

NATIONAL PRESS CLUB LUNCHEON WITH THOMAS R. FRIEDEN, M.D.

SUBJECT: MAJOR ISSUES AND HEALTH CHALLENGES

MODERATOR: ANGELA GREILING KEANE, PRESIDENT OF THE NATIONAL PRESS CLUB

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ANGELA GREILING KEANE: (Sounds gavel.) Good afternoon, and welcome to the National Press Club. My name is Angela Greiling Keane. I am a reporter for Bloomberg News and the 10th president of the National Press Club. We are the world's leading professional organization for journalists committed to our profession's future through events such as this while fostering a free press worldwide. For more information about the National Press Club, please visit our website at www.press.org. To donate to programs offered to the public through our National Press Club Journalism Institute, please visit press.org/institute.

On behalf of our members worldwide, I'd like to welcome our speaker today and those of you in our audience. Our head table includes guests of our speaker as well as working journalists who are Club members. If you hear applause in our audience, I'd also like to note that members of the general public are attending, so it's not necessarily evidence of a lack of journalistic objectivity.

I'd also like to welcome our C-SPAN and Public Radio audiences. You can follow the action today on Twitter using the hashtag NPCLunch. After our guest's speech concludes, we'll have a question and answer period. I will ask as many questions as time permits. Now it's time to introduce our head table guests. I'd ask each of you to stand briefly as your name is announced.

From your right, Charles Sniderman, medical doctor and Ph.D. and bureau chief for Audio Visual News; Marilou Donahue, President of Artistically Speaking; Jodi Schneider, Congress team leader for Bloomberg News; Susan Heavey, a health reporter

for Thomson Reuters; the Honorable David Obey, a former U.S. Congressman from Wisconsin's 7th district and currently a senior counsel at Gephardt Government Affairs.

Skipping over the podium, Doris Margolis, President of Editorial Associates and the National Press Club Speakers Committee member who organized today's lunch. Thank you for that, Doris. Skipping over our speaker for a moment, Joel Whitaker, editor and publisher of *Kane's Beverage News Daily* and Secretary of the National Press Club; James Blumenstock, Chief Program Officer for Public Health Practice for the Association of State and Territorial Health Officials; Karin Assmann, foreign correspondent for Spiegel Television; Jeff Levi, Ph.D., Executive Director of the Trust for America's Health; Anna Miller, associate editor for the *Monitor on Psychology* magazine; and Robert Weiner, national columnist, president of Weiner Public News, and a regular analyst on Main Street Radio Network. (Applause)

Our guest today has plenty to keep him awake at night. It's his job to worry about the growing threat that dangerous new pathogens pose for the health not only of Americans, but for the world population. Dr. Thomas Frieden is the Director of the Centers for Disease Control and Prevention, and one of the world's leading experts in safeguarding our health. Emerging disease threats can hitchhike rides and crisscross the globe in a day. Uncertainty looms right now as H7N9 has spread to the human population in China and the Middle East respiratory system coronavirus has emerged in the Arabian Peninsula.

Other major concerns that Dr. Frieden will address in his remarks today are highly resistant pathogens in healthcare settings, killer microbes that jump from animals to humans, and emerging bacteria and viruses. Recent findings show that five killer microbes, and counting, are resistant to all available drug treatments. And one in six Americans, or 48 million people, get sick from contaminated food every year. That costs the U.S. \$77 billion in healthcare treatment.

Dr. Frieden has been Director of the CDC since June 2009, a physician with training in internal medicine, infectious diseases, public health and epidemiology; he is especially known for his expertise in tuberculosis control. Dr. Frieden worked for the CDC from 1990 until 2002 and then led the New York City Health Department. There, he gained plaudits and criticism for his anti-smoking and anti-obesity work. While he was criticized in some corners for fostering a nanny state, his work brought demonstrable results, including cutting teen smoking in half.

Fluent in Spanish, Dr. Frieden is a graduate of Oberlin College and received both his medical degree and master's of public health, from Columbia University. He completed infectious disease training at Yale University and has published more than 200 scientific articles. His topic today is "The Cough Heard around the World: CDC and Health Security." Please join me in giving a warm National Press Club welcome to Dr. Tom Frieden, Director for the Centers for Disease Control and Prevention. (Applause)

DR. FRIEDEN: Thank you so much to all of you here at the National Press Club. Thank you Greiling Keane and the media and public for being here. I'd like to tell you about something that's happened almost exactly one year ago on the border between Uganda and the Democratic Republic of Congo. Tragically, a young child died. The child's mother carried the child to a nearby village which happened to be over the border from Uganda in DRC for the funeral. More than a hundred people came to the funeral. On the way back from the funeral, the mother became very ill and another person along with them also became very ill. The other person died, the mother was admitted to a local hospital.

The local hospital contacted a research unit that CDC has worked with for more than a decade and supported. They immediately went to the hospital, tested the woman for a particular infectious disease with a rapid dipstick that takes only 20 minutes to give a response. The woman tested positive. She was treated, but tragically she also died. Three people died within just a few days of one another. The dipstick was positive for plague, pneumonic plague, potentially highly infectious.

