**SEASON THREE: Episode 42**

Precision Medicine Is Coming Faster Than You Think

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Karan Cushman: Welcome to season three of the Precision Medicine Podcast sponsored by Trapelo. This is the podcast where experts come to discuss the problems oncologists, reference labs, and payers face as precision medicine grows and consider solutions for advancing the quality of patient-centered cancer care. Be sure to subscribe at precisionmedicinepodcast.com to get the latest episodes delivered straight to your inbox.

Jerome Madison: Thank you for tuning into another episode of the Precision Medicine Podcast. I'm Jerome Madison. And Karan, first, I think we should pause and thank our listeners because we have exceeded 40 episodes of the Precision Medicine Podcast.

Karan Cushman: Yes, the award-winning and now worldwide podcast I might add as we kick off season three. Some of you may know we are based in Boston and we now have listeners as far as Australia and East Asia, over to Europe and even the Middle East. So yes, as Jerome said, we thank you all of you for continuing to tune in and share with your friends and we encourage you to leave a review where ever you get your podcasts.

Jerome Madison: Yeah, absolutely. Our audience of scientists, cancer patients and advocacy groups, cancer care providers, industry labs, payers, and we have to thank for that, our incredible guests. And I'm excited about today's conversation of…about the promise of precision medicine. And we have with us CEO of Concert Genetics, Rob Metcalf with us as a guest on the podcast. Rob, thank you for joining us.

Rob Metcalf: Thanks for having me, thrilled to be a part of it. Yeah.

Jerome Madison: And later on we have to talk about the same conversation here is the CEO of Trapelo Health. And we kind of have a group conversation around this. Clynt, thanks for coming back to the podcast.

Clynt Taylor: Yeah. Jerome, thanks. We're looking forward to this.

Jerome Madison: Absolutely. Rob, tell us a little bit about your background and how you came to lead at Concert Genetics.

Rob Metcalf: Sure. My background is a little bit unconventional, at least as it relates to Healthcare Technology CEO. I have run a couple of different companies previously. Most recently I was running an artificial intelligence machine learning company that focused largely on unstructured data, applying cognitive computing to broad swaths of data in a variety of markets, financial services, national security, law enforcement, healthcare. Before that was running businesses for a large multinational company LexisNexis, Reed Elsevier.

I had the privilege of running businesses in a few countries, and they were all however, focused on data and software information services, businesses of helping professionals make decisions. Before that I was in strategy consulting, and I have really over the course of the last 10 or 15 years, kind of developed an interest in, expertise in bringing technologies—largely advanced or emerging technologies—to market, hopefully in ways that are really meaningful for the end users of that technology and for the broader marketplaces that they serve.

Jerome Madison: So, when we talk about the industry of precision medicine, I mean, we had a robust conversation before we even press record to record the podcast, Rob, but we'd been talking about the promise of precision medicine. We talked about the human genome project was completed in 2001, right? Almost 20 years ago. The industry has been talking about precision medicine or the promise and potential of precision medicine for almost 20 years. Why do you think the promise of precision medicine has taken so long to arrive? If that's right to say it like that.

Rob Metcalf: That's a great question, and I think it's one of the things that Concert Genetics that we have spent a lot of time working on and hopefully working through and building some solutions that help address. I think one of the... There're number of challenges, there are always challenges when you are bringing kind of advanced technologies to market. There are early-stage problems of just proving out kind of how things work and then it takes time to transition to actual solutions.

I think from the perspective of Concert Genetics in particular, as it relates to precision medicine, I think one of gaps or one of the challenges is just that we're doing things that are really, really different. Precision medicine is challenging some of the underlying assumptions and certainly underlying infrastructure for healthcare. And so going from understanding the genome sequence to developing utility models and ultimately implementing things in the health care system, it takes a long time normally to see that translation from research to the clinical environment.

But in this case, it's an even more complex transformation or translation because the scale of the data is so large and different. The purpose, the underlying capabilities of the healthcare infrastructure just were built long ago for purposes that are quite different than what we're asking of the healthcare today. When we think about rapid explosion of genetic testing, a deep and complex pipeline of therapeutics, a knowledge base from, or from the perspective of a clinician that has expanded and continues to expand almost exponentially.

