

(Music)

Mark Masselli: This is Conversations on Healthcare. I am Mark Masselli.

Margaret Flinter: And I am Margaret Flinter.

Mark Masselli: Well Margaret, it's been a good few weeks for a quality in this country. First the Supreme Court upheld the tax subsidies for the Affordable Care Act essentially keeping the law alive by ensuring that no matter what state you live in you are entitled to tax subsidies to offset purchases of health insurance. Then there was the decision legalizing gay marriages for all citizens no matter what state you live in both victories for equal rights and access to the same rights for all Americans regardless of geography.

Margaret Flinter: Once again seeing the enormous impact that laws have on our society Mark, millions of Americans will be able to hold on to Affordable Health Coverage which was essential to the Affordable Care Act and the marriage equality decision had very interesting implications for the country. Same sex couples are often facing very challenging issues and impacting everything from being able to share health benefits to adopt children even visit the spouse in the hospital setting even at the end of life.

Mark Masselli: So many years same sex couples have struggled to achieve access to the same basic rights as all Americans after such a long struggle for acceptance a big win for this country.

Margaret Flinter: Well certainly a momentous turning point for us as a nation. You know those there is momentous turning points come in many ways some of are social legislatives, some of them are scientific and mapping of the human genome a few years ago was also a big turning point. It shifted health and medical research into entirely new direction where personalized medicine can truly be realized. We can be so much more precise and that something our guest today knows quite a bit about.

Mark Masselli: Dr. Eric Green is director of the National Human Genome Research Institute at the National Institute of Health. The real work has begun to find translational scientific discovery on the DNA of disease. He is leading some exciting work in genomics at NIH.

Margaret Flinter: And Lori Roberston will be stopping by the managing editor of FactCheck.org. Lori is always on the hunt for misstatements spoken by health policy in the public domain.

Mark Masselli: But no matter what the topic, you can hear all of our shows by going to chcradio.com and as always if you have comments, please e-mail us at

www.chcradio@chc1.com or find us on Facebook or Twitter; we love hearing from you.

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

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

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Marianne O'Hare: I am Marianne O'Hare with these Healthcare Headlines. The Supreme Court has been busy with matters of health, life and death. First upholding of the tax subsidies and Affordable Care Act ruling came down. Now all Americans have a right to access those subsidies regardless of their state of residence. Then they upheld the use of a controversial drug approved for use in lethal injections of death row inmates. Several executions were bouched due to the drug not working specifically well sparked a moratorium on its use until the high court ruled it was okay. And the State of Texas has been attempting to close the state's remaining abortion clinics in round about ways by exerting a new ruling requiring facilities to operate more like hospitals. The High Court ruled the State was over stepping its bounds. Many women in Texas who are poor and uninsured use these clinics for all their prevented women's health needs. And from Kaiser Health News the right to marry in any state won't be the only gain for gay couples after the Supreme Court's ruling. The decision will probably boost health insurance among gay couples; same sex spouses get access to employer plans that according to benefits consultants and analyst. How much is unclear but it's going to increase coverage in a community that has often had trouble getting access to medical services according the Kaiser Family foundation. The logic is simple fewer than half of employers that offer health benefits make the insurance available to same sex partners who aren't married, virtually all of them offer coverage to spouses. And the FDA has made is official no more Trans fats in processed food that will take 3 years for food manufactures to come into full compliance. The FDA is also looking at the proliferation of vaping or e-cigarettes seeking comment on whether they should be further restricted. A number of studies are mounting now showing they are already leading to an increase of nicotine addiction among teens. I am Marianne O'Hare with these Healthcare Headlines.

Mark Masselli: We are speaking today with Dr. Eric Green Director of the National Human Genome Research Institute at the National Institute of Health. Dr. Green has been at the institute since 1994 and has been its director since 2009. The institute is the largest organization in the world dedicate solely to genomics research part to becoming director, Dr. Green lead a large research group involved in studying the human genome including being a start to finish participating in the human genome project. Prior to joining the institute Dr. Green

was the Professor of Pathology Genetics in Internal Medicine at Washington University School of Medicine in St. Louis and were here on his PhD in cell biology as well as he is MD. He is also the founding editor the Journal of genome research and co-editor of the annual review of Genomics in Human Genetics. Dr. Green welcome in Conversations on Healthcare.

Dr. Green: Thank you happy being talking to you.

Mark Masselli: You have played a major role in the Human Genome Project completed in 2003 clearly one of the great scientific achievements of the age and is complex and ground breaking that task was you say it was really just a starting point and you have been involved in genomics since the beginning and tell our listeners how has the Human Genome Project in subsequent genomics efforts influenced the direction of medical research and how has the mission of your institute evolved over the years.

