Dr. John Moore

Female: Welcome to Conversations on Health Care with Mark Masselli and
                     Margaret Flinter a show where we speak to the top thought leaders in
                     health innovation, health policy care delivery and the great minds
                     who are shaping the health care of the future. This week Mark and
                     Margaret speak with Dr. John Moore, Medical Director of Fitbit Care a
                     personal coaching platform at Fitbit the wearable device company. Dr.
                     Moore discusses the platform which provides personal coaching and
                     health coaching services to help users achieve their fitness goals and
                     better control of chronic disease management.

                     Lori Robertson also checks in, the Managing Editor of FactCheck.org
                     looking at misstatements spoken about health policy in the public
                     domain separating the fake from the facts, and we end with a bright
                     idea that's improving health and well-being in everyday lives. If you
                     have comments please e-mail us at chcradio@chcone.com or find us
                     on Facebook or Twitter iTunes or ever you listen to Podcast and you
                     can also hear us by asking Alexa to play the program Conversations on
                     Health Care. Now stay tuned for our interview with Dr. John Moore,
                     Medical Director of Fitbit Care on Conversations on Health Care.

Mark Masselli: We're speaking today with Dr. John Moore a physician, engineer and
                     Medical Director of Fitbit overseeing the newly launched Fitbit Care, a
                     tech enabled connected health coaching platform for wellness,
                     prevention and disease management. Dr. Moore is co-founder and
                     former CEO of Twine Health, a health coaching enterprise, which was
                     acquired earlier this year by Fitbit. John, you last joined us several
                     years ago while you were still at MIT Media Lab where your research
                     focused on solutions to an improving patient engagement and
                     empowerment and clearly your frustrations with the health system's
                     inability to help patients succeed in their own care management
                     beyond the doctor's door really inspired you to leave the clinical track
                     focusing on efforts on the health tech space, launching twine in 2013
                     and since then, companies like Fitbit have added a key element to
                     advance that quest, the wide proliferation of user friendly wearable
                     technology and I'm wondering if you could just share with our
                     listeners your journey from that startup of Twine to this new
                     collaboration with Fitbit and why you think the time is now right for
                     health coaching to really scale up?

Dr. John Moore: Yeah absolutely, and as you mentioned, I left my residency back in
                     2007 then I was really, because I got inspired to support people
                     between office visits. I was struggling as a physician. There was this
                     aha moment for me that no matter how hard I tried in the office, as
                     we know, 99.99% of health happens out in the real world. Until some
                     of the early technologies for digital health came out, there wasn't a
                     whole lot we could do because if you just call people on the phone or

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try to schedule visits, it's very hard to fill that time in between, but right when I was in my residency, there was a time when mobile computing started to catch on. It was pre iPhone, but you could see that it was coming, and I started to get this conviction that there was going to be a path to be able to rethink how we communicate and collaborate with people. Even further their contribution could change dramatically such that they're not just at the center of care but they're actually driving it. That was really the impetus for this work and spent six years at MIT, at the MIT Media Lab doing research and really having the opportunity to fail fast and try out radical new ideas and then ran a few randomized controlled trials where we could compare the state of the art and health coaching with the same health coach, but with our tools that would augment their ability to co-create action plans, track people's progress, provide social support and clinical support to individuals so that they could succeed in their goals and then built Twine Health with that business proposal of improving diabetes, hypertension, weight loss, smoking cessation, etc. Working with organizations in a commercial manner in order to validate that we could do this at a larger scale and then joined forces Fitbit because what we wanted to do was expose it to many more people and Fitbit is arguably one of the largest digital health interventions out there and brings to bear a great capability of inspiring and engaging people in health behavior change. To partner those health coaching skills with Fitbit's ability to help people measure and become inspired to change their health and bit of a perfect combination.

Margaret Flinter: John, you've spent a lot of time analyzing what drives behavior change, how technology can play a vital role at that? You did that first at Twine and now at Fitbit. What did all that research reveal about the ways to get around or overcome the perennial challenge of fostering behavior change in our patients that we know would lead to better long-term health outcomes? What's been missing? What do you see as the solution?

