Dr. Anthony Fauci of the National Institutes of Health on emerging Coronavirus

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Female: Welcome to Conversations on Health Care with Mark Masselli and Margaret Flinter, a show where we speak to the top thought leaders in health innovation, health policy, care delivery, and the great minds who are shaping the health care of the future.

This week, Mark and Margaret speak with Dr. Anthony Fauci, Director of the National Institute for Allergy and Infectious Diseases at the National Institutes of Health. He's leading a large global team working to understand the outbreak of COVID 19 and the strain of Coronavirus that has infected tens of thousands, killed more than 2,000 and is fast approaching pandemic status. He talks about public health interventions, precautions that should be taken and development of vaccines.

Lori Robertson also checks in, Managing Editor of FactCheck.org looks at misstatements spoken about health policy in the public domain, separating the fake from the facts. We end with a bright idea that's improving health and wellbeing in everyday lives. If you have comments, please email us at chcradio@chc1.com or find us on Facebook, Twitter, or wherever you listen to podcast. You can also hear us by asking Alexa to play the program Conversations on Health Care. Now stay tuned for our interview with Dr. Anthony Fauci on Conversations on Health Care.

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Mark Masselli: We're speaking today with Dr. Anthony Fauci, Director since 1984, of the National Institute of Allergy and Infectious Diseases, the NIH division leading global research on the current outbreak of COVID-19, a new strain of Coronavirus. Dr. Fauci has advised six presidential administrations on a variety of global health issues and was the principal architect of the President's Emergency Plan for AIDS Relief or PEPFAR. He is an inaugural inductee into the government executive, Government Hall of Fame. Dr. Fauci, welcome back to Conversations on Health Care.

Dr. Anthony Fauci: Good to be with you.

Mark Masselli: Yeah, it's been a while since you've joined us in 2016 during the outbreak of Zika virus. Now you're on the frontlines of a new epidemic, which you say is fast approaching pandemic status COVID-19 a new strain of Coronavirus first identified in Wuhan, China in December, and it has spread to some 30

countries. I think past the spread of 30 countries, we had a professor from the School of Medicine at U-Penn here yesterday, and she was noting that she has two young children, a six year old and a four year old and came home and her six year old gave her a whole lecture on Coronavirus. We know it's spread past countries. It's really animated so much of the conversations around kitchen tables, and yet the scientific community has learned much about this new pathogens in really very short period of time. I wonder if you can bring our listeners up to speed how does COVID-19 compared to other infectious diseases you studied and what has you most concerned about the this pathogen?

Dr. Anthony Fauci: Well, what concerns me the most is what you mentioned just a moment ago, it really does have the potential to become a global pandemic. It transmits extremely efficiently among humans. Remember with SARS back in 2002, there were a total of about 8,000 cases over about a year and a couple of months. Right now, we're only literally less than two months into this outbreak, and we have about 10 times as many transmissions as we had in a year and a couple of months with SARS. As the makings of the ability to be able to really spread globally in a pandemic way, the mortality is about 2%, 2.5% calculated on the basis of the number of cases that get to the attention of the health care system.

But I think and most of my colleagues believe that the denominator of that is much, much larger. There are probably many fold more individuals who are either without symptoms or a minimally symptomatic and are not getting counted. The bad news about that is that there are likely many, many more infections than we realized. The somewhat good news about it is that that makes the denominator much larger, which means that the death rate is very likely not 2%, but more towards 1% or less than 1%.

Remember SARS was 9% to 10% and MERS was 36%. We're dealing with a highly transmissible brand new virus that started off in China, and 99% of what's going on is taking place in China. But we have a number, as you mentioned correctly, of travel related cases so more than 27 countries. In some of those countries, we're starting to see person to person transmissibility. This whole thing is going to turnaround on the ability of those other countries to be able to contain the travel related cases in their own country, and countries with good health care systems are clearly going to be able to do it better than countries that don't have those facilities.

