Welcome back to Central Line. I'm your guest host, Dr. Brooke Trainor, and I'm welcoming Dr. Michael Hofkamp, the co-chair of the Medical Student Education Committee for the Society for Education in Anesthesia, or SEA, and Dr. Sara Neves, the co-chair of the Graduate Medical Education Committee for the SEA. She's also program director for the Anesthesia Residency Program at Beth Israel Deaconess in Boston. Today, we're going to explore the topic of medical student and resident education, together. So I'm happy to have both of you with us today. And let's start with both of you telling us a bit about yourselves and your interest in training the next generation of our anesthesiologists. How about I start with Dr. Hofkamp?

Hello. Thank you for having us on today. Appreciate the opportunity to speak. I grew up in Illinois and did my residency in Baltimore, and I migrated to Texas and I took an interest in educating medical students. And when I was a junior faculty member, I became the faculty advisor for our Anesthesia Interest group in 2011. And I've been mentoring students to go into anesthesia ever since. And I'm adjacent to graduate medical education but I mostly deal with medical students at my institution.

And Dr. Neves.

Hi. Thank you very much for having me. I'm an anesthesiologist, a fellowship trained in critical care, and I'm the residency program director here at Beth Israel in Boston. I did
my residency at Yale and my fellowship at Brigham and Women's. And now here at BI. I think, you know, one common thread has been a real focus on education and teaching. And so I kind of got the bug from those programs and love working with residents and learners here.

DR. TRAINER:

Wonderful. And we're talking about medical school and residency training and wondering what some of the trends are that are right now being integrated for learners today and how that looks different than when some of us old folks who practiced for a while were in school and in residency.

DR. NEVES:

Sure. So I think the latest trends that we're really seeing now is that, you know, there's a focus on adult learning, as I think there always has been in training. But how that adult learning happens is different. And, you know, when I trained, I think when many of us got trained, we got a big pile of textbooks. We'd gather periodically for lectures by an attending. Really towards the end of my training, we started to see a little bit more of kind of active learning techniques, you know, problem-based learning discussions or PBLDs, some SIM. Now our trainees are doing a lot of that kind of lecture watching on their own, whether it's podcasts like this one or YouTube lectures or watching or listening to recorded lectures. And then what they're looking for from us is the utilization of that information. So we're really seeing a lot of shifting to that kind of flipped classroom model where they do the reading of background learning before and then the active learning as a group.

DR. TRAINER:

I'm curious if there's a connection between how we're training our medical students and residents and then how we are offering them continuing education in the future, you know, after they've graduated. And does that education that we're giving them, is that creating and fostering that interest for that future lifelong learning? You know, is that something that you as the trainers and and, you know, all of us really training any of these budding anesthesiologists, you know, should be intentional about? Dr. Hofkamp?

DR. HOFKAMP:

Yeah, I agree with Dr. Nieves about the the increasing trend towards using technology and other modalities. One of my other roles is in the Anesthesia Toolbox. I'm on the editorial board. And the Anesthesia Toolbox is an educational platform mostly for
residents but we do have some educational content for medical students, and it's a self-directed learning process. About half the residency programs subscribe to it. But I see, in the future, physicians completing continuing education requirements kind of doing it their own way. Even with our current MOCA requirements, for the American Board of Anesthesiology, there's usually a lot of different ways that you can maintain your board certification. Like, for instance, even when I was a young attending several years ago, you had to do a simulation session, and then they softened that to say, Well, you can do a simulation session, you can also do some of these other things. So I think it's a constant evolution to match the technology and the needs for continuing medical education to the needs and wants of the physicians who have to complete it.

DR. TRAINER:

Dr. Neves?

DR. NEVES:

Yeah, I think how we teach the trainees is really starting to mimic how we learn as as attendings in practice, right? It's very much like curiosity driven, based on what we're seeing in our practice, what we're curious about with the patient, you know, that kind of Wikipedia rabbit hole type of learning. And I think now we have a lot of resources such as the Anesthesia Toolbox, that are really great for our learners to kind of, you know, feed that curiosity, like, you know, develop those learning techniques that are what they'll do as as attendings.