The plague research station in rural Uganda mobilized. It had confirmed the diagnosis within hours of hearing of the first case. They announced a treatment program, because you can prevent the progression to plague in people who've been exposed, and many people had been exposed at the funeral from the household. More than 130 people got preventive medicine within 12 hours. Within the next 24 hours, they went to every hut in the area to prevent plague by dusting with insecticides because plague is spread from rats to fleas to people.

And so this was a cough that was not heard around the world. This was an outbreak that didn't happen, and it didn't happen because of a collaboration, because of a commitment that started many years ago to work with the people of Uganda, to work with the scientists of Uganda, to work with science to develop something like a rapid test dipstick, and to figure out how you can rapidly find, stop and prevent a health problem. And that fundamentally is what we try to do at CDC, not just for plague in Uganda, but for food borne disease here, for hospital associated infection care, for many of the diseases and conditions that we are paying for but we don't have to.

Now, a disease outbreak reminds us that we're all connected by the air we breathe, that an outbreak anywhere is a risk everywhere. Now, despite that, I think there are those who believe that public health is passé, that no longer is it so relevant, both nationally or internationally. And I would provide an unfortunate exhibit one for that mistaken belief, the fact that over the past four years, about 46,000 thousand jobs have been eliminated by state and local governments in public health departments. I understand that because it was a time of contraction. But in state after state, as state budgets recover, those jobs are not yet being put back.

There may be a misconception that public health is no longer needed because we have healthcare, expansion of healthcare access. Well, public health is not healthcare for poor people. Public health is healthcare and health for everyone. There may be a

misconception that clinical medicine can take care of prevention. And while clinical medicine is crucially important, prevention in the community has for the last hundred years, and for the foreseeable future, been the best buy in promoting health. There may be a misconception that infectious diseases are over in the industrialized world. But in fact, infectious diseases continue to be, and will always be, with us. Microbes are part of our lives and if we don't come to balance with them effectively, we will continue to suffer unduly from preventable illnesses.

And there are, of course, questions about what is the role of public health in addressing things like heart disease and cancer and stroke and diabetes? Globally, there's a concern that perhaps we've crested in global commitment to public health. For all of these reasons, I think there is in some quarters a sense that public health is less and less relevant.

But I think to paraphrase Mark Twain; rumors of the death of public health are greatly exaggerated. In fact, I think that today public health is both more needed than ever, and has greater potential than ever. And I'll go through why that is the case. At CDC, we work 24/7 with boots on the ground to protect people from threats, whether they're infectious, environmental or chronic, whether they come from this country or anywhere in the world, whether they're intentional and manmade, or naturally occurring. And we do that with more than 15,000 employees, a budget of about \$13 billion, more than 2,500 staff embedded in every state in the country and more than 60 countries around the world. And wonderful staff who I feel very privileged to work with.

If you opened a medical textbook to any page randomly, you would find an expert somewhere at CDC who is one of the world's experts in that area. It's an organization that has both depth and breadth when it comes to health, healthcare, public health and promoting health.

Our goal really is fairly simple; help people live healthier, longer lives with lower healthcare costs and increased productivity. Sounds simple, not so simple in practice. I think the first thing to start with is keeping people safe. Government's first responsibility is to the safety of the people around us, is to the safety of the people within a community. If we can't do that, then we can't move on to the next level of things that government should be focusing on.

Now, again, I don't think it's rocket science. First, figure out what the problems are. Second, figure out what the solutions are. Third, implement those solutions. And fourth, see if they're working and have an iterative system to continuously monitor whether they're working and tweak them, fix them, adjust them if they're not.

When it comes to infectious diseases, we have two broad trends that are concerning. And the first is globalization. Already, a virus anywhere is just a plane ride away. Already, most of our seafood, sorry we just had a lunch of seafood, but most of our seafood-- not a lot of our cookies. The cookies are fine. They have the CDC logo on them-- but most of our seafood, most of our fruit and vegetables, which we encourage

people to eat, most of our medication supply comes from other countries. And in addition, we have three trends that lead us to what I have called a perfect storm of vulnerability.

The first trend is the cough of emerging infections. We have H7N9 influenza, we have MERS coronavirus, which is acting quite a bit like SARS. An average year, we identify one new infectious disease, MERS coronavirus is a new infectious disease identified last year. In average, they, CDC, starts one new investigation as a possible new infectious disease or environmental threat.

Now, H7N9 gives a remarkable example, both of emerging infection risk and of the value of collaboration. H7N9 influenza is a combination of various different types of influenza and when you ask a public health expert what keeps you up at night work-wise, they will say influenza. Because there's nothing that can kill as many people as influenza. In 1918, more than 50 million people around the world were killed by flu. An average year, over 10,000 people are killed by flu in this country. H7N9 influenza is a form of influenza which is highly lethal, which spreads readily from animals to people, which doesn't make the animal sick so we can't cull the flocks, for which we don't yet have an effective vaccine, though we're working hard on it. And for which we have virtually no natural immunity from prior infections.

