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**DRUG RESISTANT INFECTIONS IN THE COMMUNITY:
CONSEQUENCES FOR PUBLIC HEALTH**

Wednesday, November 7, 2007

House of Representatives,
Committee on Oversight and
Government Reform,
Washington, D.C.

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Committee Hearings

of the

U.S. HOUSE OF REPRESENTATIVES



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The committee met, pursuant to call, at 9:20 a.m., in Room 2154, Rayburn House Office Building, Hon. Henry A. Waxman [chairman of the committee] presiding.

Present: Representatives Waxman, Towns, Davis of Virginia, Duncan, Issa, Foxx, and Bilbray.

Also Present: Representative Matheson.

Staff Present: Phil Barnett, Staff Director and Chief Counsel; Kristin Amerling, General Counsel; Karen Nelson, Health Policy Director; Karen Lightfoot, Communications

Director and Senior Policy Advisor; Sarah Despres, Senior Health Counsel; Steve Cha, Professional Staff Member; Teresa Outfall, Deputy Clerk; Careen Auchman, Press Assistant; Ella Hoffman, Press Assistant; Zhongrui Deng, Chief Information Officer; Leneal Scott, Information Systems Manager; Kerry Gutknecht, Staff Assistant; William Ragland, Staff Assistant; Bret Schothorst, Staff Assistant; Earley Green, Clerk; David Marin, Minority Staff Director; Larry Halloran, Minority Deputy Staff Director; Jennifer Safavian, Minority Chief Counsel for Oversight and Investigations; Ashley Callen, Minority Counsel; Patrick Lyden, Minority Parliamentarian and Member Services Coordinator; Brian McNicoll, Minority Communications Director; Benjamin Chance, Minority Clerk; Ali Ahmad, Minority Deputy Press Secretary; and Jill Schmalz, Minority Professional Staff Member.

Chairman Waxman. The meeting of the committee will please come to order. Today we will examine a growing threat of public health, the spread of drug resistant infections. In particular, we'll hear about a bacteria called methicillin-resistant staphylococcus aureus. Some call it MRSA, which you could understand why they call it MRSA, or MRSA for short. At the outset I want to commend Ranking Member Tom Davis for his interest and leadership on this issue.

In fact, Mr. Davis was the person who first suggested holding this hearing. Under Mr. Davis' leadership, the committee held multiple hearings on public health preparedness, and we're working together to continue active oversight in this crucial area. MRSA infections can occur anywhere. Traditionally, we have thought of them as confined to hospitals, nursing homes and other health care settings. But now we're learning that drug resistant staph infections can be contracted at schools and other places where people congregate. This has alarmed parents across the Nation.

In October, researchers at CDC published a major study in JAMA, the Journal of the American Medical Association. The study estimated that there are about 94,000 cases of

serious MRSA infections every year in this country and nearly 14 percent of these infections are due to exposures in the community. The researchers also estimated that over 18,000 deaths each year are due to MRSA in both the community and healthcare segments. That's far more deaths than previously believed.

In fact, it is more deaths each year than caused by AIDS, though it is about half of the number of deaths from influenza. At the same time, we've heard about personal tragedies with MRSA. In the last month alone, two otherwise healthy young people died from MRSA, a 17-year old boy in Virginia and a 12-year old boy in Brooklyn. In response to the reports of deaths associated with MRSA infection, many schools have begun to look for cases and to take steps to try to clean their facilities.

Since there are 94,000 MRSA infections each year it is not surprising that school districts across the country have found cases. Parents and the public are rightfully concerned about community-associated MRSA. Mr. Davis and I and other members of the committee share this concern, which is why we are holding this hearing today. We want to understand how to prevent the transmission of drug resistant staph infections in the community. What steps should schools, gyms and households be taking to reduce the risk of MRSA infection? Does it actually make sense to try to

disinfect entire school districts? We will also examine what the Federal Government and State and local health officials can do to combat MRSA. We'll hear two messages from our expert witnesses; one reassuring and one worrisome. The reassuring message is that there are simple steps that we can take to protect ourselves and children from this infection. We can limit the spread of MRSA with basic measures like frequent hand washing and keeping wounds covered.

Also reassuring is the fact that doctors already have drugs that can treat MRSA and more are in development. The worrisome message is that MRSA is a symptom of a larger problem of drug resistant infectious disease. This is not a new problem. But in recent years, antibiotic use has increased, which has led to more drug resistant bacteria. According to the Centers for Disease Control antibiotic resistance has been called one of the world's most pressing public health problems. Antibiotic use is no longer limited to the appropriate use of fighting antibiotic sensitive bacteria infections. Unfortunately antibiotics are inappropriately prescribed for a host of ailments that antibiotics can't actually treat. These include certain ear infections and the common cold and flu. Antibiotics have also made it into our food supply and experts have raised the concern that this too could be increasing resistance.

