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Teaching in the Time of COVID-19

Narrator:
Coming to you from the ReachMD Studios, this is *COVID-19: On the Frontlines.* I'm Dr. Matt Birnholz.

On this episode, we'll share a special program produced by critical care specialists from the American Thoracic Society, as part of their new podcast series, Scholarly. The continual updates from ATS and other likeminded societies helping clinicians respond better to COVID-19 have been exemplary. But one area that has been mostly overlooked within the clinical community has been the question of how to sustain medical education and teaching in this time of a pandemic. That's the focus of today's episode.

We take you now to Dr. Avi Cooper from the American Thoracic Society, host of Scholarly:

This podcast is brought to you by the American Thoracic Society. We help the world breathe.

Dr. Cooper:
So, hello, and welcome to another episode of Scholarly, the podcast brought to you by The Journal, ATS Scholar, and the American Thoracic Society Section on Medical Education. My name is Avi Cooper. I'm a pulmonary critical care physician and a fellowship—Assistant Program Director at Ohio State, and I am very fortunate to be joined today by Dr. Lekshmi Santhosh. Lekshmi is a pulmonary critical care physician and the Associate Program Director for the Pulmonary Critical Care Medicine Fellowship at the University of California-San Francisco. Today we're going to be discussing a topic that hits close to home for all medical educators out there right now, and that is teaching in the time of COVID.

First of all, Lekshmi, let me just say it is a huge honor to have you on the podcast.

Dr. Santhosh:
Thanks so much, Avi. I'm really delighted to be here, especially for Scholarly, which is a great new podcast. I'm loving all the great content you guys have put out so far, so thanks for inviting me. It's really my honor.

Dr. Cooper:
Yeah, we're excited to launch it as well, so it's terrific to have you here. And I will say that Lekshmi is really a rising star in the field of medical education in general, not just pulmonary critical care, so I think it's particularly cool to be able to have her input on what we're going to talk about today, which is teaching in the time of COVID.
Now, obviously, the pandemic at the time of this recording, the pandemic has not yet hit its peak. Healthcare systems are still scrambling to adapt, and medical education infrastructure and training programs are also, I would say, adapting in real-time as we go, and today I was hoping to get Lekshmi's input and to have a conversation with her about how things are going with this kind of rapid transition we are seeing.

So, Lekshmi, I guess I'll just start with asking you, how have your fellows and other trainees been adapting to the kind of rapidly changing learning and practice environments that we're seeing?

Dr. Santhosh:
That's exactly the theme that's fresh on everyone's mind, Avi, is that everything is fluid, and we're all really learning and rapidly iterating and adapting all together, and we're learning from each other. From the training perspective, we're learning a lot about how to not assume that we know what the trainees want and how to really listen to what trainees want and say, "How are you doing?" "How is the balance and everything going?" "How are you feeling with this?" I think we've been fortunate to get a lot of peer support from what other programs are doing as well. This year we had the APCCMPD conference, the Association of Pulm- Critical Care Program

Directors. The annual meeting was virtual, of course, and we have a specific session dedicated to what are different programs and program directors around the country doing related to changing their practice environment for trainees related to COVID. And because of how individual like you said, every program is going to be hitting their peak a little bit at a different time. Everyone has different settings. There's ever-evolving standards, and the numbers and census are changing rapidly, so we're all in it together, and I think flexibility is the name of the game.

I think one way to approach it is to think about first principles, and we kind of thought about it in your program with 3 bill principles in mind. They are, first of all and foremost, I think: How do we protect the trainees, both physically, health-wise, and emotionally and mentally? And the second big principle is: How do we ensure that ongoing training and education is still happening safely and productively? And the third principle is the one that we wish we didn't have to talk about, but it's the truth, which is: How do we do all this while still preserving our PPE? And so, because each setting and site kind of has their own individualized responses to these questions, that makes each site and each program and even each rotation sometimes dictate differently sort of who is seeing the COVID patients, who's seeing the PUIs. Is it attending-only services? Is it attending- and fellow-only? Is it senior residents who are opting in? And so we are wrestling with all those questions just like every other program in the country.

