

# Simulation as Part of a Family Planning Curriculum



Deb Bartz, MD, MPH ([dbartz@partners.org](mailto:dbartz@partners.org))

Brigham and Women's Hospital

Planned Parenthood League of MA, Boston, MA

# Challenges in Surgical Education

- Explosion of knowledge
- Incorporation of new technology
- Financial pressures
  - Increase in volume of patients
  - Increase in ambulatory surgery
  - Decrease in hospital stay
  - Decrease operating room time

# Current Model of Surgical Education

- Experiential-based learning
- Graded responsibility
- Didactic teaching
- Supervision and mentorship
- No standardized competency

# **The Addition of Simulation Training in Medical Education**

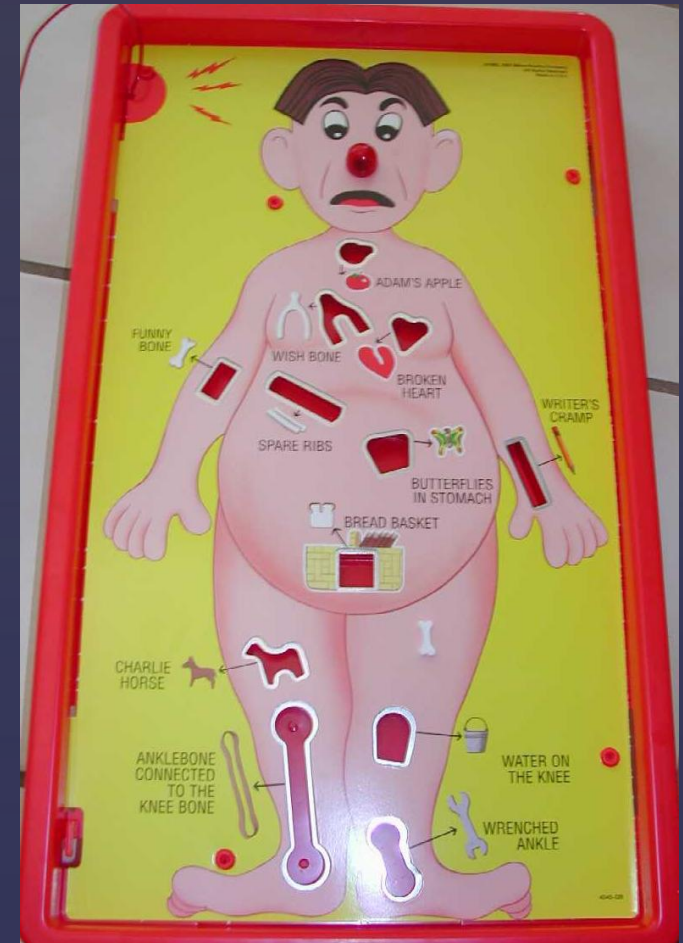
# What is medical simulation?

The use of a device or scenario to emulate a real patient care situation or environment for the purposes of training, evaluation, or research



# Goal of Surgical Simulation

- To provide a safe, low-stress venue for learning and evaluation with the intent to improve operative performance and patient management through directed practice and assessment

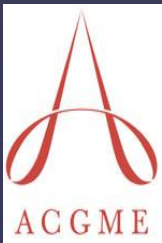


# Institutions as a Driver of Simulation

<b>GYNECOLOGIC SKILLS:</b> <b>66% (16/24)</b>	<b>OBSTETRICAL SKILLS:</b> <b>41% (10/24)</b>
Family Planning: Vacuum aspiration and FP emergencies PGY 1-4	Shoulder Dystocia PGY 1-4
Hysteroscopy Skills PGY 3	Forceps and vacuum PGY 1-4
IUD Insertion PGY 1-4	Cesarean section surgical teaching PGY 3
Knot tying PGY 1	Normal vaginal delivery PGY 1
Laparoscopy advanced skills PGY 3-4	Team training PGY 1-4
Laparoscopy simulation: FLS skills PGY 1-4	Circumcision PGY 1-2
Pelvic and perineal anatomy PGY 1-4	Vaginal breech delivery PGY 1-4
Suturing PGY 1-2	Operative Vaginal Delivery PGY 1-4
Wound vacuum training/ wound healing principles PGY 1-4	Post partum hemorrhage PGY 3
Female sterilization methods PGY 1-4	Neonatal resuscitation PGY 1-4
	Episiotomy repair PGY 1

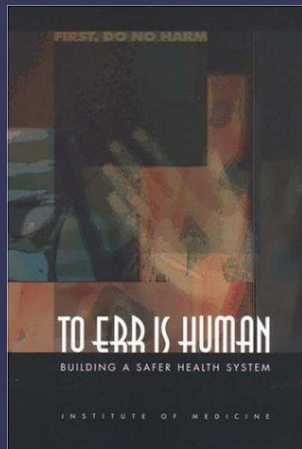
# Societal Drivers of Simulation

- National guidelines in education
  - ACGME requirement



“The institution and the program must jointly ensure the availability of adequate resources for resident education....Resources should include simulation and skills laboratories.”

