

# In Conversation with Robert Redfield, Director of the CDC

Alison Kodjak: Thank you. I just went over briefly at a tiny fraction of what the CDC has to monitor and deal with, uh, in the United States. Can you talk just about your priorities, what it is that you are going to focus on and want to focus on considering the vast mandate that you have?

Robert Redfield: You know, I think, uh, first just to underscore, CDC is a science based data driven organization and one of the things like, uh, really also, uh, admire about it's also a service organization. I think it's important for people to see that great privilege to get the chance to lead it from a priority point of view. We really put three major priorities, ending epidemics, never thought as an infectious disease doctor that the epidemic that I'd been be confronted with was not an infectious disease, but it's really the opioid and drug use disorder epidemic really is a public health crisis of our time. Um, clearly one has to begin to continue to deal with and worry about pandemic flu, which I do think still is one of the, is the most important public health risks to this nation. In the world. The second is eliminating disease. And, uh, when science provides you the tools to eliminate disease, you got to take it off the shelf and use it.

Robert Redfield: Otherwise, I don't understand what, what it's value is. I'm reminded of Fleming discovering penicillin in 1929 and it sat on the shelf until the mid forties. You imagine how many lives would have been saved if people realize in 1930 that penicillin actually had value. It wasn't just a bread mold. We have a lot of science has been done and we continue to invest in it. Meaning we as a nation, NIH in particular the academic medical communities industry, uh, and when those, that science provides solutions that needs to be applied. So eliminating disease, really important. The targets, as you know, is the HIV infection. We have the tools to bring HIV to an end as an epidemic in the United States. Very proud of president Trump's, uh, decision to launch that initiative. And, uh, I'm confident that we'll accomplish that over the next decade. I'm sure you heard Tony [inaudible], you talk about it.

Robert Redfield: For those of you who went to some of his presentations. Um, uh, the other disease that we need to get off the shelf as you mentioned is, is vaccine preventable diseases. We need to make sure that, uh, that science is not left on the shelf for individuals or families or communities in too many communities. That has been, we'll come back and talk about that. I'm sure, uh, one of the other areas for me and who would have ever believed that we would ever have a cure, more or less a treatment for hepatitis C and Hepatitis C is now curable. And yet last year, 18,000 people died of hepatitis C in this country. So again, I think we have to figure out when science says solutions to public health problems, how do we provide the solutions and leaving them on the shelf for individuals? And the final area of focus for me is health security.

Robert Redfield: I think, uh, uh, people underestimate some people underestimate the realities that there are in terms of health security. And I think CDCs want to CDCs core function just sort of to be the tip of the spirit. How security. The last area for me is it's really remarkable that CDC has done so well for the last 70 years. But you know, there's really no investment in the core capabilities of public health. And so I've really tried to prioritize a, to get an awareness of how important it is to invest in those core capabilities. And what are the data and data analytics. We need big data. We didn't need data. What happened two years ago. We need data to tell us what's going to happen tomorrow. Predictive data analysis, very important. We need laboratory that stays updated. I was just in a discussion about our bio watch program and the Bio Watch program was launched in 2003 to look for Evan tissues agents that may come into this nation in different parts of the country.

Robert Redfield: And I was being briefed on it by homeland security, not classified. And, and I asked for the laboratory background of it cause I knew the 2003 but I wanted to see what it was now in 2019 and they said, well it's the same platform that we launched in 2003 and the gentleman that was with me, he pulled out his iPhone and he said, you know, in 2003 I didn't have one of these. And now I'm on my 10th version. We've got to invest in bringing the laboratory to public health. And finally, it's a public health workforce. We need a public health workforce. Uh, you know, this is a very exciting time for public health because I think we're about to go through a transformation in health in America where I have been part of for many years a disease system. I actually think we're on the verge of starting a health system.

Robert Redfield: And the underpinnings of that health system is public health. You know, those of you who are studying medical history know about the history of the development of public health schools with deflection and report back in, in 1929 I think it was. And there was a strong argument made if we're going to bring public health and we needed to pull it out of medical schools and develop a separate discipline, it may have been necessary. I don't know. But I'm a big advocate in, in, in 2019 we need to bring those disciplines back together. The interrelationship between medicine and public health, the opportunity now to use medical records and as public health tools. Yeah. Opportunity to get big data across this nation. So again, I think, uh, I think those are really the areas that I focus on the most start now.

