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# Healthcare Simulation as a Global Nursing Education Strategy

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# Disclaimer

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Juli Maxworthy currently serves as the Secretary for the Society for Simulation in Healthcare Board of Directors as well as an accreditation site reviewer but receives no monetary compensation for her volunteer activities.

# Topics

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- **Review of foundational aspects of healthcare simulation**
- **Review of the basic phases of a healthcare simulation activity**
- **Examples of Healthcare Simulation being utilized globally as an education strategy**

# Definition of Healthcare Simulation

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- A technique that creates a situation or environment to allow persons to experience a representation of a real event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions
- An educational technique that replaces or amplifies real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner (Gaba, 2004)
- A pedagogy using one or more typologies to promote, improve, or validate a participant's progression from novice to expert (INACSL, 2013)
- The application of a simulator to training and/or assessment (SSH).
- A method for implementing a model over time (SSH Dictionary, 2016)

# Types of Healthcare Simulation

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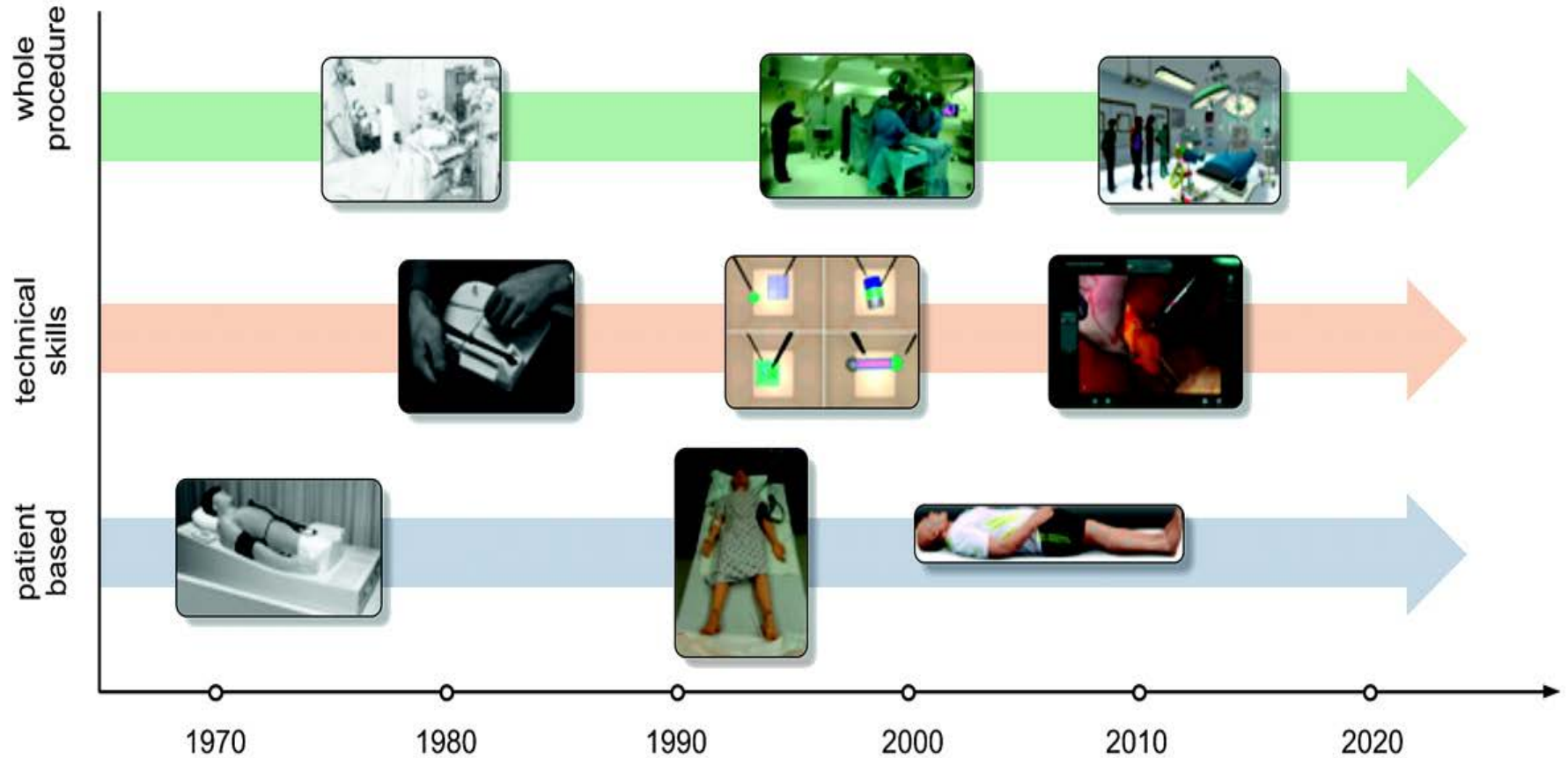
**Virtual reality**                      **Three-dimensional static models**  
**Full-bodied mannequin-based**  
**Audio simulations**                      **Task-specific simulators**  
**Standardized patients/participants**  
**Animal models**                      **Written (paper) simulations**  
**Human cadavers**  
**Video-based simulations**                      **Role playing**  
**Computer-based clinical simulations**

