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**Anesthesiologists™**

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VOICEOVER:

Welcome to ASA's Central Line, the official podcast of the American Society of Anesthesiologists, edited by Dr. Adam Striker.

DR. ADAM STRIKER:

Welcome to another episode of Central Line. I'm your host and editor, Adam Striker. Today I'm joined by Dr. George Williams, Vice Chair and Division Chief of Critical Care Medicine, and Associate Professor of Anesthesiology and Critical Care Medicine at the McGovern Medical School at University of Texas. Dr. Williams is going to update us on some critical care trends and issues, some COVID related issues, and he's also penning articles for The Monitor, so we'll learn a little bit about that as well. Welcome to the show. Dr. Williams.

DR. GEORGE WILLIAMS:

Thank you so much Dr. Striker. I'm honored to be here.

DR. STRIKER:

Well, let's start off, uh, with a little bit of your background. I'm familiar with you and your career in critical care medicine, but some of our listeners may not be. Would you mind telling us a little bit about your expertise and how you got here?

DR. WILLIAMS:

Oh sure, well thank you so much. I have the privilege of serving as the Vice Chair for Critical Care Medicine at McGovern Medical School. It's actually my, my first job. I, I was privileged to do my residency at, at, uh, Case Medical Center in Cleveland, Ohio. And then clinical care fellowship at Cleveland Clinic, and then I came right here to McGovern, where, starting off with really just myself and now fortunate to have ten faculty here. We focus on the, um, care of perioperative patients. I personally, um, have been a neuro intensivist and surgical intensivist in my time at McGovern. And so really,

now that we have a new surgical ICU that I've been uh, asked to medically co-direct, by my Chair, um, really focusing on surgical patients there and it's really been a fantastic experience. But we have a, a large multidisciplinary practice that covers about three hospitals. And I have the privilege of coordinating that.

Personally, I really enjoy teaching residents, writing books. Some of my books have included, um, I've done a (sic) for anesthesia or basic, uh the basic exam and also recently we were able to publish a book for the critical care medicine exam for anesthesiology, and this is, it's the first time there's been a book like that. I spent nine years being uh, the Program Director for our fellowship and, um, we never had a book specifically for that. So I really get, I really enjoy getting the chance to provide education and teach residents and fellows.

And finally, I've had the opportunity to contribute to some research as well, particularly now with um, everything that's been taking place nationwide with the pandemic. ARDS is a variant I like to focus on, and other things, and so I've really been, been blessed with a great opportunity where I am, and, and had a chance to do a lot of things. So, that's me in a nutshell.

DR. STRIKER:

What drew you to critical care in the first place? I know you're passionate about communicating about critical care, as evidenced by, uh, your recent, your recent Monitor article, but also interested in what aspects of critical care, uh, drew you to that.

DR. WILLIAMS.

Well, you know Dr. Striker, I, anyone that knows me personally, knows that I critical care is really anesthesiology. They're just not separable. I remember when I was an intern and a, a resident, and I was like, my gosh, I just have to do this. This is just so fun. I get to take the same skills that I use every day in the operating room, go to the ICU, and know more about the equipment than everyone else, know more about the drugs than everyone else, um, about acute care management than everyone else. It's fun because critical care is commensurate to the practice of anesthesiology. They're not separate. And I really enjoy that. I, I really feel that anesthesiologists have a really key role to play in the delivery of critical care because of the fact that we, we manage ventilators every day and, and resuscitate every day, and deal with um, um emergencies every day. It just gives us a chance to shine in a community of critical care where other people have to really get a chance to ramp up those skills, and we come in the door with those skills.

I kind of like to tell my fellows all the time the biggest difference you're going to learn in a fellowship is infectious diseases and nutrition because you're not meeting people very often in the operating room. And, and choosing what antibiotic to give his kind of unique.

But, you know, I, I think another important thing to think about with critical care, and, and I really enjoy it, but I think the pandemic that's taking place has really illustrated how anesthesiology and critical care are not separable. If you can take any specialty and say, okay look, we're going to ask everyone in the specialty effectively tomorrow, overnight, to suddenly staff ICU patients, and do it safely, we're the only specialty that can realistically do that because we deal with those issues every day. The pandemic has really illustrated the need that we, for us to have more intensivists. We, we've always as a country had less intensivists, and that, than the population requires, and foundational knowledge that anesthesiologists bring in terms of biochemical knowledge and procedural knowledge. It's just an, an opportunity for us to show tremendous value to, um, our hospital partners, to our colleagues in other specialties, to provide education and to really rise to the occasion of what we need as a society globally right now.

So, I have to tell you, you know, I really think, well, I get paid to do what I do? You know, I, um, I see, um, that I come to work, it's just like a, a present wrapped in a bow. I'm gonna have all these patients, and I don't know what's going to happen, I don't know what I'm going to have to solve today. I'll have to read something that I haven't read about before, possibly. It's just a really exciting way to spend your day. And then to go back and forth to the operating room and take care of those acutely challenging patients, and then come back to the ICU and maybe take care of those same patients again. It's just incredibly exciting and rewarding and I see it as a way to align my professional purpose, to take care of sick patients, to prepare the next generation and illustrate that every anesthesiologist has the skill set, it's a matter of when that we exercise that skill set.

