Welcome to the Anesthesiology journal podcast, an audio interview of study authors and editorialists.

Dr. James Rathmell: Hello. I’m Jim Rathmell, Professor of Anesthesia at Harvard Medical School and one of the executive editors for Anesthesiology. You’re listening to an Anesthesiology podcast designed for physicians and scientists interested in the research that appears in our journal.

Today we’re going to talk to the authors of a publication that appears in the August 2016 issue of the journal. Helping me with today’s interview on behalf of the journal is BobbieJean Sweitzer, Professor of Anesthesiology at Northwestern University and an associate editor for Anesthesiology.

Dr. BobbieJean Sweitzer: Hello, Jim. From someone who has worked in preoperative medicine during my entire career in anesthesiology, I cannot tell you how delighted I am to see this important work from Dr. Blitz and her collaborators.

Dr. James Rathmell: We’ll get right to it. With us today is Dr. Jeanna Blitz. She’s Assistant Professor of Anesthesiology, Perioperative Care and Pain Medicine at New York University School of Medicine in New York, New York. Dr. Blitz is the first author of an article titled, “Preoperative Evaluation Clinic Visit is Associated with Decreased Risk of In-Hospital Postoperative Mortality.”

Joining Dr. Blitz is her co-author, Dr. Samir Kendale. He’s an Assistant Professor of Anesthesiology at New York University School of Medicine and is the author responsible for the statistical analysis and you’ll see that that statistical analysis is the detail in this work we’re going to talk a bit about that. Hello to you both, Dr. Blitz and Kendale. Thanks for joining us.

Dr. Jeanna Blitz: Thanks for having us.

Dr. Samir Kendale: Likewise.

Dr. James Rathmell: Dr. Blitz, congratulations on the publication of your work. The obvious take-home message of your study is potentially astounding news for anesthesiologists; the idea that seeing patients in-person in a structured, preoperative evaluation clinic may actually reduce the risk of death following surgery. That’s really something, but of course, you’ve shown an association, not a causation here and we’re going to talk a bit about that and get your insights. Let’s take a closer look at what your group did and what we can really conclude.

NYU has established a set of criteria that you provide in the paper to identify patients who must be seen in your preadmission testing center, preoperatively. Can you explain how the list was established?

Dr. Jeanna Blitz: When we originally developed those criteria, we were actually attempting to capture both patient-related and systems-based issues that we felt that if they were not addressed preemptively, may lead to issues such as day-of-surgery cancellations, delays, or other downstream issues. So, our original motivation for developing those criteria was not with this study in mind, but was an attempt to address what we thought were the most common themes that were occurring at our institution related to inefficiency within the perioperative process at the time.

I’d just like to say that our list reflects our attempt to identify scenarios where we felt that there was a likelihood for miscommunication to become possible between providers and the patient, or amongst themselves, or that there would be a lack of care coordination that could potentially lead to a patient safety issue, some sort of a delay or cancellation.

I do think that something that was somewhat unique about our process was that we chose to take a screen-in perspective, if you will. What I mean by that is that our goal was to evaluate the majority of patients in-person at our PEC, our Preoperative Evaluation Clinic, as opposed to the more common preoperative process at the time, with a focus toward reducing the number of in-person visits through the use of screening phone calls.

The other thing I think is important to emphasize about these criteria that we established is that you’ll notice that there are many examples on our list—which is included in the manuscript—that reflects patients who are in sort of a gray area, who might be moderately ill, an ASA score of three, perhaps, but where we thought there were still medical issues that had the potential to affect patient safety if the patient had not been evaluated and addressed by anesthesiologists prior to the actual day of surgery.

Furthermore, we thought that we would have a better chance of engaging the patient and ensuring that important preoperative information was communicated, received and retained by the patients if we met with them in-person. That was sort of how we came to develop that criteria.

I also should say that while we were in the process of creating these criteria, it wasn’t in a vacuum. We certainly took the opportunity to visit other successful, well-designed PECs, such as the Cleveland Clinic, and learn from their successes.

Dr. James Rathmell: I get it. You have a bunch of criteria that can lead to inadequate communication, maybe the patient takes medications when they shouldn’t, or doesn’t take medications when they should. Perhaps it has something to do with their medical history. You’ve got this list of things that you know can lead to delays and cancellations. How did you get buy-in from your surgeons? How did you get them to actually send the patients to you for in-person visits?

