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Domestic & International Collaborations to Combat COVID-19

Announcer:

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Here's your host, Dr. Matt Birnholz.

Dr. Birnholz:

Coming to you from the ReachMD studios, this is a special COVID-19 edition of *Vascular Viewpoints*. I'm Dr. Matt Birnholz. Joining me to talk about American and international collaborations toward vascular access innovations is Dr. Kelly Cawcutt, an infectious disease and critical care physician and Associate Director of Infection Control and Hospital Epidemiology at the University of Nebraska Medical Center site of one of the world's most preeminent biocontainment units where several of the first American cases were seen and managed.

Dr. Cawcutt, welcome to the program.

Dr. Cawcutt:

Thank you so much for having me back.

Dr. Birnholz:

Great to have you. So I'd like to start with some background on your hospital team's experience of COVID-19 in the ICUs thus far. How have you and your colleagues been holding up in this unprecedented time?

Dr. Cawcutt:

Oh, well, thank you so much for asking specifically about how myself and our colleagues are holding up. Having wellness discussions in this time I think is incredibly important, and I am very grateful to say that our team is doing very well. There's been an extraordinary amount of collegiality and support for each other, reaching out to make sure people are doing well, to see if they need help, and truly just stepping forward in unprecedented ways in this unprecedented time we are in.

Dr. Birnholz:

Of course. And I think the entire country owes you and your team a debt of gratitude. You're among the first to see, adapt to, and manage patient cases with COVID-19 that started coming to your ICUs before almost anywhere else. Can you tell us a little bit about the initial response to vascular access protocols and any adaptations, if any needed to be made, when these patients started coming in?

Dr. Cawcutt:

Sure, absolutely. So, as you mentioned, we did have some of the first cases in the United States that were brought in from specifically the Diamond Princess to our institution, and they were brought in initially into our biocontainment unit or our National Quarantine Center. The biocontainment unit would be equivalent of an intensive care unit for these patients, and that unit has been staffed up with trained, multidisciplinary teams for years, and that includes vascular access colleagues who are trained to help place at our institution PICC lines or midlines. In the biocontainment unit, if we required a central line, that was placed by one of our critical care medicine physicians specifically or one of our anesthesiology colleagues who also is critical care medicine trained.

So, when we started with some of those early patients, we relied on the expertise and the training that has existed for years at our institution, but just like everywhere else in the country, we had to prepare for wider community spread and a larger number of patients than what our biocontainment unit could necessarily continue to support alone, and as we prepared for that, we had to look at what it

meant to expand the number of people who could support the patients in a multidisciplinary aspect. For us, that included training more healthcare workers and colleagues on appropriate personal protective equipment, safe donning and doffing practices, and reinforcing all of those strict infection control policies that we followed so religiously in the biocontainment unit because we know that is what kept us safe from acquiring healthcare infections during Ebola, and that is what kept us safe with those early COVID-19 infections where we did not see healthcare worker conversion to positive infection. That specifically did include increasing the number of people trained on our vascular access team who could go into the rooms and provide vascular access support as needed.

Dr. Birnholz:

And let's center on those policies for a moment, because there is the old adage, "If it ain't broke, don't fix it." Your team has been among the frontrunners in designing protocols that others would follow, and you've been preparing for this for many years. I'm wondering, however, if there were any existing or updated guidelines in the context of this crisis that have played a role in ICU vascular access protocols at Nebraska Medical in particular.

Dr. Cawcutt:

Sure. So there are protocols that changed that impacted our vascular access team, but there were not changes to our vascular access protocol. So, what I mean by that, in order to support multidisciplinary, robust teams and our standard of care that we've provided historically pre-COVID to our patients now in the era of COVID-19 infection, we did have to struggle with the same potential shortages that many other institutions, both here in the US and around the world, were struggling with, such as how to preserve our personal protective equipment, specifically looking at N95 use, so that in our patients we could continue to provide that high level of care and protective gear for our healthcare workers entering those rooms, including our vascular access teams. The protocols, the line choices, the anatomic location, none of that part of our existing vascular access algorithm actually changed for these patients.

Dr. Birnholz:

Well, for those just tuning in, you're listening to a special COVID-19 edition of Vascular Viewpoints on ReachMD. I'm Dr. Matt Birnholz, and with me is Dr. Kelly Cawcutt, Associate Director of Infection Control and Hospital Epidemiology at the University of Nebraska Medical Center.

So, Dr. Cawcutt, let's talk about the global nature of this disease and consider the responses that have been made here and in other parts of the world. When I consider Europe, for instance, there have been several changes that came over there for their line insertion practices, their device choices to better combat the disease. How did that compare with the practices in the US? And what kinds of changes made sense on their end?

