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

Margaret Flinter: And I am Margaret Flinter.

Mark Masselli: Well Margaret, we have seen some challenges in the startup of the online insurance marketplaces on the national level. Since the opening of the exchanges October 1st there have been quite a few technical issues that have led to difficulties across the country for those trying to navigate the online marketplace in 36 states relying on the federal exchanges. And a few good notes in terms of some of the individual states but across the board Margaret, I think it's not been a shining moment.

Margaret Flinter: Well we were warned that there would be difficulties Mark, that we would have hoped for a perfectly smooth rollout. And maybe it was to be expected with such a large system turning into existence and I bet there are lot of people doing a retrospective on where the various bumps in decisions were that weren't so good in retrospect. But we do know this that the leaders at the White House and Health and Human Services are working around the clock to fix the flaws in the system, and that's going to be a ongoing process.

Mark Masselli: It is. Robert Pear of the New York Times had a huge piece the other day certainly talking about the problems, so there is a lot of finger pointing on they have to get this thing fixed. And I think the polls show that only 25% of those who tried to navigate the exchanges had a satisfactory experience. So there is a lot of work to be done and let's hope they get right to it.

Margaret Flinter: That's right. And I do want to shine a little ray of optimism on things, Mark. We note that this hasn't been the case in those states that set up their own exchanges. There were some technical glitches in the state-based marketplaces in New York, California and our State of Connecticut and others, but it seems that the problems were worked out much more quickly. Tens of thousands of Californian have already signed up for insurance in the first few weeks, 40,000 New York residents have gained coverage and here in Connecticut, we have certainly had the experience of seeing people both having a chance to educate themselves by going to the online exchange and sign up for coverage. But of course, these are the states that are also showing more willingness to help facilitate the experience for their residents and I do think that has a positive impact. People do need a little hand-holding in understanding it.

Mark Masselli: Well, hopefully one of the key redesigns is allowing people to go through without having setup an account, no different like you buy a car or a house. You go in, you look at it, you take it around for a spin and you look at the price and then you come back to it. So that's a fundamental redesign that hopefully will happen with the federal exchanges. So there is some work to do with some big decisions on the long term implication as they lay this redesign out.

Margaret Flinter: Well most experts agree also that the numbers of Americans who will be gaining insurance on the exchanges is going to pick up greatly in the next month ahead. We should remind our listeners that they have until December 15th to sign up in time for their coverage to begin on January 1st. So open enrollment does continue until March 31st but if you want to be covered on January 1 you have got to complete the process and enroll by December 15th. So that's plenty of time to both educate yourself and shop around.

Mark Masselli: Some of the problems have certainly been masked by the shutdown Congress has had and dealing with the debt limit, dealing with this year's budget, dealing with last year's sequester Margaret. All those have an enormous impact. They certainly have a huge impact in the health care arena. The National Institute of Health normally welcomes 200 new patients per week into clinical trials, has had to turn most of those patients away including critically ill children. It's still too early to assess how much damage has been done with the government shutdown but there is no doubt it's had an impact on the health of many Americans.

Margaret Flinter: I couldn't agree with you more, Mark. And our guest today is an individual who is working to have a very positive impact on the health of many Americans, Mark. Dr. Ruben Amarasingham is an Internist, Founder and CEO of a PCCI, a center for innovation at the Parkland Health & Hospital System in Dallas, Texas. He talks about the program he has created that has shown some very promising results in reducing costly hospital admissions, using predictive analysis and health data analytics.

Mark Masselli: You know, there are hundreds of hospitals across the country who are looking into the system he has developed so some interesting innovations out there Margaret. We will also get a visit from Lori Robertson, Managing Editor of FactCheck.org. She is looking at false claims about the health care law.

Margaret Flinter: And no matter what the topic, you can hear all of our shows by Googling CHC Radio, and as always, if you have comments, email us at www.chcradio.com or find us on Facebook or Twitter, we love hearing from you. We will get to our interview with Dr. Amarasingham in just a moment.

Mark Masselli: But first, here is our producer Marianne O'Hare with this week's Headlines News.

