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14. ABSTRACT 1641 individuals attended the 2009 International Meeting on Simulation in Healthcare and had access to Post graduate courses, panels, keynotes, roundtables, and workshop sessions to further their knowledge of use of simulation in healthcare to improve patient safety and manage resources. 29 workshops provided both hands-on and interactive learning in the areas of conducting research, outcomes based assessment, case development, disaster training, needs assessment and competency based training. Panels and keynotes addressed education, research, simulations operations, interactive environments, credentialing & assessment, clinical areas, economics of simulation and standardized patients. 91 peer reviewed research abstracts were presented and selections will be published in the Society's Journal, Simulation in Healthcare. Additionally, 175 non-peer reviewed works in progress abstracts were presented and published in the course program.					
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Introduction

The International Meeting on Simulation in Healthcare (IMSH) is the official meeting of the Society for Simulation in Healthcare (SSH). The SSH mission is to bring together investigators, educators, and health care practitioners from a broad range of medical and paramedical specialties that are interested in health care simulation in all of its forms. IMSH featured keynote speakers, workshops, panels, research and “work in progress” poster and presentation sessions covering topics such as: surgical training devices, patient safety, curriculum development, simulation center operations, performance evaluation, developing metrics, debriefing simulation experiences, and training applications (crisis management, credentialing and assessment, faculty development, trauma, clinical emergencies, teamwork skills, etc.) This contract provided funding support for the conference faculty and publication of the research abstracts in the syllabus and the Society’s peer-reviewed journal.

Body

Over 1600 individuals involved in simulation in healthcare attended the 2009 conference and participated in panels, workshops, peer-reviewed research and non-peer-reviewed “work in progress” abstract presentations. The TATRC contract provided funds for the publication of the peer-reviewed research abstracts and support for the faculty of general session panels and workshops. The schedule below of the general sessions and workshops identifies the content areas covered by the conference and identifies the faculty experts participating. The appendix includes a pdf of the section of the syllabus for the peer-reviewed abstracts which is being published in the Society’s Journal, Simulation in Healthcare, now accepted for indexing in Medline® and a document showing the workshops (with named faculty) conducted at the conference.

The growth in attendance, which more than doubled since 2006, clearly indicates the growing interest and need for continued education in the area of simulation in healthcare at quality CME/CE activities such as IMSH. The research abstract authors benefited from individualized attention at the “Professor Rounds” whereby conference faculty interacted directly with the authors. Interaction and networking between attendees and faculty at the conference will likely result in additional research by individuals and new multi-center research opportunities.

Published research abstracts will be available on-line through the publisher and on the Society’s website. Additionally, selected sessions were video taped and will be made available to the membership on-line on the Society’s website (www.ssih.org). Selected faculty presentations are available on-line for conference attendees.

Below is the conference schedule at a glance that gives an overview of the meeting breakdown.

Sunday, January 11

8:00 am–12:00 pm SSH Board of Directors Meeting (Closed)*
8:00 am–12:00 pm PG1.A Grant and Proposal Writing (Novice)
8:00 am–12:00 pm PG1.B Research, Where Do I Start? (Novice)
8:00 am–12:00 pm PG1.C An Overview of Instructor Training (Novice)
8:00 am–12:00 pm PG1.D Setting Up a Sim Center (Novice)
8:00 am–12:00 pm PG1.E Scenario Design for Nursing Curricula (Advanced)
8:00 am–12:00 pm PG1.F Which Research Should I Do? Prioritizing In Your Center (Advanced)
8:00 am–12:00 pm PG1.G Instructor Training 2 - Structured and Supported De-Briefing (Advanced)
12:00 pm–1:00 pm Lunch
1:00 pm–5:00 pm Summit Organizations (Simulation Alliance) Meeting*
1:00 pm–5:00 pm Technology Workshops*
1:00 pm–5:00 pm PG2.H Embedding Simulation into Nursing Curricula (Novice)
1:00 pm–5:00 pm PG2.I Introduction to Team Training and Assessment (web) (Novice)
1:00 pm–5:00 pm PG2.J Scenario Design (Novice)
1:00 pm–5:00 pm PG2.K Instructor Training 2 - Difficult De-briefing (Advanced)
1:00 pm–5:00 pm PG2.L Standardized Patients & Multi-Modality Simulation (Advanced)
1:00 pm–5:00 pm PG2.M Scenario Design (Advanced)
5:30 pm–6:30 pm New Member/New Meeting Attendee Session *
6:30 pm–7:00 pm SSH Annual Business Meeting*
7:00 pm–8:00 pm Affiliate Meetings*

Monday, January 12

7:00 am–8:00 am Affiliate Meetings*
7:00 am–4:00 pm Work in Progress (WIP) Poster Viewing
8:00 am–9:30 am PS 1 Plenary Session & Keynote Address
10:00 am–5:00 pm Exhibits*
10:30 am–12:00 pm EP1.1 Learning Theories and Simulation: New Advances
10:30 am–12:00 pm EP1.2 Administration Considerations: Budget Management, Invoicing, Timetabling
10:30 am–12:00 pm EP1.3 Training at the Point-of-Care: Innovative Application of “In-Situ” Simulation
10:30 am–12:00 pm EP1.4 Simulation Advocacy: Successful Lobbying at High Levels
10:30 am–12:00 pm RT1.1 Use of Simulation in Pediatric Training Programs
10:30 am–12:00 pm RT1.2 International Fellowships in Simulation-Based Education
10:30 am–12:00 pm V1 (see separate schedule)
10:30 am–12:00 pm WS1.1 Designing Simulation Based on Learning Theory
10:30 am–12:00 pm WS1.2 Assessing and Improving Debriefing

10:30 am–12:00 pm WS1.3 Setting Performance Standards for Simulation-based Exercises
 10:30 am–12:00 pm WS1.4 Distributed Simulation: Simulation-Based Surgical Training
 12:00 pm–1:00 pm Exhibit Hall Lunch
 1:00 pm–2:30 pm EP1.5 Low Stakes Assessments with High Outcomes
 1:00 pm–2:30 pm EP1.6 Similarities? Differences? New Hurdles? Old Hurdles?
 1:00 pm–2:30 pm EP1.7 The Architectural Design Process for Simulation Centers
 1:00 pm–2:30 pm EP1.8 Technology: Addressing Your IT Needs
 1:00 pm–2:30 pm RT1.3 State-of-the-Art: Serious Games & Virtual Environments in Healthcare
 1:00 pm–2:30 pm V2 (see separate schedule)
 1:00 pm–2:30 pm WS1.5 Putting In-Situ Simulation to Work
 1:00 pm–2:30 pm WS1.6 The Trade Game: The Use Of Games To Develop Non-Technical Skills
 1:00 pm–2:30 pm WS1.7 Promoting Excellence in End-Of-Life Care
 1:00 pm–2:30 pm WS1.8 Bringing CRM to Life: Using (Hollywood) Movies
 2:30 pm–3:30 pm Affiliate Meetings*
 3:30 pm–5:00 pm EP1.9 SSH's Plan for Accreditation of Simulation Centers
 3:30 pm–5:00 pm EP1.10 Hot Topics in Nursing Simulation
 3:30 pm–5:00 pm EP1.11 Simulation Center Operations: Day-to-Day Considerations
 3:30 pm–5:00 pm EP1.12 Making Inter-Professional Simulation Work
 3:30 pm–5:00 pm EP1.13 Standardized Patients, Simulation and Assessing the Core Competencies
 3:30 pm–5:00 pm RT1.4 Simulation-Based Research
 3:30 pm–5:00 pm V3 (see separate schedule)
 3:30 pm–5:00 pm WS1.9 Moulage Magic! Theatrical Tricks to "Suspend Disbelief"
 3:30 pm–5:00 pm WS1.10 Scenario Development: A Collaborative Step-Wise Approach
 3:30 pm–5:00 pm WS1.11 Development of a Faculty Portfolio for Use in Simulation-Based Education
 3:30 pm–5:00 pm WS1.12 Context-Specific Fidelity in Obstetric Team Simulation Training
 3:30 pm–5:00 pm WS1.13 The Development of Multimedia Simulation
 5:00 pm–6:00 pm 2008 IMSH Welcome Reception*
 6:00 pm–7:00 pm Affiliate Meetings*

Tuesday, January 13

7:00 am–8:00 am Affiliate Meetings*
 7:00 am–4:00 pm Research Poster Viewing
 8:00 am–9:00 am PS 2 Research Keynote
 9:00 am–9:30 am Research Award Winners Oral Presentations
 9:30 am–10:30 am Poster-side Professor Rounds
 10:00 am–5:00 pm Exhibits*
 10:30 am–12:00 pm EP2.1 Research Technology Oral Presentations
 10:30 am–12:00 pm EP2.2 Integrating Cause and Effect Diagrams into Nursing Curriculum
 10:30 am–12:00 pm EP2.3 Simulation and the Law: You Be the Judge
 10:30 am–12:00 pm EP2.4 Department of Defense Simulation Success Stories
 10:30 am–12:00 pm RT2.1 Hospital Information Systems: Simulation of Time-Sensitive Clinical Processes
 10:30 am–12:00 pm RT2.2 Use or Lose It: Understanding the Process of Procedural Skill Decay
 10:30 am–12:00 pm WS2.1 A Program to Enhance Relational and Communication Skills
 10:30 am–12:00 pm WS2.2 Simulation PBL (Problem Based Learning)
 10:30 am–12:00 pm WS2.3 Activity-based Instructional Design
 10:30 am–12:00 pm WS2.4 Methods for Measuring Skill and Task Difficulty
 10:30 am–12:00 pm V4 (see separate schedule)
 12:00 pm–1:00 pm Exhibit Hall Lunch*
 1:00 pm–2:30 pm EP2.5 The Use of Simulation in High-Stakes Assessment
 1:00 pm–2:30 pm EP2.6 Preparing for Disaster
 1:00 pm–2:30 pm EP2.7 Research Education Oral Presentations
 1:00 pm–2:30 pm EP2.8 The Insurance Industry in Simulation: Stakeholder or Casual Observer?
 1:00 pm–2:30 pm EP2.9 Department of Defense – New Developments and Future Directions
 1:00 pm–2:30 pm RT2.3 Roundtable Discussion: Nursing
 1:00 pm–2:30 pm RT2.4 The Power and Pitfalls of "In Situ" Simulation: Bring Out Your Dead!
 1:00 pm–2:30 pm V5 (see separate schedule)
 1:00 pm–2:30 pm WS2.5 Current Simulators and Medical Equipment to Enhance Pediatric Simulations
 1:00 pm–2:30 pm WS2.6 Construction of Effective Instructors' Training Workshops
 1:00 pm–2:30 pm WS2.7 Assessment of Non-Technical Skills of Operating Room Teams in Simulation
 1:00 pm–2:30 pm WS2.8 Enhancing In-Situ Simulation Team Trainings
 1:00 pm–2:30 pm WS2.9 Teach Me Talk To Me Deal With Me Generational Differences
 2:30 pm–3:30 pm Affiliate Meetings*

3:30 pm–5:00 pm EP2.10 And Why Would We Fund You?
3:30 pm–5:00 pm EP2.11 Linking Professional Organization and Private Industry
3:30 pm–5:00 pm EP2.12 A Funny Thing Occurred After the Simulation Experience: Critical Thinking
3:30 pm–5:00 pm EP2.13 Determining the Efficacy of Serious Games
3:30 pm–5:00 pm EP2.14 Research Technology Oral Presentations
3:30 pm–5:00 pm RT2.5 Simulation-based Assessment of Teamwork and Team Performance
3:30 pm–5:00 pm V6 (see separate schedule)
3:30 pm–5:00 pm WS2.10 Moving the Learning Curve Outside the Operating Room
3:30 pm–5:00 pm WS2.11 Debriefing as Formative Assessment: Concepts and Practice
3:30 pm–5:00 pm WS2.12 Effective "Train the Raters" Workshops
3:30 pm–5:00 pm WS2.13 Team Training for Undergraduate Healthcare Professional Students
3:30 pm–5:00 pm W2.14 Using Simulation to Bridge Cultural Barriers
5:00 pm–6:00 pm Affiliate Meetings*
6:00 pm–8:00 pm Tuesday Night Party* (tickets required)

Wednesday, January 14

7:00 am – 8:00 am Affiliate Meetings*
8:00 am – 9:30 am EP3.1 Human Factors Research in Pediatrics
8:00 am – 9:30 am EP3.2 Designing, Funding and Impacting Programs Using Simulation
8:00 am – 9:30 am RT3.1 Preventing and Managing Human Errors
8:00 am – 9:30 am WS3.1 Instructional Design: A Strategy For Simulation Curriculum Development
8:00 am – 9:30 am WS3.2 Teamwork Performance Measures
8:00 am – 9:30 am WS3.3 Instant and Delayed OSCE Feedback – How To Do It Well
10:00 am – 11:30 am PS3 Plenary Session and Keynote

Content Areas At A Glance

Some offerings have multiple content areas.

EP = Expert Panel

PS = Plenary Session

PG = Post Graduate Course

RT = Roundtable

WS = Workshop

Content Areas	Sun 1/11	Mon 1/12				Tues 1/13				Wed 1/14	
	AM/PM	8:00am-9:30am	10:30am-12:00pm	1:00pm-2:30pm	3:30pm-5:00pm	8:00am-9:30am	10:30am-12:00pm	1:00pm-2:30pm	3:30pm-5:00pm	8:00am-9:30am	10:00am-11:30pm
Assessment Evaluation	PG2.I/PM	PS 1 Plenary/Keynote Work in Progress Abstract Viewing 7am -4:00 pm	RT1.1 WS1.2 WS1.3	EP1.5		PS 2 Plenary/Research Keynote/Oral Present. Professor Rounds Research Abstract Viewing 7am – 4:00 pm	RT2.2	WS2.7	RT2.5 WS2.11 WS2.12 WS2.14	RT3.1 WS3.1	PS3 Plenary/Keynote
Education & Training	PG1.C/AM PG1.E/AM PG1.G/AM PG2.I/PM PG2.J/PM PG2.K/PM PG2.L/PM PG2.M/PM		EP1.1 EP1.3 RT1.2 WS1.4	WS1.5 WS1.6 WS1.7 WS1.8	EP1.9 WS1.12		RT2.1 RT2.2 WS2.1 WS2.2 WS2.3	EP2.5 RT2.4 WS2.6	RT2.5 RT2.10 WS2.11 WS2.12	RT3.1	
Governmt, Intl, & Non-Healthcare			EP1.4	EP1.6	WS1.9		EP2.4	EP2.8 EP2.9	EP2.11 RT2.5		
Nursing	PG1E/AM PG2.H/PM		WS1.1		EP1.10 WS1.10		EP2.2	RT2.3 WS2.9	EP2.12	EP3.2	
Pt Safety & Human Factors							RT2.1 WS2.4	WS2.8	WS2.13	EP3.1 RT3.1	
PreHospital								EP2.6			
Research	PG1.A/AM PG1.B/AM PG1.F/AM				RT1.4		EP2.1	EP2.7 RT2.3	EP2.10 EP2.14	EP3.1 WS3.1	
Sim Center Operations	PG1.D/AM		EP1.2	EP1.7 EP1.8	EP1.11 EP1.12 WS1.11		EP2.3		WS2.10		
St'dardized Patients	PG2.L/PM				EP1.3 WS1.13						
Technology				RT1.3				WS2.5 WS2.6 WS2.7	EP2.13		

Key Research Accomplishments

None

Reportable Outcomes

- 91 Peer-reviewed abstracts presented at the 2007 IMSH conference and subsequently published in the Journal
- 29 Peer-reviewed workshop presentations in interactive format
- 3 keynote presentations plus ten special content tracks (see table above)
- Keynotes and selected panel presentations will be made available to members on the Society's website www.ssih.org

Conclusions

As a result of this project, the current research being conducted by those in the simulation in healthcare field was disseminated to over 1600 individuals and further distribution of this information will be available in the public domain through the Society's journal publisher and the Society's website.

References

None

Appendices

1. Workshop descriptions published in the 09 IMSH syllabus
2. Award winning Peer-reviewed research abstracts with oral presentations at the 2009 IMSH and a sample of non-peer reviewed works in progress (10) as published in the syllabus.
3. Roundtable Descriptions with References
4. Expert Panel Descriptions
5. Post Graduate Course Descriptions
6. Special Interest and Affinity Groups
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Appendix 1

WS1.1

Designing Simulation Based on Learning Theory: Grading Students' Conceptual Knowledge

Joanna Kaakinen, Elyn Arwood, Tricia Gatlin, Mary Oakes
University of Portland, Portland, OR

TOPIC AND RATIONALE: The purpose of this workshop is to elucidate the crucial importance of using a learning theory to develop simulation as well as to assess student learning outcomes, from and during simulation. The presenters designed a simulation model based on language learning called SIMBaLL, **SIM**ulation **B**ased on **L**anguage and **L**earning that evolves from Arwood's Neurosemantic Language Learning Theory. This model provides a hierarchical framework for assessment, measuring and grading students' conceptual learning.

OBJECTIVES: Discuss how the learning theory is a critical foundation of using simulation

to design simulation for grading students' conceptual knowledge.

Understand the rationale and purpose of graded simulations.

Participate in a CAS as a learner and as an evaluator. Utilize a CAS grading rubric designed by the University of Portland for senior level BSN students in a medical/surgical course.

TARGET AUDIENCE LEVEL: Faculty Development

OPTIMAL LEVEL OF EXPERIENCE: All levels

THEME LIST: Assessment/Evaluation

COI Statement:

REFERENCES

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WS1.2

Assessing and Improving Debriefing: A Practical Workshop Using The Debriefing Assessment for Simulation in Healthcare (DASH)

Robert Simon^{1,2,3}, Jenny Rudolph^{1,2,3}, Daniel Raemer^{1,2,3}

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Boston, MA, United States,

³Massachusetts General Hospital, Boston, MA, United States

ABSTRACT TEXT: Based on extensive research and experience a behaviorally anchored rating scale for assessing debriefings, the Debriefing Assessment for Simulation in Healthcare (DASH) is available for widespread use. Participants will be given the DASH and trained in its use. The instrument assesses eight crucial elements for conducting an effective debriefing. The workshop will provide participants a chance to observe debriefings, use the DASH to assess the debriefings, and discuss the ratings. Participants will learn how to use the DASH and have permission to use it.

OBJECTIVES: Understand the practical value of the eight debriefing elements.

Be able to use the DASH to assess the quality of debriefings in a variety of settings and for a variety of debriefing styles.

Know how to join and benefit from the DASH validation database.

Full Workshop Proposal and Rational: Many debriefers and simulation centers wish they had a way to assess the quality of their debriefings and provide feedback to instructors

about how to improve. To date, there has been no standardized instrument to assess healthcare debriefings. While there are some instruments in aviation, especially those developed by Key Dismukes and associates (1999), the psychometric properties of these instruments are not available, the instruments do not reflect the educational and psychology

underpinnings of debriefing, and they are not oriented toward healthcare. To address this gap, researchers at the Center for Medical Simulation developed a debriefing assessment

tool. The Debriefing Assessment for Simulation in Healthcare (DASH) is a behaviorally anchored rating scale applicable for a wide variety of debriefing styles and settings.

The instrument assesses eight debriefing elements identified as crucial to conducting an effective debriefing through a review of the literature in debriefing, reflective practice, and

experiential learning, and first-hand observation and implementation of over 3000 briefings

by the developers. The DASH was developed and is being used for an American Heart Association project to improve debriefings in the Pediatric Advanced Life Support program

and is now ready for widespread use in the simulation community. The workshop will provide participants a chance to observe debriefings, use the DASH to assess the debriefings, and discuss the ratings. First, the DASH will be given to participants followed

by a discussion of the theory behind it and directions for its use. Next, participants will engage in an active learning cycle in which they will observe a scenario, practice using the

DASH on the subsequent debriefing, compare ratings via the Audience Response System and discuss differences. This practice cycle (observation - ratings - discussion) will be repeated

three times each time a different debriefing style will be observed. The workshop is designed to

introduce participants to two possible uses of the DASH. First, the systematic use of the DASH

can help improve the quality of debriefings within local simulation centers. Second, when sufficient data is collected in the national validation database it will be possible for debriefers to

see how well they perform within eight critical debriefing elements. Participants in the workshop

will learn how to use the DASH and have permission to use it. They will also be given the opportunity to contribute to the national DASH validation database established at the Center

for Medical Simulation.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)

THEME LIST: Education/Training

Assessment/Evaluation

Research

COI Statement: The authors indicate they have nothing to disclose.

WS1.3

Setting Performance Standards for Simulation-based Exercises

John (Jack) Boulet¹, David Murray² ¹Foundation for Advancement of International

Medical Education and Research, Philadelphia, PA, United

States, ²Washington University

School of Medicine, St. Louis, MO, United States

ABSTRACT: As mannequin-based simulation becomes more popular, and is incorporated

in more summative assessments, there will be a need to set appropriate performance standards. While standard setting techniques are well-developed for selected-response examinations (e.g., multiple choice), relatively little work has been done in the performance

assessment domain, especially with respect to mannequin-based assessment scenarios.

By employing some of the techniques used to set cut-points for standardized patient assessments, it is possible to derive appropriate standards for mannequin-based simulations.

OBJECTIVES: Choose an appropriate standard setting methodology for his/her particular needs.

Design a basic standard setting study.

Understand and evaluate the process of setting standards for performance-based assessments.

Proposal and Rationale: Setting Performance Standards for Simulation-Based Exercises.

For most traditional assessments, including multiple-choice examinations and other

selected- response formats, standard setting techniques are well-developed and widely used. With the recent adoption of high-stakes performance-based assessments in medicine and other healthcare professions, including those used for credentialing, there has been a need to modify existing standard setting methodologies, including developing new techniques that can reliably delimit the point, or points, that separate adequate from inadequate performance. For mannequin-based simulations to be effectively used for summative decisions (e.g., licensure, maintenance of certification), setting defensible performance standards is paramount. Much empirical standard setting research has been conducted for assessments that utilize standardized patients (SPs)(12), lay people who are trained to model the medical complaints and mannerisms of real patients. However, while SP-based cases can be similar in format to those involving mannequins, they often concentrate

on the measurement of different skills (e.g., communication), are typically longer in duration (i.e., 10–15 minute encounters), normally rely on the SP for some of the assessment activity, utilize relatively simple scoring rubrics, are unlikely to involve trauma-type events, and generally do not focus on technical skills. The standard-setting framework developed for SP-based assessments, with some appropriate modification, has been shown to be viable for mannequin-based cases(3). In general, standard setting techniques can be classified and norm- and criterion-referenced. For norm-referenced methods, a point on the score scale is chosen so as to fail (or pass) a certain percentage of the candidates. For summative assessments, where one wants to know what a candidate can and cannot do, norm-referenced techniques are not appropriate. For criterion-referenced techniques, either a test- or examinee-centered approach can be used. For test centered approaches, the standard setting panelists make judgments based on the scoring tools. For example, if a checklist is used for scoring, the panelists would decide how many items need to be credited for a candidate to be judged to be competent (or minimally proficient, etc.). Unfortunately, these types of judgments can be difficult and, because of various opinions regarding the importance of certain actions, there is often only marginal agreement among panelists. Alternatively, an examinee-centered approach can be employed.

Here, performance samples (e.g., videotapes) are shown to the panelists (without the scores) and they are asked to make summary judgments (e.g., adequate, inadequate) for each. Then, the panelists' judgments are regressed onto the actual scores to delimit the score point that maximally discriminates between adequate and inadequate performance. This technique has been shown to yield valid and defensible standards for both SP- and mannequin-based assessments.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Assessment/Evaluation

Education/Training

COI Statement: The authors indicate they have nothing to disclose.

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WS1.4

Distributed Simulation: A Novel Approach to Simulation-based Surgical Training

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ABSTRACT TEXT: This participative hands-on workshop will explore the concept of Distributed Simulation (DS) - the use of low cost, portable simulation technology to recreate conditions of real-world surgery in any available space. Distributed simulation provides realistic yet affordable simulated environments which avoid the need for large, resource-intensive simulation centres. The workshop will demonstrate the assembly of a distributed simulation 'operating room' and its use as a learning environment, leading to a critical discussion of distributed simulations strengths and limitations.

OBJECTIVES: To explore the concept of distributed simulation as an innovation in simulation based training and research.

To observe and to/or participate in a simulation scenario in the distributed simulation setting.

To explore the potential applications of and strategies for refining the current training prototype.

