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Considering Quality of Care for Colonoscopies

Dr. Buch:
Each year, there are approximately 19 million colonoscopies performed in the United States, but how shall we measure quality? Welcome to *GI Insights* on ReachMD and I'm your host, Dr. Peter Buch. Here to help us answer that question is Dr. Douglas Rex.

Dr. Rex is Distinguished Professor Emeritus of Medicine at Indiana University School of Medicine, Chancellor's Professor at Indiana University, Purdue University, Indianapolis, and Director of Endoscopy at Indiana University Hospital. He is also one of the leading authorities today on colorectal cancer screening and technical performance of colonoscopy. And if I continued with all of Dr. Rex's qualifications and accolades, we would not have enough time for today's program. So, with that being said, Dr. Rex, we are truly honored to have you join us here today.

Dr. Rex:
Glad to be with you, Peter.

Dr. Buch:
Let's just jump right into it. Let's start with adenoma detection rate, or ADR for short. We're all familiar with this quality indicator. Could you contrast ADR with polyp detection rate and adenomas per colonoscopy as quality indicators?

Dr. Rex:
Sure, so I think, you know, for those that aren't colonoscopists it's not really understood well by lay public that colonoscopy is what we call a highly operator-dependent procedure. And it's true for almost any aspect of it that you look at and try to measure. For example, skill in polyp resection, you can see varies about three-fold. Assignment of screening and surveillance intervals, really everything that's been looked at. But the fundamental thing that started really the quality movement was the recognition that detection varied between colonoscopists, and it varies a lot. So, if you look at data that's been around now for up to 25 years, we know that there are endoscopists who miss basically more than half of the precancerous polyps that are in the colon. So, 19 years ago the U.S. Multi-Society Task Force proposed a measure called the adenoma detection rate, or the ADR, which is basically the percentage of people undergoing a screening colonoscopy who are aged 50 and older. The initial proposal was just - didn't even have to be screening, just over 50, didn't have a polyp syndrome or IBD, who had one or more, what we call conventional adenomas in their colon.

And it was really, I think, a bold move by the MSTF because it was based on fairly limited data, but it set off an absolute tsunami of investigation into detection and it led to what validation of it as a measure. So we know that people who have a higher ADR, they're patients have a lower risk of developing cancer. And those who have a lower ADR, their patients have a higher risk. And that's been demonstrated in multiple studies. And we all know – also now know that if a doctor, through a process of quality improvement, improves their ADR, that now going forward, their patients will have a lower risk than they used to have, than the patients that they were scoping before. So it's a very powerful indicator that gets at the fundamental goal of colonoscopy most of the time, which is can you find precancerous lesions?

The polyp detection rate is a is a variation of it where you don't measure conventional adenomas, but rather just any polyp that's removed. And if you look retrospectively, it correlates well with the ADR. What hasn't been shown is that, going forward, you might be able to corrupt it. When the ADR was first proposed, it was my concept and I was very tuned in to trying to make it be something that would be very hard to corrupt. It's basically an effort to regulate behavior during colonoscopy by the colonoscopist. I'm sort of a strong believer that if you make a regulation corruptible, it'll be corrupted. And there a variety of ways to do that. But one of them is that we have a kind of polyp that we see commonly, especially in the rectum and sigmoid, that is not precancerous. And, you know, you could be incentivized to remove those. So prospectively, it hasn't really been established that it is a predictor of cancer risk. And so even

though it's easier to measure than the adenoma detection rate, I favor using the ADR.

Adenomas per colonoscopy is possibly the wave of the future. It shows more separation between colonoscopists than the ADR. The only downside of it is that it could incentivize endoscopists to put every single polyp in a separate bottle. And we don't have a real standard about how polyps should be sent to pathology. But that would increase costs. And I do think we have enough information now, we could potentially set targets with APC, but would say we're not quite there yet. The ADR has been validated as a predictor of interval cancer. It's very hard to corrupt it. And so time will tell. But for right now, ADR is the detection measure of choice.

Dr. Buch:
Thank you very much.

Does colon cancer protection improve significantly if we either increase the ADR significantly or increase the withdrawal time significantly?

Dr. Rex:
Yeah, so the relationship between the ADR and withdrawal time, the withdrawal of time, if you're not familiar with it, is the time that it takes to get from the beginning of the colon, the appendiceal orifice to complete the examination. And if you look at that in colonoscopies where no polyps were removed and no biopsies were taken, there is a very good correlation between the withdrawal time and the ADR. And there also is actually good evidence that, as the withdrawal time increases cancer protection increases. So, overall, I think there's a good correlation. However, there's a stipulation about that. It works really well. The withdrawal time works really well when you look at it retrospectively. But again, when you try to do it prospectively, it gets sort of perturbed by colonoscopists. So excellent with, or longer withdrawal time is a consequence of examining the colon really carefully. And I think it's a mistake to focus on withdrawal time. If we see somebody who has a low ADR, we often look at their withdrawal time as a signal that they are not using effective technique. The reality is, that if you use effective technique to examine the colon, it takes an average of eight or nine minutes at least. And so what we really want to do with people who have low ADRs is focus on their examination technique. Withdrawal time, I like to say it's a consequence of good examination technique. And so the focus should be on measuring ADR, and if people are low teaching them how to examine the colon better and also to recognize lesions that are up on the TV screen. There are a lot of lesions that get exposed on the TV screen during colonoscopy that aren't recognized because their appearance is very subtle.

Dr. Buch:
Let's move on to this one. What is your protocol when a patient arrives for a colonoscopy and is poorly prepped?