DR. STRIKER:

You bring up some great points and I, I want to ask you, your perspective on the training for critical care from either the pulmonary medicine side or from the anesthesia side. When, you know, when I was training it, it certainly seemed like very few anesthesiologists were going into critical care, and it, uh, my impression now is that has changed over the last couple of decades. And number one, is that true? And number two, do you feel that it's, it's great for the subspecialty of critical care, or the specialty of critical care I should say, to have a variety of training backgrounds to offer the most expertise to take care of these incredibly complex patients?

DR WILLIAMS:

That's a fantastic question, Dr. Striker, and you know it and I have almost respect for our colleagues that have different backgrounds, who are the pulmonary, surgery, emergency medicine, neuro critical care or even obstetric critical care. Um, I think that it is so useful to have different perspectives going into critical care, to have different backgrounds because, you know, one of the most exciting thing for me was, you know, when I was training, learning how to place a chest tube, or put a peg by a surgeon, or learning how to do a neurological assessment by a neurologist, or, you know, vice versa, to manage a pulmon, pulmonary disease by a pulmonologist, having that background just strengthens us so much. So I, I do feel there's a lot of value to having a multidisciplinary critical care and having different perspectives.

And to get to transition to the first part of your question, I think anesthesiologists have tremendous value, we add tremendous value to the critical care equation. We walk in the door with working knowledge of the physics that are, and, and pharmacology and physiology that make critical care possible. And so critical care without anesthesiology, I feel is incomplete. Um, and of course, we're always stronger together. Having multiple perspectives is important, but we really, you know, we really benefit from that and I think it benefits the specialty. I think, um, having, just like, having a presence in terms of pain management benefits the specialty. Being present in the ICU illustrates how clearly to, we, the clear benefit we bring to all of society.

You know, the interest in critical care medicine as a fellowship is, is a great topic of discussion amongst, you know, former Program Directors like myself. I handed off the program to my partner in January of this year to be the Program Director of our program and there is definitely more interest, for sure, in anesthesiology critical care now than there was ten years ago or 15 years ago or 20 years ago. It is definitely consistently been going up.

There was a period of time in the mid-2000s where critical care was flat in terms of the relative amount of interest we had from applicants, but it has been increasing. We're really gratified to see that increase. And commensurate to that, we've also seen increasing opportunities for the practice of anesthesia critical care. Not just in academic centers, but in private groups as well. So many hospitals need intensivists, and anesthesiologists bring so much to bear to help in the practice of critical care. We're not rounding on a patient in the morning and going to our clinic in the afternoon. We're in the hospital all the time. And that's the kind of person you want to actually be at the bedside in the highly acute unit. There is tremendous opportunity for us right now, and we could literally double the number of intensivists that we train today and still not meet, in terms of anesthesiology, still not, you know, come anywhere close to meeting the demand for anesthesiology critical care that's out there.

So while the, the interest is going up, we look forward to hopefully that it continues to increase. Particularly, it has been illustrated recently how important we are to the critical care equation and we just bring a lot to that team effort. You know, I may not have seen that much of Wegener's granulomatosis lately, but I certainly, uh, know how to manage someone who's acutely sick. And vice-versa, when we team together we can really be just a incredible combination of expertise to benefit our patients.

DR STRIKER:

Well, I do want to touch on the anesthesiologist's role and how it shifted during the, the pandemic as you've already stated. But, um, before we get to that, let me just back up for a second and ask how critical care has changed throughout the COVID pandemic? Are their shifts or trends that have surprised you?

DR. WILLIAMS:

That's a fantastic question. There are several ways critical care has changed during this pandemic. A lot of it deals with the day-to-day elements of how we interact with our families, or the patients' families, um, and how we interact with our patients themselves. It's the biggest change I've seen, it really just, gosh, you know, when you can't have someone come to the bedside when their loved one is dying, or if their loved one is scared, when you're making decisions about care with, um, a person who really quite literally has never seen your face. Um, for example, when I, when I, am in there taking care of COVID patients, I stand outside the room sometimes and pull down my mask and hold my breath and just, just so they can see my face. You know, something like that, that personal connection that we take for granted is lost with the way that the pandemic has actually affected our, our practice.

And then even dealing with the families remotely. For example, when you're uh, making decisions about whether or not it's appropriate for someone to proceed with end-of-life care, where we can revert to comfort care, that sort of, that sort of discussion is something so powerful, and so life-changing, life impacting. To do it on the phone with someone who hasn't ever seen you, they don't even know what I look like, they don't know anything about me. They, I haven't gotten a chance to shake their hand or look them in the eye and tell them how sorry I am to even have to have that sort of conversation with them. Those sorts of things are really, really important and really have just been tremendously different.