The only thing protecting us from a global pandemic right now is the fact that it doesn't yet spread from person to person. I can't predict if that's going to happen tomorrow, in ten years or never. But when it comes to new emerging infectious diseases, the question is not whether, it's when and where.

So the first cough to mention is the cough of emerging infectious diseases. And if you think about some of those we've missed, what if we had found HIV 50 years ago and stopped it from spreading widely? What a different world we would have today.

The second cough is the cough of drug resistant tuberculosis. I worked for more than a decade in tuberculosis. In fact, I was infected by tuberculosis while volunteering in the New York City Health Department tuberculosis clinics before I implemented infection control procedures when I became the doctor there. But tuberculosis reminds us that we are all connected by the air we breathe. I remember a patient I cared for for almost two years in New York City. He came from a rural area in Kerala, a southern state of India, and he developed what we would now call extensively drug resistant TB, or XDR TB. He was very difficult to treat, though he was very willing to be treated. His disease was bad. It was so bad that we had to remove part of his lung. It was so bad that we tried experimental treatments. It was so bad that he needed an intravenous medication given to him for about a year. And we were able to do that, in part, because his wife was a nurse and so she could actually administer the medications.

And all of that 20 years ago cost over \$100,000. Today, it would cost three, four, five times that amount. Years later, I went to India where I helped the government of India and the state government of Kerala to implement a program to treat tuberculosis

that could have prevented his drug resistance for \$10. So, if we fail to stop the emergence of drug resistance anywhere, all of us are at risk all over the country. In fact, we've seen antimicrobial resistance spreading in hospitals around the U.S. One of the organisms that we've highlighted, or the types of organisms, is called CRE, or carbapenem resistant enterobacteriaceae. You have to take your infectious disease training to be able to say that. It's actually a really scary organism because it spreads from what are called gram negative organisms to other gram negative organisms, not just within one species, but between species. And it contains the resistance, not just to one antibiotic, but to multiple types of antibiotics.

So you have the reality that some strains of antibiotic resistant bacteria are spreading in long-term care facilities and hospitals widely. What's important is that the door is not yet completely open. We still have time to shut it. We can still stop the spread of many of these organisms. And by doing that, we can protect ourselves and protect others. But we're going to have to do that with a collaboration throughout the U.S. healthcare system and with collaboration globally. So first cough on emerging diseases; second cough on resistant diseases.

Third cough, sadly, on intentional diseases. We've already had anthrax used as an intentional weapon here in the U.S. I gave the example of the plague cluster in Uganda. Plague is one of the organisms that we're concerned about in terms of its potentially being used as a bio weapon. And unfortunately, the same tools that enable us to do things that we've never been able to do before to find problems, stop them and prevent them, also are available to bad guys who may be trying to create resistant, easily spreadable, highly virulent organisms and to disseminate those around this country or around the world.

Now, what do we do about this perfect storm? Find, stop, prevent; three simple concepts. Now, if you're logical, you would say, "Wait, wait, wait. It should be prevent, find, stop, right?" Because you prevent first. But actually, to go into a little bit too much wonky detail, probably, the way public health works is by trying something out, figuring something out, and then going back and using what we figured out to change practice and policy. So finding what's a problem, stopping that problem. And then based on what worked, figuring out how to prevent it more effectively. That's our approach.

So if you start with not being able to find things, we can't stop them. As an example, H1N1 influenza emerged in Mexico. We didn't expect it to emerge in Mexico and it spread there for at least a couple of months before it was recognized. In fact, it was first recognized by CDC in California. If we had known several months earlier that H1N1 had emerged, we would have started on a vaccine several months earlier. We would have better understood the range of illness it caused. A blind spot anywhere in the world, it's a risk to us everywhere in the world.

One of the things that's very exciting is our ability now to test using molecular techniques, to unlock the genomic revolution on microbes and on the human/microbe interaction. When I started at CDC as an epidemic intelligence service officer, it took months to sequence a tiny part of a genome, and then months more to try to interpret the

massive amount of data we got. Now that same type of test can be done with a tiny chip in just three hours. But we haven't yet learned. Some of that will be useful information, some of that will not be useful information. And we haven't yet learned how to do that quickly and apply it rapidly. And we're suffering for that as we try to find out breaks quickly and stop them quickly, understand how they're spreading so we can prevent them more effectively. So we haven't yet unlocked the genome on the challenges of infectious disease control.

But we have made progress. We've been expanding laboratory networks. For example, PulseNet which looks at food borne illnesses in every state in the U.S. and 80 countries around the world. We've trained disease detectives called epidemiologists to find and stop outbreaks. And we've done that not only in this country, but in more than 40 countries around the world where we've trained about 3,000 of them, 80 percent of whom stay in their home country often in positions of leadership finding and stopping outbreaks and implementing programs.

