



MEDICAL EMERGENCY SIMULATIONS TRAINING

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OBJECTIVES

- Discuss importance of simulation as a key element of learning
- Brief review of *growing* literature



DISCLOSURES

- None



SIMULATION BASED MEDICAL TEACHING AND LEARNING

“To Err is Human”

- 45,000-98,000 deaths/year → medical error
- System vs. Poor individual performance
- System changes → acquire clinical skills

1. Kohn L et al, To err is human: building a safer health system. Washington, DC: National Academy Press; 1999
2. Institute of Medicine Report



SIMULATION BASED MEDICAL TEACHING AND LEARNING

Traditional: apprentice model

See one, do one, teach one...

No longer optimum

IOM report 1999: medical errors and patient safety

Emphasized

- Training modalities- non direct patient care teaching activities
- Maximize patient safety-no risk to patients while training providers



FOUNDATIONAL THEORIES FOR TEAM WORK & PATIENT SAFETY

- Normal accident theory(NAT):
 - Complex systems, organizational structure
 - All systems have gaps or holes
 - Holes align → accident

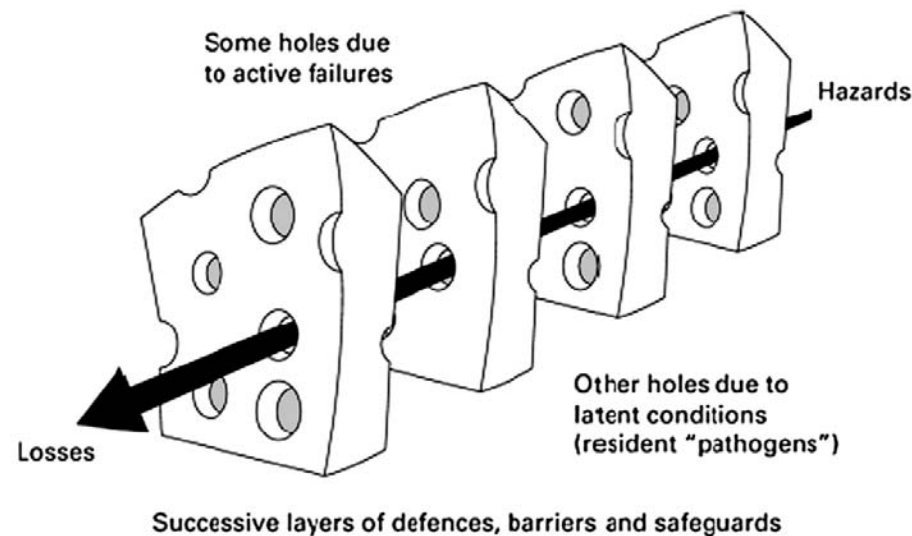


Fig. 1. The Swiss cheese metaphor for the genesis of medical mishaps in a complex environment. (From Reason JT, Carthey J, de Leval MR. Diagnosing "vulnerable system syndrome": an essential prerequisite to effective risk management. Qual Health Care 2001;10:ii21; with permission.)

FOUNDATIONAL THEORIES FOR TEAM WORK & PATIENT SAFETY

- High- Reliability Organization Theory

- Organization of people
- Technology
- Processes
- Safety- a priority

Requires:

- Training: redundancy & drilling

Simulation



TEAMWORK IN OBSTETRIC CRITICAL CARE

- Failure in teamwork and communication
 - leading cause → adverse events >70% sentinel events
- Nurses, doctors, health care staff
 - well trained
- No traditional training
 - work well as a team

Team work skills are essential



WHAT MAKES SIMULATION BASED TRAINING APPEALING?

- ✓ Team work skills can not be taught in didactic settings
- ✓ Simulation training → forum....roles can be assigned and perfected.
- ✓ Defined role and tasks responsibility
- ✓ Objective → assess performance

EMERGENCY SIMULATION TRAINING

- Acute care *in-patient settings*
- emergency departments
- intensive care units
- labor and delivery units



Resources



OUT PATIENT SETTING



RELEVANCE

The outpatient setting

- Primary venue for delivering women's health services
 - ✧ family planning services: contraception and abortion care
 - ✧ gynecology procedures: Essure, endometrial ablation etc.
- Medical risk- practice type:
 - ✧ low risk practices-minor procedures-healthy pts.
 - ✧ high acuity practices-complex procedures- sedation-complex medical problems.



RELEVANCE

- Adverse outcomes in the outpatient setting occur *infrequently* but when they do they can have harmful consequences.

NEVER
UNDERESTIMATE
SHIT'S ABILITY TO
FIND A FAN

Solution:

A prepared **team**



Does Simulation Improve Patient Safety?: Self-Efficacy, Competence, Operational Performance, and Patient Safety

Akira Nishisaki, MD^{a,b,*}, Ron Keren, MD, MPH^{b,c},
Vinay Nadkarni, MD^{a,d}

attitudes
performance
self-efficacy
knowledge

Reliability and validity of simulation based assessment is accumulating

- Self efficacy
 - Knowledge
 - Competence
-
- Operational performance
 - Patient safety & outcomes

Prospective Randomized Trial of Simulation Versus Didactic Teaching for Obstetrical Emergencies