And I think those are just some of the obstacles that have to be overcome if the healthcare system is to kind of adopt and keep up with the promise, if you will, of precision medicine which I would just define as really the ability to take into account one's genetic information in a safe, efficacious and ultimately beneficial manner for the patient and for the broader health of the population.

Jerome Madison: Your background in technology, how does that benefit you coming to healthcare and thinking about how to solve problems in this space?

Rob Metcalf: Yeah. So coming into the precision medicine space five or so years ago, I think one of the kind of most helpful ways for me and for us at Concert of thinking about the problem was to kind of look at genetic testing, precision medicine as a value chain, as a sequence of steps where critical activities have to take place in order to go from an identified need, ultimately to a test, to an interpretation, a result, a therapy, a reimbursement of payment and more broadly and over a long-term a set of steps that we can learn from.

And so when you think about, or when we looked at that value chain and tried to understand how it was or was not functioning effectively, I think a couple of things emerged as it relates to precision medicine, genetic testing and the resulting therapies. And I think number one was that it's, it's done in a highly irregular, variable fashion. There's variability at every step of the process. There's variability in terms of the selection of tests, there's variability in terms of how those tests are sent and received and returned and managed.

There's variability in terms of how interpretation occurs. And there's definitely variability in terms of how the reimbursement landscape functions. And there's also multiple stakeholders involved. Broadly speaking, you can think of a stakeholder as a health insurance company or as a hospital or a health system or a physician or a third-party laboratory or a pharmaceutical company, or of most importantly, a patient or a health consumer.

And so, when we assessed the marketplace with current and where it needed to go, it was very, very clear that there was a disjointed…or there is a disjointed value chain with multiple stakeholders who are not connected. And importantly, essentially there was not a common set of infrastructure. We talk a lot at Concert about the data and digital infrastructure necessary for precision medicine. But what that really means is information is flowing around through these different stakeholders and it is not connected.

And when you can't connect data, when you can't connect to information it's handled, but not connected. I mean, a laboratory will return a result in a PDF and that PDF will never make it into an EHR or there's no structured representation of data that can be ultimately preserved and analyzed. What happens when you lose those connections and when that data is siloed is that it is extremely hard to learn over time. And I think when you look at precision medicine, the promise of precision medicine, it is ultimately a promise of learning and learning from rapidly evolving science.

Learning what works, being able to do the math to determine the efficacy of certain tests or certain therapies at a molecular level, at a variant level and over time evolving the system to do more of what works and less of what doesn't. And to do it across geographies and across all really aspects of the healthcare system in an efficient and uniform fashion. And so, when we looked at that problem, we said, "Well, in order for sort of precision medicine to thrive, that infrastructure is going to have to mature. And it's unlikely in my opinion, in our opinion to mature without new innovative companies to step in and fill the gap in those various aspects of the value chain.

And so, I think when we at Concert approached the problem we're thinking, who is the stakeholder that we serve, who are the stakeholders that we serve? How can we serve them in a way that meets a core need that delivers value to that stakeholder, whether it's a payer, a provider or a laboratory. And do it in such a way that over time, we'll move toward a more connected, efficient, and transparent ecosystem or information network that does learn and can better serve the patient or the health consumer. And I think that's exciting. It's essential. It's also filled with many, many little and important challenges and some significant and complex challenges along the way.

Jerome Madison: You know, I just think that's incredible. Just to digest the things that you broke down in the last few minutes, Rob is incredible. So listen, go back, rewind that and just break that down for those of you out there listening. Technology innovators have the innate ability to see the problem that needs to be solved before we have the ability to solve it, the tools or resources to solve it.

Clynt and I are reading, I recommended a book to him. A fantastic book that is titled The Future Is Faster Than You Think by Peter Diamandis and Steven Kotler. And they talk about how technology is converging to radically change our future and healthcare—specifically cancer. And Rob, you just spoke too, a lot of that. Clynt, how is Trapelo Health leveraging technology to solve problems in precision medicine?

Clynt Taylor: Well, I've enjoyed listening to Rob's comment on applying technology to this, and I think that it's part of the reason that we're on this podcast together because we've recognized a lot of the challenges and while we are kind of approaching the problem or different parts of the problem, we both recognize the importance of applying technology. And Jerome, I appreciate your comment on innovation because one of the things that I've really come to believe in this is that just as Rob said earlier, he said precision medicine is really different.