DR. TRAINER:

Yeah, that's great. And that really touches upon my next question. I'm sure many of the young doctors transitioning from education where they're being fed a bunch of the information and they're not really responsible for what content they're being fed, from that to transition to practice where now they're in charge of what or how even they learn. And so how do we reiterate that or enforce that independent growth when they're transitioning from being fed education to then seeking it out on their own? I think you touched upon some of it, but is there anything to expand upon?

DR. NEVES:

I think for us it's about having them practice using that information, right? So giving them opportunities to seek it out rather than feeding it to them. So that's why we focus a lot on opportunities for them to use clinical judgment, decision making that prompts them to identify their own knowledge gaps and, you know, is more realistic to how we
experience learning and practice. I think we also focus more on, you know, when we were reading things in textbooks, you had to worry about information not being accurate because it was outdated. Right? And now we worry about the information not being accurate because it's not vetted. Right. So we include a lot more about identifying bias and sources and evidence based medicine. So that piece, I think, also prepares them for how to learn information and use information in in practice.

DR. TRAINER:

Right. That that makes so much sense. And so, you know, we talk about all the new ways of learning that what people are finding on the Internet. And you know, I think that goes hand in hand with the transition back from in-classroom to virtual learning. And so we were really heavily using this virtual learning for the last few years. I think now we're starting to finally get back to some normalcy with some of that adopted techniques and technology. So I think a lot of folks really depend now on Zoom and electronics and that virtual, you know, opportunities for learning. So how do you blend the best of both worlds with that in-person experience and then the virtual experience? What does that look like for the future and for now? Dr. Hofkamp?

DR. HOFKAMP:

I think that there's always going to be a role for in-person learning, particularly when using the Socratic method for classroom. At my institution, we have morning didactic sessions that are mainly focused for people who are our main operating room because people on outside rotations like the SICU and the Pain clinic can't always attend. But for our learners who show up to our our didactic lectures, we are trying to increasingly incorporate a flipped classroom model where we say, All right, you need to know a little bit about this topic so we can talk about this topic. This is going to be more of an active learning process as opposed to a passive learning process where we just read slides to you. And so my experience has been when I employ a flipped classroom model, I think that the students are much more engaged and I think they get more out of it. I do think that there is a role for virtual learning, particularly with providing a repository of excellent educational content. Like, for instance, the University of Kentucky has a big YouTube channel with all their lectures, and those are excellent lectures and someone can watch those at 2:00 in the morning at their leisure and think there's a place for that. And I also think there's a place for people to interact with an attending in real life time and talk about the the subject matter in more depth and detail.

DR. TRAINER:
I'm curious, Dr. Neves, if you have anything to add to the balance of that. I mean, Dr. Hopkins you touched upon that you think it is important. And I think that is, you know, the wave of the future. It seems to be the hybrid of virtual and in-person. But how do you balance that, like what, you know, degree of in-person versus hybrid learning, with the convenience of virtual, you know, and being able to offer it even wider geographical locations like you alluded to, to even increase number of students. How do you balance that?

DR. NEVES:

I think we're definitely still finding that balance and figuring out something that works. One thing I've started to notice is I feel like things that are in-person are only in person, and things that are virtual are only virtual, right? We had, you know, still have some of this transition time, certainly in our grand rounds where there's two options and it makes it challenging, right? Because trying to motivate people to come in person with a hybrid option, you know, I think makes it tricky. But Zoom has really offered, like Dr. Hofkamp said, a lot of opportunities, whether it's for programs who have limited resources, right? To have guest speakers that they might not otherwise be able to afford to fly out or we use it to take advantage of pockets of time, right? So our residents have a Tuesday tune in where it's designed. One resident talks about a topic while the rest of them are just listening and setting up their rooms. So they're all connected in a way that they otherwise aren't usually in the mornings, right? They're all in their individual rooms, but it's an informal listening only experience that gives them a chance to to still do some learning.

DR. TRAINER:

That is so cool. And and that just brings me to the next question I'm going to ask about non-clinical training next. We are going to take a short break and be right back.

