Mark Masselli: This is Conversations on Health Care; I'm Mark Masselli.

Margaret Flinter: And I am Margaret Flinter.

Mark Masselli: Well Margaret the Weight of the Nation conference ended last week with some pretty dire warnings about the growing obesity epidemic in this country. They gathered thought leaders from the centre for disease control, the Institute of Medicine and the National Institute of Health. All joining scholars and public health professionals last week to explore ways to combat this rising tide of obesity.

Margaret Flinter: One of the predictions that 42% of the nation's population will be obese or overweight by 2030 unless we turn this around, not just unacceptable but really the consequences unthinkable.

Mark Masselli: There is encouraging news in tackling obesity as its becoming a public health initiative across multiple disciplines in organizations throughout health care and public policy for making improved school nutrition and priority to getting kids moving more to incentivising weight loss programs for adults.

Margaret Flinter: It's a problem that calls for public policy approach and on that note this week HBO's The Weight Of The Nation documentary series begins airing. Now that's a collaboration between HBO, the National Institute of health, the Institute of Medicine and the CDC. All organizations with the power to promote policies that can really make a difference.

Mark Masselli: You know we had the executive producer of the series on the show recently, John Hoffman. He let us know that HBO feels so strongly about this problem of obesity, they are making the multi part series available to everyone who wants to access it, not just if you are a HBO subscriber we encourage every one to gather around with their families and friends and watch this important documentary.

Margaret Flinter: Seems like everyone understands its time for holistic approach to the problem of obesity and I think this public awareness campaigns really incredibly positive first step.

Mark Masselli: And today our guest will speak to new technologies that could lead the way to discovering the genetic markers for obesity and many other health problems and creating an entire new paradigm of treatment and cures Dr. Eric Topol has been on the forefront of his own kind of healthcare revolution. Highly regarded cardiologist, Dr. Topol, has since turned his attention to the emerging disciplines of genomics and telemedicine.

Margaret Flinter: Dr. Topol is the cofounder of the West Wireless Institute which is exploring telemedicine protocols that are expected to revolutionize how

healthcare is delivered and how consumers access it. Dr. Topol's also the director of the Scripts Translation Institute which explores the world of Translational Genomics.

Mark Masselli: Dr. Topol will be talking about his published book The Creative destruction of Medicine: How the digital revolution will create better health care.

Margaret Flinter: FactCheck.org's Lori Robertson looks at statements from the White House about children being protected from loss of insurance coverage under the affordable care act.

Mark Masselli: And if you have comments you can email us at chcradio.com. We'd love to hear from you. We'll get to Dr. Topol in just a moment but first here is our producer, Marianne O'Hare, with this week's headline news.

(Music)

Marianne O'Hare: I'm Marianne O'Hare with this Headline News. Health insurers will gain one trillion dollars in new revenue over the next eight years under the 2010 healthcare law, assuming it's upheld by the Supreme Court. That according to the Bloomberg government study and insurers led by the United Health Group would keep about 174 billion or $22 billion a year for profit and administrative cost. The money comes from U.S. subsidies to people purchasing insurance beginning in 2014. While legal scholars and political pundits continue to weigh in on the affordable care act, one of its provision is about to go into effect which may gain the attention of the public who are uncertain about the AACA and what impact it might have on their lives. Insurance companies, who spend less than 80% of their budgets on actual delivery of care, will now have to start offering rebates to insurance customers. Meanwhile California's budget woes continue to deepen. Leading Governor Jerry Brown issue a budget that projects steep cuts across the board to save $6 million worth of spending. Health programs like **Medcail** will not be immune as well as health and wellness programs for women and children. Alzheimer's, the fatal form of dementia now afflicting some 5 million Americans is poised to double in numbers of those affected by the year 2050. The Institutes of Health announced two clinical trials this week that look promising. One of the studies announced uses of drug that it blocks amyloids, a protein start to cause Alzheimer's and the other study a nasal insulin spray has been shown to restore cognitive abilities in patients already afflicted with Alzheimer's. The Weight of the Nation conference last week and this week's airing on the multi-part documentary The Weight of the Nation on HBO is shining a glaring light on the growing problem of obesity with 42% of Americans expected to be obese or overweight by the year 2030. Experts in the field are issuing new directives for combating obesity beginning with the annual visit to the doctor. Experts say physicians should begin taking Body Mass Index measurements that is the ratio of fat mass to lean mass a person carries as part of a general diagnostic like blood pressure

or testing for cholesterol levels. Tracking a patient's BMI will offer clinicians a clearer picture of where the patient falls on the obesity charts and can better recommend protocols for treating the clinician before it leads to more serious health consequences. I am Marianne O'Hare with this Headline News.

