



American Society of
Anesthesiologists™

Central Line
Episode Number 30
Episode Title: Inside The Monitor – The COVID Issue
Recorded: December 2020

(SOUNDBITE OF MUSIC)

VOICEOVER:

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

DR. ADAM STRIKER:

Welcome to Central Line. I'm Adam Striker, your editor and host. I'm joined today by Dr. Steve Shafer who is Professor of Anesthesiology, Perioperative and Pain Medicine at the Stanford University Medical Center and also Editor-in-Chief of The ASA Monitor. He's here today to talk to us about The Monitor and the current state of the COVID-19 pandemic, which happens to be the topic of January's issue. Dr. Shafer, welcome back to the show.

DR. STEVEN SHAFER:

Adam, it's a pleasure to be back.

DR. STRIKER:

Well, let's start off by discussing the major issue on all our minds currently. We're recording this in mid-December and course the COVID-19 pandemic is, uh, the big issue that we're all concerned with and you've been keeping, uh, your ear to the ground and providing daily briefings to, uh, to a lot of different people, and you were are certainly well versed on the current state the pandemic. Can you tell us where we stand today?

DR. SHAFER:

Happy to do so, Adam. Um, first just by way of background, so I've been modeling the pandemic since March of last year because I couldn't get the information from Stanford. I've been making my daily updates available to a list of recipients which has now grown to well over a thousand recipients, uh, and anybody by the way on this podcast, is more than welcome to get them. Just send an email to me. That's simply with Steven. Shafer,

S T E V E N dot S H A F E R, StevenShafer@stanford.edu, and I'm very happy to add you to the recipient list. And the modeling extended to California then to the United States, and then internationally. I started getting requests for it. I've been following this, this daily modeling of the numbers, and to be honest, it's pretty frightening.

So let me just talk about where we are today. Today, December 14th 2020 is a pretty grim day in the United States. Today is the day that we passed 300,000 deaths, uh, that are directly attributable to COVID-19. And obviously there are untold additional deaths from delayed healthcare, from suicide, domestic violence and other indirect causes of mortality, but just directly linked to COVID-19 the United States has now reported over 300,000 deaths.

Additionally, the United States, as of last week, we're seeing 200,000 new cases every day and 2,000 deaths every day. To put that number in perspective, the United States is reporting more than one death every 30 seconds, that's about one death in every 25 seconds, or something, you know, horrific like, but I think that helps to calibrate these numbers. Um, not only are we having 2,000 deaths per day, but the daily case and death rates are accelerating at about four percent per day. What that means is by the time you hear this in early January, we will be reporting more than 3,000 deaths per day in the United States. So, to calibrate that number, that's nearly the combined total of deaths from heart disease and cancer, which have, for decades, have been the number one and number two causes of death in the United States. Our daily death rate in January will be more than the combined total of what has traditionally been the number one and number two causes of death in the United States.

So we are at a very difficult moment right now. And, one other way of calibrating these numbers, one in every 20 Americans has been infected, one in every twenty. One in every thousands Americans, one in every 1,000 Americans, have now died of COVID-19. It is presently the leading cause of in United States. So that's kind of unfortunately the grim update of where we stand, uh, as of mid-December.

DR. STRIKER:

I wanted to ask you, if you could tell our listeners, a little bit about what's going to be specifically in the January issue. We, it's going to be on COVID, but, uh, maybe give a little preview of the features that might be highlighted.

DR. SHAFER:

Thank you for asking. I'm, I'm very excited about the January issue of The Monitor. A bunch of articles that, really, I think clinicians will find useful. Uh, there's a, a, article by,

uh, Uday Jain on COVID therapeutics because one of the other great successes over the last ten months is developing some novel therapeutics for COVID. Um, the FDA decided this is not the time to engage in, in small molecule development, uh, other than taking existing small molecules like Remdesivir, and seeing if they could be repurposed for COVID, which they successfully did. Uh, looking at other possible therapeutics like dexamethasone. Uh, those two, at this particular moment remain the only two drugs that are actually approved for treating, uh, COVID-19. However, the development of monoclonal antibodies, uh, has been phenomenal and Regeneron has a cocktail of two monoclonal antibodies which seems to be exceptionally effective, uh, including perhaps, saving, uh, President Trump's life, uh, when he received it in, uh, September.

