salvatore Silvestri** from Orlando Regional Medical Center conducted two simulation sessions at the 2007 CORD Annual Academic Assembly: a beginner's track (So you want to start a simulation program? Tips, Tricks, & Potential Pitfalls) and an advanced track (Beyond the Basics: Bringing Simulation Theory & Technology Together).

Eduardo Salas, PhD, director and trustee chair of the Institute of Simulation and Training at the University of Central Florida and an expert consultant to the airlines industry, and his team have been working with Dr.'s Wu and Silvestri to develop the SMARTER Approach to Simulation Based Training (Simulation Module for Assessment of Resident Targeted Event Reponses).

The goal of their approach is to provide a validated and reliable method for linking and assessing EM resident performance and ACGME core competencies. Data from the SMARTER Approach is currently under review and pending publication.

In other news, **Steve McLaughlin, MD** has been named CORD Simulation Chair and will be working to arrange collaboration between CORD and SAEM to foster develop educational curricula and case.

Simulation Task Force Elevated to Committee Status (Tech in Med Ed)

Based on its work during the 2-year Task Force term (2005-7) the SAEM Simulation Task Force has been elevated to standing committee status, under the name "Technology in Medical Education." Jim Gordon will remain the chair.

A summary of Task Force work and simulation resources can be found on the SAEM website at www.saem.org, go to Education/Simulation

A brief summary of the Committee meeting in Chicago:

Old Business:
Summary of 2005-7 work, including
- SAEM/AAMC Simulator Case Collection
- Publication of research agenda paper
- Initiation of simulator consult service
- Informational papers for membership
- Website development

Guest Reports
- AEM Editorial Board/Consensus Conference
- CORD simulation committee

New Business
- **CONSENSUS CONFERENCE** (main topic)
- White paper on simulation in GME
- Collaboration with ACEP/CORD
- Continued development of case bank

SAEM Simulation Didactic Session Discusses Metrics

The Annual Meeting Program Committee commissioned a didactic session on simulation-based performance metrics in Chicago.

Session/panel speakers included Andy Godwin, U.Florida/Jacksonville; Michelle Sergel, Rush Medical College, and Jim Gordon, Mass General/Harvard.

The keynote speaker was William McGaghie, PhD, Professor of Medical Education at Northwestern University, who provided a superb academic overview of performance assessment in medicine, and detailed the state-of-the art in simulation-based metrics.

2008 AEM Consensus (cont.)

PROPOSED DRAFT OF CONFERENCE OUTLINE

Morning Plenary: Defining Clinical Expertise--The Metrics of Performance Assessment
- Keynote 1 : The Art and Science of Performance Assessment in Medicine
- Keynote 2: ABEM and the Board Examination in Emergency Medicine

Concurrent Consensus Tracks: Simulation and Clinical Expertise (Defining Expertise)
- Consensus Track 1: Individual Cognition and Critical Thinking--Individual High-Stakes Examinations to Certify Clinical Expertise
- Consensus Track 2: Team Performance and Communication--Crisis Resource Management: The Metrics of Group Performance
- Consensus Track 3: Technical and Action Skills: Overview--Procedure Labs and their Transference to the "Real World"

Lunch Session: Does the Biomedical Paradigm Apply to Educational Research? The Role of Social Science in Studies of Clinical Expertise

Afternoon Plenary: Developing Expertise—How to Create and Maintain High Performance
- Keynote 3: The Development of Expertise among Medical Professionals
- Keynote 4: High-Performance Team Training and Crisis Management in Medicine

Concurrent Consensus Tracks: Simulation and Clinical Expertise (Creating Expertise)
- Consensus Track 1: Individual Cognition and Critical Thinking—Creating and Maintaining Provider Expertise
- Consensus Track 2: Team Performance and Communication--Creating and Debriefing Expert Teams
- Consensus Track 3: Technical and Action Skills—-Learning and Maintaining Procedural Competence

