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Mark Masselli: This is Conversation on Healthcare, I am Mark Masselli.

Margaret Flinter: And I am Margaret Flinter.

Mark Masselli: Well Margaret, Open enrollment is official underway for those seeking to purchase insurance under the Affordable Care Act. We want to remind people who have purchased insurance on the exchange in previous years the process is essentially the same as it's been in years passed except for the shorten enrollment period.

Margaret Flinter: Here in Connecticut, a State that created its own exchange, the states around the country that rely on the federal exchange their residents go to a federal website www.healthcare.gov, don't forget December 15 is the deadline on the federal exchange.

Mark Masselli: You only have six weeks to sign up for coverage and if you miss the deadline, you'll miss the chance to gain coverage for 2018.

Margaret Flinter: And a number of hospital and medical associations are concerned about what is most likely going to be an increase in uninsured Americans this year and that will be to an increase in uncompensated care in the Nation's hospitals and loss of access to primary care and preventive services. Most Americans who sign up get some kind of subsidy to offset the cost of purchasing insurance.

Mark Masselli: Our guest today is someone who has been on the forefront of taking healthcare into the 21st century with connected health technology. Dr. Joseph Kvedar is the founder and director of the Centre for Connected Health at Partners HealthCare in Boston.

Margaret Flinter: And he has come out with a new book, 'The New Mobile Age: How Technology Will Extend the Healthspan and Optimize the Lifespan'.

Mark Masselli: Lori Robertson always stops by, the Managing Editor of FactCheck.org, but no matter what the topic, you can hear all of our shows by going to www.chcradio.com.

Margaret Flinter: We will get to our interview with Dr. Joseph Kvedar in just a moment.

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

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Dr. Joseph Kvedar –VP of Connected Health at Partners

Marianne O'Hare: I am Marianne O'Hare with these Healthcare Headlines. November 01 the first official day of open enrollment for coverage during the 2018 calendar year, lot of Americans maybe confused about the Affordable Care Act this year after so much effort in Congress to repeal Obamacare and the current administration has made moves to underline some of the ACA stability.

President Trump slashed the enrollment period in half, consumers must sign up for coverage by December 15 on the federal exchange or lose out on being covered for the next year. They could purchase insurance elsewhere at a greater cost and without the tax subsidies and other protection such as coverage for the essential benefits. Auto enrollment kicks in December 16, the day after this year's open enrollment closes on the Federal exchange that could leave those consumers out of luck for the following year.

And be very wary of businesses offering cheap short term plans, such plans often cover very little and will not cover such things as the essential benefits covered by the metal plans in the Affordable Care Act. In the State of Maine where the Republican Governor denied the expansion of Medicaid to cover more of the State's poor population there is a movement of photo [PH] referendum on this month's ballot override Governor LePage's refusal to expand the federally funded health plan. About 80,000 Maine residents would become eligible for coverage under the Medicaid expansion measure if it passes in the upcoming vote.

New Jersey is joining a number of other states of Municipality suing Purdue Pharma the maker of the Opioid Oxycontin saying the company heavily pushed the drug on the medical community knowing the highly addictive nature of the drug. New Jersey Attorney General said, Purdue deceived doctors and patients into believing Oxycontin could treat chronic pain over the long term as an alternative to things such as Advil and Tylenol. Purdue has faced similar lawsuits by at least nine other U.S States, several cities and Counties too. I am Marianne O'Hare with these Healthcare Headlines.

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Mark Masselli: We are speaking today with Joseph Kvedar Vice President of Connected Health at Partners HealthCare which seeks to create a new model of care using Information Technology to move care from clinician's office to the Patient's lives. Dr. Kvedar is Program Chair for the Connected Health Conference, he is also a Board Certified Dermatologist and associate professor of Dermatology at Harvard Medical School. Dr. Kvedar is the founder of Healthrageous a health tech entity focusing on supporting wellness. He is the author of numerous articles and books and connected health including his latest 'The New Mobile Age: How Technology Will Extend the Healthspan and Optimize

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the Lifespan'. He received his MD at the University of Vermont College of Medicine. Dr. Kvedar, welcome back to Conversations on Healthcare.

Dr. Kvedar: Delighted to be with you.

Mark Masselli: Yeah, yeah, congratulations on another successful Connected Health Conference. This year's conference theme was the 'life journey' which is also an important theme in your latest book 'The New Mobile Age' and you make a strong case for how health technology is going to make it far easier to address the complex health needs of an aging population. In fact you have called the 21st century I really like as this century of health span vs. life span, and I am wondering if you could share with our listeners what do you mean by that.

