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VOICE OVER:

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

DR. ADAM STRIKER (HOST):

Welcome back to Central Line. I'm your host and editor, Dr. Adam Striker. Today I'm here with Dr. Patrick Guffey. Dr. Guffey is the committee Chair and Medical Director for the Anesthesia Incident Reporting System, also known as AIRS. He's also a practicing pediatric anesthesiologist at Children's Hospital Colorado and Associate Professor of Anesthesiology at University of Colorado. He's on the board of directors for AQL, and today we're going to talk about reporting and specifically the AIRS registry. Dr. Guffey, welcome to the show.

DR. PATRICK GUFFEY:

Well, thank you very much for having me today. It's a pleasure to be here.

DR. STRIKER:

Well, let's start out with kind of a more of a general question. Most of our listeners are going to certainly understand that anesthesiologists are at the helm of patient safety. But why don't you talk a little bit about why our specialty is positioned so well as leaders when it comes to patient safety and also how it pertains to quality data?

DR. GUFFEY:

So when you reflect back on anesthesia, I would open with the concept of the miracle of anesthesia and what we are able to do for patients. If we look back historically to times before the advent of modern anesthesia, it's particularly scary and really disheartening as to what went on. And when you think about what's happened and what we're able to do today, thanks to the the gift of anesthesia and all of the researchers and people that

came before us that made this miracle, it's positioned us very nicely to be able to do things that we've never been able to do before. Specifically, some of the most complex surgeries imaginable.

Now why this has taken off with patient safety is because as we started down that road of surgery, we have been able to increase the complexity of the procedures we do and also the medical complexity of the patients and get good outcomes. The driver for that has been safety and quality.

The other thing is we sit at the helm of one of the most acute specialties in all of medicine. So we are constantly on the edge of life or a potentially bad outcome, meaning that we are particularly sensitive to the impact that we have on patients.

I think through that and the desire to push forward and offer lifesaving treatments to more and more patients, we have had to improve very quickly relative to other specialties in medicine to be able to deliver the results that we do. So we are not only at the helm of patient safety, we're at the heart of quality when we take a look at what we need to be able to do to meet the needs of our patients and get them the procedures that they need.

DR. STRIKER:

Well, great segue to what we're going to talk about, which is data. And there's certainly a plethora of data out there, especially nowadays. There's so much of it, and it certainly can help us identify trends and outcomes, quality, performance measurements, all those things. But ... reporting can be kind of confusing somewhat of an alphabet soup, depending on what you're talking about. There's AQI, NACOR, AIRS, which we're talking about today. So if you don't mind just highlighting the difference, explaining a little bit about what exactly AIRS is compared to things like NACOR or Closed Claim Projects, et cetera, just to give sort of an overview for our listeners.

DR. GUFFEY:

So I think that's an excellent question, and let's start by reviewing the registries and what their purpose is. So starting with NACOR, for example, NACOR is all of the quantitative data from an anesthetic, all of the billing data, all of the vital sign data, diagnoses things of that nature for a patient that was cared for by an anesthesiologist so extremely quantitative and shows you what happened during an anesthetic in that matter. AIRS, on the other hand, is really the story that goes with that data when something doesn't go the way that it should. So for example, let's say we had a patient in the OR that had a had a complication. You'll see the data, the blood pressure may

drop, pulse might go up, saturation may change and tidal may drop out. But what caused it? What is the story that goes along with that data? The qualitative data, that's what's captured in the AIRS registry, along with some additional questions about whether the event was preventable and then also a classification schema. Was this an airway complication or a cardiac complication, for instance? And if we contrast that to Closed Claims, for instance, Closed Claims takes a look almost looking in reverse after an event has gone through a legal process. Closed Claims looks back and says what was the cause of that quote closed claim. Whereas AIRS is looking more from the front right after the event occurred through the eyes of the reporter of the information. So I really think that both of those registries complement each other.

To dive a little deeper into what exactly is the AIRS registering how that works. This is the first specialty specific, nationwide reporting system in the United States, and that's really important because it ties back to our previous conversation that anaesthesiologists lead patient safety. So it's not surprising that through the work of leaders in our specialty, that this was developed first in anesthesiology as part of the Anesthesia Quality Institute and the American Society of Anesthesiologists.

