

Welcome!

Welcome to our Simulation Newsletter!

This month's topic is pediatrics. Children are not just small adults, and they will respond differently than adults do.

Simulation of pediatrics needs to reflect those clinical differences, but can also help reinforce how providers must handle a child differently. The simulationist can do this in the Creation and Running the Simulation

steps (see the lower-right-hand corner of this page).

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

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How to Simulate Children

The Life Support Learning Center has a Laerdal Sim-Junior who can represent children from 6-10 years old. We can represent teenagers with our adult manikins. We have CPR-style infant manikins to represent infants. We are excited to say we are in the process of obtaining a Gaumard Noelle mother with a Premie HAL child (a 30-

week gestational age newborn). As a result, we have manikins that can simulate children of all ages.

When running the simulations, we need to know what this child's normal vital signs would be and how this child might react to this situation. Children of different ages react differently as their body systems mature. A sinus

rhythm of 140 might not be as concerning in a 6-month-old as it would be in a 6-year-old.

We also need to know how the medications and other interventions will affect the child.

None of this will be new to readers of this newsletter — but read the next article.

Challenges in Simulating Children

There is a lot of overlap between diseases in children and in adults. Asthma exists in both age groups and is treated roughly the same, for instance.

Some problems exist in both age groups but the responses are different. Adults and children can both have trauma, but the child's response may look different than the adult — children are known to hold a blood pressure until they collapse quickly. The simulationist must know how

the child will respond to the original problem and how the child will respond to interventions.

Children also have their own set of illnesses that rarely exist in the adult world. Epiglottitis makes all pediatric providers nervous. Respiratory Syncytial Virus (RSV) is common in kids in the winter but doesn't occur in the adults.

Properly simulating children sometimes needs a lot of prep work. Simulating a child who has just finished

the second of three surgeries for hypoplastic left heart syndrome required about a week of our simulationists wrapping our heads around the condition and how that child could deteriorate.



Easiest way to transport a child manikin...

Steps of a Simulation:

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

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

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An ED Peds patient with sepsis having his port accessed.

Simulations for EMT and AEMT Courses

Jim True and Robin Clark, the instructors for our Emergency Medical Technician (EMT) and Advanced EMT courses, have a specific rotation of pediatric scenarios for their students. EMTs generally don't see many pediatric cases, so they need training to be confident with them.

They have the same chal-

lenges as we've already mentioned in this issue: different equipment sizes, the need to interact differently with a child, the need for appropriate terminology that the child will understand, differences in medication dosing (everything is weight-based), and interacting with parents.

The biggest opportunities for improvement for their stu-

dents are in the interactions with the child and the choice of words. Translating medical concepts to first or second-grade terms can be a challenge. In addition, there is a great need to be able to establish trust with the child quickly.

Their simulations are all built to emphasize these points. As always, the most

important part of building a scenario is: what do you want your people to see? Jim and Robin know what their students need and have crafted their simulations to focus on those needs.

More Challenges in Simulating Children

We talked on the previous page about the clinical challenges of simulating children. Another aspect of simulating children is the child's reaction to everything that is occurring.

It's hard to have a manikin adequately project the voice of a child. Manikins are usually voiced by adults, so getting the child's pitch correct can be tough. Also, kids use a different word selection that adults do. Finally, a working knowledge of Paw Patrol and other kids shows is useful.

It's also hard to have the manikin show the panicked look that a truly sick child can have and that can drive a provider's heart rate up while caring for that child.

Pediatric classes such as PALS and ENPC emphasize an across-the-room first look at a child, which it is difficult for a manikin to display.

The simulationist also needs to be aware of a child's propensity to understand things literally (You're going to take my blood pressure? Why? It's mine! I get to keep it!).

Easier to Simulate Children

As a pediatric nurse pointed out once, usually in children there's only one thing going wrong — there are no comorbidities to make your job harder (high-tech kids are a separate category).

Also, frequently a parent or other adult is present with the child, so the simulationists have a natural way to include an ally in the scenario. That ally can bring out some of the information that the manikin struggles to present, such as the panicked look or the across-the-room information.

Even more so than with adults, let's practice the care of a child on a manikin instead of on an actual child.

Journal Article Spotlight

This month's article discusses using simulations as part of a region-wide initiative in Indiana to improve pediatric Emergency Department care. The article is Abuledba, K., et al. (2018). A Collaborative In Situ Simulation-based Pediatric Readiness Improvement Program for Community Emergency Departments. *Academic Emergency Medicine* (25)2. The following link should work from any computer:

<https://doi.org/10.1111/acem.13329>.