Alison Kodjak: That doesn't sound like very much. Um, so I do want to get into the specifics of the HIV initiative and the measles issue. But what I just as you were describing your areas of focus is getting into two of the thorniest issues that we have have facing healthcare. One is healthcare delivery and how to get access for health care for everybody. And the second has to do with federal budgeting. If you want to expand the systems, the data, the Public Health Service corps, that requires money. And if not very there. There aren't people who are very loose with their wallets in Washington DC and so those aren't specifically science-based issues. It seems like the science might be the easy part right now. Can you

talk first about how, what role does CDC might have in improving the health care delivery so that the solutions that already exist can get to the people who need them? The

Robert Redfield: biggest thing CDC can do is provide uh, data, evidence based data, evidence based outcome data to show the impact of, of different interventions. You know, I've always said that CDC is not an opinion organization. You know, it's, it's, it's points of view and need to be grounded in data. That data's usually grounded in science. I think we do the, the nation of service when we can show evidence based data about the important health consequences and economic health consequences of, for example, bringing it into the HIV epidemic. Yeah. If you look at it right now, we're looking at 40,000 new infections per year. If we stay status quo, we'll have about 400,000 new infections in the next decade. Let's just round 2015 numbers. It's about a half a million dollars a person to treat them. That's a \$200 billion healthcare costs. It's coming. It might be to our advantage to invest, you know, some resources to divert that.

Robert Redfield: You can do the same for hepatitis. Say you can do the same for vaccine preventable diseases. So I think our role is in providing data, um, related to, um, the issue in funding. I think our role there through data is to be able to show that public health has value. And I think that really comes back to it. I would argue this is a time where we're highly under invested in public health. Um, many of you probably know that the public health dollars that CDC does get 70% of those dollars go directly out to state territorial tribal, local health departments. If you look at most states and territories, local tra, territorial local public health departments, they get over half, if not more of their public health dollars actually come from CDC. So I think it's a great investment and it's something I continue to try to advocate for that, uh, for the nation, particularly at this time when I think we're, we're a critical inflection point where as I said, we're moving from a disease system to a health system. I think this is a time, but again, those issues or you know, higher than me, uh, we try to use the resources that were allocated to the best of our ability to meet the public health mission that we have.

Alison Kodjak: Well, one of the things I hear from people who work in public health is that the only time people appreciate public health efforts is when they fail and there's a crisis. And when public health succeeds, people forget about it in defunded. Um, I dunno if you see that as a trend. Do they, when you, when you're delivering good public health care and services, the problem with don't prop don't, don't rise to the top as quickly.

Robert Redfield: I think that there's a lot of truth to that. Obviously the, the, uh, interest in having a highly effective public health response is obviously very high internal public health crisis. Um, I think it's part of the education that we continue to need to go through how important public health is to the underpinnings as we move into what I call, you know, a value based health system. I'm going to say

that a lot of that value based sell systems going to be defined on how effective your public health enterprises.

Alison Kodjak: Okay. So let's talk a little bit about vaccine hesitancy. Um, obviously you've been dealing with outbreaks across the country, um, and in, in very specific communities. How do you overcome the, um, the skepticism that has permeated some, some parts of the country, um, and some populations about vaccines and their potential dangers. And do you think mandates are the way to address the issue?

Robert Redfield: I'll start with your last part of the question first. Um, ultimately I think we have to change the hearts and minds of individuals to embrace this really important, uh, contribution to science, to the medicine and public health. Ultimately, that's that what has to happen. Um, vaccination is really one of the key tools we have, um, to eliminate disease, which you know, is one of my three, three top priorities. I will say it's the only tool we have to eradicate disease. And we've seen that with, with smallpox back in 1976 and we are in the verge, uh, to try to accomplish the same with polio. Right now as many of you know, we still have active wild type polio cases in Pakistan, Afghanistan, but, um, I do believe that in the next several years we'll be able to eradicate wild type polio and then go onto the longer journey to basically or, uh, or switch vaccines to kill vaccines and then eventually say that polio has been eradicated.

Robert Redfield: So I think it's really important from that point of view vaccine, who, who would have believed who this vaccine hesitancy was one of them most than 10 most important health threats to the world. So I think it gives you a sense of where we are with vaccine hesitancy. Uh, you were looking at the measles outbreak in our country where the last week it was 1044 cases, 28 states. This is a disease that we had eliminated in 2000. Uh, most of the individuals that have gotten in fact it have gotten infected because they were on vaccinated. Most of the them, the outbreaks really started because of individuals who've traveled. You don't think of yourself when you're taking yourself on a vacation to Italy and you might have your four month old grand's son with you that you have to worry about measles. But there's over 60,000 cases of measles and Shanda Harry in Europe, over 110,000, Ukraine, you know, over 90,000 in the DRC, over 20,000 in the Philippines, uh, over a 20,000 now down in Venezuela and Brazil.