Stopping outbreaks is the next step. It's not enough to count things, we have to make sure we get less of them. So take a tale of two outbreaks. One of them, the outbreak of listeria from cantaloupes in Colorado. Happened just before Labor Day weekend two years ago. It was the Colorado Department of Health. They were alert, they realized on a Friday afternoon, and for those of you who have ever worked in public health, you know that all crises happen on Friday afternoon in public health. On a Friday afternoon, they realized that they had a big increase in listeria. They worked through the weekend. They called patients. There's no alternative, there's no replacement for shoe leather epidemiology, for finding out what people ate, where they were, what they were exposed to, who they had contact with. That's a core part of public health. They did that through the weekend. Within days, they had identified cantaloupes as the vehicle for the infection. They removed them from the shelves and they prevented dozens of deaths by doing that.

Compare that with the outbreak in the EU of E. coli, pathogenic E. coli, from sprouts. Misidentified, slowly identified. The result was billions of dollars lost to the economy, people becoming sick who didn't have to become sick. So the ability of public health to find and stop outbreaks is in everyone's best interest.

Now, China's story of H7N9 collaboration is a great example of that. Ten years ago, when SARS emerged in China, they did not handle it well. It cost the world \$30 billion to deal with SARS. And when H7N9 came about, we then had ten years of collaboration with the Chinese public health authorities to build on; ten years of trust, ten years of capacity building. And from the first hours after they identified the organism, they have been absolutely transparent. They have posted that organism's genome onto the internet. That allowed us to download it and make a diagnostic test, which we've sent out to every state, dozens of countries and used for any patient with suspected H7N9 influenza.

With that gene, we were able to begin to make a vaccine, to make seed strains, to identify challenges in making that vaccine and address those challenges so now what we

hope will be an effective vaccine is entering clinical trials. That's the harvest of ten years of collaboration, ten years of working together that allowed us to help the Chinese know how to diagnose flu, know how to set up a monitoring network, know how to sequence the genome, become members of the World Health Organization collaborating network so that they will be, in fact required, though they're willing, they required, to post that on the internet promptly when identified.

That kind of collaboration protects all of us. And, of course, prevention is what we're all about in public health. We like to see things not happen because that's a mark of success. It's the dog not barking in the night, as Sherlock Holmes described it, maybe the most significant things, the diseases that don't happen. But we still have a large unfinished prevention agenda. If you look just at the coughs that are preventable by vaccines, the pneumococcal vaccine, the pneumococcal vaccine is tremendously effective. It has driven down rates of pneumococcal disease. It has avoided a huge problem with resistance in this country and where it's been implemented. And yet, and yet, over the next ten years, if we scaled up rapidly, we can prevent four million child deaths around the world, four million kids don't have to die if this vaccine gets scaled up as we anticipate will happen with an ambitious rollout pattern. So we're very ambitious about this and we're very optimistic that it's going to happen.

Measles, we've had lots of measles cases in the U.S. This is, as Yogi Berra said, déjà vu all over again. When I started at CDC in 1990, we were in the midst of a resurgence in measles. In fact, it was my first investigation as an epidemic intelligence service officer. And we had measles all over the place. And in the U.S. over that outbreak period, we had more than 55,000 cases and more than a hundred deaths from measles. Measles is perhaps the most infectious of all of the infectious diseases. If you take, oh let's say a room with a couple hundred people in it, and there is one person coughing with measles and there are just three or four others who are susceptible, they'll probably get it. It's that infectious.

And there are still more than 400 deaths a day from measles around the world, but we can make a lot of progress, a lot more progress, against measles. And, of course, there are unfinished challenges with HIV. The cough of pneumocystis pneumonia and pneumonia. When I did my medical training in New York City from 1982 and then through my time there in TB in 1996, 15 years, 15 years of the AIDS epidemic without effective treatment, it was a terrible, terrible time where often the only thing we could do as physicians would be to help people die comfortably, and that's a terrible position to be in for patients, for families, for physicians, for the healthcare system.

The discovery of combination antiretroviral therapy has revolutionized the treatment of HIV. And the PEPFAR program, the President's Emergency Plan for AIDS Relief, has been an amazing success story around the world. There are now more than 5 ½ million people around the world alive, learning, teaching, raising kids who would be dead or dying otherwise. Earlier this year, the millionth baby was born HIV negative who would have been HIV infected if it had not been for PEPFAR. And the program has not only saved lives and turned the tide on HIV in many countries, but it's also strengthened

systems. Child survival rates are higher, immunization rates are higher, maternal mortality is lower in many of the places where PEPFAR is operating.

Sometimes, people wonder, “Why should we be involved in global health since we have so many challenges here at home?” But we can't keep Americans safe just looking at our own country. We need to make sure that we're not only protecting ourselves from diseases that can spread from elsewhere, but also learning lessons that can be learned elsewhere, sometimes more efficiently and effectively.