The impetus for it actually came from the aviation industry, so some may be familiar with a system called ASRS, another acronym, if you will, and that system is administered by NASA. And this all started because there was a plane that was on approach to Dulles in Washington, DC, and there's a mountain there called Mount Weather. And a couple of airliners that experienced problems on that approach and told their pilots to watch out in certain conditions. Well, TWA's pilots didn't get the message and they had a crash. So from that, they decided, well, we need to have a way to get near misses or things that go wrong out to the broader audience. So that's how the Aviation Safety Reporting System, ASRS, was developed and we looked at that and said, Wow, that really has a complement in the field of anesthesiology.

DR. STRIKER:

Well, describe a little bit more of the actual process of reporting to the AIRS as opposed to the quantitative component NADCOR. Or is it when you report the quantitative data, it's it's a supplemental reporting of how to explain the data? Or is it totally separate than quantitative data?

DR. GUFFEY:

It's totally separate. And the reason for that comes back to what the legislation was that allowed us to even do this. So as we all know, these stories are particularly sensitive in some cases, right? They could be legally discoverable. And why would somebody

report it if it wasn't protected? Well, back in around the time of 2010, the concept of a patient safety organization was put in place through an act of Congress. And what PSOs allow you to do at the federal level is to protect discussion and documentation of adverse events. And what's really critical about that is that it supersedes state protections and authority, meaning that if you report a case to a Patient Safety Organization, which we are at the AQI, then that report cannot be disclosed or used in any legal process. So reports are put in through our website, is one way to do it, or we're able to retrieve reports from other patient safety organizations that partner with us.

DR. STRIKER:

So you don't have to supply any quantitative data when you report to the AIRS system if you just want to get some information out. I have a patient who, just so everybody knows this, his piece of equipment can do this to patients. I'd like to put that in there just for information purposes or this happened to one of my patients. But you don't need the whole quantitative piece then. Is that correct?

DR. GUFFEY:

Absolutely. You can put a report in as fast as a couple of minutes, just depending on how much you choose to put in the in the narrative. And I would invite our audience to hop over to aqiairs.org, aqiairs.org, and you can take a look at the website while we're listening to the podcast. If you're able and you can enter a report and see how it works as a test case

DR. STRIKER:

When AQI was created, was this not thought of or is this a recent idea like, hey, you know, we'd need this piece? Or was it born out of what we have seen from AQI so far? Just curious on how how has arrived to you now?

DR. GUFFEY:

That's a great question. AIRS was one of the original databases from the AQI inception, and it closely followed NACOR. So NACOR was really the database that you could argue that AQI was set up to do, to gather all of that information about cases. And then it very quickly became apparent, and I think it's important to mention Rick Dutton's role in this, he quickly identified the need for this. And Jim Caldwell and I were at UCSF at the time. I was just completing training and we were taking a look and doing research on near-misses and anesthesia. So we presented the concept of a near reporting database in anesthesia at a meeting that Rick Dutton was at. And very quickly, I think

Rick had probably already thought about it, and moved us forward with the AIR's setup. So from there, Dr. Dutton convened a group of experts from around the country and a couple from around the world, where they had done this work before, specifically Australia and New Zealand. And Dr. Alan Mary was very closely involved in this. And from there, we met at a conference room in an airport at O'Hare and conceived the AIRS's registry. And then very quickly, this was live.

DR. STRIKER:

Excellent. Well, let's delve into what we've learned from it. Has the data been useful so far and maybe give us some examples if you have any about how the registry data has actually helped anesthesiologists in their practices?

DR. GUFFEY:

Sure. So there's a couple of different ways that we use the data. People put their cases in, and our committee of about 10 to 12 people takes a look at the data and first ask ourselves for the case, what really happened here and what can we learn from it? And that's really at the heart of it, of the AIRS registry. Its purpose really is to allow us to learn from each other's mistakes and to prevent errors from happening again. In other words, repeating the same error that somebody else might have. So that kind of goes back to the same reason that the aviation industry near-miss database was put in place.