Robert Redfield: We have a global measles outbreak. And, uh, and why do we have a global measles outbreak? Some of it is vaccine hesitancy, some of it is nations that have unfortunately a collapsed, whether Venezuela, Ukraine, et cetera. But it's a big issue. Um, you're, you, when you look at vaccine has in its, I think it's important not to lump everybody together. I think at first important in our country, 94% of parents choose to vaccinate their children. So it's, it's not widespread. 94% vaccinate their children, but there are communities where there's more than 30% of the community's not vaccinated. There's pockets and these pockets are very susceptible because then they can sustain transmission. Certain amount of herd immunity needs to be there for measles, not to be able

to transmit probably somewhere between 90, 95%. So when you get below that tipping point and you have a travel or come back from the Philippines or Ukraine or Israel as has been the case for the major outbreaks we've had in the country, in New York, uh, and state of Washington and California, uh, then you can begin to start transmission within those pockets.

Robert Redfield: Um, I think when you look at that community, who makes up most of it? I don't think it's anti vaccs people. I actually think most of the people don't vaccinate their children are the worried, well they don't want to do anything that are children that might harm them. And in order to get them to change, we can't use criticize them. We have to enter a dialogue and get people to understand that we understand their concern. Uh, but that actually the diseases that they protect are actually more concerning. And you know, I'm hoping the grandparents can get involved. We need trusted sources in those discussions. The medical community's got to spend a little time in these discussions. They just can't pontificate. You should be vaccinated and that's it. Um, so I do think, I will say from a research perspective, one of the areas we want to do is that I don't think we know exactly what works and changing the world worried well to an accept or, and we need to understand that. Then you have the group of truly misinformed people. Yeah.

Alison Kodjak: Well do you have, I mean for four we moved to the Trillium misinform the worried, well, I mean is there also a minimization of the, the dangers of measles or,

Robert Redfield: I think you're going to be, most of the people, I mean, uh, that are younger have not seen measles. Most of the people haven't seen polio. Most of the people haven't seen many of the vaccine preventable diseases, whether Pertussis, diptheria, tetanus, and this was one of the reasons I was hoping the grandparents might help out a little, you know, those people like me, I had measles, you know, uh, so, uh, I do think the lack of appreciation for the risks, they don't really understand the risk. I think that does drive. And if there's no risk, why take any risk if you're worrying? Well, and I think that's part of the dialogue we have to go through. Many people also don't think they're harming anybody by not being vaccinated. It's my choice. If you want to get vaccinated, good facts, any, but they don't realize the real group at risk is the children under what used to be the children under one.

Robert Redfield: We now recommend if people were in a, in an area of risk, if you're six months or older, you get your first measles vaccine with those children that are under six months or at real risk. And so there are people, not just people with medical illnesses that can't get vaccinated, that are at risk. Pregnant women that hadn't been vaccinated are real risks. But those of us that are newly born and under age, six months of age, we're all at risk. And it really is a, I think the more you get people to understand, it's not just about them, it has a broader issue. I think you can begin to change that, the misinformed or you think it's going to take even more time of interacting and not criticize them for their misinformation,

but understand they're just information and then get credible sources to help get them the proper information on Ford.

Robert Redfield: Unfortunately, a lot of government entities, including public health agencies like our own, that are highly trusted in public health sometimes aren't the trusted source that's going to make the change. So I do think we have to be much more aggressive. Uh, we have a portal that we have now for parents at CDC on this issue. They can get into our portal, ask a lot of questions. Um, I'm hoping ultimately that will change the hearts and minds of people. Uh, I come back to that and not leave science on the shelf for themselves. Um, I think, uh, I do think getting better data on the vaccination status, so the American public, so people have a better idea. I mean, there are some schools in this nation that have vaccines, uh, uh, status less than 50%. And you know, I think we need to begin to reverse that. I think this measles outbreak is sort of a wakeup call. Okay.