We're also promoting stability around the world. We're increasing economic productivity around the world and lifting all boats by having healthier communities. We're promoting the reputation of America. I'll never forget the woman I met in Nigeria who was holding twins, her twins, babies, in her hands and she said to me, “I'm HIV positive, but my babies are HIV negative because of PEPFAR. And thank the American people for me.”

And ultimately, our work in global health is so important to do because it's the right thing to do, because we're a great country and because for a very small investment, we can make a massive change in the lives of literally billions of people.

But it isn't just about infectious coughs. There's also a smoker's cough. And while there's a rumor that I approach every smoker and try to get them to quit personally, that's not quite true. (Laughter) Cab drivers sometimes. As a public health professional, it would be dereliction of duty if I didn't work to reduce tobacco use. Tobacco remains the leading preventable cause of death in this country and in the world. In fact, globally, tobacco kills more people than AIDS, tuberculosis and malaria combined. In this country, there is sometimes the misconception that tobacco is-- we dealt with that already, it's dealt with. We still have more than 45 million adults who smoke, one in five adults. We still have 440,000 deaths per year, more than a thousand deaths a day from tobacco. And tobacco is highly addictive. Most Americans who ever smoked have already quit. We are making progress. Most Americans who continue to smoke want to quit.

Yesterday, as some of you may have seen, we released the results of the first ever paid national campaign against tobacco. It was funded by the prevention fund of the Affordable Care Act. The funds are about \$50 million. That's what the tobacco industry spends in three days. But because we have truth on our side, because we have the realities on our side, it made a huge difference. Six million Americans seeing those ads talk to friends and family who try to encourage them and support them to quit smoking. Well over a million Americans made a quit attempt and by the most minimal conservative estimate possible, more than 100,000 Americans quit smoking for life.

That means tens of thousands of Americans will not die early deaths from tobacco because of that ad campaign. And that ad campaign really was a tribute to the courage of smokers who came forward and said, “I want other people to see what I'm living with as a smoker.” Eighty percent of smokers, 75 percent of nonsmokers, saw those ads and yesterday we had a media briefing and a woman, a Miss Hancock, Alicia Hancock, came

from Kentucky because she wanted to tell her story. She is someone who has smoked for 17 years starting at age 21. She had tried to quit many times, and she was watching the TV one day when her son, who's five, saw the ad with Terry Hall. Terry is a very courageous woman who's had cancer, she's had a tracheotomy and she shared in the first round of tips campaigns what it's like to get dressed when you've had a tracheotomy. And the second round of tips campaigns, she shared that one of the tragedies of her life is that her grandchildren will never hear her normal voice. And so her tip for smokers was record yourself singing the lullaby now before you sound like this.

And Alicia's son said, "Mommy, are you going to sound like that?" And because of Terry, Alicia quit smoking for good. And that kind of one to one change, that kind of evidence based intervention, because we know what works, it's just a question of investing in it. That kind of insuring that our society is structured so that if you go with the flow, you will end up healthy rather than sick. If you go with the flow, you will be able to go about your business and enjoy your life, be productive at work, not have unduly high healthcare costs. That's what prevention's all about.

And the remarkable thing about the time we're living in now is the new opportunities for progress. The advanced molecular detection that I talked about earlier, the collaboration between healthcare and public health and our ability to get the best of both worlds to reduce sick days, to reduce healthcare costs, increase productivity, to reduce disability.

I think that for the next decade, the leading challenge for public health is to strengthen the collaboration between healthcare and public health. I think this opportunity is so important because with the focus not just on expanding coverage, which is very important. More coverage means saved lives. Not just on reduced costs, because reduced cost is very important. That means that businesses and individuals can afford to do more things. But on increased quality and increased impact of prevention, we can really transform our health system. We can make a huge difference. And I would use that same three system approach of find, stop, prevent. There are so many things, so many conditions and problems that are hiding in plain sight in our healthcare system.

Nearly one in five people living with HIV doesn't know it, and yet they're in the healthcare system, most of them frequently. Most people with hepatitis C don't know it, and yet they're in the healthcare system regularly. A surprisingly high proportion of people with high blood pressure don't know it, and yet they've been in the healthcare system regularly. So, detection, finding things is the first step. Stopping things, being able to treat effectively. Right now, we don't do the kind of job we need to do overall in our healthcare system. And from the public health standpoint, we can bring the data to the table to show that.

So just to take two examples, high blood pressure; only 47 percent of Americans with high blood pressure have it under control. HIV, less than a third of Americans with HIV have their viral load suppressed. And that's despite spending a lot of money on it. And most of those people who don't have their condition under control having health. So

we need to do all three of these things; increase coverage, decrease costs, and increase quality of prevention. And prevention through vaccines, through screening, through more rational use of medications, which is increasing use for some things and decreasing use for others. These can make a huge difference, as well as the conditions that lead to health; smoke-free workplaces will reduce the number of people getting sick.

This intersection of public health and healthcare is crucial. It's two wings of a bird. It's being able to really change the health of an individual, of a family, of a community and of a country. And I think it is possible in the way that it has never been the case before.

