

July 2012

Keeneland Conference Plenary Sessions: Thomas R. Frieden

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Recommended Citation

Frieden TR. Keeneland Conference Plenary Sessions: Thomas R. Frieden. *Front Public Health Serv Syst Res* 2012; 1(2).

DOI: 10.13023/FPHSSR.0102.11

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Abstract

One of the leading challenges in public health today is moving forward as one whether we are part of academia, a clinical health setting, or a public health department, in order to improve health outcomes. Right now in the United States, the leading causes of death are caused from diseases that are preventable. We also face a steady rise in health inequalities among those citizens with a lower socioeconomic status. Director of the CDC, Thomas Frieden addressed the Keeneland conference audience on the impact that public health initiatives have had on the health of our nation. Public health interventions have a potential impact in all levels and the challenge is to identify areas where we can work systematically to improve health outcomes. Six key areas for potential impacts are smoking, obesity, health care associated infections, HIV, teen pregnancy, motor vehicle accidents. Major initiatives that need to be undertaken are heart attack and stroke prevention, electronic health records, and clinical innovations that involve improving quality of care and reducing prices. It is also vital that we come up with ways to bridge the gaps in program implementation.

Keywords

public health services and systems research, phssr

Cover Page Footnote

This manuscript edited from the plenary session given by the author at the fifth annual PHSSR Keeneland Conference. See the full version at: <http://bit.ly/Jhh0wP>

We think about the value of research in changing people's lives around the world and around the state. I want you to picture in your mind a person who you know who has had a heart attack or a stroke and a person who you know who has had cancer. At least half of all of the heart attacks and strokes and cancers in this country and in this world could be prevented with easy, inexpensive interventions that are available to us today. So at least one of those two people who you pictured didn't have to go through that. The biggest challenge for health research, for public health, and for clinical medicine moving forward is how to be as one program focused on improving health status whether we do that from the public health department, from the university, from the clinical provider, from the community health center, from the pharmacy, from the school, from the workplace. That is our biggest challenge in health today, and health is our biggest challenge in our country today. So that is our number one challenge.

Falling Behind

Health services research can be very important in helping us to address that challenge. Now, what this slide shows* is what I just said. If you look at three of the leading causes of death in the U.S.—cardiovascular disease, cancer, and unintentional injuries—at least half (that's a rough estimate), but at least half of each of those conditions are preventable with current technologies. If you look at how we're doing compared to the rest of the world, this is quite interesting because if you just focus for a bit on the blue bars, that was just 15 years ago. We were better than a couple; not much worse than many. Over the past 15 years, the world has kind of left us in the dust. They have significantly reduced conditions that are preventable through health care, death from conditions preventable through health care, and we have not. The result of that is that we are making much slower progress than other countries, and the result is that chronic diseases are the leading cause of death and disability in the U.S.: 1.7 million deaths per year, half of all Americans have one or more chronic conditions, and more than three-quarters of all health care costs. What you see is that this is not sustainable in our society. The number of Medicare beneficiaries continues to increase, and the number of workers per beneficiary continues to decrease. Medicare is dealing with the results of failure to prevent and effectively treat high blood pressure, high cholesterol, heart disease, diabetes, arthritis, and more.

As NACCHO has said, not only is our health status poor, but our inequalities are very large. Our inequalities in health status are large, persistent, and increasing. Poverty, income, wealth inequality, poor quality of life, racism, sex discrimination, and low socioeconomic conditions are the major risk factors for ill health and health inequalities. African Americans have a lower life expectancy than white Americans by 4 to 7 years for females and males, and heart disease is the leading single cause of that difference in life expectancy, with cancer number two.