Full Workshop Proposal and Rational: This workshop demonstrates an innovative solution to the problem of accessing scarce, resource-intensive simulations for full immersion

surgical training. Distributed Simulation (DS) uses inexpensive, portable simulation environments that provide high levels of perceived realism, allowing surgical teams to carry out complex, customised scenarios within their own hospital sites. The changing

nature of surgical training, increased public accountability and ever expanding new technologies make it essential to train within a safe, learning-friendly environment. Surgical training is being increasingly delivered through simulation. However, although evidence supports the efficacy of simulation-based surgical training, access to simulation facilities remains problematic for many clinicians. Most full-immersion simulation takes place in dedicated simulation centres, with high financial and human resource costs. Few hospitals have direct access to such facilities when they need them. Consequently, simulation centres are perceived as an unaffordable luxury for many trainee surgeons. This has implications for surgical training and patient safety, as substantial numbers of surgical trainees are not offered the opportunity to experience simulation-based training within a team setting. DS retains the key elements of 'traditional' simulation (e.g. perceived realism, high fidelity levels, debriefing facilities) but at greatly reduced cost. Lightweight, self-supporting photo-realistic backdrops create authentic clinical environments that can be easily transported and set up at any hospital. Scenarios offer different levels of challenge and can be tailored for the needs of different surgical team members. Networked digital video surveillance cameras and recording software support post-scenario debriefing and the construction of longitudinal learning portfolios, as well as the possibility for offline performance assessment. Our group is exploring the potential of DS for training individual surgeons and surgical teams, assessing technical and non-technical skill, and as a test-bed for new surgical devices and techniques. Preliminary data suggests that DS has wide potential application as a training tool, offering a paradigm shift in how high-fidelity simulation can be provided. We believe that this innovation resonates with the changing educational environment of contemporary surgical training and will ultimately enhance the safety of surgical care. The workshop will invite participants to engage critically with the concept of DS, discussing its strengths and limitations.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Planning a program/center

THEME LIST: Education/Training

Assessment/Evaluation

Patient Safety/Human Factors

COI Statement: The authors indicate they have nothing to disclose.

WS1.5

Putting In-situ Simulation to Work: A Hands on Primer for Applying Point-of-care Training to Your Institution's Educational Needs

Liana Kappus, Gavin Hayes Children's Hospital Boston, Boston, MA, United States

ABSTRACT: In-situ simulation promotes deliberative practice for full teams who regularly work together within their native clinical environment/hospital system. The workshop will illustrate the step-by-step process—from curriculum design to implementation including technical aspects—for applying in-situ point-of-care simulation to a variety of educational needs within healthcare. The session will discuss benefits and limitations of in-situ simulation with specific focus on the technique as a vehicle for institutional study and improvement. Participants will learn “how-to” create an in-situ simulation classroom and will design and implement simulations as well “drive” a mobile cart to address specific educational challenges.

OBJECTIVES: Understand in-situ simulation as a vehicle for point of care training with the goals of individual as well as institutional study and quality improvement. Place risks and benefits of in-situ simulation within the context of other modes of simulation delivery within the hospital setting. Design an in-situ session that can be brought back to home institutions to specifically address an educational problem. Implement session including a didactic presentation, simulation with a human patient simulator, and a video-based debriefing.

Full Workshop Proposal and Rationale: Simulation-based education has developed into three approaches including training at off-site stand-alone centers, training on-site at hospital-based centers, and training in-situ at the point-of-care. While there are benefits and limitations to each approach, the educational goals and objectives of a curriculum should dictate the delivery method. Stand alone centers allow clinicians to dedicate protected time to training while on-site centers are conducive to frequent training and deliberative practice as part of a work day. Optimally, both on-site and off-site centers are fully outfitted with the technology required to create both an effective classroom and realistic patient care environment. However, simulation laboratories may not completely replicate distinctive clinical environments and teams throughout a hospital. In-situ simulation promotes practice within the native environments equipped with all of specific clinical nuances and embedded within current systems. The workshop will explore the process of in-situ course development to address specific institutional challenges by allowing participants hands-on experience of curriculum design through implementation. Participants will be actively engaged in this workshop by experiencing in-situ simulation through video demonstration, group discussion and experimentation. Participants will be prompted to identify specific educational challenges within their own institutions and will work together to devise educational solutions using in-situ simulation.

TARGET AUDIENCE LEVEL: Faculty development

OPTIMAL LEVEL OF EXPERIENCE: Advanced (more than 5 years experience/in operation)

THEME LIST: Education/Training

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WS1.6

The Trade Game: The Use of Games to Develop Non-technical Skills

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and Critical Care, Massachusetts General Hospital, Boston, MA, United States

ABSTRACT TEXT: The Trade Game is an inexpensive and fun approach to exercise Non-Technical Skills (NTS) for groups of 15 to 60 people. The workshop will explore how

games can be used to introduce behaviors of effective healthcare teams and explore debriefing methods. Participants will play and debrief The Trade Game, then deconstruct the game to examine how it can effectively be included in their simulations courses. A copy

of the game will be provided for participants.

OBJECTIVES: Appreciate the experience of immersion into a serious game.

Understand how to debrief NTS games.

Design similar games.

Full Workshop Proposal and Rational Introduction: In healthcare the use of realistic simulations to develop NTS (communication, teamwork and crisis management skills and behaviors) is increasing. However, most clinician educators have little experience

using simulation and teaching NTS. Developing faculty expertise in NTS has proven challenging to the simulation community. Games provide a unique opportunity to break the ice and introduce how failures in communication, collaboration and situations awareness

can produce poor outcomes without bringing a clinician's clinical skills into question. The Trade Game is a generic game designed to demonstrate how people behave when under pressure and faced with uncertainty. The Trade Game works as a physical and mental arousal activity that can be used to explore the following issues: Human Behavior, Leadership, Teamwork and Social Identity Decision-making in Complex Situations

Workload and Meta-Cognition Educational Design and Debriefing Techniques The skills and behaviors tackled through The Trade Game can be the same as those in high-fidelity simulations however, the trade game is both inexpensive and effective with larger groups than those found in the typical clinical simulation scenarios. The trade game is not

designed to replace simulations, but rather to augment the learning experience. Since the game has no clinical component it provides an effective method to get the participants to focus on non-clinical skills and behaviors. This workshop will use The Trade Game to examine how games can be included in a range of simulation activities from CRM courses to instructor training courses.

Workshop Outcome: The participants will appreciate the experience of immersion into a serious game. The participants will have a copy of The Trade Game to use in their own educational programs. The participants will understand how to debrief NTS games. The participants will be able to design similar games. The participants will have fun.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)

THEME LIST: Education/Training

COI Statement: The authors indicate they have nothing to disclose.

WS1.7

Promoting Excellence in End-of-life Care: Developing a Blended Simulation-based Educational Experience for Healthcare Practitioners

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University Department of Emergency Medicine, Detroit, MI, United States

ABSTRACT TEXT: This workshop will provide a methodologically sound approach to training and evaluating healthcare practitioners in end-of-life patient care using blended human patient simulations (HPS) / standardized patient (SP) educational modules. The presenters will facilitate small group activities to guide the design of an HPS/SP based simulation module focused on one aspect of end-of-life patient care. A pre-recorded blended simulation will serve to stimulate discussion around assessment. Additionally, participants will be provided an example of a single blended scenario including educational materials, evaluation forms, and simulator programming guidelines.

OBJECTIVES: Describe current national trends in end-of-life care.

Design a blended educational module that utilizes human patient simulation and standardized patients to support advanced communication skill acquisition in an end-of-life

care clinical context.

Identify an appropriate assessment approach for the objectives of the blended end-of-life educational module

Proposal and Rational Background: Over the past decade, healthcare practitioners have become increasingly aware of the unique knowledge and skills involved in providing

high-quality, compassionate end-of-life care for patients and their family members. In order to deliver such high-quality care, healthcare providers must possess both the medical

knowledge to appropriately treat the patient, and the advanced communication skills necessary to communicate with the patient and the family members. Historically, educating

practitioners in these two domains has been done in isolation or through the use of standardized patients (SP) or direct observation of real clinical experiences. What is needed, therefore, is an educational modality that blends both domains of medical knowledge

and communication skills into one, so that healthcare workers have the opportunity to rehearse communication skills in the face of complex end-of-life care clinical

situations, without danger to the patient or risk of harm to the family member. A blended experience

combining high-fidelity human patient simulators (HPS) and standardized patients (SP) can satisfy this need. The purpose of this workshop, therefore, is to promote the development

of blended HPS/SP modules to facilitate high-quality end-of-life care education. At the end of this workshop, participants will be able to: 1) Describe current national trends in end-of-life care curricula. 2) Design a blended educational module that utilizes HPS

and SPs to support advanced communication skills acquisition in an end-of-life care clinical context. 3) Identify an appropriate assessment approach for the objectives of the blended HPS/SP end-of-life care educational module. Active Learning Approach: This

workshop will utilize two active learning methods. First, we will facilitate a small group project to address objectives 2 and 3. This small group activity is described in detail below.

The presenters will circulate and offer assistance/guidance to each group. A spokesperson from each group will be recruited to present the group's educational module. Second, we will facilitate the evaluation of a videotaped blended HPS/SP module via the large group,

utilizing the provided audience response system with responses to questions graphically reproduced on the Microsoft PowerPoint® presentation. The audience response system

allows for immediate and anonymous feedback from participants.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in

operation)

THEME LIST: Assessment/Evaluation

Education/Training

Standardized Patients

COI Statement: The authors indicate they have nothing to disclose.

WS1.8

Bringing CRM to Life: Using (Hollywood) Movies to Make People Think About CRM

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States, ⁵ARCADA Medical

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ABSTRACT: Crisis Resource Management (CRM) helps improve patient safety by optimizing

both individual cognitive factors as well as team work and communication.

Movies often show aspects of CRM quite impressively and can stimulate reflection about CRM to deepen the understanding of these principles. Participants will watch short movie

clips and subsequently faculty facilitators will promote small group discussions about the CRM principles they observed.

OBJECTIVE: To identify CRM principles and their interactions while observing human interactions in complex systems.

To recognize whether the principles are being applied well and whether they need to be applied better.

To implement similar CRM training at their own centers (handouts will be provided to assist participants in such endeavors).

Workshop Proposal And Rationale: This workshop is the 5th part of the workshop series "Bringing CRM to Life" that the authors conducted in recent IMSH and SESAM

meetings. The underlying principle is to help simulation instructors apply CRM by providing

cognitive friction and deeper processing of the principles. The workshop proposed

here has been piloted in different contexts and helps people reflect on the CRM principles in an interactive, engaging, and relevant way. We also trust that this workshop,

introducing

a new and readily applicable way to introduce and teach CRM, will attract and satisfy a big audience. The presenters have worked together previously and have considerable

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experience in running simulations and instructor courses, and have taught extensively about CRM and non-technical skills in different areas. Patient safety is strongly related to crisis resource management (CRM) and non-technical skills (NTS). Simulation is an effective method to teach CRM. However, for some the CRM principles are easy to read, but hard to really grasp, understand, teach and use. Often CRM is only superficially built into scenarios. Also, neither instructors nor participants have understood the principles well enough to feel comfortable using and facilitating meaningful discussions during debriefings. As a consequence participants get little support in applying CRM in their actual work setting. The proposed workshop allows for further developing the actual application and discussion of CRM during scenarios and debriefings. The workshop enables participants to use the CRM principles in a novel way, generating cognitive friction and encouraging participants to expand their perspective of the principles in a way that leads to deeper learning and subsequent application of CRM. The target audience for this workshop is primarily educators who have experience running CRM-related simulations, who want to deepen their understanding of the underlying principles, and get ideas how to help their learners apply CRM during simulations as well as clinical practice. The workshop, however, is also suitable for attendees who seek a basic understanding of CRM principles using experience-based methods. This interactive workshop will help participants develop new perspectives and encourage participants to optimize their use of existing perspectives. The acquisition of the new perspective will be facilitated by the internationality of presenters their multi-centre and multi-professional background (physicians of different specialties, psychologist, nurses, paramedics). Participants will see video clips which then will be discussed in small groups. The faculty is available to facilitate the process, but the content will be produced by the participants.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Patient Safety/Human Factors Education/Training

Assessment/Evaluation

COI Statement: The authors indicate they have nothing to disclose.

WS1.9

Moulage Magic! Theatrical Tricks to “Suspend Disbelief”

Becky Damazo, Bobbie Merica Rural Northern California Clinical Simulation Center, Chico, CA

ABSTRACT: The objective of this workshop is to make participants familiar with moulage techniques that will make their case scenarios more realistic. Participants will be introduced to “tips and tricks” for using moulage effectively. They will be able to participate in case scenarios that demonstrate the effective use of moulage as a teaching tool. Participants will discover ways to find moulage materials and tools, view moulage possibilities and receive an introduction into the use of gel effects materials. The workshop will provide hands creating common medical conditions and will leave with moulage creations that can be used in their simulation scenarios.

OBJECTIVES: Discover moulage materials and tools.

Understand how moulage techniques can provide authenticity to patient cases that are designed for use with human patient simulators.

Receive an introduction to gel effects and safe makeup use with human patient simulators.

Use provided ingredients to create common medical conditions.

Understand the basic principles used to incorporate moulage into case scenarios.

Description and Rationale: Moulage can provide realism to case scenarios that can help students “suspend disbelief”. Everything from the creation of body fluids to realistic smells and dehiscent wounds can be created to make the human patient simulators seem more *human* than *simulator*. In this workshop we will demonstrate how it is possible to make convincingly accurate representations of wounds, drainage, edema and various body fluids. We will introduce the use of realistic gel effects materials—designed to work seamlessly with the human patient simulators—as an effective means of enhancing the reality of patient scenarios. In addition to providing authenticity to the cases the moulage is so realistic it can serve as a teaching tool. Students can measure ulcers, diagnose potential epidemics and educate about diaper rash. Moulage contributes to teaching and learning tools available and also allows the evaluation of assessment skills and knowledge.

The workshop will provide participants with knowledge of tools and techniques that are available to create moulage magic. They will be able to examine an all-inclusive moulage kit and learn how to assemble inexpensive tools for use in moulage. The participants

will be able to view very sophisticated moulage in case scenarios and will see the difference this reality can provide students. The use of moulage allows for very realistic representations of cutaneous anthrax and smallpox as well as other conditions such as reclus spider bites and chickenpox with which these infections can be confused. Participants

will see how case scenarios which utilize moulage can expose deficiencies and permit the reinforcement of assessment competencies.

Rationale for Importance: Moulage is defined as “the art of applying mock injuries”. Moulage can be as simplistic as the art of applying premade injuries to mannequin limbs or as complex as using complicated makeup and theatre techniques to provide realism.

Moulage techniques can provide authenticity to patient cases that are designed for use with human patient simulators. If a mannequin is scripted to have a post-partum hemorrhage

it is more realistic if the student finds a convincing hemorrhage when doing their assessment. Moulage contributes to teaching and learning tools available and also allows the evaluation of assessment skills and knowledge.

TARGET AUDIENCE LEVEL: Faculty development

OPTIMAL LEVEL OF EXPERIENCE: Advanced (more than 5 years experience/in operation)

THEME LIST: Education/Training

Sim Center Operations

Assessment/Evaluation

COI Statement: Need Damazo and Merica COI

We do plan to introduce our books and showcase a kit that we have developed. The Rural Northern California Clinical Simulation Center would receive profit from any moulage book or kit sold as a result of the presentation.

WS1.10

Scenario Development: A Collaborative Step-wise Approach

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States, ²Cabrillo College, Aptos, CA, United States

ABSTRACT TEXT: Curriculum driven scenarios mimicking actual patient situations form the backdrop for best practices in the use of simulation technology. Commercially available scenarios may not integrate easily into existing curricula. In the effort to fill this gap the Bay Area Simulation Collaborative (BASC) comprised of educators from academia

and service, developed a standardized process for writing, validating and pilot testing scenarios. The outcome is a bank of evidence-based scenarios focused on critical learning outcomes that are shared among the group members. This workshop highlights the scenario development process with direct application to the participant’s own simulation environment.

OBJECTIVES: Self-assess level of preparedness for each component of the scenario development process.

Analyze selected scenarios to determine functionality.

Collaborate with academic/service group to develop and evaluate one scenario storyboard

Full Workshop Proposal and Rationale: Scenario development can be a time and resource intensive challenge in the fast paced academic and clinical learning environments.

However, most educators believe that the scenario must be curriculum and program driven, rather than event driven. A step-wise approach to scenario development is utilized by the BASC. In this model, volunteer educators from academia and service craft clinical scenarios through a process that integrates three related components: Scenario writing, scenario validation and pilot testing. This process ensures that the scenario is relevant, accurate, based on current evidence and supports the learners in achieving the intended outcomes. In this workshop, presenters will highlight the process used by the BASC in a dynamic, highly interactive way. Using the audience response system, the participants will first self-assess by answering a series of questions related to the components

of scenario development. After a brief presentation of the BASC Scenario Development process, participants will form small groups representing academic and service. This process will be facilitated so that participants will be able to create the initial scenario storyboard including learning outcomes, critical performance elements, case flow and end points. Following brief instructions on the validation process, a visual example of a storyboard with case flow will be displayed on the presentation screen. As a group, the participants will identify the problem areas and make suggestions for improvements. After a brief group discussion of the errors noted on the example, presenters will display a

corrected storyboard example with case flow that meets criteria. The correct and incorrect information will be highlighted in different colors on the presentation screen to provide a visual learning cue for the audience. To illustrate the pilot testing step, short video clips of

scenarios will be shown demonstrating a scenario that caused learners to detour from the intended outcomes and one that facilitated learning outcomes. This activity will emphasize the key components and rationales for scenario writing, validation and pilot testing using the BASC scenario development process.

TARGET AUDIENCE LEVEL: Faculty development

OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)

THEME LIST: Education/Training

Nursing

COI Statement: The authors indicate they have nothing to disclose.

WS1.11

Development of a Faculty Portfolio for Use in Simulation-based Education

Bryn Baxendale, Andy Buttery Trent Simulation & Clinical Skills Centre, Nottingham University

Hospitals, Nottingham, United Kingdom

ABSTRACT TEXT: Health Care Professionals are encouraged or required to use portfolios

to collate evidence of continuing professional development. Recruitment and retention

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of faculty is a major issue for many simulation centres with competition from increasing pressure for service provision and the individual's need to demonstrate appropriate continuing professional development for their clinical role. A faculty portfolio would support recruitment and retention by providing evidence of value in respect of this activity, whilst also being relevant to key quality assurance issues faced by the simulation community relating to validation of programmes, accreditation of centres, and 'certification' of individual faculty.

OBJECTIVES: Describe the key requirements for a simulation-based faculty portfolio. Generate a model simulation-based faculty portfolio for subsequent evaluation.

Identify the advantages of a portfolio for clinical educators, simulation centres and organisations acting as healthcare providers.

Workshop Topic and Rationale: Clinical learning away from the patient is available across a wide spectrum of educational opportunities, and the staff involved as clinical educators have a similarly broad range of backgrounds that will be reflected in their personal development needs and ambitions. Hence, a new faculty member may arrive with vast experience as an instructor, but be unaware of the skills needed to facilitate reflective adult learning in small groups. They may join as specialty experts and expect the whole simulation-based educational framework to be provided for them in terms of (i) educational structure (e.g. defined aims and objectives for the course and session/scenario), (ii) clinical simulation fidelity and content (e.g. simulated environment, scenario, physiological modelling), and (iii) technical support (e.g. A/V set-up). Alternatively they may arrive with anxieties about their credibility with the clinical content due to having a stronger focus on broader educational goals, or perhaps they will expect to deliver a favourite presentation on a specific clinical topic. All or any of these viewpoints can form a starting point for portfolio-based development that will serve the needs of the individual and the centre. A personal portfolio should be a development resource for the individual to gather evidence, and a tool for them to reflect and seek solutions to their needs. It can be a repository, providing a place for recording progress against identified development themes, something which can be assessed, and a showcase for the presentation of work undertaken. However, the portfolio can function at several levels, namely for individual faculty, their employer(s), and the simulation facility itself. Individual faculty must be able

to use the portfolio to demonstrate that time spent as faculty does contribute to their development needs and they find the process rewarding. By comparison, employers who support staff acting as faculty can acknowledge the value and relevance of this evidence, especially with regard to the transferable skills that are being developed. Finally, the simulation

centre can provide evidence supporting quality assurance for the courses delivered under its aegis, by collation of evidence regarding the skills and expertise of faculty who develop and deliver each course. At TSCSC we have initiated the development of a prototype portfolio that aims to support faculty by: Setting out their personal objectives from taking part as faculty on simulation-based educational programmes. Reflecting upon their experiences as faculty and identifying further development needs providing evidence of the value of being a faculty member to their continuing professional development.

This prototype portfolio will be used as a template for critique and further development within the workshop resulting in a broader consensus document that can be shared with SSIH for wider debate and evaluation.

TARGET AUDIENCE LEVEL: Faculty development

OPTIMAL LEVEL OF EXPERIENCE: Advanced (more than 5 years experience/in operation)

THEME LIST: Education/Training

Sim Center Operations

Assessment/Evaluation

COI Statement: The authors indicate they have nothing to disclose.

WS1.12

Context-specific Fidelity in Obstetric Team Simulation Training

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ABSTRACT TEXT: We will demonstrate a multi-professional team approach to the evidence-based management of three obstetric situations. We will use a high-fidelity birth simulator to demonstrate optimal management of shoulder dystocia and vacuum delivery. We will then show how low cost props and standardized patients may be employed for other emergencies with psychological fidelity and team communication benefits.

OBJECTIVES: Evaluate an approach to move the safety agenda forward from safe design to safe practice, and ultimately safer outcomes, using simulation as a powerful training tool.

Realise how either high-fidelity mannequins or simple props can be used for multiprofessional

team training in the management of emergencies.

Practice safe obstetric techniques in the management of shoulder dystocia and vacuum delivery.

Full Workshop Proposal and Rational: Investigators for the Confidential Enquiries into Maternal and Child Health and JCAHO have identified substandard care in a significant

proportion of maternal, fetal and neonatal deaths. and have recommended multiprofessional

training for emergencies. We have previously demonstrated that training

improved knowledge for, and management of, simulated obstetric emergencies and is associated with improved real life outcomes: 50% reduction in number of babies with Apgar ₇ at 5 mins, a 70% reduction in brachial plexus injury after Shoulder Dystocia as well as shorter decision-delivery intervals for cord prolapse. Multi-professional teams taught the management of obstetric emergencies using simulation are more likely to demonstrate sustained improvement in confidence, knowledge, as well as clinical management

of the case, compared to teams taught with a lecture format. On the other hand, designing obstetric training interventions to closely imitate the demands of real-life labor ward crises is more important for psychological fidelity than the technology of the equipment

used. In this simulation workshop we will demonstrate a multi-professional team approach to the evidence-based management of three important obstetric situations: shoulder dystocia, vacuum delivery and cord prolapse. We will use a high-fidelity birth simulator to demonstrate optimal management of shoulder dystocia and vacuum delivery. We will then show how low cost props and standardized patients may be employed for emergency training with psychological fidelity and team communication benefits i.e. cord prolapse. A team approach to emergencies may also be desirable in drills requiring advanced

skills from individual professionals: In the SaFE study, teams did not include neonatologists, and after training there was a trend to forget calling them for help in shoulder dystocia. Using a high-fidelity mannequin was associated with an even lower likelihood of calling them compared to training with a low-fidelity one. On the other hand, individuals trained with the high-fidelity model had a significantly higher chance of delivering the posterior arm after training. It seems that team training should focus on environmental realism and effective team communication and coordination, whereas high-fidelity part-task trainers can be used to train individuals in highly technical skills.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Research

Education/Training

Patient Safety/Human Factors

COI Statement: Conflict Reported: Mr Draycott is a consultant to Limbs and Things Ltd, manufacturers of the PROMPT Birthing Simulator. None of the other authors own stock, or hold stock options, in any obstetric emergency training company. Mr Draycott is founding member of the steering committee of PROMPT, a UK-based charity running training courses and has no financial interest from this association.

WS1.13

The Development of Multimedia Simulation Using a Hybrid of Simulated Patient Actors (Jeff PLAYERS) and Mechanical Simulation Models for Teaching The Core Competencies of Medical Students and House Staff

Dale Berg, Katherine Berg, Rob Hargraves, Carol Trent Thomas
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ABSTRACT TEXT: Every medical school and residency program in the United States must teach and evaluate a set of core skill competencies. Some of these include procedure skills, communication, professionalism and teamwork. This is a challenge, one that may best be met with curricula using multimedia simulation. We have developed and implemented

case-based, competency driven multimedia simulation teaching tools that use a hybrid of human and mechanical simulation. The multimedia simulation includes debriefing

which involves live interaction with the main actor of the case based video-clip scenario thus allowing for optimal teaching efficacy and credibility.

OBJECTIVES: To demonstrate the effectiveness of using multimedia to combine human

and mechanical simulation into a hybrid for teaching the core competencies of medical education.