Margaret Flinter: Well, Dr. Fauci, there is so much in what you just said, which is on the minds of people. I think often the comparison is made to influenza or flu when we're talking about these epidemics that occur that people are somewhat familiar with. But I think the point here that everyone is hearing is that COVID-19 is more infectious and deadlier than the flu. We worry plenty about the deadliness of flu every year on an annual basis during the flu season. We know COVID-19 can be spread while people are still without symptoms, which is a huge concern, I think, and we've certainly seen that in the densely populated city of Wuhan, and on those cruise ships which are a living example of densely populated, and it's spread rapidly there. Share with us again, what exactly do we know about the transmission of COVID-19? What do we still need to learn? What answers are you seeking, or what questions are you seeking to answer about how the disease spread so that we can better protect populations across the globe?

Dr. Anthony Fauci: Right, yeah that obviously a key question. We know for sure that people have asymptomatic infection. We also know from anecdotal reports that are solid, they're not just off-the-cuff, they're solid that there have been well documented instances of people transmitting the infection when they are asymptomatic. Now what we don't know is the full extent of what the asymptomatic transmission is to the kinetics of the outbreak. We know that it does occur, but is it a major driver of the outbreak or is still symptomatic people the major drivers?

When you look at influenza, clearly, the major driver of influenza are people who have over clearly recognizable symptoms. Right now the big unknown is that the phenomenon of asymptomatic transmission we know exist, but to what extent does it exist, because that's going to totally impact how you screen people. It's going to totally impact the scope of the outbreak so that there will be people out there who have no idea that they're infected that might be infecting other people. We need to learn that really quickly.

Mark Masselli: Dr. Fauci, other things that will learn is sort of how a country reacts. Certainly China's reaction has been quite dramatic and they've issued a strict quarantine for all of Wuhan and much of Hubei province. According to some estimates, maybe 700 million Chinese citizens are under some kind of quarantine or travel restrictions. You say this is unprecedented response and maybe help our listeners understand why these mass quarantine approaches may do more harm, and why you suggest that the classic well tried public health response of

identification, isolation and contact tracking might be more beneficial?

Dr. Anthony Fauci: Well, first of all the latter, which you said, are beneficial and more beneficial than anything else, identification, isolation, contact tracing. But an interesting thing has happened with this outbreak that is, I would say, humbled me in the following way. I'll explain what I mean, because for years before this outbreak I had been saying travel restrictions really don't help when you're in a pandemic. They may make matters worse by creating fear, by creating anxiety, by blocking off the ability to have access to resources. Well, you know, that's still true, but what we've seen here that since this outbreak was concentrated so intensely in a single country, the idea about temporarily giving travel restrictions, not permanently, not thinking that you're going to stop the outbreak. But if it could buy you time, interestingly, despite all the caveats that I and my colleagues have been saying about travel restrictions, it seems to have worked, because we have 15 people in the country who are infected, 13 were direct travelers from Wuhan, and two were the spouses of those travelers.

Now, prior to the travel restriction, something that I totally didn't realize and it kind of shook me because of the numbers, is that every day 22,000 people would come from China to the United States. If you have a hot spot like Wuhan, could you imagine how many people who were infected would have come to the United States if we didn't have the travel restriction? Even though it isn't a permanent solution, because once you get a pandemic that's diffused throughout the world, you got to throw travel restrictions out the window, because you can't restrict travel from every place in the world, that's inappropriate and non tenable. But the temporary restriction on a particular country or region that is the sole source of the outbreak, interestingly, did work this time.

Mark Masselli: That’s great.

Margaret Flinter: Well, Dr. Fauci, I really admire and respect that you're willing to say yeah might have been wrong, those preconceptions is so important that we continue to try and learn with every one of these unfortunately, recurring epidemics. But I want to get to the question maybe on the minds of people here at home. You've said that the risk of infection for COVID-19 is currently very low in the US, but it could change. CDC is conducting test in five major cities randomly testing people for both flu as well as COVID-19 with this goal of allowing epidemiologists to get a better handle on cases that might be missed or overlooked.

Tell us more about this approach. I imagine it's been done before, but I'm not aware of it. Beyond that, how should public health departments here in the US, which we have everywhere in the US, be anticipating and preparing for a buildup of their capacity to manage a response to an outbreak here, should one occur?