* see: http://www.publichealthsystems.org/uploads/docs/Frieden_KC2012.pdf for slides

The factors that affect health are at the base of the socioeconomic factors that determine the structure of our society: poverty, education, housing, inequality. One level above that are things that change the context and make the default decision the healthy decision, whether that is clean water or iodized salt or smoke-free air or zero grams trans fat or tobacco taxes that are high. This makes the default decision healthy. One level above that are long-lasting preventive interventions like immunizations or brief intervention for problem drinking or colonoscopy or tobacco cessation. One level above that are clinical interventions, things that require the health care system to work day in and day out all year long: treatment of high blood pressure, high cholesterol, diabetes. At the top level is counseling and education, encouraging people to eat healthy, be physically active. This is not to say that we should only do one or another level, although the impact of these interventions tends to be largest at the bottom and smallest at the top. But for any health program, there are interventions that have the potential to make a difference at every level. Our challenge is to identify the areas where we can make a difference and then systematically and objectively work to improve health in those particular areas.

Six Key Areas of Impact

At the Centers for Disease Control and Prevention, we identified 6 key areas where we think we can make a really big difference, and I will go through those one by one.

1. **Tobacco** use remains the leading preventable cause of death in the U.S. Tobacco will kill more than 1000 people today and every day this year. It will cost our health care system around \$100 billion, and it will expose more than half of our children to secondhand smoke, and yet we know what to do. We are making progress. Proportionally, fewer people smoke now than have ever smoked before. Smoke-free laws are expanding. We began running Tips From Former Smokers, a hard-hitting ad campaign on tobacco. How many people in this room have seen the ad campaign? We estimate that by the time the 12-week campaign finishes, 90% of smokers will have seen one ad at least 10 times. This is the first national advertising campaign against tobacco paid for by any part of the federal government. The budget for this campaign is less than what the tobacco industry pays in two days for marketing and promotion, so we are getting outspent for our entire year in two days of tobacco industry marketing and promotion. And yet, this campaign will be very successful because we have truth on our side and we have real people's stories. I heard earlier from officials here in Kentucky that calls to the quit line in Kentucky have increased fivefold since the ads began running, and we did not put the quit line number on most ads because we were afraid of overwhelming the quit lines. So this is an example of the kind of big difference that can be made. You see here graphs of the California experience and the New York City experience where smoking has declined by more than a third, teen smoking by more than half. Teen smoking in the leading jurisdictions in the U.S. is now at 7%, one-third the national average of about 20%. So progress is definitely possible.

2. **Nutrition, obesity, food safety, and physical activity** are also critically important. A huge burden. Someone who is obese costs the health care system on average \$1700 more per year to care for. One in 6 people in the U.S. gets sick every year from food-borne illness, and food-borne illness costs a lot. A single, fatal case of E. coli O157 can cost \$7 million. We have made progress. In some age groups, we have seen declines in obesity. New York City, through a comprehensive approach, has rigorously documented in hundreds of thousands of school kids a decrease in obesity of 6%, and a decrease of 10% in the younger age groups. We are not sure what caused that, but we are seeing progress in various jurisdictions around the country. E. coli O157 infections decreased by half in the past 14 years through a collaboration with industry and public health.
3. **Health care-associated infections** affect 1 in 20 hospitalized patients. They cost about \$30 billion a year. If you look at just one particular problem, Clostridium difficile, which we recently published an update on, nearly all infections are from the health care setting, and about 14,000 Americans die each year as a result of complications of C. difficile, and yet we are seeing real progress with steady declines in central line infections. So again, a winnable battle, an area where we can make a difference.
4. **Motor vehicle injuries**, 33,000 deaths a year, 3 million emergency department visits a year, the number one cause of injury death, the number one cause of death in Americans age 1 to 44 and \$100 billion in health care and economic costs, but we have made progress. Nearly a 25% decline over the past few years in motor vehicle fatalities through a wide variety of efforts, including expansion of ignition interlock devices and expansion of graduated drivers' licenses, making it safer for kids to learn to drive without endangering themselves, their friends, and other drivers and pedestrians.
5. **Teen pregnancy**. One thousand teens give birth every day in this country. One out of 11 new mothers is a teen. Our rate of teen pregnancy is 9 times higher than the rate of other countries, and the cost to taxpayers is about \$9 billion every year. More than that, teen pregnancy condemns the next generation to not living up to their full potential and often represents the intergenerational transmission of poverty. We are seeing progress; not nearly enough, but progress with a 17% drop in teen pregnancy in recent years. These are areas where we are making progress, and we can make much more.
6. **HIV**. There are 1.2 million people living with HIV, and 1 in 5 of them do not know they are infected. Only about 1 in 4, 28%, of people with HIV have their viral load suppressed. That means that nearly 3 out of 4 are not getting effective treatment, and the virus is raging through their body, destroying their immune system, increasing their risk of cancer, and increasing their risk of infecting their partners, their families, and their communities. The lifetime cost of caring for 1 person with HIV is \$400,000. You can buy a lot of condoms to prevent HIV for \$400,000. We are making some progress - 11 million more Americans know their status than knew it just a few years ago, and we need to make even more progress helping people learn their status and get into care and stay in care.