(SOUNDBITE OF MUSIC)

DR. SCOTT WATKINS:

Hi, this is Dr. Scott Watkins with the patient safety editorial Board. Nothing strikes fear in the hearts of anesthesiologists more than the difficult airway, except perhaps the pediatric difficult airway. The physiological difference in oxygen consumption between adults and children are well known to all anesthesiologists. So it will come as no surprise that the most common complication involving pediatric airway management is desaturation or hypoxemia. The use of passive oxygenation by nasal cannula that flows as low as 0.2l/kg per minute significantly increases the time to desaturation during
airway management. This benefit is found with little to no discernible downside, suggesting that passive oxygenation via nasal cannula should be considered any time a potentially difficult pediatric airway is encountered. This is one way to improve the overall safety and success of airway management.

VOICE OVER:

For more information on patient safety, visit asahq.org/patientsafety22.

DR. TRAINER:

And well, we're back. So non-clinical training I feel like is just as important. There's an increased emphasis now on wellness and leadership as well as practice management issues. The business side that I feel like is so scarcely touched upon, at least when I went through medical school and even residency. So has that changed? Are we now providing more education related to these non-clinical topics?

DR. HOFKAMP:

I can say that I've seen it at the institutional, state and national level. For example, in my own institution, we had our grand rounds as it's Thursday morning and my office mate gave a talk on personal finance. And it was mostly geared towards residents. But anybody in the department could have gotten value out of his excellent comprehensive talk. And I think at the at least for the Texas …anesthesiologists, we're increasingly providing programming for residents and medical students on the topics of wellness and advocacy. And I know at the level they're doing that as well. If you look at the educational program, you can see a variety of offerings geared towards those non-clinical topics for our residents and medical student attendees.

DR. TRAINER:

Is there anything being taught now with the considerations we've given to diversity, equity and inclusion, health disparities? Are we providing more attention to those areas and topics, you know, especially our roles as physicians in how that impacts care that's delivered and the social injustices. Residents are much more keen and aware of these things. So are we teaching to this specifically and providing this like maybe community care opportunities and things like that to help our future physicians?

DR. NEVES:
I think for us we definitely are having an increased focus on this. Our efforts are really geared to making sure our anesthesia trainees are recognizing their role, right? So contrary to the typical paradigm of the anesthesiologist being perioperative in-hospital only clinician, I think we all know, right, we're very well poised to see the effects of health care disparities on our patients, whether it's in methods of chronic pain management and the pain clinics or certainly the peripartum safety of mothers and labor and delivery, medical optimization or lack thereof, in that we see in the clinic or in the ICUs. Research that's been much more active in this area is allowing our trainees to recognize that, yes, this is definitely our jurisdiction, it's definitely our purview. And so it's not just a primary care problem. And so I think there's always more that we could be doing. But that's a good first step that I'm seeing in a lot of programs.

DR. TRAINER:

Yeah, I love that. And, you know, I also think it'd be great to see even more allotment of credit hours and teaching emphasis on some of the health care policy impact. You know, again, I feel that there are other specialties and other health care careers that do place more emphasis on really teaching their learners, their students, on how to get more involved in advocacy and health care policy in general. And I wonder if the medical students and residency training programs have considered adopting more emphasis on these areas of teaching. Dr. Hofkamp?

DR. HOFKAMP:

Yeah, I think it's an evolving set of priorities, and I think that, to be quite honest, what happens in my smaller town and of Temple, Texas, where I teach, is going to be a lot different than in Boston, Massachusetts, at a Harvard hospital. However, as a specialty, I think we're starting to grapple with these issues. And I think that there's always going to be a little bit of a difference in opinion of how exactly where to go with some of the social issues. But I think in the training programs, we're starting to really emphasize some of the social justice issues. And I think that a lot of good progress has been made over the past few years, particularly since the pandemic.

