

Hero Award

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[Dr. William Foege] We're all used to the expression that it's easier to ask for forgiveness than for permission but how early does that actually start in life? Our two-year-old granddaughter was staying at our place. She awoke one morning, I went to pick her up and we played for a while, but, as with all of the grandchildren, they continue to ask for Grandma. And I said "Well, she's asleep," but I was asked so often I said, "Let's go to the door of the bedroom. If the radio's on, it means she's awake and we can go in. If the radio's not on, we'll play some more and then try again later." When we went to the door, my granddaughter kept saying "Shhh, be quiet." We got to the door and suddenly, with no warning, she knocked on the door and simultaneously turned to me and said "Sorry."

Now I intend to talk about CDC and if you wanted to hear something else, I'm now saying sorry. So thanks for such a nice day. It's been said that there's no harm in predicting the future unless you start to believe it. Well there's no harm in receiving awards unless you start believing the things people say. The 'imposters syndrome' continues to be real for me, but years ago I said to Bill Watson, "It's very bothersome to have all of these people at CDC doing things and then I get the credit," and Bill said, "Don't worry. Someone's gonna mess up and you're gonna take the blame and it'll all even out."

And that's never happened; I mean that's never happened. I'm speaking at CDC on the 26th, the Joe Mountain lecture, and so I was concerned with what do I say at the two talks and I decided to give one talk, and I'll just divide it up. In both of them I'm going to talk about what CDC means to the world, but also what are some of the challenges. Today I want to talk about some generic challenges; on the 26th, some very specific challenges.

There's a tendency when you think about CDC to think of the headlines: smallpox, malaria, swine flu, legionnaires, and so forth. But newspaper inches do not measure the importance of a subject. If so, you would see that horoscopes are, in some newspapers, more important than science. But if you go back to 1938 and look at all of the inches of print in all of the newspapers in 1938 the number four topic was Mussolini, number three was Hitler, number two was Franklin Roosevelt, number one was Seabiscuit. You get the picture. The inches can't tell you what the real contribution is.

What's the greatest medical scientific improvement of the 20th century? Well, I believe it's not found in a vaccine or an antibiotic. I believe it's found in the increasing life expectancy of the average American of seven hours a day for every day of the 20th century. And when you first hear that, you might say it can't be true. I know you might think that because the very first time I ever used this in a talk, shortly after I'd figured it out, my boss, Ed Branch, was in the audience; he was the Assistant Secretary for Health, he had an MD degree, he had a Theology degree and he had a PhD in Biostatistics, and he stood up in the middle of my talk and said "that can't be true," and then he sat down. You can imagine what that does... At the conclusion of the talk, though, he got up and he apologized to everyone. He said "when I heard that, it so astounded me

I didn't think it could be true, and I had to figure it out for myself. Now I know it's not true. It's really seven hours and six minutes."

Now some people, of course, get more than that. Frank Buckles died this year at the age of 108. The last survivor of the First World War, and he was asked for his secret of old age, and he said "When you start to die, don't."

The seven hour average is the result, not of a single vaccine, an antibiotic, or a single intervention. It's the result of hundreds of millions of decisions made every day by hundreds of millions of people. It's the result of people deciding to stop smoking, to modify their diet, to exercise, to wear seatbelts, to wear helmets on motorcycles and bikes and while skiing. If you're in the health profession, it's reducing the chances of getting an infection in the hospital. It's the decision to use sunblock, to drink fluoridated water, to use iodine salt, to have children immunized, to take flu vaccines, on and on and on. It's all of these decisions.

And speaking of exercise, less than a month ago, Larry Gelbart died at age 81. Some of you know he helped create the program, *M*A*S*H*. He was a very funny man, and last year a false rumor circulated that he had already died. And when he heard that rumor, he didn't use the usual comment, but he said "Does that mean I can stop exercising?"

