UVAHealth

UVa Health Simulation News

UVAHealth Life Support Learning Center

Volume 4, Issue 10

October 2023

Welcome!

Welcome to our Simulation Newsletter!

We've talked a lot recently about system simulations, where the clinical performance of the participants isn't the primary goal of the simulation. This month, we're going to go back to clinical simulations, in which the clinical performance is the goal.

We'll look at two different simulations that both have clinical aspects, though one also has system aspects. We'll see the value of clinical-only simulations but also that the clinical side can be a goal in a systems-focused simulation as well.

Please send us your feedback! *Our contact information is in the top left corner of the second page.*

System Simulations vs. Clinical Simulations

System simulations look at how the group as a whole responded, rather than individual provider performance. Recent examples have been the OR Malignant Hyperthermia simulations and the ED 500s Cut Suit simulation. Both of them involve multiple professions (techs, nurses, and LIPs) and a primary goal was how everyone worked together.

In October, we've done Emergency Medicine Conference Training simulations on birthing newborns and their immediate care with the EM residents. These are clinical sims — how does a resident care for a newborn?

We've also done an ED Peds simulation with a birth involving L&D, OB, and NICU in June 2023. This was both clinical (birthing a baby) and system-focused (having four different service lines come together for one simulation).

Clinical Simulation Benefits

Scenarios for clinical simulations tend to be either situations we see all the time or situations we almost never see but want to be good at, sometimes called low-frequency/high-acuity simulations.

We simulate these situations because we want to be good at them. The simulations allow us to build muscle memory and thought pathways. In a sense, the body and the brain can say, "I've seen this before," even though it was on a simulated patient.

We want providers to practice patient care. Providers shouldn't be doing compressions for the first time ever (or even in a long time) on a real patient. Providers shouldn't be running the Belmont rapid infuser for the first time ever on a crashing trauma patient. This is muscle memory.

We also need to think about how these situations should go before we do it on a real patient. Providers should be able to run the potential causes for a coding patient quickly. Providers should know the steps of a sepsis protocol before treating a real sepsis patient. Providers should have thought pathways that have been built and smoothed in simulations before doing them on real patients. These are thought pathways.

Clinical simulations help us be ready for the patient who is the Big One — the patient with a STEMI, cardiac arrest, or surgical complication.

Inside this issue:

Welcome!	*1*
System Simulations vs. Clinical Simulations	*1*
Clinical Simulation Benefits	*1*
Clinical-Only Example	*2*
Mixed Example	*2*
Journal Article	*2*
Either Way Works	*2*
Picture!	*2*

Steps of a Simulation:

- Goals
- Creation
- Preparation
- Running the Simulation
  - Briefing
  - Run
  - Debriefing
- Reset
- Assessment

UVAHealth
Life Support Learning Center

1222 Jefferson Park Ave
Fifth Floor, Room 5603
Box 800309
Charlottesville, VA 22903

Phone: (434) 924-1765
Email: jhoward@uvahealth.org

We create simulation-based experiences for current staff and students to improve their clinical judgment and teamwork skills during medical emergencies.

Follow us on:

Facebook:
https://www.facebook.com/UVALSLC

Instagram:
@uva_lslc

YouTube:
https://www.youtube.com/channel/UCx-KtMNJMIYLdWKEoOjrVvA

Our newsletter repository:
https://www.medicalcenter.virginia.edu/mesa/simulation-newsletters

Picture!

The ED Peds simulation in June. The team is working on birthing the child. On the far right side are some of the providers waiting for the newborn.

Journal Article

Our article this month is an overview of the use of simulation in obstetric medical education. The article is: Satin, A. J. (2018). Simulation in Obstetrics. *Obstetrics & Gynecology 132*(1), 199-209. The following link should access the article from a UVa computer: https://oce-ovid-com.proxy1.library.virginia.edu/article/00006250-201807000-00028/HTML

Clinical-Only Example

The Emergency Medicine simulation was a good example of a clinical-only simulation. The participants were all residents or medical students. We had one ally standing in as a nurse. The focus of the simulations were the clinical aspects of newborns: birthing a baby and then resuscitating it. Both of these were focused on and written for physicians, not anyone else on the team.

One of the simulations used a half-torso birthing body and the providers needed to do maneuvers to get the baby out (muscle memory). Other simulations were on a newborn manikin and the providers needed to go through Neonatal Resuscitation Program algorithms (thought pathways).

These were not the most realistic scenarios — they were in a simulation room, not a real patient care area, and some of the manikins were not particularly life-like — but they had enough fidelity that the residents could learn from them.

Mixed Example

The ED Peds simulation from June was both clinical and system. We had a Noelle manikin that births a baby manikin. We used one of the OB emergencies Noelle can simulate. Once that emergency was resolved, the baby came out and there were two patients for the team to treat.

There were clinical goals for both patients. Noelle had her OB emergency that providers needed to recognize quickly and then start a sequence of interventions to resolve the emergency. This all needed to occur in just a few minutes, so the team needed to be able to do the interventions quickly (muscle memory) and be able to smoothly progress through the interventions (thought pathways).

The newborn had an emergency that needed to be treated using Neonatal Resuscitation Program guidelines. Those interventions also need to occur quickly and smoothly. The mother still needed care, too.

In addition, this simulation had a system side: it had multiple service lines coming together to treat these patients. An imminent birth brings L&D, OB, and NICU down into the ED. We have people, some out of their normal areas, working with people they don't see often.

Either Way Works

Notice that the EM simulations were more skills-based, focusing on the physical birth process and NRP algorithms, while the ED Peds simulation was more immersive, also focusing on the actual birthing process and NRP algorithms, but as part of a bigger, in situ scenario with non-physician providers.

The good news is that either type of clinical simulation will help. The choice of goals is what will drive the choice of simulation type. Just as in ACLS or PALS, scenarios for material that is newer for the participants may be easier than scenarios for more experienced providers, and would allow those participants to do multiple simulations in the same amount of time. More advanced providers can be given more difficult scenarios. We can choose what level of simulation we want to provide to help the participants improve their clinical skills.