You know, um, another thing that, um, has really changed with the pandemic is really, the, the role of families and the community. We've really, the whole critical care community, has come together to try to meet this challenge. Of course,

anesthesiologists have been a tremendous part of that, but you know, like just like anything else that involves multiple people in the same space, there's sometimes this competition like, oh this should be my unit, your unit, that sort of thing. And in this case, it's not so much, hey, I've, I'm like the best for this, or you're the best for that. It's like, look, we have to take care of people. These are friends, are neighbors, are loved ones, fellow citizens and fellow countrymen and we just need to come together, meet this need. Let's all roll up our sleeves and help.

And then, you know, another thing that's really been different is that COVID itself is such a unique illness. You know, we focused so much initially on the respiratory component of it, the ventilation, the oxygenation. But there's so many things across-the-board so many systems involved and severe COVID ARDS, that our traditional approaches that we expect to work don't work any more. The sort of things that we have historically done, supportive care, making sure we are, uh just (sic) early directed, goal-directed therapy, things like that. That doesn't necessarily work with COVID, so we're figuring it out as we go. And so most of the times, like, we have this type of presentation, this is what we should do. This is how we should approach it, and COVID has literally, my first experience in the practice of medicine in my career, where I am learning and creating protocols from scratch. And, then changing a few weeks later depending on what data comes out, constantly. Uh, there have been a lot of tremendous shifts in what we expect and how we manage things. And so, that's been very important, very, very remarkable about this experience in terms of the changes we have seen.

DR. STRIKER:

I want to tackle two facets to your most recent comments here. Number one, the change in best practices with COVID and anesthesia, and number two, the role of the anesthesia community. And so let's start first with anesthesia protocols, or best practices. How are they evolving during COVID, what changes, or what is changing that our listeners should know about?

DR. WILLIAMS:

Great question. The first thing that comes to mind is how aggressive we were in terms of managing the airway, cuz oxygen delivery is the key thing these patients that we see in the pandemic, have, they decel so fast. Um, how do we proceed, and, and, in protecting them and in saving them? We're doing everything we can to keep them alive. Well, first we started intubating early. You know, ok, we, they were hypoxic, we need to get them on the ventilator. ARDS is the primary disease process that thought we were

managing really can't effectively and appropriately manage traditional ARDS in an extubated patient. And, and so we started really intubating early for numerous reasons.

But then over time, it seemed like, you know, hey, I see our intubated patients are getting worse. In fact, intubation is not protective. And it may be precipitating ongoing lung injury. So then we started saying we need to really step back and try to manage these patients as non-invasively as possible for as long as possible as long as they tolerate it.

So then we started trying, we started to say okay, we're going to do some sort of non-invasive ventilation. There's BiPAP which is a mask, vs. our high-flow nasal cannula oxygen and both of them sound equivocal, but we were really, really going to try to avoid BiPAP because our thought was that if you were administering positive pressure ventilation and 15 centimeters of water pressure is being forced across a narrow orifice, i.e., the, the junction between the mask and the skin of the face, then you're producing aerosols, and the last thing we want to do in COVID is make more aerosols.

So we started saying, okay, let's try high flow oxygen first. Let's, let's do high flow oxygen, we, we'll give them high-flow oxygen until essentially the last possible moment that we can safely facilitate, but then patients were, were desaturating fast anyway. Then we started thinking to ourselves, wait a minute, what if we start prone positioning patients? So that we can prone position patients, not just after they're intubated, but before they're intubated, while they're on high flow oxygen. We can let them eat, turn themselves prone, use the bathroom, we'll do everything we can to keep them oxygenating well.

And now, you know, several months into the pandemic, we're using BiPAP again. Now we're like, hey, we have patients on BiPAP because, um, we would need to do that, we would even, before we would consider it heresy to transfer someone down the hall on BiPAP, but now we clear the hallway, everyone's supposed to be wearing a mask anyway, transport them on BiPAP.

So, the even, just the fundamentals of how we decide to manage the airway have changed tremendously as the pandemic's gone on. And then, even, for example, we've all seen these really creative, um, tools, for example, um, like whether or not we're going to use an intubation shield, or a, a hood, or trachs or bags. All that is constantly changing. You know, most recently, um, some of outstanding colleagues, and I'll give them credit, to Dr. Michael O'Connor, who's the Executive Director of Critical Care at University of Illinois, Chicago. I believe that's right, so I'm pretty sure that's correct. And, he mentioned, you know, actually, he found that it works well to even mask a patient while they still have their surgical mask on. And I was like, whoa, that sounds very

interesting and I tried it and it works. You know, and so everything, we are trying all these things to minimize exposure and still safely care for the patient. It's very interesting.

Anticoagulation, how we proceed with anticoagulation has changed. Whether or not we consider that, um, something that should be ongoing or stopped before surgery. COVID patient? We know we really need to anticoagulate them. There, it's a hyper coagulable (sic). Um, that's just an example. There are so many variables, so many elements in terms of practice that are changing that it's just not monolithic. It's fascinating to see changes on numerous fronts like that in the way we manage from the anesthesia protocol perspective.

DR. STRIKER:

You know, absolutely. I, I mean I think all of us are, um, sharing that fascination with a, a whole new illness and, and, and trying to do what's best changing practices on a frequent basis without having a road map, without having a recipe book, but without having, um, training for a specific disease process that we usually do, and, uh, so I think it is, it is truly fascinating.