Consensus Discussion and Summary

SIG Subsection Reports

1) **Education Research and Methodology – Chair: Dr. Linda Spillane**

Drs. Spillane and Fernandez discussed issues related to assessment in simulation based on their study.
Several points were discussed:
a) Make sure you know what your assessment tool is really measuring before starting your study;
b) Simulation evaluation may be a "moving target." Over time, increased exposure to the technology may affect performance;
c) Teaching occurs in debriefing, not so much in actual simulation; Discuss group cognitive dynamics as part of debrief;
d) Utilize audience response system to assess real knowledge;
e) Standardize behavioral markers and critical actions while keeping scenarios flexible

2) **Simulation Technology – Chair: Dr. Nowecki**

A discussion was opened relating to the various technologies used in medical education and how to best categorize them. These range from High Fidelity Human Patient Simulators and virtual reality down to simple task trainers. The group discussed the development of a web based discussion thread that could serve as a resource for those planning/developing simulation based curriculum. This would allow the sharing of experience and opinions about current technology as well as assist in new technology development. A solicitation for subcommittee members from the interest group was made. Consensus was that this would be a good use of time.

3) **Patient Safety – Chair: Dr. Bond**

Dr. Bond presented a brief background on patient safety by Dr. Bond. This was followed by a presentation by Dr. Vozenilek on his AHRQ funded project looking at ED handoffs. Preliminary findings indicate that ED handoffs are often associated with significant gaps in information transfer. The significance of these gaps is unknown. The culture of the ED is the main impediment to good handoffs and simulation may be able to create insight that can lead to change in practice.

4) **Educational Product and Content Development – Chair: Dr. Lammers**

Dr. Richard Lammers, set two goals for the subcommittee: 1) Recruit more members; 2) Locate, evaluate, and catalog educational simulation products in at least 8 categories.
The list of categories, which is expandable, includes: a) mannequins & partial-task (or procedural) trainers, b) Objective Structured Clinical Examinations (OSCE's); c) props & adjuncts to simulations; d) courseware development products; e) audio/video products; f) computer-based (screen-based) simulations; g) simulation-based assessment tools; and h) courses, workshops, & curricula. Once identified and evaluated, these products will be posted on the SAEM Simulation Interest Group website. Emergency Medicine educators will be able to use this "library of simulation resources" to build their own curricula.
Dr. Lammers recommended four, widely-used simulation websites that are relevant to Emergency Medicine:
1) SAEM Simulation Interest Group website http://www.emedu.org/sim/
2) MedEdPORTAL www.aamc.org/mededportal
3) Virtual Patient Resource Center: http://www.aamc.org/meded/mededportal/vp/
4) Society for Simulation in Healthcare http://ssih.org/
5) Advanced Initiates in Medical Simulation (AIMS) http://www.medsim.org/

Dr. Lammers reported on the MedEdPORTAL project and encouraged SIG to submit their work for review and inclusion in their website, and to utilize the work of others. Details of the AAMC MedEdPORTAL website can be found at the link above.

Academic Announcements

James Gordon, MD, MPA, Director of the Gilbert Program in Medical Simulation at Harvard Medical School and Assistant Professor in the Department of Emergency Medicine at Massachusetts General Hospital, is currently serving the second year of his elected term as Treasurer of the Society for Simulation in Healthcare, having been on the Board of Directors since the society's inception.

John Vozenilek, MD, Assistant Professor at Northwestern University was appointed the Director of the Northwestern McGaw Simulation Network, Feinberg School of Medicine.

Elliot Rodriguez, M.D., F.A.C.E.P., Assistant Professor at SUNY Upstate Medical University was awarded a two-year grant by the American Geriatric Society to develop a geriatric curriculum.

