(Music)

Mark Masselli: This is Conversations on Health Care. I am Mark Masselli.

Margaret Flinter: And I am Margaret Flinter.

Mark Masselli: Well Margaret, it's the day after Valentines Day, the day when we celebrate matters of heart. It might be a good time to remind folks that February is American Heart Month.

Margaret Flinter: Because cardiovascular disease, still a major issue in this country Mark, with heart disease and stroke accounting for a third of all deaths in America, a huge toll in dollars, a huge toll on suffering and something to work on.

Mark Masselli: One of the great things that's being done is by the CDC, it has its own Valentine's message for the country, the One Million Hearts Program. Their goal to reduce the number of cardiac incidents by one million by the end 2016, it's a coordinated effort between the Center for Disease Control, Health and Human Services, the Institute of Medicine, and a number of other organizations around the country.

Margaret Flinter: Well Mark, we mostly talk about health reform and innovation as opposed to clinical issues on this show but it's worth talking about their message, the ABCS: Aspirin regimen for folks at-risk, blood pressure control, cholesterol management and smoking cessation, all within the reach of people but still so many Americans not making the healthy choices they should and we want to encourage them to do so.

Mark Masselli: And there is a public health campaign to really get people focused in on this. A recent report showed that the average trans fat level in Americans are down by almost 60% from a decade ago, trans fact being the chief culprit in bad cholesterol levels which lead to heart disease. It shows how a coordinated public health campaign can really have a positive impact.

Margaret Flinter: That's right. And if you have successfully cut yourself off from those trans fat foods the next target is probably high consumption of sugar. Certainly, that's a direct contributor to the high rates of obesity and diabetes in this country, not the only one but an important one, and there is a big move on to start lowering that across the country and we will be following that.

Mark Masselli: Well, Massachusetts Governor, Deval Patrick, is promoting legislation that would issue a tax on food and drinks that are high in sugar. Studies show that the tax would decrease consumption of those foods while bringing money into the state coffers to fund health awareness programs.

Margaret Flinter: Well speaking of innovators in Massachusetts, our guest today is Dr. John Moore, who is Director of the Massachusetts Institute of Technology's Media Lab which is a collaborative think tank where art and design meet engineering and technology. He has launched a really interesting program called CollaboRhythm which he thinks will change the way health care providers and patients interact in the future and is part of our contribution to the discussion about changes in health care.

Mark Masselli: Dr. Moore will be telling us about a competition he just ran at the Media Lab, Health Innovations 2012 in which a bunch of scientists, doctors and designers came together to create a host of new tax solutions for common health problems.

Margaret Flinter: And no matter what the story is you can find all our shows and hear more about us by Googling CHC Radio.

Mark Masselli: And as always, if you have feedback, e-mail us at www.chcradio.com, we would love to hear from you. Coming up our conversations with Dr. John Moore but first, here is our producer Marianne O'Hare with this week's Headline News.

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Marianne O'Hare: I am Marianne O'Hare with this Headline News. President Obama's announcement late last week that religious institutions who hire large numbers of employees of different faiths would now be required to supply birth control to their ensured workers under a plan put forth by Health and Human Services. The plan which called for all institutions and companies to provide birth control at no cost to their female workers came under harsh criticism by a coalition of Catholic leaders who claimed the edict went against their moral teachings. In a compromise reached late last week, the President's Office announced a deal in which large catholic-run institutions like colleges and hospitals would not be required to offer the free birth control or even counseling on where to find it and that any employed woman in the country would have that free birth control made available through a third party insurance. Catholic leaders are saying they need to see the fine print and decide whether it still forces them to violate anything within the Catholic moral code. Meanwhile, some states are challenging the Administration's ruling on mandated free birth control, Michigan among states planning suits against the Administration.

President Obama revealed his budget plans this week, included in the plan more money for continued progress in health reform initiatives with several hundred billion in Medicare and Medicaid savings by the 2013 fiscal year. The President's plan does call for wealthier seniors to pay more for their Medicare and health care costs.

The cost of a medical degree isn't cheap. It's one of the contributing factors in the critical shortage of primary care physicians coming out of medical school these days. The Department of Health and Human Services has offered to sweeten the pot $120,000 worth of grant money to defrayed medical school loans for students studying primary care who devote a year or two of service in areas where the shortage is the greatest. The nine million dollar program is aimed at boosting the number of med students choosing to go into primary care. I am Marianne O'Hare with this Headline News.