Of course, when you get to a situation like tragically in New York, a lot of these principles seem kind of luxurious, and it's been an all-hands-on-deck approach, but for the rest of the country where we're still in the preparation phase or the early surge, we're thinking about it from these principles, and throughout it, all the trainees, the fellows and the residents are just amazing. They are resilient, inspiring, and they want to make a difference in however way they can, and that comes in so many different ways. Our UCSF medicine residents have put together a huge fundraising effort to raise money and supplies for programs in New York, residents in New York. Some of our senior fellows are actually thinking of sending a delegation to go to places that are hard hit, so we're trying to coordinate that at the health system level.

Dr. Cooper:
That's fantastic.

Dr. Santhosh:
Of course, we have trainees. Yeah, that will be really great to see because, you know, we feel that here in San Francisco, we're at a place where we're, fingers crossed, at a little bit of curve-flattening, perhaps, and thinking about how can we help our colleagues across the country. We're thinking about telehealth. We have our residents and fellows involved in telehealth. We're looking into are there ways we can get involved in tele-ICU across the country. And our fellows are getting involved in the research enterprise as well.

Of course, we're creating a good jeopardy pool and establishing and changing our culture norms about staying home while sick. I think in medical culture there's this culture of presenteeism, right? We all are showing up to work and the hero mentality, and this pandemic has changed that so much that you have to stay at home even if you have a sniffle, and that's the honorable thing to do, and that's the right thing to do, and that's a really big change in culture for medicine in general.

At the end of the day, our trainees are just passionate about advancing patient care, furthering their education and training, contributing to research and scientific knowledge and, of course, staying healthy and safe and taking care of themselves and each other through it all, and I think that's what we all want.

Dr. Cooper:
It sounds like you guys have taken a deliberate approach, a very kind of focused and multipronged approach to kind of ensuring that your program is ready, that your trainees are ready, and I think that's—I think that's fantastic. And I also like the shout-out to the fellows and the trainees who are doing amazing work, and I certainly. My fellows, the fellows working with me at Ohio State, I feel the same way.

I think one thing that other programs might be interested in hearing about is how you guys have coordinated your response as a fellowship. Has there been a task force or a point person within the fellowship to kind of coordinate all these different movements in real-time? How have you guys navigated that?

Dr. Santhosh:
That's a really good question, and I think that we're lucky in that we don't want to be in a silo; we want to learn from the experience of other programs, both locally and across the country. So, across the country, like I said, the APCCMPD has been a huge support as well as ATS and SCCM. Locally, I think getting support from our parent internal medicine residency program as well as other junior programs has been hugely helpful. So about once a week, actually, all the GME-wide program directors, APDs and key clinical faculty have kind of an open panel discussion of big picture issues: What are we going to do in July? How are people going to travel? Should we start preparing for remote interviewing and things like that now? So that's what's going on at the macro level nationally and at the

local level institutionally. Within our fellowship program, I think communication and transparency are the key ingredients to make it all work, so our program director and I have been really trying to communicate everything we know with the fellows in real-time, sending out regular kind of FAQ messages. It's a bit of COVID e-mail fatigue that everyone has, so we're being sensitive to that as well.

Dr. Cooper:
Sure, sure.

Dr. Santhosh:
And grabbing people informally, texting people. Like a lot of programs, we're doing our virtual Zoom Happy Hours once a week. Those are all informal mechanisms.

For formal mechanisms, what's been really helpful is that we had a preexisting structure of every Monday we have a hospital clinical and research conference. The first hour is clinical cases presented by the fellows, and the second hour is research updates presented by usually fellows, faculty, post-docs. And we've actually converted that into kind of an open forum about clinical and research aspects of COVID every week, which has been nice since we had that built-in protected time and space, so now that first hour is really talking about how is COVID affecting our clinical enterprise, so we either get an expert speaker from, say, infectious disease to come and talk to us or palliative care.

