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The Acceleration Lab: Key Initiatives in Patient-Centered Care

Announcer:

You're listening to *Medical Breakthroughs from Penn Medicine* on ReachMD, advancing medicine through precision diagnostics and novel therapies. Here's your host, Dr. Jennifer Caudle.

Dr. Caudle:

Welcome to *Medical Breakthroughs From Penn Medicine* on ReachMD. I'm your host, Dr. Jennifer Caudle, and joining me today to explore the work of the Acceleration Lab, located in the Penn Medicine Center for Health Care Innovation, are Dr. Shivan Mehta and Roy Rosin. Roy Rosin is the Chief Innovation Officer at Penn Medicine and the Interim Executive Director at the Center for Health Care Innovation. Mr. Rosin, thank you so much for being here today.

Mr. Rosin:

Thanks for having me.

Dr. Caudle:

Of course. And Dr. Shivan Mehta is the Associate Chief Innovation Officer at Penn Medicine, and an Associate Professor of Medicine and Health Policy at the Perelman School of Medicine. He also serves as Co-Director of Quality for the Division of Gastroenterology. Dr. Mehta, welcome to the program.

Dr. Mehta:

It's a pleasure to be here.

Dr. Caudle:

Well, we're excited that you're both here. So, let's start with some background on the Acceleration Lab. Mr. Rosin, can you tell us who's involved in the Acceleration Lab, and what is the team's mission?

Mr. Rosin:

Sure. This lab has been around for about ten years now and it is something that Kevin Mahoney, our CEO, got started. And Shivan and I have been here from the very beginning with David Asch, who was the Executive Director. And it's an interesting question who's involved with Acceleration Lab because the reality is there are a lot more people who are involved than on the organizational chart. Pretty much everything we do depends on a close collaboration with the entire institution, with clinicians, with care teams, with finance, even partners outside of Penn's walls, like Blue Cross. And so we work very closely with a large range of people, and internally, we do have folks who are trained on innovation methodology design thinking behavioral science, some of the key tools that we use to drive change. But it's really quite an extensive cast of characters. From a mission perspective, I would say our mission is really to improve health and care delivery, and to do so materially, not incrementally.

Dr. Caudle:

As a quick follow-up to that, Dr. Mehta, how does the Acceleration Lab's approach impact patient care at Penn Medicine?

Dr. Mehta:

The way we work best is to work in collaboration with frontline clinicians and leaders, to help translate their ideas to actions. Just as Roy described, our job is to develop, evaluate and scale new ways of delivering care, and we do that best by helping to catalyze all the enthusiasm, the insights, the expertise of folks all across our health system who have lots of great ideas, but just need a little bit of help with moving those ideas forward. And part of that is through innovation methodology that Roy described, such as design thinking, lean

startup. We also incorporate quality improvement principles, things like behavioral economics.

Dr. Caudle:

Coming back to you, Mr. Rosin, if we zero in on one tool in the innovation tool kit, how does this framework function, and can you give us an example of this tool in practice?

Mr. Rosin:

Sure. Our tools are really meant to allow us to learn quickly at low cost. Everyone has lots of ideas about better ways to do things, and some of those will work and some of them will not. And the history of innovation having a lower batting average than necessary is to scale prematurely. In other words, to scale before you have it right. So, what we try to do is get it right, and then scale what works. One favorite tool, I would say that we use quite commonly, is something that we call a fake back end, and a fake back end basically means that we're going to fake the back end as the name implies, we're going to do something manually at small scale to see what really happens before we invest heavily in automating and scaling that intervention.