Dr. John Moore: Yeah, so there's a few foundational things that we discovered from the research that are really key to helping people change behavior. One is that people really need to set goals in very small steps, in order to have a path that they believe is achievable, but they also need to think about things in quite short timeframes. We operationalize behavior change as humans and in about two week intervals and in health care we often operate in three to six month intervals, so they're foundationally out of sync. If we can instead communicate with people on a daily or weekly basis, especially at the beginning of their behavior change journey, we can shrink that feedback loop down to an appropriate amount of time that allows people to create the motivation and momentum that they need to succeed. If people really need small goals, short timeline feedback loops and they need

more than just our own internal drive. The social accountability and social support are two of the most powerful external motivators for people to change behavior. You break the goals into smaller pieces, make the feedback loop much tighter and then you add social support and accountability to help drive them to feel motivated and to give them the support that they need, and that combination just was not possible to do at scale without some of the new advances in technology. As great as the health coach might have been, if they didn't have the right tools to get on that smaller timeframe, for them to provide their support, it just wasn't possible before, but now with the technologies that came available for us in building our solutions, we were able to close this.

Mark Masselli: John, we're seeing a growing interest in deploying community health workers to connect people where health happens, in their home, in their workplace, in their neighborhoods, so that's one way we're narrowing some of those care gaps between clinician visits, but you're presiding over a system at Fitbit care that goes way beyond that model and the patient is connected 24/7 to coaching infrastructure that's available through multiple interfaces and texting and messaging and phone conversations. Then I'm wondering if you could talk about that infrastructure of health coaching approach at Fitbit and what makes it unique?

Dr. John Moore: The human health coaching is this piece that we've developed technology that allows for the creation of what we call action plans. The action plans break down your health goals into meaningful pieces. For example, a gentleman in his 50s named Dave has high blood pressure and he's a smoker. We allow you to build action plans across multiple health behavior change goals, but to do so in sequence. Dave might say, hey, I'm not ready to quit smoking yet, but I'm ready to work on this blood pressure piece because my brother had a heart attack. I can't make it to the doctor's office all the time, but if you're telling me you can be my health coach and can be available to me on a day to day basis with as simple as a secure text within this app. I'm willing to give it a try. We have the infrastructure to create these action plans that are very structured, and they break the goal into tiny pieces. Instead of trying to get his blood pressure all the way down to 120/80, they decide to step it down in small increments from where he is, for example, maybe he is in the 150s and they want to get it down to the 140s and it allows you to decide, well when during the day are you're trying to achieve this, and it's designed for co-creation. It's not someone telling Dave, you need to do this. It's saying, well, what do you think you can achieve and how can we get there together? It automatically synchronizes to all of his devices, his cell phone, his tablet, his computer, and as he tracks things, it flows back to his coach and bubbles up at a population level. Instead of his coach needing to manage date and all of her other coachees, she manages

based on need. She can see, hey, is Dave's blood pressure going in the right direction as opposed to I'm going to talk to him two weeks from now and because of that she's able to really give him an experience where he feels like he's the only person that counts and that's an incredibly psychologically motivating piece of this, that's the infrastructure. Action plans and communications on top of that, that are team based and allow that team to see who needs help and wherein, which allows you to scale this at an incredible rate. Then we can measure the performance of every coach and every care team member in real time. We know if a given coach has a cohort of 200 coachees, we know exactly how they're performing in things like diabetes or hypertension and we can compare them to their peers so that we can help them adopt best practices and so that was something that didn't really exist in health coaching in the past.

Margaret Flinter: John, not only are the clinicians looking for ways to get better health outcomes, obviously stakeholders and payers have a big interest as well. In fact, Fitbit just announced their big partnership with Humana, making Fitbit Care available to some 5 million customers and that is going to offer the coaching solutions you've talked about, but they have to be willing it seems to share their data. The consumer or the patient has to be willing to share their data, how well they've slept, how many steps they have or maybe have not taken, and we see that there's been some real resistance in people to being held so accountable for the personal choices one makes. Talk with us a little bit about how this partnership with entities like Humana will work and most importantly, how do you get the buy-in and engagement from the consumer?

Dr. John Moore: Yes. First of all, I'd started to talk about the different tiers of what we offer, and I talked about the coaching piece and how Fitbit also inspires, and the Fitbit devices and those pieces also inspire people. While we connect that in with the coaching, we also leverage our social communities which are very powerful drivers to help inspire and engage people as well. Then we also have more and more digital tools that provide guidance. We have a whole host of video and audio workout that sit between the coach and the self-tracking that provides some more digital and automated guidance. Those are the pieces and then to your question, well, how do we inspire people to join this and how do we deal with potential concerns that they have about their data privacy and security, especially if we're dealing with their health plan or with their employer. That answer is quite simple, in the terms of service and the way we work with employers and with health plan beneficiaries who are not in these relationships, sharing the individual person's data back to any other entity without their permission. Part of that design is that we just share aggregate data about the overall effectiveness of the intervention back to the organization to provide the value, but our coaches and our software

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are responsible for providing the services to help them succeed. So, really they're only sharing their data with Fitbit. Now there are certain relationships where there are data sharing agreements, but we make that very clear to the individual and very clear of what value they could provide and give them the choice of with whom they want to share their data, but a lot of the times it's just about us providing them the service and then working with their coach to get the results and that that eliminates a lot of the concern.