(Music)

Marianne O'Hare: I am Marianne O'Hare with these Healthcare Headlines. Obamacare is taking it on the chin in the opening weeks of open enrollment. A quick check of the federal online insurance exchanges has shown only roughly a quarter of those who have attempted to log on to the federal exchange have

rated the experience as favorable. The system has gone down more than it's been up and folks are having difficulty getting past the point where they can create an account. Essentially, there are unpredictable results among users across the 36 states being covered by the federal portal, HealthCare.gov, but there is progress being made in getting to the root of the technical problems. According to a published report in the New York Times, Obama Administration officials feel the system is about 70% on its way to being fully functional. But there were widely varying views on when that remaining 30% of the problems with the insurance marketplaces would be fixed.

Confidential progress reports from the Health and Human Services Department showed senior officials repeatedly expressed doubts that the computer systems for the federal exchange would be ready on time. The largest contractor was awarded its contract in December 2011 but apparently, the government was so slow to issuing specifications, they didn't start writing code until this spring, and changes were being made to specifications up to the last minute. While customers are having an easier time within the state-based exchanges, there are still complaints, chief among them being the cost of the plans themselves which do vary widely from state to state. Another big problem across states and federal exchanges is many in the lower economic brackets lack an email address which is required for the online signups.

Medicaid expansion is advancing in several states. Ohio and New Hampshire are taking up that expansion as a way of getting more vulnerable residents the coverage they need and qualifying for federal dollars to underwrite the expansion as well. 27 million Americans might be seeking help in the health care arena for knee problems. The estimated number of those Americans grappling with knee troubles, glucosamine and chondroitin has long been thought to have a beneficial effect, tested first in horses and then in dogs before being mass marketed to humans as a natural solution. But according to a study published in the New England Journal of Medicine, it turns out there is not much difference in knee function improvement or pain reduction from glucosamine than from placebo pills. What's the best source of relief according to this study? Losing weight and exercising. They had a more lasting effect on knee improvement. I am Marianne O'Hare, with these Healthcare Headlines.

(Music)

Mark Masselli: We are speaking today with Dr. Ruben Amarasingham, Founder, President and CEO of PCCI, a non-profit research and development corporation in Dallas, Texas that specializes in real time health predictive analytics. Dr. Amarasingham is an internist and is the Director of Biomedical Informatics for the University of Texas Southwestern, NIH Center for Translational Science. He is also an Associate Professor in the Departments of General Internal Medicine and Clinical Sciences at the University of Texas Southwestern Medical Center. Dr. Amarasingham was a Robert Wood Johnson Clinical Scholar and was recently

given one of the Robert Wood Johnson Foundation Young Leader Awards for his exceptional contribution for improving health care. Dr. Amarasingham, welcome to Conversations on Health Care.

Dr. Ruben Amarasingham: Thank you. It's a real pleasure to be here and feel free to call me Ruben.

Mark Masselli: Ruben, great perfect. You have created a new tool for reducing hospital readmissions that's gaining quite a bit of national attention, and in fact, several hundred hospitals have made inquiries about your program, and many hopefully are in the process of adopting it. And you have developed a system in clinical setting that responds to the needs of large vulnerable populations. And while you are also an internist, serving largely poor and underserved population in Dallas, you are also a skilled coder and data analyst who saw real opportunity in this area of creating a solution. So can you describe for us that clinical environment you were working in before that led to the development of your predictive analytic system, aimed at reducing those costly hospital admissions?

Dr. Ruben Amarasingham: During my fellowship at John Hopkins Medical Institution, I had a chance to work with some renowned individuals and focus on how you use Information Technology to improve the care of the patient and specifically how Information Technology may give rise to predictive modeling or the ability to use data to identify what may happen to a patient or health system in advance of any adverse outcome. Then when I returned to Dallas, and took a position at Parkland Health and Hospital System at UT Southwestern Medical Center, one of my first assignments as a medical director was to review the charts of patients who were readmitted to the hospital and it's just sort of a standard practice. And in my review of these patients' charts and looking at what the factors were that might have caused a readmission, some of the things that really jumped out at me obviously was first there are enormous socioeconomic determinants of health, where a patient lives, what kind of access to food, their education and literacy status, as well as clinical options that are generated for the patient. And it became clear to me that this would be a great example of the use of electronic predictive modeling because there are factors that you can identify that seemed to be consistent among patients that were getting readmitted. And from that came this idea of can we model the social determinants of health directly from information on the electronic medical record and can we also understand and model the physiologic or clinical factors that affect a patient and use that to say which patients might be at a higher risk for readmissions. And so that was really the genesis of my work with respect to developing this software and this modeling.

