

Virtual reality: the new age of using simulation to teach and assess learners



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Workshop Faculty

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- Dr. Glenn Stryjewski
 - Al duPont Hospital, Thomas Jefferson University Wilmington, Delaware
- Dr. Joseph Lopreiato
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- Dr. Cliff Yu
 - National Capital Consortium Pediatric Residency Program, Bethesda, Maryland



Disclosure

- The workshop leaders have no financial interests to disclose or conflicts of interest to resolve.
- Several products will be discussed and demonstrated in this workshop
- The leaders do primarily use Laerdal products at their centers



Workshop Objectives

- Demonstrate available simulation tools in pediatric education
- Identify opportunities to use simulation to enhance medical education curriculum
- Outline a plan for using simulation to teach or evaluate the ACGME competencies



The New Age of Medical Education

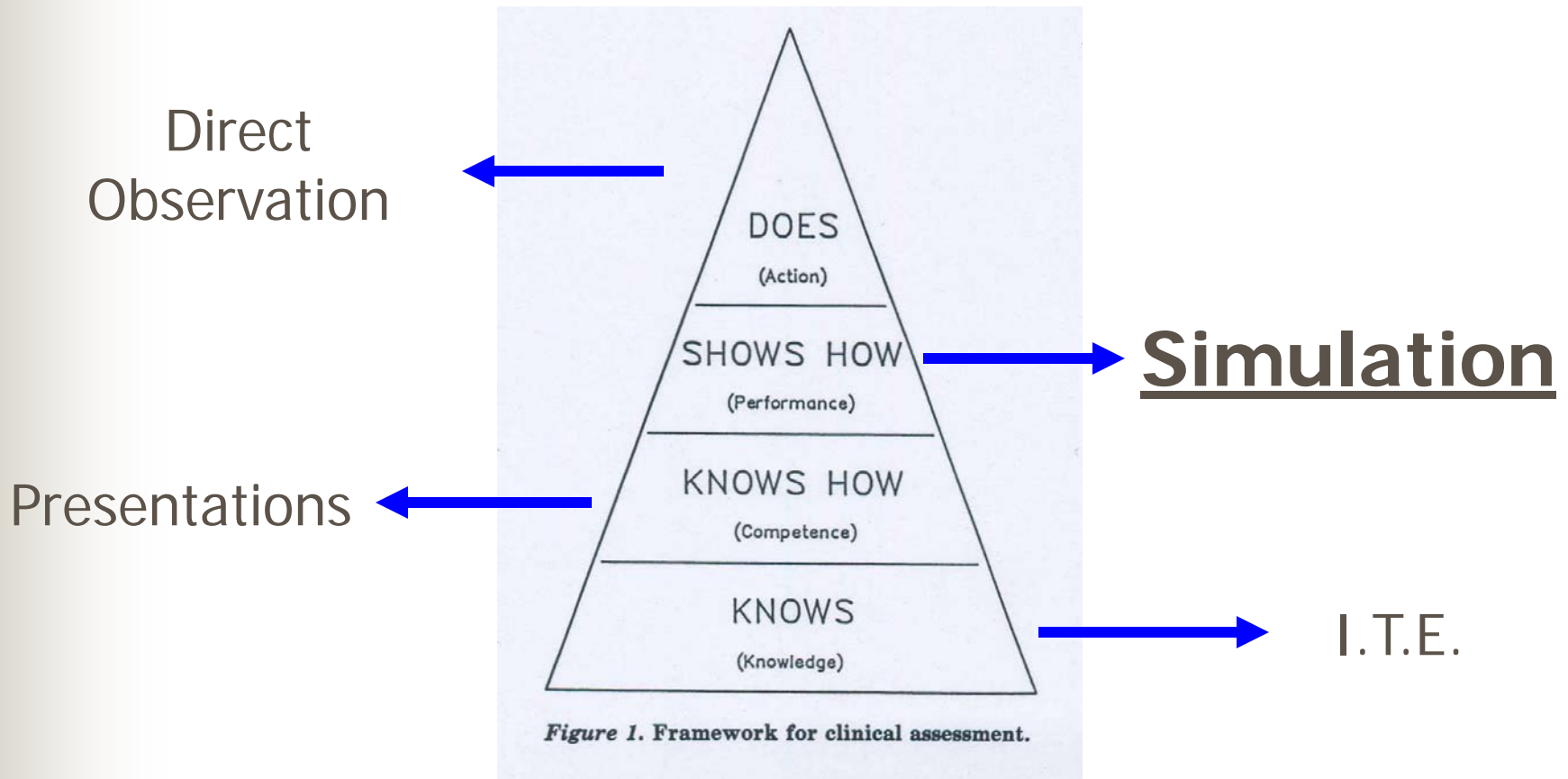
- Work Hour Restrictions
- Increased faculty presence
- “See one, do one, teach one” not acceptable
- Systems changes



Pediatric Relevance?