Dr. Jeanna Blitz: Our institution formed what we called our Preadmission Testing Taskforce Redesign. This was initiated at the encouragement of our senior administration within our hospital. This Preadmission Testing Redesign Taskforce was actually a multidisciplinary team. It included anesthesiologists, surgeons, perioperative nursing staff members, members from the finance department, from our IT departments.

Our primary goal was to improve both the patient experience with the perioperative process, as well as to increase the satisfaction of the members of the perioperative team’s experience with the process. I think that was critical. Because surgeons were active participants within this taskforce and the redesign process, and I think because one of our main goals of this redesign of the process was to increase their satisfaction, it was relatively easy to gain their buy-in.

With this in mind, I want to emphasize that this Preadmission Taskforce as a group took on a discussion about who would actually lead this perioperative process once it was redesigned. It was decided as a group that anesthesiologists would ultimately direct this process, but that all members of the team were going to be important contributors and would have their role to play.

Furthermore, it didn’t hurt that we had the ability to track metrics such as case cancellations, including reasons why and whether or not
the patient had been seen in our preop clinic so that we were able to address issues with lack of buy-in from that standpoint by tracking data over time.

Dr. Bobbie Jean Sweitzer: Sounds like you took a well thought out, excellent approach. The details of your paper a bit. You write, “All patients who visit the clinic were subjected to a standardized preoperative evaluation process in patient education methods. Can you highlight for listeners some of the specifics of what this process is actually like for a patient?”

Dr. Jeanna Blitz: In my opinion, one of the most critical steps in our process is actually the phone call that the patient receives 48 hours prior to their visit at our preoperative evaluation clinic. The reason I believe that is that the formal name of our clinic is actually still Preadmission Testing Clinic. Many patients, understandably, are under the assumption that the focus of coming to our clinic is to get some blood work done, or some other necessary testing prior to their surgery and that they’d be in and out.

However, that couldn’t be further from the case. The average PEC appointment at our clinic lasts about two hours and focuses on preparing the patient for the surgery. On the pre-visit phone call, we’re sure to let the patient know what to expect from the visit in terms of appointment length, what the focus of the visit is going to be. We encourage them to bring a list of questions that they want to discuss and we also encourage them to bring a co-learner, such as a spouse or a loved one with them, who’s going to help them remember and retain that information that we’re going to go over during the visit.

As to the specifics of what our standardized process includes, I’m guessing it’s probably not very different than the majority of clinics that you’d be familiar with. We certainly take a thorough medical, surgical and anesthetic history. We review their medication list and we provide them both verbal and written advice about how to manage those medications prior to surgery and that is the standardized policy that exists within our institution.

We explore the patient’s goals for the surgery and their understanding of what the recovery process will entail. The point of doing that is we hopefully want to ensure that their expectations of the process, both with regards to the recovery with pain management, that those are appropriate.

We discuss expectations regarding pain management essentially to explore whether there are any non-pharmacologic modalities that the patient may have utilized in the past and found helpful. We’ve had great success with a program we have here, which is called Prepare for Surgery, Heal Faster, by Peggy Huddleston. We have a Department of Integrative Medicine, who are fantastic and certainly help guide the patients through positive imagery techniques to help them with anxiety reduction, but within the preoperative phase, as well as on the actual day of surgery. We find that we have a lot of success in anxiety reduction by having patients start this preoperatively.

The other part of our visit that is standardized is our use of the teach-back method, in that although each patient is given a typewritten summary with their recommendations regarding medication management and PO requirements, information about the planned surgery, the anesthetic and the recovery, not only do we hand them that typewritten summary, but we review it verbally and then, we ask them to repeat back to us what that document is explaining to them to check for their understanding and to make sure that we can clarify anything that we think needs further attention.

Dr. James Rathmell: Dr. Kendale, you’re the statistician. You know what they say about statisticians. The methodology used in your study is pretty complex. This is a retrospective study and it examined the inhospital mortality in over 64,000 patients. You used propensity score matching. Can you explain the use of propensity scoring in a way that a non-statistician can understand the method and why it’s so important in how you interpreted the results of your study?