And there are several other antibody cocktails that are highly active and highly specific for COVID-19. Um, this has work, goes all the way back to the initial publishing of the genome by the Chinese in January. These companies started immediately to try to identify antibodies. There are additional antibody cocktails coming out, there are these new sort of pseudo antibodies that are amazing. So there's a lot of therapeutics as highlighted in that article by Uday Jain in the January issue.

Then, there's an article about uh, a vaccine update, uh, that will appear. I, I wrote that with a, a science writer, Rich (sic), uh, and we review the status of the vaccines, uh, and I believe we say in there, you know, it's very likely that the two mRNA vaccines will be approved, uh, by the time they read this, and that, that will in fact be the case.

Uh, there's an article on herd immunity. It's one of the really misunderstood topics that's come up. What is herd immunity and does it have any role here? At the conclusion of the article, just to jump to the punch line, is herd immunity is not really going to help us. Herd immunity will happen when 75% of the population gets vaccinated, but that's the only way we want to get to that number, uh, we don't get to that number by having that number of people actually get the native disease or we'll be dealing with an extraordinary amount of death.

Uh, we have an article about, uh, what's happening with COVID and academic staffing because, uh, COVID has made it really challenging to recruit faculty, to staff departments. Additionally, many places are facing very uncertain clinical burdens where, if you're at a small private practice hospital where they're closing down elective surgery, they could may down your entire clinical practice. What does that mean? You know, suddenly you have no patients, you have no cases. Then, they open up again, and, and things, things want to surge back to, and then they may close you down again. I, I mean, the staffing models have been severely effected by COVID throughout medicine, and certainly uh, by anesthesia. Uh, at a place like Stanford, there's lots to do

to just take care of COVID patients, but if you're in an outpatient center that's not dealing with COVID patients, uh, it's, it's really a challenge.

And finally, we have an article that I think is interesting, about building rapport in the COVID era. This isolation that we've all been putting up with now for months and limiting social contacts, and trying to do our best to bring the pandemic under control, takes a psychological toll on everybody, uh, on us, on our patients, on our academic and clinical colleagues. And one of the featured feature articles that we discuss is, uh, basically about how we maintain rapport, how we maintain support of interpersonal relationships to get us through difficult and challenging clinical days. So it's, it's a great set of articles, and, uh, I think that most clinicians will find the January issue of The Monitor to have a lot of useful information, uh, about the, the pandemic. Where are we, where have we been, and where we're going.

DR. STRIKER:

And Dr. Shafer, typically, um, The Monitor articles related to COVID have been accessible freely to, to anyone. With the January issue being primarily about COVID, the entire issue, how are you guys going to handle the January issue?

DR. SHAFER:

I am very proud of what anesthesiologists been able to bring to the table when it comes to COVID. And the January issue really shows how much we are bringing to our patients and how much we are bringing to the efforts to, uh, address many aspects of this pandemic. So, what the ASA has generously agreed to do, is we are going to make the January issue entirely open for six months. And most anesthesiologists in the country get The ASA Monitor. The point of making this open is so that people from all kinds of disciplines can see the contribution that anesthesiologists are making, and can uh, benefit from the well-written, and frankly pretty concise summaries of therapeutics, of vaccines, of issues about epidemiology that will be featured in the January issue. So, it's sort of our gift to our colleagues in multiple disciplines. We're going to be making this issue available for six months, and I think it will be very widely read outside of the anesthesia community.

