

Announcer: [00:00:00] Welcome to the Perioperative Nutrition podcast. Sharing knowledge with clinicians to ensure all patients are ready for surgery. This six episode series is sponsored by Abbott Nutrition and here's your host, Dr. Paul Wischmeyer of the Duke Clinical Research Institute.

Dr. Paul Wischmeyer: [00:00:15] Welcome to DCRI's podcast on Perioperative Nutrition and the optimization of patients before surgery. My name is Paul Wischmeyer and I'm a Professor of Anesthesiology and Surgery here at Duke, and Director of the Perioperative Therapeutic area for the DCRI. And I'm truly honored to be joined today by Dr. Sol Aronson, and Abby Whittington. Sol, could you introduce yourself? It's really a joy to have you here.

Dr. Solomon Aronson: [00:00:40] Thank you, Paul. Thank you for having me. I am Solomon Aronson as Paul just pointed out. I am the Executive Vice-Chair of the Department of Anesthesiology and the director for a perioperative enhancement team here at Duke University.

Dr. Paul Wischmeyer: [00:00:54] Thanks, Sol. Abby?

Abby Whittington: [00:00:55] Thank you for inviting me here. My name is Abby Whittington. I'm a physician assistant under the supervision of Dr. Wischmeyer. I work in the nutrition services here and have helped with the POET nutrition clinic.

Dr. Paul Wischmeyer: [00:01:11] So Sol, starting with you. This was really the concept of POET and I'm going to ask you to tell us what POET means, and why it was named that. But this was your brainchild and tell us about how this came to be and what it means?

Dr. Solomon Aronson: [00:01:25] The story of POET, which is an acronym that stands for Perioperative Enhancement Team, was born out of a brainstorming session that probably began about six years or so ago. I had the privilege of spending some very quality time with some smart people of the MD/MBA ilk, who had gathered weekly to do nothing more than to sort of generate great thoughts and think about we could blow things up to change the world and improve healthcare delivery.

Dr. Solomon Aronson: [00:02:00] Out of that was born the concept of Perioperative Enhancement Team or POET as we will be referring from hereon. Which is really predicated on the basic principle that patients who are determined to require surgery, they're declared surgical, need surgery obviously, and we do whatever we have to do and can do in the perioperative care space to take best care of those patients. But what we've recognized is that our foundational paradigm heretofore is flawed significantly, in that patients who are often scheduled to have surgery on occasions are not simply optimized. They're not completely prepared for that surgery.

Dr. Solomon Aronson: [00:02:52] The metaphor I love to use is landing an airplane. We would never consider a pilot competent if he or she chose to land an airplane before the wheels were down. And yet we, often, in the surgical arena perform surgery and perform the duties of caring for those patients who are undergoing surgery, without having the patients be fully optimized. And so, our basic premise is that if people need surgery, they need surgery. Obviously emergencies and urgencies are dealt with emergently and urgently, but if people need surgery, they need surgery.

Dr. Solomon Aronson: [00:03:37] But we believe people shouldn't have surgery until they're ready to have surgery. And so in the parlance of optimization, we've developed over the years a number of optimization programs, the course of which identifying people who are not nutritionally fit to have surgery as well as other comorbidities should be optimized pre-surgery to better withstand the perturbation and stress of surgery.

Dr. Paul Wischmeyer: [00:03:57] That's excellent. Yeah, it really is an innovation that we hope, and I know you hope, takes on not just here at Duke, but throughout the country. Because for instance, in nutrition we know that, at least in GI surgery for instance, two out of every three patients are malnourished when they come to us and very few of them ever get identified or treated, But we know the risk of complications is threefold higher, the risk of death is fivefold higher in a malnourished patient who isn't treated. And so you've had some success with other POET clinics to date, and maybe mention those, and then maybe we'll talk a little bit about how the nutrition clinic evolved.

Dr. Solomon Aronson: [00:04:32] Sure. So as I mentioned, this concept was generated by just simple generative discussion and some research into opportunities to improve the way that we had traditionally cared for patients. And the first program that we really developed and launched and have now over the span of five or six years, benefited to see some successful impact, was our preoperative anemia clinic. It's a situation obviously whereby we recognize blood management is complex. It's a medical decision that requires integration of many, many complex variables.

Dr. Solomon Aronson: [00:05:11] But certainly the decision to transfuse or not transfuse is predicated among many things, the presenting risk factors for transfusion, interoperatively, of which a preoperative hemoglobin is a very, very strong predictor. So what we decided is before we really had to confront that intraoperative decision algorithm to transfuse or not transfuse based on the biology and the physiology of oxygen delivery, that we could obviate that whole step in the algorithm by preempting, if you will, the need to make that judgment in managing patients who are anemic pre-operatively before they even come to the OR.