To demonstrate the use of multimedia scenarios in which the main character literally steps off the screen during discussion and debriefing to optimize credibility, interaction with the group and teaching efficacy.

To begin to develop, using a template, a case scenario to teach a core competency that can be used at the participant's home institution.

Full Workshop Proposal and Rational: The AAMC and the ACGME have set position papers on the core competencies that every medical school and residency program must follow. These competencies include clinical skills of physical examination and invasive

clinical skills like intravenous line insertion, but also include competencies of professionalism,

teamwork, communication, admission to medical errors and cultural competencies.

Although more traditional simulated tools like Harvey, SimMan and mechanical models have been useful tools for teaching and evaluating clinical skills competencies, there remains a great void in tools to effectively and efficiently teach, allow for practice and

then evaluate these other core competencies. Virtually every medical school and residency

program is currently struggling with this issue. This is especially acute in residency programs

where time is very limited and the learners are very sophisticated. The University Clinical Skills and Simulation Center at Thomas Jefferson University has developed and implemented case-based, competency driven, multimedia simulation teaching tools using the combination of standardized patients and mechanical simulation in video clip

productions. We develop scenarios, that are then produced by a group of our actors (JEFF PLAYERS), filmed using the simulation center as a stage and the mechanical model equipment as actor-patient extenders. In these the actors breathe life into the mechanical models. These video clips are then combined with standardized actors during the teaching sessions such that the actors come out of the screen to provide role play resulting in a hybrid of multimedia simulation and human simulation. These video clips are integrated into undergraduate, graduate, faculty development and interdisciplinary curricula across the University and have been used in multiple venues across the nation. The actors and the

equipment together provide the context and credibility and thus optimize the efficacy of this hybrid and allow the learner to suspend disbelief. The simulated scenario come to “life” during presentation in that the main actor on the clip will, after a debriefing of the simulated scenario, the main actor presents in character during the teaching activity, thus providing for optimal teaching efficacy, credibility and impact. In addition, when these are used in large groups, multiple individuals can easily work together to role-play and learn together these skills and provide group driven remediation of deficits, reinforcement of good skills and feedback to the learners. The UCSSC at Jefferson has developed over 33

video clips on topic ranging from unprofessional behavior, providing feedback, taking a specific history that is sensitive, detecting signs of the stressed out resident, dealing with end-of-life issues and optimizing teamwork and interdisciplinary teaching. They have been extremely well received. This workshop will demonstrate the effectiveness of these using multimedia combining mechanical and human simulation for teaching and evaluation tools.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)

THEME LIST: Education/Training Standardized Patients

COI Statement: The authors indicate they have nothing to disclose.

WS2.1

A Program to Enhance Relational and Communication Skills

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ABSTRACT TEXT: The Program to Enhance Relational and Communication Skills is a multidisciplinary training program designed to improve the communication skills and relational abilities of health care providers as they interact with families during stressful times. Through the use of case scenarios, debriefings and interactive discussions with the specialized actors needed to teach relational and communication abilities, this workshop will help the audience to develop programs addressing this educational need.

OBJECTIVES: Understand the clinical considerations and behavioral components of a scenario that highlights relationship and communicational issues.

Understand an approach to debriefing scenarios of clinician-patient relationships and communication.

Understand the steps needed to develop similar resources in the participants' home institution.

Full Workshop Proposal and Rational: The Institute for Professionalism and Ethical Practice at Children's Hospital Boston brought together anesthesiologists, intensivists, nurses, respiratory therapists, ethicists, psychologists and parents to develop the Program to Enhance Relational and Communication Skills (PERCS), a multidisciplinary training program designed to improve the communication skills and relational abilities of health care providers. Relational and communication skills are being increasingly recognized as central to the clinician-patient relationship. Teaching such skills in training programs has been strongly encouraged and sometimes required. The ACGME, for example, requires residents to “demonstrate interpersonal and communication skills that result in effective information exchange and collaboration with patients, their families, and health professionals.”

Our central belief is that the process of interaction is often more important than the end result. We espouse patient-centered interaction, which emphasizes satisfying the patient's informational, decision-making, and other needs while honoring ethical and legal requirements. The guiding ethic in this learning environment is that there are multiple acceptable ways to view any communication. In debriefings, we explore these multiple insights by inviting participants to share psychosocial, spiritual, medical, nursing, and family perspectives. We emphasize that the greatest learning is likely to occur when these often different perspectives are offered in a respectful dialogue among team members. Respectful sharing of multiple perspectives contributes to a synergistic learning

experience and greater respect for the experience of others. Successful scenarios require realism and appropriate tension. The scenario must “ring true” to the participants. As with other simulations, scenario development benefits by participation from both content experts and simulation experts. In this case, however, it is equally critical to involve actors

in the process as well - in our program, a performing arts consultant helps develop scenarios and also auditions, hires and coaches actors. Actors in these simulations need different skills than standardized patients. To teach communication skills, actors must become their character and react as s/he would to the empathy, body language, tone, mannerisms and words of the participant. To do this, actors need to engage with good listening and communication skills and have the ability to improvise. Actors with advanced

training enhance the realism of the scenario, allowing the clinician to act as they would with a real patient in a real situation. The personal and emotional experiences actors bring to the scenario intensify their involvement in the conversation and that, together with training, permits them to give otherwise unobtainable detailed and nonthreatening feedback.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Education/Training
Patient Safety/Human Factors
Standardized Patients

COI Statement: The authors indicate they have nothing to disclose.

WS2.2

Simulation PBL (Problem Based Learning): Demonstration of an Integrated Learning Strategy That Uses a Range of Simulation Learning Typologies

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ABSTRACT TEXT: This workshop centres on a simulated learning event, common to a Problem-based curriculum, in which participants are caused to question and justify practice, to think about care situations and to perform actions (clinical interventions) to best manage those situations. It models an integrated approach to learning which values thoughtful, highly skilled and efficient action and the ability to examine clinical situations, deconstruct them from a number of perspectives, and reconstruct them around core concepts essential to practice.

OBJECTIVES: Demonstrate an integrated learning experience which causes students to view themselves as action-oriented learners Demonstrate an integrated learning experience

which causes students to view themselves as action-oriented learners Engage workshop participants in critical review of the demonstrated learning module.

Full Workshop Proposal and Rational: Description of the workshop and rationale for importance Health professions have not fully appreciated the integration of thinking and doing to create informed action, and have historically tended to ‘compartmentalise thinking from doing’. This does little to promote integration of theoretical and clinical learning activity. This modelling of simulation provides a modality for experiential learning

and evaluation and demonstrates a risk-free environment where learners can integrate theory and practice without the fear of harming patients. This is especially important when real-life experiences are discouraged given such risk. When integrated appropriately

into learning and competence testing, simulation plays an important role in acquiring the critical - and reflective-thinking skills needed for competent, safe patient care. Simulation is as defined by the NCSBN (2005) an educational process. This simulated learning experience

imitates the working environment and requires the learner to demonstrate procedural techniques, decision making and critical thinking. It exemplifies an educational technique (not pure technology) in which elements of the real world are appropriately integrated to achieve specific goals related to learning or evaluation. While there is increasing

emphasis on development of cognitive abilities in students and recognition of the complex nature of contemporary practice, this should not lead to a dichotomy between clinical skills and theoretical knowledge. Some suggest that emphasis on theoretical knowledge results in a devaluing of clinical skills and, consequently, devaluation of clinical

practice practical and theoretical knowledge are inevitably and infinitely intertwined. Recent decades have provided evidence of a paradigm shift in education, which now views

learning as the construction of meaning in context rather than what to learn and how to do things. Contemporary education challenges health professionals to question and justify practice, and emphasises the ability to think about care situations and to perform actions (clinical interventions) to best manage situations. The challenge centres on learning which values thoughtful, highly skilled and efficient action, the ability to examine clinical situations, deconstruct them from multiple perspectives, and reconstruct them around core concepts essential to practice. Problem based Learning (PBL) is a recognised teaching

and learning strategy and curriculum design which uses simulation to provide an integrated approach to acquiring knowledge, skills and behaviours required for effective clinical practice. However some models of PBL do not achieve this outcome, focussing on

acquisition of knowledge only and not including structured, integrated learning opportunities

to acquire skills, behaviours and relevant conceptual knowledge. Little's (2000) model of PBL integrates learning principles of PBL and includes simulations as the stimulus

and context for learning. A Simulation-PBL (S-PBL) Model developed by the Department of Nursing in Cheju Halla College, Korea in 2004 in collaboration with the University of Newcastle Australia will be the basis for modelling best practice resources used by both countries' nursing programs. The S-PBL model has been used by the entire 3-year nursing diploma course of the Cheju Halla College over 3 years. This workshop demonstrates a S-PBL teaching module implemented for 2nd year students in 2008. The learning module was designed to guide student learning for 4 weeks. It includes 2 hours of tutorial, 2 hours of lecture and 2 hours of clinical laboratory session each week which add up to 24 hours of total face to face teaching. The workshop will demonstrate the different PBL events (scenario, self-directed learning, resource sessions (lectures) and clinical laboratory sessions) and the various types of simulation (Standardized patient, peer to peer teaching, computer screen based program, task trainers and SimMan) used in the integrated learning module. How this workshop will engage the participant in active learning. The workshop will model the different PBL events (participant analysis of scenarios, participant engagement in self-directed learning, participant feedback as resource sessions (short resource demonstration by facilitators to guide appraisal of strategies employed, suggestions for improvement provided by participants) and participants accessing video clips of clinical laboratory sessions and the various types of simulation used in an integrated learning module.

TARGET AUDIENCE LEVEL: Undergraduate education

OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)

THEME LIST: Nursing Education/Training Assessment/Evaluation

COI Statement: The authors indicate they have nothing to disclose.

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WS2.3

Activity-based Instructional Design: Interactive Strategies to Optimize Learner Engagement

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ABSTRACT TEXT: Not all components of a simulation-based curriculum may involve the simulator equipment itself. Prerequisite theoretical concepts are just as important as the hands-on learning to gain the most from the simulation scenarios. While concepts are often taught in traditional lecture format, strategies based on modern educational principles

can make these non-simulator sessions more engaging and maximize learning. In this workshop, formally trained educators will guide participants as they learn about fundamental educational principles, while gaining exposure to different concrete activitybased strategies that they can apply to their own teaching sessions or curricular design.

OBJECTIVES: Discuss basic educational principles.

State the advantages and disadvantages of the different interactive strategies, including the strengths of enhanced learner engagement.

Apply interactive strategies to a training course at their home institutions

Full Workshop Proposal and Rational: Description of workshop topic and rationale for importance A review of the Society for Simulation in Healthcare's listserv indicated that questions related to curriculum development was among the most frequently posted topics, second only to simulation equipment operations (unpublished report by Yue Ming Huang, submitted to the SSH Board of Directors, January 2008). This illustrates a need for faculty development workshops to train clinician-educators in curricular design that integrates sound educational approaches with active learning techniques and appropriate hands-on activities. Most healthcare and simulation courses are designed and taught by clinicians or scientists since they are the content experts. However, in the absence of formally trained educators, the course design may not always be maximized for learning. Education experts should be engaged to help design simulation courses in order to produce the maximal learning as well as to optimize evaluation strategies. Recent literature in educational science has highlighted the benefits of active learner engagement in maximizing meaningful learning. Indeed, proponents of simulation-based education already know the impact of experiential learning. Not all educational domains, however,

are amenable to direct hands-on simulation training. In these instances, educators often use traditional lectures or PowerPoint presentations when delivering didactic content—for example, a lecture about crisis resource management principles. In addition to helping deliver didactic content in an active format, activities—including working with physical objects — can enliven courses and keep the learners' attention. The purpose of this workshop is two-fold. First, participants will explore strategies to incorporate activitybased

approaches to enhance learner engagement and maximize the effectiveness of a course or training session. At the same time, they will learn about basic educational principles in an interactive way, a topic traditionally taught in didactic format. In short, the workshop will model a different way of teaching by applying what is taught.

TARGET AUDIENCE LEVEL: Faculty development

OPTIMAL LEVEL OF EXPERIENCE: Planning a program/center

THEME LIST: Education/Training

COI Statement: The authors indicate they have nothing to disclose.

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1. Kern, DE, Thomas, PA, Howard, DM & Bass, EB. Curriculum Development for Medical Education: A Six-Step Approach. Baltimore: The Johns Hopkins University Press, 1998. Chapters 1–3.

2. Meier, D. The Accelerated Learning Handbook: A Creative Guide to Designing and Delivering Faster, More Effective Training Programs. The McGraw-Hill Companies, 2000. How this workshop will engage the participant in active learning The workshop will utilize accelerated learning techniques and interactive activities to teach and apply educational principles. We will start by assessing the audience's baseline understanding of terms and definitions using the audience response system and a short quiz. The responses will guide participant assignment into groups that will rotate through different stations. At each station, participants will engage in a different activity to learn about the educational concepts. Faculty will debrief at the end of each activity. Participants can share experiences and ask questions during the discussion. After the rotations, participants will determine the strategies most applicable to their program.

WS2.4

Methods for Measuring Skill and Task Difficulty: An Introduction to Human Factors and Workload Assessment

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ABSTRACT TEXT: There is a growing interest among members of the medical and healthcare simulation community in assessing trainee skills and task difficulty. This workshop will introduce the discipline of human factors (HF) and some unique and useful HF methods and tools for measuring skills and task difficulty. Participants will get a chance to apply three types of workload measurement tools to performance of a hands-on exercise using a simulated airway management task.

OBJECTIVES: understand the discipline of human factors (HF) and how HF methods and tools can help assess and improve performance in medical simulation.

Understand concepts and metrics associated with mental workload.

Apply multiple techniques for measuring human performance and assessing workload in medical simulation.

Full Workshop Proposal and Rational: Many educators and researchers in the medical and healthcare simulation community are interested in assessing trainee skills and distinguishing difficulty levels among tasks. These activities can include anything from intubating a patient, comparing single and two-handed laparoscopic surgery tasks, or even monitoring life signs over extended periods of time. Some of the measurement techniques used by human factors professionals can prove valuable to the medical simulation community.

Human factors (HF) is a discipline in which knowledge of human information processing and physical abilities is used to assess and improve performance. Numerous HF methods, techniques, and tools have been developed to measure and improve human performance across a wide variety of applications including aerospace systems, automobiles, computers, and consumer products. Human factors practitioners use the term “mental workload” to describe the attentional demands needed to perform activities. Individuals have a relatively fixed attentional capacity. When demands placed on that fixed attentional capacity are high, individuals experience higher levels of mental workload. More important, mental workload is related to performance. When there is ample attentional capacity, performance is usually quite good. However, when individuals

reach their attentional limits, mental workload increases and task performance begins to deteriorate. One way to measure mental workload is to ask individuals to rate their perception of task difficulty. Two commonly used subjective measures that have been well

validated are the NASA Task Load Index (NASA-TLX Hart & Staveland, 1988) and the Subjective Workload Assessment Technique (SWAT Reid & Nygren, 1988). Both measures

require individuals to assess the workload associated with a task on multiple dimensions using rating scales. The second way to measure mental workload is to examine task performance. This is typically done by measuring performance on the primary task of interest. This approach tends to be most diagnostic when task demands are high, but may not be sensitive when task demands are low or when the primary task is measured with a pass-fail type metric. An alternative type of performance-based measure requires individuals

to perform the primary task and one or more additional tasks simultaneously. Performing simple tasks such as mental arithmetic or estimating the passage of time can be difficult when already carrying out a taxing task. Thus, performance on the secondary task

serves as an index of mental workload by revealing attentional resources not used on the primary task. With this method, if performance is good on the primary task, but poor on the secondary task, it indicates that primary task demands are high and there is little capacity for the secondary task. The goal for this workshop is to introduce participants to the fundamentals of mental workload and basic assessment techniques. They will be given an overview of the construct and then shown how to use standard subjective measures and the primary and secondary task techniques to measure mental workload. Active Participation:

This workshop will provide the participants with a set of tools to measure skill and task difficulty. The concepts will draw heavily on participants' own experiences, and the primary mode of learning will be hands-on. We will employ brief participatory demonstrations of key concepts throughout. Participants will get hands-on experience using assessment techniques during group-run simulation sessions. We will conclude with a group discussion of participants' experiences, allowing participants to share the difficulties and successes they had with the tools. We will also share tips and guidelines for making the best use of these techniques.

TARGET AUDIENCE LEVEL: Other-please describe/specify below - The methods are not tied to any medical or allied health specialty. They are universal.

OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)

THEME LIST: Patient Safety/Human Factors Assessment/Evaluation

COI Statement: The authors indicate they have nothing to disclose.

WS2.5

Modification of Current Simulators and Medical Equipment to Enhance Pediatric Simulations

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DESCRIPTION: There will be 3 workshop facilitators who will demonstrate various modifications of current simulators and medical equipment which are aimed at enhancing the realism of the simulation experience. These modifications can be applied to a team training concept to allow health care providers from several different disciplines to participate and learn. Group interaction will be encouraged to allow workshop participants to describe any modifications that they have made.

OBJECTIVES: To demonstrate modifications of current simulators and medical equipment to enhance the realism of the simulation experience.

To provide an interactive modification workshop such that participants can actively learn through hands-on experience.

To provide an opportunity for health care providers to learn and practice technical and behavioral skills necessary to manage the modifications of the medical environment (ex. to enhance the realism of managing ECMO emergency simulations through the modification of current equipment).

TARGET AUDIENCE LEVEL: Faculty development

OPTIMAL LEVEL OF EXPERIENCE: Advanced (more than 5 years experience/in operation)

THEME LIST: Education/Training Sim Center Operations Assessment/Evaluation

COI Statement: no conflict; Need fr Afrothite Kotskakis and Dylan Campher, Kristine Boyle, NNP and Anand Rajani, MD

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WS2.6

Construction of Effective Instructors' Training Workshops as a Crucial Component of Simulation-based Medical Education

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ABSTRACT TEXT: A crucial factor in Simulation-Based Medical Education (SBME) is

the quality and preparedness of the instructors. Often, the instructors are experts in the relevant medical field, but have only limited experience in SBME. A 'train the trainer' workshop will be presented. Participants will experience different aspects of the debriefing

process, and will be exposed to a structured training approach that leads to improved trainers' readiness and enhanced SBME quality.

OBJECTIVES: Acknowledging the crucial role of effective instructors training in SBME,

and learning the main principles of constructing instructors' training workshops. Experiencing the debriefing process and practicing the facilitation of an inexperienced simulation-based instructor.

Becoming acquainted with a prototypical instructors' training workshop that can be adjusted and implemented in various simulative environments.

ABSTRACT: A crucial factor in Simulation-Based Medical Education (SBME) is the quality and preparedness of the instructors. Often, the instructors are experts in the relevant medical field, but have only limited experience in SBME. A 'train the trainer' workshop will be presented. Participants will experience different aspects of the debriefing

process, and will be exposed to a structured training approach that leads to improved trainers' readiness and enhanced SBME quality. Background Simulation-Based Medical Education (SBME) is increasingly recognized as an important educational tool for training,

evaluation and accreditation of health care providers. (1,2) In addition to being content experts in the relevant field of medicine, instructors or trainers in SBME are expected to possess debriefing and facilitation skills that are unique to simulation-based environments. They must be familiar with the simulated scenarios and their educational aims as well as the debriefing points designed for each scenario. Furthermore, they have to

master debriefing skills (with or without the use of audio visual tools) in order to facilitate

constructive group discussions during the debriefing sessions that follow the simulated encounters. In our experience at the Israel Center for Medical Simulation, accumulated through the process of training trainers for multiple national training programs in various medical and para-medical professions, the process of "train the trainers" is one of the most

crucial components in any course development and a key element in the success and failure of simulation-based educational programs. However, the reality is that most instructors

recruited for SBME are content experts with experience in traditional clinical teaching, but with very limited or no experience in simulation based training. Therefore, hands-on exposures of newly recruited instructors to the concepts and principles of SBME as accompanied with a formal and structured training in debriefing techniques play a major role in a developing faculty into becoming effective and potent simulation-based instructors. The aim of the proposed workshop is to introduce the concept and principles of "train the trainers" process, and to supply the participants with a recommended workshop

protocol that can be adapted for different SBME contexts. The session will demonstrate a mini train the trainer workshop and will include a component of actual practice, thus enabling participants to experience the process firsthand.

LEARNING OBJECTIVES:

Acknowledging the crucial role of effective instructors training in SBME.

Learning the main principles of constructing instructors' training workshops.

Experiencing the debriefing process and practicing the facilitation of an inexperienced simulation-based instructor.

Becoming acquainted with a prototypical instructors' training workshop that can be adjusted and implemented in various simulative environments.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)

THEME LIST: Sim Center Operations Education/Training

COI Statement: The authors indicate they have nothing to disclose.

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WS2.7

Assessment of Non-technical Skills of Operating Room Teams in Simulation

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ABSTRACT TEXT: Assessment of non-technical skills (e.g., teamworking, decision making) in simulation-based training for Operating Room teams is becoming a priority. This workshop, organized by three leading international groups in non-technical skills research, will familiarize participants with three state of the art non-technical skills assessment

tools for use in OR team training. Participants will use the tools and report their

experiences. Following the workshop, an online forum will be established for participants to discuss ongoing tool usage.

OBJECTIVES: The following four inter-related learning objectives are set for workshop

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participants: * To understand current issues around non-technical skills assessment in the context of simulation-based training for OR personnel.

To be exposed to three key non-technical skills state-of-the-art assessment tools, with guidance from the tool developers.

To experience “hands on” use of the tools to provide assessment * To explore practical and conceptual issues in non-technical skills assessment using the tools.

ABSTRACT: Assessment of non-technical skills (e.g., teamworking, decision making) in simulation-based training for Operating Room teams is becoming a priority. This workshop, organized by three leading international groups in non-technical skills research, will familiarize participants with three state of the art non-technical skills assessment tools for use in OR team training. Participants will use the tools and report their experiences. Following the workshop, an online forum will be established for participants to discuss ongoing tool usage. 2. Description of workshop topic and rationale for importance There has been a recent surge in the clinical literature of assessments of “non-technical skills” in Operating Room (OR) teams - including teamworking, situation awareness, and leadership.

¹⁰⁻¹⁵ Two basic premises underlie this interest: (i) cognitive and teamworking skills, jointly with OR personnel’s technical skills, contribute to patient safety, and (ii) these skills cannot be assumed: they require training. Simulation has been the mainstream training route for non-technical skills in OR personnel. Reduced training time and increased shift-working are key factors that necessitate training within a safe, learningfriendly environment.¹⁶ Simulations offer effective learning environments^{17,18} and are welcomed by trainees and trainers.¹⁹ Simulation-based training can only be effective if tools exist to robustly assess non-technical and technical performance. Historically, skills assessment in surgical, anaesthetic and nursing specialities has been unstructured and non-systematic. This has led to feedback that is often unreliable, unfocused, and thus not useful as a guide for learning. This has been particularly true for non-technical skills, which are often perceived as depending on personality and not amenable to training. Systematic, robust assessment of non-technical skills in OR personnel is a training priority as simulation-based training is increasingly embedded in surgical, anaesthetic, and nursing curricula. Our research groups have conducted world-leading research in the field of non-technical skills in OR personnel. Our ongoing research explores factors that impact on non-technical skills (e.g., stress), ways to deliver feedback on non-technical performance, and continuing cross-validation of assessment tools. In this workshop, we focus on three observational assessment tools for assessment of non-technical skills in OR teams in simulation-based training. As the developers of the tools, we shall share our expertise in this field, providing participants with the necessary knowledge, skills and experience to use these tools in their own simulation environments. **Target Audience Level:** Graduate education/training.

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Assessment/Evaluation
Education/Training
Patient Safety/Human Factors

COI Statement: The authors indicate they have nothing to disclose.

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WS2.8

Enhancing In-situ Simulation Team Trainings – Designing Relevant Scenarios from Incident Reporting Systems - Not the Cases, but the Causes

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ABSTRACT TEXT: Anonymous Incident Reporting Systems are well known to provide insight into care delivery problems in medicine (“window on the system”). Simulation team training is widely used to close the gap between theoretical knowledge and practical experience. With this workshop we want to introduce a concept to exploit case reports from incident reporting systems for the most effective use for designing simulator training scenarios, where the focus is not on the original “case” any more but on the underlying causes.

OBJECTIVES: analyse case reports for specific deeper underlying learning goals.

Identify categories in case reports under which several cases could be summarized. Identify the causes of a case report and design a scenario using the relevant aspects.