2007 EM Simulation Abstracts

SAEM Abstracts

Stallard T, Strecker-McGraw M, Vanwalsum K. Confidence, competence and leadership: the role of high fidelity simulation workshops to improve emergency medicine residents self confidence, technical competence and leadership skills. Acad Emerg Med. 2007 May;14(5 Suppl 1):S74. Epub 2007 May 1.

Girzadas D Jr, Delis S, Bose S, Rzechula K, Hall J. Heart rate, stress and learning are independent of role in high fidelity simulation. Acad Emerg Med. 2007 May;14(5 Suppl 1):S74-5. Epub 2007 May 1.

Lammers RL, Fales W, Byrwa M, Hale R: Simulation-based assessment of paramedic pediatric resuscitation skills. Acad Emerg Med. 2007; 14(5):S158-159.

Beach C, Vozenilek J, Adler M, Donlan, S. Transitioning Patients from the ED to the Hospital: Observations of Handoff Communication. Acad Emerg Med. 2007 May;14(5 Suppl 1):S205-6. Epub 2007 May 1.

Santen SA, Hemphill RR. A low technology, low cost simulation model for performance of lumbar

2007 EM Simulation Abstracts

puncture. Acad Emerg Med. 2007 May;14(5 Suppl 1):S215. Epub 2007 May 1.

Gutman D, Ragsdale L, Becker B, Kobayashi L. High-fidelity Medical Simulation for Geriatric Emergency Medicine Training. Acad Emerg Med. 2007 May;14(5 Suppl 1):S216. Epub 2007 May 1.

Heilenbach T, Rogers R. An ultrasound simulator for emergency medicine resident education. Acad Emerg Med. 2007 May;14(5 Suppl 1):S218-9. Epub 2007 May 1.

Ellis DG, Brown JL, Myers JW, Meinert E. Simulation of tele-trauma resuscitations for rural emergency physicians and emergency medicine residents. Acad Emerg Med. 2007 May;14(5 Suppl 1):S219. Epub 2007 May 1.

Simulation in Healthcare Abstracts

(Presented at the 7th Annual International Meeting on Simulation in Healthcare: January 14-17, 2007 * Lake Buena Vista, Florida.)

Teresa S. Wu, MD; Salvatore Silvestri, MD, FACEP. Emergency Medicine High Fidelity Simulation Case Selection: Who should decide?: Research Abstract: 16.

Rosemarie Fernandez; Dennis Parker; James Kalus; Douglas Miller; Scott Compton. Use of Human Patient Simulation-Based Training to Teach Interdisciplinary Team Skills in a Doctor of Pharmacy Curriculum.: Research Abstract: 30.

Salvatore Silvestri, MD, FACEP; Teresa Wu, MD. How does Varying the Scenario Strategy Change the Case Selection Utilized in High Fidelity Simulation Training for Emergency Medicine Residents?: Research Abstract: 50.

James A. Gordon; Steven W. Lockley; Erin E. Evans; Christopher P. Landrigan; Charles A. Czeisler; Erik K. Alexander. Correlation of Physician Performance in a Simulator-Based Environment to Actual Error Rates in the Intensive Care Unit (ICU).: Research Abstract: 43.

Strother C, Weiner C, Okuda Y, Weingart S. SimWars: Simulation Competition as a Model for Resuscitation Learning. **Council of Residency Directors Annual Meeting**, Orlando, FL 2007.

2007 EM Simulation Publications

Eich C, Timmermann A, Russo SG, Nickel EA, McFadzean J, Rowney D, Schwarz SK. Simulator-based training in paediatric anaesthesia and emergency medicine--thrills, skills and attitudes. Br J Anaesth. 2007 Apr;98(4):417-9.

Bond WF, Lammers RL, Spillane LL, Smith-Coggins R, Fernandez R, Reznek MA, Vozenilek JA, Gordon JA; Society for Academic Emergency Medicine Simulation Task Force. The use of simulation in emergency medicine: a research agenda. Acad Emerg Med. 2007 Apr;14(4):353-63. Epub 2007 Feb 15.