Two of our fellows just yesterday actually collated our internal data looking at outcomes. How have our patients hyper-locally done? Who all are discharged? Who all are intubated? Who all are extubated? What were their clinical characteristics? What's the proportion of AKI? And presenting that to the larger faculty and fellows. And we actually invited other divisions to that because they were interested, so Division of Hospital Medicine; we invited faculty and learners as well. So that was a great example of kind of repurposing our clinical existing clinical conference structure to target what's up in front of everyone's mind and make it useful for our fellows and faculty audience. And the research hour, which used to be sort of people presenting kind of like their own lab talks and works in progress and really exciting has now become this hour of brainstorming and collaboration and people talking about how are they pivoting their labs or how are they thinking about applying for grant supplements to harness their work towards COVID, so it's been really exciting.

Our main fellowship point people are still our program director and myself, and we're just trying for regular communication. Our chief fellow has also been critical in getting inputs in and out, especially about sensitive topics, so we want people to delicately be able to sort of opt in or opt out to caring for these patients. In a big residency they kind of just did a... Our big residency, they did a Qualtrics survey, sort of saying, "Would you rather prefer to be in a telehealth-only capacity and not take care of patients because of underlying health conditions? And we don't need you to disclose that." So that's a nice thing to be able to do when you have a larger program, but for smaller programs like ours and some specialty fellowships, the chief fellow is a nice way to get some of that information with a layer of security or anonymity, and so we can say, "Okay, these people are on the schedule. These people are on the jeopardy clinical backup schedule for the ICU. These people are not on the schedule." And then that leaves kind of a layer of security or protection or anonymity.

Dr. Cooper:
It sounds like, from the institutional level on down, you guys have really kind of taken this head-on and set yourselves up well to handle the pandemic. I know with our fellowship I've been really impressed with even the incoming chief fellows from our program have been involved in kind of adapting the schedule and kind of shaping our staffing response at the fellows' level, and so it sounds like a lot of similarities there. I think it sounds like you guys have really done a great job.

So, why don't we zoom in a little bit on the teaching level. Have you been on a COVID teaching service yet?

Dr. Santhosh:
Yes, I just got off yesterday, actually, our weeklong COVID ICU service.

Dr. Cooper:
And what was that like? Are you teaching on rounds? What are you teaching on rounds? How is that going?

Dr. Santhosh:
The amazing thing about it is, in talking to the people who are rotating with me, everybody from the residents to the fellows to myself, everyone was saying the same thing, which was, "I feel so much better being here in the thick of it all in the ICU rather than when I was at home." There was this palpable sense of everyone wanting to be there, this mission, camaraderie, teamwork, and that's intrinsic and inherent and such a big part of ICU medicine in general, and it's even more accentuated now, and that was really inspiring.

And as for teaching, I firmly believe that the show must go on in terms of education and also acknowledging that even though we're very

busy and there's this whole extra emotional overlay of fear, anxiety, stress, ambivalence, I think it's really important to acknowledge those very explicitly up front so that you can talk about that and then also still prioritize and value teaching on rounds. So my intro spiel sort of at the beginning of every ICU week or medicine attending wards week has been largely the same for a couple years, and I noticed that this time it was really different because we spent a lot more time talking about those mixed emotions and conflicted feelings that people are feeling and normalizing that and validating that and talking about the cognitive load that learners are experiencing in addition to the usual high cognitive load in the ICU with 10,000 pieces of data, alarms beeping. The learners and faculty are worried about personal health, their parents and grandparents, colleagues in New York and across the country, and neighbors, and people are worried about how to think clearly after inhaling your own CO_2 all day with the universal masking policy, and that's just a different thing that adds to your cognitive load that you're not used to. And there's the whiplash of all the changing policies and procedures, so I up front kind of acknowledged all those feelings and said, "It's okay. It's okay to not be okay. We're all in this together, and let's keep a pulse on ourselves, both physical and emotional health."

And for rounds teaching, of course, leading up to service we're all constantly consuming the COVID content, reading the journal articles, reading @medtwitter and guidelines, and one thing that surprised me in the feedback from the trainees is that they really appreciated the teaching that I did on COVID and on evidence-based medicine and talking about recent articles and pearls from @medtwitter. And what they appreciated actually even more was that feeling of normalcy of just teaching about regular, core, bread and butter ICU topics, so that felt like a temporary and positive reprieve from COVID. So, when I was teaching about criteria for extubation or differential for refractory shock in patients or treatment modalities for alcohol withdrawal, everyone had said universally, "That was very refreshing and reminded us that these diseases are still happening and we're still getting our core learning in," and people liked that and felt kind of a mental break and return to normalcy.