Dr. Green: I would probably describe genomics as transformative in many ways. The Genomes Project's goal was to create this foundational information resource about our blue print and which then has provided since its completion 11 and half years ago. Really a context for being able to learn a tremendous amount about how the human body works by knowing more about our blue print, but also knowing how our blue print can break leading to disease. It's really finding its way across all areas of biomedical research.

Margaret Flintner: So Dr. Green the recent NIH gathering you share some pretty compelling conclusions of the external advisory group about how all composed of NIH manage and used research data. How is your institute in NIH is going to approach this issue of the problem are really the opportunity of big data which is seems to be some more confounding people in the health and science research space.

Dr. Green: Yes, I mean, it's a new world genomics has become that of a poster child for the biomedical big data challenges. The reason for that has to do with the technological explosion that have taken place in genomics since the end of the Genome Project, where by we have these incredibly powerful methods for now reading out our DNA not just across one human but now have done this across tens of thousands of human. And that creates massive digital datasets that are incredibly powerful to analyze but that means that we kept to them in the hands of researchers around the world and that's just genomics data. We are seeing a swift in biomedical research where we are going from being relatively data poor to being data overwhelmed. And genomics sort of lobbed away but I don't want to leave your listeners with impression that it's just genomics. We have had similar technological innovations in imaging and there is other Omix coming down the road besides just looking at DNA but look at our proteins and proteomics and our metabolism and metabolomics and so forth. And an interesting statistics is that if you go back to 1993 for example if you took all of

the world's genomic data is housed here a public database called Genbank. 1993 which sit on one CD-ROM you go to do that today and it would require 400 million four door file cabinet to house all that data. And that's just genomic data. The future of benchmark research is going to be heavily a data science endeavor and the question we had asked our self --

Mark Masselli: With that alliance with obviously is part of the NIH's program this just launched the big data to knowledge initiative over BD2K as it's called. You say the BD2K initiative is focusing on improving the biomedical research enterprises relates to the big data in the four key areas can you tell us what these are and how you see this facilitating more robust data sharing and use platforms?

Dr. Green: You know the overarching aspect of this program is as much as anything to begin a cultural shifts in science and biomedical science in particular. Where by we value the production of data and the sharing of data in a fashion that allows and empowers other scientists to use all the data in very creative ways, and there is a lot of barriers to that some are cultural and some of them are mechanical and we are trying to fix all of those things. So among the components of BD2K is developing better ways of sharing data and finding data another component is building better software tools. We need to empower all scientists to be able to analyze the data being generated including data outside of your immediate fields. So if were genomics researcher I want them to be able to analyze data and see it alliance with some of their genomic data. And if it's so specialize and they can't access that software to get the kind of result they need that the problem. So we need to enhance that capability and then we need to setup a series of sort of centers of excellences as we call them. We have major groups whose focus is how to get broader use of this incredibly large dataset and having lots and lots of scientists really around the world analyzing the entire world's biomedical research data in creative ways that it really wasn't possible before so we are funding groups to help really come up with those solutions.

Margaret Flinter: Dr. Green so often on our show and conversations we can back to the issue at one level you can call it workforce. You have addressed the fact that there is something of a scarcity of data scientist in the market places who are equipped to handle this volume of big data out there and the challenges and opportunities that oppose. I have a feeling that BD2K is also thinking about training both training people in the field now training people who are going to come through the field in the future maybe if you can tell us a little more about how do we really create this next generation of data scientist for this work.

Dr. Green: Oh it's a great question when I give talk to something so slide of an article that was featuring the new opportunities in the data science and I call the data scientist sexiest job of the 21st century. And I saw this article of my teenage children remind me of that because indeed they are the generation that are going to see this thing be reality. So we are thinking about that at NIH for biomedicine

and we are thinking about how do you train the next generation? And that's part of the BD2K initiative is to develop new curriculum and develop new approaches to make a graduate student or a medical student or a pharmacy student and you know all the health professions very facile with analyzing manipulating big data because that's the world we are going to live in. But let's not forget about the current generation I think about my medical school classmates my graduate school class mates and we all have another couple decades ahead of us in our profession. And the fact is the world of big data and data science has come on fast and furious and we were not trained for any of these I graduate school or medical school. So what are the things that we could put into place to help mid career individuals climb that, that competency ladder if you will. All these things are important and all these things we are looking at and in fact our funding programs to address both of these areas.