DR. STRIKER:

The January issues does sound fascinating. I, I really can't wait to read it and I'm sure all of our listeners are, are going to be looking forward to reading all those features. So, thanks for sharing that with us and I also wanted to talk about The Monitor for the calendar year of 2021, beyond the January issue though. Um, when we spoke, I believe

it was May of 2020, in preview for the new format of The Monitor. You had told us that you were very interested in feedback about The Monitor's redesign and new format and, um, I guess my question is twofold. Number one, what kind of feedback and engagement, uh, metrics have you gathered from the readers, and number two, a preview for what we can expect as far as themes for 2021?

DR. SHAFER:

So, both great questions, and much appreciated. The feedback has been overwhelmingly positive, but we also have some hard metrics. There are various survey organizations that look at things like readership, how relevant people consider what they're reading to be to their practice, how interesting they find it, how often they just, you know, open it up, uh, and look at it. And the, uh, feedback that we have gotten on The Monitor shows that since we changed to the new format, we have had considerable positive feedback and an uptick in uh, readership, an uptick in the relevance of The Monitor, uh, the perceived quality of the presentations. So, by in large, it's been extremely positive and it's been reflected in, uh, objective surveys as well.

So coming up, I'm also excited about the, what's going to be in The Monitor this year. Uh, based upon feedback from readers and we have an expanded editorial board and the editorial board has been exceptionally engaged, so we've tried to put together things that reflect the diversity of interests of the ASA membership. So starting January with the 2020 pandemic seemed kind of obvious because that really is something that's is on the top of everybody's list. Uh, but from there we move on to the February issue, which I am really very proud of, put together by Gunisha Kaur on refugees and vulnerable populations and it talks about anesthesia and healthcare in vulnerable populations. Uh, I, I heard a talk just last month from the woman who's the head of the Syrian American Medical Society about the attempts to bring care, particularly during the time of the pandemic to Syrian refugees, uh, that are in Turkey and Jordan. And, wow, you look at how much impact we can have as physicians in caring for these vulnerable populations, and it's considerable.

Uh, March, we're talking about de-skilling anesthesia. This is something that, uh, is a touchy subject because on one hand if you get a drug like sugammadex that really makes giving neuromuscular relaxants much easier, because, you know, you can just always reverse it with sugammadex. That's great, but guess what? It doesn't take as much skill to use a muscle relaxant now if you have sugammadex and you can always reverse it.

Same thing with our video laryngoscopes. When I was in my own training in the 1980's, the best anesthesiologist in house was the one who could intubate anybody with a Mac

3 Blade. Well now that we've got all kinds of video laryngoscopes, uh, it's just not that hard to intubate anybody any more. No longer can somebody who can intubate anybody with a Mac 3 Blade is considered the, the best anesthesiologist. That just doesn't happen. These are examples of de-skilling. We welcome these changes, they make our practice safer, but at the same time they make our skills perhaps a little less valuable. And it's an interesting dance that we do, always go in the direction of de-skilling because we always go in the direction of patient safety.

Uh, we'll be talking about mentoring in the April issue. Mentoring is near and dear to many of the younger colleagues that I have at Stanford, uh, because they come in with primarily clinical expectations and the question is how are they going to advance their careers if they are primarily clinicians just doing basically 6 a.m. to 8 p.m. anesthesia, day in and day out?

Uh, the May issue, we, we talk about pediatric pain. Uh, pediatric pain is something that this is a real problem. Uh, very few people go into this as a specialty and there's a huge need for it.

In June, we're going to be talking about anesthesia and innovative surgery. Um, one of the things I am facing in the months ahead, is, I am coming up on, looking at my own clinic retirement in about two years. One of the reasons I am looking forward to retiring is there are all kinds of surgeries that I am set to do anesthesia for that I have never heard of before I walk into the room. Uh, you know, just constant changes in surgery and our practice has to keep up. And so we're going to be talking about changes in surgery and how anesthesia has to adjust to that.