So if we think about that for a minute, one of the simplest ways that we get value from this registry is a window into what goes wrong in anesthetizing locations and operating rooms around the country. And the way we get that out to people is through the Monitor. So every month for the last week, it's now about 10 years, we've been putting a case report in the Monitor that describes an actual case out of the AIRS database. When we put a case in the Monitor, one of the first things we do is change the details so that the case is not identifiable. However, from there, the committee talks about in the case report what happened during that case, any learnings that we can find from a system standpoint, and then a series of recommendations on how to prevent that error from occurring in the future. And we've written up close to 120 of these in the Monitor over the years, and it's one of the most read sections of the Monitor going out to an audience of about 50,000 anesthesiologists. So at its most simple, if you read the monitor articles, you're probably unlikely to make the same mistake, or error, that our colleagues have. And also, you might prevent a near miss, for instance, from becoming an event that causes harm. So that's one way we use the data.

Another way that that data is used is if you do MOCA questions you might notice now is you're doing a question. You might see that the reference goes back to the AIRS

database or a case report. So when things are going wrong now, we have a powerful tool in terms of as you're doing your CME and your MOCA questions, you might be learning about something that happened in a case and then how to prevent that from happening in your practice.

The other thing we do is we trend this information. We have the capability to send cases or information out to different committees at the ASA or potentially to regulatory agencies as appropriate to get the information out that way that people submit.

And then also all of the case reports are de-identified and roll up to AHRQ with all of the other CSOs. So our data not only feeds the field of anesthesiology, but is used in general ways for health care improvement overall. So the cases that go into the system take a lot of different tracks to do different things.

One notable trend we found years ago in the system was put in place that we educated people about was air embolism during ERC cases, for one example. And that alerted people to this possibility and to be prepared that when you're doing an ERCP, you're at a higher risk of an air embolism. And that was something that came out of this database that's been published on in one of the monitor articles, for instance.

DR. STRIKER:

Let's talk about physician participation. Have you encountered physicians being afraid to enter data in this regard or have a fear about participating in the registry?

DR. GUFFEY:

We've had really good results with that. That's not a common thing we hear. I think this is because we've been doing this now for close to 10 years, so with the protections from the PSO Act, we've not had a case where information's been inappropriately disclosed, so I feel our anesthesiologists feel very comfortable putting information into the system. And as somebody who's read all the reports in the system, some of these cases are extremely sensitive. So that tells me that we're getting good information. Also, about two thirds of the cases are preventable, so anesthesiologists have put cases in here are in essence telling us we could have prevented this if we had known this, or if I had understood this aspect of the patient or the system or something to that nature. And we even get reports that say things like, I'm not going to tell my hospital about this for fear of retribution, but I want to tell you about it at AIRS so that maybe you can do something about it at a national level, so we feel really good about that aspect of it. The problem with reporting is that it takes time and effort to put that in. And for your average anesthesiologist, you might be asked to report an adverse event to your group through

your typical MNM process. You might be asked to report to the hospital through their incident reporting process, and then we're asking for a third report to be put in to AIRS, as hosted by AQL. So that's what we describe as a significant reporting burden. And we know from research that adverse events are only only put in the reporting systems, even when it's just one reporting system, less than one percent of the time. So one of the biggest challenges we face in AIRS is getting reports that said, we feel like we get a sampling around the country. So that does help us detect trends and things that are going on. But it's it's far from enough reports. So work in the area to help that is instead of asking somebody to put the report in three times, can we get the report from the source? And there's large anesthesia groups in the country that are starting to partner with us in order for us to be able to get reports directly from the source so that the anesthesiologist only has to enter this one time versus two or three times. And that is a way to really increase reporting rates.

DR. STRIKER:

Certainly. And just to clarify for our listeners. PSO legislation, patient safety organization.

DR. GUFFEY:

That's correct.

DR. STRIKER:

Ok. Why don't you talk a little bit about the downside of clinicians not participating? Why should our listeners participate and share their data?

DR. GUFFEY:

I would define sharing what's gone wrong and allowing others to learn from it as a professional responsibility and one of the things that makes our specialty really special in the field of patient safety. That's something that's ingrained in all of us. So I know it takes a little bit of extra effort. But being open and transparent about what's happened, reporting it, and allowing others to learn from that is a way that we can improve our safety, quality and outcomes to benefit all of the patients that we take care of going forward. You know, patients are just going to continue to get sicker. We're going to be able to care for more complex patients doing more complex procedures. And our ability to do that and to learn and improve is predicated on learning about what didn't work the previous time. So to sum that up, I would put it squarely in the bucket that we all have a professional responsibility to each other to share what's happened so that we can all

learn and prevent it from happening to the next patient. Now, since we have the PSO structure, we're able to do that in a very safe way without any risk to the reporter. So we've been able to make it safe, and while it's convenient, it still takes time. And that's something we're continuing to work on is how do we make it easy and really get it right into the workflow of the anesthesiologist so it's not an extra burden in terms of time?