Major Initiatives

Heart disease and stroke are leading killers in the U.S. There are two million heart attacks and strokes per year in this country, 800,000 deaths per year from heart attack and stroke, and 1 in 3 deaths is from heart attack or stroke. Many of them are in younger individuals, and the conditions are costly, about \$444 billion a year in health care and economic costs. There is a lot that we can do to reduce cardiovascular disease, and that is why last year, in conjunction with the Center for Medicare and Medicaid Services, we launched the Million Hearts campaign. We think we can prevent a million heart attacks and strokes in the next five years. With focused interventions we can do, on the one hand, is to reduce the need for care through tobacco control, improvements in diet and nutrition such as the elimination of trans fat and reduction of sodium, and on the other, improve the care of people who are in need of care for high blood pressure and high cholesterol. The several ways we have seen improved clinical care involve first and foremost looking at the numbers—getting everyone to focus on key outcome indicators. What proportion of your patients have their blood pressure under control? We want every doctor, nurse practitioner, advanced practice nurse in America to know the answer to that question, whether they are an obstetrician, an orthopedist, or a primary care practitioner. That's because right now, nationally, about 46% of Americans have their blood pressure under control. Even for people in care, it is not much over 60%. But the best-performing health systems can get it up to 85% to 90%. That difference is the difference between two million heart attacks and strokes a year and one and a half million heart attacks and strokes a year. It is half a million Americans if you think back to that person you thought of at the very beginning of my talk.

The second major initiative in clinical care is health information technology. We are still in the Dark Ages, but we are rapidly emerging from them. We are rapidly able to increase the availability of information before the patient's visit, during the visit, and after the visit, not just for the doctor but for the entire health care team that has a role in patient care. We need to free that information. As patients, why shouldn't you own your health care data?

And third, clinical innovations. We know that there is only one solution to the following problem: how do you improve the quality of care, reduce expenditures, and preserve employment? There is only one answer to that challenge. You use a broader health care team where every member of the team is used to their fullest potential - to the limit of their license so they are practicing at the top of their competencies, not at the bottom. You have the physician as quarterback, point guard if you will since we are in Kentucky, and you make sure that there is optimal use of all members of the team. We think that with this focus, we can reduce the number of people who smoke by four million and increase by 10 million the number of Americans whose blood pressure is under control. Those are measurable numbers that are going to require laser-like focus. Most of the work in tobacco control will be done in communities. Most of the work of

hypertension control will be done in clinical settings. In tobacco control, we have things like hard-hitting ads, tobacco pricing, smoke-free air laws, and comprehensive programs. They work. Communities that implement them see their health care costs fall. They see their smoking rates fall. In the clinical sphere, we have blood pressure control and the potential to make a huge difference with reducing strokes, heart attacks, dialysis, kidney failure, eye problems, and a host of other health problems that come from high blood pressure.