Dr. Solomon Aronson: [00:05:48] And so we implemented a process whereby we would check for pre-operative anemia with point-of-care tests and if the patient was deemed to be sufficiently anemic to likely have a behavior of transfusion, interoperatively, we diverted them to a pre-operative anemia clinic where they were coached and

evaluated more fully to understand the essence of their anemia. Make sure there wasn't anything terrible and occult going on there, and then give them the opportunity either to get an IV iron or IV Erythropoietin type of infusion, which postponed their surgical procedure by two to four weeks or so. And then we brought them to surgery no longer anemic and obviated that sort of risk factor.

Dr. Solomon Aronson: [00:06:35] The results of that are extremely satisfying. We were able to reduce the incidence of transfusion in our highest risk orthopedic procedures. These are the patients who were deemed historically to be the most at risk for the likelihood of transfusion from greater than 60% to less than 10%. So it had significant impact and we were very proud of that. And since then, there's been some horizontal integration of other sites and services, high risk OB, oncology, surgery, etc. have sort of fallen into the sort of corridor of being screened for anemia.

Dr. Solomon Aronson: [00:07:09] Since then we've also launched a pre-operative diabetic clinic with a hemoglobin A1c threshold, and of course, we along the way developed a pre-operative nutrition optimization clinic as well.

Dr. Paul Wischmeyer: [00:07:22] And so, this has been a process that was one of the reasons that brought me to Duke was to have a chance to do this as it's always been a dream of mine. And as part of this, one of the key features we had to do was develop a score, or a way to easily identify malnutrition in our patients, one that can be built into the electronic medical record. And Abby, you've had a lot of experience and spent a lot of time going to clinics and working with physicians and nurses and surgical pre-operative teams to help educate them. And maybe you can tell us a little bit about the PON score and your experience trying to integrate that into the initial assessment of patients when they come to surgery clinic.

Abby Whittington: [00:08:01] Sure. So yeah, we developed this score that's supposed to identify the highest risk patients for malnutrition, so we can identify them easily and then be able to intervene appropriately before their surgery to reduce their risk. And it consists of three questions and two labs depending on which team you're working with, but the questions are: Is your BMI less than 18.5? Or less than 20 if you're over the age of 65? The next question is, have you lost greater than 10% of your weight in the last six months? And the third question is, have you eaten less than 50% of your typical intake in the last week? And the two lab values are an albumen of less than 3, or a vitamin D less than 20. If those labs are within those values, or any one of those questions are positive, then they automatically score into the ... They automatically get a POET referral.

Dr. Paul Wischmeyer: [00:09:09] What happens when they get a POET referral?

Abby Whittington: [00:09:10] They're scheduled with a dietician in our clinic that we've reserved space for here at Duke, a certain day and time that we have them scheduled. And we then see the patient on that scheduled appointment time. We have them come in and we look heavily into their chart to make sure they're

appropriate and see if there are any comorbidities, anything we can do to optimize them. And we just talk to the patient, figuring out what are their risks and do a physical assessment to see if they have any physical signs of malnutrition. But get a good history and we talk to them about how we can optimize their diet and their supplements and we usually recommend an oral nutrition supplement that's very high in protein and that's kind of our focus.

Dr. Paul Wischmeyer: [00:10:07] And how long on average is that given for?

Abby Whittington: [00:10:10] We would like at least a month of this optimization, and you know sometimes that is not possible, but that's ideal. And we follow them weekly. So we'll call them on a weekly basis at that point just to make sure that they're compliant or if they have any barriers to them doing the intervention. And making sure they're on the right track. And we would like to see them before the surgery to make sure that it's still appropriate, that they're still not at such high risk of malnutrition.

Abby Whittington: [00:10:46] And based on what we, the information we gather, we'll communicate with the referring physician and saying, "Hey, they're doing great. Their weight's gone up. Their labs look better. You know, I think they'll be ready now". And then if they're not, then we'll say, "Hey, we may need some more time with these patients to optimize them".

Dr. Paul Wischmeyer: [00:11:06] The things you're looking for is like you said their weight to stabilize and...

Abby Whittington: [00:11:10] Yes. Definitely not downtrending. No downtrending albumen or vitamin D or you know, whether if they have other like, kidney disease. You're got to look at their electrolytes. There's so many things that play into this, but making sure that they're physically ready.

Dr. Paul Wischmeyer: [00:11:32] And then you keep seeing them in the hospital.

Abby Whittington: [00:11:35] Yeah.

Dr. Paul Wischmeyer: [00:11:36] We have a process where you see them in the hospital.

