



### Welcome!

Welcome to our Simulation Newsletter!

This month, we are going to discuss realism, fidelity, the differences between the two, and which we focus on more.

We invest a lot of money in our manikins to increase

the realism of our simulations and for good reason: it's much better for a participant to have to look/listen/feel if their patient is breathing rather than ask the facilitator if the patient is breathing.

We also work hard in sce-

nario creation and in the scenario run to increase fidelity and draw the participants into the simulation.

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

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### Definitions

We'll start by talking about the definitions of realism and fidelity. From the Healthcare Simulation Dictionary, realism is the "ability to impart the suspension of disbelief to the learner by creating an environment that mimics that of the learner's work environment".

Fidelity is "the ability of the simulation to reproduce the reactions, interactions, and

responses of the real-world counterpart. Fidelity is not constrained to a certain type of simulation modality, and higher levels of fidelity are not required for a simulation to be successful."

To us (not necessarily to other simulationists), realism is more the manikin, the props, and the supplies being as close to reality as possible. Fidelity is how accurate the situation, the

scenario, and the patient responses are; it includes how similar the stress the participants are feeling is to a real situation's stress.

Some simulationists spend lots of time making their blood product bags look perfect, while others use a 250 mL NS bag with red food coloring in it and an ally who knows how to check blood. Which is better?

### Which Is More Important?

High realism is a useful thing. It's hard to have a nurse practice drips without a pump to work with. It's hard to evaluate a patient with chest pain without having a 12-lead ECG to look at. It's hard to practice patient care without having a practice patient.

But, to us, high fidelity is more important. A manikin helps get participants "into" the simulation, but having an

ally who can portray the previous offgoing nurse who is very tired but still giving report is even better at drawing the participants in.

Participants will accept a red-food-coloring NS bag as a unit of packed red blood cells if we have provided a patient with the right symptoms, vital signs, and responses to previous interventions. The NS bag is a placeholder for an actual

unit of blood. Participants will accept it as long as it fits into the puzzle (the simulation).

Either way, finding something jarring is what will break the participants out of the simulation.

Make sure your scenario is written to be accurate, your allies are good actors, and your props are good enough. To us, fidelity wins over realism.

### 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: [jph5z@uvahealth.org](mailto:jph5z@uvahealth.org)

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<https://www.medicalcenter.virginia.edu/medsa/simulation-newsletters>

## Pictures!



A picture of the TCV-ICU ECMO code. There is a surgeon in surgical gear using a real ultrasound on the fake groin while CPR is in progress. There are nurses, physicians, RTs, and ECMO specialists in this picture.



This is another interprofessional simulation: a malignant hyperthermia scenario in the Outpatient Surgery Center. In this picture, there are CRNAs, nurses, and techs all working together.

## How to Increase Fidelity

There are ways to increase fidelity without being perfectly realistic. For instance, we use rigged IV lines that don't go into our manikins — but they still have a cap on the end and a Tegaderm cover. We have our medications that aren't perfect but are the right concentration and amounts. As stated before, we have normal saline bags with red food coloring but we do make the label and paperwork look pretty close to the real ones.

It's also partly the simulationists being good actors. We're the offgoing nurse as described earlier, we're the LIP who ramps up on recognizing VFib, we're the Vascular Access Team coming in and asking what size IV and what location are needed. If we as simulationists pretend and act as if this is a real patient, so will the participants.

## A Wonderful Example

We had the chance recently to be part of an ACLS mock code on TCV-ICU that went to ECMO placement. The simulation ran for more than 45 minutes and the patient was actually cannulated and put on ECMO. How can we do that?

With a lot of help from both TCV-ICU and the ECMO team! TCV-ICU asked for the mock code simulation (we're now doing them about monthly) and brings in their full team including LIPs. We bring a mock code cart, a mock drug box, and a training ZOLL.

The ECMO team brought a groin they had created out of ballistic gel that had arteries and veins that could be cannulated. Here's one of the great examples of fidelity vs. realism: once the team said they wanted to put the patient on ECMO, we put the groin model on top of our manikin. The entire team saw this happen. It's totally unrealistic to have a groin suddenly appear on your patient. They were willing to accept it in the simulation because it allowed them to do what came next. It fit in the puzzle. We don't need to be perfect — just good enough.

## Journal Article

This month's article is an editorial that discusses various types of simulations for multiple casualty incidents. Unsurprisingly, since we've chosen it for this month, it talks about a lot of the same topics we've discussed in this issue.

The article is Moss, R. and Gaarder, C. (2022). Exercising for Mass Casualty Preparedness. *British Journal of Anaesthesia*, 128:2; e67-e70, February 2022.

We have a link for this that should work from any UVa computer:

<https://www.sciencedirect.com/science/article/pii/S0007091221006863>

## Our Ongoing Opinion

The TCV-ICU ECMO simulation is a great example of a very complicated interprofessional simulation. Cannulation is a rare thing to happen and yet we want to be very good at it when it does. It is our strong opinion that we should continue to do simulations like these. Let us bring everyone together to practice the hard things!