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Mark Masselli: Today, Margaret and I are speaking with Dr. John Moore, physician, inventor and brains behind an innovative annual competition at MIT Media Lab. The Health and Wellness Innovation 2012 competition brought six teams of collaborators from around the globe and across multi-disciplines to design innovative technical solutions into facilitating patient engagement in their own health outcomes. Dr. Moore, welcome to Conversations on Health Care.

Dr. John Moore: Thank you very much for having me.

Mark Masselli: Dr. Moore, you are pretty passionate about using technology to revolutionize health care delivery, making it easier for patients to be empowered in their own health care. In fact, one of your invention CollaboRhythm: Primary Care Teamwork Anywhere at Any Time won a big award for offering an effective tool to engage patients and their physicians for better health outcomes. Tell us about the genesis of your work. What was CollaboRhythm designed to do?

Dr. John Moore: Well, I was a resident in ophthalmology several years ago and I became kind of very frustrated with the tools that I had at hand to take care of people because they were predominantly designed around billing and around short-term visits documenting the information that we had but I really didn't have any tools to help people understand what was going on with their illnesses to help them manage their conditions longitudinally. So, CollaboRhythm was the idea that set me out of the medical path and back to school with MIT. At the time it was just the idea behind it that I wanted to engage patients wanting the care. But overtime it's become more of a system with loftier goals of really helping patients serve as apprentice to move novices all the way up to an expert level of proficiency in managing their own care. And it provides the tools that allow that to happen which are communication tools with clinicians and family members and friends and visualization tools and educational components that allow them to see and understand the consequences of their actions on their health and then the ability to discuss that and to help them to understand and make decisions on their own that are more effective at helping them manage their diseases.

Margaret Flinter: Dr. Moore, you say one of the fundamental issues in health care, one of the problems is a lack of patient compliance and taking medications

correctly is just one example but that's really not necessarily the patients' fault that it's a lack of understanding of the role they play and the role in health outcomes and really more of a system failure when we have poor patient outcomes. Tell us more what you mean by that.

Dr. John Moore: The old term for it was compliance that had the connotation that patients were just supposed to do what doctors said. Now, we call it adherence. It's not that patients don't have the drive or the understanding or the skill to follow-up with medical recommendations it's that never are they typically really instructed or helped to gain the knowledge and understanding so that it's meaningful to them. We want to provide them those tools that help people to come to that realization themselves and then these terms of compliance and adherence kind of wash away and what we are left with is well what can I do to make myself healthier and make myself feel better. While much of the technology that exists out there is very much focused on just getting people to remember, pinging them with text messages or alarms, our approach is really about understanding and self-reflection.

Mark Masselli: You know Dr. Moore, at the Health and Wellness 2012 event at MIT, you brought together engineers and physicians and designers and entrepreneurs all putting their heads together to **group hack** new tech solutions to a variety of common health issues. So what was their directive?

Dr. John Moore: The directive was above all just to build something that they felt would empower patients beyond anything else that's going on out there, beyond even the patients' wildest belief, sharing some of the technology across the board so that all the projects could benefit to really think about cost of health care but above and beyond everything was to build projects that enabled patients to dig in deeper to their problems, share more effectively their progress on their disease with family members and friends so that they can get social report, to be able to communicate more effectively with clinicians so that they didn't spend half of their life running around between doctors' offices but instead got the care that they needed when they needed it. And it was up to the teams to really decide what they felt was most important. When it comes down to mobile health applications and other tools that are out there what we try to do is make it a bit more human something that people can relate to and can understand on a deeper level and communicate that around. So some examples, one of the teams worked on a project for diabetes and tracking the fitness along with medications, along with blood sugar and something that they decided to do in their project was to use the metaphor of a hot air balloon. Either it gets pulled down by insulin or diabetes medications or exercise with sandbags weighing it down, or it lifts up towards the clouds and floats away with too much high glycemic food and lack of those other components. So their goal was to try to use a metaphor and make it a bit of a game that their goal was to maximize the time that this balloon floated in the optimal region of blood glucose control. Then on top of that there was data coming from the device that they wore which was a fitness training device called

the MOTOACTV that would suck its data about exercise performance into that application for managing diabetes. Really the technology itself is not the solution but with CollaboRhythm, lot of the philosophy is that the solution is really the fact that we can now converse and be socially motivated towards better health behaviors. Again, the solution is when that starts to dissolve away into your life, the data flows where it needs to go and it's there when you need it.

Margaret Flinter: Dr. Moore, we have been following this work on the website around the MIT Lab work and there is such a strong theme of creativity and technology solutions and also humanitarianism flowing through this and you have really spoken to the human impact of this. And most good inventors I think have a reputation well deserved for testing out their inventions on their own family members and friends, right, as a first step and I wonder was there an element of consumer involvement in this or stories from the front.