Mark Masselli: We are speaking today with Dr. Green director of the director of the National Human Genome Research Institute at NIH where he previously served as scientific director at the Institute and director of the genome technology branch. We are seeing the world respond to global epidemics from hep C to Ebola and the scientific communities add up their efforts to create effective treatments in, while these epidemics are certainly frightening, truth is far more common deadly pathogens that probably will you encounter including antibiotic resistant bacteria they are having devastating effects on human health. And how does genomics play a role in this dash to find treatments or cures for emerging diseases like Ebola and morphine pathogens like antibiotic resistant bacteria.

Dr. Green: This really represents one of the very beneficial outcomes of the Human Genome Project and subsequent programs. You know, the Human Genome Project mostly focused on human and another small set of organisms and their genome. But the immediate programs that follow the Genomes Project involve developing new powerful technologies for sequencing DNA and those can be used to sequence a bacteria or virus's as DNA just as easily in fact much easier than sequencing a human genome because the human genome is much, much bigger than a microbe genome. And so what we are finding is that the cost and also the speed at which you can sequence a microbe are really remarkable now. Such that in the case of the recent story with Ebola, we are able to sequence in one of our investigators, a good colleague of ours did just this study and got some of the early isolates from Ebola outbreak and quickly sequence the genomes of those isolates and with that given immediate information about sort of the origins of it and some of the patterns of transmission. That otherwise might have taken months or not years to figure out. So we get real time read outs of what's going on in an infectious outbreak like Ebola. Now what's happening in with antibiotic resistant bacteria where we seek we know what the routes of transmission are, now you can do detective work by sequencing the isolates as they appear in different patients and as we have seen story after story surprises come above where you figure out that what you thought was happening is not

really what's happening and that teaches us it immediately how to better contain some of these outbreaks even within a hospital.

Margaret Flintner: Dr. Green I would like to take a look at what I think if we looked back over the arch of time since 2003 and the conclusion of the human genome project. One of the real promises seems to be the concept of personalized medicine or precision medicine as some people call it where each of our unique genomes would be the guide for the treatment protocols tailored to fit us specifically. And while the cost of sequencing one whole genome has come down significantly. It seems as though this reality is still a long way off or at least it's not spoken about as part of our current practice pattern. What is the state of the science about personalized medicine?

Dr. Green: Yeah I actually might slightly disagree with you, and that I actually think it is starting to be heard now, and I might just point to the Angelina Jolie story as an example where there is a situation where she came it was very public about this and illustrated a situation where she has a change in her genome that makes her -- and a well known gene that makes her susceptible to breast and ovarian cancer. I would actually say go look on the news and you'll see that just came out a couple of weeks ago. Big fix special issue of Time magazine all about DNA and genomics and how the DNA shapes our life. I see routinely at least in the Washington DC area now cancer treatment centers and healthcare network and they are using the word genomics and there are advertisements that are streamed into your living room. Those examples are some of the low hanging fruit and I would immediately tell you that we are maybe 1% of the way towards implementing personalized medicine, genomics medicine, or precision medicine, whichever word you want to use. The best is yet to come but in areas like Cancer and it's here now for some kinds of Cancer. Another example is Pharmacogenomics big word Pharmacology in genomics. The reason we all respond to medications differently is because of differences in our genomes that influence how we metabolize drug and for more and more drugs we are figuring out who are the good responders versus the bad responders by reading out specific parts of the genome. And I think the other area that's here now for precision medicine has to do with these rare cases of diseases that sort of stump clinicians, these diagnostic odysseys that often involve children but sometimes adults. You know, now for a few thousand dollars you can read out their genome sequence and in a fair percentage of the cases you can figure out what's wrong with them.

Mark Masselli: Dr. Green we had your colleague at NIH Dr. Francis Collins on the show well back he expressed some grave concerns about the cuts to funding for the NIH research and the impact it would have on future research. As always had a history of being supported across the board and that seems to have changed in the you and Margaret were talking earlier about the sort of group of young people that we want to come into this field and they don't do it for the money for the most part but money does help, so give our listeners assessment

what's happening in the state of scientific research funding including genomics and the impact these budget cuts are having on the present and the future research protocols at NIH.