(Music)

Mark Masselli: Today Margaret and I are speaking with Dr. Eric Topol, a leading proponent in use of genomics and wireless technologies to revolutionize medicine and improve health outcomes he's the Director of the Scripts Translational Science Institute and vice chair of the West Wireless Health Institute whose mission is to find effective ways to reduce healthcare cost. Dr. Topol it's a pleasure to having you on the show today.

Dr. Eric Topol: Well thanks very much for having me.

Mark Masselli: It seems we are in the frontier of a new era in medicine and you are a keynote speaker at the recent mHealth Summit and are considered as visionary and thought leader in applying emerging technologies like mobile and genomics to the practice of medicine but what's your vision for how these technologies can revolutionize health care?

Dr. Eric Topol: Yes well this is what I consider an extraordinary time, the most exciting time ever in medicine, I have been a student of its progress for almost 3 decades but I will qualify this as a veritable Kairos you know the supreme opportune moment just because we have this amazing digital infrastructure and super imposed and embodied intersect that with the medical applications of that.

Margaret Flinter: Dr. Topol, in your book 'The Creative Destruction Of Medicine', you talk about the explosion technology and entering the era of the digitized patient and I was struck by the persistent theme of individualized medicine based on individual genomics, that you see as one of the hugely promising areas. But I think it comes right when much of the health care community has just gotten comfortable with the concept of population medicine, planning and delivering health services based on understanding the data and the risks and the outcomes of groups of people or population so, these are two pretty different approaches, so how do you think health care not just medicine but public health and policies going to reconcile and embrace these two very different approaches.

Dr. Eric Topol: We have new found potential to understand each individual in a high definition granularity way we've never had before. That's the real extraordinary opportunity. That's the big difference today. You know we couldn't sequence the human genome before in a matter of hours and in an affordable way and being able to interpret it. We couldn't track any physiologic metric whether its blood pressure, glucose, any vital sign, brain wave, anything you can think of continuously remotely and image things of any part of the body you know

with hand held high resolution scanning equipments. These things in addition to health information system give us the ability to understand each person to do that for people, for persons in a new found very unique time in our lives and that's what really is the rebooting this creative destruction idea is this goes beyond in an innovative disruptive force, this is something we've never been able to do before.

Mark Masselli: You know I'm fascinated by the concept of creative destruction, I am not sure it's a term, it sounds like a Buddhist term. And you say its a necessary starting point for the transformation that a company's radical innovation. It makes the point that our world of social networking and connectivity has been dramatically altered by digital devices. But in health care, not to much, right?

Dr. Eric Topol: You know it's really so brink regarding how difficult it is to change things in the medical community. It takes 17 years is the average for you know new things to get incorporated into daily practice. So here we have this unparalleled opportunity to change medicine and the reason that I put the book together was in fact because my sense that we could do this in the medical community appears to be virtually impossible. We need the pressure to be **exuberated** from consumer activism I think. Particularly in a world where there's just this phenomenal capability of social networking to bring people together to force a change that's appropriate.

Margaret Flinter: So Dr. Topol, as you've clearly laid out the mapping of the human genome, the digitizing of the patients can radically alter the way we treat patients going for but as you know based on your clinical background how we treat patients is half the battle and how patients engage with their own care and make changes is the other half of the battle that remains one of the areas to solve, what's the interaction of patients with this whole area of genomic medicine in your experience.

Dr. Eric Topol: The first place where that really comes up is in taking medications, so what we have now is the capability for many of the most commonly prescribed drugs to find out before the drug is ever taken, the first pill, whether or it might induce a very serious side effect or whether actually it will be more work in that individual. You know that will be efficacious. So this is an opportunity for people where before they start a prescription to say to their doctor what about genotype with respect to my DNA and how it will interact with that medicine avoiding what can be very serious even fatal side effects. Let me give you one example, in the country Taiwan, you can't get a prescription for Tegretol now which is a very common used drug for many different neurologic conditions but you can't get that drug prescription unless you get a genotype because of a potentially fatal side effect which is called Stevens–Johnson syndrome where as in United States, no one gets genotypically screened.

Mark Masselli: We are speaking today with Dr. Eric Topol, world renowned cardiologist and thought leader in the area of genomics, translational medicine and wireless medicine. You have just mentioned the area of safety and certainly that's one area we like to focus in but we also like to address making health care more affordable, something you are committed to at the West Wireless Health Institute as health care cost continue to rise, how much will these technologies cost implement and how will they impact efficiency and cost?

Dr. Eric Topol: How can we turn this around where we have this technologic revolution whereas in the for the first time that it can lower cost. We have evidence of that today. At the mHealth Summit' I demonstrated actually on myself a couple of technologies for one that does your cardiogram on the phone basically for free.

Margaret Flinter: We are excited about that one.

Mark Masselli: Yes we are.