Dr. Kvedar: Over the 20th century through Medical breakthroughs we added 25 years to our life span if you can believe it, so my father died in 2008, he was 88. But what we haven't really thought about is how we can harness those extra 25 years and add value back to society for each of us as we live into those years. We tend to think about once you had 65, well sort of, maybe a few extra dollars called social security and health plan cum Medicaid and pet you on the back, and we have to bring those 25 years back into focus as productive healthy, happy phase of life.

Margaret Flinter: Well you and your colleagues at Partners Center for Connected Health have been working on some of these technology interfaces for quite a number of years now. And you've had time to learn particularly from some of these interactions with whole monitoring of patients what's worked well and maybe not so well and I think we all know it's also about engaging patients and making it easy and satisfying for them. So are there technologies that you found are really more effective and what emerging technologies now look poised to help advance this kind of connected health system?

Dr. Kvedar: Well the combination of wearable's or sensors that allow us to create data feedback loops are an important part of that, and most people can figure out how to buy something at Best Buy and connect it into their network so they can get a reading of some component of their health that's measurable. And those forms of foundation for what you are talking about in terms of how we better equip people to manage their own care in the privacy of their home as opposed to having to travel to the hospital for everything, the second component of that is the engagement. So while feedback loops are important knowing your blood pressure, keeps it top of mind, knowing your step, count allows you to make certain maybe adjustments in your day so you might walk a little bit farther and make those 10,000 steps. But over time we find that the actual numbers kind of fade into the background if you don't have some kind of engaging system on top of that.

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And so we spent a lot of years learning that and working with engagement and to the point now where we have a whole design team now that designs very specifically in collaboration with consumers and patients so that we design things that are sticky and meaningful. And we still shamelessly from other industries that have already figured out how to keep you glued to your phone; social networking, gamification, all those things and so if you combine the feedback loop with some sort of engagement tool that keeps you focused and engaged on achieving goal you can actually inspire people to improve their own health.

We talk about some of this in our book, one of them is tools that allow a computer to recognize the tone of your voice just simply the tonal signatures of your voice and predict things about you. One company called Beyond Verbal out of Israel showed that people who are about to have a heart attack have a certain vocal signature that they could pick up by computer and predict that [Inaudible 00:08:42] cardiac event, another company in Boston Sonde is doing similar kind of work to predict emotional state. So when you think about voice, you can think about facial recognition that's becoming very very powerful.

And then the other technologies that I would throw in are all those tools that allow us to extend our caregiving to a one-to-many model. We are running out of young people to give care to our older folks by 2050 twice the number of people will be over 65 as under five we are getting this lopsided demographic around the planet. So the technology such as the Hasbro, Joy For All Companion which is a \$99 toy that's designed to look like a cat or a dog but has a little artificial intelligence engineered in it. And it becomes a very important interim companion for your mom and dad that you can't visit and spend every day with, if you mix it too up you can start to see how we can extend ourselves across many individuals.

Mark Masselli: And I want to pull the thread a little on that fast growing senior population that are living longer but the burden of chronic diseases is growing significantly as well. 30 million Americans have diabetes and there are 89 million waiting in the wings with pre-diabetes and we talked a little bit about technology and the role it can play. And also there has just been this remarkable discovery over the last couple of years around gene editing the whole genetics field, how do you see the interplay with the new discoveries that we're finding daily now it seems in the genetic world?

Dr. Kvedar: One of the first things I learned in college it was the idea of genotype and phenotype and so -- which leads to traits that we can observe how you look, the color of your eyes, the color of your hair. These days of course phenotype is much more than those things, things like how many steps you took today, your mobile phone tracking your location data, maybe the number of texts that you sent to, the number of emails you sent, there is an indicator of your mood. So with all these phenotypic traits that are simply coming off of your body by either

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wearable's of the use of your mobile device we have a much more rich way of really getting a unique digital signature for each one of us.

And the genotype part simply gives us a foundation for saying, if you were born with this set of genetic information, you may be at certain higher risk for certain conditions and we know that early on we can start to change the way we interact with you and your family so try to prevent those things from happening. You might be at higher risk for obesity because you have a satiety [PH] a set point that's off and we can start to help you deal with that. So the other way to think about is they are both really important inputs into a big data equation or a machine learning that gives us the unique signature of each one of us that we can then use to promote healthier behavior.