Full Workshop Proposal and Rational: Anonymous Incident Reporting Systems are well known to provide insight into care delivery problems in medicine (opening the so called “window to the system”). Simulation team training is widely used to close the gap between theoretical knowledge and practical experience. With this workshop we want to introduce a concept to exploit case reports from incident reporting systems for the most effective use for designing simulator training scenarios, where the focus is not on the original “case” anymore, but on the underlying “causes”. Because simulator trainings are more costly than classroom teaching, it is even more important to meet the learning needs and expectations of the participants. Especially for in-situ simulator team trainings (i.e. participants train where they work in actual teams) scenarios designed by case reports from their department can provide aspects of high relevance and importance for the participating department. But also for focussed trainings (e.g. difficult-airway trainings, in-hospital resuscitation team trainings etc) case reports from incident reporting systems can be used as basis for the creation of relevant scenarios. Moreover, the interdisciplinary analysed case reports may reveal underlying system problems, as the in-situ training concept may reveal critical aspects in the real work place. Both aspects put together may increase the potential for systematically increasing patient safety. For this workshop we use the databases of the German incident reporting systems PaSOS and PaSiS in which incoming cases are differentiated into categories (i.e. contributory factors framework by Vincent/NPSA, crisis resource management key points (Gaba/Rall) and medical criteria) which can provide a basis for the creation of scenarios and definition of learning goals. Participants are supposed to identify categories under which several cases could be summarized

and look for aspects that can be integrated into scenarios - not copying the cases as such, but analysing the cases for specific deeper underlying learning goals and systematic

details which can be enacted in a new scenario (“Train the causes, not the cases”).

Specific props needed, a timeframe and possible implications for system factors as well as non-technical skills (like CRM) will also be considered. This workshop demonstrates the intrinsic impact of cases from incident reporting systems for improving patient safety

systematically: In this way, learning from other's experiences is not restricted to get the message from reading or organisational changes. If individual cases and their causes (thematic priorities) can be reproduced in simulation trainings they make an important impact for many health care professional teams. Engagement of participants in active learning: Participants will work in small groups. They are expected to read and discuss the selected case reports. They will then identify categories under which several cases could be summarized, analyse the cases and their underlying causes for learning goals, aspects that can be condensed into a new scenario and difficulties in creating a scenario from a case report. After that each group will present their work defining overall criteria for aspects that make a case report suitable for the creation of a scenario and aspects that are difficult to integrate into a scenario. So the workshop take home messages among the groups will be shared.

TARGET AUDIENCE LEVEL: Continuing education

OPTIMAL LEVEL OF EXPERIENCE: Advanced (more than 5 years experience/in operation)

THEME LIST: Education/Training

Patient Safety/Human Factors

COI Statement: Conflict Reported: The German Incident Reporting System PaSOS is run by TuePASS for the German Anesthesiology Society.

WS2.9

Teach Me Talk to Me Deal With Me Generational Differences in Simulation Education

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ABSTRACT TEXT: The Joint Commission reports that the leading cause of error in sentinel events is a failure in communication. Within any healthcare arena, there exist four different generations, Veterans, Baby Boomers, Generation Xs, and Millennials, each with different communication patterns and skills. Positive patient outcomes depend on all generations working in concert, communicating effectively across barriers and assumptions.

This workshop will address the unique communication attributes of each generation and the impact of simulation in improving communication. Participants will work in small groups to design and plan simulation strategies related to generational differences common in the workplace and academia.

OBJECTIVES: Identify the attributes of the following generations Veterans, Baby Boomers, Generation X and the Millennial.

Develop new perspectives for designing and implementing simulation scenarios that recognize generational differences in learners.

Create and/or modify scenarios focused on multigenerational communication styles.

Full Workshop Proposal and Rational: The leading cause of error of sentinel events in health care is failure in communication

(<http://www.jointcommissionreport.org/performance/results/sentinel.aspx>).

Communication includes both verbal and nonverbal experiences.

Furthermore, communication is a key element of all simulation experiences.

There are intergenerational differences in communication which affect teaching and learning. Within any healthcare arena, the following four generations practice in concert: the Veterans, Baby Boomers, Generation X and Millennials. Each generation utilizes communication techniques differently based on a shared background. For example, Veterans

remember when communication was limited to radio, newspapers, books and letters written by hand. The Baby Boomers experienced communication through television,

typewriters, memos and pay phones on every corner. Generation X experienced the initial video games and home computers. E-mail made communication with others faster, simpler, and less formal. The Millennials have always known the Web and instantaneous information. They comfortably instant message (IM), text message, download, and conference with their thumbs not their voice. Learning styles also differ within these generations. For example the Veterans' learning experiences had a consistent logical progression similar to how a book is organized. The learning environment of the Baby Boomer generation stressed teamwork. The Gen X learned in a non traditional visual and auditory environment, stressing self-reliance, yet with a cue to turn the page with the sound of the bell. Learning was casual and the authority behind the learning was informal,

often times more friend than teacher. The Millennials are bullet learners: what is important

that can fit on one screen, what is in it for **me**, and how does it make **me** feel. Learning facts for retention is not important since the Internet is in their pocket. As faculty, we must

consider the design of simulation to address the generational differences. When the class is a homogeneous generation, it is much easier to manage the simulation experience.

However, there are many times when the class is multi-generational. Even if the class is the

same generation, in the clinical setting, patients and other interprofessional healthcare providers will likely be of a different generation. These differences create a challenge in planning, implementing and debriefing simulation experiences. Considering the differences

in the generations, the Veterans are amazed by simulation, the Baby Boomers think it is really cool, the Generation Xers are excited to learn with simulation, and the Millennials

wonder when the technology will get better. This workshop will offer suggestions to address these multi-generational differences. How the Workshop will Engage Participants

Presenters will use a case study approach to guide participants in simulation and curriculum

design using integration of generational sensitive learning and communication differences among students, staff, faculty and patients. During the session, participants will work in small groups to address specific issues and strategies required to address the generational differences observed in education and the workplace. Small group work will be shared with the entire workshop attendees to promote dissemination and discussion of simulation education.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Education/Training

Nursing

Assessment/Evaluation

COI Statement: The authors indicate they have nothing to disclose.

WS2.10

Moving The Learning Curve Outside The Operating Room – A Hands-on Experience With Surgical Simulation

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ABSTRACT TEXT: Simulation plays an increasingly important role in surgical education.

With the recent changes in the residency review committee requirements for residency programs many program directors and teaching faculty are looking for guidance in developing curricular components for their own skills centers. This workshop provides participants with a hands-on experience of currently used surgical simulators, simulation curricula and techniques which are demonstrated by experts from multiple simulation centers. After completion of this workshop, the newly acquired knowledge will allow participants to further advance their skills laboratories and develop effective simulator curricula for their residents and students at their home institutions.

OBJECTIVES: After attending this workshop the learner will be able to better understand

some of the basic principles of surgical simulation.

After attending this workshop the learner will be empowered to implement the presented surgical simulation techniques in their home institutions through the provided hands-on experience.

After attending this workshop the learner will be able to better understand the important elements of a simulator skills curriculum and the steps required for its development.

Full Workshop Proposal and Rational: The increasing number and complexity of procedures surgery residents have to master today within the constraints of the 80-hour workweek along with ethical concerns of practicing on patients have forced surgical educators to identify additional venues for training. Simulators are playing an increasingly important role in surgical education. They allow repetitive and deliberate practice in a safe

and non-threatening environment enabling trainees to overcome the learning curves of new skills and procedures before applying them on patients. By moving the learning curve

outside the operating room, surgery residents are better prepared and more confident when they perform procedures on patients. While a number of surgical simulators have been developed and validated, their effective incorporation into the surgical residency curriculum presents multiple challenges. Furthermore, the recent changes in the residency review committee requirements for surgical residency programs have created an urgent need for residency directors and teaching faculty to identify the best ways of incorporating simulation in the programs and developing appropriate and effective skills curricula for their learners. This workshop aims to expose participants to a variety of surgical simulators and currently used simulation curricula and techniques. Experts from several simulation centers around the country will afford participants a hands-on experience

that will enable them to better understand the basic principles of surgical simulation and how to implement surgical simulation in their curriculum. Furthermore, the important components of a surgical simulator curriculum will be addressed and guidelines provided for curriculum development. Participants will also be exposed to the basic principles of team training and encouraged to share their experiences with simulation from their surgical skills centers. The components of this workshop include **hands-on** skills training for **open, minimally invasive** and **cardiac surgery** as well as aspects of **multidisciplinary team-based training**. Open Surgery Simulation In this 30 minute section, participants will be able to personally create and see several fabric models (small bowel, abdominal wall, pancreas, etc.) to be used in hands on sessions regarding surgical judgment and technique. Several 'live' simulations will be offered using participants as surgeons, assistants, nurses, and anesthetists. Video display of Mayo Clinic surgical trainees

using the same scenarios will be shown to clarify teaching opportunities, limitations in simulation, and ideas for better education. Laparoscopic Surgery Simulation: A successful laparoscopic skills curriculum depends on many factors including participant motivation,

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available resources and personnel, and trainee and faculty buy-in. It should encompass goal-oriented training, sensitive and objective performance metrics, appropriate methods of instruction and feedback, deliberate, distributed, and variable practice, an amount of overtraining, maintenance training, and a cognitive component. A curriculum that follows these principles is likely to spark trainee interest, ensure their satisfaction and participation in training sessions, and lead to an effective and efficient way of acquisition of new skills on simulators. The Fundamentals of Laparoscopic Surgery tasks will be used for hands-on practice of participants and a practical application of the aforementioned curriculum design concepts will be provided. After participation to this part of the workshop, participants will have a good understanding of what the important elements of a laparoscopic skills curriculum are and how to effectively incorporate it into their program. Cardiac Surgery Simulation We have developed a series of skills stations and procedures in dry-lab and wet-lab settings that are intended to provide initial and follow-up training and practice of cardiovascular surgery for the surgical resident. For cardiac surgery simulation, current equipment and materials include plastic torsos, arrested and beating heart models, vessel anastomosis and valve replacement skills stations, and porcine hearts for the wet-lab. The cardiac surgery simulation curriculum permits a structured approach to the use of simulation in resident training and provides a basis for collaboration with other institutions interested in simulation training. The course is structured to provide the resident with an understanding of the technical aspects of the surgical procedure, followed by direct supervision and practice, and concluded with formative feedback. Proficiency in these sub-procedures will ultimately permit the resident to understand the sequence of events and to be proficient in the entire procedure. We are currently evaluating the anastomosis skills station and beating heart model by assessing the progress of the residents. Additionally, the scenarios for the simulated operating room for environmental and crises simulation are being developed and evaluated. Multidisciplinary Team Simulation Aspects of team interactions under OR crisis circumstances in terms of collaborative decision making and procedural responses will be highlighted. After completion of this workshop, the newly acquired knowledge will allow participants to further advance their skills laboratories and develop effective simulator curricula for their residents and students at their home institutions.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)

THEME LIST: Technology

Sim Center Operations

Education/Training

COI Statement: The authors indicate they have nothing to disclose.

WS2.11

Debriefing As Formative Assessment: Concepts and Practice

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ABSTRACT TEXT: Building on a forthcoming article in Academic Emergency Medicine

(Rudolph, Simon, Raemer, and Eppich 2008), this workshop familiarizes participants with the theory and practice of conducting formative assessments in simulation debriefings.

These steps include identifying a performance gap, providing feedback, investigating the basis for the gap, and closing the gap. The workshop blends didactic and experiential approaches to provide participants the concepts and experience to conduct formative assessments using debriefing.

OBJECTIVES: Discuss the role of formative assessment in healthcare education and compare and contrast it with summative assessment.

List the steps of formative assessment and apply the steps to debriefing and bedside teaching in clinical environments.

Discuss approaches for integrating formative assessment into scenario design and subsequent debriefing.

Full Workshop Proposal and Rationale: Educators seek efficient strategies to help residents and medical students address and even master the complex clinical, social, and logistical challenges of practicing medicine in busy clinical environments. Formative assessment, the process of providing individually tailored doses of feedback to students on their performance is a concrete, effective way to provide this help. In simulation-based education, post-scenario debriefing is an ideal forum for formative assessment. Sometimes known as assessment **for** learning, formative assessment is often contrasted to summative assessment, which is often characterized as assessment **of** learning. Summative assessment is relatively infrequent usually involves grades or formal ratings occurs at the end of a training period and is associated with high-stakes such as advancing or not

advancing to the next stage of training, being certified or not certified. Formative assessment, in contrast, is ideally conducted separate from grades or formal ratings, occurs throughout the training period, is relatively frequent, involves lower stakes such as immediate improvement on sub-tasks of a profession or skill set, and is tailored to the individual learner. A key feature of formative assessment in both classroom and experiential contexts is that it provides feedback to the student with the goal of improving current performance. This workshop presents a four-step model of debriefing as formative assessment that blends evidence and theory from education research, the social and cognitive sciences, as well as experience drawn from conducting over 3000 debriefings and teaching debriefing to approximately thousands of clinicians world-wide. The steps are: 1) Note salient performance gaps related to pre-determined objectives 2) Provide feedback describing the gap 3) Investigate the basis for the gap by exploring the frames and emotions contributing to the current performance level and 4) Help close the performance gap through discussion or targeted instruction about principles and skills relevant to performance. We propose that the model, designed for post-simulation debriefings, can also be applied to bedside teaching in nearly all clinical settings. Exercises in the workshop will allow participants to practice formative assessments related to three different types of error defined by Bosk in his 1979 study of residency training: technical errors, judgment errors, and normative errors (violations of professionalism). This workshop will be structured to introduce, demonstrate and provide participants an opportunity to learn the steps of formative assessment and immediately apply them during simulated debriefings of different types of errors.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)

THEME LIST: Assessment/Evaluation

Education/Training

COI Statement: The authors indicate they have nothing to disclose.

WS2.12

Effective “Train The Raters” Workshops - A Crucial Component of Simulation-based Testing and Evaluation

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ABSTRACT TEXT: A crucial factor in Simulation-Based Testing and Evaluation is the quality and preparedness of the raters who score examinee's performance. Often, the raters are experts in the relevant medical field, but have only limited experience in simulation-based testing. A ‘train the rater’ workshop will be presented. Participants will experience different types of rating processes, and will be exposed to a structured training approach that leads to improved raters’ readiness and enhanced testing reliability and validity.

OBJECTIVES: Acknowledging the crucial role of raters’ training in SBTE. - Enhancing the awareness to the challenges, potential biases and common measurement errors in simulation-based rating.

Learning the main principles of constructing raters’ training workshops. - Experiencing the raters’ calibration process and its unique role in raters’ training.

Becoming acquainted with a prototypical raters’ training workshop that can be adjusted and implemented in various simulative environments.

Full Workshop Proposal and Rationale: Background Simulation-Based Testing and Evaluation (SBTE) is increasingly employed for assessment and accreditation of health care providers at different levels of training and seniority (1, 2, 3). The importance of maintaining high psychometric qualities (reliability and validity) in SBTE has been widely recognized (1, 4, 5). It is generally acknowledged that SBTE should be based on multiple scenarios and well-defined scoring criteria, and should be administered in standard testing environments. Another crucial factor is the scoring process. In most, examinees’ performance is observed by rater/s and scored through the completion of yes/no checklists (used mainly for assessing performance of clinical tasks), or rating scales (varied ranges of

“very bad to very good” scales used mainly for assessing holistic parameters such as communication skills). Frequently, raters are content experts in the relevant field of medicine but have limited or no experience in testing and evaluation, making the rating process prone to biases and measurement errors (6). The Israel Center for Medical Simulation (MSR) has gained experience in training raters for simulation-based anesthesiology board certification, paramedic licensure exams, advanced nursing certification and medical school admission assessment center. Raters’ training was found to be crucial for reliable and valid measurement. The aim of the proposed workshop is to introduce the concept and principles of a comprehensive raters’ training process, and to present a workshop protocol that can be adapted for different SBTE contexts. The session will demonstrate a mini raters’ training workshop and will include hands-on practice, enabling

participants to experience the scoring and calibration processes firsthand.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Assessment/Evaluation

Education/Training

Standardized Patients

COI Statement: The authors indicate they have nothing to disclose.

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WS2.13

Big Events in Small Packages: Team Training for Undergraduate Healthcare Professional Students

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ABSTRACT TEXT: Simulations of patient care with a desire to practice teamwork may not optimally change behavior of participants in an actual patient care situation. The use of event sets is a systematic approach to design critical-event scenarios with manageable, clear objectives in teamwork skills. Participants in this workshop will practice the use of event sets in design of scenarios for multidisciplinary groups of undergraduate healthcare students.

OBJECTIVES: Describe and identify event sets, triggers, and distracters as components of team training scenarios, as well as teamwork-related learning objectives for each event set in a basic healthcare team training scenario.

Begin utilizing event set methodology for scenario design and identification of related learning objectives in beginning multidisciplinary team training scenarios.

Discuss strategies for minimizing the focus on medical knowledge and maximizing focus on basic team concepts in scenarios developed for multidisciplinary groups of undergraduate healthcare professional students.

Full Workshop Proposal and Rationale: This workshop will engage participants in the process of constructing and implementing event-set based scenarios for the purpose of introducing multidisciplinary groups of undergraduate healthcare professional students to concepts related to effective teamwork. Improvements in communication and other teamwork skills may avert thousands of deaths annually related to medical error. Rather than incorporating key team skills into their response, healthcare professionals addressing a crisis tend to rely on familiar actions based on knowledge of medical algorithms. The use

of event sets enables instructors to systematically incorporate routine challenges to team function into teaching scenarios. When learners respond to systematically constructed crisis scenarios, their behaviors can be video-recorded, analyzed, and debriefed, allowing them the opportunity to recognize effective and ineffective teamwork behaviors, and to begin translating useful behaviors and actions into strategies that promote expert function of healthcare teams. An event set associates a phase or a “scene” of a scenario with a particular set of educational objectives. The event set begins with an event or a problem called a trigger, typically includes additional challenges called distracters, and has associated

observable behaviors related to teamwork sought by the instructor. Thus the event set and the debriefing afterward is an opportunity for the participants to apply and discuss a particular set of human factors skills that represent the educational objectives of each event set. Undergraduate healthcare professional students present an important opportunity

for simulation-based teamwork training. In contrast to many of today’s practicing clinicians, students who experience video-recorded simulations to improve teamwork skills may become graduates who expect such work as part of their on-going professional development. Furthermore, students have not yet differentiated into distinct professional roles, allowing for discussion of roles in a crisis with fewer preconceived ideas. The workshop will outline a practical approach to introduce undergraduate health professional students to key concepts of effective team function using both demonstration videos and short, recorded practice scenarios. Both the videos and the practice scenarios are debriefed.

TARGET AUDIENCE LEVEL: Undergraduate education

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Education/Training

Patient Safety/Human Factors

COI Statement: Conflict Reported: Dr. William Hamman and Dr. William Rutherford are the recipients of a 2005 grant from the state of Michigan, Battle Creek Unlimited, and the Forest Park Foundation that has supported the work of developing event set methodology as applied to simulation in healthcare.

WS2.14

Using Simulation to Bridge Cultural Barriers

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ABSTRACT TEXT: Effective culturally sensitive communication is an integral component

of nursing practice and education, providing quality nursing care, and responding to emergent and non-emergent patient encounters. Due to ethical or lack of exposure to particular cultures, students may not have sufficient opportunities to practice culturally sensitive communication strategies. Simulation provides such experiences in a safe non threatening environment. This workshop will allow participants to work in small groups to design and plan simulation strategies related to culturally competent communication encounters in the workplace and academia.

OBJECTIVES: Develop culturally sensitive scenarios utilizing high fidelity human simulation as a teaching strategy.

Describe barriers and/or facilitators to high fidelity human simulation scenarios that have a culturally sensitive focus.

Appreciate the importance of developing culturally sensitive scenarios for all levels of healthcare professionals.

Full Workshop Proposal and Rational: Communication is an integral component of nursing education, providing quality nursing care, and responding to emergent and non-emergent patient encounters. Issues surrounding communication has become a focus of attention recently, on both the national and international level. Furthermore, schools of nursing seek to include diverse learning experiences that provide for application

of culturally sensitive care practices. Effective nurse-patient communication has been shown to improve quality health outcomes, patient compliance, and ultimately, patient satisfaction. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) recently reported that communication issues were the root cause of approximately

65% of nearly 3,000 sentinel events identified within the past 10 years. The Essentials of Baccalaureate Education for Professional Nursing Practice (1998) define the standards for baccalaureate graduates, and include: understanding the ways cultural, racial, socioeconomic, religious, and lifestyle variations are expressed. This includes communication,

teaching, beliefs in the healthcare system and family/patient, and nurse interactions.

Ethnic diversity and the diversity we demonstrate as people includes individuals with differences in race, culture, religion, mental or physical abilities, heritage, age, gender,

sexual orientation, and other characteristics. Culture is defined as the way of life of people that includes the sum of their learned behavior patterns, attitudes, and material things. Most people understand culture in its broadest sense, and usually interpret it as something that characterizes distinct groups (e.g. Hispanic, African American, and Asian American). Often the approach to nursing delivery is shaped by one’s own cultural lens.

For this reason, it is important to educate students to become aware of what beliefs and practices shape their own cultural identity so they can then become culturally-sensitive to the patients under their care. The strategies for increasing cultural competence involve change from the grassroots level to the highest level of an organization. Developing competencies by practicing on real life patients may be an ethical issue due to a potential threat to their safety (Rystedt & Lindstrom, 2001). Most importantly, changes in healthcare

delivery require that developing new and creative methods for facilitating intraprofessional

and inter-professional culturally-based education. One such change, high fidelity human simulation, allows faculty and students to learn in a safe environment thus broadening the student’s lens. Hopefully, these planned experiences can be transferred to actual clinical situations in future professional practice.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Education/Training

Assessment/Evaluation

Patient Safety/Human Factors

COI Statement: The authors indicate they have nothing to disclose.

WS3.1

“Instructional Design: A Strategy for Simulation Curriculum Development”

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ABSTRACT TEXT: Instructional Design (ID) is a systematic approach to course and curriculum development. Principles of ID assure that defined learning goals are accomplished.

It is an iterative process requiring evaluation and feedback. Success is judged by the extent to which learners acquire skills and transfer them to practice. Rapid Prototyping

(RP) is a heuristic process using development of a small-scale prototype used to test critical design elements. These principles will be explored in an interactive simulation-based

medical education curriculum development problem solving exercise. Participants will consider the application of Instructional Design and Rapid Prototyping principles to a specific curriculum development task.

OBJECTIVES: Demonstrate application of instructional design principles.

Conduct a heuristic evaluation of one educational objective.

Define Instructional Design and Rapid Prototyping curriculum development processes.

Full Workshop Proposal and Rational: Simulation based medical education is a methodology that requires a paradigm shift in curriculum development and teaching methods for most medical educators. A shift from experience and evidence based curriculum development to a learning objective based and structured curriculum is demanded for effective curriculum integration of simulation technologies. Instructor delivery of simulation based curriculum likewise requires a shift in style, from didactic presentation to facilitation and facilitated discovery instruction. Simulation based curriculum development utilizing the principles of Instructional Design and Rapid Prototyping provides a framework for creating successful simulation based curriculum to enhance existing education programs. Curriculum development remains a barrier to curriculum process improvement using simulation in many settings. This workshop is designed to demonstrate and provide experience with a specific rigorous approach to educational design for teachers who are beginning to use simulation techniques. Instructional Design is an educational discipline which applies a systematic approach to course and curriculum development. Instructional Design principles assure that defined learning goals are accomplished. It is an iterative process that requires ongoing evaluation and feedback. Successful training is not judged by the explicitness of an instructional design model, but according to the extent to which learners acquire skills and knowledge, and transfer them to practice. Rapid prototyping is a heuristic problem solving strategy in an Instructional Design process. Rapid Prototyping methodology uses early development of small-scale prototype curricular elements to test and modify key features of the educational process during development. Test-retest reliability of curricular elements is assured through rapid prototyping to assure that the desired behaviors of the educational objective are elicited by the simulation. These principles will be explored in an interactive group process workshop which employs a simulation based medical education curriculum development problem solving exercise. Participants will consider the application of Instructional Design and Rapid Prototyping principles to a specific curriculum development task. During the workshop participants will be provided a brief introduction and roadmap for Instructional Design and Rapid Prototyping principles for application to the problem solving exercise. Groups of 6–8 participants are then assigned a unique specific limited curriculum development task. Workgroups will adjourn to build a curriculum strategy solution for the assigned task. Presentation of each group curriculum plan is then discussed and evaluated for critical elements by the entire workshop using an audience response system.

TARGET AUDIENCE LEVEL: Faculty development
OPTIMAL LEVEL OF EXPERIENCE: Beginner/novice (1–3 years experience/in operation)
THEME LIST: Education/Training
 Assessment/Evaluation
COI Statement: The authors indicate they have nothing to disclose.