Dr. Samir Kendale: The best way to think about this is to think about how a normal, randomized control trial is performed. In that circumstance, subjects are separated into either a treatment group or they’re exposed to an intervention or a control group where they’re not exposed to the intervention. Because they’re randomly put into either group, typically that’s how selection bias is reduced and what that means is that the characteristics of both the groups should be roughly equal.

Now sometimes we can’t do prospective, randomized trials for a variety of reasons; either there’s too low an event rate and you need to recruit thousands and thousands and maybe up to millions of patients, or it’s unethical to create a control arm because of the potential harm it could expose the subject to, or if it’s just logistically unfeasible based on whatever systems are already in place within the hospital and within our workflow.

This is where retrospective studies can be useful in addition to hypothesis generation. It’s a way to reduce the potential bias by using propensity score matching. Basically what we do is we develop a score for each patient based on how likely they are to have been exposed to the intervention. In that case, that’s a visit to the Preoperative Evaluation Clinic.

Now those scores are then matched up between similar patients, between those that were exposed and those that were not exposed, so you end up with two roughly similar groups, just as you would if you were performing this trial prospectively and randomly selected the patients to either group. That way, you have two similar groups for comparison. You’re actually comparing apples to apples and not apples to bananas.

Dr. James Rathmell: Back to the stunning results. You found that in-hospital mortality was lower in patients seen in the Preoperative Evaluation Center compared to those not seen. Here’s where it gets tricky. This is a significant statistical association. It’s not necessarily cause and effect. Can you explain what this association might mean and the limitations on what you can conclude from this study?

Dr. Samir Kendale: Right. This goes back to the concept that we were just discussing a second ago. Because we’re not actually exposing the two different groups to the intervention, we can’t accurately say that it was the intervention that caused any sort of effect. We can say that these patients that went to PEC are less likely to have died because they went to the PEC, but what we can’t say is that there is an association because there’s no chronologic implication there saying that there’s a true cause and effect would be an incorrect extrapolation of the results.

But what we can say, that there is some sort of a relationship between the PEC and the reduction in mortality and what you can attribute that to is a little murkier and that involves more of the non-statistical analysis and exploring really what is going on in the PEC that may be contributing to this.

Dr. Bobbie Jean Sweitzer: Dr. Blitz, you made a distinction in your paper between deaths due to a failure to rescue versus a non-failure to rescue. Can you help us understand what is meant by failure to rescue and why it was an important distinction for your study?

Dr. Jeanna Blitz: We referred to any deaths that was associated with an intra-operative or post-operative complication that could not have been reasonably anticipated preoperatively as a failure-to-rescue death. An example of this would be an unintended bowel perforation during elective hysterectomy that ultimately leads to sepsis and then, death. Because
failure-to-rescue scenarios such as those occurring in a wait-and-see fashion and are unlikely to be mitigated by any amount of preoperative planning in our PEC, we felt that it was important to determine the number of failure-to-rescue deaths in each group.

Our hypothesis was that the number of failure-to-rescue deaths should not be different between the two groups of patients, those who were seen in PEC preoperatively and those who were not. However, we hypothesized that the percentage of non-failure-to-rescue deaths, those deaths that were related in some way to some pre-existing medical condition that could potentially have been optimized or the patient could have been prepared in some way, would be the ones in which the PEC would be most likely to be able to reduce. We felt that making this distinction may help us clarify that the association that we noted between PEC and a reduction in mortality was, in fact, somehow related to the PEC process. However, the sample size was too small to allow us to draw any specific conclusions either way.

Dr. James Rathmell: Dr. Blitz, in your article, you write, as specialists in preoperative medicine, “Anesthesiologists are well-equipped to design and oversee the preoperative patient preparation process.” Can you tell us what skills you think are important for an anesthesiologist who wants to lead a preoperative medicine service?

Dr. Jeanna Blitz: In my opinion, the skills that are important for leading a preoperative medicine service are essentially the same as those that we define as important for working in the operating room. You need solid communication skills, both a willingness to listen to other members of the team, including the patient, as well as the ability to advocate for your point-of-view and for the patient in a way that others are able to buy into the plan. You need the ability to evaluate a patient and recognize the trajectory that that patient is on.