Margaret Flinter: Ruben, I am very intrigued by what you just said and also intrigued by the experiences that set people out on their respective paths in life. And your experience as a forth year medical student with Parkland's Homeless Medical Outreach Service was another one of those kind of pivotal experiences

that shaped your future work, studying the homeless population in Dallas and finding that half the homeless population you were serving were women and children. So when you look at those socioeconomic factors, I would like for our listeners to help them get a real sense of how this works, and tell us how those things factor in not for people who have been in the hospital but maybe for people who are at the community level, how do you collect those socioeconomic, social determinants of health from the community and primary care and use them to prevent those hospitalizations from happening in the first place. Has that been part of your approach?

Dr. Ruben Amarasingham: That is, and actually, there has just been great work across the United States trying to solve these problems, recognizing just as you described that socioeconomic determinants, the environment you live in, your family status, your housing situation for children and then obviously the same kinds of factors for adults. All of those factors play a huge role in whether or not you can maintain a healthy environment for yourself and prevent needing to go to the hospital. And so people are trying to understand well can we measure that, how can we use that data, try to improve communities, improve patients' health, and there is a lot of very exciting initiatives going on.

In our community, one of the things that we are developing is called the Dallas Information Exchange Portal, and the goal there is to create a network of information systems that connect data from the hospital systems, from individual primary care clinics and then from social organizations like (12:44 inaudible) and the Salvation Army, and data from individuals' phones and other data that if they want to participate in these systems to try to help manage their care, that they can be plugged into this larger network. What that would allow is for us to really have a precise understanding of what's available to an individual in the community to help social and community organizations work together with health care providers, to try to improve all the things that are traditionally outside of the health care sector but there is no question that it has a big impact on health. And I think if we are able to link up the school systems with the health systems and with these community-based organizations that are providing social services, food and nutrition and adequate housing, when we combine all of these great efforts that people are making in a combined community effort, then I think we can make a real difference for our patients. And we have a major effort going on in Dallas. I think there are other efforts in other cities, and as these develop, I think there is incredible potential for these technologies to help these vulnerable populations.

Mark Masselli: Well there is lots of potential but there is also lots of hard work. It seems that you have your head in the clouds and I say that with all due respect that you are working in the area of big data which is sort of new to the health care field, it certainly has been used in a lot of other areas. And then you are in the weeds if you will on technology and the health community has not been quick to adopt health technology, certainly not like the banking industry, so there is a lot

of issues and you have talked about them in Dallas making sure that the systems talk to each other, they are interoperable and responsive and they can do things in real time. So your software system seems to be designed to sort of address some of these. It's called PCs forecast adverse clinical events, in particular, the likelihood of hospital readmissions using real time data from electronic medical records. But there is also a surveillance component to your system. So how does that work exactly and also tell us about some of the innovations that were applied in developing it.

Dr. Ruben Amarasingham: You know (14:51 inaudible) is a software application that sits on top of an electronic medical record. So I think the idea or the analogy might be for those people that have smartphones. There's usually an app store and there are apps that you can purchase that kind of sit on top of your phone and allow you to do all these neat functions. And so in this case, we have developed something similar what we call sort of a grand application that can sit on top of any electronic medic record. It takes the data in real time from this record, interprets and uses the data to understand what might happen to a patient before it happens. So obviously, one aspect that we focused on is can we predict with a high level of accuracy who has a very high chance of having a readmission, and then once we identify that, we can direct resources that really help with reducing readmission of that patient.

But there are lot of other approaches like trying to prevent septic shock mortality, trying to reduce the likelihood of having a cardiopulmonary arrest in the hospital. We have been working on programs to reduce the incidents of chronic kidney disease and diabetes complications when patients go home. So it's been fascinating to work on bringing all of this vast rich data that's collected as part of the normal health care experience and trying to use that data, interpret it through the computers to say, hey we can really make a difference on this patient here that has these particular problems and here are potential recommendations. Some of the innovations that we are using that have come from other industries and from the mathematical and computer science worlds are Natural Language Processing, which is the ability for computers and algorithms to read the notes of doctors and nurses and understand what they are concerned about with the patient. We use different advanced mathematical modeling techniques and machine learning to kind of interpret and define huge amounts of data in split seconds. And so I think it's a really exciting time to be doing this work because I think the infrastructure of electronic medical records is being adopted across the country and I think technologies like this really allow you to take advantage of this infrastructure that's being developed.