WS3.2

Communication Analysis: Teamwork Performance Measures Using Objective and Qualitative Scoring Methods

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ABSTRACT TEXT: Simulation affords a method to assess teamwork. Communication is an integral aspect of teamwork. During this workshop, both objective and qualitative scoring methods will be evaluated for measuring teamwork. Objective measures adapted from conversational analysis used in the field of social linguistics will be applied to simulated events. Qualitative or subjective measures include a series of rating scales. Participants will score representative performances using qualitative measures and these will be compared to the objective measures adapted from conversational analysis of the same simulations. The strengths and limitations of using subjective and objective measures of communication in assessing teamwork in health care settings.

OBJECTIVES: Describe how communication interactions differ in conversational communication settings and in the crisis environment. evaluate a qualitative scoring system for communication interactions. Understand and evaluate both objective approaches to scoring communication behavior using a framework used in the field of social linguistics and qualitative approaches to scoring teamwork.

Apply the qualitative scoring method to a set of simulated critical events and compare the qualitative to the quantitative approach to scoring communication interactions.

Full Workshop Proposal and Rational: Simulation affords a method to assess teamwork.

The evaluation of communication is an integral aspect of scoring team interactions. Studies of teamwork include a variety of scoring frameworks that primarily evaluate global team performance. During this workshop, a scoring system for communication will be described that utilizes both objective and qualitative scoring methods. The objective measures are adapted from conversational analysis used in the field of social linguistics. Measures included mean length of a talk turn in seconds for both the resident and the nurse, mean length–turn–ratio (i.e., the ratio between the mean length of a conversational turn of the resident and of the nurse, number of questions posed by the resident, etc.)

Qualitative or subjective measures include a series of rating scales. Items ask the experts (workshop participants) to assess the resident communication effectiveness and to assess his or her management of the acute care incident. In addition, the key actions will be provided to determine the critical event management. These qualitative methods will be compared and contrasted with objective communication scores derived from social linguistics.

Four (7 minute) scenarios will be reviewed by workshop participants. During the workshop, participants will score two scenarios that illustrate effective communication and less effective communication. Objective measures will be compared to both the expert (participants) impressions of communication effectiveness and to expert (participants) key-action scores of medical management. Implications for using various scoring methods for teamwork will be discussed during the workshop.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Assessment/Evaluation

Research

Education/Training

COI Statement: The authors indicate they have nothing to disclose.

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WS3.3

Instant and Delayed OSCE Feedback - How to Do It Well

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ABSTRACT TEXT: The instructional value of Objective Structured Clinical Exams (OSCEs) and similar types of multiple station exams has been recognized widely. Some programs are designed so that individual participants receive instant performance feedback

before moving on to the next station. Other programs incorporate a debriefing session for all trainees that occurs as soon as the OSCE is completed. Yet others provide written feedback several weeks later. Sometimes the various types of feedback are combined.

This workshop will explore theoretical and practical issues, and provide participants with an opportunity to practice the relevant skills in a simulated setting.

OBJECTIVES: Identify key characteristics of effective feedback and debriefing.

Discuss selected findings from feedback and debriefing research.

Express more confidence in their own ability to provide feedback, debrief in a small group and create OSCE report cards.

Full Workshop Proposal and Rational: Description of workshop The power of feedback and the challenges of providing it effectively have received much attention in the last decade. Equally there has been more focus on how clinicians can learn from reflection. OSCEs can provide unique opportunities but also unique challenges for feedback and reflection. Typically there are time limitations and the multitude of cases (and therefore also feedback) can easily result in information overload, thus limiting learning. At times multiple feedback providers are present (e.g., standardized patients and faculty observers) which creates an own dynamic. During a post-OSCE debriefing session, learners will need

to reflect in a group setting. Facilitators must protect the privacy of individuals while keeping the discussion at a deep enough level to remain meaningful. In both types of interactions, one also has to be mindful of connecting OSCE cases and performance to past experiences, and helping trainees generalize what was learned to future clinical situations. Written feedback is another option for helping trainees learn from their performance

during the OSCE. By using NCR paper or printouts from computer-based rating forms and feedback sheets one can provide personalized feedback soon after the OSCE is completed. Report cards that juxtapose an individual’s performance with the group profile have also become very popular. Preparing such written materials always brings up questions about how much information is appropriate, how is it best presented (e.g., graphical layout) and whether it is advisable to first edit written comments. Faculty and others involved in developing, implementing and evaluating OSCE-based learning need to enhance their knowledge and skills in this area to maximize the impact of their programs. How this workshop will engage the participants in active learning: A brainstorming

activity at the beginning will help workshop attendees bring their own ideas and experiences into the discussion. Participants will be split up into groups of four to create small study teams. During the workshop they will engage in various roleplay activities to explore the intricacies of giving and receiving personal and group feedback. Faculty, standardized patient, and trainee roles will be divided in a way to keep all participants

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engaged throughout. Each workshop section is concluded with a large group discussion to summarize the experience. The take-home points at the end will help deepen the reflections on what was learned during the workshop.

TARGET AUDIENCE LEVEL: All of the above

OPTIMAL LEVEL OF EXPERIENCE: Intermediate (3–5 years experience/in operation)

THEME LIST: Education/Training
Standardized Patients

COI Statement: The authors indicate they have nothing to disclose.

Appendix 2

Research Abstracts Presented at the 9th Annual International Meeting on Simulation in Healthcare

January 11-14, 2009 - Lake Buena Vista, Florida

OVERALL BEST RESEARCH ABSTRACT - #78

CORD PROLAPSE SIMULATION TRAINING TO IMPROVE OUTCOME

Dimitrios Siassakos^{1,2}, Zaid Hasafa², Thabani Sibanda², Naomi Jobson², Joanna Crofts², Cathy Winter², Timothy Draycott²

¹University of Bristol, Bristol, United Kingdom, ²Southmead Hospital, Bristol, United Kingdom

BEST TRAINEE RESEARCH ABSTRACT - #11

DISTRIBUTED SIMULATION: AN INNOVATIVE TOOL TO ENHANCE MEDICAL STUDENT EDUCATION IN THE OPERATING ROOM (OR)

Sonal Arora¹, Samir Latif¹, Bhamini Vadhvana², Nick Sevdalis¹, Dominic King¹, Rajesh Aggarwal¹, Fernando Bello¹, Debra Nestel³, Roger Kneebone¹

¹Imperial College, London, London, United Kingdom, ²University of Manchester, Manchester, United Kingdom,

³Gippsland Medical School, Monash University, Australia, Australia

EDUCATION

#37 – First Place

LEADERSHIP INSTRUCTIONS ENHANCE LEADERSHIP AND MEDICAL PERFORMANCE IN CARDIOPULMONARY RESUSCITATION

Sabina Hunziker¹, Cyrill Buehlmann¹, Franziska Tschan², Norbert Semmer³, Sereina Streiff¹, Stephan Marsch¹

¹University of Basel, Basel, Switzerland, ²University of Neuchatel, Neuchatel, Switzerland, ³Univeristy of Bern, Bern, Switzerland

#48 – Second Place

EXPERT MODELING IMPROVES THE ACQUISITION OF BEHAVIORAL SKILLS IN SIMULATION-BASED TRAINING

Douglas Leonard¹, Laura Corbin¹, Kristine Boyle², Katherine Leaning¹, Judy LeFlore³, JoDee Anderson¹

¹Oregon Health & Science University, Portland, OR, United States, ²Stanford, Stanford, CA, United States,

³Univeristy of Texas Arlington, Arlington, TX, United States

#2 – Third Place

BROADENING THE ASSESSMENT OF PHYSICAL EXAMINATION SKILLS IN A STANDARDIZED PATIENT-BASED ASSESSMENT

Michael Ainsworth, Karen Szauter

University of Texas Medical Branch, Galveston, TX, United States

TECHNOLOGY

#39 – First Place

A STIFFNESS DISCRIMINATION EXPERIMENT INCLUDING ANALYSIS OF PALPATION FORCES AND VELOCITIES

Ernur Karadogan, Robert Williams, John Howell, Robert Conatser

Ohio University, Athens, OH, United States

#75 – Second Place

A COMPARISON OF VISUAL AND HAPTIC FEEDBACK ON A SIMULATED BONE PINNING TASK

Mark W Scerbo¹, T Robert Turner¹, Dwight A Meglan², Robert Waddington²

¹Old Dominion University, Norfolk, VA, United States, ²SimQuest, LLC, Silver Spring, MD, United States

#50 – Third Place

MONITORING WITH HEAD-MOUNTED DISPLAYS (HMDS) IN ANESTHESIA: SIMULATOR AND CLINICAL EVALUATIONS

David Liu¹, Penelope Sanderson¹, Simon Jenkins², Marcus Watson¹, John Russell²

¹The University of Queensland, Brisbane, Australia, ²Royal Adelaide Hospital, Adelaide, Australia

PATIENT SAFETY

#4 Third Place

SIMULATION-BASED TRAINING PROMOTES RAPID RESPONSE TEAM UTILIZATION AND IMPROVES IN-PATIENT MORTALITY RATES

Hania Wehbe-Janek^{1,2}, Jose Pliego^{1,2}, Frank Villamaria^{1,2}, M. Hasan Rajab^{1,2}, Simon Sheather³

¹Scott & White Healthcare, Temple, TX, United States, ²Texas A&M Health Science Center, College of Medicine, Temple, TX, United States, ³Texas A&M University, College Station, TX, United States

#42 – First Place

COMPARISON OF SUDDEN CARDIAC ARREST RESUSCITATION PERFORMANCE DATA OBTAINED FROM IN-HOSPITAL INCIDENT CHART REVIEW AND IN SITU HIGH-FIDELITY MEDICAL SIMULATION

Leo Kobayashi¹, Frank Overly¹, Mary Cooper³, Gregory Jay^{1,2}

¹Department of Emergency Medicine, Alpert Medical School of Brown University, Providence, RI, United States,

²Department of Biomedical Engineering, Alpert Medical School of Brown University, Providence, RI, United States, ³Quality Management, Lifespan, Providence, RI, United States

#26-Second Place

TEAM PROCESS AND DIAGNOSTIC SUCCESS IN MEDICAL EMERGENCY DRIVEN TEAMS: A SIMULATOR STUDY

Tschan Franziska¹, Semmer Norbert K.², Gurtner Andrea³, Bizarri Lara¹, Spychiger Martin⁴, Marsch Stephan U.⁴

¹University of Neuchâtel, Switzerland, Neuchâtel, Switzerland, ²University of Berne, Berne, Switzerland, ³Applied University of Berne, Berne, Switzerland, ⁴University Hospital of Basel, Basel, Switzerland

Sample of Works in Progress Abstracts Published in the program Syllabus

WORK IN PROGRESS POSTER ABSTRACT # 1

USING SIMULATION TO TRAIN STAFF FOR A NOVEL UNIT WITHIN THE CHILDREN'S HOSPITAL OF PHILADELPHIA

Anne Ades^{1,2}, Tracy Widmer¹, Natalie Rintoul^{1,2}, Joanne Patykula¹, Amy Scholtz¹

¹The Children's Hospital of Philadelphia, Philadelphia, PA, United States, ²The University of Pennsylvania School of Medicine, Philadelphia, PA, United States

INTRODUCTION: Simulation training can improve staff self-confidence, competence, operational performance and prepare staff for rare, stressful and novel situations in selected settings. Deliveries of neonates with congenital anomalies are rare, stressful, high-risk events. In June of 2008, The Children's Hospital of Philadelphia (CHOP) opened a Special Delivery Unit for deliveries of high-risk neonates with selected congenital diagnoses. The neonatal ICU staff was trained to national standards of delivery room resuscitation following the AAP neonatal resuscitation program. However, since there was not a delivery unit at CHOP previously, many did not use the skills directly related to stabilization and resuscitation of a neonate in the delivery room. Given this lack of experience and the specialized population of neonates, we developed a training course to educate and prepare staff for their new role. We, also, developed a questionnaire to help evaluate the perception of the usefulness of simulation to successfully prepare them for their new role.

METHODS: The training course consisted of four 4-hour training sessions. The first 3 sessions consisted of 2 hours of didactic lecture and 2 hours of simulation team training that reinforced the content of the lectures. The last training session with 3 simulations was used to help familiarize the staff to the physical space and organization of the new unit. Staff participating in the simulations included all members of the planned neonatal resuscitation team. The simulations utilized various manikins ranging from low-fidelity to high-fidelity with modifications made to represent congenital anomalies such as omphaloceles, gastroschisis, neck masses etc. The simulations progressed in difficulty from session 1 to 3. This study was IRB reviewed and determined to be exempt from consent. There were

4 focused questionnaires, each with 5 questions, excluding baseline demographics, using a 5 point Likert Scale (1=strongly disagree, 5 = strongly agree) that addressed subject's comfort participating in deliveries of normal newborns and newborns with congenital anomalies, understanding of their role, comfort in performing required technical skills, and confidence in participating in resuscitation of neonates with select congenital anomalies. The questionnaires were completed 1) before the first training session, 2) upon completion of the first session, 3) after completion of all training sessions, and 4) after completing 2 real-life deliveries in the Special Delivery Unit.

RESULTS: Each session was run 5 times with 5-7 nurses and 2 respiratory therapists per session. Thirty nurses and 10 respiratory therapists agreed to participate in the study. We are in the process of analyzing the data from the first 3 questionnaires and are still collecting the 4th questionnaire as not all staff has attended 2 deliveries.

DISCUSSION: The training sessions were well received by all participants. Many operational issues were revealed allowing for solutions to be made prior to any patient care. We will use the data collected from the questionnaire to help structure future training sessions for new staff and on-going sessions for current staff.

Category:

Education

COI Statement:

no conflict

WORK IN PROGRESS POSTER ABSTRACT # 2

A SIMULATION MODEL FOR AN EMERGENCY DEPARTMENT HEALTHCARE UNIT IN KUWAIT.

Talal Alkhamis

Kuwait University, Kuwait, Kuwait

INTRODUCTION: The emergency department (ED) is open 24 hours a day and receives an average of 145 patients daily. The process begins when a patient arrives through the doors of the ED, and ends when a patient is either released from the ED or admitted into the hospital for further treatment. The arriving patient goes through the receptionist who collects the patient's personal information and locates his/her file. Following this, the patient waits for availability of an examination room. The acuity of the patient's illness is assessed by a doctor in the examination room. Also in the examination room, doctors will decide if the patient needs further tests such as x-rays, clinical lab tests, and so forth performed by a patient care lab technician. Patients are classified into critical (category 1) and non-critical (categories 2 and 3) according to their conditions. After an assessment is performed by the doctor, the non-critical patients are classified into two categories. Category 2 patients are asked to wait for a minor treatment which is performed by a treatment nurse in the treatment room. Category 3 patients receive their medication and are released from the hospital. Each critical patient is assigned to a bed in the emergency room where he/she receives complete treatment and stays under close observation. The treatment services in the emergency room are provided by a nurse and a doctor (the doctor is called from the examination room when needed). Finally, critical patients are either released or admitted into the hospital for further treatments. Patients who arrive at the hospital in an ambulance are considered critical patients (category 1) and are rushed immediately to the emergency room. The emergency department has the following resources: 1. Receptionist (denoted by x_1) 2. Doctors (denoted by x_2) 3. Lab technicians (denoted by x_3) 4. Treatment room nurses (denoted by x_4) 5. Emergency room nurses (denoted by x_5) Due to cost and layout considerations, hospital administrators have determined that the staffing level must not exceed 3 receptionists, 4 doctors, 3 lab technicians, 4 treatment room nurses and 12 emergency room nurses. The hospital wants to find the configuration of the above resources that maximize patient throughput (patient dismissed per unit time) subject to budget constraint and a constraint imposed on the average waiting time in the system for patients of category 1.

METHODS: A comprehensive survey at the emergency department has been carried out in order to collect data on the arrival process, the service times at the examination room, the service times at the treatment room and the total turnaround time in the emergency department. After observing the process for three weeks and after collecting additional data from interviewing doctors, nurses and hospital personals in charge of each of these activities, the results of these interviews were used to determine the best theoretical distribution to represent each stage of the process under study. The arrival process follows a non-homogenous Poisson process. The mathematical representation of our problem is as follow: Maximize $f(x_1, x_2, x_3, x_4, x_5)$ (f is the throughput objective function value) subject to $f_1(x_1, x_2, x_3, x_4, x_5) \leq \text{Budget}$ (f_1 represent budget constraint) $f_2(x_1, x_2, x_3, x_4, x_5) \leq Q$ (f_2 represent wait time in system constraint) Function f and function f_2 are both stochastic functions that have no analytical form and can be evaluated only through simulation. To solve the above problem, we adopt a two-phase approach. Phase I finds a set S that contains only feasible or near-feasible solutions and then Phase II chooses the best among those solutions.

RESULTS: We applied our optimization approach using the current budget constraints. As the waiting time for different patient categories are very high, the question regarding staffing distribution efficiency has been raised by hospital managers. The hospital management would like to get more details on the effect of the new optimization model on the individual waiting time for all patient categories. Our new approach obtains different staffing distribution as follows: one receptionist, three doctors, two technicians, two treatment nurse and seven emergency nurses. Table 2 presents the results of our optimization model along with the current situation. From Table 2, the improvement is obvious in both the overall system throughput and patients' waiting time for all categories. Table 2: Comparison between current and optimal staffing distribution.

	Measure of performance			
	Average waiting time in system			Throughput
Staff Distribution	Category 1	Category 2	Category 3	
Current	3.56	3.28	2.83	4.9
New Approach	2.76	1.8	1.33	6.3
% Improvement	22 %	45 %	53 %	28 %

DISCUSSION: This work integrates simulation with optimization for the design of a decision support system for the operation of an emergency department unit at a government hospital in Kuwait. The hospital provides a set of services for different categories of patients. We present a methodology that uses system simulation, combined with optimization to determine the optimal number of doctors, nurses, receptionists, and lab technicians to maximize patient throughput and to reduce patient time in the system subject to budget restrictions. The optimization

simulation model presented in this paper provided optimal staffing allocation that would allow 28% increase in patient throughput and an average of 40% reduction in patient's waiting time with the same resources. A decision support system was designed to help decision makers at the hospital to either evaluate different situations of staffing distribution or optimize the system for optimal staffing distribution. **Acknowledgements:** This research was supported by the Office of the Vic President for Scientific Research, Kuwait University, under project number SS01/08.

Category:

Technology Development and Evaluation

COI Statement:

no conflict

WORK IN PROGRESS POSTER ABSTRACT # 3

THE DEVELOPMENT OF THE PSYCHIATRY SIMULATION INNOVATION CENTRE: A RESOURCE FOR PSYCHIATRY AND INTERPROFESSIONAL MEDICAL EDUCATION FOR EXPERIENTIAL LEARNING TECHNIQUES AND CONCEPTS NB: I WOULD BE HAPPY TO DEVELOP THIS INTO A WORKSHOP TO DEMONSTRATE SOME OF THE TECHNIQUES AND INNOVATIONS THE PSI CENTRE DEVELOPED - SORRY I MISSED THE DEADLINE FOR THAT!!!!

Bruce Ballon
University of Toronto, Toronto, ON, Canada

INTRODUCTION: The Psychiatry Simulation Innovation (P.S.I.) Centre will focus on psychological and psychodynamic elements for simulation excellence. The vision of the PSI centre is to To prevent, treat and provide education on mental health problems through the use of innovative simulations and interactive teaching methods and to To promote excellence in health care simulation design by incorporating psychiatric elements into innovative hybrid models to enhance dealing with interpersonal dynamic factors (e.g. communication). This will include creating techniques and methods that evoke cognitive, behavioural and emotional effects via simulations and emulations of psychiatric and addiction issues. Mental health conditions can be quite complex, with many possible concurrent mental health and psychosocial situational factors. A major goal of the centre will be to better understand, prevent and treat psychiatric disorders and associated issues. Initiatives at the centre will include simulations designed to develop open attitudes, empathy and professionalism for dealing with psychiatric and other medical conditions and issues. It is much easier for learners to acquire the technical knowledge and skills in psychiatry than it is for them to develop the grounded interpersonal skills and empathic capacity needed to work effectively with people suffering from mental health and addiction disorders. Attitudinal factors impact on professionalism, communication, scholarship and collaboration capacities in a learner. Providing students with the opportunity to experience, through various simulations technologies and methodologies, the emotions and cognitive trajectory of specific psychiatric conditions, may help them develop their empathic capacity as well as shape their attitudes towards people with mental health disorders as well as their fellow health care providers. Such experiences reinforced by debriefing and reflective exercises ultimately have a positive impact on patient care. This concept fits well with adult learning theories such as Kolb's experiential learning cycle as well as other constructivist and phenomenological theories which articulate that through experience we construct our reality and sense of efficacy in the world. These innovative simulations can be used to understanding people's perspectives i.e. not only in terms of psychiatric conditions, but other professionals' points of view, deal with grey areas of overlapped responsibilities, and developing teamwork excellence. In other terms, creating simulations for developing healthy professional attitudes and destigmatizing / removing stereotypes associated with various professions. Interprofessional issues can be quite complex, with many possible concurrent personal, team, and institutional / broader situational factors. The Centre was recently launched and its resources can be used for creating or augmenting simulations in a variety of medical contexts as well as allied health care situations. Beneficiaries of the centre include medical curricula designers (undergraduate, graduate, postgraduate and CE), interprofessional health care providers, simulation designers, simulation researchers, medical educators, actors (SP), and health care students, residents and fellows, and faculty wishing to pursue scholarship and/or research in this area. Another aspect would allow for public education on different conditions presented in novel simulations formats. Internationally collaborations with simulation societies and networks will also allow the exchange of ideas and innovation in this exciting field.

METHODS:

RESULTS:

DISCUSSION:

Category:

Education

COI Statement:

no conflict

VIRTUAL MICROSCOPY SIMULATION: THE NEW FRONTIER IN MEDICAL LABORATORY SCIENCE AND PATHOLOGY.

Karim Bandali¹, Brad Niblett¹, Amitai Ziv²

¹The Michener Institute for Applied Health Sciences, Toronto, ON, Canada, ²Israel Center for Medical Simulation, Tel-Hashomer, Israel

INTRODUCTION: Traditionally, the microscope has been used in the Medical Laboratory Science (MLS) Program for diagnostic and educational purposes in the area of microanatomy for histology, hematology and cytology. Its extensive utilization has resulted in the production and maintenance of a large inventory of glass slides for in-class use and distribution. This type of microscope-based education has created certain limitations for faculty and students by increasing case by case remediation and tutorial times at the cost of opportunities for student practice and preparation. The evolving area of virtual microscopy/digital slide technology (DST) is now providing other innovative avenues to enhance learning and clinical preparedness in the area of MLS and pathology specifically focused on dynamic application through a simulated microscopy computer-based medium. Its employment could translate into increased student accessibility; increased student and faculty synchrony through viewing the same digital images; flexibility between static (glass) images and dynamic (digital) images; and reduced tutorial time. This simulation modality provides students with increased autonomy and more control over the learning process by fostering the use of simulation as a key tool in dynamic slide manipulation while enhancing experiential and reflective learning.

METHODS: The implementation of virtual microscopy simulation was undertaken by the MLS Program at The Michener Institute for Applied Health Sciences with the understanding that advancement will need to be made from a technological perspective (storage and resolution). As well, The Worldwide Instructional Design System (WIDS) was employed to carefully design and embed this simulation modality into the histology and hematology curriculum.

RESULTS: Through the advent and procurement of a storage area network (for storage capacity and data protection) all quality testing for accuracy and reproducibility has now been completed. Michener has successfully built an extensive database in Canada with over 2000 digital images at various resolutions for various disciplines (MLS and Pathology included). During this time this simulation modality was incorporated into the advanced histology curriculum (53 students) and hematology (40 students). Preliminary course surveys and student feedback suggest a high degree of satisfaction with virtual microscopy simulation which was perceived as a key component of their learning. There was also a recommendation that it be expanded with regards to its access to provide students online, remote, off campus capabilities.

DISCUSSION: This ongoing work in virtual microscopy supports and strengthens Michener's innovative curriculum direction based on simulation, inter-professional education and competency assessment. Our intent is: (i) to continue with the incorporation and evaluation of virtual microscopy simulation, (ii) continued expansion of our digital slide database, (iii) holistic integration of virtual microscopy simulation with our inter-professional electronic health record, (iv) monitoring commission of medical error (self-reporting as well as instructor detected) and (v) finally assessing the impact of this simulation technology on the readiness of students to proceed to the clinical phase of their education.