DR. WILLIAMS:

Yeah.

DR. STRIKER:

Let's talk about roles of the anesthesia community. How has that changed? I think a lot of our listeners are certainly familiar with the innovative ways anesthesiology has, uh, come to the forefront of, of the pandemic and provided unique, innovative ideas and, and, leadership and treatment during the pandemic. How is it evolved since this started?

DR. WILLIAMS:

You know, I think, um, one of, one of the ways that the anesthesia community has really kind of responded to this is, on the critical care side clearly anesthesia groups have really rallied to take care of these patients. I mean, we, we've had friends and partners who haven't seen the ICU patient in 15 years, rounding on patients. And ramping up like that, like talked about a little earlier, big part of it. I think that's been very, very important.

You know, but also the anesthesia community has responded with, uh, in very creative ways, for example even procedure teams, to, to support COVID care. And providing procedural support in the ICU patient, or these types of patients in general, can seem minor, but it's such a big deal. I mean a normal, a normal ICU is normally build to handle around 15-20 patients, 10 patients in most hospitals in general. ICU's aren't normally very big, but when you suddenly have a situation to where you're talking about having 50 patients you have to take care of, putting in lines, maintaining those lines, keeping them not dirty, but turning them over every certain number of days depending on the protocol in your hospital, that gets really hard. Because now all the family meetings which used to be in person to be a little more efficient. Now they're on, via phone, and there's trust issues, and so providing that procedural support has been extremely important in terms of preventing infections and positioning injuries, things like that. I mean, procedural support doesn't mean just putting central lines and arterial lines and intubating, but also just things like proning patients. We're the ones, the specialty in the hospital that prones patients routinely. When this pandemic started, yeah, people that had never proned a patient, we, we, we do it, every spine, every sacral procedure, so, being available and being able to help lead that effort has really been very important.

And then, you know, of course, there, we have the bedside elements, but there's also just logistical knowledge and support that comes from the anesthesia community. Every anesthesiologist understands M cylinder vs. E cylinder, every anesthesiologist knows where our oxygen supply is, how it was provided, what our gas supplies are, how to transport patients safely, um, and support those patients. And those are incredible knowledge sets that we have as, as a community, and the general anesthesiology community have, uh, been able to contribute.

And then of course, there's like leadership on resource allocation, triage. I mean as an anesthesiologist, we have to decide, ok this one has to go 1st, this one has to go 2<sup>nd</sup>, this has to go 3<sup>rd</sup>, all the time. So doing that in a team of people, in fact leading a team, is very normal for an anesthesiologist. We we're just very good at getting people to work together, utilize the skill sets that they have, capitalize on skill sets. And that's an ideal combination, uh, for us. To have a leadership role and to take care of patients and make sure their needs are met. That's just a synergistic way to think about an anesthesiology skill set and how I think our community of anesthesiologists really risen to the challenge and stood tall and met that need for our community.

DR. STRIKER:

Well, let's talk about where we're going. And what are the long-term care concerns arising regarding emergency care during COVID that the anesthesiology community will need to respond to. How do you see the next phase or phases?

DR. WILLIAMS:

Well, you know, um, you know, right now we're seeing more cases again and then we had to be ready to do what we did again in adapting with our, our pre-existing knowledge and be willing to change and improve on that knowledge based on our experiences that occurred before. So clearly, the ongoing care of COVID patients is, is, in the critical care setting is important.

But also, I think there's, we have to be prepared for a lot of perioperative questions that still have yet to be answered. Hypercoagulability, I mean when we have a normal patient that goes to surgery, and the fact that they got an incision, that makes them hypercoagulable. That surgery, that surgical procedure itself, is a hyper (sic) inducing disorder or inducing insult. And now you're talking about putting that potentially on top of patients that had COVID recently? Or maybe had COVID two months ago? What is the role of how hypercoagulable they are? Should we make sure they're actually on anticoagulation? And for how long? These are questions that really can have tremendous long-term ramifications and affect perioperative mortality.

Changes in pulmonary function status, when we look at a patient that has had COVID there are, there are substantial amounts of data that are starting to come out that indicate that there's potential long-term pulmonary dysfunction that occurs in association with uh, certain degrees of COVID illness. It doesn't have to be someone who was intubated for two months in the ICU. It could be someone that had, had COVID ARDS on high flow oxygen on the floor, shortness of breath, dyspnea, has something has been something that's been seen further for the out from infection. And what does that mean for a patient that goes to the operating room? You know, what is, what is the risk of them having post operative pulmonary dysfunction? Intraoperative pulmonary dysfunction? So, we have to be ready to lead on that. And no one is going to tell us that, we're going to have to be the people that have to come up with that, for sure on our own.

Then, of course, looking at patients that have specific needs related to a COVID inflammation. So we're really, I think we're like, in chapter two of the novel or, you know, part one of the eight-part series in terms of what is going to happen in terms of how we manage COVID patients. We have to test every assumption that we have, because we can't depend on those assumptions. And, we're going to be searching for data as an anesthesiology thought leadership community, I believe, to figure out how to respond to those needs, those questions, come, going forward for COVID patients.

