



### Welcome!

Welcome to our Simulation Newsletter!

This month, we are focusing on the simulations that are part of the end-tidal CO<sub>2</sub> monitoring roll-out on the General Medicine floors (3E/3C/3W/5S). This is a

project those floors have been working on for months to allow their staff to do spot-checking and short-term EtCO<sub>2</sub> monitoring.

The staff of those floors should be proud of what

they've done and we are happy that we can be a part of it!

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

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### EtCO<sub>2</sub> Rollout Overview

The NECs for the General Medicine floors, with help from NPDS and Masimo, developed a multi-step rollout for end-tidal CO<sub>2</sub> monitoring.

The first step was CBLs with required videos from Masimo. These provided the basic information that staff needed about what end-tidal CO<sub>2</sub> monitoring is and what it could do. For a new process, this has to be

the first step — a nurse can't do well in a simulation if she doesn't have the basic information.

The second step was a return demonstration to show they could locate the equipment and set it up correctly. Again, this is a needed step, allowing staff to put their hands on the equipment and see how it works.

The NECs asked LSLC to help with the third part: simulations that reinforced the first two steps but also allowed the nurses to see how this could be useful for them with their actual patients. That is what every nurse asks when presented with a new process: how does this help me better care for my patients?

### The Scenarios

We're going to walk a fine line in describing the scenarios, as the simulations are still running and we don't want to tell people what they will see. However, we can give some hints...

The NECs and LSLC created four scenarios. Each of the scenarios has a reason for using EtCO<sub>2</sub> monitoring, but only some of the patients are having a respiratory problem. We wanted to show that EtCO<sub>2</sub>moni-

toring is useful for more than just finding a COPD exacerbation.

EtCO<sub>2</sub> monitoring can help detect problems at various places: CO<sub>2</sub> creation, shock states with poor perfusion, gas transfer in the lungs from blood to air spaces, and expiration of CO<sub>2</sub> from the lungs. Our scenarios show those different aspects of EtCO<sub>2</sub> monitoring.

In addition, during the debriefing, we talk about how EtCO<sub>2</sub> monitoring can help

determine when the patient has improved. If the patient isn't improving, EtCO<sub>2</sub> monitoring gives more data showing the need for a higher level of care.

Our scenarios reinforce that EtCO<sub>2</sub> monitoring can be used for detection, ongoing monitoring, and resolution of the problem.

### Steps of a Simulation:

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

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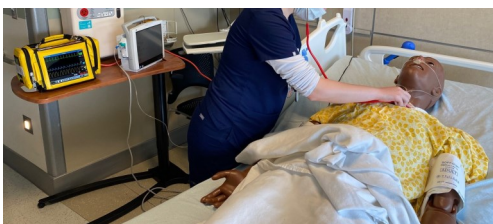
## Pictures!



Two participants in the simulations who are both listening to lung sounds. We emphasized that nurses haven't lost anything (such as auscultation) because of EtCO<sub>2</sub> monitoring — it's another tool to go along with what they're already doing.

You can see the EtCO<sub>2</sub> waveform on the yellow monitor in the bottom picture.

You can also see the travel monitor where they were able to practice the setup again.



## Snowball Simulations

One constraint we had on the simulations was time. Nurses would sometimes be coming off the floor to do their simulations, and they could only be away for so long. So we came up with snowball simulations.

Each nurse would come for two 20-minute blocks. In the first one, they would observe the nurse before them being the primary nurse in a simulation — that was their orientation to simulation. In the second block, they observing nurse would now be the primary nurse for a different scenario and another nurse would observe them. We would roll through the simulations with little time lost for briefings. We planned to have 12 people attend in each 4-hour block.

Some nurses came in on their off time. We encouraged them to stay to observe more simulations if they wanted to. Each nurse was scheduled to see two of the four scenarios, but some nurses stayed to see more.

We had to keep very close watch on time — 20 minutes is not a long time for a simulation including the debriefing. The floors were excellent about getting coverage for on-duty nurses and having them at the simulations on time. We made it work!

## STICU Simulations

We've done a version of this before. In 2014, STICU rolled out proning patients. They did a similar process: CBLs followed by proning simulations. We were glad to help with those simulations as well. We deliberately rigged IV lines, central lines, and ET tubes so that it would be easy for them to be lost during the proning and emergency un-proning processes. This helped staff remember to be cautious and to plan ahead, which were two of their goals for the simulations.

## Journal Article

Our article this month discusses using simulation as part of orientation to new intubation processes during the COVID-19 outbreak. The article is: Munzer, Brendan, et al. (2021). In-Situ Simulation Use for Rapid Implementation and Process Improvement of COVID-19 Airway Management. *Western Journal of Emergency Medicine* 21(6), 99-106. The following link should work from any UVa computer: <https://www.ncbi.nlm-nih.gov/proxy1.library.virginia.edu/pmc/articles/PMC7673893/>

## You Can Do This, Too

The General Medicine floors have done a great job of putting together a multimodal education structure, with CBLs, return demonstrations, and simulations. If you have a new process coming, you can do this, too.

It doesn't have to be exactly the way General Medicine did it. Figure out what your educational goals are (that's always the basis for every simulation) and then you can decide on what structure to create for your new process rollout.

We believe simulations can be part of that structure because it's always better to practice something new on a plastic patient instead of a real one.

So far, the feedback we've received has been positive, both from comments and from people staying beyond their scheduled times (when possible) to see as many simulations as they could.