But of course, it could be better than seven hours a day, as a sizable group still smokes, obesity stalks the land, exercise resolutions are forgotten, and immunization rates go down in some areas. And yet an improvement in longevity has been achieved, and it is not by accident. It's due to decisions based on science, promulgated by CDC and others, available to everyone, even if they have no scientific background or interest, and in many ways, CDC became the interpreter of science for the masses. And it is this effective interpretation that marks CDC and the last century.

On December 8th, 1994, the New York Times had an article on James Thurber. It was 100 years since his birth. And in the article, they talk about a reception one night, where a woman came up, introduced herself as an American living in Paris, and she said "They now have your columns in the French newspapers," and she said "I think they're even funnier in French." And James Thurber said "Yes, they tend to lose something in the original."

Medical science loses something in the original and CDC translates the findings into action for the good of the public. It's just a wonderful concept. So the CDC story is a story of spectacular events and stories but overshadowed by a story of non-events - the polio cases avoided, the measles deaths unrealized, the food poisoning averted, the lung cancers not occurring - and whatever the category of employees, we—and I use the word 'we' because my observation is no one ever leaves CDC; CDC people go to work for other agencies, but they continue throughout life to be CDC employees—so 'we' consume science. It's the gold standard for our beliefs, but we deliver that science by using the humanities and art and management, and I've repeatedly said to employees and to students that they should love science, absolutely love it, but don't worship it. There's something better than science and that is science with a moral compass, science that contributes to social equity, and science in the service of humanity.

This required CDC to become a cutting-edge institution for science, and through the years it's demonstrated its uncanny ability to attract and hold extraordinary people; people in over 150 different job categories, including scientists and physicians and public health advisors, but also many, many more. And do understand the significance of science: science is not truth, but it is a way of seeking truth.

Alan Alda has bemoaned the fact in his recent book entitled *Things I Overheard While Talking to Myself* that for some people, science is just another belief, and he says it should be more than that. It's a way of finding truth, and we need to accord it that importance. We still have so far to go in this country and the globe to reach equity in applying that truth. It was once said by Mayor Dinkins that we still have far too many children who reach the sunset of their opportunities at the dawn of their existence. We want to avoid lives that are compromised by ill health or lack of opportunity. It takes science plus art and the humanities. C.B. Snow is remembered for saying that the gulf between science and the humanities would never be bridged; CDC bridges that gulf every day. How? Well, if we use Huxley's definition for science, and he said "Science is simply common sense at its best," and if we add to that the creativity of art, then we have creative common sense at its best and that's what underpins the work at CDC. Quality is never an accident.

Creativity, by the way, has some parallels with humor. Humor brings two or more boxes of knowledge together in a new way. But it's interesting, people have to know both boxes of knowledge or it doesn't turn out to be funny. Once you have to explain one box of knowledge, there's no humor in it. So, when Henny Youngman says, "My grandmother's over 80 and still doesn't need glasses," you listen to that, and then he adds, "She drinks right out of the bottle." So you have two images and then he brings that together to provide humor. CDC does the same thing by bringing together known knowledge, but in two different boxes, together for creativity. I do not like the phrase, "Thinking outside the box"; that's not what we do. We think, instead, inside of two boxes - known information put together in an unanticipated way. And we've all experience that and we think of it as insight. When I saw the movie *Doubt*, what went through my mind was, "Isn't that interesting. I've never thought of this before in my mind. I've always been so careful, over the years, to make sure that there's a person in the room when examining a girl or a woman." It's never even occurred to me, until I saw the movie, that I should have done the same thing when examining boys and men. So - knowledge coming together in a new way.

And just as this remarkable gift of seven hours a day is the result, not of a single breakthrough, but rather a collection of factors, so is everything we accomplish at CDC a collection of people and skills and interests. There's no way for any one person to take credit or be given credit, even for an award where the product of countless coalitions, the coalition of historical events that has led to the tools, the philosophy, the programs of today. If we were smart enough we could actually trace back the steps that lead to every tool, philosophy, and program. And the reason to study history is not so that we won't make mistakes. There are too many mistakes to be made. We will still make mistakes. The reason to understand history is to actually come to the conclusion that this is true, that there are logical steps for everything we have today, because once you believe that, then you become convinced that everything you do today is significant because it will go on forever.