Abby Whittington: [00:11:37] Yeah. So when they come in, we like to see them sometimes it's after surgery because they come in for the surgery, so we'll see them right afterwards. And we make sure that they're still on the same, the protocol that we have laid out for them. If they're any complications or any issues to their nutrition delivery, we will get ways to optimize that as well. Like if they need TPN or if they need enteral feeds. But still trying to optimize their intake around surgery and making sure we don't lose the ground that we had already built for them.

- Dr. Paul Wischmeyer: [00:12:10] And then the other piece is of course that we use the immuno-nutrition formulas around the time of surgery five days before and seven days after. And then we encourage them to keep taking nutritional supplements, the high protein nutritional supplements after surgery as well.
- Abby Whittington: [00:12:24] Yes, for at least a month. And we'll still continue to follow them after surgery for a month, and longer if we need to, if we feel like they're not doing as well as we had hoped. I would continue to follow them. And then touch base with the primary team as well, just to give them an update of how things are going.
- Dr. Solomon Aronson: [00:12:43] Yeah, it's been remarkable. We've had some of those surgery teams reach out to us for patients who are months out of surgery.
- Abby Whittington: [00:12:47] Oh yes.
- Dr. Solomon Aronson: [00:12:48] Care for them. So I think that's been quite remarkable, that interaction that's been built.
- Dr. Paul Wischmeyer: [00:12:52] So I think Sol ultimately all of this we hope will begin to become much more integrated as Abby can attest to the fact it's hard to get patients back for multiple visits sometimes after they've seen the surgeon. And the evolution of this we hope to use the PASS clinic. And maybe you could mention the PASS clinic and how the nutrition clinic and some of the other clinics we have might integrate into that to make this a more efficient process.
- Dr. Solomon Aronson: [00:13:15] So thank you for the segway. PASS is another acronym, we love acronyms here at Duke. And PASS stands for Pre-Anesthesia and Surgical Screening clinic. It's the next derivative if you will of the traditional pre-anesthesia testing clinic, which is to say it differentiates from the common pre-anesthesia clinic today, which is something that is a necessary J Co mandated step along the journey from the moment of declaration of surgery to the actual surgical procedure itself. When it's typically scheduled days if lucky, week before surgery and the patient's clerical information is recorded and there's an inventory of patient's comorbidities taken by the clinic provider. And that information's typically passed forward to the interoperative team, who is confronted with just this list of comorbidities and has to do what they do to manage the patient. It's a paradigm that has very unsatisfying, if you will, consequences in that we're often having to put 10 pounds of sand in a five pound bag and forced to do things that we just simply don't have time to ideally do.
- Dr. Solomon Aronson: [00:14:37] The PASS clinic concept is a little bit different in that once there is that moment of confrontation and declaration of surgical need between the physician and the patient, the patient will be immediately sent to the PASS clinic, where an exhaustive evaluative process will be performed, and it will be

determined if the patient is ready for surgery, if you will, to go back to the metaphor, are the wheels and the flaps down and is the plane ready to land?

Dr. Solomon Aronson: [00:15:02] If there's a determination of need for optimization then in that PASS clinic, there will be a referral to one of those several optimization clinics. They will be either scheduled to occur in the same physical location or virtual location of the PASS clinic. And so though there are a number of current hub and spoke kind of organically positioned clinics all over the institution, we will collate and coalesce them into a more centralized mechanistic way of providing that care.

Dr. Solomon Aronson: [00:15:39] With respect specifically to nutrition optimization services, there will be within the PASS clinic, a nutrition optimization clinic. And it will be staffed with a registered dietician model and any patient who's seen in our pre-operative evaluative PASS clinic deemed to require nutrition optimization services, will be immediately referred over to have that consult service be provided.

Dr. Solomon Aronson: [00:16:05] And all of the wonderful things that Abby just described in terms of the recipe for optimization will be conducted and disseminated and coached and trained by that RD patient interaction, including the prescription of those nutrition supplements for the patient. I think it's also important, Paul, to mention that even in the instances when a patient is determined to be nutritionally fit, we still advocate the idea that pre-operative nutrition supplementation is an advantage that we want to take care of and we simply subscribe to that philosophy that nutrition is a very, very important precursor to good health and recovery after surgery.

Dr. Paul Wischmeyer: [00:16:51] Absolutely, and I think it's key that everyone listening realize that all patients can benefit like you said from nutrition, Sol I think you said it well and I think the pathway Abby described can be a benefit where immuno-nutrition needs for patients are true for all patients. This is part of our evolution as humans that we become immuno-suppressant after surgery to prevent our immune system from injuring us, and the provision of immuno-nutrition formulas and of Argene and other nutrients have been shown to reduce infections by as much as 40% in many thousands of patients studied and can reduce length of stay by multiple days.