Dr. Eric Topol: And you know I do that for all my patients as a cardiologist, I don't you order cardiograms now, I just take my phone out and you know do the cardiogram on the phone and send that quickly to be deposited for the record and the same thing with an echocardiogram. I don't even listen to the heart anymore because the portable echo Vscan that I use I don't need to send patients except under unusual circumstances to get a full expensive echocardiogram. This is just part of the physical exam, it's free and so you know in terms of the cost to the patient and the cost to our overall health care burden. So these are things that I use today, that I think already demonstrate that new technology market at lower cost, I mean there are over 20 million echocardiograms done each year, and so there is at least a several billion dollars can be saved just for that one use of ultrasound technology. So the opportunity is here for a cutting cost, really I consider remarkable.

Dr. Eric Topol: Dr. Topol as you may know we devote a lot of attention with our guest, thinking about health reform as its unfolding in the United States and certainly to looking at the affordable care act and many say that the act is so deep and bulky everything is in there but the proverbial kitchen sink metaphorically speaking but it doesn't seem to me that beyond electronic health records and exchange of health care information through exchanges which vitally important developments but beyond that I don't recall so much attention devoted to some of these areas that you see is absolutely vital to quality and cost in the future genomics the digitized patients what's your take on the affordable care act relative to these areas?

Dr. Eric Topol: Well firstly everything we've been talking about was omitted from the affordable care act. There was of course some attention to health information systems and information technology, the electronic medical records. But as far

as genomic as far as wireless sensors, advanced revolution pocket miniature imaging devices those sorts of things these technologies were not incorporated. The concept of digitizing human beings wasn't even you know mentioned in that 2000 plus page.

Mark Masselli: But isn't it fair to say that in the stimulus bill there was the high tech act which provided the sort of the foundational dollars for people to go to electronic health record, so on one hand there is revolutionaries like you in terms of technology and genomics, on the another hand there are lot of eye to really simply don't have the basics of an EHR to receive the wireless transmission.

Dr. Eric Topol: You know that's right. There was a dimension the one thing on the digital medicine front that was incorporated was as you say high tech which is about electronic medical record which is going to be a slow process and it already you know planned a $40 billion to be spent on that and its not clear how much that's going to be improve but I think the other part that offered tremendous opportunities you know just going back to genomics for a moment, in cancer therapy we've already learned in a few types of cancer how knowing the driver mutation can meet to be appropriate therapy and cures likes of which we haven't seen ever before. So the question is why don't we have a national program for all patients with a new diagnosis of cancer get sequencing of their tumor, get sequencing of their native DNA and so called germline DNA, find the driver mutation and basically make a whole different look of how cancer is treated if this was done in a **wiki** collaborative way, we would be well far along and it wouldn't take nearly the types funds that have to be put in for that electronic medical health records to accomplish that task.

Mark Masselli: What's the balance here where do you see yourself falling out in terms off who's going to lead this transformation?

Dr. Eric Topol: This is a public base consumer health revolution I think that has to unfold, this not going to come from the government and certainly not going to come from the medical community but we have learned from examples of for example pharmaceutical company, direct to consumer advertising that the consumers can drive their own care and if we start getting that you know type of air of spring occupy Wall Street type movements towards health care and towards a new precise way to render care and you know move towards a whole axis of prevention which is possible when you know everything about a person that's relevant. Then I think you know we can achieve this I mean I think that was the purpose I put in the efforts to do a book just because I thought well finally may be we can actually get the activism here which is potentiated now to a level you know we've never seen. Each week there has been another article which is just amazing like one was do patients have a right to access their laboratory data?

Margaret Flinter: Right.

Dr. Eric Topol: Actually how can you even ask that question then the week before that it was do patients have a right to their genomic data? And this is really embodies the problem, is it made up if he doesn't even think that people should have right to their own DNA to their you know data something is wrong with this picture and this paternalistic 'doctor knows best' attitude we have to get over that.

Margaret Flinter: Well those are great points and we certainly had some very interesting discussions with colleagues about their right to lab data, but looks that ones been decided for everybody and the patients have that right so that's terrific.

Dr. Eric Topol: Well we are not seeing only there is only like one health system that actually makes that real **tighter** but for the most part most of them can access their lab data you know you probably saw the analyst internal notes in papers about sharing the medical chart your doctor notes and again another example why shouldn't people ask the right to access to notice why are we asking these questions.

Margaret Flinter: I noted in your book you made the point that really now is within the power of the consumer to have their genetic code map which is not something that not only the very well they can do and yeah I noted when I read that interesting but most people have not.