DR. TRAINER:

Yeah. And I think, you know, I'm a very strong believer that knowledge is power and really health care policy and advocacy sort of go hand in hand with education and training. And and it's the strength we hold over any scope of practice issues. It's also, you know, gives us the power and knowledge to be able to help our patients. And I often have wondered, and Dr. Nevis, I don't know if you feel the same way as a critical care intensivist, maybe I'm a little bit biased in that I'm also a critical care intensivist and
believe that all anesthesiologists should have plenty of exposure to critical care medicine. And expanding our knowledge in critical care really distinguishes us from other specialties, including surgeons and medical hospitalists. But it really also aligns us better with our anesthesiology colleagues across the ocean in UK, Australia, India, all these other places where they are the perioperative experts in medicine when it comes to surgical patient issues. And so has there ever been consideration for adopting a dual certification for anesthesiologists critical care? I mean, we do a lot of it, and if we did a little bit more, wouldn't it be interesting to be able to call anesthesiologists, experts of critical care medicine as well, in OR and outside?

DR. NEVES:

Well, I'm definitely very heavily biased towards our trainees and anesthesiologists getting more exposure in critical care. I mean, I think especially as you know, we really identify ourselves as the leader of the perioperative health care team. I think, you know, that's where we can we can differentiate. We know how to more closely identify sick versus not sick, especially in our sicker patients. And our more complex patients is where we're going to be able to really bring our value. And so I'm very much pro more critical care exposure for our learners. Definitely think would be great to consider a dual certification with some more experience is definitely something I try to push on. Our residents really has very little to do with where you want to work after training, but that the critical care exposure is making you a better interoperative physician.

DR. TRAINER:

Absolutely. Just last question, I think for both of you. Is there anything that you would currently like to change about how medical students and residents are trained? I imagine that in the positions you both hold, you are attempting to push or adopt these practices. If that is the case, I just wonder if you had a magic wand and you could wave it and make a meaningful change without the obstacles in the way, What would you do with that power and how would you use it?

DR. HOFKAMP:

I think that the wave of the future is evaluating people on competencies and not time served. And our plastic surgery colleagues are attempting to do this. So, for instance, now you have to do four years of anesthesia, residency, and any of us who've sat on a CCC. have known that there are some residents who you are quite concerned about sending off into the wild, so to speak, at the end of their four year residency. And conversely, there are some other residents where maybe after three years of training, you could send them off to independent practice. So I think that as we move forward as
a specialty and I think as just in medicine in general, I think we're going to have better metrics, better evidence to support a competency based evaluation system where we train our residents and guide our residents through residency based on how well they're doing. It's kind of almost like an adaptive residency where it's we're fitting the training to the resident and not the other way around.

DR. NEVES:

Yeah, well, you can tell Dr. Hofkamp and I are both med ed nerds from C because that's exactly my thought as well. It would be a real paradigm shift for the US training system and would be a real challenge because I think our assessment tools right now are so poor, right? And so it would be very challenging not to slip into a system where, you know, programs that can graduate their residents in two years are seen as better than those who have a percentage that graduate in four years because of how long it takes for them to achieve competencies, right? And so you'd have I think we all worry about kind of a a race to the bottom, right. But I think if I had that kind of magic wand, I would love to have better assessment tools, more data to shift to that kind of system. I agree completely.

DR. TRAINER:

Now, that sounds really unique and incredible, so we'll see what the future holds. I can only imagine. Well, thank you both for such a great discussion regarding what's new and hot in medical student and resident education. Before we leave our audience today, Dr. Hofkamp, Dr. Neves, I want to thank you both for joining us. Is there anything else you'd like to leave our audience with? Any final words before we go?

DR. NEVES:

Oh, thank you so much. I think anyone who is interested in getting more involved or learning more about medical education, we have the committee of residents and medical students at the ASA, and there's a lot of cross talk with that committee and the Society for Education and Anesthesia. So we always welcome new members.

DR. HOFKAMP:

And I'll second what Dr. Neves said.

(SOUNDBITE OF MUSIC)

DR. TRAINER:
Sounds good. Well, it's been a pleasure having both of you on the show today. Thank you so much for your insight. We hope that all who have been listening have enjoyed some creative ideas here and solutions to our education. So thank you both. And please join us again next time on Central Line.

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