Margaret Flinter: Well Dr. Kvedar, there is so much that is changing and the Connected Health Conference does a great job always bring it to the forefront, certainly the voice recognition technology like Alexa. I have heard many sort of features say we're going to in healthcare look back on our current time as maybe the era of when pharmacology ended up being at the root of so much of what we do and that the non drug interventions will really begin to move to the forefront treating certainly some of the physiological and also the psychological and behavioral problems like depression and PTSD using technologies like virtual reality, maybe just talk with us about some of these technologies and how likely they are to become widespread and incorporated into the health system of the future?

Dr. Kvedar: Well that really is where we are at the groundbreaking of many of the concepts that you alluded to, one of them is now being bandied about as digital therapeutics which simply means that software when properly applied can impact healthcare in some cases better than a chemical therapeutic. We have seen this in diabetes with walking tools to encourage walking behavior, we have seen it in teenage asthma where we created a Facebook group for teenagers with asthma and their asthma improved just by them being together on a social Facebook group. So some very powerful stuff and a number of companies bandied together to form something called the Digital Therapeutics Alliance because they are all so excited about this future where not everything is cured by a pill.

The business margins of pharmaceutical companies are high, they are -- not surprisingly their businesses are fine-tuned to a certain way of doing business and it involves discovery of new molecules and then getting them into the market place. And so for them to sort of change their model and start to be software provider as opposed to chemical therapeutic providers I think we are ways off from seeing that, but that's certainly is a future. And maybe there is just whole new group of companies like Omada Health and others that are going to be in the lead for new solutions that are disruptive to the pharmaceutical industry.

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Mark Masselli: We are speaking today with Joseph Kvedar, Vice President of Connected Health at Partners HealthCare which seeks to create a new model of care. Dr. Kvedar is the author of 'The New Mobile Age'. We have had a number of folks on the show who have been talking about empowering the patient e-patient Dave and others. We were just sort of referencing that you know we are sort of in this digital therapeutic environment and not everything can be cured by a pill. And obviously we need to have engaged patients, and I wonder you can talk about that role of engaged patient and how we must enhance the health system to better support that participation and what are you doing around that area to vitalize this important element of their own healthcare?

Dr. Kvedar: Well it's a really interesting conundrum because I am sure you have heard that about 5% of people cost the system about 50% of health care cost and most of those people have tragic complications like mental health or substance use disorders and other determinants of health maybe they are homeless so they have challenges with basic daily living. And so for them the idea of tracking their steps or something it's the last thing they are thinking of, they are much more struggling with the basic Maslow's hierarchy of needs. And we spent a lot of energy as an industry trying to create programs to keep them as healthy as possible and help them with the help that they need.

The flip side of that 5% is, well I don't know about 30% or 40% of people who are motivated to be healthy and getting back to what I said about wearable's earlier, that particular segment is the kind of segment that's made Fitbit a public company and allowed others to flourish in this era where monitoring something as a feedback loop. If you are internally motivated yourself you don't need that motivational overlay that I talked about earlier because you want to be healthy. I am a perfect example of that I have been using a Fitbit since it came out and I am quite aware of why I use that tool and how I can use it to help me stay more active. So it's really the segment in the middle that we have I think the most interest in because people could frankly go in either direction they could -- those are the people where anything we can do to engage them and support them and get them more in the driver seat of their own health, technology, particularly mobile technology and mobile apps play a really important role in that.

Margaret Flinter: Well Dr. Kvedar, we haven't touched on something that I think is also poised to -- perhaps have a huge impact on health moving forward and that's Precision Medicine. In your book you touch on the ambitious Precision Medicine Initiative underway the National Institutes of Health the All Of Us Campaign something that we are engaged in here in our organization. And it seeks a million participants who really reflect the enormous diversity on every level of people in America and ask them to share their personal genomic health lifestyle data to fuel large research protocol to better understand the impact and the role of all these elements in health. So would you be so kind to just touch upon the premise of the All of Us Campaign and you know what your thoughts are on whether this is something that will help us scale up our understanding of

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how to diagnose and treat and most importantly maybe prevent disease in the future?