Marianne O'Hare: You are right at this transition to hold genome sequencing, so the question is why bother with it scan right now for a few $100 when you can have your whole genome sequence every one of the six billion letters and get a whole lot more information. So that's one part of this, the other one is that the American Medical Association and I did write about this in the book has doing everything they can to allow the government to prevent people from accessing their data and this is a problem because you know I guess we are right in this transition where its very rich opportunity to get everything you could possibly know about your own sequence DNA and patients did very well to know their genome-wide scan, 1000s of patients that we study did perfectly fine without psychological trauma but still the AMA is taking that on lobbing the FDA for people not to have their data directly but only order through a physician.

Margaret Flinter: You know Dr. Topol all this radical change also requires us to think about pretty big change in the education and training of the health professionals right and the health profession students and we know if a -- if clinical medicine and nursing the other professions **are slowly** changed the education can be even slower. What are you doing at scripts well how is your work fundamentally transforming medical education to embrace this new arena?

Dr. Eric Topol: Well we do things to educate the medical community on genomics and we have had specific programs where by for example the very commonly used drug Plavix where we got all the physicians that are involved in treating patients with Plavix educated about genotyping and so that when patients have a stent placed that they know that they are going to get genotyped the medication the regimen they get is going to be effected by that information and we were hoping soon in the new year to start another program in diabetes genomic. So that is our plan is not to try to do it all but we know with specific programs the right physicians and health care professionals are working in that to get them up to speed and to hopefully buy into a new order of medicine.

Mark Masselli: Dr. Topol when you look around the country in the world what do you see in terms of innovation and who should our listeners at conversations be keeping an eye on?

Dr. Eric Topol: There is different fronts, we are starting to see, there is movement from you know gene hunting research to now you know applying that information in practice of medicine. And then on the another hand in parallel there are similar things with the bio central movement which was in health and fitness but it is just now getting into the whole medical sphere and so we haven't seen it integrated yet. That's one of the unusual advantage points that we have in la jolla because we've got these different institutes working together, so that whole idea of this panoramic view of each individual you know there is enough of that going on yet but hopefully it will in the near future.

Margaret Flinter: Today we've been speaking with Dr. Eric Topol leading proponent in the use of genomics, Director of the Scripts Translational Science Institute and vice chair of the West Wireless Health Institute. Dr. Topol its been a pleasure to have you on the show thank you so much for joining us on Conversations.

Dr. Eric Topol: Well thanks you so much for having me.

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

Lori Robertson: Well Mark and Margaret this week we'll look at a claim from an Obama campaign film. This was the 17 minute video narrated by actor Tom Hanks and the film has high praise for the Federal Health Care Law obviously but it takes few liberties with facts. For instance it says that because of the health

care law 17 million kids could no longer be denied for preexisting conditions that implies that 70 million kids were being denied before the law but that's not the case instead that's the total number of kids in the United States according to the administration's estimate who theoretically could be denied coverage or charge more money if they were seeking coverage on the individual market and that's where families would buy insurance on there own but most kids aren't getting insurance from the individual market with or without the health care law many of these kids would be on their parents employer based plans which wouldn't deny them coverage and others would have insurance through Medicaid and CHIP. In fact the Obama administration said that up to 140,000 kids did have coverage on the individual market before the law and they had preexisting conditions. Its true that the federal law mandated that insurance companies not deny coverage to children because of preexisting condition. So the Obama campaign would be correct to say that the law added protections for kids with preexisting ailments but 17 million weren't been denied coverage before the law was passed as the campaign video implies and 17 million wouldn't be at risk of losing coverage if the law hadn't been enacted. 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'd like to check email us at chcradio.com we'll have FactCheck.org's Lori Robertson check it for you here on Conversations on Health Care.

(Music)

Margaret Flinter: Each week Conversations highlights a bright idea about how to make wellness a part of our communities and everyday lives.

Mark Masselli: The human genome was only recently fully mapped but already its changing the way scientist and the average person are thinking about their health. A few short years ago getting a personal gene mapping could cost up to a quarter of the million dollars but now with the price becoming reasonable for individuals you can have your personal genetic code unraveled to determine your potential for a variety of diseases and that has spawned a whole new crop of citizen scientist armed with their own personal genetic information to share this information and ultimately have an impact on public health. Melanie Swan founded DIYgenomics.org to provide a platform for interested citizen scientists to share their genetic data and crowdsource information that idea being that they can offer scientist preaggregated communities of patients and healthy individuals willing to share their information for research on disease identification markers and hopefully generate potential faster routes to cures and prevention. DIYgenomics.org is already conducting several studies on everything from heart disease markers to staving off dementia. Millions are expected to be participating in social health networks as the population continues to age

providing a gold mine of essential data for medical research personal genomics testing for one's own health and sharing that information with science for the betterment of public health 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.

Conversations on Health Care broadcast from the campus of Wesleyan University at WESU streaming live at WESUFM.org and brought to you by the community health centre.