Dr. Anthony Fauci: Okay, so that's a great question. What the CDC is doing is what's called surveillance for undetected under the radar screen. We now, as I mentioned, have 15 individuals, actually there's an additional 14 because we brought the people over from the Diamond Princess ship and brought them here. They're in the University of Nebraska now being taken care of under containment. But if you look at it right now, we're not seeing any recognizable unexplained coronavirus infection, but the question is maybe because we're not looking for it properly. What the CDC has done, they've taken five cities, New York, LA, San Francisco, Chicago and Seattle. What they're doing is that in a surveillance way, when people come into their surveillance clinic with flu like symptoms, if they're negative for the flu, they'll get tested for Coronavirus. If you do that you'll pick up these undetected flu like illnesses that might be Coronaviruses. We're going to quickly expand that to many more cities.

If you do that, I think we'll get a good handle on whether or not we're missing these undetected Coronavirus infection. It will be really very important, because what you don't want is to have this under the radar screen and then all of a sudden, you wind up with sustained transmission in your country and you didn't realize it until it was too late, which was exactly what happened in China. Because in the early weeks of the outbreak, the Chinese were insisting that it's only animal to human. In the meanwhile, for previous three weeks there was transmission from human to human, so they didn't recognize it. Instead of doing the social distancing, and things that you would do if you were having an outbreak, they were sort of acting like there was no human to human transmission, and there really was. We want to make sure that that doesn't happen in the United States.

Mark Masselli: That's a great strategy canary in the coal mine, just making sure. We're speaking today with Dr. Anthony Fauci, Director of the National Institute of Allergy and Infectious Diseases, the division at NIH which is leading Global Research on the current outbreak of COVID-19. Dr. Fauci, your division is now overseeing thousands of scientist around the globe or collegially working with them who are researching various

aspects of this emerging pathogen. There's a high level of scientific interplay going on here. I'm wondering if you could talk about that vast network. Margaret mentioned earlier that we had these, or you did, the mathematical epidemiologists who are trying to frame up the numerator and the denominator. We've seen a number of those models. You talked a little bit about the denominator, always wonder is if the numerator is right if the denominator is wrong. But talk about those folks the genomics and folks who are doing crispers and the like and how that's changing how large scale research gets done on an event like this?

Dr. Anthony Fauci: Well, that's a great question and it really is truly team work. The idea of an individual person no matter how bright they might be, being the one that's going to solve all of this is just not the way things work. We interestingly, we have been studying Coronaviruses for some time because prior to these outbreaks, Coronavirus was accountable about 10 to 30% of all of the common colds that we get each year. We know a lot about Coronaviruses. Only in 2002, when we had SARS, we realized that it could be a deadly virus, not just a trivial common cold.

But what we're seeing now, as you mentioned quite correctly, that we have a multi disciplinary approach. We have the evolutionary biologist, we got vaccinologist because we're going to develop a vaccine. We have clinicians, we have clinical trialist, we have virologists, we have immunologists, we have a whole group of people now coming together, working together to try and solve this not only at the national level, but at an international level, because many of our colleagues who study these respiratory illnesses are in China. I mean, many of the Chinese scientists and physicians who are addressing this now in China, many of them trained right here in the United States. We've developed a collegial relationship with them over the years. It's a team effort and it's multidisciplinary.

Margaret Flinter: You know Dr. Fauci we go back a long time in terms of following your work certainly during the early days of the AIDS epidemic and onward over the last couple of decades. The Ebola epidemic when that happened we watched and in that one we watched really with such heartbreak as people to succumb to the illness and were particularly struck by how devastating it was to the health care workforce in those countries that were deeply affected. We're seeing some of that here with this epidemic, we certainly have seen just tragic stories out of China about health care workers doing a magnificent job on the front lines, doing the very best they

can, but we have seen people succumb to the virus.

Maybe talk with us a little bit, again, with your great perspective over these death decades about health care workforce preparedness to respond, and to respond with as much safety for the health care workforce as we possibly can to protect them and to make sure that they're there to take care of patients. Do you think we've made the progress with our training protocols and our drills and our preparedness to be able to really mount the appropriate response relative to our health care workforce if we were to have an epidemic like this here in the United States?

Dr. Anthony Fauci: Well, the answer is yes we have. The tragic situation in China that they felt, the number is that at least 1700 health care workers have gotten infected in China. It isn't because they're careless, they're running out of personal protective equipment and they are bravely taking care of people even without the most basic of the personal protective equipment, so that's one of the problems. They always have to reuse them when they shouldn't be reusing them.

