


Uniformed Services University of the Health Sciences

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!





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

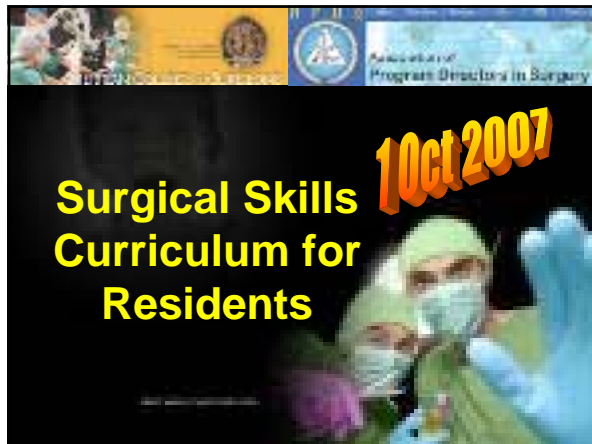
Society for Simulation in Healthcare formed 2004

- 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 for Residents

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




Surgical Skills Curriculum Modules

- 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



Surgical Skills Curriculum Modules

- 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



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)

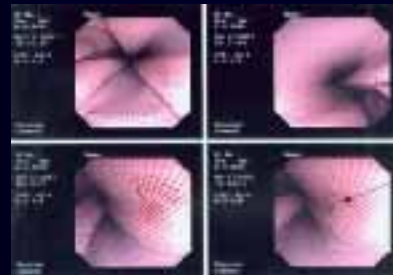
- Introduction
- Objectives
- Assumptions
- Suggested Readings
- Description of Laboratory Module
- Description of Techniques & procedures
- Common errors
- Expert performance
- Recommendations for practice
- Supplies & recommendations for setup
- Suggested time length



Colonoscopy Model



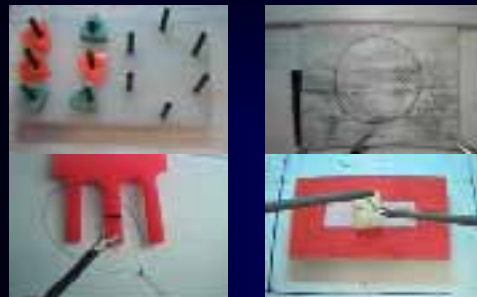
Colonoscopy Model



Staples GI Anastomosis



Laparoscopic Skills



Surgical Skills Curriculum Strengths

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



Surgical Skills Curriculum 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



Surgical Skills Curriculum Opportunities

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



Surgical Skills Curriculum

Phase 2: Procedural Simulation

Phase 3: Team training