Alison Kodjak: Let's move on to HIV. And especially talking about the science, the education issues, it's, it's continues to spread, continues to expand. Um, and the president has announced this initiative, try to eliminate HIV new new cases, at least, you know, over I think the next decade. There are a few tools and one of them is, is greater sex education, ways to prevent the spread of HIV. There's prep. Um, what is it that the CDC, what is your role in promoting prevention, prevention

Robert Redfield: further spread of HIV? Well, I think it's important to emphasize that again, it's a direct consequence of science. You know, the science that has been brought to bear for HIV is really, really in my view on precedent as a clinical doctor that cared for patients in the early eighties. I, I didn't, you know, I didn't see this coming is even though for many may seem slow, uh, as quickly as it has, I mean, the patients like cared for in 1983 84, 85, uh, had less than a year survival. No, you're talking about the fact that you can now live with HIV as a chronic disease. You can live and natural lifetime or a near natural lifetime, but it goes to prevention. Even more importantly, the way an infectious disease goes from one person to another is by the, the infectious agent. And we now know that if you go on antiretroviral therapy, not only is it going to improve your health so you can now live a normal lifetime.

Robert Redfield: You really becoming capable of transmitting the virus to another person. So actually treatment is one of the most important prevention strategies that we have. And truthfully, if we can prevent, treat, diagnose and treat everyone in this country and now the treatment really has gotten very, very, very good. Um, it's really as close to bulletproof in terms of treatment failures. You can get that if everybody was diagnosed and treated and barley suppressor would be no HIV transmission. Um, now when you talk the other side of the coin, we've got prevention and in the early years all we had was behavioral messages and I think for hateful messages did what they did, they did the best they could. But now we have biological mechanisms to prevent HIV transmission. Those biological mechanisms or the ability to take a medicine pre exposure

prophylaxis. And if you take that medicine and you are exposed to HIV infection, you will not get infected.

Robert Redfield: It's very unlikely for you to get, in fact, so you've got two mechanisms now to stop transmission. I do think there's other evidence based prevention methods that have to be embraced. I'm a big advocate for safe syringe programs. Uh, those communities that have embraced them. I've seen major impacts, not just in transmission of HIV and Hepatitis C, but one of the other reasons I'm a, became a big advocate for safe syringe programs is that, uh, if you enter a safe syringe program, do you know your three to five times more likely to get treatment for your addiction? Well, we have a public health epidemic of addiction right now and I need to get people into treatment and if you do go into treatment, you're two times to three times more likely to succeed. So again, I'm, those are the methods. You know, I was very proud that governor camp and Georgia has signed the safe syringe program and hopefully, hopefully other jurisdictions will look at the data seriously and reconsider their decisions if they haven't embraced them.

Robert Redfield: I think this is really the tools we have now. We just need to apply them. We need to apply them. I will say the last thing I'll say what we're done is we've looked across the nation and there's 50 jurisdictions that make up more than 50% of all the new infections in the United States. They're all urban. Uh, so we also looked across the United States to see where rural HIV acquisitions occurring because some of the complexity, particularly with stigma is going to be different in the rural environment. We found seven, uh, states to be leading in rural acquisition. They happened all be southern states. So we've included those seven states in this concentrated effort to start the ultimate end game is the whole country. But we want to start in a concentrated way to get this done, uh, to uh, uh, to bring an end to, uh, HIV transmission.

Robert Redfield: The most important people though in the success of this program. And one of the biggest challenges that I go around in the country now to try to embrace is, is the young men and women that do get infected in the first couple of years of this initiative. We need those young men and women to come forward and have the courage to be our teachers, to tell us what didn't work. We don't need to tell them what didn't work. We need them to teach us what didn't work because we're confident that there are gaps in both treatment and prevention in the communities that people don't really understand. Some places that may be housing stable housing. So we need to, uh, if we can get the young men and women who we do become infected in the first year to be part of the solution and to help teach us how to improve it, I think we'll re edit heavily, get better, and will bring an end to new HIV acquisition in this nation, which I think will be very important.

Robert Redfield: Beyond HIV. It will show that we can invest heavily in science, make an enormous contribution in science where we had an incurable disease. Now it's not only curable, but it's preventable and we can apply it in a national level and

bringing into this epidemic. Hopefully it will be a beacon for other countries to do the same. So tell me how many women are nearly like w. W how did that work? Walk me through. Well, it's going to be important as we go through these right now, this, this initiative, the way it's going to roll out as each of the jurisdictions have been given the task to make up their own plan. This is not a Washington driven plan. This is not a department health and human service plan is not an nic DC plant. They need to come up with their plan. They know what they've been doing for the last 20 years and they know what, what's what the results are.

