Host: Welcome to the *ANESTHESIOLOGY* journal podcast, an audio interview of study authors and editorialists.

Dr. BobbieJean Sweitzer: Hello. I am BobbieJean Sweitzer, an Associate Editor for *ANESTHESIOLOGY* and you are listening to an *ANESTHESIOLOGY* podcast designed for physicians and scientists interested in the research that appears in the March 2024 issue of the journal.

With us is Dr. Scott Segal. Dr. Segal is the senior author of an article titled, "A Quality Improvement Initiative to Reduce Adverse Effects of Transitions of Anesthesia Care on Postoperative Outcomes: A Retrospective Cohort Study."

Dr. Segal is Professor in the Department of Anesthesiology and Perioperative Outcomes in Informatics Collaborative at Wake Forest University School of Medicine in Winston-Salem, North Carolina. Welcome, Dr. Segal.

Dr. Scott Segal: Thanks very much, Dr. Sweitzer; it's a pleasure to be here.

Dr. BobbieJean Sweitzer: And joining Dr. Segal is Dr. Jeffrey B. Cooper. Dr. Cooper wrote an accompanying editorial, "Anesthesia Needs to Lead the Way in Safety—Again—through the Universal Adoption of Structured Handoffs."

Dr. Cooper is Emeritus Professor in the Department of Anesthesia, Critical and Pain Medicine at the Massachusetts General Hospital and Harvard Medical School in Boston, Massachusetts. Welcome, Dr. Cooper.

Dr. Jeffrey B. Cooper: And thanks so much for having me and great to hear you, Dr. Sweitzer, and great to hear from you again, Dr. Segal.

Dr. BobbieJean Sweitzer: So, all three of us at some point were in Boston, Massachusetts. Tonight before we started the podcast we were just chatting a bit. I think it may be the first time I've ever been able to actually interview two personal acquaintances and people I consider friends as well as colleagues on this podcast. So, I'm delighted to have you both.

Dr. Segal, let's start with you. What was the primary intent of this study?

Dr. Scott Segal: Our primary intent of this study was to try to understand a little bit better about the potential adverse effects of handovers or handoffs of anesthesia care between teams. And most importantly, we wanted to know whether better adoption of a structured handover tool would make a difference in those potentially adverse outcomes associated with handovers.

Dr. BobbieJean Sweitzer: Do you have a good idea or is there actually published data on how often these handoffs occur?

Dr. Scott Segal: It's an interesting question in and of itself, Dr. Sweitzer. The reported incidence of handovers in a number of different studies varies quite widely between 2% and 40%. Ours was closer to that 40% number.

There is one statistic that says nationally it's overall about 6.5%. But there's tremendous variation, I think, due to differences in the patient populations being served, the types of facilities, staffing models at the various facilities and so forth. And therefore I think it's not a simple question to say how often they occur because it depends intimately on the specific practice setting.

Dr. BobbieJean Sweitzer: Maybe you can tell us a bit of background of what we maybe already know about patient outcomes after these handoffs or handovers.

Dr. Scott Segal: We know that in almost every study, not quite all, but most studies that have looked at transitions of anesthesia care between teams there has been an association with adverse outcomes. It's not universally true but most studies have found this to be the case.

Most of those studies have looked at some sort of compositive adverse outcome of mortality and major morbidity in the perioperative period and it appears that if you look at a large enough sample size, you can show that there is some sort of relationship between handovers and adverse outcomes.

I think we should note upfront here, though, that handovers don't occur in a vacuum and many of the reasons why a particular case might have handover versus another one that doesn't may themselves be risk factors for adverse outcomes: things like longer cases, bigger cases, sicker patients, maybe later in the day cases and so forth.

So, it's important to recognize that when you use these large datasets there's a very large number of potential confounders of the association.

Dr. BobbieJean Sweitzer: So, Dr. Cooper, many studies have examined the association between anesthesia handoffs and adverse patient outcomes in the past few decades. What is unique about what Dr. Segal has done?

Dr. Jeffrey B. Cooper: First we should clarify that we're talking about permanent handoffs not the short breaks that we might call reliefs, so these are about permanent handoffs.

The key thing for me was that they tested an intervention and that they measured the effect of the intervention on outcomes; I thought that was really neat, something really new. I don't think it's been done before.

So, now we have some new evidence that following a checklist the – in electronic medical records seems to reduce the harm that can come from permanent handoffs.