Category:

Education

COI Statement:

no conflict

SIMULATION-BASED EDUCATION FOR THE CARDIOVASCULAR PERFUSIONIST: AN INNOVATIVE TRAINING PROGRAM

Karim Bandali¹, Michael Aubin¹, Brad Niblett¹, Dwayne Jones², Amitai Ziv³

¹The Michener Institute for Applied Health Sciences, Toronto, ON, Canada, ²St. Mary's General Hospital, Kitchener, ON, Canada, ³Israel Center for Medical Simulation, Tel-Hashomer, Israel

INTRODUCTION: Cardiac surgery and cardiovascular perfusion (CVP) are marked by rapidly changing demographics, increased case complexity and significant elevations of risk profiles within the cardiac surgical population. The demanding cardiovascular operating room (CVOR) will require a perfusionist that can integrate manual dexterity, think critically, and demonstrate teamwork as a key member of the CVOR team responsible for maximizing patient safety. A critical part of the solution to preparing the perfusionists for complex surgical management of patients may be the use of simulation-based education. This tool can be used to create focused interactive education that has the ability to impart the complexity of the CVOR setting in an experiential manner while allowing students to make mistakes as they learn in a safe environment.

METHODS: To address these educational challenges in perfusion, The Michener Institute for Applied Health Sciences which has one of the most successful and well respected Cardiovascular Perfusion (CVP) programs in Canada has embarked on a dramatic program redesign. This redesign (14 month program and 12 students enrolled) includes a variety of education modalities including distributive on-line learning, intensive laboratory residency incorporating different levels of simulation (matched to competency attainment) and a clinical education phase. The development of simulation-based cases for the simulated CVOR were created through an innovative approach that leveraged anonymous electronic health record data sets. High-fidelity simulation cases were run by faculty and clinical perfusionists using surgeon role-play, manual clamping alterations to the heart-lung machine with concurrent alterations to the Laerdal SimMan advanced simulator. Debriefing of the simulation experience occurred in groups and individually with students. Structured student feedback was derived using a Likert scale (1 to 5) survey (with voluntary written comments) methodology to assess the areas of confidence, ability to integrate multiple skills, and the readiness for clinical education in the first phase of our research.

RESULTS: The incorporation of multiple levels of simulation learning activities culminating in simulated (high fidelity) cardiac cases enhanced the experience of all of our students as 100% of voluntary written comments were positive regarding their simulation experience. Students thought the high-fidelity simulation was realistic (avg rating of 4.8), felt more confident in their clinical skills (4.4) were better able to multi-task and communicate in the CVOR environment (4.4) and felt better prepared to enter the clinical phase of their education (3.7).

DISCUSSION: The preliminary results of our work demonstrate the value of simulation-based education from the student's perspective. Future research is warranted to evaluate student performance and clinical readiness levels including commission of medical error as students progress through this enhanced education experience prior to entering the clinical phase of their program. The acquisition of profession specific and necessary inter-professional collaborative skills without compromising patient safety may have significant dividends in terms of limiting patient risk and standardizing surgical management.

Category:

Education

COI Statement:

no conflict

A REVOLUTIONARY ALLIANCE BETWEEN AVIATION AND MEDICAL SIMULATION: WORKING TOWARDS CREATING AN INTERNATIONAL STANDARD IN HEALTHCARE SIMULATION.

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¹The Michener Institute for Applied Health Sciences, Toronto, ON, Canada, ²CAE, Saint-Laurent, QC, Canada,

³Israel Center for Medical Simulation, Tel-Hashomer, Israel

INTRODUCTION: The field of aviation simulation has long ago achieved a high level of utilization, standardization and regulation that is still lacking in the current state of healthcare simulation. The Michener Institute for Applied Health Sciences and CAE - a leader in aviation simulation, have created a novel public/private alliance to build a healthcare simulation center that encompasses medical education for the entire healthcare team including allied health professionals. This unique alliance is set to leverage Michener's innovative curriculum based on simulation, inter-professional education and competency assessment while employing CAE's global leading expertise to enable functions that will optimize healthcare simulation-based learning environments. This alliance is focused on working collaboratively to establish excellence in healthcare simulation-based education, training and evaluation.

METHODS: The uniqueness of this public/private alliance also requires an appreciation and effective management of the cultural shift that each organization will face in support of the creation of a center attuned to the simulation needs of the full healthcare team in the spirit of inter-professionalism. Therefore, with many complexities in play, our major focus to date has been one of strategic planning and design rather than the accumulation of capital assets and construction.

RESULTS: Our collaborative comprehensive plan includes: i) the creation of clear pedagogical standards in healthcare simulation focused on a student-centric model of learning emphasizing comprehension, retention and proficiency with valid and reliable evaluation and assessment methodologies/practices ii) the creation of well structured learning models that will see students move through a continuum of pre-study, simulation-based education and refresher learning activities iii) capitalizing on Michener's successful creation of a clinical simulation semester to create learning-environments for team based and discipline specific healthcare simulation iv) resource integration by leveraging our collective local, national and international simulation network contacts as well as attracting new partners to ensure that the utility of our inter-professional simulation center is maximized v) optimization of healthcare simulation delivery and through-put by drawing efficiencies in registration, scheduling, logistics and simulator use vi) the creation of relevant accountability and quality frameworks to ensure targeted progress, continuous improvement and excellence in curriculum and delivery standards vii) the creation of a mutually beneficial strategic governance model based on collaboration to review Center performance, over trends and demands in simulation education viii) the commitment to scholarship, research and development

DISCUSSION: This public/private alliance represents a new generation of collaboration that has the potential of creating synergy between local and global networks thereby achieving a level of unprecedented integration between healthcare simulation centers. The intent of The CAE/Michener Center for the Advancement of Simulation in Healthcare is to bring the best practices and relevant innovations from the aviation industry to the field of medicine in order to advance utilization, standardization and regulation of healthcare simulation. Through these accomplishments, we hope to create an inextricable link between simulation-based education and excellence in professional practice.

Category:

Education

COI Statement:

no conflict

HIGH FIDELITY SIMULATION AS A MECHANISM FOR IMPROVED MULTI-DISCIPLINARY OPERATING ROOM CRISIS MANAGEMENT COMMUNICATION - A WORK IN PROGRESS

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INTRODUCTION: Graduate trainees from various medical disciplines often work side-by-side to provide routine patient care. In the operating room, the surgical team proceeds in established and expected manners to facilitate expected outcomes. However, pre and intra-operative patient crises, while infrequent do occur, increasing the risk of sentinel events and poor patient outcome. The ability to manage these crises is often determined by the operative team members' non-technical skills, or human factors. High Fidelity Simulation (HFS) is becoming standard practice as a method for health sciences education. HFS has long been used as a pedagogical mechanism in industries such as aviation, power plant operations, and the military, where high-risk, low-incidence events are known to occur. Standard approaches to anesthesia crisis resource management were pioneered by David Gaba (2001), a Stanford Anesthesiologist and leader in the field of health sciences simulation. Over the last five years simulation in various forms has been used as a method to provide situated experiential learning opportunities across the health sciences. Surgery and anesthesia residents often acquire intra-operative crisis management skills in an unstructured manner, as crises unfold during an actual operation. A crisis management curriculum stressing teamwork using a simulated operating room may allow residents to develop teamwork and communication skills in a situated environment, without risk to patients. Providing simulated experiences to students may provide them with rich and meaningful experiential learning opportunities to guide them as they transition from the role of student to the role of clinician. The current proposal seeks to develop and test a HFS-based educational intervention including two intra-operative crises that require surgical and anesthesiology residents to communicate effectively to produce a positive patient outcome. Can a simulation-based curriculum increase productive communication during patient crises in the operating room? Can a simulation-based educational intervention increase efficiency of patient care during intra-operative crisis? We predict that a simulation-based curriculum will increase effective communication, and promote efficient patient care during a simulated pre or intra-operative crisis.

METHODS: Subjects will be arranged into matched pairs of PGY3 surgical and CA2 anesthesiology residents. Participants' performance will be videotaped during HFS-based scenarios of pre- or intra-operative crisis before and after and a HFS-based educational intervention. A panel of experts will evaluate participants' performances.

RESULTS: Two tools will be developed to score participants performances. One will measure each participant's behavioral ability to manage the crisis using a global scale adopted from previous research (Bauman 2007). The second will be developed to measure the team's efficiency at achieving appropriate critical intervention(s) by measuring the time to appropriate action(s). A matched-pair Wilcoxin analysis will be used to determine pre- and posttest performance differences in pairs of participants.

DISCUSSION: Developing effective communications skills, particularly during times of crisis is essential for safe clinical practice. The Accreditation Council for Graduate Medical Education specifically addresses communication as a core content area for resident education. We believe that providing situated learning opportunities using HFS may be an effective method for developing comprehensive communication skills needed to mitigate patient crisis.

REFERENCES: Furnished upon request

Category:

Education

COI Statement:

no conflict

GAMES & SIMULATION FOR HEALTHCARE: BUILDING A LIBRARY FOR CLINICIANS AND EDUCATORS

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INTRODUCTION: Technology plays an increasingly integrated role in education, particularly in the area of the clinical sciences including, but not limited to disciplines such as Nursing and Medicine. Much of this technology is found in the realm of simulation and video games. Many have been slow to accept the roles that simulation-based curriculums have come to occupy in the health sciences. The notion of accepting video games and virtual environments as an acceptable means for clinical education may be even more challenging. The goal of this project is to develop an inventory, which aims to categorize existing simulation and videogame educational opportunities for learning. To this end, the project not only seeks to identify existing types of simulators and games, and their application, but to also vet an expectable nomenclature for future evaluation and cataloguing of games and simulations found within the health sciences.

METHODS: The first phase of this project is to identify categories of games and simulations in terms of consumer use and compile a list. In a broad context, the following working categories have been established: · Games and Simulations for Clinicians & Healthcare providers · Games and Simulations for Patient and Consumers The second phase of this project aims to develop a vetting process for games and simulation, so that criteria can be established to effectively name and place games and simulations into an appropriate descriptive framework. The third phase of this project seeks to develop a searchable database to meet the needs of educators and clinicians within the health sciences. The structure of the database will be determined by both the criteria developed in phase two as well as any administrative metadata deemed necessary. Basecamp project management software is being used as a working space for the project – this allows us to share links and files, discuss issues and track progress toward goals with less need for face-to-face meetings or extended email discussions.

RESULTS: The results of this project are important because the use of technology, specifically game and simulation technology, is rapidly expanding in the area of health sciences education. Unfortunately, much of the available content in the area of games and simulation is not easily accessible using common and standard academic search engines. Furthermore, much of the content in the domain has not been vetted, nor has any common language or framework been established for content evaluation.

DISCUSSION: We believe this project will develop into a vibrant resource offering health sciences clinicians and educators a usable place to turn when attempting to incorporate simulation and games into either their practice or curricula. We also hope to avoid the pitfalls of excessive balkanization of the games and simulations listed by taking a faceted approach to classifying them, allowing people to browse and search in a variety of ways.

REFERENCES: References furnished upon request.

Category:

Technology Development and Evaluation

COI Statement:

no conflict

WORK IN PROGRESS POSTER ABSTRACT # 9

TRAINING PRE-HOSPITAL PROVIDERS TO MANAGE THE PREGNANT PATIENT PRIOR TO ARRIVAL AT THE HOSPITAL

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INTRODUCTION: Traditionally pre-hospital providers are trained primarily to handle a normal delivery and receive only an overview description of potential complications. Training is accomplished by didactic and observation methodology. Hands on training is limited and the task trainers previously available do not meet the programmatic needs. This educational module ensures that the providers have the foundation needed to optimize a positive outcome in an obstetrical emergency.

METHODS: Prior to the development of birthing trainers, pre-hospital trainee programs were limited on availability of resources to ensure competency resulting in uneven skills proficiency. Research and descriptive articles have been published relative to the less than optimum outcome for infants born prior to arrival at a hospital or birthing facility equipped to provide comprehensive care.¹ We have a program of instruction focused on pre-hospital providers, both experienced and in-training, that encourages the development of appropriate skills directed at the improvement of outcomes for infants delivered prior to the arrival at the hospital as well as better management of the mother. Henderson and Mallon² noted in their publication "Trauma in Pregnancy" that when management to optimize both fetal and maternal outcome" is complicated by trauma, two patients are now at risk. Focused training to manage these events can dramatically increase the probability of a viable infant and positive maternal outcome. Using the PROMPT birthing trainer and the pelvic exam trainer (anatomical training) (Limbs & Things™), pre-hospital providers are being trained in appropriate management of the labor and delivery process as well as the newborn and mother following delivery. Students complete a skills survey and demographic survey prior to beginning training. Students receive simulation birthing training prior to their rotation in the Labor and Delivery Suite and then will complete their skills survey. Surveyed student skills will be presented and discussed.

RESULTS: We expect to develop an educational process to improve recognition of critical obstetrical situations. This will include the ability to accurately communicate patient conditions to the hospital receiving staff ensuring appropriate management while enroute.

DISCUSSION: This is a work in progress. Data collection results and initial analysis will be included on the poster presentation.

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Category:
Education

COI Statement:
no conflict

BUILDING YOUR TEAM - THE IMPORTANCE OF THE CLINICAL AND TECHNICAL PARTNERSHIP!

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INTRODUCTION: Running a simulation scenario is not a one person show. The value of skilled technical support in partnership with clinicians is critical to a successful educational outcome. It is also not cost effective to have multiple clinically trained individuals changing out parts, setting up rooms nor can the technically trained computer person determine what is appropriate for educational outcomes based on clinical skills.

METHODS: Placing educators in different simulation roles allows them to experience the challenges of working outside their area of expertise. This gives them the opportunity to observe how their own role impacts the educational team. A retrospective survey was conducted looking at the impact of simulation events utilizing different teaching leadership styles. This included clinical only, clinical - technical team and technical team only. Prospectively, teaching teams were deliberately constructed with the 3 different approaches to evaluate student perceptions of effective teaching.

RESULTS: A successful simulation session includes appropriate roles for all personnel, so that the learning objectives can be successfully met. The need for good communication and preparation amongst the education team became apparent with a learning environment created using a well-developed clinical/technical partnership. (Data collection in process).

DISCUSSION: Most simulation centers do not have multiple clinical instructors with available time to learn simulation software, technically support the mannequins, develop the educational goals and objectives, meet with administration. the list goes on. Using an instructor / technical team maximizes the resources in such a manner that sessions can be organized with minimum time wasted. It is well worth the effort to create a learning environment that incorporates the planned objectives and stimulates critical thinking that might otherwise be interrupted or compromised by a poorly constructed education team.

REFERENCES: The Logic Of Failure: Recognizing And Avoiding Error In Complex Situations by Dietrich Dörner (Paperback - Aug 3, 1997). Clinical Simulation: Operations, Engineering and Management, Richard R. Kyle, Jr. and W. Bosseau Murray, eds. Academic Press, 2008.

Category:
Education

COI Statement:
no conflict

Appendix 3

Roundtable Descriptions

Monday, January 12

RT 1.1 10:30 am-12:00 pm - Nutcracker Ballroom 2/3

Use of Simulation in Pediatric Training Programs: The Role of the ACGME and Competency Evaluation

Moderators: Melinda Fiedor-Hamilton, MD, MSc, Pittsburgh, PA, Walter Eppich, MD, MEd, Chicago, IL and Nicole Shilkofski, MD, MEd, Baltimore, MD

There will be 3 facilitators to lead an interactive discussion on the use of simulation in pediatric residency and nursing training programs, specifically highlighting the role of the ACGME and competency evaluation proposals.

- What is the role of simulation in pediatric training programs?
- What are the current methods of evaluating competency?
- What are the current and future uses of simulation to evaluate competencies of pediatric residents?
- What is the use of simulation in pediatric training programs to enhance patient safety?

RT 1.2 10:30 am-12:00 pm -Nutcracker Ballroom 1

International Fellowships in Simulation-Based Education

Moderators: William F. Dunn, MD, Rochester, MN, and Doris Ostergaard, MD, PhD, Copenhagen, Denmark

This roundtable session will explore the potential benefits and pitfalls of having educational fellowship posts for clinicians who wish to spend a dedicated period of time (e.g., 6 to 12 months) gaining a more comprehensive understanding of how simulation-based approaches to education can best enhance learning and reduce risk in healthcare. In particular there will be discussion about whether an opportunity exists (and is worth exploring further) about established simulation centers offering to host fellowship posts for clinicians from abroad who have an interest in healthcare education and wish to see how simulation fits in with clinical education in different healthcare systems.

- What are the potential objectives for an International Educational Fellowship position (perspective of the fellow as well as the host center)? What are the types of evidence that support demonstration of achievement of these objectives?
- What should be the background and experience of the individual who would be considered for a visiting fellowship post?
- How would potential host centers and fellows apply to support or undertake such posts? What are the practical details for consideration by both sides when pursuing?
- What are the potential role(s) of SSH, SESAM, and other national / international simulation bodies?
- What is the potential value of support from external funding sources or industry?

RT 1.3 1:00-2:30 pm - Nutcracker Ballroom 2/3

State-of-the-Art: A Roundtable Discussion of Serious Games & Virtual Environments in Healthcare

Moderators: Eric Bauman, RN, PhD, Middleton, WI and Jeffrey M. Taekman, MD, Durham, NC

Invited Discussants: Bob Waddington, COO, Silver Spring, MD; Sem Lempotang, PhD, Gainesville, FL Jerry Heneghan, MBA, Durham, NC

This roundtable discussion will provide demonstrations of current serious games and virtual environments found in the health sciences. These demonstrations will be used to seed and foster discussion about the state of current games and virtual environments developed for healthcare audiences. This session will also provide hypotheses and direction about the future direction of serious games and virtual environments developed for healthcare education.

- What is the role of serious games and virtual environments developed for clinical and patient education?
- What is involved with student competency and evaluation as it pertains to gaming and virtual environments?
- What areas of health sciences and patient education can take advantage of serious games and virtual environments?
- What is the relationship between an institution's educational and patient safety infrastructure and how can that be leveraged?
- What are the limitations of serious games and virtual environments as methods of instruction in the health sciences and patient education?

RT 1.4 3:30-5:00 pm - Fantasia Salons K/L/M

Simulation-Based Research From Different Angles Towards a Universal Research Agenda

Moderator: Peter Dieckmann, MD, Copenhagen, Denmark

Invited Discussants: Willem van Meurs, PhD, Porto, Portugal, Steve K. Howard, MD, Palo Alto, CA, Marc Scerbo PhD, Norfolk, VA, and Hans Rystedt, PhD, Gothenburg Sweden

This roundtable is organized by the SSH Research Committee with partners and looks at research and simulation from different perspectives (clinical, social sciences, and engineering) to define and prioritize research needs to advance the field of simulation in medicine. The inputs from the different areas concerning research "on simulation" (e.g. training effect studies, technological developments) and "with simulation" (e.g. human-factors oriented studies, usability investigations) are provided by experts in the different domains. After the inputs, RT faculty and participants will discuss the implications for a research agenda, involving the audience.

What are the different perspectives on simulation and research?

Clinical: Anesthesia

Social Sciences: Psychology, Pedagogy, Sociology
Engineering: Modeling and Hardware building
What are the implications for an universal research agenda?
As examples for the different perspectives, what are the typical research questions?

Tuesday, January 13

RT 2.1 10:30 am-12:00 pm -Nutcracker Ballroom 1

Hospital Information Systems: Simulation of Time-Sensitive Clinical Processes

Moderator: Lucila Ohno-Machado, MD, PhD, Boston, MA

There was consensus on the need to include information technology systems in simulation at a roundtable discussion in 2008 IMSH. Hospital information systems (HISs) have been widely adopted in healthcare environment. In most practice environments, HISs significantly impact the way in which care is delivered. HISs include various types of systems such as computer-based order-entry system (CPOE), electronic medical/ healthcare records (EMR/EHR) and picture archiving and communication systems (PACS). Health information exchange within and between hospital information systems is just emerging, and few hospitals have developed and tested escalation procedures for time-sensitive processes involving HISs. There is currently no concerted effort in educating key decision makers on the impact of HIS in the clinical workflow and on the potential effectiveness of simulation in determining the design, implementation, and evaluation of these HISs. Clinicians also remain unaware of the potential for implementation of decision support tools in HIS, and miss opportunities to participate in their design and evaluation. In the 2008 roundtable, the group discussed how to promote HIS simulation given limited resources, and in which areas to focus the resources. In 2009, we will discuss how we can use simulation to engage clinicians and other decision makers in the process of optimizing workflow in clinical settings and how to measure the effects of HISs in these settings.

- Is there a general framework for simulation of escalation procedures that the healthcare industry can borrow from other industries?
- How to engage healthcare workers in the design of simulations involving HISs?
- Who should guide the development and implementation of HISs (and HIS simulation)?
- How realistic is the sharing of simulation cases across different systems?

RT 2.2 10:30 am -12:00 pm -Nutcracker Ballroom 2/3

Use or Lose It: Understanding the Process of Procedural Skill Decay

Moderator: Frederick K. Korley, MD, Baltimore, MD

Procedural skill decay refers to the loss of some or all of the skills necessary to perform a procedure after a period of nonuse. Since certain medical procedures are only occasionally performed, most physicians are familiar with this concept. It is however poorly understood. The advent of the 80-hour work week regulation has resulted in trainee physicians in certain disciplines are doing fewer procedures^{1,2}. Academic physicians sometimes go for long periods without performing procedures in which they are credentialed because of the need to allow trainee physicians to perform these procedures. Simulation exercises are an excellent way to augment the educational experience of residents. They can also be used to re-train physicians who face the danger of losing skills they once possessed. Majority of what is known about procedural skill decay comes from the work of experimental psychologists.³⁻⁵ The Army Research Institute for Behavioral and Social Sciences (ARI) developed a model for predicting how rapidly skills required for performing tasks decay over a period of one week to one year of non-practice.⁶ Few studies have investigated medical procedural skill decay.⁷⁻¹¹ Understanding this process will help medical educators design training interventions that enhance skill retention. It will also allow better estimation of how frequently re-training needs to occur. There are many unanswered questions about medical procedural skill decay. The aim of this roundtable is to bring together a group of individuals who are interested in studying medical knowledge and procedural skill decay, and to initiate discussions that will form the framework for further investigation and collaboration.

- What are the standards for determining procedural competency in a simulated environment?
- What are the methodological challenges to designing a skill decay study such as: accounting for interval learning, regarding testing sessions as training sessions, and blinding subjects to test dates?
- How do you overcome the statistical challenges in analyzing repeated measures?
- How do you apply the accepted theories of forgetting¹² to the study of procedural skill decay?
- What are the factors that enhance skill retention?
- What amount of skill decay is significant, i.e., warrants re-training?
- How do you form a multi-center network for the study of procedural skill decay?

RT 2.3 1:00-2:30 pm - Fantasia Salons C/D

Roundtable Discussion: Nursing

Moderator: Sharon Decker, RN, PhD, CCRN, ACNS-BC, ANEF, Lubbock, TX

Participants in this round table discussion will explore the "state of the science" of simulation in nursing education and continued competency assessment. A brainstorming session will investigate the future possibilities and identify potential barriers in achieving the preferred future.

- What is the current state of the science of simulation in nursing?
- What are the future possibilities through the integration of simulation in education and competency assessment?
- What are the current "state of affairs" and strategic planning for the future?

RT 2.4 1:00-2:30 pm - Fantasia Salons E/F

The Power and Pitfalls of "In Situ" Simulation: Bring Out Your Dead!

Moderators: Vinay Nadkarni MD, MS, FCCM, FAHA, Philadelphia, PA, and Mary Beth Mancini, RN, CCRN, PhD, Arlington, TX

Are you tired of moderators telling anecdotes and giving glorified lectures during roundtable discussions? Are you interested in a highly interactive and vibrant discussion of the power and pitfalls of embedded "in situ" simulation for the hospital ward and ICU? Come join a rowdy, rousing discussion of the "hard knocks" encountered during in situ simulation. No holds barred....bring out your dead! Contribute your time and talents to become part of the solution by sharing your stories and studies with the collaborative roundtable participants.

- What are the controversies (pro's and con's) related to embedded "in situ" simulation training programs?
- What are the pitfalls and potential solutions related to embedded "in situ" simulation-enhanced education?
- What studies have addressed key impediments to establishment of successful "in situ" simulation?

RT 2.5 3:30-5:00 pm - Fantasia Salons E/F

Simulation-based Assessment of Teamwork and Team Performance in Healthcare: Is There a Need for an International Consensus?

Moderators: Nick Sevdalis, MD, London, UK

Invited Discussants: Tanja Manser, PhD, Zurich, Switzerland; Rhona Flin, Prof, Aberdeen, UK; and Eduardo Salas, PhD, Orlando, FL.

This roundtable will open with a brief introduction to available tools by the faculty. This will be followed by an open discussion with the audience regarding tool penetration in healthcare (for assessment and training purposes) and tool usability. The discussion will then address the need for an international consensus on tool development and usage.

- What existing tools are available? What are their similarities/differences and overlap?
- Is there potential for simulation as a test-bed for the development and refinement of such tools?
- Is there a need for an international consensus on the development, validation, and usage of such tools?