# History of Healthcare Simulation

- Simulation has been occurring for thousands of years
- First commercial manikin-based simulator was introduced in 1911 – Mrs. Chase was utilized in nursing schools



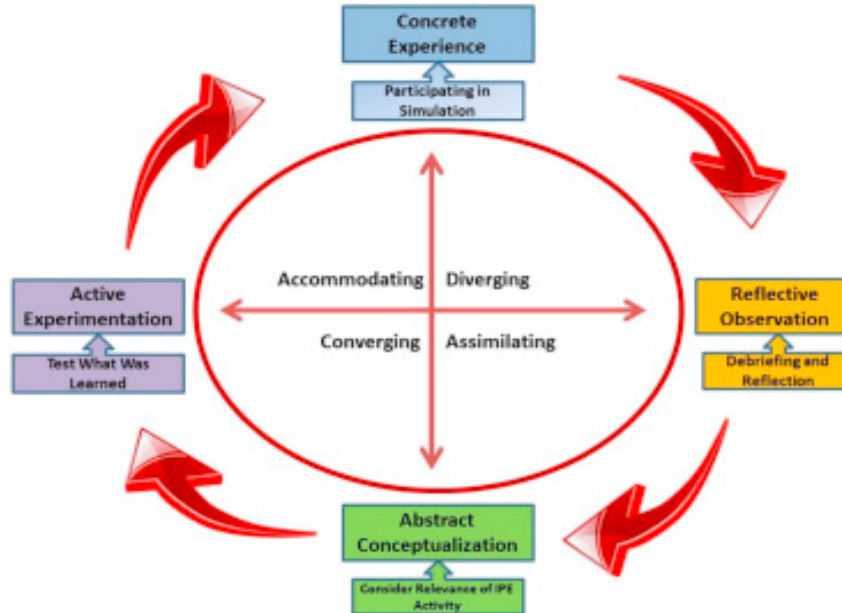
# Past 40 Years



# Experiential Learning Theory

- Dominant learning theory in simulation
- David Kolb-Chief proponent
  - Based on Kurt Lewin's Experiential Learning Cycle

(Kolb, 1984)



Simulation-based Inter Professional Education (IPE) incorporated with Kolb's Experiential Learning Theory.  
(Poore, Cullen & Schaar, 2015)