I think another thing that we can do is calling out and talking out loud and discussing very explicitly clinical reasoning and diagnostic reasoning, so I've been doing a lot more of that: What is our pretest probability for COVID in this patient? Is this person a high risk or a low risk and why? Do I believe a negative test up front? How are the sensitivity and specificity of the different tests impacting me?

We talked a lot about anchoring bias and premature closure and what's the risk of missing a COVID diagnosis or non-COVID diagnosis and talked about social determinants of health and how health inequities have been magnified by COVID. And there's a huge role of teaching just by role modeling , keeping that calm amidst a very stressful situation. When patients, families, our staff, our interprofessional team, our consultants are all anxious, there can be some I'm sure you've experienced this some "pushback" among some consultants or services or things that you're requesting in the COVID times. And role modeling to trainees, how do you navigate that? How do you talk about that respectfully? How do you negotiate sometimes and acknowledge people's fears and keep your cool?

And also, I think it's more important now more than ever to talk about the role of humanism in medicine, particularly in the ICU when our patients are delirious and vulnerable and they can't have visitors and English may not be their first language, and so role modeling and talking explicitly about the value of humanism in medicine in the ICU has been huge this week. Teaching in the COVID ICU this week was incredible and rich, and so many things I think that we take for granted have been pushed to the forefront, and it was a wonderful experience from my perspective. And you have to ask the trainees how it went from their perspective, of course.

Dr. Cooper:
Based on your description, I'm sure they had a good experience with you as their attending. It would be cool to be a fly on the wall, you know, and watch you work and do that because it sounds like the richness and depth and the attention that you're giving to kind of all of their needs, both educational and personal and noneducational, is really amazing.

Dr. Santhosh:
Oh, thank you.

Dr. Cooper:
So you said that you felt like your kind of preamble setting the stage for the week on service was different. Do you find... Did you find that you were debriefing more or less or differently this week than others?

Dr. Santhosh:
That's a good question. I think that debriefing—we spent a little bit more time on that. I think our debriefing process was pretty similar, or pre-briefing, or talking about how would we extubate a patient with COVID precautions. We talked about that a lot more than talked about it afterwards, or if a patient is not doing so well or celebrating patient successes, and so all of that debriefing I think we took the time and space for instead of sort of someone… Instead of maybe passing by that or acknowledging that and moving on, we allowed a little bit more time and space for people to talk about it and listen and allowed a time for silence.

Dr. Cooper:

Yeah, and I think the fact that you can do that while the added stress of caring for COVID patients, which is, frankly, there, right? in terms of personal exposure and your staff and patients' exposures and stuff the fact that you can still do that and operate at such high a level is really quite impressive, I will say, and certainly something that I'm going to strive for myself when I'm servicing with house staff in the COVID ICUs, so kudos to you.

Dr. Santhosh:
Thanks for saying that.

Dr. Cooper:
Yeah, of course. How have you maintained kind of a... You mentioned the wellness piece, and that's obviously really, really important with everything going on outside the hospital, inside the hospital. How are you maintaining that wellness for your teams, for your trainees?

Dr. Santhosh:
This is so incredibly important, and I think talking about it up front, throughout, at the end of the week, every single opportunity we can to show how important that is and how much we value the trainees' wellness, physical and mental, is so key. We're doing our virtual happy hours with our fellows and with the quarantine-ees, and I just recently learned that Japanese word for it, onomi (phonetic). I don't know if I'm pronouncing that correctly, but it has been cool to be able to do that and see people's faces and say, you know, it's okay to turn on the video, and we can see your house and your cat and your and your babies all crawling in the videos together, and that has been really fun, and that cheers people up.

We also recently had a big mega e-mail chain going around with all the fellows who have kids and just acknowledging the added stress that now you're expected to not only be a physician in training and also a full-time home school educator and parent. And the kiddos are under their own levels of stress and acting out and different from routine, and so we had a really good e-mail thread where every single person kind of shared what they were doing, how are they balancing it all. Again, it's okay to not be okay. And in talking with the fellows who have kids, they said multiple times just having that forum and talking about these things kind of in the open what normally would have been you're kind of coping and managing it all and compartmentalizing, but actually giving that space to say, "It's okay to share tips, strategies, venting," that was really helpful to fellows.