Mark Masselli: We're speaking today with Dr. John Moore a physician, engineer and Medical Director of Fitbit overseeing the newly launched Fitbit Care, a tech enabled connected health coaching platform for wellness prevention and disease management. Dr. Moore is co-founder and former CEO of Twine Health, which was acquired earlier this year by Fitbit. John, one of the things that clinicians are increasingly dealing with is data inundation and Fitbit faces this problem. It's sitting on just mountains of data and we recently had tech writer David Polk talking about his recent foray into Fitbit's a 150 billion hours of heart data alone and while you're platform is really great about gathering data, how are you gaining insights from that data in a way that will make this coaching platform an iterative one that continues to adapt to huge data sets you collect on the individual level and how does that system learn and improve itself?

Dr. John Moore: Yeah, this is a really fun and exciting time for us because we've already just with the tools that we've created for coaching, we've been able to on average, increase the panel size of a given coach by about three times because of the additional contribution of the individual participant and helping to identify people in need for the coach, but to your point about how do we crunch through all this data and make the process even more efficient and insightful. We have a quite a large team of data scientist and machine learning experts on our team that since the advent of Fitbit had been using these kinds of techniques to find tidbits in the data, even simple things like what seems simple like tracking your steps or figuring out your sleep stages. A lot of that is driven by AI. There aren't simple algorithms to detect those you have to crunch through a lot of data. Now what we're starting to do is expose what we call insights in the application and these are already released and out there, especially around sleep. For example, the other day I exercised about 15 minutes before going to sleep, I went for a swim. In the morning it gave me an insight that said, hey, it's great that you're exercising, but were you aware that exercising right before sleep can affect the quality of your sleep. Take a look at your sleep data and see how it's, you know, your activities are affecting that. It's looking across my data, finding interesting tidbits that are based on science and feeding them back to me as an individual to help me tune my behaviors. Well, we're interested in doing the same kind of thing with coaches. If we can feed those

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insights to the coaches as well, then they can help to doubly reinforce that and help people to discover even more strategies for optimizing their behavior, and you can imagine the more and more coaching interactions, the more capability we have to learn from the kind of insights that coaches are coming up with and they help to turn our algorithms and improve this process. I think that kind of scale that we're at now is we're quite optimistic that we can drive that scalability up to even higher with leveraging all of this data and all the ability to crunch through that and find the right people who need the right care at the right time.

Mark Masselli: John, I said you were a physician and an engineer, a medical director at Fitbit, but you really are a technologist with an eye out in the future. One of the hats you also wear is as a judge of the Tricorder XPRIZE competition, which is sought entries from developers around the world to make a handheld smart device that does a whole host of medical diagnostics in the palm of your hand, really just like the Star Trek show that we grew up watching. As we see a growing interest in developing these kinds of technology and knowing personally how difficult it can be to make such innovations viable in the marketplace, what are you seeing on the horizon that looks like a possible paradigm shifter in the healthcare space?

Dr. John Moore: Yeah, I think really the paradigm shifter is leveraging human touch along with scalability of technology to change the way we communicate and collaborate. I think all of the exciting new devices and sensors and other technologies only have value when you have that ability to allow health coaches and nurses and doctors to collaborate with individuals in this new manner, that is going to be the game changer that is going to help all the digital health companies to succeed in their goal of helping people be healthier. I think if we just build more and more technologies that pull more data, it's not going to get us to the promise land. We're really going to need to double down on that ability to create this feedback loop where we can set goals, social accountability and support and create small feedback loops that allow people to collaborate together.

Margaret Flinter: We've been speaking today with John Moore, physician, engineer and medical director of Fitbit overseeing the newly launched Fitbit Care, a tech enabled connected health coaching platform for wellness, prevention and disease management. Dr. Moore is the Co-Founder and Former CEO of Twine Health, a health coaching enterprise, which was acquired earlier this year by Fitbit. You can learn more about their work by going to www.fitbit.com or follow them on Twitter @Fitbit. John, thank you so much for your continued innovations and for joining us on Conversations on Health Care today.

Dr. John Moore: Thank you very much for having me. It was a pleasure.