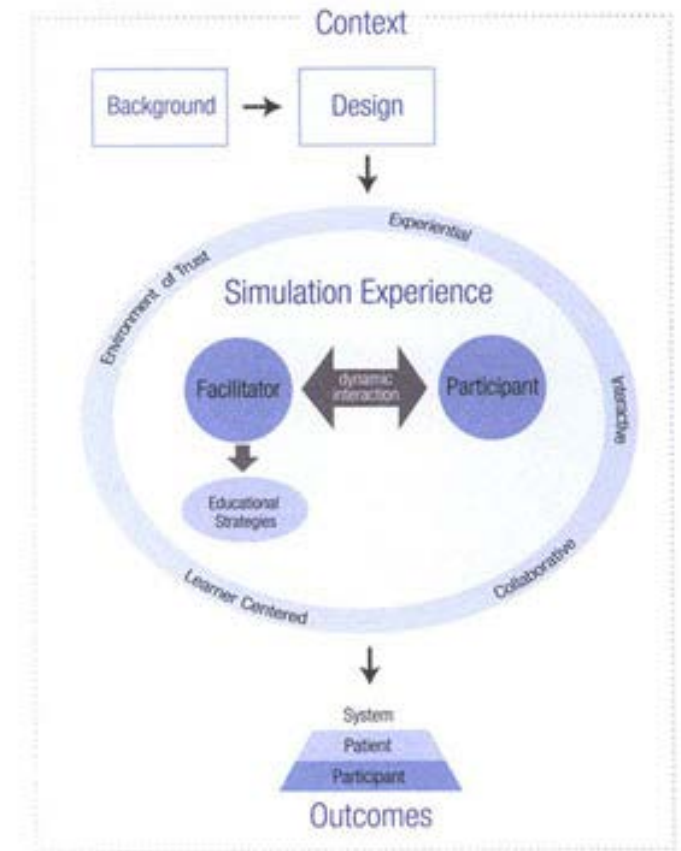


# NLN Jeffries Simulation Theory

- Context
- Background
- Design
- Simulation Experience
- Facilitator and Educational Strategies
- Participant
- Outcomes

(Jeffries, P. R., 2015)

Figure: NLN Jeffries Simulation Theory



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# Simulation Activity

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- **The entire set of actions and events from initiation to termination of an individual simulation event; in the learning setting, this is often considered to begin with the briefing (prebriefing) and end with the debriefing.**
- **All the elements in a simulation session including the design and setup required. (SSH Dictionary, 2016)**

# Phases of a Healthcare Simulation Activity:

## Prebrief/Brief

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- **An information or orientation session held prior to the start of a simulation activity in which instructions or preparatory information is given to the participants. The purpose of the prebriefing is to set the stage for a scenario, and assist participants in achieving scenario objectives.**
- **The time used by educators, researchers, facilitators, or staff to plan their roles prior to the simulation; suggested activities in a prebriefing include an orientation to the equipment, environment, manikin, roles, time allotment, objectives, and patient situation. For example: Before starting the simulation session, there is a prebriefing where the equipment and its capabilities are reviewed and they are reminded of the equipment available to them in the room (INACSL, 2013). (SSH Dictionary, 2016)**

# Phases of a Healthcare Simulation Activity: Simulated-Based Learning Experience

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- **An array of structured activities that represent actual or potential situations in education and practice.**
  - These activities allow participants to develop or enhance their knowledge, skills, and attitudes, or to analyze and respond to realistic situations in a simulated environment. (Pilcher, Goodall, Jensen, Huwe, Jewell, Reynolds, and Karlson, 2012). (SSH Dictionary, 2016)

# Phases of a Healthcare Simulation Activity: Debrief

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- A formal, collaborative, reflective process within the simulation learning activity.
- An activity that follows a simulation experience and led by a facilitator.
- To conduct a session after a simulation event where educators/instructors/facilitators and learners re-examine the simulation experience for the purpose of moving toward assimilation and accommodation of learning to future situations (Johnson-Russell & Bailey, 2010; NLN-SIRC, 2013); debriefing should foster the development of clinical judgment and critical thinking skills (Johnson-Russell & Bailey, 2010).
- To encourage participants' reflective thinking and provide feedback about their performance while various aspects of the completed simulation are discussed.
- To explore with participants their emotions and to question, reflect, and provide feedback to one another (i.e., guided reflection) (SSH Dictionary, 2016)