And it challenges, I would go on to say it challenges existing processes. Anytime something new comes along and people want to take advantage of it because it seems to be very promising, it challenges existing processes. Those processes, whether they have to do with the way a test gets ordered, whether even determining what or whom should be tested. And then how to interpret those results. And then bringing all that to scale, all of that gets impacted by these existing processes.

So, when you ask, how do we bring technology to solve these problems? I think it really started in recognizing the problems in the first place. And companies like ours and companies like Concert who have the benefit of kind of stepping into a space into a world where these problems can be recognized. And then having, I guess, the determination, the passion to try to find out how do we apply technology to fix some of these problems is really what's exciting.

And I say that because when you look at some of the companies that are in our space today, who kind of just kind of evolved into this space, often those companies are, they're very constrained by the way things have been. The way their businesses kind of need to be run and they don't have the opportunity to look at the problems from a really fresh perspective. Rob and I've had conversations about this and the fact that we were able to look at these problems that are new and changing really quickly.

We were able to look at this from a fresh new perspective with the ability to say, look, we can rapidly create relatively, rapidly create new solutions that address these which puts us in a unique position. And that's what I think is pretty exciting about it is the ability to kind of see the problems, where are their workflow challenges, where are some of these old processes that can be reformed and how do we do that?

Jerome Madison: Yeah. Rob, we were on a panel with Hannah Mamuszka for the Precision Medicine Leaders' Summits. And the question was asked, who has the biggest impact on the adoption of diagnostics into our standard of care standard practices? And Hannah thought it was the payer. She said, "By far it's the payer." I don't want to put words in her mouth. I don't know if she said by far, but she was passionate about the payer has the biggest impact.

She said, "Because if they consistently paid for diagnostics, these tests and the subsequent therapies, the physicians would then use them routinely to treat patients." This question is for Rob, you answer it, why should payers change their processes or even care about this problem? I mean, they will pay for what they want to pay for. I mean, they have their ways of doing things that have worked for years. How do you get their attention to understand the impact and the benefit of a new approach?

Rob Metcalf: That's a great question. I think our interaction with payers and with health insurance companies, we focused on a set of problems that are easy to explain, that are complex to solve. And I think at Concert, we think represents significant opportunity for their members and for the other stakeholders that they interact with, their ordering providers. And I think it is important to understand the ecosystem, to understand the role of payers particularly in setting medical policy and determining coverage.

And so I certainly agree with Hannah in that regard. And I think our approach, at least at Concert has been when we're talking about the payer to think, what are those problems and how do we solve them uniquely? So in as it relates to genetic testing, and by genetic testing I refer to both the sematic testing and germline testing, everything from prenatal tests through to oncology panels, to cancer screening, to rare disease panels. There's just a pretty broad swath of genetic test. We at Concert track about 160,000 unique orderable genetic tests at this point.

And there is a lot of variation. It's difficult to identify tests. There's a lot wide variation in coding. There's wide variation in how medical policies are written by payers, there's wide variation in terms of how those policies are interpreted. There's wide variation in terms of pricing. And that's all just on the genetic testing, that's even before you get to all the things that follow genetic tests. And so variation is not always a bad thing but in this case means and connects to a lot of inefficiency.

And that inefficiency, as it relates to the question you ask around the payer and the types of problems we're trying to solve and how do we kind of move this marketplace forward? Our recognition at this area, precision medicine is very complex. The rate of scientific advancement, the rate of regulatory advancement both tests and drugs that come on the market is very rapid and taxes everyone's ability to keep up. Including medical directors, chief medical officers, chief clinical officers, chief health officer and health plans.

And so, one of the kind of... We at Concert try to provide, tying back to my earlier comments, kind of infrastructure, data and digital infrastructure that helps health plans manage these…this area more efficiently, and that can translate and does translate into reduction in administrative costs and friction in the healthcare system. We want to reduce those two things because that it comes out of our pockets as our insurance premiums, it comes out of our health. As friction in the system, means it's harder for our doctors to kind of keep up-to-date and apply technologies and science.