Dr. John Moore: We did a pilot study with patients with hypertension at the Mayo Clinic this past summer. Before that, we did a study with patients with HIV at Boston Medical Center in Boston. So, all of it is driven by research behind the scenes. So although the projects doing the Health and Wellness Innovation event only had some small amount of input from patients because we only had 10 days but many of the projects did seek out patients to get their opinions which I think is an extremely important part of it. And really what we find out as much as the most meaningful part of it is the social part of using these applications to manage their health and being able to have someone else to help kind of watch over you and help you to make decision about your health can be one of the most powerful things.

Mark Masselli: We are speaking today with Dr. John Moore, physician, inventor and creator of the Health and Wellness Innovation 2012 Competition at MIT, where health care professionals, engineers, designers, and entrepreneurs joined forces in a two week competition to invent tech solutions to health care management problems. I know that you just said that you didn't have a lot of consumer input but you did have e-Patient Dave there who has been a guest on our show, and he is a real passionate voice for growing sector of the population that need to empower patients as much as access to and knowledge about their health care data. He was there to be a conduit to possible participants in the inventions being designed by the groups who you gathered. Talk to us a little bit about the Internet and social media making it easier for researchers and developers to find faster solutions and really connect with the groups that they are trying to develop new tools for.

Dr. John Moore: Yeah, Dave and I had an interesting chat in the beginning of that first day and we weren't quite prepared to do it as well as I would like to this time but I think next time around a goal will really be to include patients in the process of designing tools for them. And I think we just need to be a bit more prepared and to have some channels set up on the net that will be more effective

at helping patients in real time give advice and feedback to the teams. Certainly, we see a lot of this out there on the web today that allow patients in real time to track each other's progress and give each other feedback and connect people from around the world. The idea that Dave had when we chatted the first day is not just can they be involved in managing their own diseases but they could be involved in helping us to design better tools for them. If we are equipped to get them on the web in an efficient way, they could reply back to bloggers or tweet back at us with suggestions or maybe things that they have already tried and found unsuccessful or things that they have tried and they found very fruitful in pushing themselves towards positive health behavior change. And I think that's a really exciting idea. This is not the end of it, the goal is really that these projects continue on from now until next year or from now until they get to the goals that they have set for themselves. And I think that's something we did best this year compared to previous years is really set the projects up to springboard on to next stages either doing further research or trying to make it into a product, have a good prototype that now that they can show off to the world. Now is the opportunity to really get a lot of feedback from the people out there who would be potential users.

Margaret Flinter: We really appreciate that creative input. But one of the issues that many previous guests on our show have talked about is this lack of unifying platform for health care technology. And I wonder from your perspective how does this affect or limit how new ideas come into being, make it to the marketplace and what can be done to improve that.

Dr. John Moore: That's one of the big driving forces behind CollaboRhythm but another big part of it is that our underlying health IT infrastructure here in the States and around the world is extremely fragmented. I saw lots of great projects out there being funded by different organizations or studied at different institutions and in my estimation they were spending about 90% of their time recreating the same fundamental infrastructure. In the end, it's wasting patients' time and not getting the tools out there that they need. So, a big part of CollaboRhythm is that it is open source. Although we know that our tool might not be the one that starts to provide some free open source architecture out there but at least it provides the start. Our teams, some of them make products out of their tools but that doesn't mean that they need to do that from the ground up. Our fundamental most important component of this system is that patients own and control all of their data. And as a reflection on how important we think open source tools are, we use a tool called Indivo X which is an open source Personally Controlled Health Record System. And so even in our work, we don't build everything ourselves but we try to leverage as much as possible that already exists and Indivo X is building tools to aggregate data from different clinical sources like hospitals and clinics and labs. And the Personally Controlled Health Record really provides the opportunity for some consistent architecture out there. And the big premise is instead of storing patients data all over in siloed

databases at every different institution or at every encounter they have instead for each patient there is a single repository of information.

Mark Masselli: Speaking about your research, you are engaged in a number of other research projects, one is called ForgetAboutIT and it's certainly addressing the issue that about 50% of patients with chronic diseases take their medications and it's obviously not simply due to forgetfulness but it's a really complex set of intertwined problems. Talk about where you are on this project and what do you hope to attain.

