UVA Health

UVa Health Simulation News

UVAHealth Life Support Learning Center

Volume 4, Issue 9

September 2023

Welcome!

Welcome to our Simulation Newsletter!

This month, we want to discuss the most recent adult ED simulation we were part of: a full trauma alert, including a resuscitative thoracotomy, using a Cut Suit device.

It is similar to the previous month's OR simulations in that it was an interprofessional simulation. It was also an inter-service-line simulation.

These events are fantastic uses of simulation — let's bring all the participants in the real events together to practice them before they actually occur.

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

Interprofessional Simulations

We do a lot of single-profession simulations, and they're very useful. We should practice what we do.

But interprofessional simulations just warms our hearts. Let's practice a complicated situation with all the participants there. Let's bring in the physicians, nurses, paramedics, techs, pharmacists, respiratory therapists, and even (for this simulation) a chaplain. Let's do the simulation and then have a chance to talk about it afterwards in a relaxed environment.

To us, this is the top level of clinical simulations. The participants will be able to see how the situation works out in real time, how the team is working together to make the patient care happen, and then be able to ask questions, get clarification, and ultimately have a better idea of how each other thinks about patient care.

Inter-Service-Line Simulations

Inter-service-line simulations also warms our hearts.

Trauma alerts are very complicated things, with two service lines, Emergency Medicine and Trauma Surgery, coming together to care for one patient. There are easily a dozen people in the resuscitation bay, with more outside. There can be multiple procedures happening at the same time.

So let's practice that without any chance of hurting a patient. Just as everyone's first code ought to be on a plastic patient, everyone's first trauma alert ought to be on a plastic patient. That holds for the Trauma Surgery chief resident, the new ED nurse, and the pharmacy resident rotating in the ED.

Even more so, let's bring together people who don't work with each other every day. Surgeons see surgeons a lot. Emergency Medicine and the Emergency Department staff work together all the time. But trauma alerts are less common and can have a very high acuity. Let's have both services practice working together and iron out the bumps before a real patient comes in.

The ED and STICU are pairing so that a STICU RN comes to the trauma alerts in the ED bays to help. It's been great at helping those two areas work better. Inter-service-line simulations are another way of bringing people together to improve our patient care.

Inside this issue:

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

Pictures!

A picture of a basic Cut Suit, cut away so you can see the underlying parts. The black around the neck and the red behind the abdomen is some of the Teflon armor. The actor's arms do not have the IV start armor on.

A resuscitative thoracotomy in the ED bays. The left lung has been flapped up to allow access to the heart. The patient has been intubated (the actor was holding a specially cut ET tube in his mouth) and had IVs started over the armor on the arms.

What Is a Cut Suit?

A Cut Suit is a simulated body that is wearable (see picture below on the left). The suit has a layer of Teflon protecting the actor wearing it, and then a complete (fake) body above it.

The key of it is that participants can actually perform procedures, such as needle thoracotomies (chest darts), placing chest tubes, or doing resuscitative thoracotomies, since none of it affects the actor.

There is also Teflon protecting the arms, so that IVs can be started.

The suit can also actively bleed, but we did not use that option this time.

How Did the Sim Actually Happen?

The scenario for this simulation was a motorcycle crash with significant left chest injuries. The patient had a tension pneumohemothorax. When the team put in a chest tube to relieve it (the right decision to make), the patient lost a significant amount of blood and coded. The team then decided to open the chest for a resuscitative thoracotomy.

For the event, the LSLC team came to the Emergency Department with the suit, an actor for the suit (thank you, Ryan Thomas!), and all of our props. The Emergency Department and Emergency Medicine provided the ED team, and Trauma Surgery provided the trauma team. We also had a person solely dedicated to being the Safety Officer for the simulation, who could stop the simulation at any time.

We had a longer than usual briefing (see Steps of a Simulation on page 1) due to the need to keep everyone safe when live sharps were going to be used. The team then had time to set up for the incoming patient. On the patient's arrival, the team assessed the patient, found major injuries, and treated them. When the patient coded, the team was able to do an actual open thoracotomy on the Cut Suit (see picture to the left).

Then, we were able to have a debriefing where we discussed all the things that happened in the simulation. Very few people have done an actual open thoracotomy, so there was lots to talk about. That discussion is what locks in the learning from being in the simulation.

Journal Article

Our article this month describes military training that uses the Cut Suit. There are pictures of the suit in the article (we did not use the fake blood in our scenario). The article is: Hoang, TN et al (2020). Hyperrealistic and immersive surgical simulation training environment will improve team performance. *Trauma Surgery Acute Care Open,* ;5:e000393. doi:10.1136/tsaco-2019-000393. The following link should access the article from a UVa computer: https://www-ncbi-nlm-nih-gov.proxy1.library.virginia.edu/pmc/articles/PMC7066601/pdf/tsaco-2019-000393.pdf

Shoutouts!

Thank you Gil Somers for repairing the Cut Suit skin! And thanks to everyone for August — we had 19 simulations with 229 participants, our fourth highest month ever!