# Leading Healthcare Simulation Organizations

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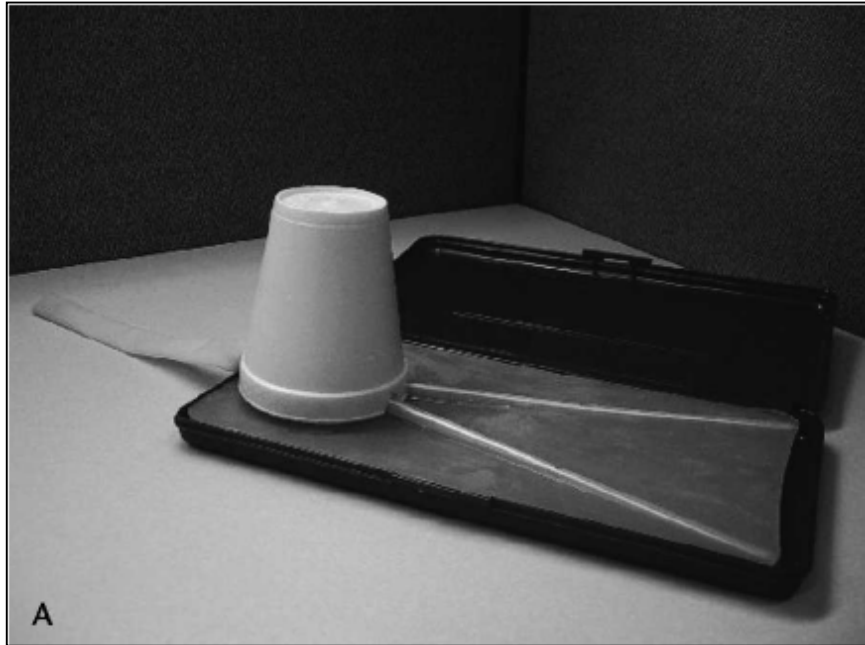
- **Society for Simulation in Healthcare (SSH, 2017)**
  - *The purpose of the Society for Simulation in Healthcare is to serve a global community of practice enhancing the quality of healthcare*
- **International Nursing Association for Clinical Simulation and Learning (INACSL, 2017)**
  - *The Mission of INACSL is advancing the science of healthcare simulation*
- ***There are many other regional/country specific organizations***

# Benefits of Healthcare Simulation for Resource-Limited Rural and Remote Regions

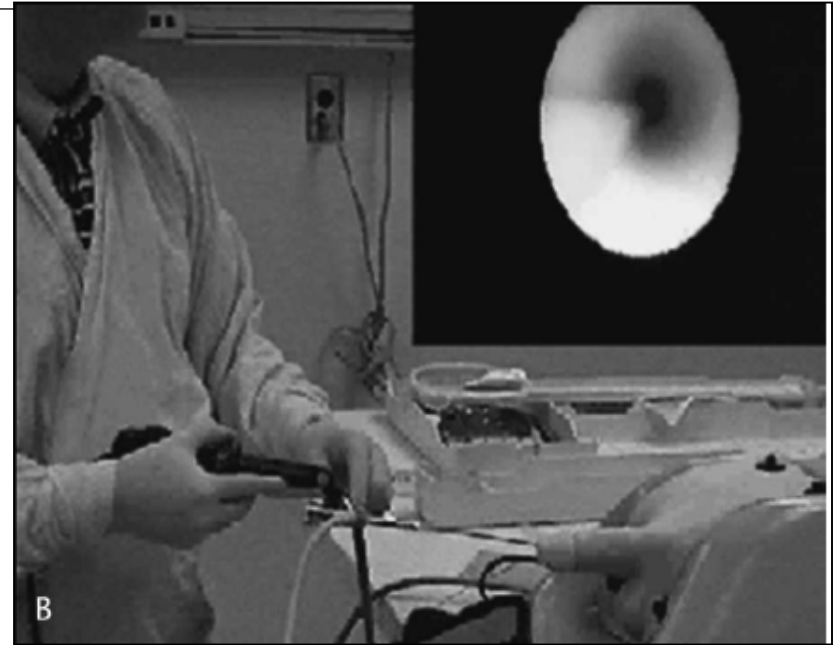
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- **Rapidly preparing entry-level providers and facilitating career development opportunities through academic institutions**
- **Developing the abilities of community-based providers (traditional healers, teachers, village and tribal leaders) to work in partnership with professional providers**
- **Bridging the gaps of understanding between professional health service providers and local populations who may mistrust modern medicine (Andreatta, 2017)**