Then in July we will be talking again about COVID-19. This is going to be talking about the unequal burden of COVID-19. The burden of the disease is not shared, it is falling particularly hard on women, uh, particularly women, uh, professionals who often are uniquely burdened with having to deal with the demands of a career in the time of COVID and also tasked with child support, uh, and you know, having to care for, for small children at home and look at their schedules and all that stuff. So we'll be looking at that in the July issue.

August is always our government affairs and advocacy issue. September is a scope of practice issue. I can tell you right now scope of practice is a hugely important issue to the ASA and we'll be addressing that. Uh, October will be looking at anesthesia in low and middle-income countries. November, we're gonna look at artificial intelligence and disruptive innovation, a subject in which I have quite a bit of personal interest. And finally, in December we needed to talk about burnout, because this is something that a lot of people are feeling, and COVID hasn't made that any easier to deal with burnout.

But, we're titling this issue "Rediscovering the Joy", sort of the inverse of burnout. How do you rediscover the joy of anesthesia in our lives, and in our, uh, professional capacity? So that's what we have coming up for 2, 2021 and I think it's going to be a, a exciting year for The Monitor.

DR STRIKER:

That sounds great. Uh, you know, one question I wanted to ask you after our last conversation about The Monitor. You said that uh, your goal for the first 6 months was not to break anything. It's been 6 months now. Did you, have you broken it?

DR. SHAFER:

I don't think so. Near as I can tell, uh, we're continuing to do the things that we did before and I haven't gotten complaints that anything has been, uh, has been broken so far. I have gotten a couple letters, what has happened to this or that, things that we decided were not of particular interest, usually based on metrics. I, I, I don't think we've broken anything. And I will say that the collaboration with Wolters Kluwer has been a really positive development because we've actually built some things with Wolters Kluwer. Uh, they, they have brought reporters and, uh, writers and science writers so we've built some things and we have more building that's going to come up in 2021 including expanded online content and other kinds of article types that we're going to be building in 2021. But as far as I can tell we haven't broken anything. At least they haven't told me if I have.

DR. STRIKER:

Excellent. Well, also, as we stand here in mid-December the first doses of vaccinations have been rolled out and administered as of today actually. And I know that gives everyone certainly a sense of optimism and hope and perhaps seeing a light at the end of this tunnel, but do you mind putting everything in just a little bit of context related to that, to the vaccination?

DR. SHAFER:

Absolutely. Thank you for asking about it. First the punch line: when you're offered the vaccine take it. Please, get vaccinated. Um, the development of the vaccine is really an unprecedented accomplishment. I personally feel it's a new landmark in human achievement. Thinking back to the 1960s, uh, 1960 itself when John F. Kennedy said that we're going to put a man on the moon. It's like Kennedy making that statement and then, twelve months later, the US lands a person on the moon. I mean, it's, it's an

accomplishment at that level. I don't think there has ever been a single accomplishment of human intellectual firepower on the order of developing multiple vaccines in a period of about 10 months. Back in March, people asked me about a vaccine, and I said it's impossible. There's no way, we've never developed a vaccine in less than a decade. So it's an unbelievable scientific accomplishment and it really speaks to the fact that, you know, we're pretty clever monkeys.

Having said that, Pfizer has now announced they are going to be distributing three million doses of vaccine. Wow, three million doses of vaccine. That's great, but keep in mind, there are over 300 million people in the United States. That's enough to vaccinate about 1% of the population, to place it in perspective. Uh, we expect the Moderna vaccine, which is also an mRNA vaccine, be available, to be approved, uh, this coming week. And then we are also expecting in January for vaccines from AstraZeneca and Johnson & Johnson. Now those are both adenovector vaccines, in other words, it's an adenovector, it's a virus, uh, an inactive virus that delivering the uh, antigenic payload to the body. Uh, those will hopefully be approved in January.