The creation of the CDC foundation is one of those events. It filled a need, it will forever change the capacity of CDC to explore new areas. It's more than just history. We are all the products of schools that involve taxation and teachers who went through the wisdom of the ages to bring the kernels to you. We're the result of the schools and taxes and parent-teacher organizations and all kinds of things, all for our benefit, and every professional activity in public health involves countless coalitions. I've said for years that the health leaders of today are not determined by titles, but by the people who are able to bring together a coalition and make it productive. It requires knowing where the last mile is, and a definite last mile in such things as eradication, but a last mile for immunization might be a system because we haven't vaccinated the first person who will be born next month, and so we have to have a pristine system in order to do that. It requires surveillance systems which, like poems, are never finished - surveillance systems that continue to change as they try to understand truth. And it requires mentors, for guidance, for ideas, for renewal. As Schweitzer once said, "At times our own light goes out and is rekindled by a spark from another person. Each of us has cause to think with deep gratitude of those who have lighted the flame within us."

I was recently in India, to talk about the lessons of smallpox eradication for other health programs, and the number one lesson is that smallpox eradication did not happen by chance. It was the product of deliberate visions, objectives, plans, actions, evaluation, and collaborative efforts. CDC did not happen by chance, and if you don't know the history, it's worth reading up on it. We talked a little bit about this at lunch today; reducing malaria in troops being trained for World War II, and then a decision to use that core for a communicable disease center. The EIS program, which was developed in order to protect us from biological warfare, but which not only trained young people but improved CDC in order to make it able to supervise those people. The development of surveillance systems. I was in high school before the United States had its first surveillance system, nationally, for any disease, and that was for malaria and was found that malaria had quietly disappeared and no one knew about it. It was seven more years before the next surveillance system, which was for flu, 1957. And so, the surveillance systems have developed very recently.

The history of CDC suggests no limits to what we might do. Michael Jordan was recently inducted into the Basketball Hall of Fame and he said, "Limits, like fears, are often just an illusion." We have no limits. For all the positives, we will have challenges and let me mention four generic challenges. Number one is seeing the world whole. Someone has said that the definition of genius is the ability to see your field whole. That means in breadth, in retrospect, and forward. A few examples: Roger Bacon was asked 700 years ago to summarize science for the Pope. He spent over a year doing his summary, and when he was finished, he was unhappy. It was far too long. He then did a summary of the summary and finally a summary of the summary of the summary, and when he sent it to the Pope, and it's been years since I've looked at this, there were three things that stood out. Number one, he made the point that science is unbelievably exciting, and he predicted 700 years ago, airplanes, submarines, telescopes. Number two, he said science has no moral compass. And number three, he said the Church has provided no guidance. Now I have said to people before that the fact the he suffered no consequences tells me the Pope never actually read the summary. But if he would come back today, he would indict all of us—the Church, government, universities—for not providing the moral compass for science. So his observations are still accurate. And what's the evidence that

we don't provide a moral compass? Well, I'll rest my case on one thing. Many things have gone awry, but if one looks at our national health system, you immediately get the point that we've lacked a moral compass. That's all I'm going to say on it but I'm going to talk about this on October 26th.

Number two, Stephen Hawking, who in *A Short History of Time* gives us a picture of the universe, the history, and looks forward. A genius, he understands his whole field. E.O. Wilson, Harvard biologist, he's written a book called *Consilience*, and he defines concilience as "the jumping together of knowledge." And you read that book and you realize this man is a genius. Can it be taught? Someone.