- Patient Safety



**44,000 - 98,000 Deaths due to avoidable medical errors in US hospitals each year!!**

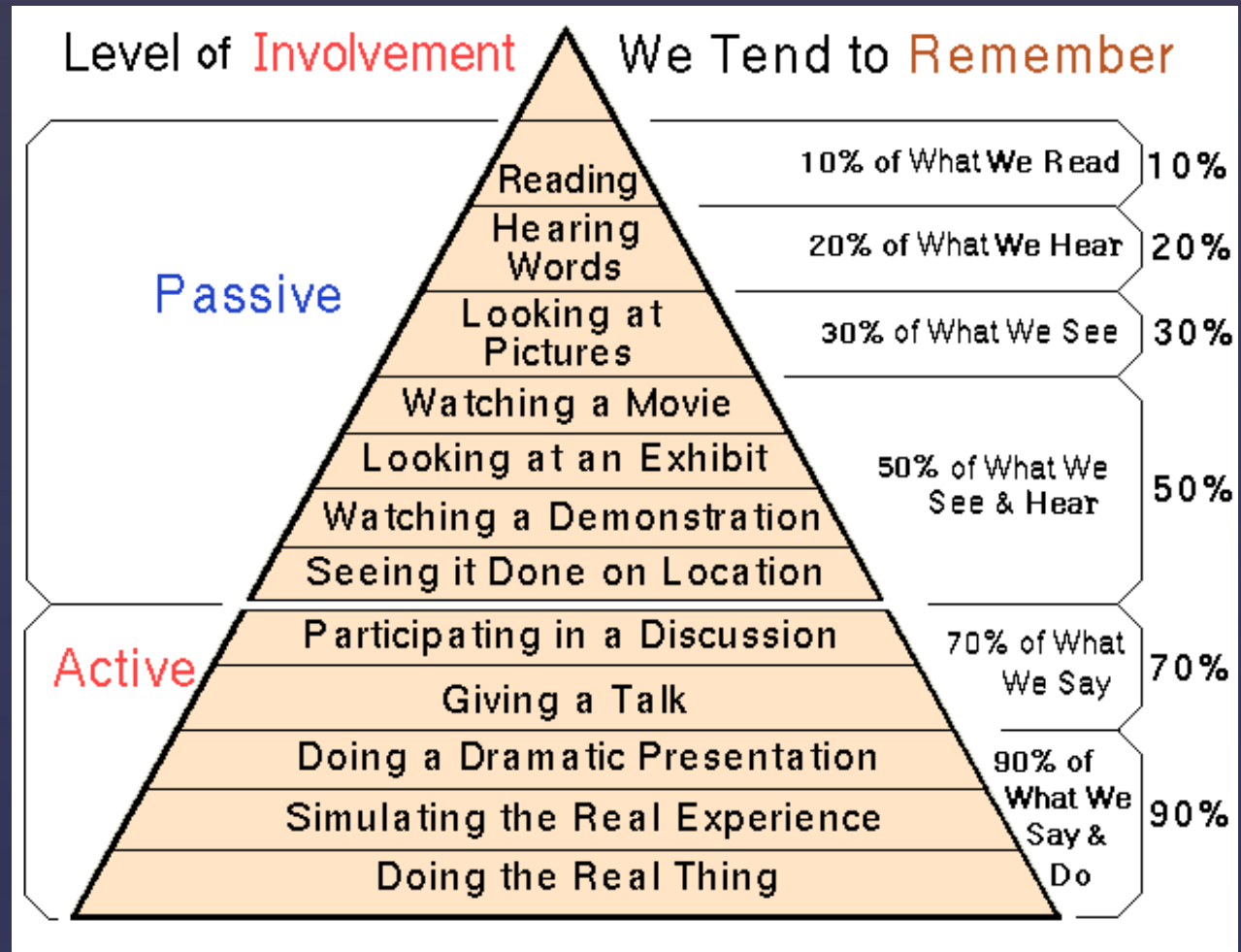


# Societal Drivers of Simulation

- Residents expect it
  - Frequent use of simulation in medical school
    - Simulation centers
    - Simulated patients
  - Part of exams
    - Shelf exams
    - USMLE
      - Step II – Simulated patients
      - Step III – Computer-based simulated cases

# Educational Theory as a Driver of Simulation

- It works!