But going from the approval, and again an unbelievable accomplishment by the pharmaceutical industry which includes incredible amount basic science that fed into this accomplishment, as well as the coordination of clinical trials and things like this. To go from there to bringing the pandemic under control is going to take months and months and months of incredible effort to distribute and get people vaccinated. And the bottom line is, the vaccine doesn't work if you don't get it. And so there's also going to have to be a public education campaign so that people understand the need to get vaccinated, and this is why, I think it was in the October ASA Monitor, in my editorial, I talked about teachable moments. As soon as the vaccine is available to me, I am going to get it. And, I am going to encourage my patients, when I see them preoperatively, or any time in the perioperative setting, I am going to say do you smoke cigarettes? If they say yes, I am going to tell them to stop. I am going to say have you been vaccinated for COVID-19? And if they say no, I am going to say, well, please do. Uh, this is something that you can do to help bring this pandemic to an end.

So, the vaccines are a, a hopeful sign, but one has to realize the size of our population, 300 million people. We're going to need to vaccinate about uh, two-thirds to three-quarters of them to reach what's called herd immunity where, uh, we just have isolated cases but we no longer have, um, the outbreaks that characterize the current pandemic.

DR. STRIKER:

Would you say then that then that this might be even arguably the most dangerous situation we've been in with the idea that, oh, we're out of the woods because there's a

vaccination so I'm going to drop my guard down a little bit and those measures actually are now more important than ever?

DR. SHAFER:

Absolutely so let's talk about those measures, because I want to be very clear about this. If everybody on the planet would agree to not interact with everybody else on the planet for 6 weeks, COVID would be gone. Because people's immune systems would clear it, and it would not pass to anybody else. Now obviously, we can't all isolate, because we'd all starve to death. You know, we, we, we need things like food, water, jobs, things like this. But the disease is spreading right now because people are giving it to other people. Most people who get COVID catch it at home. Most COVID cases are transmitted by somebody bringing it into your household and, and infecting everybody else. That's why the people at greatest risk are the people that live in multi-generational houses. The kids get it any they bring it home and the grandfather dies from it. So, uh, the, the notion that it's all about, well, we're going to protect ourselves at work, if somebody brings it home, a young person at work brings it home, they're going to infect the rest of the household. So that's how, that's how COVID primarily spreads.

So those other measures are extremely important and one of my frustrations has been our inability to just get people to do the simple things that actually work. How well do they work? Uh, in one of our early issues on COVID we interviewed people from the, uh, Nebraska bio containment unit. Now these were anesthesiologists who deal with some of the nastiest viruses in the world, things like Ebola, the original MERS and SARS that were much more deadly than the current, uh, SARS-CoV, CoV2. They have never had a healthcare provider get sickened by a patient. It's not happened once. Why? Because PPE works. What, what is their PPE? They don't, you know, dress up in, in things that look like diving suits. They put on an N-95 mask, they put on a face shield, they put on a gown and they put on gloves, and that works. If that works, when dealing with the most dangerous pathogens on the planet, if people just simply did the same thing, wore masks, washed their hands, maintained distance, it would work.

So we have to keep those other measures going and with the cases surging like they're surging right now, the vaccine is not going to help us. The vaccine will help us get this under control but it's going to be months until we get there. The, our car is already going at breakneck speed, 2,000 deaths a day and we are still accelerating. It's a very frightening time, Adam, because if we can't get that acceleration down, I mean, I thought 2,000 deaths would have been unbelievable per day. Now we're there. 3,000 deaths which I'm saying I think we'll be seeing in January, come January that now be the new norm and we will looking at maybe at 4,000 deaths a day. Things are not going to go back to normal in any way, shape or form until we get these numbers down, and

we could do it just by doing those other measures those simple things. And as you say if people say, oh, the vaccine's here I can let down my guard. No. We let down our guard when we get the caseloads down to what they currently have in China which is three or four a day.

DR. STRIKER:

And speaking of, uh, other countries I just saw New Zealand is just declaring that they are completely free of COVID. I think they're taking away all restrictions. What do you think about a situation like that?