One of the examples that we talk about quite a bit is Heart Safe Motherhood, which is a project we worked on with our OB/GYN group. And it was really going after the top driver of maternal morbidity at the time, and so we know we had a really big problem with rising maternal mortality and morbidity. We had new mothers who, because of a condition called preeclampsia and hypertension related to pregnancy, would end up in trouble, and they'd end up in trouble shortly after delivering and going home. And we knew what we needed to do to keep them safe. If we had their blood pressure, for example, blood pressure three days after discharge, and another blood pressure seven to ten days after discharge, we knew we could keep them safe. But we didn't have that information. And so, there was a question, and not only of which women were at risk, and how do you engage those women, but then how do you get those blood pressures and of course, how do you act on that information to then keep them safe? And so, the fake back end, where it really came into play, was we realized that these women really had a preferred communication modality of texting. And so, in a visit we would engage them with a blood pressure cuff they could take home. We would begin a texting program, a two-way texting program with them, but since we didn't know how to automate that texting program, we didn't know exactly what they would respond to, for example. The fake back end was a fourth-year medical resident, a fellow, actually, Adi Hirshberg, and Adi pretended to be the software that we might later build. And so, as patients would text in their blood pressures or text in questions around the program, Adi could respond as if she was that software and learn about their questions, their concerns, and what kind of language would drive the responses we would need. After iteration and after making sure that we understood how to get this right, it was really a dramatic difference. And what was really exciting is not only could we secure the blood pressure information we needed, but we could act on it, and we could keep the women safe. And in fact, we reduced the readmission rate and the morbidity rate by 80 percent.

Dr. Caudle:

For those of you who are just tuning in, you're listening to *Medical Breakthroughs From Penn Medicine*, on ReachMD. I'm your host, Dr. Jennifer Caudle, and today I'm speaking with Dr. Shivan Mehta and Roy Rosin, about Penn Medicine's Acceleration Lab.

Switching gears a bit here, Mr. Rosin, let's take a look at some of the Acceleration Lab's top initiatives. What can you tell us about the Connected Approach to Recovery program?

Mr. Rosin:

So I love that program. That program that we call CARE, internally, first of all, it had a wonderful start. It started over a pizza box in the kitchen which is one of these storied beginnings of innovation efforts when people just happen to come together I think, in that case, over leftover pizza. But, someone from our plastic surgery team, and someone from the innovation center, were in the same place at the same time, and started to compare notes. Kat Lee, who is on our team and who is just fabulous, she is an emergency room physician by training and an innovation leader here at the center, began to see in this opportunity, some of the things that we were good at, in terms of understanding the journey of the patient, in terms of understanding the journey of the clinician, and how we might do things much more efficiently. And so, a lot of this had to do initially with what's called drain management and drain removal. So, the patient, after surgery, would have to come back to the clinic several times, at least three times in the first 30 days, usually about five times within the 90 days, that's a global payment program. So, you had a 90-day program where they were coming back to us about five times, three times right in the first 30 days. And there's all kind of things going on there. A lot of them have to do with checking at the drains and making sure we understand the drain output and that we, for example, remove the drains at the right time. But there's other things going on as well—range of motion, pain management, surgical site wound infection—and a lot of this was happening in a way that required the patient, who was actually considered home-bound and qualified for home care because there was some pain and there were reasons that it was hard to be mobile. But they would have to come in and travel long distances to come in. What Kat realized with the plastic surgery team, is that there are ways that we could shift this work home. Our home care nurses are absolutely fantastic. They are highly trained. Doing drain management was not something that they did, but it was within their scope of practice. And we began to look at these activities that happened, usually in the clinic, that maybe didn't have to happen in the clinic. And so she began to work with our

home care group who realized yes, we absolutely can support this in the home, and began to train on these skills.

But I think that what might make it one of my favorite projects is that what Kat and the plastic surgery team, Joe Serletti and Mike Tecci and their team did, was they looked at the overall journey that the patients had, and they said there are a lot of things that these women struggle with. It's difficult to begin driving again. There's a hard plastic seat belt that goes right across a place that had a surgical incision. There are these drains dangling off your body, they often would call them tentacles, and it would be difficult to do things like take showers or regain independence and independent living. And this team looked at the entire journey, the way we try to get really deep in the experience of the patient and the experience of the care team trying to serve them, and they reimagined so many steps of that journey. They were able to, for example, have a very soft wrapper that went around a seat belt that allowed a woman to regain independence and start to drive again, without worrying about aggravating the surgical site or having pain there. They were able to actually have a shower implement that allowed a woman to shower independently with her drains and not worry about causing any damage or getting in trouble, and again regaining independence more quickly. And so it was a material change to the overall experience, not just to the clinical outcome, which was great.