I feel as anesthesiologists, that’s second nature to us, to be anticipating, “Here’s a patient in front of me. Where are they going to be five minutes from now? Thirty minutes from now? Even two days from now?” Anesthesiologists have always been leaders in patient safety, so stepping up and taking a more direct leadership role in the preoperative process in order to improve patient outcomes and patient safety, I feel is a natural fit for anesthesiologists.

In addition, Dr. Patricia Kapur had delivered the 50th annual Rovenstine Lecture at the Anesthesiology meeting several years back. She highlighted the importance for those of us who are going to lead into the future, of maintaining our knowledge of medicine as anesthesiologists. I can’t agree with her more, that that really is going to be what separates those of us who ultimately become tied to only a procedural-based role and those who adapt to whatever positions become available as we lead into the future.

I think also placing an emphasis on the importance of being an educator, both for the patient and just as importantly, to our residents who will likely be called upon more often to have skills to lead preoperative teams outside of the OR, both preoperatively and postoperatively and the ability to transfer our knowledge about value-based medicine concepts and to truly affect the attitudes that our resident anesthesiologists have toward preoperative medicine and value-based healthcare, patient safety and quality initiatives are all important skills.

Certainly, it doesn’t hurt to be someone who’s interested in pursuing quality and safety projects, participating in systems’ design for your hospital, learning new management skills, who’s willing to try new things and push yourselves outside of your comfort zone to learn about aspects of business, healthcare policy, education, even if you haven’t had the formal training.

Dr. BobbieJean Sweitzer: Many anesthesiologists are drawn to the specialty precisely because they want to avoid working in a clinic setting. Why did you decide to specialize in preoperative medicine and spend some of your time away from the operating room?

Dr. Jeanna Blitz: As the Assistant Program Director for our residency program, a common theme that I hear with applicants over and over again when we ask them to describe what motivated them to want to become an anesthesiologist, is that desire to focus all of their efforts on one patient at a time, at one of the most anxiety-provoking and vulnerable times in their lives and to serve as that patient’s guardian as they undergo surgery. That is a very rewarding experience.

To me, working in the Preoperative Medicine Clinic allows me that opportunity to expand that period of time when I serve as that patient’s perioperative guardian and hopefully also impact even more patients than the ones that I personally care for on the day of their surgery. So, whether it’s alleviating their anxiety two weeks before surgery instead of just in the ten minutes before they go to the OR, creating standardized protocols for the preoperative period, or working on strategies to increase patient engagement in the process so that they truly can become a partner in their care, I find that very, very rewarding.

Furthermore, I feel that we anesthesiologists are in the best position to lead the perioperative care team for the reasons that I mentioned just a couple of minutes ago. Leading that process of the perioperative care requires a boots-on-the-ground involvement, in my opinion, from the very beginning of the process. Being present physically in the Preoperative Evaluation Clinic is incredibly important in my opinion, for that reason.

I predict that leading these perioperative care teams will become a larger part of the role that many of us anesthesiologists play as our roles continue to evolve in response to the changes in our healthcare system within this country.

Finally, I personally feel that working in the Preoperative Medicine Clinic has afforded me the opportunity to grow professionally and to learn about many topics that I had never been formally introduced to during medical school, such as healthcare system design, philosophy about LEAN management and business concepts. That’s not to say, however, that I don’t still enjoy my days in the OR and I do treasure them, as well.

Dr. BobbieJean Sweitzer: I feel very much the same way, but you have articulated it much better than I have done in the past. Jim, do you want to wrap up?

Dr. James Rathmell: It’s very rewarding to see investigators like the two of you getting involved outside of the operating room and really taking a deep dive into the potential impact that we have on patients going through the surgical period.

I hope today’s discussion will interest many of our listeners and lead you to read this article and learn more about the potential impact of preoperative evaluation done by anesthesiologists. I want to thank Dr. Blitz and Kendale for discussing their work with us today. I wish you well as you continue your efforts to push the boundaries of the practice of anesthesiology and providing evidence that preoperative assessment may well improve care for our patients in meaningful ways. Dr. Sweitzer, thank you for joining today’s discussion.

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