Dr. Rex:
Well, the devil's in the details there but, it sort of depends on if they've had some bowel movements, if they're still passing solid stool versus sort of liquid, runny stool. So we try to take all that into account. Most often we try to keep them in the unit and have them drink additional prep, so we would move them to later in the day if it's possible for them and for their driver to do that. If it's not, then we'll try to schedule them for the next day, so that they, whenever they're rescheduled, they're not starting over from scratch. And so what we'll do is find them a room that's close to a bathroom and we have them drink more prep. We keep prep of different kinds types in the endoscopy unit. And once they have reached the point where what's coming out their bottom no longer has brown in it, no longer has visible feces, then we wait a couple of hours so it's safe to sedate them because we want their stomachs to be empty and we go ahead. That's the best approach.

Occasionally it's not convenient for patients and then we'll usually reschedule them when it is convenient and we'll ask them to take the prep actually for two days in a row, which seems like a challenge, but sometimes that's what's necessary to get the job done.

Colonoscopy is a really important test. It can be lifesaving. And if that's what we need to do, then we work with our patients to encourage them, educate them about why they need to do that.

Dr. Buch:
For those of you just joining us, this is *GI Insights* on ReachMD. I'm Dr. Peter Buch. And joining us to talk about quality indicators and colonoscopy is Dr. Douglas Rex.

So, Dr. Rex what's your perspective on the use of artificial intelligence to increase ADR?

Dr. Rex:
Yeah, great question. Artificial intelligence is on the way. It's not available for colonoscopy yet in the United States. There are several programs that have been approved in Europe and are being actively used. So the first wave of A.I. programs are trying to get at something I alluded to earlier, which is that sometimes there will be a polyp evident on the TV screen during colonoscopy. And the doctor fails to recognize it because the appearance of it is so subtle. Usually it's something that's very flat and has a color that's similar

to the surrounding normal lining. The ones that are sticking up quite a bit are easy for everyone to recognize. But only the real experts see the real subtle ones. So these A.I. programs have been trained to recognize subtle polyps and to put a little box around them, to highlight them, and draw your attention to it so that you can interrogate it. And then if it's - if you confirm that it's a polyp, you can go ahead and remove it. So there – so far there have been five studies of these programs. Four from China, one from Europe, and the average improvement in the adenoma detection rate, the ADR, has thus far been 11 percent. And that's a really dramatic and very clinically important and useful and significant improvement. We know from previous data that for each 1 percent improvement in the ADR by a doctor that there is a 3 percent drop in the risk of the patient developing colon cancer, and a 5 percent drop in the risk of fatal colon cancer for the patients of that doctor. So an 11 percent increase in ADR is very dramatic. And so I think that this these - these technologies are going to be very impactful, and we're looking forward to the day that they're available in the United States.

Dr. Buch:
Colonoscopies and the complications are an important quality measure. So how do you make sure that you have gathered all immediate as well as remote complications and, for that matter the complications that may arise in another hospital system?

Dr. Rex:
Yeah, so it's really a challenge because it requires resources. And an awful lot of endoscopy units typically call patients the next day to make sure that they're doing okay, but they don't necessarily make a second call. And the ideal time to do that is probably either around 7 days, or if you use the same approach that's used for surgical morbidity and complications, it would be 30 days. Most of the significant colonoscopy complications happen in the first week, but not all of them. There can be bleeding that is - that is delayed. The only way you can actually do it is to is to call patients. I will say that there are a lot of endoscopy centers in the United States that don't do that. They don't have really the resources to make those late calls. We often do it as part of our research efforts, you know. And I use resources from my research program to do that. But it's a challenge.

In many hospitals in the United States, the issue of complications and whether specific doctors are incurring an excess complication rate is handled by what we call sentinel events. A sentinel event approach, which basically means that when you learn about it, you investigate it in detail. This can be handled through morbidity and mortality conferences. And, you know, you discuss it and you try to decide do you need to make systems changes that will reduce the chance of a complication. I'll say in general, colonoscopy, especially by skilled people, you know, has a really low rate of significant complications. But I think you're - what you're alluding to is that getting accurate measures with regard to complications is actually much more challenging than some of the other quality indicators that we use, including the one we've been talking about mostly here, the adenoma detection rate.

Dr. Buch:
That's exactly right.

So before we conclude, Dr. Rex, is there anything else you would like to share with our audience today?

Dr. Rex:
Well, you know, I would like to say to - to everybody that, you know, we still have 50,000 people dying from colorectal cancer in the United States every year. And colon cancer is the most preventable major internal cancer that we have. And colonoscopy is just a remarkable procedure. It allows us to go into an organ, identify precancerous lesions, remove them, prevent cancer, and not have any effect on the structure or function of the organ. And if you look across this large number of deaths that we have every year, while some of them are attributable to things like variation in the performance of colonoscopy, and people going for surgery for polyps that don't have cancer in them that could be removed by colonoscopy, and things of this type, the biggest chunk by far is people who have never been screened for colon cancer. And colonoscopy is the most effective way to screen for colon cancer. It's not the only one. There are stool tests that also can be used. There's something for everybody. And, you know, don't kid yourself. You're at risk for developing colon cancer. Talk to your doctor about getting screened. If you have been screened, talk to your loved ones, your family members, your friends. Find out if they've been screened and encourage them to go and get checked. That's how we're going to make the biggest impact in preventing all these unnecessary deaths.

Dr. Buch:
Thank you so much. Unfortunately, we have to end our discussion there. But I want to thank Dr. Douglas Rex for sharing his insights today. Dr. Rex, it was absolutely great speaking with you today.

Dr. Rex:
Enjoyed it, Peter. Thank you so much for your interest in colon cancer prevention.

Dr. Buch:
Absolutely. For ReachMD. I'm Dr. Peter Buch. To access this program as well as others from this series, visit ReachMD.com/GIInsights,

where it can be part of the knowledge. Looking forward to learning with you soon. Thanks for listening.