Dr. Paul Wischmeyer: [00:17:29] And I think that's true in all patients, not just malnourished patients, but I think we all feel compelled like you said to get the wheels down on our planes and for our patients to be ready to go to the operating room and I think we have not traditionally focused on optimizing the nutrition. Identifying as you described Abby with the PON score, the optimal way to do that.

Dr. Paul Wischmeyer: [00:17:52] And I think for all of you listening, the Perioperative Quality Initiative, the POQI group, and the American Study for Enhanced Recovery recently has had us put together some guidelines which I was honored to be a part of and lead where all this information can be found and it will be published in the June 2018 of Anesthesia and Analgesia where all these pathways, the PON score

Abby described, and the pathways and concepts Sol talked about of giving nutritional supplements, replacing vitamin D in our patients, and all the data around how to think about nutrition in your patients is available. So I encourage you all to find that article as well.

Dr. Paul Wischmeyer: [00:18:29] Just some final thoughts from each of you. Abby, there have been some challenges at times implementing this. What are the challenges you've seen and how do you think we'll overcome them?

Abby Whittington: [00:18:38] That's a great question. So I think when you start up any program, it requires a ton of communication. So a lot of times, we have to circle back and speak with the teams, in making sure that they remember to do the screening and if there were any obstacles to them to refer the patient. And then also encouraging the patient when they say, "Hey, you need to see nutrition" to really encourage them to do that, so they see the importance of it. And that they actually will show up to their appointment, excited and willing to just take the advice and recommendations that we have, and understand the importance of it. Help with compliance. So that's certainly a big barrier.

Abby Whittington: [00:19:30] Once we see the patient honestly, they're very welcoming and receptive to what we have to say. That's usually not a barrier. They're really excited that someone's helping them tangibly, something that they can control and do to optimize their health to help prepare them. So it's more of the flow of getting the referral and making sure that the teams are on board and they continue to review the process and making sure that everything's lined up and working.

Dr. Solomon Aronson: [00:20:05] One of the things that I'm really looking forward to and I think would address, if you will, that hurdle that Abby just spoke to, is the PASS clinic really changes the paradigm in that patients are brought to the PASS clinic once there's a declaration of surgery and the need to further evaluate or assess patients' readiness is no longer the burden that we would expect anyone to really make, unless that evaluative process is reformed by the providers with selective competencies in the PASS clinic to determine readiness for surgery if you will.

Dr. Solomon Aronson: [00:20:47] And so if you picture this very narrow corridor where everybody is funneled through the PASS clinic and evaluated for their readiness, the nutrition fitness question will be addressed as per routine. And anyone who is to have surgery will be evaluated for their nutrition fitness and managed appropriately. And so it takes that variable of guessing or needing to educate people how to guess properly out of the picture. And I think we're going to really see some significant enhancement in our ability to manage appropriately nutrition needs prior to surgery.

Dr. Paul Wischmeyer: [00:21:28] And I think Sol, what you describe is a game changer for all of how pre-operative care is done in the US and around the world, and I think you really should be commended for the concept that all of us should be bringing our pre-

operative processes together so that a common screening pathway can occur and patients won't be missed anymore like you said. We won't miss their high hemoglobin A1c. We won't miss the opportunity to have them stop smoking.

Dr. Paul Wischmeyer: [00:21:52] We really see this as a teachable moment in their life when they're perhaps preparing for the marathon of their life. You wouldn't run a marathon without getting yourself trained, without getting yourself properly nourished, without getting yourself ready. Yet now they're running the marathon of their life and you're really the trainer now. You're the lead trainer, Sol Aronson, if you've ever imagined yourself that way. Teaching people how to do this.

Dr. Solomon Aronson: [00:22:16] So just to be clear, we switched from a airplane pilot to a marathon runner. I just want to make sure we get our metaphors clear.

Dr. Paul Wischmeyer: [00:22:23] We like metaphors at Duke too. But I really think in a quality based environment right, I think we're all obliged to give our patients the best quality. I think this kind of clinic that addresses these needs in a consolidated fashion is the future.

Dr. Solomon Aronson: [00:22:38] Of course.

Dr. Paul Wischmeyer: [00:22:39] So I think I want to thank our guests, Dr. Aronson and Abby Whittington. And thank the listeners and we look forward to bringing you more content around how best to get your patients ready for surgery. Thanks to both of you.

Dr. Solomon Aronson: [00:22:54] Thanks Paul.

Abby Whittington: [00:22:54] Thank you.

Announcer: [00:22:55] Thank you for listening to the DCRI's Perioperative Nutrition podcast. Sponsored by Abbott Nutrition. More episodes are available on SoundCloud and DCRI.org.