My first test in medical school—you will remember how much fear and anxiety was involved with that first test as you'd study far into the night and all the details and we'd go in, and there's one question, "What is life?". And I felt cheated at first, cause I had so many parts of life in my mind, but "What is life?". And it's worth asking yourself repeatedly how you answer these big questions, for your own life and for public health. And what you learn is that it forces you to be a generalist and a specialist simultaneously - a generalist to try to see the big picture and a specialist to know where you fit in. And it means seeing numerators and denominators at the same time and, as we heard before, it means seeing faces in those numerators and denominators.

Dave Sencer, Karl Western, and I were once asked to brief Henry Kissinger during the Nigerian civil war on what was happening with malnutrition, and he was late in seeing us and I thought we would get the bum's rush and be sent out. No, he listened. And when we had finished, he sat down, rubbed his eyes, and he said something I never expected from that man. He said "For me, these are numbers. For you, they must be faces." And that's what we have to keep in mind, to see faces in the numerators and denominators.

Another generic challenge - to think forward. It's so hard, when you're faced with things like H1N1, to actually think 20 years in the future or 100 years in the future or 300 years, but we need to hire people at CDC with extra-century perceptions, because the idea of "Do No Harm" applies forever for the future. Look at the harm to the future caused by the way we use energy. Look at the harm caused by our financial advisors and institutions. Look at the harm caused by those who created the healthcare system we have today. Those people who will live 300 years from now are our true bosses because we're preparing the world that they're going to be living in.

Number three - thinking globally. CDC can't think that responsibility for domestic health can be of quality if it does not totally involve global health. H1N1 is only one example of this. Dave Sencer understood this 40 years ago when he sent domestic workers around the world to stop smallpox. I recall a hearing 30 years ago when I was being criticized because we were using CDC money for global work and cooperating with the Soviets. And I asked the congressman "Have you had a flu shot this year?" and he said "Yes I have," and I said "In the flu shot, is a component isolated in Leningrad, now St. Petersburg, sent to us by the Soviets which we included in the vaccine." And then I added, simply because I didn't like him, I said, "You now have Soviet antibodies coursing through your body."

Democritus, 400 B.C. Greek philosopher said, “The wise person belongs to all countries for the home of a great soul is the whole world.”

Last point - the challenge of pursuing health equity. That is the constant in our public health backgrounds. Health equity. Not health equality, health equity. Science breaks down the walls of ignorance, medicine tries to provide that truth for every patient, but public health tries to provide that truth for everyone, and therefore, the philosophy behind public health is equity. Troyme [?] thought that would be the legacy of the 20th century; he was wrong. But in the last ten years, we are now seeing tools come together, resources which have increased four-fold for global health in ten years, we’re seeing political interest, we’re seeing interest of celebrities. There’s never been a better time for people to go into global health, and I think students who are now training for global health, you can’t imagine what a wonderful time this will be. Gandhi said “People often become what they believe themselves to be,” and the same is true for institutions. If CDC believes it can be the leader in making global health equity a reality, that is what it will become. So this award is shared by the entire CDC and thanks for having me back.

[Master of Ceremonies] Dr. Foege, thank you for those remarks. Those that have been kind enough to take questions and comments from the audience, we have a microphone up front. Anyone who would like to ask a question, please come to the microphone. I would ask that we keep the questions brief. If you have a personal comment, we will have a reception following this outside; you’ll have an opportunity to talk then, and also there are stations provided outside with note cards and pens, so anyone who would like to write a personal note to Dr. Foege, feel free to do so.

One more minute, if there are no questions... There is one. Can you move to the microphone, please?

[Question] Thank you, Bill, for a fabulous discussion. If you were in the room with the G7 leaders ...let’s say the G20... and their view of the 21st century for health was pretty much about, well, ‘why don’t we concentrate on economic growth. People will have money and that’s going to buy better health.’ What would you say?