Dr. Kvedar: Well it's an incredibly ambitious project and my heart goes off to the people who envisioned it Eric Topol and colleagues sold it to the Government they brought Eric Dishman who is a fabulous guy and so the reason it's so exciting is because if you got a million people to participate these days in anything the way all of these new data systems work which called deep learning machine learning artificial intelligence they have one thing in common which is the more data you feed them the smarter they get. So if you got a million people with a million different kinds of things then you are able to create a data model i.e. categorize them and feed them then inevitably that computing infrastructure will be coming up with associations that we didn't know existed. And they will be able to say, like I said earlier the idea that, well people are about to have a heart attack who have a unique vocal signature, it will be something like that it will be probably 50 or 100 insights like that where we'll say well did you know that if you have these characteristics we can predict that you might have this outcome and that will be really powerful for us, so incredibly exciting stuff.

Mark Masselli: We are speaking today with Joseph Kvedar Vice President of Connected Health at Partners HealthCare and co-author of the book 'The New Mobile Age: How Technology Will Extend the Healthspan and Optimize the Lifespan'. You can learn more about the book by going to www.newmobileage.com and you can follow his work by going to connectedhealth.partners.org or follow them on twitter @jkvedar. Dr. Kvedar, thank you for the important work you are doing and for joining us again on Conversations on Healthcare.

Dr. Kvedar: Really delighted to be with you today.

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Mark Masselli: At Conversations on Healthcare, 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: President Donald Trump says that branded prescription drugs are generally cheaper outside the US, and that's true, but he distorts the fact when he says "As usual the world is taking advantage of us", prescription drug pricing expert say Trump's complaint is with pharmaceutical companies and US legislators who balk [PH] at such cost controlling measures as having the federal government negotiate drug prices for Medicare. Trump made his comments on the cost of prescription drugs during a cabinet meeting on October 16, he said

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the US is paying prices that are double, triple, quadruple what other countries pay. One expert told Factcheck.org that branded prices on average are between 10% and 40% higher in the US compared with other industrialized countries. Another thing to note is that this comparison doesn't include cheaper generic drugs which make up about 84% of prescription in the United States.

As for Trump's claim that the world is taking advantage of the US, experts told us the US is the one that's responsible for high cost of drugs not other countries. Most other developed countries have a centralized health care system that allows the government to negotiate drug prices with the pharmaceutical companies not the US. In fact a Medicare drug law passed in 2003 specifically prohibited Medicare from negotiating prices with drug companies. Lawmakers, mostly republicans have resisted the idea, some say price controls would limit research and development. Research found that drug companies spend much less on R&D than steeper prices in the US could be potentially fund. Trump said he wanted to "Bring our prices down to what other countries are paying" but he didn't say what measures he was supporting to do that. And that's my Factcheck 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 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 Healthcare.

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Mark Masselli: Each week Conversations highlights a bright idea about how to make wellness a part of our communities and everyday lives. Pregnancy is normally an exciting time for most women but according to the research an estimated 10% of prenatal women experience some kind of depression during their pregnancy and many are reluctant to treat their depression with medication for fear of harming the fetus.

Dr. Cynthia Battle: In fact a higher percentage are experiencing lower grade depressive symptoms, and left untreated those mild to moderate symptoms can progress in some cases lead to a more serious postpartum depressions.

Mark Masselli: Dr. Cynthia Battle is a psychologist at Brown University with a practice at women's and infant's hospital in Providence. She and her colleagues decided to test a cohort of pregnant women to see if a targeted prenatal yoga class might have a positive impact on women dealing with prenatal depression.

Dr. Cynthia Battle: That was a typical kind of Hatha Yoga breathing exercises meditation and we enrolled 34 women who were pregnant who had clinical levels

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of depression and they would come to classes and we measured their change in depressive symptoms over that period of time.

Mark Masselli: Not only were women able to manage their depressive incidents they also bonded with other pregnant women during the program and found additional support from their group.

Dr. Cynthia Battle: And the initial signs from this research are really encouraging, so we found that women on average were reporting that they were reporting much less.

Mark Masselli: A larger study with controlled groups is being planned with the assistance of the National Institute of Mental Health.

Dr. Cynthia Battle: Women who are depressed during pregnancy unfortunately do often have less ideal birth outcome, so one thing we're interested in seeing is when we provide prenatal yoga program can it improve mood and then can we even see some positive effects in terms of the birth outcomes.

Mark Masselli: A guided non-medical yoga exercise program, designed to assist pregnant women through depression symptoms, helping them successfully navigate those symptoms without medication, ensuring a safer pregnancy and a healthier outcome for mother and baby – now that's a bright idea.

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Margaret Flinter: This is conversations on health care. I'm Margaret Flinter.

Mark Masselli: And I'm 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.