

Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Diseases

Mark Masselli: This is Conversations on Healthcare, I'm Mark Masselli.

Margaret Flinter: And I'm Margaret Flinter.

Mark Masselli: Well Margaret we are seeing an accelerated response to the zika pandemic. The Center for Disease Control and Prevention has deployed teams of investigators to north-eastern Brazil, the epicenter of the outbreak of the mosquito borne virus.

Margaret Flinter: And they are really trying to determine if it is the zika virus could it be possibly be other additional causal agents that have led to the spike in babies born with microcephaly.

Mark Masselli: Teams are going to door to door interviewing women who have been exposed to zika during their pregnancy. The data needs to be collected methodically so public health officials can be armed with the best intelligence on the outbreak and the risk assessment.

Margaret Flinter: Well this is really what we call basic classic epidemiology Mark and it's got to be done but understanding the nature of these disease outbreaks and the specific outbreak is something that our guest today is quite expert on.

Mark Masselli: Dr. Anthony Fauci is the Director of the National Institute for Allergy and Infectious Disease. He led the global effort to uncover the cause of the AIDS epidemic. His department is working in concert with the CDC and the World Health Organization to get a handle on the zika virus which still has so many unknowns.

Margaret Flinter: And Lori Robertson will also check in, she is the managing editor of FactCheck.org and is always on the hunt for misstatements spoken about 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.

Mark Masselli: And as always if you have comments, please email us at chcradio@chc1.com or find us on Facebook or Twitter because we love hearing from you. Now we will get to our interview with Dr. Anthony Fauci in just a moment.

Mark Masselli: But first here's our producer Marianne O'Hare with this week's headline news.

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Marianne O'Hare: I'm Marianne O'Hare with these healthcare headlines. The World Health Organization has issued several new guidelines associated with the ongoing zika

Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Diseases

virus pandemic affecting a large swathe of South and Central America. Evidence is mounting between the link between zika infection in pregnant women and babies born with severe birth defects including but not limited to microcephaly, abnormally small head and brain development. And for anyone who travelled to the affected region being advised to avoid donating blood for at least to 28 days upon return, incidents of a neurological disorder Guillain-Barre disease is also being linked to zika exposure.

Zika is expected to exact the \$4 billion economic toll. The federal government and the insurance industry released on Tuesday an initial set of measures of physician performance that they hope will reduce the glut of conflicting metrics doctors now must report. The measures are intended to make it easier for Medicare, patients, insurers and employers to assess quality and determine pay.

America's Health Insurance Plans or AHIP which represents most insurers said it was encouraging insurers to add these into contracts it strikes and renews with doctors and hospitals. Sometimes doctors have to report multiple measures assessing the same things such as, how many patients' diabetes improved because each insurer has its own metric.

A RAND report has borne out what is long been known the military's health programs falls far short of properly addressing behavioral health issues affecting active service members, a vast majority of soldiers who get diagnosed with PTSD or depression receive at least one talk therapy session according to the study, but the system faces difficulties ensuring the patients continue with treatment either by continuing to see a psychotherapist or following up with the doctor after being prescribed medication. The RAND study examined medical records were close to 14,000 soldiers diagnosed with 1 or 2 other conditions of those about 15,000 had PTSD, 30,000 had depression and 6,000 had both. About 1 in 3 patients newly diagnosed with PTSD got the appropriate follow up care after starting treatment, the soldiers with depression less than a quarter had been completed those four visits. Meanwhile only 40% of patients who are prescribed medication followed up with their doctor afterward. I am Marianne O'Hare with these healthcare headlines.

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Mark Masselli: We are speaking today with Dr. Anthony Fauci, Director of the National Institute of Allergy and Infectious Disease at the National Institute of Health which oversees research of broad spectrum infectious diseases. Dr. Fauci served as the key advisor to the White House and The Department of Health and Human Health Services on global AIDS issue as well as the global preparedness for emerging infectious disease. He earned his medical degree from Cornell University Medical College. Dr. Fauci welcome to Conversations on Healthcare.

Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Diseases

Dr. Anthony Fauci: Good to be with you.

Mark Masselli: You know it's fair to say American know you as our expert on infectious diseases, you have made substantial contributions to the HIV AIDS research as well as other infectious diseases. But the most recent is of course the outbreak of the zika virus which is the mosquito borne pathogen that's been showing up in South and Central America. The outbreak has sparked a coordinated effort between your organization CDC and the World Health Organization and others, why is there so much concern about the zika virus and how dose it differ from other mosquito borne infections?