[Answer] Well, I think all of the things that people are interested in finally come down to the health of people, and, the... Ron Paul has recently said, “The healthcare system is so complex that only the marketplace can actually correct it.” And I say to myself, one year after the marketplace let all of us down, has made some people destitute, has made live—has ruined lives, has made joblessness... how can anyone have that view? So I would think that health is primary, and these other things don’t matter if you don’t have health, they really don’t. We get so caught up in actually thinking that financial people understand things we will never understand, and so we have let them go. And I remember that Eric Hoffer used to say that “when you have people who are economists, who are versed in the field, you ought to give them as much freedom in a university as they can have, but never give them power.” He said, “That’ll ruin the world.” So I think that my answer to you would be, not that I would want to be in that room, but I would like to say that we should be trying to train public health people to go into politics and into leadership, so that we have the right people in those positions. I really think this business of

'power corrupts' is so powerful that we have a hard time putting people in those positions and having them remain Abraham Lincolns. They just don't do it very often.

[Master of Ceremonies] Charlie.

[Question] You know, when I look at your amazing career, there are times, I'm sure, throughout that career where you obviously were confronted with opportunities around smallpox eradication, guinea worm, river blindness, where you understood the opportunity and stood up to make a difference. As you look at the world today and try to take that extra-century perception view of CDC, what's your gut tell you might be one or two of those next opportunities for CDC to really...?

[Answer] One has to be sure you understand the question, and I think I do. But our four-year-old granddaughter asked me a couple months ago, "What do wolves eat?" And I like the fact that she's interested in all of these things, in biology, and I gave a long explanation of, "It depends on where they're living and in certain parts of the Arctic they live on mice and rodents and other places they live on caribou and so forth." But then I asked "Why are you interested?" and she said "I think I saw a wolf on our property and I just wondered if they eat people."

But, in public health, I think I see two big things ahead. First, in global health, let me divide this in two. In global health, I think there are two big areas of need. One - that the tools are becoming so good, but our delivery system is so bad. And it doesn't matter if you have 12 vaccines if a country can't even deliver six; I mean, it just doesn't matter. So this whole idea of a delivery system, and I think what we have to do there is to incorporate the management people in corporations. We already are able to call on the scientists in those corporations, but what if we got the best managers of six companies and have them go to Africa to figure out 'how do you deliver these things?' That's number one. The second big barrier to improving global health is, how do you level the playing field so that people go back to their countries after training? People try different things, like you have to promise to in order to get the training—none of that works. None of us would be willing to get skills and knowledge and then go back to a place where we can't use what we've just acquired. Instead, we have to figure out how to level the playing field and in Seattle, which has a lot of Norwegians, I say no one migrates from Norway to Seattle anymore. Why? Because there's a level playing field; there's no point in doing that. And one of the ways we can level the playing field is, you don't simply educate people so that they get a PhD in some subject. You provide them with a degree and a warrantee. Once you take them into the program, you're not only going to educate them, you're going to support them for the next 10 years after they go home. Make sure that they have the things—and that's part of the price of giving a scholarship—make sure that they have the things that allow them to use their skills and knowledge. Because what will happen? People will go back to where they speak the language, where their family is, where they understand the culture, if they can use their skills and knowledge.

If you look at public health in general, there are two things that I see on the horizon. One is, to figure out how to use public health in the mental health area, that we actually have surveillance systems, that we're able to detect the people that have mental health problems, that we figure out how to provide the treatment. Can you imagine what might happen to a society if we could

actually treat the ten percent or fifteen percent or twenty percent who are depressed at any one time? I mean, think of what would happen to the productivity of society.

The other thing that I see for public health, and I'm going to talk about this at the next lecture, is that if public health would look at healthcare delivery in this country the way we look at other problems, and monitor that in a way that makes sense, that you could actually compare one program with another. Kaiser is never able to truly compete because it offers more services. People buy their health insurance on the basis of premium, and it's only when they get into trouble and need mental health care, they find out that their premium doesn't cover it or that there's a limit, and so forth. So, Kaiser provides those things and it's always having trouble then, competing in the marketplace, but it comes closest to doing what needs to be done. So, I think that monitoring healthcare delivery, coming up with measures of health outcome so that you can compare one group to another, and then rewarding those programs on the basis of improved outcome—what would happen? Inevitably, they would have to sign up sick people, rather than well people, because that's the way they would make their money is by improving health outcomes. And I think, if we did this right, you could then have the marketplace solve the problem we're in with healthcare delivery.