But they also did add that the more evidence in the harm that can result from unstructured handoffs, but that's not new as Dr. Segal mentioned there's evidence for that.

Dr. BobbieJean Sweitzer: So, Dr. Segal, before we get into details of this study, I think you write in the paper that this grew out a quality improvement initiative at your institution. Can you tell us more about that?

Dr. Scott Segal: Yes, that's right. So, we like many other institutions, participate in the Multicenter Perioperative Outcomes Group of MPOG collaborative and there are a number of quality indicators that MPOG publishes every year.

And we realized that we were lagging our comparison institutions on the use of structured handover tools for interoperative handovers and we decided that it might be a good target as a department for us to work on. We picked a couple every year to work on and this was one that we decided to work on starting in 2019.

As a prelude to that, we looked at our own data prior to making any intervention on the possible effects of handovers on adverse outcomes and there was preliminary evidence that there was such an effect, so we thought it might be a good idea to attempt to improve the use of a structured tool and follow the effect over time.

Dr. BobbieJean Sweitzer: So I think you mentioned MPOG and I think that's the Multicenter Perioperative Outcomes Group, is that correct?

Dr. Scott Segal: Right, based at the University of Michigan but I think now it has over 70 participating institutions around the country and, indeed, internationally.

Dr. BobbieJean Sweitzer: So, Dr. Cooper, can you tell us – I think it was a specific handover tool that was actually published in the manuscript and I was hoping that maybe you could discuss that for us.

Also, if you know if that's available to others outside of Wake Forest or how one would want to adopt that if they read Dr. Segal's paper and decided this was something that was important for their institution?

Dr. Jeffrey B. Cooper: Well, the tool that they use, from what I can tell from the manuscript, and Dr. Segal can chime in, is the one that's with the – in the EPIC electronic medical record.

And it was, I think, really derived from what's called the MHC, the Multi-Center Handoff Collaborative which was a group that's – it's a somewhat informal group that has been working on handoffs now for several years and they worked in collaboration with EPIC to create that tool.

As far as I know that tool is available to everybody; I don't know if it has to be turned on or not. But maybe Dr. Segal can add to that because – to be clear that that's the one they used.

Dr. Scott Segal: Yes, that's absolutely correct; we used the built-in tool that's in EPIC and my understanding is that collaborative, in working with EPIC, did (sounds like: derive) that tool and we put a screenshot of it in the paper.

It is, as the best as I understand it, available to any EPIC shop. All you have to do is turn it on.

Dr. BobbieJean Sweitzer: Thank you for that. Maybe you can or cannot answer this question, but I was just curious if there was maybe a specific incident that sparked this quality improvement project or even you looking into it or was it just simply you were comparing your data in MPOG?

Dr. Scott Segal: I'm going to be completely honest with you. We were interested in handovers just because it was a hot topic and this whole thing started off as what I would embarrassingly call a "me too" project just to see if we could replicate the results of other institutions because, as we mentioned earlier, not every institution found an association with adverse outcomes.

So, it started off with us just looking at that and then picking a target where we were well below our peers. There was not a specific case where something that said, "Oh, we have to do something right now." It was really more that the rest of the country had 80% or 90% use of a structured handover tool and our use was around 30%. So, we thought we could do much better.

Dr. BobbieJean Sweitzer: I think that's a good "me too" project or an initiative. I think that's the idea behind these comparative databases or registries where we can see how well we compare to others.

Dr. Scott Segal: Right. That's how it started, anyway.

Dr. BobbieJean Sweitzer: So, Dr. Cooper, you write in your editorial, "The evidence supporting the relationship between unstructured anesthesia handoffs and harm is compelling but mixed." Can you tell us more?

Dr. Jeffrey B. Cooper: Of course I've got to be clear that this is not something that's easy to study; it can be really confounding by lots of different factors. So, that said, there are numerous studies—and Dr. Segal alluded to this before—that have used what I call sophisticated statistical methods, frankly, I don't completely follow. And fortunately I had a coauthor on the editorial, Dr. Meghan Lane-Fall who's at Penn and she's been actively studying handoffs for several years.

So, we included a table in the paper, in the editorial that includes – it lists seven studies that were done between 2014 and 2022 that offer evidence that permanent handoffs are associated with harm when compared to cases in which there was no handoff.

