Toward National Standards for Simulation Based Medical Education: Current Initiatives and Future Directions

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Challenges in Medical Education

• Less physician teaching time
• Less resident time
• Fewer patient hours available for teaching
• Larger number of procedures
• Teaching high risk procedures without endangering patients
• “To Err is Human” Institute of Medicine report

Fallacies of Medical Education

• Exposure = Mastery
• Written performance translates to technical performance
• Completion of proscribed course of training = mastery of material
• Proficiency is based on numbers

End of year intern with ACLS Card soon to be only Dr. on Boat
Traditional Surgical Education

- Apprenticeship
- See one, do one, teach one
- Learning on patients

Learn by Doing

You too can be a Surgeon.....

....or at least look like one!
Divine Intervention?

Simulators in Medical Education

• Need a safe transition from book to patient
• Solution: Medical Simulators

The Way Forward

• Collaboration
• Integration
• Validation and Verification
• Innovation
  — Increased Realism
• “Bleeding Edge”
• Create a National Agenda ($$$)
• Acceptance by national organizations
• Involve End Users Early
• Incorporate into Curriculum

Notable simulation events

Society for Simulation in Healthcare formed 2004
• ACS accreditation of Educational centers 2005
• AHRQ invested $2.4 in simulation research for pt safety 2006.

Advanced Initiatives In Medical Simulation (AIMS) – 4th year on capital Hill legislation co-authored

Notable simulation events

• May 14-15 2007 ACS Summit on the Use of Simulation in Continuing Education in Surgery
• Oct 26, 2007 Simulation Summit sponsored by SSH
Surgical Skills Curriculum for Residents

• A standardized approach to teaching skills to surgical residents
• Comprised of 20 modules to be administered by program directors
• Incorporate simulation where appropriate

Surgical Skills Curriculum Modules

• Module 1: Asepsis & Instrument ID
• Module 2: Knot Tying
• Module 3: Suturing
• Module 4: Tissue Handling, Dissection, Wound Closure & Management
• Module 5: Advanced Tissue Handling

• Module 6: Catheterization, Urethral & Suprapubic
• Module 7: Airway management
• Module 8: Chest Tube & Thoracentesis
• Module 9: Central Line Insertion, Arterial Lines
• Module 10: Surgical Biopsy

• Module 11: Vascular Anastomosis
• Module 12: Laparotomy Opening & Closure
• Module 13: Principles of Bone Fixation & Casting
• Module 14: Intro to Inguinal Anatomy
• Module 15: Upper Endoscopy

• Mostly use low cost readily available (low fidelity) models
• On-line (Moodle) with pdf & video resources
• Also includes a discussion forum for each module
Surgical Skills Curriculum Modules

- Module 16: Colonoscopy
- Module 17: Basic Laparoscopic Skills
- Module 18: Advanced Laparoscopic Skills
- Module 19: Hand Sewn Intestinal Anastomosis
- Module 20: Stapled GI anastomosis

Surgical Skills Curriculum Modules (Cookbook)

- Introduction
- Objectives
- Assumptions
- Suggested Readings
- Description of Laboratory Module
- Description of Techniques & procedures
- Common errors
- Expert performance
- Recommendations for practice
- Supplies & recommendations for setup
- Suggested time length

Colonoscopy Model

Staples GI Anastomosis

Laparoscopic Skills
Surgical Skills Curriculum

Strengths
• Standardized National Curriculum
• Supported by professional organization
• User friendly
• Low cost
• Heavy input from educators

Weaknesses
• Low Fidelity
• Models not rigorously standardized (many home made)
• Videos are of variable quality (?engaging)
• Most of the skills have not been validated (Laparoscopy an exception)
• Does not include the core competencies

Opportunities
• Develop better models
• Improved videos
• Ongoing validation of models and curriculum
• Set proficiency levels
• Use for advancement

Phase 2: Procedural Simulation
Phase 3: Team Training

Thank You!