Robert Redfield: We need them now to come together. I say that most importantly is not just the public health officials and the medical community. I say the most important contributors to that plan or it's you know, for the community, by the community and the community because the group, we're trying to get into Karen treatment now or the group for whatever reason, decided to stay out of Karen treatment. The people we diagnosed in the last two years, over 50% of men and been infected for more than three years. Why did they stay out of the system? The same thing for the young, the individuals at risk for HIV infection. Right now, less than 20% of the people that benefit from preexposure prophylaxis or taking it. So you gotta get through and try to figure out what are the barriers to that, how to correct them, but the people who know best what they are, truthfully or not the state public health officials, not CDC director, did people know best what they are, the men and women that are in the communities that are actually affected by it.

Robert Redfield: So I do think I'd like to see the public health community look at every new infection as a sentinel event and ask those young men and women to come forward. And help teach us what didn't work for them. So, and then have them help be a beacon to teach, uh, to maybe be a better credible source to express it to back to the people that are walking in their shoes so that they now will learn how to take advantage of whatever we figure out we need to know, offer. Um, I'm very confident that, um, with the full cooperation of the young men and women in the community, that this will be a highly successful program and hopefully it will lead to the ability of other programs. I mean, one or the other ones I'd love to see launched is a, obviously a program to bring an end to hepatitis C in this nation. It's curable. HIV is, I got to treat it for life and it's going to be a near, yeah, near normal is not normal. Life of dicey is curable, but this nation is probably, at this point in time, we've probably cured less than 20%. I know my friend Bill Hazel Teens in the audience, you may want to comment, there's other nations around the world, uh, that he's worked with that are actually far ahead of the United States in terms of putting science into action when it comes to curing Hepatitis C.

Alison Kodjak: So when you talk about HIV and, um, addiction and syringes, one of the biggest contributors to getting new patients into addiction treatment has been the expansion of Medicaid in the states where it has been expanded. That's

something that the Trump administration officially opposes. What do you think about the expansion of Medicaid and have you been vocal about it?

Robert Redfield: You know, my focus is really trying to figure out how to get the public health systems to work. You know, in the AIDS initiative. I'm confident that we have the mechanism to get everybody access to care and treatment independent of insurance plan. I'm also confident that we'll be able to get everybody access to pre exposure prophylaxis independent of health insurance plan. I'm going to do my part. Huh? How do you do that? Well, there is, again, there's a variety of different mechanisms for, for HIV. Uh, people with HIV, we've had a Ryan White program in this nation for a long time, um, for people that don't have HIV but need to be prevented. That's part of what this initiative is about is how to put that structure in place, uh, both through community health services, uh, uh, units as well as working at how to provide prep directly from pharmacies, the individuals that are, uh, on, uh, uninsured.

Robert Redfield: So I think you'll see that that's the commitment to make sure we're not going to be an effective program and eliminate HIV in less. Everyone is affected, gets access to treatment and everyone who is at risk, it's access. I will do my part to continue to try to show the data with our CDC subject matter experts to jurisdictions about the advantages of safety net programs. Ultimately, those are local jurisdictions decisions, but we at least want them to see the data so they're not making that decisions based on data from 15 years ago. Um, so I think that's the role we'll continue to try to do. Uh, um, I do think the more we can get in individuals both in the state and the federal level to see that one of the best ways to improve the financial situation for health care is actually to treat and respond and eliminate those diseases that science has provided the tools for us to do and then reinvest those dollars into the next stage.

Alison Kodjak: Okay. I'm going to bring in, you know, if you have questions, I'd love to have everyone here participate in the conversation. Um, if you've raised your hand and wait for the microphone to come to you, that would be great. We have the gentleman in the blue jacket right here.

Speaker 3: Hi. Uh, Bob mentioned my name Bill Haseltine. Uh, I've had the privilege of spending time with the program in Egypt, which is controlling, actually making a systematic effort to control hepatitis C infection, um, hypertension, diabetes and obesity. And the way they did that is to create a screening program, uh, that is basically housewives and the, and no art and ordinary people train for a day to do the screening programs. Um, they've added some elements we don't think about, which is compulsory, not compulsory, but you can't get a driver's license if you haven't been screened. You can keep or have a government or military job if you haven't been screened. Now what they do is it in less than five months, they've screened the entire country, 60 million people, everybody over the age of 18 in high school students with their parent's permission, uh, for those diseases and are providing free treatment.