I also want to mention the epidemic of prescription drug overdose. Prescription opioids now kill more people than heroin and cocaine combined, 15,000 people a year. There has been a fourfold rise in the number of deaths in the past 10 years that mirrors an increase in the sales of these drugs. In fact, enough opiates are prescribed each year to give every adult in America opiates every four hours around the clock for a month. This is a major problem. We think we can do a lot about it. It won't be easy, but it is possible to improve clinical practice; increase access to substance-abuse treatment; strengthen prescription drug-monitoring programs, which your congressman Hal Rogers has been instrumental in helping to create across the country; implement patient review and restriction programs; leverage insurer and pharmacy benefit managers and enforce laws, policies, and regulations to make a big difference in terms of both patients and providers. You have those who are appropriately using, and we need to ensure palliation and appropriate care for people, for example, with severe cancer pain. You have a second group of patients or physicians who may simply lack adequate training and information and be prescribing inappropriately or demanding inappropriately. A very interesting article last month in the *Archives of Internal Medicine* looked at patient satisfaction and patient outcomes.¹ More satisfied patients used more health care, used less emergency department visits, and died younger. It is not always the best thing to give patients everything they ask for, particularly if those are addictive substances. And then there are a very small number of patients and a very small number of doctors who are breaking the law and are doing this for profit and essentially are drug pushers. For that, you need the appropriate law enforcement response. Hal Rogers has been a real leader in the fight against prescription drug overdose. He rang the alarm early, and he has been a leader in helping to get programs up and running around the country. We now need to optimize them, implement them, and ensure that we can make them effective at confronting this epidemic.

Prevention

The failure of prevention costs money. As I said earlier, someone who has obesity costs about \$1700 more to care for per year. A smoker costs about \$2600 more to care for per year. Someone with diabetes costs about \$7400 more to care for every year for the rest of their life.[†] There are scalable interventions, and one word I want you to take away from this conference is scalability. Having an intervention that works great in a

[†]Corrected figures should be: \$1400, \$2000, and \$6600, respectively.

small group but is never going to get scaled up means not having an intervention that is going to do the kind of good it could do. The diabetes prevention program can reduce the risk of progression from pre-diabetes to diabetes by nearly 60%. Working with the Y, we have been able to drive down the cost from \$2000 to \$400 to \$500. If you compare that with the \$7000+ cost of diabetes care, you realize that this can be a cost-saving intervention. In fact, nationwide implementation of this would break even in a few years and provide billions of dollars of health care savings soon after that.

Just to give an example from the past, let's look at fluoridation. Fluoridation reduces dental caries substantially. It saves about \$20 for every one dollar spent and is highly effective to reduce costs. Folic acid is another area where there has been real progress, more than a one-third reduction in neural tube defects, preventing an estimated 10,000 children born with neural tube defects and saving more than \$400 million in health care costs alone each year. We have more to do with neural tube defect prevention, particularly among Hispanic women, and we are working with a company that has just submitted its proposal to the FDA, to fortify corn masa flour, which is more commonly used in Mexican American communities and will result in a further decline in neural tube defects in that population.

We need public health systems and services research. Prevention can improve health, reduce disease, and save money. We need to identify and document cost reductions, and we need to identify how we can deliver the strategies that we identify at the right time to the populations most in need in the right way every day year round. The challenge is to identify the scalable interventions and then scale them up. Doing that will require establishing feedback loops—figuring out what works, figuring out if we are going to scale, if we do have fidelity to the model, if we are achieving the impact we anticipated.

I give the example of my experience as a health commissioner in a large city where we implemented tobacco control interventions. We increased the tobacco tax, and smoking went down. We implemented the smoke-free air act, and smoking went down. We thought our job was done, but then smoking didn't go down anymore. We had a stall. So we said, "What else can we do?" We ran hard-hitting ads, and again we saw a dramatic decline in smoking. If we had not had that feedback loop, we would not have known we needed to do something different. We would not have achieved the results we did. When we were criticized for spending that kind of money on hard-hitting ads, we would not have been able to defend them, but I was able because of the information systems that we had in place. I was able to say under oath I was confident the ads we were running were saving at least 1500 lives for every million dollars we spent. I think the life of one of our fellow citizens is certainly worth the modest investment that that represents.

So bridging the implementation gap is the challenge for health services research and for public health research. We have knowledge and technologies—things that we know

work—and we have the ability to implement, but what we all too often lack is the connection between those two things. We have an implementation gap. The gap between what we know and what we wish we knew is huge, but it is much smaller than the gap between what we know and what we do. That is the challenge of all of us working in implementation research, health systems research and public health implementation, because ultimately there should be no gap between program and analysis. It is not a question of analyzing over here and running a program over here. A well-run program must have an in-built feedback loop to figure out if it is working so we can defend and extend programs that work and fix them if they are not.

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