Dr. Anthony Fauci: Well in general the zika virus went in and affects an individual is a relatively mild infection characterized by a couple of days of fever, a rash and some conjunctivitis. However, most recently with the explosion of cases in Brazil there has been the realization that it is very very likely a strong association of infection of pregnant women with zika and the occurrence of congenital abnormalities in the fetus and newborn particularly a type of congenital abnormality called microcephaly which is a small head and brain due to either underdevelopment and/or direct damaging effect of the virus on the brain of the baby. And individuals who are not pregnant, anyone, there is now the realization that there is an increase in the incidents of the syndrome called Guillain-Barre which is autoimmune disease that attacks the peripheral nerves and can under extreme circumstances lead to difficulty in paralysis and breathing and even death. But the most important thing that's driving the concern about zika is the effect on congenital abnormalities in women who are infected during pregnancy and that's the thing that's causing a great deal of concern in South America particularly in Brazil.

Margaret Flintner: Well Dr. Fauci like so many public health threats that emerge, people are scrambling I think to learn and to understand and to know more, but a new piece of information that seems to have thrown an another big source of worry into the equation is reports of human to human transmission in uterine partner to partner, can you talk with us maybe a little bit about what are the hardest regions at the moment and how it spreads and what sort of threats does it pose to the United States?

Dr. Anthony Fauci: The hardest hit regions, South America particularly Brazil, particularly the north-eastern section of that country, but also other South American countries like Colombia and Venezuela as well as the Caribbean. Now it is spread by a mosquito bite that is the overwhelmingly predominant way that this is spread. We have seen in this country imported cases, someone who might get infected by being bitten by a mosquito then travels to the United States and gets sick so I would not be surprised if there are in the future local mini outbreaks of local transmission. Similar viruses like dengue and chikungunya which are both spread by the same type of mosquito have been in the Caribbean and South America for long time and then every once in a while you get a little cluster of a mini outbreak in the United States particularly in the south-

Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Diseases

eastern gulf coast states and we have seen small mini outbreaks of both dengue and chikungunya. They have been very well controlled by accelerating mosquito control, but we should not be surprised if we do see this little mini outbreak. There has been the description of a couple of well-documented cases of sexual transmission namely someone who got infected, came back and then infected their partner who never left the country and we don't know how often that occurs, it's doesn't look like it is a very frequent event but we do not know that. And for that reason the CDC have recommended that when man who might get infected in South America and maybe come home, that they should practice safe sex particularly pregnant woman. So if you have a wife that's pregnant or a girlfriend that's pregnant and you are a man, the recommendation is to use the correct and consistent use of condoms

On the other hands the recommendations by the CDC is that if you are a pregnant woman in the United States and you are thinking of travelling to the region and there are over 30 countries that have now been designated in the Caribbean and South America, the recommendation is that you strongly consider not travelling to that region until the situation gets clarified.

Mark Masselli: Dr. Fauci it's sort of an interesting pathway to this crisis, zika was picked up in the 40s, what happened in the development of this disease that we missed, is it, or do we have our eyes on zika earlier?

Dr. Anthony Fauci: So it's first recognized in a monkey in 1947 the first human infection was documented in Africa in 1952 and then zika kind of stayed under the radar screen. And then in 2007 there was the first really major outbreak, there was a major outbreak in the Island of Wayag [PH] in the Pacific Ocean and then over a period of few years from 2007 to 2012 and beyond it worked its way through French Polynesia and in 2015 it hits South America with a massive explosion of cases. And very likely, because the people in South America particular Brazil had never before been exposed to this zika virus so they were a population that had no background immunity, it does not like they have any major molecular or genetic change in the virus that caused it to explode this way but we are still working on trying to find out if there is anything different about the virus, to the virus that was in Asia and then across the Pacific

Margaret Flinter: Well Dr. Fauci I would like to talk for a moment about what happens in your research community in times like this. Your organization has a very robust infrastructure for mobilizing research protocols in quick response to outbreaks, you have also responded to malaria, to dengue fever, to Ebola, what has the research community learned from those experiences that inform the research approach to zika, how this global network of scientist working together on this and what the best prospects are for controlling the outbreak as well as for a viable vaccine?

Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Diseases

Dr. Anthony Fauci: Well the experience that we have had emerging infections that go all the way back you know in recent memory to HIV AIDS, few other diseases that you mentioned tell us that we need to be essentially perpetually prepared having a global health security network to be able to pick up with surveillance these infections when they occur so that they don't get out of hand and you wind up behind the eight ball as it were before you even get started. Number two, is to develop the technologies to rapidly move to develop what we call countermeasures in the form of sensitive and specific diagnostics, therapies where possible and importantly for diseases like this vaccine. And that's exactly what we are doing right now at NIH and NIAID is rapidly trying to develop a vaccine for zika and to do that as quickly as possible in the same way as we very quickly got the ball rolling and got a vaccine for Ebola when the Ebola outbreak was at its peak. So our main job right now is to get better diagnostics and that would probably not take too long.

Now the other things that one does in an outbreak like this and this is more is to do good vector control, in other words control the mosquito vector which is *Aedes aegypti*, a very very difficult to control mosquito bites all the time inside, outside, it's a very difficult mosquito. So a lot of effort has to be put into controlling the mosquito by larvicides, insecticides, getting rid of standing water where the mosquito breeds and when people are in those regions, to cover themselves and protect themselves with insect repellent. So it's really rather a comprehensive effort to address this emerging outbreak.

Mark Masselli: We are speaking today Dr. Anthony Fauci, Director of the National Institute of Allergy and Infectious Disease at the National Institute of Health since 1984. He oversees research on a broad spectrum of infectious diseases, I would like to know your thoughts on what we really need to be prepared in terms of dollars and there were some concerns earlier about the Ebola outbreak that we weren't there fast enough, but you have talked today about we need to be vigilant, we need to have surveillance, the basic science need to be in place. So specifically what's the President asking for in research, what's the larger need to really be vigilant and surveilling public health?

Dr. Anthony Fauci: With regard to zika the President in order to allow a coordinated response among multiple agencies of the US Federal Government has requested of Congress a \$1.8 billion supplement to a 2016 budget in order for us to be able to do and continue to do what we are doing right now because the monies that we have either at the NIH or the CDC or the FDA, for the most part are committed to things that are also very important. So if you are going to take this extra bit of effort which is considerable to address a serious threat like zika you are going to need more resources and for that reason President Obama has asked the Congress for this supplemental amount of money. But in the long run you have to develop a global health security network to be able to have connection among countries throughout the world with surveillance

Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Diseases

communication to be able to detect and respond as rapidly as possible to threats that are either suspected of occurring or that are completely surprised and unexpected the same way that zika was. So you have to make the long term investment both in basic and clinical biomedical research. For us that means developing better technologies for vaccines and diagnostic so that you could respond very rapidly and not have a delay of a couple of years in responding to something that is exploding in front of you the same way that zika is right now or currently. And then there is the ability to move rapidly the way we are moving right now with zika and that's the reason why the President asked for this extra money.

Margaret Flinter: Dr. Fauci you know when these things happen, they happen at the level of community and have the potential to just overwhelm, even a pretty good public health or primary care or acute care infrastructure and we have been hearing reports the incidents of Guillain-Barre maybe small but it doesn't take much to overwhelm a small hospital. And I wonder if you can comment on how the public health community can mobilize to also help support the intervention and the response at that level?

Dr. Anthony Fauci: We learned that lesson with Ebola and that is one of the important components of an adequate response is what we call sustainable infrastructure at the local level. One of the reasons was, it was that explosion of cases of Ebola in West Africa was that the medical infrastructure was barely existent. And when we had the need for identification, isolation and contact tracing it just was not there. You have to have an ongoing building up of what we call sustainable health systems so that when you get an outbreak like this the community involve can at least begin to respond and you mentioned the situation with Guillain-Barre in some of the smaller South American countries that don't have the kind of infrastructure that you need it can become very very challenging for them. And it is a challenge because we still do not have globally the kind of health systems infrastructure that are required to respond at the local level to these kinds of outbreaks.

Mark Masselli: Dr. Fauci I can just imagine Americans this summer making a run on mosquito repellent, and I am wondering, am I more worried about dengue or zika or am I more worried about mosquitoes? How do I protect myself, and I am sure there is people who are thinking about going Olympics who might not do that but for the average person what do we worry about?