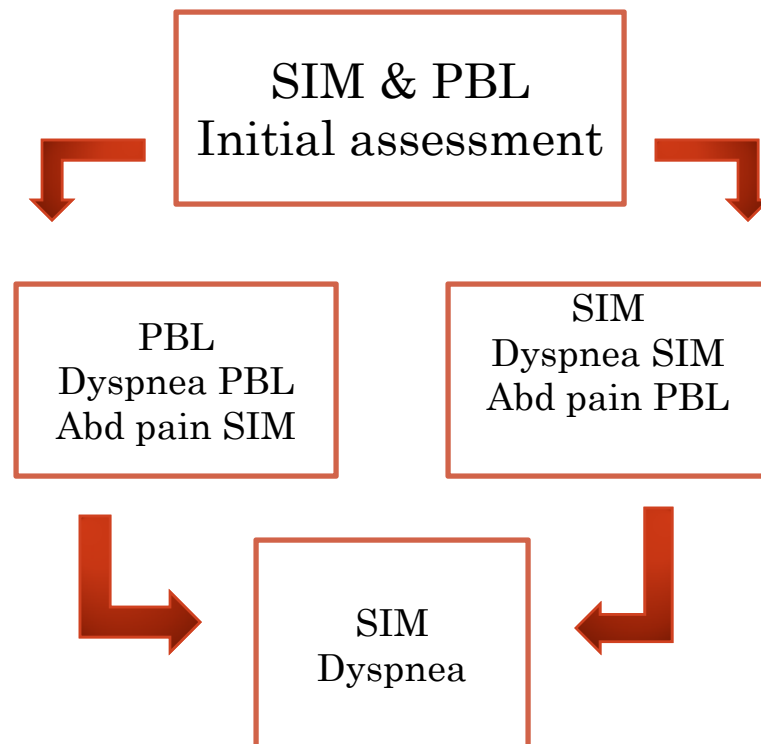
Skill: Shoulder dystocia& eclampsia management

- 3 hrs of didactic/lecture/ video/ hands on demo
- 3 hrs of simulation in the laboratory
- Simulation based teams had superior performance scores

Simulation-based training is superior to problem-based learning for the acquisition of critical assessment and management skills*

Randolph H. Steadman, MD; Wendy C. Coates, MD; Yue Ming Huang, MHS; Rima Matevosian, MD; Baxter R. Larmon, PhD; Lynne McCullough, MD; Danit Ariel, BA

- Med students SIM vs PBL
- Skill: acute care assessment and mgt
- 1 week acute care course
- **SIM superior to PBL**



Multidisciplinary Team Training in a Simulation Setting for Acute Obstetric Emergencies

A Systematic Review

*A. E. R. Merién, MD, J. van de Ven, MD, B. W. Mol, MD, PhD, S. Houterman, PhD,
and S. G. Oei, MD, PhD*

Effectiveness of multidisciplinary teamwork training in a simulation setting for reduction of adverse outcomes in OB emergencies.

Teamwork training programs with simulation (97 papers)

Improved in:

- Knowledge
- Practical skills
- Communication
- Team performance in acute obstetric situations.



TREND SETTERS...

- Simulation base training in the outpatient setting
- Important:



we are the
show..



OUT-PATIENT EMERGENCY PREPAREDNESS

- A different bird



- Limited resources
- Limited experience activating emergency resources
- Medical risk- diverse practice settings



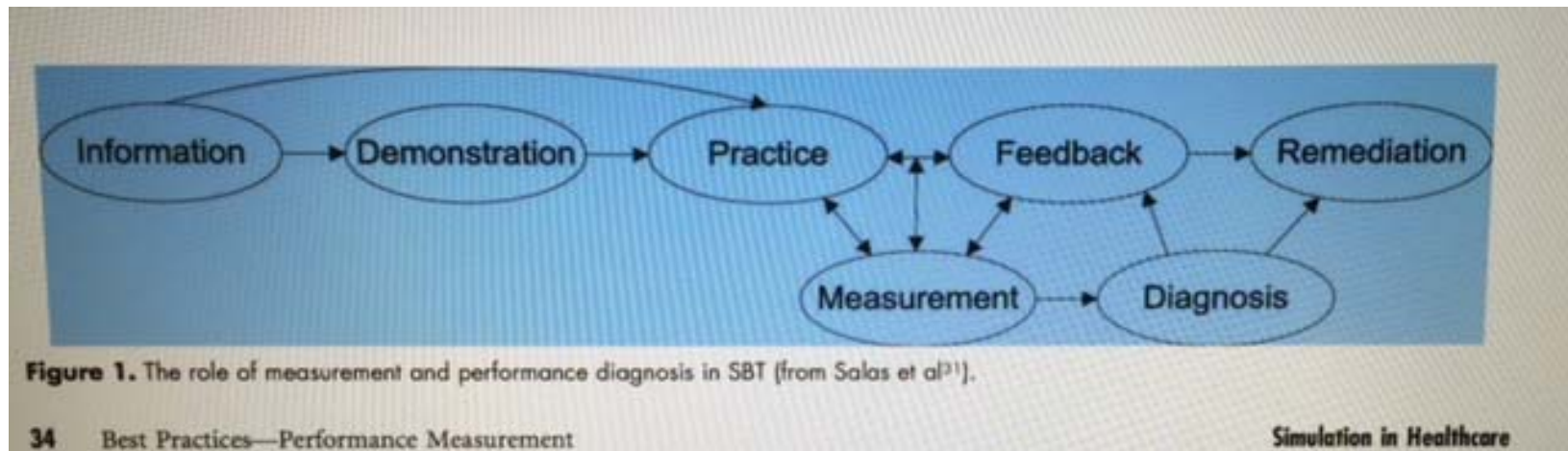
GOALS TODAY



- Understand the role of simulation in reducing morbidity
- Participate and debrief after simulated drills
- Develop a toolkit for local implementation of simulations



THE ROLE OF MEASUREMENT AND PERFORMANCE DIAGNOSIS IN SBT



Rosen et al; Sim Healthcare; 3:33-41, 2008

QUESTIONS