Wednesday, January 14

RT 3.1 3:30-5:00 pm - Fantasia Salons D/E/F

Preventing and Managing Human Errors: Crisis Resource Management (CRM) to Enhance Patient Safety. When to Start? How and What to Train? How to Measure?

Moderators: Marcus Rall, MD, Tübingen, Germany, and Rhona Flin, Prof, Aberdeen, UK

Human factors are still the major cause of harm in healthcare. This is not yet reflected by training programs, especially in all acute care fields. Even simulator courses do often not focus enough on these critical, common behavioral skills. Also CRM appears to be dealt with superficially in many debriefings, hindering a deeper learning of ways to apply it in the imperfect real world of patient care. This roundtable interactively wants to collect the knowledge and recommendations in the field and stimulate the participants with short impulse inputs to work on the CRM training of the future and its embedding into relevant simulation trainings.

- What are the importance and key elements of human factors and especially CRM for health care professionals to enhance patient safety?
- What is the right time to start with CRM-oriented training programs in the professional careers of health care professionals (physicians, nurses, paramedics)? What are the pro's and con's?
- What are the best ways for CRM training and which elements should be focused?
- What are some ideas and experiences on measuring human factors and CRM related learning outcomes, both for scientific and practical purposes?

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Appendix 4

Expert Panel Descriptions

Monday, January 12

EP1.1

Learning Theories and Simulation: New Advances from Science and Education

Moderator: Yue Ming Huang, EdD, MHS, Los Angeles, CA

What do we know about how simulation really works, especially in higher order decision-making? What factors impede the quality and efficiency of learning in simulation? Neuroscience research has given fresh insight on how people learn. With these findings, a new line of learning theory has emerged. Moving beyond the concepts of experiential learning theory as presented by theorists such as David Kolb, brain-based learning theory ties itself to the biological processes of learning. This panel discussion will present the latest concepts in brain-based learning, provide ideas for integrating these concepts in healthcare simulation, and engage participants in a discussion on the applicability of brain-based learning in the simulation lab.

Objectives:

- Discuss the general tenets of brain-based learning
- Compare brain-based learning theory with experiential learning theory
- Apply brain-based learning concepts in the simulation laboratory

*David L. Rodgers, EdD, NREMT-P, Charleston, WV
TBA*

EP1.2

Administration Considerations: Budget Management, Invoicing, Timetabling

Moderator: Ian Saunders, CerA.T., Wake Forest NC

Running a clinical simulation center is like running a mini private hospital. This session will call upon the expertise from a diverse panel who will discuss topics such as budget management, invoicing, timetabling. This session may be an eye opener for simulation facilitators or simply very informative for center administrators and operations managers.

Objectives:

- To get a general understanding of the Administrative considerations of a simulation center
- To understand the cost implications of running a simulation centre with its staffing and equipment implications
- Establish a model for income generation and usage prioritization

Neal Jones, Liverpool/Merseyside, England

Barry Hunt, Hertfordshire, UK

Daniel Battista, MBA, Pittsburgh, PA

EP1.3

Training at the Point-of-Care: Innovative Application of “In-Situ” Simulation Opportunities for Improving Simulator Systems

Moderator: Peter Weinstock, MD, Boston MA

An international panel of experts will discuss “in-situ” simulation at the point of care--rationale and benefits with a focus on realism at the level of the environment and the

team. Topics will include (1) safe delivery of in-situ simulation to high risk environments, (2) optimizing system’s mining and organizational learning via in-situ simulation and (3) decentralizing simulation throughout an institution via in situ simulation and (4) measurement and standardization.

Objectives:

- To discuss theory, rationale, risks and benefits of delivering in-situ simulation to the point of care.
- To discuss logistics, transport and broad in- and out-of-hospital applications of in-situ simulation
- To discuss opportunities and methods of organizational learning, system mining and decentralization via in-situ simulation
- To discuss measurements of efficacy and outcomes of in-situ simulation

Marcus Rall, MD, Tübingen, Germany

Geoff Lighthall, MD, PhD, Mountain View, CA

Stanley Davis, MD, Edina, MN

EP1.4

Simulation Advocacy: Successful Lobbying at High Levels

Moderator: Elizabeth H. Sinz, MD, Hershey, PA

This panel brings together three individuals who have successfully promoted simulation at the national, state, and organizational levels. Strategies that worked, and those that didn’t, will be explored and explained so that attendees can go forth and advocate for simulation-based education in their own realms of interest.

Objectives:

- Describe national lobbying efforts on behalf of healthcare simulation by the Advanced Initiatives in Medical Simulation (AIMS) organization.
- Review the challenges and opportunities of developing a statewide simulation consortium and apply lessons learned from the Oregon experience.
- Explain how to build support for healthcare simulation within a healthcare specialty society such as the American College of Chest Physicians.

AIMS/National Advocacy: Robert J. Waters, MPA, JD, Washington, DC

Statewide Initiatives: Bonnie Driggers, MS, MPA, RN, Portland, OR

Organizational Advances: Viva Jo Siddall, MS, MS, RRT, RCP, CCMEP, Chicago, IL

EP1.5

Low Stakes Assessments with High Outcomes

Moderator: Yue Ming Huang, EdD, MHS, Los Angeles, CA

What is competence and how do you define or measure it? Before engaging in performance and outcomes measurements, educators need to understand the different models for competence, the process involved in the development of evaluation tools and the implications of low stakes assessment for simulation and healthcare education. This panel will delineate a systematic approach

after providing an overview of how one's understanding of competence could influence the choice of instructional design and the validity of the assessment instruments.

Objectives:

- Describe the main models of competence and areas of evaluations
- Discuss the place for low stakes, formative assessment and why it has been underutilized
- Identify two instruments developed to measure the quality and educational practices using simulations
- Describe the steps to take when evaluating learner outcomes

Brian D. Hodges, MD, PhD, FRCPC, Toronto, ON, Canada

Pamela R. Jeffries, DNS, MSN, Indianapolis, IN

EP1.6

Similarities? Differences? New Hurdles? Old Hurdles? Simulations From Outside Of Healthcare: Lessons Learned

Moderator: Paul E. Phrampus, MD, Pittsburgh PA

This session is a panel discussion featuring experts in simulation from domains outside of healthcare. The panelists will discuss lessons learned along the way, described successes and failures in their respective industries. Hear how technology has enhanced their ability to create more realistic simulations as well as being able to standardize and refine their measurements and assessment of individuals and team members in the respective professions. We will hear from industry representatives from law enforcement as well as airline simulations. Question-and-answer sessions between the audience and the panelists will round the session out to be a "must attend" session.

Objectives:

- List three similarities between healthcare simulation programs and simulation in other industries.
- List three differences between healthcare simulation programs in simulation and other industries.
- List three challenges to the sustainment of simulation programs that are common to both the healthcare industry as well as other professions.

Steve Schnelle

Guillaume Hervé, St. Laurent, Quebec

EP1.7

The Architectural Design Process for Simulation Centers

Moderator: William F. Dunn, MD, Rochester, MN

We started with a Library, and with a nip here and a tuck there, made it into a Simulation Center!

Highlighting the Architectural Design process, we'll trace the evolution of the Simulation Center of the University of California, San Francisco. Hear from team members on how to navigate this process and how it can benefit your project.

Objectives:

- Learn how to engage the design team to get what you want.
- Recruiting the "home" team to work with the "design" team.
- Learn why Technology Planning and the Design Process go hand in hand.

C. Richard Hall, AIA, ACHA,

Malvin H. Whang, M.Arch., San Francisco, CA

David Drake, BA, Yorba Linda, CA

Patti Mitchell, AIA, LEED, AP, San Francisco, CA

EP1.8

Technology: Addressing Your IT Needs

Moderator: Thomas Dongilli, MD, Hertfordshire, UK

Could you run your simulation center if all your computers failed? Simulation often relies heavily on technology, from an audio/visual aspect through to running your video debriefing or simply controlling your patient simulators. This session will explore the impact of IT technology in different leading centers.

Objectives:

- Get an overview of the technology currently available.
- Understanding the benefits of technology in a learning environment such as a simulation centre.
- Consideration of staff training and technical expertise as a core component of a simulation centre.

John Lutz, BS, Pittsburgh, PA

Guillaume Alinier, MPhys, PGCert, Hatfield, UK

Todd Dadaleares, Portland, ME

EP1.9

SSH's Plan for Accreditation of Simulation Centers: The Why, Who, When and How of It

Moderator: Mary Beth Mancini, RN, PhD, NE-BC, FAAN, Arlington, TX

During this expert panel presentation, members of the SSH Accreditation Sub-Committee will review the history of accreditation activities in the Society, present the process to date for developing a plan for accrediting Simulation Centers, and outline proposed accreditation standards and processes. An active dialogue will be sought with the audience to obtain input as the Society continues to address this critical issue.

Elizabeth H. Sinz, MD, Hershey, PA

John M. O'Donnell, MSN, CRNA, Pittsburgh, PA

Mary D. Patterson, MD, MEd, Cincinnati, OH

Kristina L. Stillsnoking, RN, MEd, Ft. Lewis, WA

EP1.10

Hot Topics in Nursing Simulation

Moderator: Robin Wootten, MBA, RN, Columbia, MO

This panel discussion will provide information on how Standardized Patient encounters can be formatted to fit any curricular need. We will also discuss incorporating full-body simulators into Standardized Patient encounters to create hybrid simulations, allowing for more realistic scenario development. In addition, economical audio/video solutions will be discussed, outlining the educational benefit of having this capability as part of your simulation program.

Objectives:

- Describe ways to incorporate Standardized Patient encounters into any curriculum.
- Define multi-disciplinary, hybrid simulation and ways to incorporate it into the simulation center environment.
- Explore techniques and the equipment needed to add Audio/Visual recording and debriefing to encounters without breaking the bank.

Stephanie Schuler, BS, Lewisburg, WV

Dena Higbee, MS, Columbia, MO

Chris Sanders, Columbia, MO

EP1.11

Simulation Center Operations: Day-to-Day

Considerations

Moderator: Guillaume Alinier, MPhys, PGCert, Hatfield, UK

From room preparation to programming, this session will look at a number of operational considerations for a center. This session will be of interest to all delegates of IMSH, whether you work on the faculty, technical or administrative side of a clinical simulation center.

Objectives:

- Gain a better understanding of what happens behind the scene of a simulation centre.
- Understand the importance of preparation of scenarios.
- Consideration about ongoing training for new faculty.

Melissa Wanker, BS, Pittsburgh, PA

Patrik Nystrom, Arcada, Finland

Jordan Halasz, ASEE, Boston, MA

EP1.12

Making Inter-Professional Simulation Work Across Institutions, Cities and States/Countries: An Interactive Panel Discussion of Collaboration Strategies that Actually Worked!

Moderator: Michael Seropian, MD, FRCPC, Portland, OR

This panel discussion brings together leaders who have been on the front lines of making collaborations in simulation work across a variety of settings including institutions, cities and states. Panelists will share the implementation and infrastructure challenges they faced and the innovative solutions and value-propositions they used. Participants will be encouraged to bring their ideas and issues to share with the panel and audience.

Objectives:

- Be able to differentiate between the different levels of collaboration: Networking, coordination, cooperation, coalitions, and true collaboration

-Identify common implementation and infrastructure strategies used in inter-professional simulation collaborations at the institutional, city and state/national level.

-Identify common issues encountered in inter-professional simulation collaborations at the institutional, city, and state/national level

-Identify the key and common value proposition for collaborations at the institutional, city, and state/national level.

Elizabeth Hunt, MD, MPH, PhD, Baltimore, MD

KT Waxman, RN, DN(c), CNL, Berkley, CA

Katie Walker, RN, RM, Queensland, Australia

EP1.13

Standardized Patients, Simulation and Assessing the Core Competencies

Moderator: Tamara L. Owens, MEd, Houston, TX

This panel discussion will provide participants with an overview of how standardized patients and simulation can be used to assess the core competencies.

Objectives:

- Identify effective simulation-based assessment practices
- Develop ways to use standardized patients and other simulations to assess the core competencies.
- Maximize the validity of competency assessments based on standardized patients and other simulations.

Rachel Yudkowsky, MD, MHPE, Chicago, IL

Mary Cantrell, MA, Little Rock, AR

Tony Errichetti, PhD, New York, NY

Mindi Anderson, PhD, RN, CPNP-PC, Arlington, TX

Tuesday, January 13

EP2.1

Research Patient Safety Oral Presentations

Moderators: Judith Hwang, Sacramento, CA; Michael DeVita, Pittsburgh, PA

Please join us for our inaugural session dedicated to oral presentations of Patient Safety Research Abstracts! For the first time, you will have the opportunity to hear extended presentations from the award winners in the Patient Safety section regarding their research and have them answer your questions regarding their work. Come and discover some of the current projects being done across various disciplines in the area of Patient Safety.

Objectives:

- To identify existing gaps in patient care and safety and in healthcare personnel training that could be narrowed by simulation research.
- To describe innovative methods utilized in simulation research.
- To describe results of recent research resulting in advances in patient safety, educational techniques and simulation technology.

EP2.2

Integrating Cause and Effect Diagrams into Nursing Curriculum

Moderator: Kristina L. Stillsmoking, RN, MEd, Ft. Lewis, WA

So many programs are adding simulation to the curriculum. With this expansion, many questions related to space requirements, funding, and faculty buy-in continue to emerge.

This panel will discuss the creation of new centers from a small, medium, and large space perspective. There will be time for questions and answers after each presentation and at the end of the panel.

Objectives:

- Discuss steps needed to provide faculty development in the area of adopting the use of clinical simulations.
- Identify key considerations when implementing simulations into a healthcare curriculum.
- Explore how innovative strategies can be integrated into a simulated experience in an effort to promote critical thinking skills.

- Discuss strategies for combining debriefing and guided reflection during simulation.
- Explore the use of smart board technology into simulated learning experiences.

Sharon Decker, RN, PhD, CS, CCRN, ANEF, Lubbock, TX
Pamela R. Jeffries, DNS, RN, FAAN, ANEF, Indianapolis, IN

EP2.3

Simulation and the Law: You Be the Judge

Moderators: Vinay M. Nadkarni, MD, MS, and Ellen S. Deutsch, MD, Philadelphia, PA

Scenarios highlighting medico-legal controversies will be presented and then audience judgment will be solicited, followed by informed legal opinion presented by expert panelists. Discussion will highlight legal and litigation considerations related to simulation, including discoverability, use at trial, recording and record retention, deviations from standards of care and employment/antitrust matters.

Objectives:

- Participants will be able to define issues of confidentiality and discoverability related to simulation-enhanced education
- Participants will be aware of controversies related to establishing a simulation-based criteria for competency
- Participants will learn medico-legal applications of simulation

Linda Pilla, Esquire, MBA, Chief Risk Officer, Nemours Foundation

Phyllis Rosenbaum, Esquire, Associate General Counsel, Nemours Foundation

EP2.4

Department of Defense Simulation Success Stories

Presented with the support of TATRC

Moderator: Heidi King, OASD-TMA

This panel will discuss DoD's programs and progress in the use of Medical Simulation Technology. Panel members will provide success stories related to the use of simulation for combat medic training, surgical training and care, and tools available for medical team training and patient safety. Attendees will leave with a better understanding of the positive impact that Medical Simulation and Training has had on saving the lives of Soldiers wounded in Operations Enduring Freedom (OEF) and Operations Iraqi Freedom (OIF).

Objectives:

- Discuss DoD's programs and progress in the use of Medical Simulation Technology.
- Give attendees a better understanding of the positive impact that Medical Simulation and Training has had on saving the lives of Soldiers wounded in OEF and OIF.
- Discuss Team STEPPS success at Travis and success at Anderson Simulation Center.

MAJ Shad Deering, MCHJ-OG, Anderson Simulation Center

COL Debra Lawrence, Team STEPPS

LTC Chris Macedonia, Medical Science Advisor to the Chairman Joint Chief's of Staff

EP2.5

The Use of Simulation in High-Stakes Assessment

Moderator: S. Barry Issenberg, MD, Miami, FL

A panel of experts representing several medical licensure and certification organizations from Canada and the United States will provide their perspective and experience in

using simulation for high-stakes assessment. Various modalities will be featured including computer-based case simulation, standardized patients and mannequin-based simulators. Panelists will discuss the historical, current and future role of simulation-based methods in the licensure process of healthcare professionals and provide a framework for validating new simulation modalities for assessment.

Objectives:

- Outline the various simulation methods that have been used in high stakes assessment and describe how they have added to the scope of cognitive and clinical skills competencies that can be measured.

- Discuss the psychometric challenges of developing and implementing large scale simulation-based examinations.

- Discuss the role of licensure and certification organizations in ensuring high standards of medical practice and how this has impacted their use of simulation.

Rose Hatala, MD, Vancouver, BC

Gerard Dillon, MD

John Boulet, PhD, Philadelphia, PA

EP2.6

Preparing for Disaster: Using Simulation for Pre-Hospital & Hospital Disaster Training

Moderator: William Bond, MD, Bath, PA

Training to prepare for terrorism, mass casualty events, and internal hospital disasters have become part of the practice of medicine in today's world. As experts in simulation, we are often asked to help develop such programs for the hospital, local communities, or even large cities with our disaster and pre-hospital care colleagues. Though much has been developed in the area of disaster training, there is little information available detailing the logistics of incorporating simulation into such training. The purpose of the panel will be to give a brief review of the use of simulation in disaster training, demonstrate useful methods of incorporating simulation into such training, discuss and be able to anticipate obstacles in the execution of such program, and identify resources available to develop a simulation based disaster-training program.

Objectives:

- Learn to incorporate simulation into disaster training at the pre-hospital and hospital level.

- Learn to anticipate potential obstacles in executing a disaster-training program at your institution.

- Identify resources to develop a simulation based disaster-training program.

- Learn how to bring state of the art training to outlying areas using Mobile Simulation.

Steven A. Godwin, MD, Jacksonville, FL

Leo Kobayaskik, MD, Providence, RI

Yasuharu Okuda, MD, New York, NY

EP2.7

Research Education Oral Presentations

Moderators: Doris Ostergaard, Copenhagen, Denmark;

William McGaghie, Chicago, IL

Please join us for our inaugural session dedicated to oral presentations of /Education Research Abstracts! For the first time, you will have the opportunity to hear extended presentations from the award winners in the /Education section regarding their research and have them answer your questions regarding their work. Come and discover some of the current projects being done across various disciplines in the area of Education.

Objectives:

- To identify existing gaps in patient care and safety and in healthcare personnel training that could be narrowed by simulation research.
- To describe innovative methods utilized in simulation research.
- To describe results of recent research resulting in advances in patient safety, educational techniques and simulation technology.

EP2.8

The Insurance Industry in Simulation: Stakeholder or Casual Observer?

Moderator: Richard H. Blum, MD, MSE, FAAP, Boston, MA

This panel will explore the role of the liability carrier in specifying, promoting, and supporting simulation activities in healthcare with speakers from the insurance industry and simulation centers. Panel members will offer experience and views in forming strategic partnerships to affect loss reduction and provide support to providers and simulation centers through malpractice premium reduction and/or support of simulation programs.

Objectives:

- Blum RH, Raemer DB, Carroll JS, Sunder N, Feinstein DM, Cooper JB. Crisis resource management training for anesthesia faculty: a new approach to continuing faculty education. *Medical Education* 2004;38:45-55.

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Luke Sato, MD, Cambridge, MA

James M. Vaccarino, Boston, MA

H. Dieter Zimmer, MHA, FAAMA, Salem, OR

EP2.9

Department of Defense – New Developments & Future Directions

Presented with the support of TATRC

Moderator: Amy Nyswaner, RN, BSN, Ft. Detrick, MD

This panel will discuss the outcomes of a recently held working group meeting that assessed medical simulation and training progress over the past eight years and the challenges for the future. Attendees will also acquire a better understanding of how Virtual Reality can be used to train first responders and associated teams responding to infectious disease and other events.

Objectives:

- Discuss the findings of the April 2008 IPT (working group meeting) that will provide insight into the future of Medical Simulation and Training.

- Discuss the potential of using Virtual Reality in training environments, most notably infectious disease and pandemic events.

- Discuss new DoD team training tools.

CDR Debra Lowe, Ft. Detrick, MD

Rebecca Duve, MLT (ASCP), CLS (NCA), Ft. Detrick, MD

Gene Wiehagen, BSEE, Ft. Detrick, MD

EP2.10

And Why Would We Fund You? How Funding Agencies Think and How to Convince Them

Moderator: Peter Dieckmann, Ph, Dipl-Psych, Copenhagen, Denmark

This 90-minute panel discussion will begin with a brief presentation by four grantees that have received funding from various agencies/foundations to pursue simulation research/projects including AHRQ, NPSF, APSF and AHA. This introduction will be followed by a discussion of representatives of the granting agencies concerning what types of research and applications are attractive to particular granting agencies. Considerable time will be devoted to questions and discussion with the audience.

Objectives:

- Understand the diversity of projects funded by these agencies.

- Understand the types of research funded via agencies

- Understand what types of projects are attractive and fundable to these types of agencies.

Jeffrey B. Cooper, PhD, (NPSF and APSF) Boston, MA

Kerm Henriksen, PhD, (AHRQ)

David L. Rodgers, EdD, NREMT-P (AHA), Charleston, WV

George Blike MD (NPSF grantee), Lebanon, NH

Adam Cheng, MD (AHA grantee), Vancouver, BC, Canada

David J. Murray, MD, (APSF grantee), St Louis, MO

William Riley, PhD, (AHRQ Simulation grantee),

Minneapolis, MN

EP2.11

Bringing Simulation to Millions by Linking Professional Organization and Private Industry

Moderator: Vinay M. Nadkarni, MD, MS, Philadelphia, PA

Development of an effective immersive learning program requires a curriculum designed to meet the needs of the adult learner, the tools that facilitate such learning, and an infrastructure that makes the program readily available. The Neonatal Resuscitation Program (NRP) of the American Academy of Pediatrics (AAP) sets the national standard for cognitive, technical and behavioral skills in resuscitation of the newborn and since 1987 has been disseminated to over 2.2 million trainees through the efforts of more than 26,000 instructors. The NRP is evolving into a career-long simulation-based learning program; in order to do so its curriculum must adapt and new learning tools, such as patient simulators, must be developed.

Objectives:

- Discuss how the AAP is setting a new direction for one of its most successful programs

- Discuss re-training its instructors in a new learning methodology

- Discuss interacting with industry to make it all happen

W. Clive Patrickson, PhD, Wappingers Falls, NY

Wendy M. Simon, MA, Elk Grove Village, IL

EP2.12

A Funny Thing Occurred After the Simulation Experience: Critical Thinking Occurred!

Moderator: Kristina L. Stillsnoking, RN, MEd, Ft. Lewis, WA

This session will provide an overview of instructional models supporting critical thinking; information on the components on feedback, reflection, and debriefing will be given. Debriefing, the chief component fostering critical thinking will receive special emphasis.

Objectives:

- Identify the connection between debriefing and critical thinking
- Compare and contrast feedback, reflection, and debriefing
- Define the process of debriefing and importance of multiple debriefing techniques.

Leland J. Rockstraw, PhD, RN, Philadelphia PA

Teri Boese, MSN, RN, Iowa City, IA

Maria Overstreet, PhD(c), RN, CCNS, Nashville, TN

EP2.13

Determining the Efficacy of Serious Games

Moderator: Jeffrey M. Taekman, MD, Durham, NC

Healthcare serious games can be costly. Administrators and educators are interested in the "return on investment" of this new educational methodology. This panel will cover the importance of and current efforts to measure the efficacy of virtual environment/serious games.

Objectives:

- To share how serious games are developed to address specific learning goals and objectives
- To discuss the approaches to evaluating the impact of serious games and virtual environments on learning and performance
- To compare the various methods used in the development and evaluation of serious games as used for education and training

Dale C. Alverson, MD, Albuquerque, NM

Jan Cannon-Bowers, PhD, Orlando, FL

Howard Schwid, MD, Issaquah, WA

EP2.14

Research Safety Oral Presentation

Moderators: Walter Eppich, Chicago, IL; Willem van Meurs

Please join us for our inaugural session dedicated to oral presentations of Technology Research Abstracts! For the first time, you will have the opportunity to hear extended presentations from the award winners in the Technology section regarding their research and have them answer your questions regarding their work. Come and discover some of the current projects being done across various disciplines in the area of Technology.

Objectives:

- To identify existing gaps in patient care and safety and in healthcare personnel training that could be narrowed by simulation research.
- To describe innovative methods utilized in simulation research.
- To describe results of recent research resulting in advances in patient safety, educational techniques and simulation technology.