Dr. Anthony Fauci: In the United States there are low-low levels of diseases like West Nile and some of the encephalitis that are spread by mosquitoes but we don't have large overwhelming outbreaks of mosquito borne diseases such as malaria and dengue and other diseases like that because of our climate and because of the fact that we have reasonably good mosquito control. But as far as we care concerned in the United States mosquitoes are more of a nuisance than anything else which you have to be

Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Diseases

concerned about is that if you are going to a region in which there is not only a lot of mosquitoes but there is a prevalence of disease like what we saw starting in 2013, there was chikungunya in the Caribbean so people who will go into the Caribbean on vacation you know have to have some concern because chikungunya was really quite a prevalent in an outbreak in the Caribbean islands. The same now with South America and that's the reason why The Centers for Disease Control and Prevention are making a strong recommendation to pregnant women that they seriously think of not traveling there right now until it gets taken care of. So depending upon where you live mosquitoes can be a little bit of a nuisance or a real threat to your health, it really depends geographically distributed.

Margaret Flinter: We have been speaking today with Dr. Anthony Fauci, Director of the National Institute for Allergy and Infectious Diseases of The National Institutes of Health. You can learn more about their work by going to nih.gov or follow their work on Twitter and all of their latest alerts @NIAID. Dr. Fauci, thank you so much for your work and for joining us on Conversations on Healthcare today.

Dr. Anthony Fauci: Good to be with you.

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

Lori Robertson: Several members of Congress have written to government officials about the zika virus outbreak in Brazil and a suspected rise there in the number of microcephaly cases. But we found some politicians overstated what's known about the outbreak.

Senator Kirsten Gillibrand claimed that, over 4,000 babies in Brazil have been born in the last year with microcephaly, that suspected case is not confirmed. As of January 29, Brazil Health Ministry reported 4,180 suspected cases of microcephaly but only 270 were confirmed. The remaining cases were either under investigation 3,448 or discarded that's 462 cases.

Senator Richard Blumenthal said those 4,000 cases in Brazil "have been linked to the outbreak of the zika virus.", but only six of the 270 confirmed babies with microcephaly had tested positive for zika. Health officials say evidence strongly suggests a link between zika and microcephaly but they also emphasize the link hasn't been scientifically confirmed.

Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Diseases

Doctors in Brazil began noticing a possible increase in microcephaly cases around August 2015, as reported by the New York Times. The zika virus likely spread to the country roughly a year earlier.

Microcephaly is normally thought of as a rare neurological condition, where an infant's head is substantially smaller than the heads of other children of the same age and sex. However, the condition often signifies a deeper problem, abnormal brain development.

There is plenty of concern among groups such as the World Health Organization and the Centers for Disease Control and Prevention. But the concern in part arises from a lack of knowledge about zika and its potential causal link to microcephaly. For more on what's known about that possible relationship and the cases in Brazil so far, see our website at FactCheck.org 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 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. Currently about two million people around the world are suffering from end stage renal disease or acute kidney failure. There are basically two options for these patients kidney transplants which are costly and severely lacking in available donor kidneys or dialysis, also costly as well as time-consuming, requiring patients to undergo blood filtering treatments at medical facilities lasting up to five hours per treatment, costing about \$90,000 per year.

A Montreal teen science project just may pave the way for another solution. Anya Pogharian, developed a portable home dialysis kit that cost about \$500 to produce far less than the \$30,000 dialysis machines currently in use. Her idea inspired by her high school internship working at a Dialysis Center in Montreal.

Anya Pogharian: Even have to make your way to the hospital which is a problem for a lot of patients, it's not necessarily easy to go three times a week to the hospital especially because maybe limited mobility.

Mark Masselli: Pogharian says hundreds of hours of research led her to build a prototype of the dialysis machine which is about the size of a typical gameboard but pumps and purifies blood just as large scale dialysis machines do. Her invention has earned her numerous awards and scholarships and the attention of one of Canada's

Dr. Anthony Fauci, Director of the National Institutes of Allergy and Infectious Diseases

key hematology labs. She hopes this device can be developed throughout the world, especially Third World countries where significant percentage of the population doesn't have access to either transplant surgery or dialysis.

Anya Pogharian: 10% of patients living in India and Pakistan who need the treatment cannot afford it or can't have it and anyway it's not accessible so that's really what motivated me to continue.

Mark Masselli: A relatively cheap, portable, easily assembled dialysis machine that could alleviate the cost and treatment hurdles of ongoing dialysis, keeping patients healthier longer, allowing them to be treated at home, now that's a bright idea.

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Margaret Flinter: This is Conversations on Healthcare, I am Margaret Flinter.

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

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