

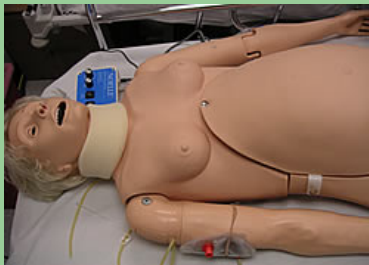
## Critical Events Team Training California Kaiser-Permanente Model

- Developed by Paul Preston, MD
- Piloted in 2003 at KP San Jose



## Simulation in Obstetrics

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“...medicine needs to expand virtual and simulated training opportunities to enhance not only technical skills, but also interpersonal, small group and interdisciplinary skills.”

- From Mussom and Helmrich: *Team training and resource management in health care: current issues and future directions.*

## Challenges in Obstetrics

- Obstetric emergencies are “rare” events.
- Medico-legal climate limits ability for “hands-on” learning, especially during obstetric emergencies.
- Two patients in one (literally).
- Quickly changing census/acuity requires team to adapt quickly to become a high acuity/ED-like team when emergencies do occur.
- Multi-disciplinary Labor and Delivery team requires increased need for team communication and coordination.

## Why we do the things we do.

- Normalization of deviance
- Lack of practice
  - Clinician
  - Team
  - System
- That never happens!



## Simulation Is...

A technique NOT a technology



## Simulation Is...

- A situation or environment created to allow persons to experience a representation of real events for the purpose of:
  - Practice
  - Learning
  - Evaluation
  - Testing
  - Gaining understanding of systems
  - Gaining understanding of human actions

(Harvard CMS Definition)

## Simulation is...

- A method through which to create a safe environment (for both patient and provider) in which to :
  - Teach, learn, and practice skills and clinical decision-making
  - Elicit responses to clinical scenarios in order to identify areas for improvement in individual, group and system response and provide corrective feedback as guide to future action
  - Explore end-result of errors in clinical judgment and/or teamwork.
  - Practice response to both common and rare emergencies.
  - Trial run new procedures and processes

## Simulation is NOT...

- A way to duplicate reality
- A teaching tool for physical exam
- An end in and of itself
- A panacea
- A one-size-fits-all solution

## Spectrum of Medical Simulation

- Task/Skill Specific
- Clinical Management
- Ob Emergency Drills/Resuscitation
- Re-enactment
- Teamwork
- Protocol implementation
- Research

## Spectrum of Medical Simulators

- Standardized patient
- Task/Skills/Procedural/Surgical
- Patient Simulator (partial or full, high fidelity vs. low fidelity)
- Hybrid Simulator
- Screen-based
- Table-Top

## Standardized Patient



- Individuals screened and trained to simulate the signs and symptoms of an actual patient condition.
  - Good for physical exam
  - Good for patient communication

## Task Simulation

- Specific simulators or using simulation to teach skills/tasks
  - Sonogram
  - Cervical exam
  - Laproscopy
  - Vacuum



## Team/Scenario Simulation



- Usually uses full-body simulator or an actor.
- Not focused on technical skill but on
  - Integration of knowledge
  - Team work
  - Patient interaction
  - Clinical scenario/Drill

## NOELLE

- NOELLE is a life-sized, full bodied articulating female mannequin with an articulating birthing baby and a full size newborn (who we call Sam).
  - Gaumard Scientific
  - Automatic birthing system
  - Instructor driven
  - Interactive fetal, neonatal and maternal monitors)
  - Well-suited for maternal and neonatal code scenarios and for scenarios that require fetal heart rate monitoring
  - Intubatable mother and newborn

## “Nellie”

- “Nellie” is a partial body simulator with movable legs (Laerdal Limbs n’ Things)
  - Realistic pelvis modeled from CT scan data
  - Detachable abdominal and perineal skin to enable visualization of internal maneuvers and fetal positioning during training
  - Fully articulated fetus/neonate body with palpable fontanelles, suture lines clavicles and scapulae
  - Patient actor can be integrated with birthing mother for training sessions
  - Well-suited for scenarios that require extensive interaction with patient and for shoulder dystocia (fetal dynamics and maternal pelvis more realistic).

## “Nellie”



## Well that's all grand, but...

- Does it work?
  - Outcome measures
  - Gherman study
  - Draycott studies

## Incorporating Simulation into your Patient Safety Simulation

- What do you want to do with it?
- Who will use it?
- Who will pay for it?
- Who will run it?
- Where will it run?
- How do you keep current?

## How do you want to use simulation?

- Figure out what you want to do BEFORE you figure out how.
- Needs assessment
- Budget
  - Financial
  - Personnel
  - Time



## Incorporating Simulation into Your Patient Safety Initiative(s) The Simulator

- Buy your own
- Create your own
- Borrow someone else's
- Both
- Neither

## Curriculum, Training and Debriefing

- Matching your program to your objectives
- Simulation is a good excuse for a debriefing session.
- No training is better than bad training.

## Keys to Success in Using Simulation in Your Program

- Obtain buy-in from key players
- Create realistic expectations (especially around the issue of realism)
- Integrate simulation into existing curriculum/program
- Have a clear mission and goals BEFORE starting program/purchasing simulator
- Try not to re-invent the wheel
- Allocate appropriate resources

## The OB Simulation Program at University of Maryland



- Needs Assessment
  - Constituency
- Program Development
  - Goals
  - Structure
  - Coordinator
  - Simulator/Room
  - Scenarios
- Implementation

## Elements

- **In situ training: simulation occurs on L&D unit**
- **Preceded by 15-minute human factors presentation**
- **Preceded by 15-minute orientation to simulation equipment and environment**
- **Followed by 30-45 minute debriefing**

## Method/Participants

- **Simulations are videotaped for debriefing purposes then erased**
- **Participants: CNM, L&D RN, OB, Pedi, Anesthesia, OB tech, Unit Assistant, Nursery RN, RT, Post-partum RN, Nurse Supervisor**
- **Low tech “Noelle” mannikin + higher tech “SimMan”**