And so, when we work with patients, we are really heavily focused in on some of those inefficiencies and using better definition around tests and codes and whole set of technology tools to automate in many ways and bring greater transparency to the setting and enforcement of medical policies. And that is a part of, but not all of, kind of the ability to move toward that promise of precision medicine. So, take these highly manual, relatively slow, very complex processes and use data to automate them. And then we think there's a huge, huge opportunity in that for health plans to act in their own. That it's in their interest of their members, as well as to advance precision medicine in doing so.

Clynt Taylor: Yeah. And Robert, just to draft off that a little bit. I mean, when we talk to payers today, they are, the whole nature of precision medicine speaks to personalization and personalization speaks to variability. And it's what you said earlier, it's not variability that we can avoid, its unwarranted variability. The hard thing is to know in a new age of personalized medicine where we're going to see more and more unique types of cases or cases that are treated uniquely. How as the payer can you apply processes that were until now really geared to put everybody in groups of people, right?

People who might have this cancer who might get one of these five drugs. We've now evolved to a place where there are so many new therapies, new approaches so much new information coming out that a personalized approach requires an entirely new way for payers to think about how to solve these problems. How do you know that this was actually warranted variability or unwarranted variability?

And I don't think I'm convinced, and I'm sure you are too, Rob, you can't solve this problem manually. You can't solve this problem without the right kind of data and information at the point of decision. No longer can you just say, "That's pretty easy, flip a few pages we'll figure out what is appropriate." This is a much more complex environment than we've ever seen in healthcare before.

Jerome Madison: So, it seems the promise of precision medicine is coming faster than we think it is because of what you both have been talking about, the convergence of technologies. And I guess to that end, you guys have Concert Genetics and Trapelo Health have created a collaboration. Tell us about that.

Clynt Taylor: Well, I might just quickly start by saying that since I joined Trapelo, which was Intervention Insights before back in 2017, people have asked me in some of the earliest conversations, "Do you know Concert Genetics? “Are you like Concert Genetics?" Your story sounds similar to the approach to the market that the folks at Concert Genetics is taking, into that we have I think had a, while we've been a little bit of a parallel course in the way we are attacking the market or addressing the market.

I think what we've known about each other is that we have a similar philosophy and we have complimentary technologies. Concert Genetics is focused heavily on genetics. Rob just talked about the hundreds of thousands of, of tests that have to be managed and monitored across this wide spectrum of diseases. And we've been very deep in oncology and really deep in the sematic testing and interpretation. And so from our perspective, we welcomed the opportunity to get to know Concert, and over the past year. So, we have just strategized on how we could be collaborative in addressing these challenges together.

Rob Metcalf: Yeah. I would just build on that. I think, from Concert’s perspective where I've had a great relationship with, with Trapelo, I have a lot of respect for the depth of expertise in oncology and in responding to the needs of our customers and more broadly speaking to the needs of the broader ecosystem and just felt like there was a really, really good opportunity to team up. And when you think about the conversation so far, we stepped back and particularly from the perspective of the payer, the payer stakeholder within, we spent a lot of time thinking and working through to reduce unwarranted variation and administrative waste, and ultimately deliver higher quality, higher certainty, precision medicine capabilities.

Some of the incredible investments that Trapelo has made in terms of oncology were really of great interest to our customers. And so, that opened up an opportunity for a conversation around a partnership, which we have put in place. And really the goal there is many of the things that we're doing with payers and with other stakeholders to kind of bring the best of that expertise on both sides to address some of these problems.

We want to move together through technology, through the availability of information toward a world in which the gap between knowledge around, in this case, around oncology and implementation is shorter, is more reliable and ultimately is more effective and effective meaning in some cases, really in all cases that what is best for the patient is done the first time.

And it has done consistently across geographies, across health systems. And it is done in a way where we can measure the results that is where it's connected digitally and where we can understand what the impact is of a diagnostic of a therapy and how those things work in relation. So really bringing together our capabilities enables additional advancements to that end, whether it be of the payers, the providers, or the laboratories in the precision medicine ecosystem. Yeah.

Clynt Taylor: Yeah. One of the thing I might add really quickly to this that I think listeners might appreciate is that while even just months ago, you could look at somatic test results and think of them even more siloed than we can today. As I was talking to Janine Morales on our team who heads up our clinical content, we had a great conversation, and she began to give example after example of how important it is to basically be looking at genetic testing and somatic testing in the context of specific patients together.