DR. STRIKER:

Well, let's talk a little bit about the Society and how the ASA has performed through all this. If you had to give the Association a grade, what would it be?

DR. WILLIAMS:

Um, I'm, um, I am confident that Dr. Peterson may eventually hear this or Dr. uh, Phillips, our current President, but I, I would say seriously, unbiased and I, and full disclosure, I am the Chair of the ASA Committee on Critical Care Medicine. I have been a member of the ASA since I was a resident, or actually, since I was a medical student. I really feel the ASA did A plus job. I really, genuinely, mean that. The ASA really insisted on taking precautions to protect our members. And I think that's really important.

I had the blessing and burden of being part of those discussions when COVID first came out and, and I am so proud of our leadership for insisting on making sure that, look, you need to have PPE for our members. There was pressure the time, tremendous pressure from our hospital partners to, um, to say hey, you know, we have a negative COVID test, why burn through PPE? Why do you even need an N95? Why do you need a face shield? Let's, let's save the PPE for other purposes. And the ASA leadership, all the way across the Executive Committee and the COVID Taskforce were consistent in saying, we, look, there, there may be a lot of pressure to do this but we're going to protect our members. And now, retrospectively, we understand how important that was. Now we see that, there are, there's asymptomatic spread, that there are patients that may test negative, we have false negatives in the early days of infection, in the first three to five days, and being able to provide that leadership and protecting those, our members, is so important. I am just so, frankly, very proud of the ASA for that. ASA leadership stood their ground, even when people outside the anesthesiology care team didn't understand it.

Secondarily, though, um, the leadership of the ASA had a COVID Taskforce and en, engaged in leadership on a national level, to hear the Vice President of the United States talk about how anesthesiologists had, were able to help meet a ventilator need or help take care of ICU patients, or facilitate care of our patients in our community, that's incredible, and that's no accident. ASA leadership was on the phone Saturdays and Sundays, every day of the week, constantly working. I mean it's amazing that they were able to keep their own practices afloat while still doing all that.

So, I'm just really proud of the ASA, and how the ASA performed as an organization.

I, I just need to mention one more thing if I could. You know the, for example, the ASA knew that there was going to be a lot of need to potentially convert anesthesia

machines into ventilators, it's happened a lot across the country. The ASA even made a hotline for members to call if they had a question about how to do that. There was a hotline of how to manage ventilators. There was even a hotline provided by volunteers to, to provide care for ICU patients. If someone had a question about what to do with, um, how to manage a common presentation, we had volunteers 24/7 manning the phones, able to support anesthesiologists for both of those venues. And I just, I just think that's an incredible member benefit that the ASA provided. And most people may not even know about it. But the ASA rose to the occasion. I'm very proud of the ASA. A plus GPA, 4.1, you know instead of 4.0. I am very proud of them.

DR. STRIKER:

I agree. I know we're on an ASA, you know, sponsored podcast and we've both been involved in the ASA, but, but honestly, in, in such difficult circumstances, uh, very impressive to, to see the Society to step up and, and provide such resource and benefit and, um, valuable information for the membership, and, and the community-at-large.

Um, well, let's talk a little bit about The ASA Monitor articles. I know you recently wrote one dealing with COVID activated emergency scaling of anesthesiology responsibilities. I wanted to spell, spell that out cuz it's an, it has an acronym CAESAR, and I didn't want to just to say that without first say what it stood for. So, can you tell us a little bit about CAESAR and, uh, what its primary objectives are?

DR. WILLIAMS:

I really appreciate you asking that question. First of all, in full disclosure, I am, I spent a summer at the NIH, um, between junior and senior year of, of college, and so they gave me this booklet of all the Government acronyms, and it's huge. So I absorbed the, my affinity for acronyms from that time there. Um, with CAESAR, it, it's an acronym as you described, the COVID Activated Emergency Scaling of Anesthesiology Responsibilities Project, and it is designed to invoke an image of success. When we think of Ceasar, everyone knows that Ceasar was a brilliant tactician, fought a lot of battles, I mean during the height of his career, he would, he's a winner. You know, and I think captures the idea that we are going into conflict and we are going that conflict to win. And we want to be prepared to win. And so, our goal was really to articulate all the existing critical care knowledge that a generally anesthesiologists would need going to the ICU. We didn't want to go from scratch, like here's how you decide whether or not you're giving fluids or not. Because all of our anesthesiologists, everyone, we all know that.

But, if, if the anesthesiologist hasn't ordered antibiotics, you know to choose how to treat sepsis that may be something to where we need a little refresher on. So we, it was an

anesthesiology focused primer on how to walk into the ICU and, um, provide excellent care on day one with very limited time to prepare. And it was interesting, we, I got a call from, um, Mary Dale Peterson who was our President of the ASA at the time, who is our immediate Past President now, and we had a conversation, like, we need to get an educational product out for everyone in the country, and this needs to be done within a week. And, and within about 10 days of after everything started happening in terms of the pandemic appearing here on our shores, it became very clear that this was a national issue and we needed to be able to produce something rapidly.