# Types of Simulation to Spark Inspiration

# Types of Simulation: BWH Family Planning Case Examples

- Partial task trainers
- Full procedure simulators
- Virtual reality simulators
- Human patient simulators
- Team training
- Crisis resource management

# Partial Task Trainers

- BWH FP case example: sterilization techniques
  - 5 stations: Adiana, Essure, Interval Filshie, PP Filshie, Falop Ring, Single-port cautery



# Full Procedure Simulators

- BWH FP case examples:
  - IUD insertion and papaya D&E simulation with all Medical Students every 6 weeks



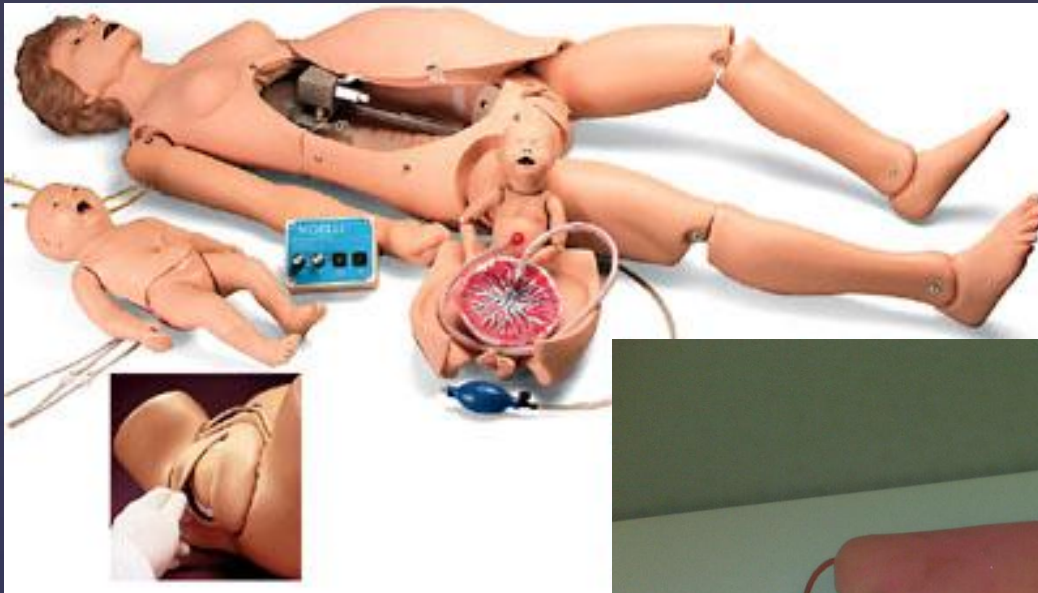
# Virtual Reality Simulators

- BWH FP case examples:
  - Laparoscopic BTL, Essure sterilization



# Human Patient Simulators

## NOELLE





# Team Training

- BWH FP case example:
  - The D&E hemorrhage



# Crisis Management

- BWH FP case example:
  - The D&E hemorrhage




# Simulation Curriculum Development

# The Approach to Curriculum Development

- Start with specific goals and objectives
- 6 critical questions
  - Who am I teaching?
  - What are the objectives?
  - In what context in the learning process?
  - What tools do I have to use?
  - Who is the faculty?
  - How will I assess the success of the program?

# Checklist for designing a simulation scenario

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- ① Define aim
  - ② Needs assessment & learning objectives
  - ③ Learning outcomes (for evaluation)
  - ④ Develop a matrix
  - ⑤ Work on evaluation strategy
  - ⑥ Identify resources and people required
  - ⑦ Programming and software
  - ⑧ Dry run
  - ⑨ Pilot with real participant
  - ⑩ Run program

# Task # 1: Consider evaluation options

- Written record
- Log
- Attendance
- Case Presentations
- Direct Observations
- Written exam
- Oral examination
  - Structured (oral patient management problem)
  - Short answer
- Videotape and audio tape review
- Simulated Patient
- Objective Structured Clinical Examination

# Task # 2: Review learning objectives and select the most appropriate evaluation method according to these criteria:

Feasible

Practical

Economical

Objective

Comprehensive

Valid

Reliable



# BWH D&E hemorrhage example

- Pre- and post-written test
- Our OSCE checklist
- Video
- Clinic team debrief

		PERFORMED	NOT PERFORMED
1	Surgical pause		
2	Check with anesthesia to confirm appropriate level of sedation before starting		
3	Confirms need for cervical block $\pm$ <u>vassopresin</u>		
4	Overall, D&E simulated		
5	Demonstrates complete <u>DDx</u> of hemorrhage		
	• <u>Atony</u>		
	• Retained POCs		
	• Perforation		
	• Cervical/Vaginal laceration		
	• DIC		
6	Communicates bleeding/ <u>atony</u> to anesthesia		
7	Requests additional help (nursing)		
8	Demonstrates ability to update nurse		
9	Demonstrates/communicates need for fluid		



# Simulation-based team training



# The Debrief