Speaker 3: Uh, this gets into another question. How much does that cost? All right. 50 cents for a serology test from Abbott for Hepatitis C, five \$5 for a PCR virally mic test. And somebody that costs us \$87,000 for treatment cost them \$45 for treatment, uh, for the entire nation. How they're going to do the long term treatment for hypertension and for diabetes is something that they're working out, but they're committed to do the money for that by the way, came through a World Bank loan and the energy came from, uh, their government. So there are things we can do. No other countries. What my foundation works on is taking good at the ideas like that and trying to have other countries do them. India, China where you have other diseases like TB, uh, HIV, they can be done and it can be done in a cost effective, effective way. If you get both community involvement and you get the government behind it. Okay. I think

Robert Redfield: comment on [inaudible] uh, um, what bill's comments and you continue to do great work around the world. I had a privilege to work with him many years ago. He's also an outstanding HIV scientists back then. Um, the, uh, I think one of the advantages of meetings like this, the idea meeting is, as you've heard me say, nothing would excite me more than define a path to how to have the 21st century implementation of the cure act. In other words, one science has given us the tools. Once penicillins been discovered, what's the cure for Hepatitis C has been figured out. Then we have, we need to put some bright minds together to figure out, well, how does that then get applied so that it's public health impact can do that. I don't pretend to have all the answers. It's complicated, but as bill said, there are countries that are have chosen to do it.

Robert Redfield: Egypt, I think you've also Georgia. I was recently in Georgia, the ex Soviet Union there. They've already treated a third of their hepatitis C cases, so there are ways to put science into action to do this. It is going to require people from different points of view to get together and figure out the path. Nothing would please me more to see that I'm glad our nation has invested in the 21st century cures act because we have to invest in science and more cures will come, but I will say we need to figure out the complexity of how the sea, those cures applied. Nothing hurts science more I think in the long run to see it there and Noah could work and to make sure people don't get access to that additional burden. Brings up a good point about costs.

Alison Kodjak: The cost of treatment, and you mentioned Hepatitis C, the customer, Hepatitis C treatment in this country is still a much higher than many other countries. I know their state public health officials who don't want to do comprehensive testing cause then they can't afford to treat.

Robert Redfield: Yeah, I think it's a complicated area. Obviously Secretary Asr has drug pricing is one of his key priorities, but it's a complicated area. Obviously something way over my pay grade. But I will say that there are groups that have worked to figure it out. I mean these countries, Egypt worked to figure it out. Georgia worked to figure it out. The VA has worked to be able to treat their, I think they've now cured over 85% of the Ba. So they've worked, stayed in Louisiana. I

don't know if the senators here, I saw him the other day, but it's the weight of stayed in Louisiana is working on a whole new model of trying to figure out how to bring a hepatitis C therapy to the people that wheezy Ghana. So I would encourage groups to continue to try to figure it out. You know what I mean?

Robert Redfield: Um, uh, because uh, you know, our nation has really is one of the biomedical research engines of the world. Uh, the private sector is really important in bringing some of those discoveries into products that actually impact health. I don't think we are served at all though. If we can't figure out then after that, how do we get them applied? And this is where I would come back to people like you all that are here. Okay. What's the path? I know the Louisiana is going to pilot a new path where it's, it's called a subscription model where for a certain amount of money the state of Louisiana is going to get all the drug they need to treat as many people as they decided to treat that year. So that's kind of an interesting model because now the reluctance to diagnose more, which you mentioned, it's gone away actually, the more people you bring in the the yield justify the cheaper each cost is.

Robert Redfield: So there are different models that are being tried and I think we need to look at how, you know, how do we pull down the barriers, you know, so that we can apply these advancements. And again, it's, you know, it's beyond the expertise that I have within running the CDC. I'm focused on the public health part of it. But I do think one of the areas that we help is by showing, you know, doing outcome evidence based for search and showing the economic consequences of that. And then hopefully people will see, wait a minute, you mean it's, it's more beneficial if I treat people then if I don't treat them. I did an analysis once before for the state of Maryland, 70,000 hepatitis C patients. Uh, I, if we could treat them all and you could estimate what that would cost, you know, several hundred million dollars. But the truth was there was a \$20 billion health exposure over the next 20 years if you didn't treat them. So you have to decide, and I think this is the kind of discussion that has to happen. CDC can help by providing some of that data. So policy makers can look at that data and then decide how they want to use it. Again, it's over. It's over my pay grade. I think we had two questions. Trust this lady and blend. And then first of all, thank you so much for your service and all you've done to advance health in the public domain

Speaker 4: in that regard. So much of what, uh, you know, is in the public health domain is driven by behavioral choices. And have you found the magic cure for modifying behavior, um, that can impact public health or many different behavioral magic?