So, uh, the article talks a lot about that experience and how we had to basically put something together that was useful for everyone immediately and that was for anesthesiologists by anesthesiologists. And we had to do that in a way that everyone could actually plausibly absorb that information. So for example, you know, maybe Dr. Striker has the opportunity to go and read, at the end of the day. Some people may have a 1-hour commute, where they can only listen to this at end of the day or the beginning of the day. What if some people learn by, by doing and not seeing? So, we actually built the concept off of The VARK Learning System, the visual, auditory, reading and kinetic learning system. So the goal is, some people learn by hearing, some people by reading, some people by doing, some people by seeing, and so we built CEASAR to try to meet all these four learning styles in one package.

So we had podcasts. Every chapter, every topic, we had for each system had a, a podcast where the author read their, and verbalized, their own chapter. We organized the chapter space on organ systems, so it was like, neuron, cardiac, respiratory, we made it nice and logical. We had readings, so someone can read the very same thing that was on the podcasts. Um we had a hotline, in terms of, like, you know, so that someone can talk to someone, so they can say, oh, I may not have read it very well or understood the podcast very well, but by talking to someone I understood it. Or, we even had graphical explanations and, and diagrams, so I, oh yeah I see that graph, I see that diagram, I see the table, and that helps me absorb that. So CEASAR ICU was built to provide a turnkey solution for a general anesthesiologist who has been practicing for 40 years or 40 days to be able to walk into the ICU and know what they needed to do.

And it was a pretty daunting task, you know, um, it's, it's, I am sure it was very intimidating for a lot of our members who suddenly walked into the ICU and hadn't been there for a while. But nice thing about this is that it kind of distilled it down to a package that everyone could actually use. And so, um, you know we, just at baseline, we know that hospitals have about 30% of the ICU docs that we really need in the country, at baseline, before COVID. So, really, we had a huge gap going into the door. We knew we were going to need anesthesiologists to do that. So it was a great way to help and

have our profession turn on a dime and provide that, that service and it met the members where they were. So we didn't duplicate existing information and we didn't get into minutia that was unnecessary. We got a chance to really focus on what was needed to be done.

And so talking about that in The Monitor article was really exciting. We got a chance to author that article with, uh, Dr. Ashish Khanna who is our Vice Chair of the Committee of Critical Care Medicine and Dr. Shahla Siddiqui, who is also one of our members of The Minute, the Committee of Critical Care Medicine. And I have to say this, and I'm, I'm not saying this cuz it's just nice thing to say. I really mean it. I had the privilege of being a quarterback and, you know, and being known as Chair the Committee, but we have such a fantastic working committee. And we've listed the names of all the members of our team in that article because I genuinely mean it, everyone on our committee rolled up their sleeves and worked to write all this, even when they were taking care of COVID patients themselves in a scary situation, and scary time. Many of us worked 20 hours a day to do this, so I just really appreciate our Committee on Critical Care Medicine. I have to give an enormous applause, recognition, accolades to our team for that incredible work. I just happened to be, I get to be the face of it, and I, and that's a privilege, but it really was the entire team coming together to make that happen.

DR. STRIKER:

Absolutely, well said, how's it working?

DR. WILLIAMS:

I, I got to tell you, you know, um, it's been amazing to have, to get a phone call from a private practice doc, who's like hey, I just want you to know I downloaded the CAESAR project and it was really good, and I, I was able to read over it in, in a day or two, I was able to go right into the ICU and help out. I mean that's incred, I just, it, it made it all worth it, cuz that means that we were able to help real people, real doctors, real patients. And, you know, we got thousands and thousands of downloads. I mean, you know, when, at, at our last meeting that we actually talked about in September we had more than 30,000 downloads. Um, we were hoping for maybe getting 5,000 to 10,000 downloads. That was our definition of success. So 30,000 downloads, and that's a little more than 50% of the anesthesiologists in the country, downloading that, numerically speaking, that was great engagement and we're grateful for that. The whole Committee felt so gratified that it was used and useful. I, I'm really glad it was working okay.

We're doing an update actually, we're actually are doing a CAESAR 2.0 as well to make sure the information is current and we've been working very hard on that and that's coming out very shortly. So we're really excited about that.

DR. STRIKER:

Fantastic. We, we'll keep a close eye out for that. Tell me about some other topics you hope to raise awareness about. What aspects of critical care in anesthesiology are you looking forward to writing about?

DR. WILLIAMS:

I would think that we really need to focus on ways that we can provide enhanced perioperative surgical care services for our patients through, through the existing critical care paradigm. You know, we talked about this a lot before with the perioperative surgical home, um, and how we would have anesthesiologists being the physicians, taking care of the patients throughout the entire uh, spectrum of their perioperative stay, almost like a surgical hospitalist. And I think we absolutely have the opportunity to do that. It's been studied and demonstrated to be efficacious, not only safe, but saving money, improving outcomes and it's a way for us to improve, it just helps patients, and we're all here for our patients.