Dr. John Moore: ForgetAboutIT is really just an application or a subcomponent of CollaboRhythm as a whole. The idea has evolved quite a bit overtime. Initially, the focus was really on persuasive type interfaces so building tools that help people to manage their medication. The ForgetAboutIT name is kind of more of a (18:10 inaudible) that really the issue is not forgetting it's about understanding and about deep-seeded motivation. So, originally the goal was more to build persuasive type interfaces, compelling visualizations that people would see what's going on inside of their body or how does this medication actually work. And by seeing the direct consequences of their action, potentially we have this ability to help the person feel what's going on inside of their body or feel more compelled for example when people have a cough or cold or runny nose or upset stomach. They take their medications quite reliably because they feel it. The problem with chronic diseases is they don't see it, they don't feel it, they don't hear it. So ForgetAboutIT it was all about taking that information that's hidden away, that's complex, make it concrete and make it actionable. The way it's progressed is really away from just this idea of persuasive interface more towards this notion of apprenticeship, of helping people not only to see this but to almost build it on their own through continued collaboration with clinicians and with other patients, other expert patients who have experienced the disease. And the idea is patients start out as novices but they have these other experts who help them transition to coaching exercises towards patients making the decisions for themselves but having an observer, a coach, who gradually fades away until the patient is capable of and motivated enough to tackle the problem completely by themselves.

Margaret Flinter: Yeah Dr. Moore, I think just within the last few days the Institute of Medicine released a draft I think, still not the final version of a major new report on chronic illness called Living Well with Chronic Illness. It really looks at the impact of chronic illness on people's ability to lead full, healthy, happy and productive lives and really calls for a major national strategic investment in helping patients live well which seems to be exactly what you are driving at. It also makes it clear that there have to be a whole lot more people involved on the health care team than just the primary care provider or the primary physician or other health care provider because we just don't have enough of that resource to go around. So in your models, who else are you engaging on your team to work with patients?

Dr. John Moore: In all of our studies, the primary point of contact has been either a nurse or a pharmacist. The idea is that it's a team-oriented architecture on the clinical side. In the long term, it will likely be a physical and multiple health coaches. And health coaches will be nurses or nurse practitioners or physicians' assistants but I think that they will have a bit of a different clinical background and also just a different skill set and interest set and that interest set will be a blend between nursing skills and social working skills. So it's really going to be more of a social support that comes from these health coaches, give them the medical advice when they need it but also give them the reassurance and also give them praise when they perform well. But it's going to be this health coaching role that really grows quickly in this space in the next decade to manage the huge amount of chronic disease that we have on our plate.

Mark Masselli: Dr. Moore, we like to ask our guests this final question. When you look around the country and the world what do you see in terms of innovations and who should our listeners at Conversations be keeping an eye on?

Dr. John Moore: For me, the most important things that I keep an eye on now are really some of the new practices that are springing up. Trying out these models with health coaches and with care teams and new payment models because I think it's quite obvious that the technology that we build does not work with a fee-for-service health care system so if we want a technology to get out there and to do good for people, we need to understand some of the different models of care. So David Judge at the Ambulatory Practice of the Future at Mass General Hospital, he is one that I followed and learned about this health coaching approach and Rushika Fernandopulle at Iora Health which is a company that delivers new models of primary care delivery and is using a health coaching type model as well that these are the places that I look to understand the trends and what's working in new models of care delivery that can support the kind of technology, that can support of the level of patient engagement that we really want to see.

Margaret Flinter: Today, we have been speaking with Dr. John Moore, Director of the Health and Wellness Innovation 2012 Competition at the MIT Media Lab and creator of the award-winning patient-doctor communication platform CollaboRhythm: Primary Care Team Work Anywhere Any Time. Dr. Moore, thanks so much for joining us today on Conversations.

Dr. John Moore: Thank you very much.

Margaret Flinter: Each week, Conversations highlights a bright idea about how to make wellness a part of our communities and everyday lives. A hospital administrator in rural Kansas has come up with a new solution to a growing problem in American health care. With a critical shortage of primary care

providers rural areas in particular are having a difficult time luring new recruits. Ashland Health Clinic, CEO Benjamin Anderson realized that the kind of physicians who might be interested in this kind of small town medicine might also be someone who had an interest in doing third world mission work. Instead of some of the usual perks that are offered, he offered something different, a chance for the physicians to take eight weeks off per year to pursue their mission work. He recruited a physician to the Ashland Clinic who also was committed to doing mission work in Haiti. Small town America health care using mission-focused models for recruiting willing practitioners in order to keep health care alive in local rural settings, now that's a bright idea.

(Music)

Margaret Flinter: This is Conversations on Health Care. I am Margaret Flinter.

Mark Masselli: And I am Mark Masselli, peace and health.

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