DR. SHAFER:

Answer is, they are correct. In New Zealand, they had no cases yesterday. They've had, it appears to be, four deaths in the last two months. New Zealand has done the same thing that China did when the virus hit, the same thing that South Korea did, the same thing that Vietnam did. Uh, the difference is that China enforce their Public Health mitigations with the military, and when the military in China says you're going to stay in your house and you're not going to contact other people, you stay in your house and you don't contact other people. New Zealand didn't have to do that, uh, nor did South Korea. They took a more corporate approach and also they took an approach in which the populists bought into the science. And it's our behavior that controls this.

DR. STRIKER:

Well, I, I know the United States is certainly a larger country with a much bigger population than New Zealand. What would you say to those that might say the United States, it's a much different animal here with, um, the population sizes compared to a country like New Zealand who could have an easier time managing this?

DR. SHAFER:

So, one can easily point to New Zealand and say they're surrounded by an ocean. They've got it easy, and they don't have some of these challenges that we have. But I want to give you a somewhat different analysis and that is an analysis of ensemble that I made in, as part of my daily updates. And this is an ensemble of four Asian countries. Those countries are Japan, South Korea, Thailand and Vietnam. I put this ensemble together back in, uh, July for just this purpose, because they have a collective population of 328 million. Uh, the most recent data really from early 2020 is it the US population is 318 million, so similar size. They are 328 million, we are 318 million. They have a rate of cases and a rate of deaths that is one 1/100 the rate in the United States.

Same size, many things going against them, for example, three of those countries actually border China, and were, had very early arrivals, arrivals with very little advance warning, where as we had a better have about a, maybe about 6 weeks of advance warning, which isn't a lot but it's some. They had very little, but where we had on Saturday, uh, 3,300 deaths, that similar size population had 57. Where we had, on Saturday, uh, 231,000 cases, they had little under 4,000.

The population of those countries, the citizens, were willing to put up with the modest annoyances that were required to bring this under control. And that includes following government directives, and allowing, um, and facilitating contact tracing, uh, isolating when told to isolate, uh, being tested when asked to be tested and their governments took scientifically based approaches. And scientifically based approaches means you apply the well understood principles of epidemiology, there's no rocket science here, unlike the vaccine, which absolutely is rocket science, there's no rocket science in the epidemiology of this. You take the public health principles that we've understood, literally for decades, and you apply them.

Now, we've learned a lot. We've learned, for example, that, that indoors is much worse than outdoors, uh, which we didn't know back in, which we didn't March, and so our knowledge has improved but the basic concepts haven't changed. They're, they're the same. But what distinguishes their success from, frankly the prettiest astonishing failure of the United States to deal with this.

DR STRIKER:

Let's turn the conversation a little bit more towards anesthesiology. Give us your take on how our specialty is affected by the pandemic and, and things that we, um, as a specialty should be you should be looking out for. I'm asking this more in context from the joint statement between the APSF and the ASA on rescheduling elective surgeries. And so I just want to get your take on current standing as how, how anesthetic care, uh, relates to the pandemic.

DR. SHAFER:

So it's a great question, and I just want to again emphasize what I said before. One of the things we can and should be doing is teaching. And we can encourage patients to get vaccinated, we can encourage patients to engage in social distancing, we can model those behaviors for our patients and frankly for our clinical colleagues. I go up to the physician's lounge at Stanford this is like 2 months ago, and people were sitting around, physicians, around the table having lunch as though nothing was going on. And

my comment was, uh, is COVID taking a brake also? Uh, because, uh, you know, we can model smart behaviors to our patients and our colleagues.

In terms of our roles as directors of operating rooms and as people who are helping hospitals plan, just watching what's happened at Stanford, we have significant roles in all these things. We are involved in the hospital evaluating PPE, we are involved in helping to create novel ways to conserve PPE. That seems to be less of a problem at Stanford now than it was that it was 6 months ago. I think there are still hospitals that PPE is a considerable problem.