Margaret Flinter: Well I was just sitting here wondering how many years will it be before we stop thinking of electronic health records as a big deal. I think what people really care about is what does this mean for me and how does it matter to me in terms of the safety and the quality of the care I get. And I wonder if you could comment, I know that you completed a very significant study for the

Archives of Internal Medicine or that was published in the Archives of Internal Medicine, looking at data from a 170,000 Texas patients and you found a very significant impact of the use of electronic health records on patient outcomes. I wonder if you could tell us about those findings.

Dr. Ruben Amarasingham: Essentially, we looked at 41 hospitals that had different stages of these electronic medical record adoption and we looked at some key components of electronic medical records, how are test results documented. Our physicians and nurses were able to put their notes in electronic form as opposed to written from, were they able to get help with decisions what's commonly called decision support, then we looked at what was the death rate and what was the complication rate, what was the sort of cost that was expected, and generally across the board we found that if the technology systems were well-constructed and had those features, there was a dramatic and impressive reduction in important outcomes like death. And also that features like decision support, computers helping the physicians make better decisions or at least interpret data, vast amounts of data or give them signals when something might be going wrong, reduced complications for patients. And one of the most interesting findings we found was that the greater the automation of the health system, the greater that the information was electronic and easily accessible and easy to use from the physician's perspective, actually lower cost as well. And so I think that some of what we hope is that as electronic medical records are distributed across the United States and if they are constructed well, if they are built to be highly usable and enhance the physicians' and nurses' power to help patients, I think we will see, at least on the basis of this study, we can see dramatic results I think overtime in the patients' quality of care.

Mark Masselli: We are speaking today with Dr. Ruben Amarasingham, Founder, President and CEO of the Parkland Center for Clinical Innovation, a nonprofit research and development corporation in Dallas that specializes in real time health predictive analytics and surveillance strategies to improve health outcomes. Dr. Amarasingham is an internist, also Director of the Biomedical Informatics for the University of Texas Southwestern NIH Center for Translational Science. Ruben, you participated in a conference in Washington sponsored by the Gordon and Betty Moore Foundation with a number of other health system innovators delving more deeply into the emerging area of health predictive analytics. Now we are geeks here, tech geeks, so one, I want to know who was there, and it sounds like a really interesting sort of thought process that was going on about sort of exploring the big challenges that you are facing in this discipline and some of the hurdles that you face. So walk us through, if you will, some high level, I think you talked a little bit about some of them before but can you delve into that and where you see potential partnerships.

Dr. Ruben Amarasingham: Well it was a wonderful conference and we had people from – luminaries really from around the United States and internationally, some statisticians from Europe that have been really working in this area. And

we delved deeply into several topics there related to the predictive modeling, what needs to happen to move the field forward. With respect to data barriers, there were several problems that were kind of identified. One was you need systems that are interoperable, technology systems that are interoperable so that data could flow freely from one system to another to allow for the best communication and interpretation to allow for the best and highest use of predictive models. In so many industries we have just incredible data capture through the systems that have been developed in defense, in travel, in the banking industries and we kind of consider what are some of the ways that we can capture more data in a way that would help patients, and some of the ideas were home monitoring technologies and data from phones if patients consented to that. And then I think there was also a recognition that we need to be able to enable data for developers. Health data, clinical data is very unique, idiosyncratic almost, and for us to unleash the innovation that might be possible with advanced predictive models and even just software that can help patients, people need a sandbox of de-identified or anonymized emerged data to build these applications. So those were some of the problems that were kind of discussed and how we could solve them.

Margaret Flinter: Well Ruben, I have a question for you as you take a futurist view. You have painted a very exciting future for the tech folks and the data folks who have this new sandbox to play in, but I am sure in your hospital institution and in your work you are on a daily basis seeing the next generation of health care professionals coming through the doors and we certainly see here they are all digital natives and I have no trouble learning an electronic health record. But how is the training of health professionals, how do you see a changing in terms of people being trained to a model or educated to a model of looking at things like predictive scores and predictive modeling and incorporating these social determinants of health, but what you see changing in the whole education and training paradigm?