For the trainees on the COVID ICU team, I think, like we talked about, the debriefing and the processing and also acknowledging up front and throughout some of the losses. And so, for example, in our specific rotation we have made it such that the residents who are not yet signed off to do procedures independently at this time, at this moment in time, are not going to be able to do procedures on PUIs or confirmed positives because, again, that would add extra PPE to have someone in there supervising, and that was a really tough decision. Again, that's a decision at this moment in time at this hospital this week, so we'll see. And so just acknowledging that up front that for the residents who are not signed off yet saying, "I know this is disappointing. You thought that this week you would get a lot of lines and procedures, and this is why, the principles that we talked about earlier about preserving PPE, protecting you, your health and safety, and still getting your education," and talking about it's okay to grieve that loss and reassuring people that we're going to find a way to sort of make it up at a different time and think creatively about those experiences, and I think I was in a meeting yesterday with our medicine program director, Rebecca Berman, and she was saying also something really poignant, which is that everyone is going to have their own different reaction to this pandemic, and some people are going to be saying, "I want to volunteer and go to New York and hop on the next plane tomorrow," and some people are going to say, "I want to be as far away from that as possible because that's scary, and I'm really worried about my elderly parents that I live with" or "my family" or "myself," and that is okay, and sort of normalizing that people are going to have a different wide range of reactions, and there's no kind of wrong reaction, and validating that people are going to have a range of experiences and conflicting emotions about that is really normal. So I think the key piece of this is communication, transparency, checking in with people, allowing them the safe space.

I will say that, in the vein of transparency, when our health system leadership started sending out a daily e-mail with the number of cases, the number of people on ICU, that actually alleviated a lot of stress among people, because when people didn't know the numbers, people feared and imagined the worst. People thought… There were all these rumors going around Facebook saying our hospitals are turning people away, and then when you hear the exact numbers, you can mentally prepare in a different way than when people were just wondering, so information also helps wellness and transparency helps wellness in that way.

Dr. Cooper:
I'm so glad that you... I feel like that phrase, "It's okay to not be okay"... I feel like that phrase should be on a billboard, you know.

Dr. Santhosh:
Yes.

Dr. Cooper:
Because I think there's a lot on social media, and I think our trainees are certainly kind of, I think, being experienced to the or experiencing the kind of heroism talk that's happening.

Dr. Santhosh:
Yep.

Dr. Cooper:
And I think that's terrific that people are saying that about healthcare workers. And I think that healthcare is getting the credit that it deserves, right? And the workers on all levels of healthcare I think are getting the recognition that they deserve, but not everyone has a uniform experience with this, right? And not everyone has the same emotional response to, like you said, anywhere from wanting to dive in headfirst, at the same time having fears about one's own safety or safety of your family members or friends, and I think just acknowledging that and, like you said, creating that safe space is so, so important.

Dr. Santhosh:
Absolutely.

Dr. Cooper:
If I had access to a billboard, I would put, "It's okay to not be okay" on there.

Dr. Santhosh:
Totally. It's a good—it's a good billboard for this time for sure.

Dr. Cooper:
As we wrap up, just to be a little bit more just to reflect on something practical that I think a lot of programs are dealing with is how to adapt in real-time to the educational needs of the trainees and specifically making sure that the curricula are disrupted as least as possible. People still have to take boards, and we still have to get certified.

Dr. Santhosh:
Right.

Dr. Cooper:
And we still have to learn the bread and butter of the specialty. And so, how have you adapted your educational curriculum to kind of keep that on the tracks?

Dr. Santhosh:
Yeah, I think we're still learning about how to do this, again from other peer programs across the country and locally. One thing that's worked really well is ensuring that our continuity clinics don't get disrupted and ensuring that the learning and the precepting doesn't get disrupted. So we actually have now… At 2 of our sites, they are completely 100% virtual, so the patients, the preceptors and the fellows are all from the comfort of their own separate homes doing Zoom visits, and it's worked remarkably well, and the patients are really grateful to have their care, and the fellows and faculty don't have to can maintain the social distancing and don't have to incur the unnecessary risk of showing up to an empty clinic room. Of course, in the beginning there were some initial tech snafus, but those were quickly dissipated, and we're all learning together.