It's worth noting that none of these studies were in settings that had a structured handoff or a checklist. There is a study from Vanderbilt in 2016 that didn't find that handoffs were associated with poor outcomes, yet we think the preponderance in the evidence—but not all of it—points to permanent handoffs in the way they're generally conducted as being less safe than no handoff.

So, I think it's also worth mentioning there's a study by Jones in JAMA in 2018 that they went so far as to call for forbidding all permanent handoffs except where the provider was fatigued and then there was an editorial challenging that suggestion and I was one of the coauthors of a letter that also challenged it.

But I have to say there are a legitimate reasons to debate the issue since there's a little bit of fuzziness around what's best overall for the healthcare system and each patient. But I think that there's a lot of evidence out there now on why we came out in the editorial as we did for calling for structured handoffs.

Dr. Scott Segal: I think the Vanderbilt study is particularly interesting in this regard and we'll come back to thinking about structured versus unstructured handovers as we continue the conversation.

But in the Vanderbilt study although they did not find an association between intraoperative handovers and adverse effects, they do write that in their institution they had recently implemented a structured handover process for OR-to-PACU transitions of care.

And I don't want to get too much into the weeds, but there is a phenomenon, a well-known phenomenon, in certain kinds of behavioral quality improvement initiations called learning contamination bias and it's entirely possible that the providers at Vanderbilt learned how to give a good handover when they passed a patient off to the PACU.

And even though they weren't using a tool in the operating room, they may have given a better handover in the OR than they might otherwise have done. So, I think it's actually a provocative result coming out of the Vanderbilt study.

Dr. BobbieJean Sweitzer: Yes, that's a very interesting point and the Hawthorne effect where it may not be part of the intended intervention but because it spills over people change behaviors or do something different.

Dr. Scott Segal: Right.

Dr. BobbieJean Sweitzer: How did you go about doing the study?

Dr. Scott Segal: Well, at the simplest, this is a medical record study. It's simply an extracted data out of the EPIC electronic medical record with a little bit of data that we actually got directly from the MPOG upload of our own data.

But most of it is a straightforward extraction out of the copy of the EPIC data called Clarity and we built a large database of patients that I think we're going to get into discussing who they were in just a moment.

And then we did analyses of when there was a permanent transition of care and when there was not and we compared outcomes in the two groups. And then we constructed a large number of, as Dr. Cooper said, fancy statistical models to attempt to control for a large number of potential confounders that made the group that had a handover and the group that didn't have a handover different in ways that might have affected the outcome.

Dr. BobbieJean Sweitzer: Why don't you just tell us about those patients now, if you will, and maybe also tell us when these surgeries actually occurred.

Dr. Scott Segal: Sure. So, this study took place over a six-year period between 2016 and 2021, beginning of '16 to end of '21. We studied adult patients only undergoing surgery that lasted at least an hour and only in our inpatient operating room suite. So, we really were excluding ASCs, known outpatient cases and so forth. It doesn't mean that everybody stayed overnight, but these were in the inpatient ORs.

We didn't exclude very many patients; only ASA 5 and 6 patients and cardiac cases which we thought were sort of special cases with particular risks. The idea was to have as broad of a range of patients as possible but we were probably looking at a subset of our overall patient population that was more likely to have a handover, hence our 40% observed rate of handovers in this particular subset of patients. All told, it was about 121,000 patients over the six-year study period.

Dr. BobbieJean Sweitzer: So, I think Dr. Cooper mentioned this, but I did want to just clarify. So, these were permanent handovers, right? Not just somebody coming into to give a lunch break or a bathroom break?

Dr. Scott Segal: That is correct. We defined a permanent handover of at least 35 minutes where a provider was gone unless the case ended during a transition, then we called it a permanent handover of care. So, even if it was shorter than 35 minutes, if the case ended during it then we called it a permanent handover.

And I think you raise a good point here and maybe Dr. Cooper wants to comment further because I think he was one of the folks who first raised this issue: those shorter transitions for breaks, coffee or lunch may not only not have a deleterious effect but might possibly have a salutatory effect on patient outcomes.

They allow a relief of fatigue, they put fresh eyes on the case for a brief period of time and at least in that study that we alluded to earlier from Vanderbilt, they appear to have a protective effective, short breaks did. So, they may very well have a very different effect on the conduct of care and patient outcomes.