[Master of Ceremonies] One last chance. If not... yes sir. I feel like an auctioneer up here. Going once...nope.

[Question] Hi, I'm Alex. Thanks very much for the talk. You know, moments like that make me very proud to work here. My question is, we have learned of some of the challenges, and we have learned some of your vision that you have for those challenges, but what we, working in an institution like CDC...what are we missing, in your opinion? You know, somebody who has been in this agency before, somebody who has, you know, taken some time away from this, seen other things, seen cooperation with pharmaceuticals, seen working for top organizations - the Gates Foundation, things like that. So, what are the opportunities there? Who should we be partnering with, you know, to do more and to do it in a better way? Thank you.

[Answer] Good question. What are we missing? That's always the hardest thing. It's very easy to see where we overlap because that's where the friction is, but it's harder to see what are we missing. And Dave Sencer had a program that was so good—and we're missing it now—where he assigned some of the best people that CDC had to W-H-O with the idea that that's where the decisions are being made on global health, and therefore we could have the most influence on global health by putting some of our best people at W-H-O. D.A. Henderson was 11 years at W-H-O, paid for by CDC as he worked on smallpox. Ray Fenderson, here in the audience, was paid for by CDC as head of the immunization program at W-H-O. Mike Burson, head of diarrheal disease, paid for by CDC. And so, this was our way of contributing to global health. Now all of this stopped in recent years when barriers were put between CDC and W-H-O, but I think this is, again, changing. We're coming back to being able to make that contribution.

It's hard to think of any group that's legal that you wouldn't want to cooperate with. I think some of the best cooperation has now been with industry, as Mark mentioned, first with Merck, but then GlaxoSmithKline, with other groups, and you know what they discovered? They discovered that while they do get some good publicity, the real reward for these companies is to have a

group of employees that like working for a company that does this sort of thing. It used to be you went to a company and you stayed there for your entire life. Now people switch so easily that loyalty is something they seek. They discovered this at Merck, when they were doing Mectizan, that their people liked working for Merck because Merck was doing that. It came to a point that one day we were having a Mectizan meeting in France and, late in the afternoon, Harry Gottison [?], who was then working for W-H-O, now works for the task force, gave a report where someone from W-H-O had used two different drugs at the same time for lymphatic filariasis. Either drug alone didn't work, but the two together showed improvement. Now I could not understand why you would put two drugs together that don't work, but nonetheless, that's what happened. And then the question was, who makes albendazole, and the answer was SmithKline Beecham. 'Does anyone know someone in the company that could help us get drug free?' We didn't, but we broke for the day, had a reception dinner, and we continued talking about this exciting possibility for lymphatic filariasis. The next morning at 10 o'clock, I'm chairing the meeting and a note is put in front of me: "Jimmy Carter's on the phone, will you take the call?" Well, you all know the answer, and so we had a coffee break. But what Carter said is, "It is 5 o'clock in the morning in Atlanta but," he said, "I'm so excited, I had to talk to you." He said, "Does the name Jan Leschly mean anything to you?" I said, "No, it didn't." He said, "Well, he's the CEO of SmithKline Beecham, and I had dinner with him last night, and he said he was so impressed with what Merck had done with Mectizan." Did Carter know of anything that SmithKline Beecham could do that would be similar? Can you imagine that? And by the end of the day, he had called Leschly and had a commitment for them to give albendazole, and that was the beginning of the global lymphatic filariasis program. So, you know, it's hard for me to see why we wouldn't want to cooperate with corporations, with other groups, and I think it's important to ask, 'Where are the decisions being made that make a difference in global health?' and make sure that we make a contribution.

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