I, I think that you really need to think about, that perioperative care is in two pathways, like, you know, if you need a operation, that's one pathway. If you don't, that's another pathway, and so if you don't need an operation, general hospitalists, telemedicine, we don't have to get involved. But if you need an operation, we can facilitate that care and shine and take care of that patient before, during and after surgery. We're not, we don't have to be confined to the operating room. And I do recognize that for most practices in the United States that is such a paradigm shift that it's actually very difficult to foresee how that might be doable. But, it's absolutely, it's been tried and has worked, and what better way to ensure that a group of anesthesiologists is able to provide excellent care to our patients, than fulfilling that type of model. So I think that enhanced perioperative care is something we need to write about more, discuss more and I think most importantly, do more.

DR. STRIKER:

Well, we spent a lot of time talking about COVID today, but let's, uh, step outside for just a little bit and tell me something about critical care that you're passionate about, um, that you'd like our listeners to know, outside of COVID.

DR. WILLIAMS:

Um, yeah, you know, well there are two big things I'm particularly passionate about. Um, the first is ARDS, which actually, um, does end up aligning with COVID. So I, I will get off the COVID topic for a minute here, but really ARDS and how to manage it, um, what strategies work, what was done in the past, what's taking place and the nature of where we're going in the future. The source of mortality and, and how much mortality we've had with ARDS is a big focus of a lot of research right now, um, and we've been, have the privilege of having grant support for some translational research that my group is doing at McGovern Medical School, and this primarily looks at different, uh, molecular signals that actually are expressed with ARDS and potential targets for therapeutics based on those signals. Um, so we're very excited about, there's really opportunities to actually treat ARDS. ARDS may be, five to ten years now, a type of disease where we think about how things were before we actually had antibiotics, and treating otitis media. Before it was like, well, supportive care, debride or you know, someone's got an infection, just give him fluids and see if their fever goes away. That's the way we almost essentially treat ARDS right now. Supportive care, let's try prone positioning, um, making sure that we're maximizing ventilation and reducing lung injury. Sounds great, but we have the potential to have molecular targets, to where we give a drug and ARDS gets better. Imagine the tremendous difference that could make for thousands of patients every year that get ARDS. And that, that by the way, that's ARDS without COVID, we're just talking about ARDS (sic).

But another thing is perioperative nutrition. And I think this, this automatically aligns with my being an anesthesiologist and intensivist. Am I do half my time in the intensive care unit and half my time in the operating room. I, I'll be in the OR on Friday be in the ICU on Monday, and, and I enjoy that. I think that's fun. But I end up seeing usually how our collective approach to anesthesia and perioperative nutrition can actually provide more harm and more risk to patients. And I see that post operatively. I mean, for example, a patient not eating after midnight sounds great to reduce the risk of aspiration, but that leads to malnourishment if you have a patient goes back to OR three times in a week, or four times in a week, or several times over two weeks. I've actually seen patients losing weight and having temporal wasting because of our NPO policy.

And so, a lot of my research, um, has also focused on ways to basically enhance our NPO policy by getting rid of it. At our hospitals, we don't do NPO any more. For critically ill patients, we feed them up until time to go to the operating room if they have an endotracheal tube in. And if they don't and they have a (sic) tube, we feed them anyway as well. We've prospectively measured that, we know complications associated with that in, and this is something that's been discussed in the (sic) community with randomized control trials. Even Dr. (sic) are giving the um, ASA (sic) Rovenstein

Lecture, I believe in 1997 about this and how really we don't need, really we are probably hurting patients more that helping them with NPO policy.

And we have perioperative ultrasound now. We can measure gastric volume. There's no reason to have to take your patient's word for it. Even older studies showed that we don't have a correlation between NPO time and, um, the amount of volume that's actually in the stomach.

So I think that there is, you know, when we thing outside the box, use ultrasound, be more aggressive feeding patients and helping them recover more and have functional status more, we have an opportunity to lead on this topic as anesthesiologists, and not follow. So I hope in the future, we actually see some tremendous breakthroughs in ARDS and tremendous progress in perioperative nutrition.

DR. STRIKER:

Dr. Williams, I know you have an interest in resident education and mentorship, and leadership and mentorship are two common threads on the podcast that we like to talk about with a lot of our guests, and I'm wondering if you had a piece of advice you'd like to pass on to others, maybe something a mentor once shared with you, or just a little bit of knowledge you've picked up along your way.

DR. WILLIAMS:

Wow, that's um, that's a great question. You know, I, um, the thing that comes to mind to me, is uh, um, something that I learned from, actually he was my Chief Resident when I was a medical student at Baylor. I was a medical student at Baylor, and I had just decided to go into anesthesiology, and I met this enthusiastic brand newly elected, uh, brand new, newly elected Chief Resident, Thomas Shaw. He's actually on faculty at Baylor now, he's in the Department of Pediatric Anesthesiology there. And he said to me, um, don't leave until the job is done. And he would say it after every day, when we, you know when I was working with him, like boy, he keeps saying that, and I, I remember, I mean, of course we think as doctors, yeah we don't leave until the job is done, but when it comes down to it, there are going to be all these opportunities, we all have to, hey I could just go home now. I can just get out of here now. That to leave, I got this, I got that, I can check out.