In the United States there are certain medical centers, my own here at NIH included, in which we train and retrain ourselves periodically through the year about how to properly dawn and doff in personal protective equipment. We did that when I took care of a couple of Ebola patients in my hospital here at NIH. As soon as we found out about this COVID-19 we and I myself personally went back and retrained about how to get in and out of the most recent iterations of the personal protective equipment. We do have good training for that.

Unfortunately, in some of the countries in the developing world they don't have those kinds of resources. They are probably going to be more vulnerable to being infected as a healthcare worker than those of us who are in Washington or New York or San Francisco.

Mark Masselli: Doctor Fauci, you painted that picture of a collegial international group working on understanding and hopefully trying to develop potential vaccines for COVID-19. I understand there are a couple of dozen of entities, startups pharmaceutical companies and academic institutions who already have some vaccine candidates in the research pipeline. Can you, maybe, shed some more light on the timeline for a vaccine? I think the public would be very interested in that.

Dr. Anthony Fauci: Okay, very good. Well, there are, I would say, just almost a dozen about ten or so candidates that are at various stages of

preclinical development. The stepwise fashion of developing a vaccine, I think I could describe by a prototype that we are working on here with the NIH it's an mRNA platform, we're doing it in collaboration with a company called Moderna, but we're not the only ones by any means that are doing this. But let me show you what the timetable is.

We're projecting to go into phase one study in about two months. If you think about that from the time that we got the sequence of the virus to the time you go with the phase one, this would be the world's indoor record. It's absolutely sure, no doubt, because years ago we would have taken well over a year, a year and a half to do. We'll be in a phase one trial in about two months, which means three months from the beginning of the outbreak. It'll take about another three months to show safety and whether or not it's immunogenic.

Then we'll go to phase two trial, that will take another six to eight months to show that it works. Even though this is the fastest we've gone from sequence to phase one trial, it's still even though we're going at rocket speed, it will not be for at least a year to a year and a half at the earliest that we would have a vaccine that would be deployable. What that tells us (a) we're moving really fast but (b) the answer to the present danger is not a vaccine, it's pure public health measures, identification, isolation, contact tracing, quarantine where appropriate.

Margaret Flinter: We've been speaking today with Dr. Anthony Fauci the Director of the National Institute of Allergy and Infectious Diseases at the National Institutes of Health. Learn more about his very important work by going to www.niaidnih.gov or follow their work on Twitter @NIAIDNews. Dr. Fauci we want to thank you for the enormous contributions that you have made that you are making to understanding some of the world's biggest health challenges for your dedication to research and to improving public health and for joining us today on Conversations on Health Care.

Dr. Anthony Fauci: It's good to be with you, it's a great pleasure. Thank you.

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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 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: Democrats and Republicans are waging a war of words over the President's proposed budget and how it would affect programs for seniors. President Donald Trump tweeted that he quote, “We’ll not be touching your social security or Medicare” in the budget, while Democrats have charged it does exactly that. The budget does propose reductions in future projected Medicare spending. But experts say they are similar to last year's budget proposal which included bipartisan ideas also supported by former President Barack Obama.

On social security, the budget calls for changes to disability benefit. On Medicaid there are more significant but not well defined cut. Before we look more closely at the numbers, it's important to note that we're talking about a budget that won't actually be enacted. Any President's budget is largely a symbolic statement of priorities, not a piece of legislation on which Congress would vote. In fact, the Republican Senate Budget Committee chairman has said he won't hold a hearing on Trump's budget, just as he didn't hold one on Obama's final budget.

Senator Mike Enzi said, “Congress doesn't pay any attention to the President's budget exercise”. Back to Medicare, Trump goes too far in claiming that he's not touching Medicare in the 2021 budget. There are several proposals to reduce the growth in spending over the next 10 years by about $600 billion. But democrats, as they did last year, have spun those proposals as a flashing. Former Vice President Joe Biden said the budget, “Eviscerates Medicare. “ $600 billion over 10 years would be a 6% decrease from projected spending according to the watchdog group committee for a Responsible Federal Budget. Three of Trumps proposals, making one payment to post acute care providers instead of different payments based on site of care, reducing bad debt and equalizing site of service payments, meaning paying the same amount whether services are performed at hospital facilities or doctor’s offices are similar to Obama Administration proposals.