DR. STRIKER:

Yeah, certainly that's the real trick. Some of our listeners may have heard of patient safety tables. Others may not have. Do you mind telling us a little bit about those?

DR. GUFFEY:

Patient safety tables are really a really neat thing. So when the PSO Act was put together, they conceived the idea of how would we discuss these incidents? Because if you put it into the PSO as we've already stated, it's confidential. So what's the mechanism to discuss a confidential report? And within the PSO, and in our case, the so is the all of the anesthesiologist participating in the United States because our PSO is the Anesthesia Quality Institute, this gives us a way to share and discuss cases among that group. So a safe table is a place where people can come together, either physically or virtually, agree to nondisclosure of the discussion, and talk about actual cases from the AIRS database. And we've done this a number of times at the annual meeting with good participation. We've also done it virtually through the quality meeting, as hosted by the Anesthesia Quality Institute and the American Society of Anesthesiologists. So these really are a powerful way to discuss cases.

Watch for news in the future. What we're looking at is our next foray is having a monthly or quarterly forum virtually where people can come together and we discuss a specific problem, like routine wires and central lines, for instance, comes to mind, or something that we've received multiple case reports on. And then go through the actual cases and talk about how you can improve or prevent that from happening in your specific group or hospital around the country.

DR. STRIKER:

Now, will those meetings be available through the communication channels for all anesthesiologists like ASA emails or what have you to get notification about those upcoming events?

DR. GUFFEY:

Exactly. We'll do a broad communication campaign and this getting these off the ground is one of our goals in 2022.

DR. STRIKER:

Fantastic. Well, one last question before I let you go. How can listeners participate overall if they want to share their data, support your efforts, what should they do?

DR. GUFFEY:

Well, there's two things. So the first is is just report cases. If you have a notable near miss or a case of harm, we want to get that information in the system. So if you go to aqairs.org you can enter that case and you can enter it anonymously or you can enter it confidentially. So we want the case either way. If you want to tell us who you are. We will absolutely protect that information. But if you even prefer to just put the case in anonymously, that's good too. And we're looking for both cases of harm, but we're also looking for near misses.

And here's why: near misses are a window into future harm. So when we have a bad outcome in the OR, most of us that have experienced that it's typically six or seven or eight or nine different things that go wrong that line up in just the right way. It's the classic Swiss cheese analogy that result in patient harm. Well, taken individually, each of those six or seven or eight things is happening all around the places we work, sometimes on a daily basis. They just line up. We call those near misses. So if we can report, learn from and cure the near misses from occurring, then we can stop the harm from occurring. And we don't have to wait until the harm occurs to go back and figure out how to prevent it. So we're looking for both notable near misses, as well as notable cases of harm so that we can learn from both and really prevent this from happening in the future.

DR. STRIKER:

Well, this is a fantastic effort and incredibly important to all the work we do and gets at the heart of what we all strive for, which is the safe care of our patients. So I just want to thank you so much for joining us, Dr. Guffey, to explain all this. I'm excited about the trajectory of where this is headed and look forward to seeing how it evolves. But before we go, let's highlight the site one more time.

DR. GUFFEY:

Yeah, aqiairs.org. [Aqiairs.org](http://aqiairs.org). And you can remember that that's the Anesthesia Quality Institute Anesthesia Incident Reporting System. So aqiairs.org. And Dr. Striker I can't thank you enough for having me on today and would invite your listeners to contact the AQI if you have any questions, and we'll be happy to get back to your listeners with any questions, ideas, concerns we have. And again, a heartfelt thank you to all for reporting what's happening in your operating rooms and anesthetizing locations so that we can all learn from it and keep our patients safer.

DR. STRIKER:

Fantastic. Thank you again, and thank you to all our listeners for joining us for this episode of Central Line. We always appreciate your reviews and your follows and any comments or feedback are welcome. Don't hesitate to tell your colleagues about the podcast. Feel like there's a lot of great information contained, and we've got a lot of great guests to help disseminate that information. So please take care and certainly join us again next time.

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