But I interpreted it as meaning you always go that extra mile. If you ever think to yourself, should I go see that patient? Should I call that patient or patient's family? Should I check on them? Then just do it. If you're thinking about it, then just do it. Don't ever opt for naw, it'll be all right. Or, naw, I don't need to make that phone call. Or I don't

need to check on them, there's someone else to do that. You always go the extra mile and I found that characteristic, that trait, that pattern of behavior, to be consistently seen in the best anesthesiologists and best intensivists that I've ever worked with, and that I would like to personally emulate. And it's not an easy thing to do. Sometimes I just want to go home. I'm tired. I get tired like everyone else. I, um, we're all human beings, but I've never regretted it. I've never regretted taking that extra few minutes to go a little farther, push a little harder, dig a little deeper. It's always better for our patients and that's, that's the type of advice that I've learned that has always served me very well.

DR. STRIKER:

Great advice, I think that we could all take a piece of that. If you could go back in time and share a little bit of wisdom with, uh, your younger self, uh, anything you'd tell yourself?

DR WILLIAMS:

Well, um, um, you're not talking about investing in Amazon or Tesla, I take it, so um? I would say if I had to talk to myself, my myself back as a medical student or, or younger version me, back as an undergraduate student, I, I would say that just don't forget that people are, are people. Human beings are just human beings. There's no true oracle or person that just knows all the answers. There are people that have been some things before and we should take their advice and think about that advice, and, and really integrate into our psyche, but realize that no one knows everything. So someone can tell you, hey, you really shouldn't do this, or you really can't do that. You would have to go to this other way. But remember that they're just people too, and they could be wrong. Sometimes they don't have all the facts.

So, of course seeking advice from multiple people can be very helpful to make sure you're screening out for those anomalies of getting some bad advice, but always try to push the envelope. I would tell myself, George, try to push the envelope and don't take no for an answer, for what you can accomplish, for what you can do it. Cuz if you do you're letting other people tell you where your ceiling is. You're letting other people pump the brakes on what you're able to achieve.

So, remember that everyone's a human being and I could be wrong, just like they could be wrong. So don't take everything as someone they say as a, as a golden nugget that is infallible. Recognize that they can make mistakes, too.

DR. STRIKER:

Also good advice. And one last question. Um, tell us one thing happening in critical care anesthesiology that you think will have a positive impact on patient care.

DR. WILLIAMS:

Well, you know, um, I think that a positive trend is that there's more a focus on outcome, like functional status, than survival. You know, we just think about, look, if someone just doesn't die, then you know, then they're doing well. You know, we, we, we stopped them from death. But now it's more like, hey, how do I make sure this grandmother goes home and holds their, their grandchildren again, or stays independent? I mean, perioperative delirium, for example, preventing that. Making sure we are a part of the treat, treatment team for sepsis, you know, all of those things are focusing on how we can make ourselves accountable for things that we used to consider too far downstream for us to be concerned with. I think that is making critical care better because we're trying to address the needs of the whole patient, not just how we get through this day on the ventilator, but how do you make sure they come back for physical therapy six months from now?

And sometimes it's just the little simple things to make sure that someone stays oriented, or that they are able to communicate with their family, or that they are, or choosing a drug that doesn't change their mental status and prevents delirium. I mean, for example, we found that that delirium is associated with increased mortality. I think, it used to be like, oh, they're delirious, well that happens in the ICU. Now, it's like, wait a minute, we need to make sure we get rid of delirium as much as we can, cuz we want people to die less. We want people to have more functional status. So, those things matter a lot. I think that outcomes based focus is, is the best thing that's really happened recently in terms of how we, how we consider our practice in anesthesiology in the past few years. And that's a good thing.

DR. STRIKER:

Absolutely. Well, Dr. Williams, thank you so much for joining us today. Is there anything else you want to add before we go?

DR. WILLIAMS:

Well, you know, I just want to thank my Lord the Savior Jesus Christ. I mean, he gives, gives me the opportunity to do all these things that we talked about and, and the ability do it and my wife, my family. I mean, I tell you I work a lot, and I try to take time, you know, make sure I'm available to them, but they support me so much. And I just couldn't do it without their love and support. You know, I am, I'm just grateful to have people that

are happy to uh, see me attempt to do these things, that, um, I've always wanted to do. And so, I, you know, every now I get this year, you know talk to some like how's your day going, like, yeah, I'm living the dream. Well, I'm, I actually get to say, I really am living the dream. This is what I've always wanted to do, and I really had a great time doing this. I really am appreciative of that and I want to thank you, um, Dr. Striker, for the opportunity to come and, and share. I know have, um, plenty of people nationwide you're able to talk to. I'm just grateful to be part of that cohort of people that you've elected to talk to. Thank you so much.

DR. STRIKER:

Oh, absolutely. Well, thank you for giving us your time. I, I, just, it's been a wonderful conversation, and, um, so insightful and, and, hopefully really helpful to our listeners, and so absolutely, glad to do it, and I'm so appreciative that you were able to, to, join us today.

This is Adam Striker thanking everyone for tuning into this episode of ASA's Central Line. Please tune again next time. Thanks. Bye.

(Music)

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