On social security Trump's budget proposes reductions to the disability programs but not the retirement portion totaling about $80 billion over 10 years. The savings would come from reducing retroactive benefits and benefits If more than one family member gets supplemental security income and testing methods to increase work participation.

One expert told us a proposal to restrict eligibility for disability benefits would affect Medicare as well, because qualifying for

the Social Security Disability Insurance Program is a pathway to qualifying for Medicare for those with disabilities. On Medicaid the budget is less specific on the details, but the left leaning Center on Budget and Policy Priorities estimated the reduction to Medicaid and Affordable Care Act spending over a decade at $1 trillion. Part of that would come from ending the enhanced to federal funding to states for the ACAs Medicaid expansion.

Medicaid covers long term care for seniors with low incomes and assets. One provision in the budget would change the asset test, a move that likely would cause seniors in states with high home values to either not qualify or have to sell their homes. That's my fact check for this week. I'm Lori Robertson, Managing Editor of FactCheck.org.

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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 checked, email us at chcradio.com, we'll have FactCheck.org's Lori Robertson check it out for you here on Conversations on Health Care.

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Margaret Flinter: Each week Conversations highlights a bright idea about how to make wellness a part of our communities and everyday lives. Tens of millions of people around the world have conditions that make it impossible for them to speak on their own, requiring them to adopt a computerized voice box for communicating. Perhaps the most well known of these folks is the physicist Stephen Hawking.

Stephen Hawking: I would have thought it was fairly obvious what I meant.

Margaret Flinter: The problem is that sound of Hawking speaking through his voice box is the same voice sound, say, that a 10 year old girl with a neurologic disorder might be forced to use as well, because there just haven't been many voice options on the market.

Dr. Rupa Patel: In the US alone, there are 2.5 million Americans who are unable to speak, and many of whom use computerized devices to communicate.

Margaret Flinter: At a recent TED Talks speech researcher and innovator Dr. Rupa Patel shared a program she has launched that can change that reality vocal ID.

Dr. Rupa Patel: I thought there had to be a way to reverse engineer a voice from whatever little is left over, so we decided to do exactly that. We set out to create custom crafted voices that captured their unique vocal identities.

Margaret Flinter: Creating a voice bank of donor voices that will allow voices to be individualized for each unique patient seeking to communicate through an electronic voice box.

Dr. Rupa Patel: Why don't we take the source from the person we want the voice to sound like and borrow the filter from someone about the same age and size because they can articulate speech and then mix them because when we mix them, we can get a voice as clear as our surrogate talker, and is as similar in identity to our target talker. It's that simple.

Margaret Flinter: 16,000 people have signed up to be voice donors at the human voice bank initiative. Volunteers like this little girl will read a series of simple phrases over a several hour period.

Female: Things happen in pairs. I love to sleep. The sky is blue without clouds.

Margaret Flinter: Then those phrases are matched with the voice footprint of the patient being provided for.

Female: This voice is only for me. I can't wait to use my new voice with my friends.

Margaret Flinter: Such speech synthesis will give that person the dignity of a speaking voice that is as closely matched to their own identity as possible. Dr. Patel, who's a professor of computer engineering at Northeastern University has launched the website vocalID.com.

Dr. Rupa Patel: I imagine a whole world of surrogate donors from all walks of life, different sizes, different ages coming together to give people voices that are as colorful as their personalities.

Margaret Flinter: With the Bank of voice donors now building around the world, Dr. Patel expects that patients with conditions ranging from Muscular Dystrophy to Lou Gehrig's disease or stroke will one day be given the chance to communicate in a voice may just for them. The human voice bank initiative, matching vocal donors with millions of people who seek to authentically communicate with friends and family and a voice that most closely matches what would be their own. Now that's a bright idea.

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Dr. Anthony Fauci of the National Institutes of Health on emerging Coronavirus

Mark Masselli:	You've been listening to Conversations on Health Care. I'm Mark Masselli.
Margaret Flinter:	And I'm Margaret Flinter.
Mark Masselli:	Peace and Health.
Female:	Conversations on Health Care is recorded at WESU at Wesleyan University, streaming live at www.chcradio.com, iTunes, or wherever you listen to podcasts. If you have comments, please email us at chcradio@chc1.com or find us on Facebook or Twitter. We love hearing from you. The show is brought to you by the Community Health Center.