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Mark Masselli: At Conversations on Health Care, we want our audience to be truly in the know when it comes to the facts about health care reform and policy. Lori Robertson is an award-winning journalist and Managing Editor of FactCheck.org, a nonpartisan, nonprofit consumer advocate for voters that aim to reduce the level of deception in U.S. politics. Lori, what have you got for us this week?

Lori Robertson: In a contentious Oval Office Meeting, President Donald Trump and the Democratic Congressional Leaders, Nancy Pelosi and Chuck Schumer disagreed over funding for a border wall. The president claimed that one reason for the wall was to stave off a public health risk. Trump claimed that "People with tremendous medical difficulty and medical problems are pouring in." Prior to the meeting, Trump made a similar claim in a tweet saying that democrats, "Wants open borders for anyone to come in." This brings large scale crime and disease. The scientific evidence, however, does not support the idea that migrants are a substantial public health risks. It report published in December in the journal, The Lancet directly addressed the subject and concluded that, "The risk of transmission from migrating population to host population is generally low." When there are legitimate concerns such as for tuberculosis studies show while there may be an increased risk for transmission within migrant communities, that isn't the case for host population.

A 2000 Study in Norway that analyzed tuberculosis cases over 12 years found that each year on average 13 immigrants and non-immigrants develop the disease as a result of imported TB. The researchers concluded that immigration, "Did not appear to influence the TB situation among the existing residents of the country," but outbreak risk is low if the destination country has strong surveillance in public health services. "These services are also crucial to prevent pandemics." The report said whether associated with population movement or not. For some communicable diseases such as measles, some migrants come from countries that have higher vaccination rates than the United States. According to the World Bank, 92% of U.S. children age one to two received the measles vaccine in 2017. That's compared with 96% in Mexico, 97% in Honduras and 99% in Nicaragua. That's my fact check for this week. I'm Lori Robertson, Managing Editor of FactCheck.org.

Margaret Flinter: FactCheck.org is committed to factual accuracy from the country's major political players and is a project of the Annenberg Public Policy Center at the University of Pennsylvania. If you have a fact that you'd like checked, e-mail us at www.chcradio.com. We'll have FactCheck.org's Lori Robertson check it out for you here on Conversations on Health Care.

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Margaret Flinter: Each week Conversations highlights a bright idea about how to make wellness a part of our communities and everyday lives. When Venture Capitalist and Shark Tank Co-Host Mark Cuban decides to sink a couple of hundred thousands of dollars into your business idea, you're probably onto something, and that's what happened to Olivier Noel, medical student and young geneticist at the University of Pennsylvania when he appeared on the popular ABC Show. Through his research and studies, Noel learned that no matter how many resources the clinical study has, it is still extremely difficult to get a large sample of participants to join and studies. He thought, what if you could simplify the process, eliminate the barriers to research participation and build up a rich DNA database for future research all at the same time, and he created DNASimple because he wanted to make it well simple.

Olivier Noel: I wanted to sort of leverage the Internet, particularly leveraged social media to be able to build a national database where somebody did not need to be a patient to be able to participate in this research study.

Margaret Flinter: All the participants have to do is to take a simple swab of the inside of the mouth, send it in and wait to see if your specific DNA is of interest to researchers. Noel says that the company will make their DNA and disease data available to researchers studying specific diseases, offering those researchers a much broader spectrum of study participants.

Olivier Noel: So one of the things we really wanted to do with DNASimple is to allow for longitudinal study so that you can continue keeping contact anonymously, obviously with a particular donor, and so if you're doing a study and you have the ability to collect samples now, collect samples in three months, collect samples in six months and see how that varies, which is very difficult to do.

Margaret Flinter: Now the study participants themselves receive an extra something for choosing to participate, a cash stipend for offering up their DNA to research.

Olivier Noel: So we ultimately provide a minimum of $50 every time somebody provides a saliva sample which dick a keep for himself or donated to a charity of their choice.

Margaret Flinter: DNASimple, a vetted database linking researchers with a broad array of participants to enhance lab research by eliminating the barriers to finding participants. Now, that's a bright idea.

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Mark Masselli:	You've been listening to Conversations on Health Care. I'm Mark Masselli.
Margaret Flinter:	And I'm Margaret Flinter.
Mark Masselli:	Peace and health.
Female:	Conversations on Health Care is recorded at WESU at Wesleyan University, streaming live at www.chcradio.com, iTunes, or wherever you listen to podcasts. If you have comments, please e-mail us at chcradio@chc1.com, or find us on Facebook or Twitter. We love hearing from you. This show is brought to you by the Community Health Center.

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