Wednesday, January 16

EP3.1

Human Factors Research in Pediatrics

Moderator: Kristen L. Nelson, MD, Baltimore, MD

There will be three panelists and one moderator to discuss the contributions of human factors in the field of pediatrics and pediatric simulation. Human factors research has made significant contributions to safety in other high-risk disciplines in large part due to the use of simulation technology and training. Medical educators, health care providers, medical system device designers/engineers should take advantage of the vast amount of human factors knowledge that exists in several areas, such as cognition, stress, workload, human error and training.

Objectives:

- To discuss what human factors engineering is and how it impacts health care providers daily.
- To discuss how human factors research can be used to test the effectiveness of current medical devices, systems or teams to ensure patient safety.
- To discuss how human factors research can be used to test innovative or new medical devices, systems or teams prior to widespread implementation in order to ensure patient safety and prevent certain medical errors.

John Gosbee, MD, Ann Arbor, MI

Stephen Small, MD, Chicago, IL

Karen Frush, MD, Durham, NC

EP3.2

If You Build It – They Will Come: Designing, Funding and Impacting Programs Using Simulation

Moderator: Robin Wootten, RN, MBA, Columbia, MO

So many programs are adding simulation to the curriculum. With this expansion, many questions related to space requirements, funding, and faculty buy-in continue to emerge. This panel will discuss the creation of new centers from a small, medium, and large space perspective. There will be time for questions and answers after each presentation and at the end of the panel.

Objectives:

- Describe space and facility requirements for the design or remodel of a simulation center.
- Identify users of simulation and innovative ways to incorporate simulation into any curriculum.
- Explain the impact of simulation on the existing faculty.
- Initiate thinking about funding of simulation in a new center

Gail Rea, PhD, RN, St. Louis, MO

Kathy Carver, MN, RN, Overland Park, KS

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EP1.8 Technology: Addressing Your IT Needs

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EP1.11 Simulation Center Operations: Day-to-Day Considerations

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EP1.12 Making Inter-Professional Simulation Work Across Institutions, Cities and States/Countries: An Interactive Panel Discussion of Collaboration Strategies that Actually Worked!

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EP1.13 Standardized Patients, Simulation and Assessing the Core Competencies

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EP2.1 Research Patient Safety Oral Presentation

First Place: Comparison of Sudden Cardiac Arrest Resuscitation Performance Data Obtained from In-Hospital Incident Chart Review and In Situ High-Fidelity Medical Simulation

Leo Kobayashi¹, Frank Overly¹, Mary Cooper³, Gregory Jay^{1,2,1} Department of Emergency Medicine, Alpert Medical School of Brown University, Providence, RI, US, ²Department of Biomedical Engineering, Alpert Medical School of Brown University, Providence, RI, US, ³Quality Management, Lifespan, Providence, RI, US

- Journal of Simulation in Healthcare, 2009 (in Press)

Second Place: Team Process and Diagnostic Success I Medical Emergency Driven Teams: A Simulator Study

Tschan Franziska¹, Semmer Norbert K.², Gurtner Andrea³, Bizarri Lara¹, Spsychiger Martin⁴, Marsch Stephan U.⁴

¹University of Neuchâtel, Switzerland, Neuchâtel, Switzerland, ²University of Berne, Berne, Switzerland, ³Applied University of Berne, Berne, Switzerland, ⁴University Hospital of Basel, Basel, Switzerland

- Journal of Simulation in Healthcare, 2009 (in Press)

Third Place: Simulation –Based Training Promotes Rapid Response Team Utilization and Improves In-Patient Mortality Rates; Hania Wehbe-Jane^{1,2}, Jose Pliego^{1,2}, Frank Villamaria^{1,2}, M. Hasan Rajab^{1,2}, Simon Sheather³

¹Scott & White Healthcare, Temple, TX, United States, ²Texas A&M Health Science Center, College of Medicine, Temple, TX, United States, ³Texas A&M University, College Station, TX, United States

- Journal of Simulation in Healthcare, 2009 (in Press)

EP2.2 Integrating Cause and Effect Diagrams into Nursing Curriculum

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EP2.3 Simulation and the Law: You Be the Judge

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- Rehrig, ST, Powers, K., Jones, DB: Integrating Simulation in Surgery as a Teaching Tool and Credentialing Standard. *Journal of Gastrointestinal Surgery*, 12(2):222-33, 2008

EP2.4 Department of Defense Simulation Success Stories

EP2.5 The Use of Simulation in High-Stakes Assessment

- Boulet J, Smee SM, Dilon GF, Gimpel JR. The use of standardized patient assessments for certification and licensure decisions. *Simulation in Healthcare* 2008. In press.

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EP2.7 Research Education Oral Presentations

First Place: Leadership Instructions Enhance Leadership and Medical Performance I Cardiopulmonary Resuscitation

Sabina Hunziker¹, Cyrill Buehlmann¹, Franziska Tschan², Norbert Semmer³, Sereina Streiff¹, Stephan Marsch¹
¹University of Basel, Basel, Switzerland, ²University of Neuchatel, Neuchatel, Switzerland, ³Univeristy of Bern, Bern, Switzerland

- *Journal of Simulation in Healthcare*, 2009, (in Press)

Second Place: Expert Modeling Improves the Acquisition of Behavioral Skills I Simulation-Based Training

Douglas Leonard¹, Laura Corbin¹, Kristine Boyle², Katherine Leaning¹, Judy LeFlore³, JoDee Anderson¹
¹Oregon Health & Science University, Portland, OR, United States, ²Stanford, Stanford, United States, ³Univeristy of Texas Arlington, Arlington, TX, United States

- *Journal of Simulation in Healthcare*, 2009, (in Press)

Third Place: Broadening the Assessment of Physical Examination Skills in a Standardized Patient-Based Assessment

Michael Ainsworth, Karen Szaute, University of Texas Medical Branch, Galveston, TX, United States

- *Journal of Simulation in Healthcare*, 2009, (in Press)

EP2.8 The Insurance Industry in Simulation: Stakeholder or Casual Observer?

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- Gardner R, Walzer TB, Raemer DB, Simon R. Obstetric Simulation as a Risk Control Strategy: Course Design and Evaluation. *Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare*. 3(2):119-127, Summer 2008.
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EP2.9 Department of Defense – New Developments & Future Directions

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- Telemedicine and e-Health News Alert: "Doctor-Rating Standards Underway From Insurers, Physicians", pp 1, April 8, 2008
- Accreditation Council for Graduate Medical Education (ACGME) Bulletin: Simulation and Rehearsal, pp 2-3, December, 2005

EP2.10 And Why Would We Fund You? How Funding Agencies Think and How to Convince Them

- <http://www.ahrq.gov/research/childr06.pdf> (Description of AHRQ funded simulation projects)
- <http://www.npsf.org/r/> (description of NPSF funded safety projects-a few with simulation application)
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EP2.11 Bringing Simulation to Millions by Linking Professional Organization and Private Industry

- Halamek LP. The genesis, adaptation, and evolution of the Neonatal Resuscitation Program. *NeoReviews* 2008;9(4):e142-e149.
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- Halamek LP. Teaching versus learning and the role of simulation-based training in pediatrics. *J Pediatr* 2007;151(4):329-330.

EP2.12 A Funny Thing Occurred After the Simulation Experience: Critical Thinking Occurred!

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EP2.13 Determining the Efficacy of Serious Games

- Alverson DC, Caudell TP, Goldsmith TE: Creating Virtual Reality Medical Simulations: A Knowledge-based Design and Assessment Approach, Chapter 31 in *Manual of Simulation in Healthcare*, in Riley R (ed) *Manual of Simulation in Healthcare*, pp. 449-64. Oxford University Press, Oxford, 2008
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EP2.14 Research Technology Oral Presentations

First Place: A Stiffness Discrimination Experiment Including Analysis of Palpation Forces and Velocities; Ernur Karadogan, Robert Williams, John Howell, Robert Conatser, Ohio University, Athens, OH, United States

- *Journal of Simulation I Healthcare*, 2009 (in Press)

Second Place: A Comparison of Visual and Haptic Feedback on a Simulated Bone Pinning Task; Mark W Scerbo¹, T Robert Turner¹, Dwight A Meglan², Robert Waddington² ¹Old Dominion University, Norfolk, VA, United States, ²SimQuest, LLC, Silver Spring, MD, United States

- Tsai, M-D., Hsieh, M-S., & Tsai, C-H. (2007). Bone drilling haptic interaction for orthopedic surgical simulator. *Computers in Biology and Medicine*, 37, 1709-1718.,
- *Journal of Simulation in Healthcare*, 2009 (in Press)

Third Place: Monitoring With Head-Mounted Display (HMDS) in Anesthesia; Simular and Clinical Evaluations;

David Liu¹, Penelope Sanderson¹, Simon Jenkins², Marcus Watson¹, John Russell² ¹The University of Queensland, Brisbane, Australia, ²Royal Adelaide Hospital, Adelaide, Australia;

- Sanderson PM, Watson MO, Russell WJ, et al. Advanced auditory displays and head mounted displays. *Anesth Analg* 2008;106(6):1787-1797.
- Crawford J, Neal A. A Review of the Perceptual and Cognitive Issues Associated With the Use of Head-Up Displays in Commercial Aviation. *Int J Aviat Psychol* 2006;16(1):1-19.
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- *Journal of Simulation in Healthcare*, 2009, (in Press)

EP3.1 Human Factors Research in Pediatrics

- Small SD. *Simulation Applications for Human Factors and Systems Evaluation*. Anesthesiology Clinics. June 2007. 25(2):237-259.
- Gosbee JW. *Conclusion: You need human factors engineering expertise to see design hazards that are hiding in “plain sight!”*. Jt Comm J Qual Saf. December 2004. 30(12): 696-700.
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EP3.2 If You Build It – They Will Come: Designing, Funding and Impacting Programs Using Simulation

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Appendix 5

Post Graduate Course Descriptions

Sunday 1/11, 8:00 am-12:00 pm

PG 1A: Grant and Proposal Writing (Novice) - *Fantasia Salon A*

Faculty: Jeffrey B. Cooper, PhD, Center for Medical Simulation

Objectives

- Describe the components of a grant and research proposal
- Discuss approaches to writing a grant and research proposal
- Identify sources of funding and application processes

PG 1B: Research, Where Do I Start? (Novice) -

Fantasia Salons C/D

Faculty: William McGaghie, PhD, Northwestern Feinberg School of Medicine; Jeffrey Groom, PhD, CRNA, Florida International University

Objectives

- Describe the importance of defining clear primary and secondary outcome measures
- Outline the process for designing a research project that optimizes both the quality of the science and efficiency of the process
- Demonstrate understanding of the components of a “testable” research question

PG1.C: An Overview of Instructor Training (Novice) - *Fantasia Salons E/F*

Faculty: Marcus Rall, MD, University Hospital Tuebingen; Walter Eppich, MD, MEd, Northwestern University Feinberg School of Medicine

Objectives

- Understand the background and uses for healthcare simulation in terms of enhancing patient safety and improving education
- Understand the elements and phases of a debriefing
- Demonstrate appropriate questions for generating interesting discussions during debriefing

PG 1D: Setting Up a Simulation Center (Novice) - *Nutcracker Ballroom 3*

Faculty: Brian C. Brost, MD, Mayo Clinic College of Medicine; Bonnie Driggers, MS, MPS, RN, Oregon Health & Science University; Katie Walker, RN, RM, Queensland Health Skills Development Centre

Objectives

- Describe the necessary elements in developing a mission plan and budget for your center
- Identify ideal uses of space when designing your center
- Discuss the development of an equipment plan for your center as related to your mission plan and budget

PG 1E: Scenario Design for Nursing Curricula (Advanced) - *Fantasia Salon B*

Faculty: Nigel Wynne, RN, University of Central England

Objectives

- Discuss incorporating nursing process into scenario design
- Describe unique aspects of scenarios designed to incorporate nursing assessment
- Identify appropriate triggers for use in nursing scenario designs

PG 1F: Which Research Should I Do? Prioritizing In Your Center (Advanced)- *Nutcracker Ballroom 1*

Faculty: Peter Dieckmann, PhD, Dipl-Psych, Danish Institute for Medical Simulation; Steven K. Howard, MD, Stanford University School of Medicine; Tanja Manser, PhD, ETH Zurich; Stephen D. Small, MD, Center for Simulation and Safety in Healthcare; Sandra Feaster, RN MS MBA, Stanford University; Roger Kneebone, MD, Imperial College London; Kerm Henriksen, PhD, Patient Safety Agency for Healthcare Research and Quality

Objectives

- Describe the importance of identifying a research portfolio for your center
- Identify the stake holders and influencing factors for designing a research portfolio
- Being able to balance the different factors when designing the research portfolio
- Participants have a draft for a research portfolio for their institution to take home

PG 1G: Instructor Training 2 - Structured and Supported De-Briefing (Advanced) - *Nutcracker Ballroom 2*

Faculty: Paul Phrampus, MD, FACEP, WISER, University of Pittsburgh; Amitai Ziv, MD, MHA, Israel Center for Medical Simulation; John M. O'Donnell, MSN, CRNA, WISER, University of Pittsburgh; Liat Pessach-Gelblum, MSR, Israel Center for Medical Simulation

Objectives

- Define structured and supported debriefing in the context of simulation education for healthcare providers
- Describe the use of the GAS (Gather, Analyze, Summarize) rubric in structured and supported debriefing
- Demonstrate use of the structured and supported method in debriefing live and/or recorded simulation events

Sunday 1/11, 1:00 - 5:00 pm

PG 2H: Embedding Simulation into Nursing Curricula (Novice) - *Fantasia Salons C/D*

Faculty: Pamela R. Jeffries, DNS, RN, FAAN, ANEF, Indiana University School of Nursing; Michelle Kelly, BSc, MN, University of Technology, Sydney

Objectives

- Describes the range of simulation techniques used in nursing curricula
- Practical demonstration of how simulation techniques can be used in nursing curricula
- Assessment using simulation techniques

PG 2I: Introduction to Team Training and Assessment (web) (Novice) – *Fantasia Salon A*

Faculty: Ruth Fanning MD, Stanford University;
Nicolette C. Mininni, RN, MEd, CCRN, University of Pittsburgh Medical Center

Objectives

- Describes different methods of team training
- Uses practical scenarios to demonstrate methods
- Assessment of team performance

PG 2J: Scenario Design (Novice) – *Nutcracker Ballroom 1*

Faculty: Ernest E. Wang, MD, North Shore University Health System; Steven A. McLaughlin, MD, University of New Mexico

Objectives

- Describes the elements necessary in developing effective simulation scenarios
- Uses objectives and templates in scenario design
- Identifies the steps for scenario development, testing and validation

PG 2K: Instructor Training 2 - Difficult De-briefing (Advanced) – *Nutcracker Ballroom 2*

Faculty: Daniel Raemer, PhD, Center for Medical Simulation; Mary D. Patterson, MD, MEd, University of Cincinnati

Objectives

- Understand different methods of debriefing
- Demonstrate appropriate questions for generating interesting discussions during debriefing
- Understand how to blend instructor objectives with student needs
- Demonstrate coping with difficult debriefings

PG 2L: Standardized Patients & Multi-Modality Simulation (Advanced) – *Fantasia Salon B*

Faculty: Mary Cantrell, MA, Arkansas Children's Hospital; Wendy L. Gammon, MA, MEd, University of Massachusetts Medical School; Grace Gephardt, MEd, Arkansas Children's Hospital; Tonya M. Thompson, MD, MA, FAAP, FACEP, Arkansas Children's Hospital

Objectives:

- Discuss and practice multi-modality simulations
- Describe the importance of training SPs on how to give constructive feedback to students
- Outline the process of developing an educational curriculum and specific exercises using SPs

PG 2M: Scenario Design (Advanced) – *Nutcracker Ballroom 3*

Faculty: William Bond, MD, Lehigh Valley Health Network;
Geoff Miller REMPT-P, Gordon Center for Research in Medical Education

Objectives

- Demonstrates the development of a range of different scenarios which meet course objectives
- Demonstrates the use of hybrid scenario design
- Adds an assessment component

Appendix 6

Special Interest Groups (SIGs)

SIGs are formal groups within the SSH that provide opportunities for members to address areas of concern related to simulation in their area of interest. SIGs:

- increase opportunities for participation and leadership in SSH
- promote and advance the purposes and activities of SSH
- provide educational opportunities at SSH annual meeting

Current SIGs:

- Anesthesiology
- Emergency Medicine
- Hospital Based Centers
- ObstetricsGynecology
- Pediatrics
- Technicians
- Serious Games-Virtual Environments
- Surgery

Affinity Groups

Affinity Groups are unstructured groupings of individuals with similar clinical or subject interests or expertise or from specific geographic areas. Current Affinity Groups are:

- Canada
- Critical Care/Internal Medicine
- Nursing
- Psychology
- Standardized Patients

The Membership Committee has responsibility for SIGs and Affinity Groups.

Appendix 7

Keynote Faculty

Monday, January 12



Michael S. Gordon Center for Research in Medical Education Lecture

Richard K. Reznick, MD, MEd, FRCSC, FACS

R.S. McLaughlin Professor and Chair

Department of Surgery

University of Toronto

Training New Surgeons: Fine Tuning Our Methods or Radical Restructuring?

This lecture is made possible by an endowment contribution to SSH from the University of Miami in honor of Dr. Gordon.

Tuesday, January 13

Research Keynote

Elizabeth G. Armstrong, PhD

Clinical Professor in Pediatrics

Harvard Medical School

Director of Harvard Macy Institute

Simulation as a Disruptive Innovation



Wednesday, January 14



Keynote

Rhea Seddon, MD

Speaker and Consultant

Former Astronaut and Asst Chief Medical Officer at

Vanderbilt Medical Group

Mock Rockets - Real Learning: Lessons Learned from NASA Simulation Systems

Appendix 8

Faculty List

A

Guillaume Alinier, MPhys, PGCert
Simulation Centre Manager & National
Teaching Fellow
University of Hertfordshire
Hatfield, UK

Mindy Anderson, PhD, RN, CPNP-PC
Simulation Coordinator, University of
Texas School of Nursing
Arlington, TX

B

Daniel Battista, MBA
Administrator –WISER
University of Pittsburgh
Pittsburgh, PA

Eric Bauman, PhD, RN, Paramedic
Faculty Association
University of Wisconsin
Middleton, WI

Bryn Baxendale, MD
Consultant Anaesthetist
Nottingham University Hospitals
Nottingham, UK

George Blike

Richard H. Blum, MD, MSE, FAAP
Senior Associate in Anesthesia
Children's Hospital in Boston
Boston, MA

Teri Boese, MSN, RN
Co-Director
Nursing Clinical Education Center
University of Iowa
Iowa City, IA

William Bond, MD
Medical Director, Div of Education
Lehigh Valley Health Network
Bath, PA

John Boulet, MD
Associate Vice President, Research &
Data Resources
Fdn. for the Advancement of Int'l
Medical Education and Research

C

Janis Cannon-Bowers, PhD
Senior Research Scientist
Institute for Simulation & Training
University of Central Florida
Orlando, FL

Mary Cantrell, MA
Director
University of Arkansas for Medical
Sciences & Arkansas Children's
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Faculty Disclosures

The ACCME's updated standards require that SSH manage any conflict and eliminate the potential for bias in planning of and during the session. The planning committee members and faculty were contacted and the conflicts have been managed to our satisfaction. If, however, you perceive a bias or conflict, please advise us on the evaluation form and also notify an IMSH staff person at the registration desk. If a faculty name is not listed, this indicates the faculty had nothing to disclose.

The faculty below have reported the following disclosure in accordance with ACCME guidelines.

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*Research: Laerdal; Consultant: Laerdal, National League of Nursing/Laerdal
Consultant: Vernon Memorial Hospital, Stockholder: Healthcare, Pfizer*

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Appendix 9

President's Message



Dear Attendees,

I welcome you to this exciting Florida venue for IMSH '09. It has been a great year for us, as a society devoted to the implementation of simulation-based processes toward the goal of facilitating optimized safety in healthcare. Although much work lies ahead, much has been accomplished by our society this year. A bill endorsed by SSH is under US Congressional review; due to the breadth of our international membership and visions, this bill is being reviewed for potential use by other governments as a template for positive change. SSH is actively partnering with like-minded societies globally. We have an increasing membership of

over 2,100 and record attendance at this year's IMSH event. There is an unprecedented number and quality of scientific submissions, further validating the importance of the simulation-enabled transformation of healthcare education and delivery, with global impact. We have a great journal. The accreditation process for simulation centers by SSH is now being rolled out, after much thoughtful, creative, and excellent work. We hope that this process will reduce the need for simulation centers to be excessively burdened by the processes and expense of multiple separate accreditation processes, specialty by specialty, while we also strive to partner with specialty organizations to facilitate their goals via simulation methods.

SSH prides itself in being an "activist society." The committees comprise the real work being accomplished, enabled by the Board of Directors. Therefore, ours is a "bottom-up" organization. Our membership is diverse, representing all specialties and disciplines, with common tools, themes, and missions; in this lies our greatest strength. In September, our Committee and Board leadership met in Chicago, in an active strategic planning session; there we outlined aggressive plans for progress consistent with our mission. Please consider giving of your best talents to the cause. We welcome your input-- get engaged.

It has been an incredible honor for me to serve as President of SSH this year. I am pleased to report that the Society is strong. The Society is visionary. The Society remains activist. Most importantly, the Society is becoming increasingly effective at carrying out the eleven purposes listed at the beginning of our bylaws—noble purposes for the common good, with the needs and safety of our patients at the core.

Sincerely,

Bill

Bill Dunn, 2008 SSH President



Society for Simulation in Healthcare (SSH) was established in January 2004 to represent the rapidly growing community of educators and researchers who utilize a variety of simulation techniques for education, assessment, and research in health care. The membership is united by its desire to improve performance and reduce errors in patient care using all types of simulation including task trainers, human patient simulators, virtual reality, and standardized patients.

We are a broad-based, multi-disciplinary, multi-specialty, international society with ties to all medical specialties, nursing, allied health paramedical personnel, and industry. A major venue for advancing simulation in healthcare is the annual International Meeting for Simulation in Healthcare, which has been held successfully since 1995.

Recognizing that simulation represents a paradigm shift in health care education, SSH promotes improvements in simulation technology, educational methods, practitioner assessment, and patient safety that promote better patient care and can improve patient outcome.

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Appendix 10

2009 IMSH Planning Committee

We are pleased to offer thirty conference workshops covering a wide range of topics. They underwent a rigorous peer-review process and were selected based on the overall quality, experience and expertise of the faculty, designs that encouraged active participation, and the perceived utility of the topics. The workshops are grouped into common themes. We encourage your active participation and welcome your comments and feedback.

Mark Adler, MD, Haim Berkenstadt, MD, and Jeanne-Marie Guise, MD MPH
Workshop Section Chairs

This year we had a record number of abstracts submitted. Research abstracts were chosen based on originality, answerable hypotheses, and overall quality. The Work-in-Progress abstracts represent exciting projects and programs in various stages of development. Both reflect the research activities in the field of healthcare simulation today. Come attend the oral presentations of the research abstract winners and be sure to view the abstracts. Who knows what ideas and questions you'll leave with to do your own research!

Walter Eppich, MD, MEd, Doris Ostergard, MD, PhD, and Judith Hwang, MD, MBA
Abstract Section Chairs

Based on needs assessment, we continue to grow our Post Graduate Course offerings to nearly 15 this year. We've listened to participants and added level of instruction to the courses: Beginner and Advanced. The faculty are excellent and we hope you will take advantage of one or two of the offerings.

Pam Jeffries, DNS, RN, FAAN, ANEF, Paul Phrampus, MD, FACEP, Katie Walker, RN, RM
Post Graduate Course Chairs

Nearly 30 expert panel sessions will provide you with "must-participate" offerings. These moderated sessions include panelists on key topics.

Elizabeth Hunt, MD, MPH, PhD, Tomohiro Sawa, MD, PhD
Expert Panel Section Chairs

Our expanded program of facilitated roundtable discussions offers exciting topics. The sessions will address issues important to the simulation community. The results of these facilitated discussions will be feedback to the Board of Directors as an input for strategic planning. Bring a cup of coffee and come join us for a lively discussion.

Tanja Manser PhD, Jose Rodriguez-Paz, MD, and Kim Yeager, BSN, MEd
Roundtables Section Chairs

For the second year, video sessions will be available that offer simulation center programs an opportunity to share short videos of actual simulation sessions or video tours of their centers. Videos may be a virtual tour of a simulation center, a recorded simulation, a debriefing session or some aspect of a center's program that is suitable for public viewing. Make sure to participate.

Thomas Belda, BA, RRT
Video Section Chair

Other Planning Committee Members:

2008 IMSH Co-Chair: S. Barry Issenberg, MD

Education Committee Chair: Yue Ming Huang, EdD, MHS

Other (not involved in program planning):

Exhibitor Section: Richard Kyle, MS, Bruce Nappi, MS, John O'Donnell, CRNA, MSN

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Appendix 11

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