Wallin CJ, Meurling L, Hedman L, Hedegard J, Fellander-Tsai L. Target-focused medical emergency team training using a human patient simulator: effects on behaviour and attitude. Med Educ. 2007 Feb;41(2):173-80.

Schwartz LR, Fernandez R, Kouyoumjian SR, Jones KA, Compton S. A randomized comparison trial of case-based learning versus human patient simulation in medical student education. Acad Emerg Med. 2007 Feb;14(2):130-7.

Idrose AM, Adnan WA, Villa GF, Abdullah AH. The use of classroom training and simulation in the training of medical responders for airport disaster. Emerg Med J. 2007 Jan;24(1):7-11. Review.

Lammers RL. Simulation: the new teaching tool. Ann Emerg Med. 2007 Apr;49(4):505-7. Epub 2006 Dec 18.

Binstadt ES, Walls RM, White BA, Nadel ES, Takayesu JK, Barker TD, Nelson SJ, Pozner CN. A comprehensive medical simulation education curriculum for emergency medicine residents. Ann Emerg Med. 2007 Apr;49(4):495-504, 504.e1-11. Epub 2006 Dec 11.

McFetrich J, Price C. Simulators and scenarios: Training nurses in emergency care. Med Educ. 2006 Nov;40(11):1139.

Wright SW, Lindsell CJ, Hinckley WR, Williams A, Holland C, Lewis CH, Heimburger G. High fidelity medical simulation in the difficult environment of a helicopter: feasibility, self-efficacy and cost. BMC Med Educ. 2006 Oct 5;6:49.

Owen H, Mugford B, Follows V, Plummer JL. Comparison of three simulation-based training methods for management of medical emergencies. Resuscitation. 2006 Nov;71(2):204-11. Epub 2006 Sep 20.

Anil Shukla, BS; Daniel Kline, BA; Ajith Cherian, BA; Ashley Lescanec, BS; Adam Rochman, MD; Claire Plautz, MD; Mark Kirk, MD; Keith E. Littlewood, MD; Cathy Custalow, MD, PhD; Rajagopalan Srinivasan, PhD; Marcus L. Martin, MD. A Simulation Course on Lifesaving Techniques for Third-Year Medical Students. Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare. 2(1):11-15, Spring 2007.

Ernest E. Wang, MD; John A. Vozenilek, MD; John Flaherty, MD; Morris Kharasch, MD; Pam Aitchison, RN; Abra Berg. An Innovative and Inexpensive Model for Teaching Cricothyrotomy. Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare. 2(1):25-29, Spring 2007.

Huang, Grace C. MD; Gordon, James A. MD, MPA; Schwartzstein, Richard M. MD. Millennium Conference 2005 on Medical Simulation: A Summary Report. Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare. 2(2):88-95, Summer 2007.

John Vozenilek, MD. Chapter: written/in pub: A manual of simulation in healthcare edited by Dr Richard H Riley Simulation in Emergency Medicine, Oxford University Press.

2007 EM Simulation Presentations and Educational Sessions

John Vozenilek, MD. Invited Speaker: Simulation conference Chicago style: Simulation for Patient Safety Outcomes.

Society for Simulation in Healthcare, 7th Annual International Meeting on Simulation in Healthcare, Orlando, FL, Jan 14-17, 2007
Jessie Nelson, MD, Beth LaVelle, "Applying Basic Educational Theory to Simulation - AKA A Rookies' Guide to Teaching With Simulation" and "They Don't All Code – Using High-Fidelity Simulation To Train Rapid Response Teams".

CORD Academic Assembly, Orlando, FL, March 2007
Sal Silvestri, MD, Teresa Wu, MD and Eduardo Salas, PhD. "So You Want to Start a Simulation Program? Tips, Tricks, and Potential Pitfalls" and "Beyond the Basics: Bringing Simulation Theory and Technology Together."
Ernest Wang, MD, "Increasing the Realism of Simulation Training."
Jessie Nelson, MD, Regions Hospital, "Combined Conference on Communication Skills."