# Concept of Fidelity



Low fidelity

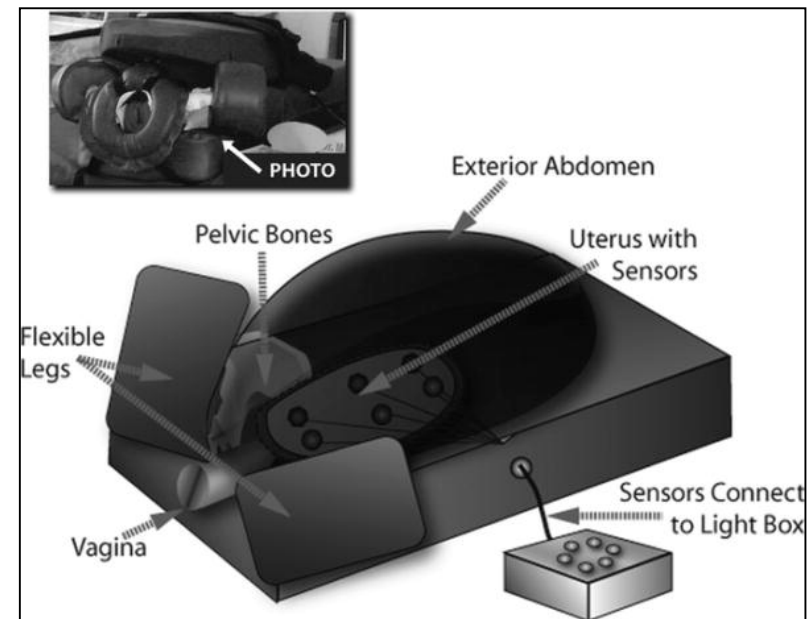


High fidelity



# Global Initiatives Utilizing Healthcare Simulation to Improve Outcomes: Low Cost Simulator Learning to Manage Postpartum Hemorrhage in Rural Africa

- Clinicians in the USA and Ghana developed and tested a low cost, long lifetime, easy to use, portable procedural simulator.
- Simulator was found to be an effective training platform to use with all types of learners-even those who were illiterate.  
(Perosky et al, 2011)



A Low-Cost Simulator for Learning to Manage Postpartum Hemorrhage in Rural Africa.  
Perosky, et al, 2011

# Global Initiatives Utilizing Healthcare Simulation to Improve Outcomes: Helping Babies Breathe

- **Helping Babies Breathe (American Academy of Pediatrics)**

- What is the difference between HBB and NRP?
  - While both HBB and NRP are based on the International Liaison Committee on Resuscitation (ILCOR) guidelines, they are designed for vastly different care environments, especially with respect to resources. The HBB curriculum was designed to specifically meet the needs of resource limited environments.



# World Health Organization (WHO)



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## Strengthening health security by implementing the International Health Regulations (2005)

Strengthening health security by implementing the IHR

About IHR

A global system for alert and response

A multi-hazard dimension

Country capacity strengthening

International travel & health and mass gatherings

Public health at ports, airports and ground crossings

IHR procedures and implementation

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### WHO Simulation Exercise Manual

**Authors:**  
World Health Organization



#### Publication details

Number of pages: 78  
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WHO reference number: WHO-WHE-CPI-2017.10

#### Downloads

- [WHO Simulation Exercise Manual 2017](#)
- [Exercise Planning Tool](#)
- [Exercise Toolbox](#)

#### Overview

Simulation exercises have been identified as a key component in the validation of core capacities under the IHR monitoring and evaluation framework (2016)<sup>1</sup>, which was noted by the Sixty-ninth World Health Assembly<sup>2</sup>. Simulation exercises, along with After Action Reviews (AAR), represent the functional assessment of capacities and complement the self-



# Questions

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