Uh, we can absolutely help our colleagues evaluate what cases need to go during periods of surge when there's a tremendous strain on hospital resources and what cases can be safely postponed. Obviously we respond to issues involving COVID patients throughout the hospital. Uh, I mostly do elective anesthesia so I take care of COVID-positive patients quite rarely. My wife is an OB anesthesiologist. She takes care of a COVID-positive patient every week, uh, usually a couple patients every week, uh, because (sic) it's not exactly elective, uh, when the baby's going to arrive. And, and, and, what she does as she looks out for her own protection, but also the protection of everybody else, in, in the room. The nurses, are, are they following things? Let's keep the number of people (sic) with the patient to a minimum. No reason to send the resident in, if you're going to do an epidural it's just going to be done by the attending so we minimize the amount of exposure.

We are really in a position to be good citizens throughout this whole endeavor. And then there are specialized cases. My field happens to be modeling, and so what I've been contributing is, is modeling and simulation of the pandemic. I have colleagues, who are inventors, and they've been inventing, respirators, you know, ventilators, uh, that can be built very quickly and at very low cost, and those are actually moving through the FDA approval process. Uh, there have been a lot of innovations coming from our specialty directed to the care. So whether we're in the clinical roll, just helping to take care of patients, whether we are in a managerial role helping hospitals deal with the pandemic, whether we are in more of a inventor, an innovator role, uh, creating novel pathways, creating, uh, novel devices, creating novel approaches to epidemiology, anesthesiologists have had a lot to contribute to helping manage the unfolding crisis.

DR. STRIKER:

As far as you know, any intraoperative or long-term effects of anesthetics? We just interviewed Dr. Cole about potential neurologic ramifications or cognitive net ramifications of COVID infections. Any information on the clinical front, um, whether

symptomatic or asymptomatic performing anesthetics on individuals that have this disease?

DR. SHAFER:

Not that I'm aware of. You know, there is very old data that is that anesthetics might have, have a, a, negative impact uh, on the ability of the lungs to cure, clear viruses and things like that. I mean, these are data that are decades old. But, in, in the case of the COVID patient, uh, I, I think one still has to take a, and an organ based approach, in part because of the protean symptoms. Uh, although COVID is primarily a form of, of pneumonia, and, and acute respiratory distress, COVID also shows up as disseminated thrombosis, uh, it shows up as strokes, it shows up a myocarditis, it shows up as renal failure, it shows up as kidney failure, it shows up, as we talked about, in multiple neurologic problems, and also it shows up in psychiatric disorders. So the disease affects many, many organ systems. We are still trying to sort that out. Uh, we had an article in The ASA Monitor about the (sic) system, you know one of several hypotheses for an underlying mechanism for the, the diverse affects. But in terms of dealing with these, in terms of anesthesia, well, we know how to take care of patients with, with heart failure, so if somebody has myocarditis we know what to do about that. We know how to take care of patients with impending kidney failure, we know how to take care of patients with strokes, and the fact that the etiology of the organ injury would be COVID doesn't really change the fact that we'd turn to our, our basic knowledge of how to anesthetize people with dis-functioning organs, uh, to get them through with minimum (sic).

DR. STRIKER:

Well, Dr. Shaffer, it's been a pleasure talking with you. Thank you for your insight, your knowledge, the preview of what's to come and, uh, for all your hard work on The Monitor, for sure. Is there anything before we go that you'd like to say to our listeners? Information, anything at all?

DR. SHAFER:

One of the best things any of us can do is just be smart. Don't get COVID, and if everybody in the country does that, we can get this.

DR. STRIKER:

Good advice. Well, thank you again for joining us. This is Adam Striker thanking everyone for joining us again on another episode of Central Line. Please tune again next time. Take care.

(MUSIC)

VOICEOVER:

Improve your overall knowledge and confidence in working under COVID-19 conditions to safely provide patient care. Participate in a new complimentary course, Lessons Learned in Caring for Patients During the Pandemic and Beyond, available in the Take My Courses section at asahq.org/LessonsLearned.

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