Dr. Caudle:

Well, thank you for sharing that. And now, Dr. Mehta, let's talk about colorectal screening. What can you tell us about the pilots you've run, and can you share some strategies to improve screening rates for colorectal cancer?

Dr. Mehta:

Sure, so we know that colorectal cancer is the second leading cause of cancer death among men and women in this country, yet there's actually ways to prevent the disease and to find it in earlier stage where it can actually be treatable and cured with effective therapy.

As a gastroenterologist, I know that screening colonoscopy is an important part of this, but it also poses a design challenge for us. Nobody wants to get a colonoscopy, and the process of getting a colonoscopy requires many steps of the process, for not just the patient but also a friend or family member. So, what we did was talk to patients observe patients, and understand what some of the challenges are in screening, and through a series of pilots in both our patient population at Penn Medicine as well as community populations across Philadelphia, we learned that a few approaches can be very effective. One is that the historical way of offering cancer screening to our patients is an opt-in process. We presume that patients will not participate, and we give them all the reasons of why they should participate, but we know from the field of behavioral economics that just by shifting the framing, from opt-in to opt-out, can maintain choice for the patients, but also make them feel more comfortable that screening is the status quo approach or the default approach. And so, just by changing, shifting the way we offer mailed colorectal cancer screening outreach, we were able to triple participation, from 10 percent to 29 percent.

Dr. Caudle:

Excellent. And before we close, I'd like to hear from both of you on how the Acceleration Lab may impact the future of home care delivery. Dr. Mehta, let's start with you.

Dr. Mehta:

We believe that bringing care to the home is really the future of healthcare delivery, and this is something that we learned particularly during the pandemic, when there were obviously important reasons to keep patients at home. But we learned at the same time that this is actually a preferred route for patients and clinicians. Instead of having to come into the office get parking, you know, schedule the appointment, sometimes come in with a friend or family member. if we can figure out ways to bring care to homes, for example, things like cancer chemotherapy, or things like post-op care that Roy just talked about. These are things that are actually desirable for patients, but there are some design challenges to implementing it. So, it's not so easy as to just take something that we do in the clinic and to provide it at home. It takes a lot of deep understanding of what the patient concerns are, what their anxieties are, but also understanding the needs of the clinician. So patients have to feel safe and trusted in getting this care at home, and clinicians have to feel comfortable with patients getting this care at home, in a safe way, so that they can actually make sure that all the things are cared for in case there are any issues that happen. And so, part of that comes with, you know, bringing it to home and working with our home care to make sure that it's done in a systematic way, and it's done in a safe way.

Dr. Caudle:

Excellent. And Mr. Rosin, I'll turn to you for the final word.

Mr. Rosin:

So I think the final word might be that through the last ten years, Shivan and I have looked across over 100 projects we've been able to work on now, and I'd say that the takeaway is that while health care is challenging, it is absolutely possible to dramatically transform care and care delivery. That in fact, it is possible to achieve better health outcomes cost-efficiently and a better experience. So, while it is

complex, there's no doubt about it, the right approach with the right people and good design principles means that we can achieve much better outcomes. So, I'd say transformation is possible is the final word.

Dr. Caudle:

Well, thank you very much. And with those forward-looking thoughts in mind, I'd like to thank my guests, Dr. Shivan Mehta and Roy Rosin, for speaking with me today. Dr. Mehta and Mr. Rosin, it was great having you on the program.

Dr. Mehta:

Thank you for having us.

Mr. Rosin:

Thank you.

Announcer:

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