Dr. Jeffrey B. Cooper: Yes, but just to chime in here that's what I would guess. Actually, we reported this—it's hard to believe—in 1982

and it came out of the critical incident studies we were doing in the 70's and was just a finding that came out of all these interviews we had done so we reported it and I was kind of naïve about all of this back then. We were talking about relief breaks.

By the way, that was at a time when there was controversy about whether you should ever give a break to anybody at anytime let alone a handoff. So, that paper back there—even though we didn't use sophisticated statistics, it was a qualitative study—our conclusion was that seeing that those short breaks were probably better because generally people were picking things up when they came in when somebody needed a break. That's not what's really being dealt with in this study.

Dr. BobbieJean Sweitzer: So, Dr. Cooper, what are the weaknesses in Dr. Segal's study, if any?

Dr. Jeffrey B. Cooper: Well, yes, first let me start it by saying when I read this paper I thought this is just a really great study. It's something like the kind of thing we've been waiting for, but all studies aren't perfect so there are a few things that come to mind.

The first thing is it's retrospective and that's not the optimal way to test the hypothesis. We'd like to do a randomized controlled trial, but I don't know. I don't know how to design that to avoid contamination between any control and intervention group, just what you were saying before, the contamination effect if some people aren't using a tool and others aren't. And so hopefully people will try to do that, but that's tough to do.

And the other thing is that we only knew that the box was checked to indicate that the checklist was done; we don't know if it really was done and, therefore, was the checklist completely used?

But actually if some of them actually weren't done and the box was checked, I think that would lead to what would be an underestimate of the positive effective of using the checklist. So, while that's a flaw it's kind of in the opposite direction.

I think the thing that I was really hoping for was to see some kind of estimate about how many adverse events might have been avoided by doing a structured handoff. I think having such an estimate would provide better evidence at least for people who are still questioning the efficacy of an intervention.

You can't really do that exactly but maybe Dr. Segal can give us a little more information and take a guess at that.

Dr. Scott Segal: I appreciate the opportunity. I will tell you, Dr. Cooper and Dr. Sweitzer, we debated back and forth when writing and revising this manuscript about whether we should do that or not. I think we tried to be very circumspect about claiming that we knew that there was a causal effect here, that the handover tool actually had this effect casually.

What we have is a really good correlation but it's not the same thing as Dr. Cooper was leading to as the kind of causal inference that you could make from a randomized trial and hopefully we've have a chance to touch on that again before we're finished.

But as a really, really rough guide with more than one grain of salt, the overarching difference in the adjusted comparison, that is the comparison adjusted for as many confounders as possible, was about 7.2% versus 6.2% of our composite adverse outcome that is in handover and non-handover cases.

So, if you just roughly say it's 1% of all the cases over that six years, that's 1,200 cases of mortality or major morbidity that might be avoided if structured handovers make handover cases have the same risk as non-handover cases and that would be in our institution about 200 cases a year and that's just one hospital. Imagine scaling that across the entire country; it could be quite an important effect.

Dr. BobbieJean Sweitzer: Yes, I think it's important that we do always remember that it's retrospective studies can only allow one to identify associations, not actually cause and effect.

Dr. Scott Segal: Absolutely true. Randomized trials like this, though, are devilishly difficult to do. There is one randomized trial of handovers versus non, but just imagine that somebody is randomly assigned to hand over a case and comes in for no good reason and says, "I'm going to take over your case," you might very well know that something is up particularly if it's at 10 o'clock in the morning.

And so I think it's really, really hard to do it in the traditional way that we would randomize at the individual case level. Probably the only way to randomize this is to take a whole bunch of hospitals that aren't using a structured tool and randomly assign some to start using it and the others not and then observe what happens across all the hospitals.

That would be a so-called cluster randomized trial and that's probably the best way to get closer to causal inference on this sort of stuff and we are in very preliminary conversations with the handoff collaborative that Dr. Cooper referred to about maybe setting something like that up.

Dr. BobbieJean Sweitzer: Wonderful. So, what specific outcomes? You mentioned morbidity and mortality, but what specific outcomes did you evaluate for?

Dr. Scott Segal: So, it was a composite outcome and most handover studies do use this; it gives you a little more ability to detect an effect. So our composite for the primary outcome was 30-day mortality all causes and a morbidity composite that had major morbid conditions.