Dr. Ruben Amarasingham: Well I think clearly, it's going to demand and require lot of change within the whole medical education and nursing and professional education (22:54 inaudible). There are some early changes to introduce statistics in epidemiology earlier on in the training process so that people will understand how these algorithms will work. I think that we are moving into an era where machines and machine-supported recommendations and the understanding of statistical methodology as it applies to patient care and decision making will be paramount. And probably I think there are widespread discussions now in the medical education community about what types of classes in the past both in the undergraduate premedical program and nursing program as well as in the graduates to a medical education paradigm could be replaced, is somewhat archaic and needs to be replaced with a better understanding of statistics, epidemiology, data science and computer science. And I think we will start to see probably the undergraduate medical, premedical

curriculum and the medical school curriculum change in response to the emergence of predictive models.

Mark Masselli: We are speaking today with Dr. Ruben Amarasingham, Founder, President and CEO of PCCI, a nonprofit research and development corporation in Dallas, Texas that specializes in real time health predictive analytics. Dr. Amarasingham is a internist and is a Director of Biomedical Informatics for the University of Texas Southwestern NIH Center for Translational Science. Thank you so much for joining us on Conversations on Health Care Today.

Dr. Ruben Amarasingham: Thank you.

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 US politics. Lori, what have you got for us this week?

Lori Robertson: Well we have seen both sides in this debate over Obamacare distorting the facts about premiums. We caution our readers to be vary of claims about big premium rate decreases or increases, and it's important to ask compared with what when politicians make such claims. For instance, days before the health care exchanges launched on October 1st, President Obama said that average premiums for the Illinois exchange were 25% lower than what individuals were able to get previously buying insurance on their own. The Illinois officials used that figure in comparing exchange rate with what the federal government had predicted premiums would be. It wasn't a comparison with individual market pricing. Obama made a similar comparison with California, saying that exchange premiums in that state were about 33% lower. But California officials said premiums were up to 29% lower compared with rates for small employer plans not individual market plans. Officials said they gave that comparison because both markets wouldn't deny applicants based on preexisting conditions, but the President didn't explain that. Obama also mentioned New York, and he was right in that comparison. The Governor's Office said exchange premiums were at least 50% lower on average than 2013 individual market rates. And that's my fact check for this week. I am 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 would like checked, email us at www.chcradio.com. We will have FactCheck.org's Lori Robertson check it out for you here on Conversations on Health Care.

(Music)

Mark Masselli: Each week Conversations highlights a bright idea about how to make wellness a part of our communities and everyday lives. Much emphasis has been paid of late to the dangers of distracted driving. A number of states have enacted laws banning texting and driving which has led to a number of traffic deaths across the country. But what abut distracted walking? A recent in-depth study conducted by SafeKids.org showed some pretty startling statics. Older teens now account for over half of all pedestrian deaths of children and one of the main culprits, distracted walking.

Kate Carr: We saw a 25% increase in teen fatalities within the last five years and that's what alarmed us and we did an observational study where we collected data from over 34,000 observations of middle schoolers and high schoolers while they were walking in a school zone and crossing the street. We saw that one in five high school students were distracted by using their mobile device, they were either texting, using headphones, or talking on their cell phone. And we saw one in eight middle schoolers also doing the same thing.

Mark Masselli: Kate Carr is President and CEO of SafeKids.org, whose mission is to find the best ways to keep kids safe. Off the tens of thousands of kids they observed walking to school in various different neighborhoods, almost 40% were seen crossing the street while texting, talking on their phone, listening to music with headphones or playing some gaming device. She decided there needed to be a campaign to promote better awareness to reduce the trend and they created a Moment of Silence.

Kate Carr: This campaign is a reminder to especially teens, there are 50% of the fatalities in kids under the age of 19, but for everybody who is distracted while walking. Put that device down, create a moment of silence when you are crossing a street or you are on a sidewalk or in a parking lot around cars, put your device down, take your headphones or your ear buds out.

Mark Masselli: She realizes that kids, especially teens, will not be separated from their mobile devices but if they could just put them down while walking across the street or through intersections, engage in a moment of silence, the number of teen pedestrian deaths would be greatly reduced. She is urging parents and pediatricians alike to access their site SafeKids.org for more details about a Moment of Silence Campaign and bring that message home to kids. A simple slogan-based campaign to raise awareness about the dangers of distracted walking that has potential to save the lives of child pedestrians and adults for that matter, now that's a bring idea.

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

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

Conversations on Health Care, broadcast from the campus of WESU at Wesleyan University, streaming live at www.wesufm.org and brought to you by the Community Health Center.