Dr. Green: It's not a good situation I mean as an American, you know America lead in the genomics during the Human Genome Project some of these spectacular technological advances I have talked about that have come about in the last eleven and half years since the Genomes Project ended have been brought about by generous support of investigators in the private sector which is was also met by a granting program we had here that's lead to that and yet if we look around were the countries are really increasing their commitment to research and genomics research in particular it's not been out of state. And we risk seeding our lead in this area if we are not careful. If you actually look what happened to our budget over the last decade our purchasing power has basically dropped by 25%. So overall we have 25% less dollars to do our science with and we did a decade ago. And this is at a time where we should be filling up our fuel tank not starving it.

Mark Masselli: Absolutely.

Dr. Green: It is really not, really not a good situation the first outcome is we are just not making advances as quick as we could. But the second consequence is that we are scaring off the next generation because we are not convincing them that this is a value in the United States and that there is going to be opportunities for them to run their laboratories or to conduct the kinds of clinical studies that are going to be needed in the future and so it's hard to give encouraging signals to the next generation when they look at these curves and these see these trends and they say this is not going to be supported well in United --

Mark Masselli: We have been speaking with Dr. Green director of the National Human Genome Research Institute at the NIH you can learn more about their work by going to Genome.gov. Dr. Green thank you so much for joining us in Conversations on Healthcare today.

Dr. Green: Great nice talking to you.

Mark Masselli: At Conversations on Healthcare, we want our audience to be truly in the know when it comes to the facts about Healthcare 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: Ever three months we take a look at what we call Obama's Numbers a statistical record of Obama's time in office. And that now includes an update on how many have gained insurance under the Affordable Care Act the

administration says that the 60 million people have gained coverage because of the law that number is based on polling by the Gallup Organization and includes an estimated 14.1 million adults who gained coverage from October 2013, the start of the 1st open enrollment period for the AC exchanges through the beginning of March of this year. The other 2.3 million in the administration's total are young adults, age 19 to 25 who previously gained coverage after the law began requiring that insurance plan allow children to remain on their parents plan until aged 26. The national center for health statistics meanwhile estimated that only 11.9% of all Americans lacked health insurance at the time they were interviewed last year that's down from 14.4% in 2013. But it leaves an estimated 37.2 million without insurance the NCHS numbers are preliminary based on interviews conducted during the first 9 months of 2014. The Urban Institute Health Reform Monitoring Survey looks at the uninsured whose age is 18 to 64, in that age group an estimated 9.7 million gained coverage between September 2013 and December 2014 according to the quarterly survey, 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 Chcradio.com, we will have FactCheck.org's Lori Robertson check it out for you here on Conversations on Healthcare.

Each week, Conversations highlights a bright idea about how to make wellness a part of our communities and everyday lives. During the school years some 21 million American children receive free or reduced priced lunches through their schools often the healthiest meal these children eat during the school day. Yet one school is out only 10% of these children participate in the free meal programs during the summer time and studies have shown that many of these kids tend to gain significant amount of weight over the summer as a result. A group of researchers at the University of South Carolina set to tackle that issue with a program they developed called the healthy lunch box challenge. They deployed the program at a number of large community bases to summer day camps and lead researcher Dr. Michael Beats say they are relied on the simple known fact about kids they love competition.

Man: Staffers during the first snacks period what asked kids to holdup the fruits or vegetables or water that they brought and staffers would then count the number of kids that brought those items and assign them points. You get a point for a fruit or a point for vegetable point of bringing in water. And then throughout the course of the week everybody's group points are tallied and then at the end of the week on Friday when they get together to do an assembly they announce the winner of the health lunchbox challenge for that week. And so there is this comparative process.

Margaret Flinter: Dr. Beat says the simple competition and group reward system created a dramatic shift in the average camper's lunch box from Chips, cookies and sugary drinks to more fruits, vegetables and bottled waters.

Dr. Beat: We saw some pretty dramatic increases in the proportion of kids that brought fruits and vegetables and water but then in the back end, we also saw that they also reduce the things that we didn't want them to bring in without even saying please reduce these things.

Margaret Flinter: The study published in the journal of nutrition education and behaviors showed a dramatic shift in the kid's home made lunches with this really simple and inexpensive incentive program. They see this as a model for summer day camps across the country which serve some 14 million children per year often in under served areas.

Dr. Beat: In our next studies, which are going to be larger that will incorporate the healthy lunchbox challenge. We will also be tracking BMI to see if these interventions which -- if those have any perceptible effects on changes.

Margaret Flinter: The healthy lunchbox challenge, a simple competitive challenge in the reward system designed to get kids to switch out high fat, high sugar high calorie foods from their diets in favor of healthier snacks and beverages now that's a bring idea.

This is Conversations on Healthcare. I am Margaret Flinter.

Mark Masselli: And I am Mark Masselli. Peace and health.

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