So, that include the so-called PSI 90 which is a group of things that CMS monitors for postoperative, supposedly avoidable adverse effects, and also CMS is a hospital-acquired conditions plus a composite of some other major morbidities that we included such as myocardial infarction, respiratory complications, transfusion-related acute lung injury, central line-associated infections, ventilator-associated pneumonia.

And then we had a bunch of secondary outcomes that we looked at as well such as reintubation postop or remaining intubated at the end of the case, length of stay, unexpected ICU admission, activation of the code team or rapid response team or readmission within 30 days; those were secondary outcomes.

Dr. BobbieJean Sweitzer: So, I know we know from other initiatives that healthcare providers do not always embrace recommendations and tools, especially reminders in the electronic medical record, maybe even such as warnings to address hypotension. So, how commonly was the handover tool used?

Dr. Scott Segal: It's a fantastic question and Dr. Cooper alluded to this in his very well and absolutely legitimate criticism. We have no idea. All we know is that the screen was called up at the time of a handover and that is because in the EPIC electronic medical record if you activate the tool, the summary of the case, the structured summary of the case appears on the screen and all we know is whether or not that occurred at the time of a permanent handover of care.

So, people might have called it up and paid no attention to it or they might have called it up and followed the script and gone through all of the items on the checklist.

As Dr. Cooper suggested, though, I think if they called it up and didn't even look at it, I think that would almost strengthen our conclusion that using a tool like this has a beneficial effect but we really can't be certain whether they were actually paying attention to the tool or not, only whether or not it was activated.

Dr. BobbieJean Sweitzer: So, Dr. Cooper, I think you've mentioned in this interview already that maybe in spite of handoffs or handovers having their challenges that we shouldn't ban them completely. So, maybe when should we allow handoffs and maybe when we should not allow handoffs?

Dr. Jeffrey B. Cooper: Well, first let me say I didn't say this outset and didn't mention in the introduction in the audience that people who don't know me don't know I'm not a clinician; I'm a biomedical engineer and have been involved in patient safety for 50 years. So, I speak more like a patient and a patient safety advocate, but in a word, at least in a question, is should we allow handoffs?

Well, I – the immediate answer is yes but then there's this big but and there's a lot in the but. So, first, I think that as we say in the editorial, there has to be some kind of standard methodical way that handoffs are conducted and that's what we really call for in the editorial, that everybody should really look in the mirror and if they're not doing it ask why because we see the evidence here from this study that gives us enough to say, "You know, this is the right thing to do."

But going further than that, I think every provider has to give serious consideration to whether handing off the care for that patient is the right thing to do at that moment. I don't think there's a simple algorithm for that. Maybe that's something also that can be studied, but I think there's some sensible things to consider.

So, for instance, if it's a complex case and you have to deeply think about whether you can effectively hand over that to somebody else, the key is really tacit knowledge that you have and for that realistic patient and complex case, there's stuff in your head that maybe you just can't transfer.

So, I think there are lots of conflicting issues, of course, but that's what anesthesiologists do all the time: you make decisions in the face of uncertainty.

The point, I think, is you've got to be deliberate about it and just don't take it for granted that, "Oh, this is what we do. We do this handoff at 5 o'clock and that's just the way it's done."

I think what we're giving this evidence for is you just can't think that way. You can't ignore the risk of handovers because we've – it's come from so many studies now and now we see that the standardized handoff will probably go a long way to mitigate the risk but there's still going to be situations where I think the professional thing to do is to stay with your patient.

Dr. Scott Segal: Pretty good for a nonclinician. I quite agree.

Dr. BobbieJean Sweitzer: Yes, I must agree as well. Dr. Segal, in this conversation I think we've already alluded to, stated that the handovers were associated with increased adverse outcomes and the handover tool appear to make a difference. But can you talk more specifics, I guess. What kind of adverse outcomes? Could you tell if it made a difference in all of these outcomes or not?

Dr. Scott Segal: Right. Well, so, you're right and I'm glad you used the word "associated." I think caution is in order in interpreting our results and I really do believe that it's true, but let's be careful.

But yes, it appeared that handovers were associated with our composite adverse outcome as well as virtually all of our secondary outcomes. Really only remaining intubated at the end of the case, I think, was the only one that wasn't strongly associated with having a handover of care.

Now, you also asked me if using the handover tool made a difference and here, again, I will sprinkle salt over my answer for everybody, but taking it with a grain of salt, what we can say is that after the intervention—which began in the summer of 2019 through the end of the study period at the end of 2021—the use of the structured handover tool increased from about 30% to over 90%.