And I think that also speaks to this because if you look today at solution providers like ours that can provide real, in-depth at the point of care and after-the-point-of-care understanding of this, there really aren't any other solutions out there who are today able to do it in one solution. Our collaborative approach, I think, is going to be really well received because it gives us a chance to come in and solve a broader set of problems and in a much more integrated way and less siloed than you might have as a way of looking at that solution, otherwise. God, I agree.

Rob Metcalf: There couple other ways to think about it. I mean, Clynt, the overlap or complimentary nature of the germline and the somatic testing is I think a really important point. The other thing that we see a lot in the marketplace that I think is maybe not as obvious to listeners, at least from the perspective of a health plan, health insurance company is that genetic testing is usually managed in a health plan as part of laboratory.

And then your sort of drugs therapies are often managed separately from that. Now they can be brought together. And I think for good reason under oncology, but you may have two or three different groups thinking about the elements that we Concert and Trapelo heavily focused on attacking the problem separately, and maybe not in this coordinated fashion. I think what's exciting about working with Trapelo is the ability to put those pieces together and really start to understand and measure and provide infrastructure so that we can see the clear connections between the diagnostic, the therapy as it relates to oncology.

And that I think is the trend that we will see continue in specialties outside of oncology, but specifically as it relates to genetic testing and more broadly molecular diagnostic, if you will, it's the oncology's first, but many other things will follow and the infrastructure needs are going to be very, very similar. How does a test get ordered? How does a test get resulted? How does it impact ultimately the patient's care? And then how does that information get used to figure out what we should do more of and what we should do less of?

Jerome Madison: Well, the incredible outcome event is its potential to benefit a greater number of cancer patients. So you can learn more about this initiative and partnership at precisionmedicinepodcast.com on the landing page of this episode. Rob Metcalf, CEO of Concert Genetics and Clynt Taylor CEO of Trapelo Health. Thank you guys for being great guests in the conversation here on the Precision Medicine Podcast.

Rob Metcalf: Thanks for having me. It's been a pleasure to be here.

Clynt Taylor: Yup. Thanks Jerome. Appreciate it.

Karan Cushman: You've been listening to the Precision Medicine Podcast sponsored by Trapelo. Trapelo is the first clinical decision support tool to align the interests of oncologist, labs and payers to give patients the best chance at beating cancer. To learn more, visit dot com to subscribe to the podcast or download transcripts of any episode, visit precision medicine, podcast.com.

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**About Our Guests**

**Rob Metcalf**

**​CEO, Concert Genetics**

Rob is the Chief Executive Officer of Concert Genetics, a leading provider of data and digital infrastructure for genetic testing and precision medicine. Since joining Concert Genetics in 2016, Rob has spearheaded the company’s strategy to bring value to patents, providers, payers and laboratories through transparency, connectivity and efficiency. Rob co-founded the Genetic Health Information Network Summit and remains a vocal advocate for spurring innovation and reducing costs in health care.

Prior to joining Concert Genetics, Rob served as President & Chief Operating Officer of Digital Reasoning. Under Rob’s leadership, Digital Reasoning grew to a global leader in cognitive computing. Rob architected the company’s strategy to use machine-learning to automate high-cost, high-value activities in financial services, law enforcement, national security and healthcare.

Rob is an Adjunct Professor at Vanderbilt University’s Owen School of Management, where he teaches Health Economics and Public Policy. Rob earned his MBA from Harvard Business School and his A.B. from Princeton University. Rob lives in Nashville with his wife and four children.

###### **Clynt Taylor CEO, Trapelo Health** Clynt Taylor is the Chief Executive Officer of Trapelo Health and a member of the company’s board of directors. He joined the company in 2017 and brings over 20 years of experience in healthcare technology innovation, both as an entrepreneur and senior executive with startup and growing companies.

Since beginning his career at IBM, he’s held leadership roles at healthcare technology companies like NextGen, where he led sales and marketing teams; HealthVision as General Manager of its fastest-growing division (purchased by Lawson) and Galvanon as Co-founder and CEO Healthcare Solutions (purchased by NCR). Most recently, he held various senior executive roles with NantHealth - including leading the innovation, launch and commercialization of eviti, Inc., recognized today as one of the nation’s premier oncology decision-support solutions. Clynt is married with four children and lives in the Dallas area.  
  
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