Robert Redfield: Roberto such a softball. You know, I always know when someone compliments me to start that I got to get ready cause something's coming. Um, you know, I, I, um, I didn't meet him softball. Uh, uh, I, um, one of the reasons I'm excited about our ability to bring an end to the HIV epidemic as we know it in America is we're no longer solely dependent on behavior. I mean, we do have a biological tool that we can know now that it does take behavior to take the tool. So I

understand that. So there's still, there's still behavior involved. Uh, and, um, and uh, you know, I'm not, uh, I, I told you, I don't even know right now what works to make a young mother doesn't want to vaccinate their child vaccinated or child. I need, we need to learn that behavioral science really needs to really embrace science and really get into this science nitty gritty.

Robert Redfield: So we really do understand, I mean, I'm dealing with this right now in the Ebola outbreak in eastern Congo. You know, we have a whole community that doesn't trust their response. They don't trust their own government. They've been at war for over 25 years. There's at least a hundred different rebel fractions fighting each other. And we have the expanding the bull outbreak going on that. So the question is how, and Oh, 30 to 50% of the people with a bowler who gets sick figure out, they have a bullet, but they don't trust the system. So they stay at home in the first time we find out they have a bowl is when they die. How do I get people who don't trust to trust? How do I get women who don't want to vaccinate their children to change their mind? I think this is really important areas for real scientific research.

Robert Redfield: And I know right now, you know, we're looking at ourselves, we don't know, for example, the Ebola outbreak. We don't know how to convert people who don't trust the trust. We do believe you need to have trusted messengers, but then who are the trusted messengers? So I think there's important questions. I'm, I'm hopeful that the behavioral community, I mean there's a lot of new resources coming in because of the opioid epidemic. Hopefully some of those resources will be used in meaningful ways that can help us understand how do you impact individuals to embrace healthy behaviors rather than, than uh, behaviors that may cause self injury.

Speaker 4: Okay, so we're going to go right here. This gentleman

Speaker 5: in the meantime, I'm just gonna mention that they're probably men who also don't want to vaccinate their children. Oh, I, I should say parents and I will drive. It's always a learning curve. I'm learning, you know, I mean [inaudible] won't even in the job for about 15 months. So now parents who don't vaccinate their children.

Speaker 6: Hi, I'm doctor red field. I want to echo, um, ladies, thanks. And also, uh, ask a quick question about, um, data. I'm encouraged that you, um, are so bullish about gathering data. The CDC, HHS a few years ago gathered data from all of the federal agencies related to health into a single health data clearing house, which was curated by CDC. And I think there were about \$200,000 dedicated in the CDC budget to supporting that enterprise and a year or two ago for reasons that are unclear to me. Um, the clearinghouse was dissolved. The, the data are still out there. They're there now accessible through individual agencies. But I'm wondering if you, if you've, um, if you were aware of this and if you had any thoughts about trying to reconstitute that, uh, that resource, which would be terrific for the population health community.

Robert Redfield: First, I, I'm not gonna have to look into it and I will look into that a second. I would like to use it as an opportunity to reiterate how important I think it is for us to modernize our data and data analytics, not just for CDC but for the nation, for the public health. When I became CDC director, one of the first things I asked for was a briefing on the status of drug use disorder and opioids. Um, when I finished that briefing, I asked the subject matter experts to update me what the data was through. They said March, 2015 I looked at my iPhone, took it out, and they said, but it's April, 2018 and they said, but that's the most recent data we had that's curated and complete from all the different states based on who you know reported. And, and I did, and I didn't mean to be facetious when I said this, but it was very, you know, direct.

Robert Redfield: I said, when I became CDC director, I didn't realize I was becoming a medical story in, you know, that I wanted to use data in real time. Actually, I want to use data predictively. So you'll see there's a big push that I'm trying to push and others are advocating for us to get as heavy investment in new, allow us to modernize, modernize our data system, not just for CDC but obviously for the states and territories so we can have a public health system where that population based data can be available. So, um, but I'll look into the specifics of what you asked for, but I do think we've under invested and I do think the private sector is getting way ahead of us cause you know, as we moved to outcome based stuff, the private healthcare companies, let me tell you, they're starting to collect a lot of data and I think we need that same data capacity in the public health system in this nation.