I'll use to close one last example of healthcare associated infections. Healthcare associated infections are all too common. People go to the hospital for one thing, they get sick with something else. And each year, around 100,000 people die from hospital associated infections. Tens of billions of dollars are spent on healthcare associated infections.

Some we've made a lot of progress on. Some are down by about half in the past decade. Others, not so much. But I want to tell you a story that haunts me. When I was a medical resident in 1987, I admitted a patient to the hospital who came in with a very severe intestinal problem. He had been in the emergency department for a long time, more hours than we currently allow. He came up to the floor where I took a detailed history. I began him on treatment. And as I was getting ready to leave, I noticed that his intravenous line was just a tiny bit red. Now, he had only been in the hospital for less than 24 hours. Very unusual to have an infection of an intravenous line in less than 48 hours. But I didn't feel right about it and I tried to start an IV on him so I could remove that one.

And I tried two, three, four, five, six or maybe even seven times. And actually, I was pretty good at that. I prided myself on being the person people asked, "Could you start an IV on this person?" But I couldn't do it, his veins were collapsed and I just couldn't do it. And I said, "Well, it's been less than 24 hours. In the morning, I'll get a surgeon to come by and make an incision and we'll insert a line that way." A few hours later, he developed sepsis. He was transferred to the intensive care unit. The bacteria that grew out of his blood was the same bacteria that grew out of a tip of the intravenous line. Over the following weeks, one thing after another went wrong. His kidneys stopped working, he required ventilatory support, his intestinal problem, which is why he'd come in in the first place, got worse and worse and ultimately he died.

He was a well known jazz musician and a wonderful man. And I will never know whether if I had been able to get that line in, that intravenous line in, all of that wouldn't have happened and he would have made it out of the hospital. But there's no reason any patient needs to be put at any undue risk. And problems like that, sadly, happen tens of thousands of times each year in the U.S. still. And by collaborating and working together between public health and clinical medicine, we can drive those numbers down. We can help people live longer, healthier lives at lower healthcare cost.

And that's why we at CDC always think of the faces and the lives behind the numbers that we provide. And that's why we work 24/7 to protect Americans from threats. And thank you very much for listening. (Applause)

MS. GREILING KEANE: Thank you. Lots of questions on a wide range of topics. We'll start out with Congress. What is your biggest worry about U.S. spending on public health as Congress faces the looming budget deadline, no deal in sight and with the attention obviously elsewhere?

DR. FRIEDEN: Well, over the past few years, CDC's budget unfortunately has not done well in the budget discussions. In fact, our budget authority is the lowest it's been in a decade. We have additional programs through things like the prevention fund, but the challenge is always the challenge of prevention. The challenge is always to remind people that what is urgent is sometimes not what is most prominent or seen most readily. That in order to protect people better, in order to stop outbreaks, in order to prevent outbreaks, in order to reduce disability, we need to invest in prevention.

And our concern is given that CDC's budget is relatively small in the big scheme of things, it's easy to forget that that small part of our budget is also an incredibly cost effective part of our budget and that if we cut it, we will be putting ourselves and all of the country at greatly increased risk.

MS. GREILING KEANE: At the CDC specifically, what gaps do you see if sequestration continues? What will have to be the first things that you cut?

DR. FRIEDEN: Well, unfortunately there are things that have already been very challenging for us at CDC. So for example, we have not been able to invest in advanced molecular detection in anything like the degree to which we really should. That means that there are outbreaks happening today that we're not able to recognize, stop or prevent as effectively as we should be able to. That's one area.

A second area is in lead poisoning prevention. Lead poisoning is a serious problem. We also have a longstanding commitment to lead poisoning prevention at CDC because it was our own studies from the National Center for Health Statistics, the National Health and Nutrition Examination Survey which identified that lead poisoning was prevalent in our kids and led to the elimination of lead paint and lead gasoline. We've had a lot of progress, but unfortunately the program which had gone on for decades had essentially been dismantled and we're losing the ability to track it, to identify new sources of lead poisoning, to prevent it and to protect the next generation.

And then to support the state and local governments which have lost 46,000 jobs in recent years. Sequestration added thousands of more job losses to that. So every time someone is not there to identify an outbreak that started, to stop it promptly, or to prevent it effectively, we're putting people at risk in a way that could have been avoided.

MS. GREILING KEANE: You talked about the marriage of public health and the practice of medicine with patients. How do you see Obamacare affecting this? Will it have an effect on public health?

DR. FRIEDEN: So, there are a lot of things that the Affordable Care Act does. And I think, as with many things, if you break it down into the component parts, you'll find that there's less controversy than you might find otherwise. CDC data shows that three million kids now have health insurance coverage through their parents' plans who would not have otherwise. Six million seniors are not paying co-payments for drugs that they would be paying otherwise.