Dr. Cawcutt:

So I think that's a great question, and certainly we have seen different practices employed in Europe—and actually, we've seen variations in practices across the US—in response to vascular access and many other preventative measures taken to try and prevent complications related to COVID-19. One such practice very specifically that impacted vascular access was the use of the helmet for respiratory support as a noninvasive ventilatory mechanism. Those helmets, the way they fit and attach to the body, certainly could impact decisions for vascular access placement in the neck or upper body. There is more risk of compression of certain vascular areas, such as axillary vein, that could impede flow and increase potential risk for those types of catheters. So I do think some of the clinical decision-making has surrounded how we care for patients from a ventilatory standpoint and the limitations that those devices result in when used.

In addition, we know that the nasopharyngeal area and the oropharynx really carry the highest burden of virus, so some groups did make the decision to avoid lines that would require the healthcare worker to be in very close proximity to the face of a COVID-19-positive patient or a person under investigation for COVID-19, again to minimize the risk of possible transmission from the droplets and possible aerosol if the patient coughed and was not ventilated with an invasive airway in place.

Dr. Birnholz:

That's interesting, Dr. Cawcutt. And one of the areas that caught my eye regarded the GAVeCeLT recommendation updates that included minimizing chest x-rays and switching to ultrasound to decrease the number of touchpoints and need to move between ICUs and radiology. Did any of those considerations work their way into you and your colleagues' practices, or did you have another approach that was more effective for your place and time?

Dr. Cawcutt:

That is an excellent question. Absolutely, there has been a lot of both anecdotal statements and guideline-based statements to minimize the transport of patients or the number of people in the room. For us, again, we really did not substantially change our standard of care. We did not change how we assess our lines as they are placed. So we do place all of our lines under ultrasound guidance. We do follow that wire in and take images of that to place in the medical record as confirmation by ultrasound, but we did also

take the opportunity to develop clear protocols on how to bring radiology in for those x-rays as needed with the least number of people possible in the room but also with the correct personal protective equipment and clear infection control policies and procedures on how to safely bring mobile devices into the room and how to clean them on exiting the room to get those images that we would historically have gotten.

Dr. Birnholz:

And you make some great points, Dr. Cawcutt, and I want to put them in context. When we consider other parts of the country and the world, one of the big factors that guided many of their adaptations in vascular access concerned the loss of many of their healthcare professionals, trained ones at that, for line placers due to becoming infected themselves and needing to be quarantined. What were the infection rates like among your team given the protocols you had in place?

Dr. Cawcutt:

We have been extremely fortunate. We've had a very low rate of having healthcare workers that have become infected with COVID-19. And early on in those first cases we talked about at the beginning of this, none of our healthcare team, including myself, who was part of that team, developed COVID-19 while caring for patients. We did certainly have some of our healthcare workers develop it, but actually, our healthcare workers, like many other areas, really developed the infection not from direct patient care but from community or travel-related exposure and imported cases, if you will, to our area, so the majority of our patients who had COVID-19 have not resulted in a healthcare worker infection.

Dr. Birnholz:

Well, it's certainly inspiring news given the low rate of transmission among your team, and we're certainly extending all our hopes and wishes that it will remain that way given the protocols that have been working for your team. But I want to look internationally one more time and consider some of the collaborations that you think might or will be needed going forward to put ICUs here and abroad in a better position to respond to this pandemic. What can you tell us about that?

Dr. Cawcutt:

I think that's a fantastic question, and I do want to reiterate we have been fortunate here to have the opportunity to take care of patients in a setting where we were prepared for these kinds of patients and where we also had the luxury of time before patients were here in our community. Not everywhere in the world clearly had that luxury.

So I do think as we move forward as a global community: 1) we've already seen phenomenal collaboration that is truly unprecedented with colleagues from around the world sharing their experiences, trying to get research up and running as fast as possible. I don't think we've ever seen the number of clinical trials, case reports, cohort studies, innovative ideas coming forward in the history of medicine that compare to what we are seeing right now as we speak. We are truly living in such a historical moment in medicine, and such groundbreaking science is coming forward to decide how to collaboratively evolve so that we are continuing to provide the best care for our patients and our healthcare structures can manage scenarios like this as they evolve in the future, because inevitably, as we saw with SARS, as we saw with MERS, as we saw with Ebola, and frankly, as we've seen in certain years from influenza, these types of pandemics will continue to rise in time, and COVID-19 is not over yet. And second, if you are resource-limited, what strategies can we safely employ? You know, we've used masks historically one time and thrown them in the garbage, and we are quickly learning that with appropriate extended use and reuse, we can certainly extend our capacity to have appropriate equipment for our healthcare workers, and that's something, again, that we had the luxury to prepare for and study. And I think as research evolves, we all need to collaborate, do large international studies and redefine any new best practices that are novel and would be continued going forward into the future.

Dr. Birnholz:

Well, I couldn't possibly ask for more informative or inspiring takeaway comments to keep in mind for our audience. I very much want to thank my guest, Dr. Kelly Cawcutt, for joining me to discuss American and international collaborations toward vascular access innovations.

Dr. Cawcutt, it was wonderful having you on the program. We're so looking forward to talking to you again.

Dr. Cawcutt:

Thank you so much for having me. I truly enjoyed the opportunity to come back and chat with you.

Announcer:

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