And simultaneously, in almost a mirror image of that increasing use of the tool, there was a decrease in the overall odds ratio or risk of having a handover versus not having a handover.

So, across the entire study that odds ratio was 1.08 or an 8% increase in adverse effect. And by the end of the study period the odds ratio, the confidence interval at least, included 1, meaning no effect of having had a handover.

If that's true—and I, again, underline if that is actually true—it looks like the handover tool did make a difference and I guess I would have to underline, I think, the theme of Drs. Cooper and Lane-Fall's editorial which is it's pretty easy to do it and if it has this important of an effect, we probably all ought to really seriously consider using it.

Dr. BobbieJean Sweitzer: I think that's a really good point. So, were there associations in the numbers of handovers and adverse events?

Dr. Scott Segal: Well, that's a great question, too. In our study we just said handover was either yes or no and we did not count the handovers and analyze it by number of handovers.

Other investigators have, in fact, done it that way and it did appear that more handovers was worse than one handover which was worse than no handovers. But that's not an association we investigated in this particular study.

Dr. BobbieJean Sweitzer: So, Dr. Cooper, I want to take advantage of this opportunity to interview you. And, first, thank you for everything that you have done for patient safety, particularly in anesthesiology.

And I think you undersold yourself when you said you were speaking just as a patient safety advocate and patient. I don't think we have enough time to talk about all of your research and you have long been a very ardent supporter of patient safety and spearheaded so many initiatives to improve anesthesia care.

Can we talk a little bit other than handoffs? Your – some thoughts from your years of doing this. What are some things that maybe we should be doing or where do we need to innovate to improve?

Dr. Jeffrey B. Cooper: Oh, well, so that's a big question. Probably need a whole podcast for that, but I guess what I would is point people to the APSF website because the APSF has been thinking about this more than I have and has it in current priorities.

At least one of things that I'm interested in—I am retired and I'm still pretty professionally active and I have a couple of really fun, interesting patient safety interests—I tell you the thing that's been most interesting to me these past several years and I've published a commentary that was published simultaneously in *ANESTHESIOLOGY* and *The American College of Surgeons* and it's about the relationships between anesthesiologists and surgeons because I think patient safety comes down to relationships within the team.

We talk about teamwork and communication and all; I think it's about how people get along with each other, how they have each other's back and they just avoid conflict.

So, we've been studying that in an APSF-funded study with both professionals interviewing people, identifying areas of conflict and what kinds of things people do to improve their collaboration and has been absolutely fascinating and I hope in here some kind of paper will come out about that. And that's not just about patient safety; it's about making everyday work in the operating room more satisfying and less stressful.

So – and I'll go a step further, something I've just been pushing a little bit more recently, giving a talk in Ireland and it's been a provocative thing I've been thinking about lately is that anesthesiologists should partner with surgeons to help the surgeons doing surgery, what anesthesiologists have done in anesthesia: be a real team, make surgery as safe as anesthesia, be complete perioperative physicians.

I know that sounds really strange, it probably needs a whole podcast in itself but I think there's just so much more that anesthesiologists can do to make perioperative outcomes better and it's by becoming real partners with surgeons and we know now that's not generally the case.

On a broader note, by the way, I'll say I think AI is going to have a big impact, for instance, on most of the APSF priorities in a both positive and a negative way. So, if you're not keeping your eye on that you really need to because I think it's going to make a big difference in a lot of ways.

Dr. BobbieJean Sweitzer: Thank you for that. So, I'm going to close with you, Dr. Segal, when or if you or a family member has an anesthetic, would you be okay with a handover?

Dr. Scott Segal: For the first time in my life I recently had major surgery and it might not surprise you to know that I sort of handpicked my anesthesia team and I was delighted to hear that they did, in fact, stay with me the whole time.

But I think on the basis of what I've learned, if there needed to be a handover of care for personal reasons, for staffing reasons, whatever, I would

want them to do a very complete and careful and structured handover of the care to make sure that their expertise transferred from one to the other.

Dr. BobbieJean Sweitzer: I hope today's discussion will interest many of our listeners and lead you to read this important article to learn more. Thank you, Drs. Segal and Cooper, for discussing your work with us today. I wish you well as you continue your efforts to enhance the practice of anesthesiology and strive to improve the care of our patients.

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