- Limited Direct Observation of patient care going on...listen to lots of presentations
- Fewer opportunity for residents to do procedures, more technically difficult
- High stakes, low frequency events
 - 44% of pediatric residents had never led a resuscitation (Nadel 2000)
- Missed teachable moments

What Gap does Simulation Fill?





How does simulation do that?

- Allows for observation & feedback
- Allows repetitive practice
- Gives permission to fail
- “Simulation is like crash testing...”

It's all about the equipment





Simulation as a Method

Four Main tools:

- Simulated Patients
- Human Patient Simulators
- Task trainers
- Screen based Simulation



Standardized Patients (SP)

- Train humans to portray patients
- Valid and reliable method since 1960's
- Used to teach **OR** assess skills in :
 - Information gathering
 - Physical exam techniques
 - Information giving
- Not just for medical students anymore....



Human Patient Simulators

- Whole body equipment allows vitals to be generated, physical exam findings, basic procedures
- Fidelity varies
- Useful to re-enact scenarios, team training



Task trainers

- Manufactured body parts
- Several manufacturers on market
- Allow focus on specific procedural training need

Screen Based Simulators

Card 11 of 33 | Vital signs

CASUS ? Help

Tyler's heart rate is 150 bpm. Blood pressure is 90/50 in the right arm, and similar in all 4 extremities. Tyler has a respiratory rate of 70-80 breaths per minute. The O₂ saturation is 98%.

Which of his vital signs is abnormal? Select the ONE best answer.




Image 1 of 1

Multiple Choice Answer:

- A: Heart rate
- B: Respiratory rate
- C: Blood pressure
- D: Oxygen saturation

CLIPP Cases



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And Now...


- Presentation of Use of Standardized Patients in Pediatric Education
 - Dr. Joseph Lopreiato and Dr. Cliff Yu

Types

- Standardized Patients (SP's)




Competency: Communication,
Professionalism, Patient Care, and
Medical Knowledge



Methodology: National Capital Consortium Pediatric Residency Program

- Begun in Spring 2001
- PL-1 and PL-3 residents
- Cases based on Continuity Clinic Curriculum modules
- Differential skill testing based on PL year



Methodology: National Capital Consortium Pediatric Residency Program

- Adds to Direct Observation Program
- Work with University SP program
- Cost: About \$300/resident for 6 cases
- Faculty observers
- Takes one full day

CASE BLUEPRINT

Pediatric Residency Case Grid April 2008

	<u>Case</u>	Domains			<u>Level</u>
		<u>History</u>	<u>PE</u>	<u>IP Comm</u>	
1	Adolesent Med	X		X	1 3
2	Persistent Cough	X	X	X	1
	ER Followup counseling		X	X	3
3	Well Baby Exam	X	X	X	1
	Child Abuse Victim	X	X	X	3
4	Parent call to clinic	X		X	1
	Teen DKA follow up	X		X	3
5	ADHD scenario 1	X		X	1
	ADHD scenario 2			X	3
6	Code scenario			X	1
	Code scenario			X	3

Faculty Rating Form

Domain

Professional Behavior

- | | Yes | No |
|--|--------------------------|--------------------------|
| 1. Did the trainee introduce themselves? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Act with Empathy? | <input type="checkbox"/> | <input type="checkbox"/> |

History Taking Skills

- | | | |
|--|--------------------------|--------------------------|
| 3. Obtains the HPI correctly to include (symptom nature, quality, duration, severity, and associated symptoms) | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Asks about Past Med/Surg Hx? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. History <u>NOT</u> taken: _____ | | |

Global Rating

- | | | |
|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

1 = Less skill than I expect for a physician at this level. Will need some work here. Many omissions.

2= Skill level is what I expect for a physician at this level. Occasional omissions. Good to Go.

3= Better than I expect for a physician at this level. No errors or omissions.