Last week, we released some really interesting data about blood pressure control in the U.S. We found that at a bare minimum, there are about 200,000 preventable deaths a year from high blood pressure and heart disease. Now, if you look over the past ten years, the rate of deaths and the number of deaths has come down quite substantially among people over the age of 65, people who have Medicare. However, for people from 40 to 64, who you might call the middle care gap because they're often uninsured, the rate came down a little bit. But because the population increased, the numbers actually didn't come down at all.

Healthcare coverage saves lives. Increasing coverage as the law provides will save lives. It will allow people to get care of high blood pressure, high cholesterol, smoking cessation treatment, that will make a huge difference. And in addition, there are many aspects of the law that reduce co-payments for preventive services, for example. It always seemed crazy to me, but we at CDC spent millions of dollars encouraging people to get mammograms, and then their co-payments, which we know reduce utilization. It just didn't make sense. So now that's no longer happening.

So there are a lot of aspects of prevention. And, of course, the prevention of public health fund without which we wouldn't have been able to do outbreak investigation or response, without which we wouldn't know critical data, without which we wouldn't have been able to run the tips campaign. So I think there are many areas where public health is in position to do even more going forward.

MS. GREILING KEANE: You mentioned the smoking study and some results from campaigns there. CDC has called for restrictions on advertising and sales of e-cigarettes. I'm hoping that you can give us more specifics on what you hope to see restriction-wise there?

DR. FRIEDEN: Well, the regulation of tobacco and e-cigarettes have been determined to be a tobacco product by the courts, is up to the FDA, the Food and Drug Administration. We released data last week that showed that there's been a doubling of e-cigarette use among middle and high school kids in one year. That's very concerning to me. In fact, we found that of middle school students who used e-cigarettes, one in five only used e-cigarettes. That means they started out with e-cigarettes. And my concern is they will go from e-cigarette use to conventional cigarette use and that we are going to be

condemning another generation of our kids to fighting a long-term addiction with nicotine.

I went on the internet a week or two ago to see what was going on with marketing of e-cigarettes. And I found that you could simply click on a button that says you're over 18 and get free samples sent to you. Because, you know, none of our teenagers know how to click on anything on the computer, right? This is really not an acceptable marketing practice. And right now, it's in an area where it may not be able to be regulated today. But no responsible company should be providing free samples like that.

MS. GREILING KEANE: We're coming up on the year anniversary of the meningitis outbreak that killed 60-some people after steroid injections for back pain. Can you tell us what lessons you took away from that investigation and what is still going on with that investigation?

DR. FRIEDEN: In fact, this morning I was with Dr. Marianne Kaner [?] at the White House where there's an event that's recognizing champions of change of whom Dr. Kaner is one. Dr. Kaner is the public health director of infectious disease and drug resistance in Tennessee. That outbreak was identified promptly because she had developed a good long-term relationship with the healthcare community. People called her when usual things happened. And they found things almost immediately. Her entire staff, every one of her staff, is funded by CDC, many of them through the Affordable Care Act's prevention fund.

Because they were able to identify that organism quickly, they were able to do the recall, warn patients, and prevent hundreds of additional cases of severe meningitis and death. So it's a lesson that emphasizes the importance of that close collaboration between public health and healthcare. However, if we had been able to do rapid sequencing, we would have been able to do even better in that outbreak. And clearly, the Congress and FDA are looking at the issue of compounding pharmacies and which of them are really manufacturers that need to be regulated in a different way.

MS. GREILING KEANE: Many health experts today say they worry that U.S. children will not outlive their parents, reversing, of course, a longstanding trend. We've heard some encouraging news recently on obesity, but concerns such as you just brought up with e-cigarettes. Do you worry about the longevity of today's youth or do you think their future is more promising?

DR. FRIEDEN: I'm optimistic. I think most things are getting better. We have a few trends that are not, and we're learning more all the time about what we can do. One of the things that we've learned in recent years is how pivotal the first few years are; getting kids off to a good start, getting women who are pregnant to be healthy, insuring that babies when they're delivered are breast fed. There are a few key interventions that can make architecturally big difference. And making sure that early on in life we get kids on the right track is going to allow us to reap dividends for an entire generation.

So I'm optimistic, but I don't think optimistic means you should ignore the threats. We have many threats to the health of our kids. We have problems of increasing drug use in some populations. We've seen the widespread abuse of prescription opiates. One of the few trends in our society that's actually getting worse, prescription opiate prescriptions have increased about fivefold in recent years and emergency department visits and deaths have increased fivefold in conjunction with that.

In addition, what we're seeing now is some kids progress from using prescription opiates to heroin. So for the first time in a generation, we're actually seeing increases in heroin use. I raise that to say that we can't be complacent. The most dangerous thing for an employee, or for an organization, is to be complacent. And one of the reasons I think CDC has been able to be a leader for decades is that we have a restlessness about saying, "How could it be better? What more could we do? How can we use the data that we're collecting to protect people even more effectively?" And certainly, there are lots of risks for our kids. Getting them more active, getting them more connected in healthy ways with their peers. All of these are real challenges that we have to address.