Speaker 6: Um,

Speaker 7: yeah.

Speaker 8: One, one a organization that's been very involved in this discussion is the National Committee on vital health and statistics that advises the secretary of state. So that may be a place to start.

Speaker 7: Thank you.

Robert Redfield: Right back here in the brown shirt,

Speaker 8: doctor Redfield. I'll also record the thanks of a well of the previous thinkers and compliment you on your commitment to science, your bold vision, your ambitions. Very inspiring to hear you. I want to ask you about one public health threat, even in emergency that hasn't been mentioned yet and that's climate change. Thinking about the heatwaves, the severe weather events, the rise of some infectious diseases, the nutritional impacts and so on, what do you think CDC is role is both in spotlighting the health impacts of climate change and in protecting the public

Robert Redfield: first? I think there's absolutely no question that the, you know, climate and extreme climate has enormous impact on health. And you know, when I've gone around, uh, whether it's the changing tick population that we're seeing across the country, whether it's the wildfires, when I look at those firefighters are out there 26 weeks a year and I'm trying to see how often do they get pulmonary function tests. They get them twice a year once in the one they do and once in their off. I kind of would like them, like I can concussion protocol. You know, if you're out in the fire and you've lost some lung capacity, maybe you shouldn't go out next week to another fire. Uh, you know, we were down in Florida recently, you know, red tide, huge impact, uh, you know, related obviously the collar outbreaks that are happening around the world or take changes in water temperature.

Robert Redfield: So I think we have a critical role in focusing on, um, the health consequences of climate. We're not going to get into the debate of what causes it or not, but I want to look at the health consequences of what they're right in front of us. We need to do that. I'm hoping Congress gives us resources, uh, to expand that work. Um, and uh, in particular, you know, you can look at them that you can lay, you know, you can probably lay some mothers, but the ones I've laid, his ticks, you know, since 2006, we've had multiple new pathogens identified and ticks, you know, we, you know, it's not just Lyme disease. We've got lots of tick pathogens now and more to come. Uh, I do think the wildfire, a worker's health, uh, we don't need to be creating a new group of coal miners who are just trying to protect this nation from wildfires.

Robert Redfield: And I'm old. I think we need to be much more aggressive there. And I do think as I mentioned, the, the area that, uh, I talked about in terms of a red tide cholera and the water temperature. So I, I think they're broader and I think just needs to be a major effort. And then I think we need to start studying how we adapt to those things that we're not going to be able to change to make sure that they don't have the health consequences that they currently do. Can we have time for one more question? As long as it's a quick and not a short

Speaker 5: speech over here, was that directly to me? No, you can talk as long as you want to be repeatedly. Uh, the health of our population comes in comparison with those of other countries and our health of our population comes up below many other developed countries. We all know that. I would like you to list your top five reasons you believe not our health care in our hospitals, but the health of our populations is below that of other developed countries.

Robert Redfield: You know, that's a really a very good question. I think it's probably a question that requires a substantial thought in discussion from different points of view. Uh, it clearly is highly disconcerting when you look at our maternal infant mortality rates, you know, uh, uh, how, how come we don't have one of the best survival rates in the world. I, you know, and obviously we have programs now trying to understand 700 women lost their lives last year as a consequence of pregnancy and then to really understand exactly why and what could have

been done to prevent that not dimension infants. And was very excited to see some of the new strategies that people are thinking about protecting newborns against infectious disease by maybe saying, Hey, let's vaccinate the mother. So the babies who can't be vaccinated at birth, um, you know, clearly, you know, whether it's access to the care that people need or the willingness to get access to people that care they need, I don't know all the answers.

Robert Redfield: I'd be interested in having that debate of what are the top five reasons why our healthcare system is that where it needs to be? Uh, or the top 10. I think he would be, uh, a great discussion to get people from multiple points of view. And you know, I think maybe I'll add that to one of the discussions that I'll try to get others to, you know, to have and say, what do you think the top five reasons are? And then more importantly for myself as CDC directors, not what do you think, what's your opinion? What's the evidence? What's the data to support that? Those are the top five. And then then we can design interventions. What are interventions that were designed to correct it. But I think at a very, very important question,

Speaker 5: unfortunately we don't have a lot of time. We are out of time, so thank you very much. Thank you. Thank you.