Educational conferences for us too have been fully virtualized. And we talked earlier about the COVID-specific nature of some of those, and I think very cool stuff that our fellows are doing… Two of our senior fellows actually put together kind of a crowdsource searchable database resource of the recent papers and publications that came out, and then journal clubs, physiology didactics, all of that we've just been doing with Zoom only.

Some rotations, however, it's tricky. So, for example, with elective surgeries basically being completely cancelled here, our OR rotation where fellows learn the basics of OR airway management skills has essentially been cancelled. Our pulmonary function lab, we're taking it as a week-by-week assessment of when to open or reopen, and so that has been sort of closed as well, so we're trying to figure out how to repurpose or best use those fellows. So some of those fellows we have put into COVID ICU-specific rotations or allowed for sort of a deeper jeopardy backup pool because people are going to be maybe out sick or self-isolating or on quarantine, and so we're still trying to figure out pieces of that.

And I would say one nice thing about Zoom… I think it's easy to say, "Oh, yeah, Zoom is not the real thing. You don't have that social community, and it's really different." I think one nice thing about the Zoom that we've utilized is the chat function. And so, previously, the side chatter, whispers, are now open to all, and so even the more introverted people who don't usually speak up in a big conference with faculty and fellows are putting in links to articles or speaking up or asking questions in the chat box, and so it's sort of more

democratic in a way to have the Zoom meeting, so that's kind of been a nice side effect. We've used occasionally the Zoom breakout function as well to have little, small groups. It's not the same as in person, but we're making it work to, like you said, minimize the disruption to curriculum as much as possible.

And I think another thing that I've been telling the trainees is that some of these experiences are temporarily paused, and we will figure out a way together to think creatively about "making up" that time or experience later. And you are gaining a unique expertise in this, in this moment of time, by taking care of these patients, and so we're also building that up as robustly as we can too, so getting people involved either in the research aspect or the clinical aspect and saying, "It's okay and it's normal to grieve maybe the loss of a few weeks of this rotation. We'll try to find a way to make it up later. We'll try to adapt. And let's talk about this new expertise that you're gaining and figure out how to deliberately," like you said, "build up that expertise in some ways."

Dr. Cooper:
It sounds to me like your trainees, your fellows, are very fortunate to have you helping lead them through this difficult time, and it sounds like your fellowship is not just surviving, it's thriving, and I think it sounds like they're very lucky to have you.

Dr. Santhosh:
Oh, thank you.

Dr. Cooper:
And thank you so much for coming on, for coming on the podcast today. Is there anything else that you wanted to discuss or reflect on before we close?

Dr. Santhosh:
I think I just wanted to say to people who are listening to this that this is an amazing time to share best practices and talk amongst ourselves with each other about what's going well, what did you try and didn't work well, so that we can all kind of share these best practices and tips together. There's a lot of online mechanisms to do that. There's Facebook groups, WhatsApp groups, Twitter chats, and so I would say let's keep the conversation going and try to figure out how to adapt and make the best of the situation to protect ourselves and our trainees while still ensuring that valuable education is going on, and let's learn all this together and adapt together.

Dr. Cooper:
Thank you so much, Lekshmi. Where can people find you?

Dr. Santhosh:
I am @LekshmiMD on Twitter. That is my main social media home. My Facebook is only for people who I knew 10 years ago who I don't talk to anymore, so that's mostly for stalking, so you can find me professionally on Twitter.

Dr. Cooper:
So go to Twitter. Go to Twitter.

Dr. Santhosh:
Exactly, @LekshmiMD.

Dr. Cooper:
Well, thank you so much, Lekshmi. I think there was a lot here. I think there's a lot that we can learn from you and your program and the things that you're doing, and I think the pulmonary critical care community and I think the medical education, you know, the medical education community in general can learn from the way that you guys have responded to this tough time. So thank you for coming on.

Dr. Santhosh:
Thanks. It's really been my pleasure. Thanks for your thoughtful questions.

Narrator:
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