MS. GREILING KEANE: What about vaccines? We've seen increases in vaccine refusals in some communities. You talked about the communicableness of measles, especially in your remarks. What does CDC think needs to be done to address the increase in vaccine refusal?

DR. FRIEDEN: Well, vaccines are one of the great accomplishments of the past century. Our vaccines are preventing millions of deaths per year in this country and around the world. In fact, each year the vaccines, the routine vaccines we give in childhood, each year these prevent tens of thousands of deaths. They pay for about \$10 billion in healthcare savings, and about \$70 billion in societal savings. The ROI for vaccines in this country is about 3:1 for healthcare costs and about 10:1 for societal costs. So they're a tremendous success story.

One of the ways to deal with resistance is with data. Because sunlight is a great disinfectant. Any time you try to do something for everyone, some people are going to be suspicious about it. And so our approach to that is to be completely up front, to understand that people have concerns, to post all of the adverse events on the internet so anyone can see them. Be transparent with our data.

One of the vaccine issues that I'm quite concerned about in this country is the issue of human papilloma virus vaccination. We're currently at less than one third of the girls in this country who should be vaccinated-vaccinated. Now, the country of Rwanda is at over 85 percent in their target population. If we were at 85 percent in this country, there would be 50,000 fewer girls aged zero to twelve today who would develop cervical cancer over the course of their lifetime. And for every year we delay in getting that number up, 4,400 more girls will develop cervical cancer at some point in their lives.

We need to change this. And I'm sure we can. We've seen in many systems what works to improve the quality of healthcare. Standardization, support for clinicians, team

based care, information systems, all of these can make a huge difference in increasing vaccination rates. The greatest reason for people not being vaccinated often is that doctors haven't sufficiently made the case to them, made clear that this is a routine.

So we have seen resistance in some pockets, resistance to vaccination. But generally, what we know is that if we just change those healthcare systems and if public health and healthcare can work together to build a network of effective care for people, we can get vaccination rates up, cervical cancer cases will come down. We can increase vaccination rates and effective treatment rates.

MS. GREILING KEANE: You talked about XDR TB, which has been referred to as ebola with wings. How concerned are you that we have limited tools to fight this epidemic and no effective vaccine against pulmonary TB?

DR. FRIEDEN: Well, a vaccine against tuberculosis would, without a doubt, merit a Nobel Prize. And we do need new treatments and new diagnoses for TB. But we also need to apply what we know now more effectively. Today, there are still millions of people around the world who develop TB and are not effectively treated. Each year, there are people who contract tuberculosis in hospitals. That shouldn't happen. So even though there's a lot more that we need to learn, there's a whole lot that we know that we aren't yet doing.

We need to address both of those gaps, the gap between what we know and what we wish we knew, that's the research gap. And the gap between what we know and what we do, that's the implementation gap. And in tuberculosis control, we still have both of those gaps. But what we know is that there's TB drug resistance being created today because of ineffective treatment systems. And there's drug resistant TB being spread in hospitals and other healthcare facilities today because of lack of simple infection control measures. So we need a balanced portfolio of addressing what we can address today and working on solutions for tomorrow.

MS. GREILING KEANE: We are almost out of time, but before asking the last question I've got a couple of housekeeping matters to take care of. First of all, I'd like to remind you about our upcoming speakers. On September 17th, we have the Honorable Mary Fallin, Governor of Oklahoma, and Vice Chairwoman of the National Governors Association. On September 26th, we have New Orleans Mayor Mitch Landrieu and Philadelphia Mayor Michael Nutter. And on November 11th, we have Walt Bettinger, President and CEO of the Charles Schwab Corporation.

Second, I would like to present our guest with the traditional National Press Club coffee mug. There you go.

DR. FRIEDEN: Thank you.

MS. GREILING KEANE: You're welcome. (Applause) And you talked about how influenza is the answer that will usually be given if you ask a public health expert what keeps him or her up at night. I want to know, how do you sleep at night?

DR. FRIEDEN: Well, I sleep very well at night, in general, because we have so many terrific staff at CDC. We have literally thousands of people who have dedicated their lives to public health; people who sometimes literally live and breathe the work that they do. Thousands of people who if you bump into them, you or I bump into them in a hallway or an elevator and ask them what they do, their eyes light up and they tell you what they do and why it is the single most important thing that CDC does.

And it is that confidence that not only do we have those people at CDC but throughout the healthcare and public health enterprise throughout this country, state and local governments, countries around the world, that I sleep well. And getting regular exercise helps, too.

MS. GREILING KEANE: How about a round of applause? (Applause) Thank you, Dr. Frieden, and thank you all for coming today. I'd also like to thank our National Press Club staff including its Journalism Institute and Broadcast Center for helping organize today's event. Finally, here's a reminder that you can find more information about the National Press Club online and if you'd like a copy of today's program, you can also find that on our website at www.press.org. Thank you, we are adjourned. (Sounds gavel.)

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