- | | | |
|--------------------------|--------------------------|--------------------------|
| 1 | 2 | 3 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

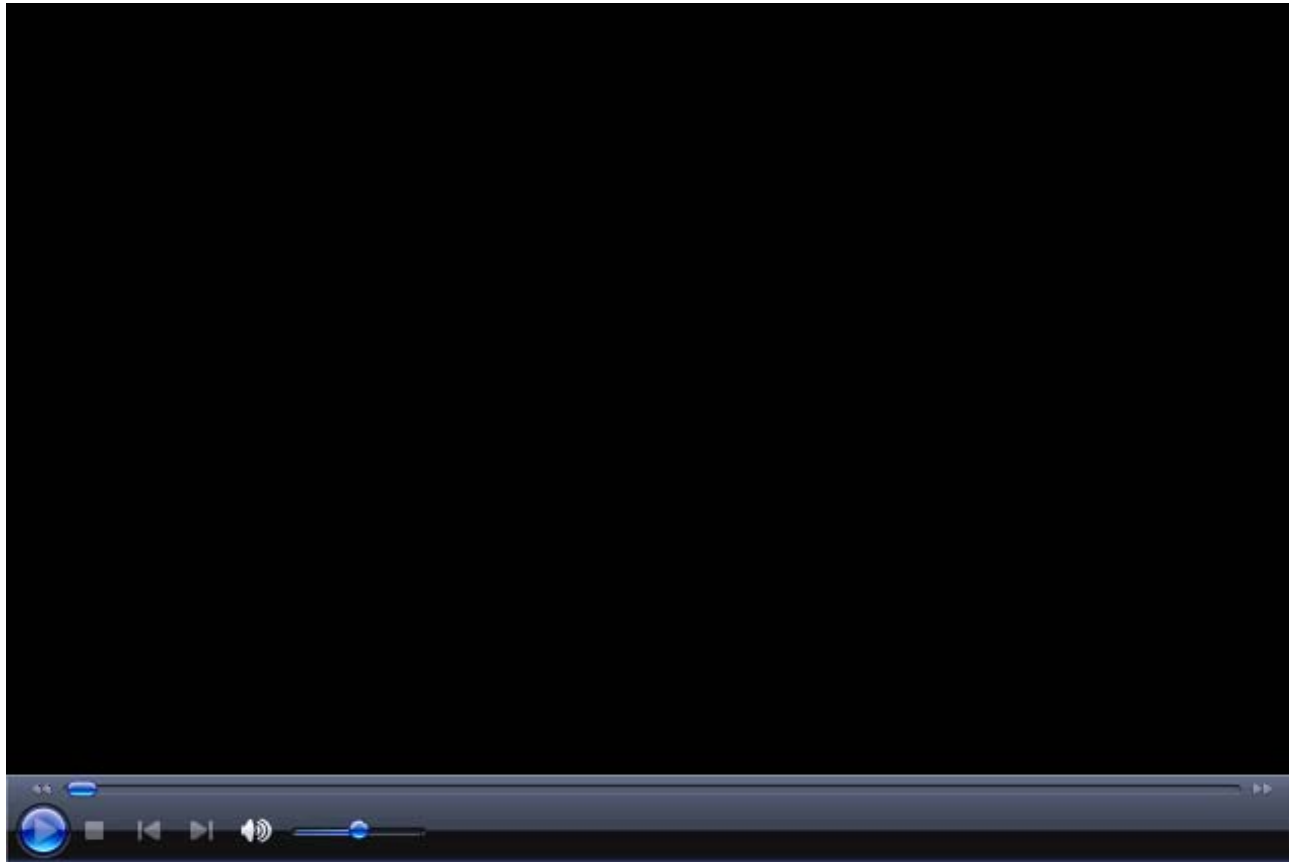
NOTES:

Examples of SP's in Peds



- PL-1 ADHD interview

Examples of SP's in Peds



- PL-1 chest exam @ 5:30

Examples of SP's in Peds



- PL-3 asthma tools @ 7:10

Examples of SP's in Peds



- PL-3 getting mom out of room



Standardized Patients

■ Pros

- SP's can be trained to respond more consistently than "real " patients
- Complexity of presentation can vary according to the learner
- No risk of harm to "real" patients
- More available for testing
- Feedback can be built in

Questions?



Uniformed Services University



Walter Reed Army Medical Center



National Naval Medical Center