Lawrence Proano, MD, clinical associate professor of emergency medicine, **Robert Partridge, MD**, associate professor of emergency medicine, **David Lindquist, MD,** of the Rhode Island Hospital Medical Simulation Center and assistant professor of emergency medicine, and **Peter DeJager, MD**, senior resident in emergency medicine, conducted lectures and advanced medical simulations in Dublin, Ireland to train Irish clinicians in acute care, airway management and teamwork behaviors at the Royal College of Surgeons in Ireland (RCSI) "Updates in Emergency Medicine" course on April 18-20, 2007.

New York Simulation Symposium in Medical Education: The Emergency Medicine Experience
May 9th, 2007
Simulation in Medical Education: New Horizons
  Haru Okuda, MD, Director of Simulation, Department of Emergency Medicine, MSSM
Starting a Simulation Center: Experience after 10 years
  Adam Levine, MD, Director of HELPS Center, Department of Anesthesiology, MSSM
Creative Funding Strategies: Money and time
  Andy Godwin, MD, Director Simulation Training Center, Dept. EM, University of Florida
Integrating Simulation into the Curriculum
  Charles Pozner, MD, Director Stratus Center, Harvard Medical School
The Interdisciplinary Approach
  Leo Kobayashi, MD, Director, Rhode Island Hospital Medical Simulation Center, Brown School of Medicine

Frank Overly, MD, assistant professor of emergency medicine and co-director of the Rhode Island Hospital Medical Simulation Center, conducted advanced medical simulations during the Ambulatory Pediatrics Association national meeting in Sturbridge, MA on May 13, 2007.

2007 SAEM Annual Meeting Didactic Session, Chicago, IL, May 19th, 2007
Simulation as a Training Tool: Where are the Metrics?
Andy Godwin, MD, University of Florida College of Medicine/Jacksonville
James Gordon, MD, MPA, Massachusetts General Hospital/Harvard Medical School
Michelle Sergel, MD, Assistant Professor of Emergency Medicine, Rush Medical College
William McGaghie, PhD, Northwestern University Feinberg School of Medicine

2007 EM Simulation Upcoming Events

Steve McLaughlin, MD, University of New Mexico, will be conducting the simulation curriculum at the ACEP 2nd annual Advanced Teaching Fellowship (ATF) this year on September 8th -10th, 2007 at the University of New Mexico. The ATF is targeted at graduates of ACEP's core teaching fellowship. The ATF focuses on expanding the educators skills set outside of the basic lecture/small group discussion. The curriculum includes sessions on bedside teaching, curriculum development, web based teaching, and a seven hour introduction to human simulation. The simulation curriculum includes an overview of the history of simulation, foundations of adult learning, and simulation research. The learners also have time for hands on programming with both METI and Laerdal systems and intensive instruction in scenario development and debriefing. This course is a great way to develop advanced skills in education including human simulation, and to network with other EM educators. More information can be found on the ACEP website, www.acep.org, or contact Dr. McLaughlin at SMcLaughlin@salud.unm.edu.

8th Annual International Meeting on Simulation in Healthcare
Fostering Excellence through Innovation and Collaboration
Marriott San Diego Hotel & Marina, San Diego, CA
January 13, 2008 – Pre-conference and Post-graduate courses
January 14-16, 2008 – General Sessions, Workshops, Exhibits

2008 AEM Consensus Conference
SAEM Annual Meeting
May 29-June 1
Marriott Wardman Park Hotel, Washington DC.

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Got something to announce? Want to write an article? The deadline is December 1, 2007!

Contact me: ernestwangmd@yahoo.com

Disclaimer: I realize that this is only a partial listing of all of our simulation endeavors. My apologies for any inadvertent omissions.

If you have any abstracts, presentations, or articles you would like to announce, please email me so you can be recognized!