Well, this hearing will focus on MRSA, and in particular, on MRSA infections in the community.

Future hearings will examine other aspects of the growing threat posed by growing resistant infectious disease. In the spring, the committee will hold a hearing on infections in hospitals where drug resistance is particularly widespread. We'll also have to look at the root causes of antibiotic resistance and consider what we can do to curb the burgeoning overuse of antibiotics.

Today we're fortunate to have some of the Nation's top experts on MRSA to help us understand the risks of community-based infections. We'll first hear from Dr. Julie Gerberding, the Director of the Centers for Disease Control and Prevention about Federal efforts to address community associated MRSA.

Our second panel we will hear from Dr. Jim Burns, the Deputy Health Commissioner of Virginia about Virginia's recent experience with MRSA. We'll also hear from Steven Walts, the Superintendent of Prince William County schools about efforts being taken by school districts to reduce the risk of MRSA infection and to educate parents about MRSA. And from my own district of Los Angeles, Dr. Elizabeth Bancroft, an epidemiologist with the Los Angeles County Health Department who will talk about the public health implications of community associated MRSA.

We'll hear from Dr. Eric Gayle, a family practitioner at a community health center in the Bronx. And finally, we will hear from Dr. Robert Daum, a leading expert in community-associated MRSA, and a pediatrician who treats children who have become sick from MRSA infections. I hope that the experts before the committee today can help us understand the type of threat we are facing, what steps families, communities and government should be taking to minimize the risks. I thank all of our witnesses for being here today and I want to recognize the ranking member of the committee Congressman Tom Davis for his opening statement.

[Prepared statement of Mr. Waxman follows:]

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Mr. Davis of Virginia. Thank you, Mr. Chairman. Thank you very much for holding the hearing on the alarming emergence of antibiotic resistant staph infections in new settings. Long recognized in health care facilities, where virulent drug resistant germs can thrive, invasive MRSA infections have recently been detected in unexpected places and in growing numbers. We requested this hearing to explore the causes, the implications and appropriate responses to this festering threat, and we appreciate the committee's timely attention to an important public health concern.

According to published comments by one of today's witnesses, old diseases have learned new tricks with hard-to-treat infectious strains penetrating local schools, athletic venues, prisons and community centers. The so-called superbug outbreak dominated local news and brought unwelcome but needed attention to the dangers of a microbe that is all around us.

In my district in Northern Virginia, at least 20 MRSA cases have been identified in Prince William County. Dr. William Walts, the superintendent of schools there, has been battling the problem aggressively, monitoring student and faculty health in helping translate obscure medical jargon to an understandably anxious community. He's here to share

his firsthand experience with the committee today, and we welcome his testimony. When it comes to assigning blame for the spread of MRSA infections, almost no one comes to the argument with literally clean hands. Overuse of the antibiotics and spotty environmental sanitation health care facilities allow superbugs to walk out the door.

Once in the community, carriers spread the infection through poor surgical wound care, sharing personal items like razors, and inadequate personal hygiene. But there's some good news. In the battle against nature's resilience and guile in spawning drug resistant germs, we have two disarmingly simple and effective weapons; soap and water. Thorough hand-washing and disinfecting commonly used surface areas can be very efficient in limiting the spread of infection. Since the primary route of transmission is direct person-to-person contact a little caution about crowding, skin contact, covering cuts, washing contaminated equipment and keeping yourself clean all go a long way in fighting MRSA in our midst.

This is not the last antibiotic resistant organism we'll confront, and the emergence of MRSA raises important questions about the reach and sensitivity of disease surveillance and reporting systems. In response to the recent outbreak, the State of Virginia issued an emergency regulation requiring laboratories to report cases of MRSA.

Twenty-two other States require MRSA cases to be reported to their public health authorities. But this drug resistant staph infection is not currently included on the list of nationally reportable diseases. We look to the Centers for Disease Control and Prevention for analysis of the net benefits and cost of expanding that and other Sentinel regimes.

Protecting the public health requires vigilance and common sense. Whether the rate of community acquired MRSA infections is growing or we're simply getting better at diagnosing existing disease rates, a robust response to the spread of MRSA will help reassure a nervous public and better prepare us for the next superbug. Until a vaccine can provide what public health officials call herd immunity against drug resistant germs, information, or heard, H-E-A-R-D, immunity can be a powerful antibiotic. Every citizen can help fight the MRSA invasion by spreading the word about consistent application of routine personal and institutional hygiene practices.

We'll hear from the CDC director and a second panel of distinguished experts this morning. We become their testimony and look forward for a frank but hopefully not too clinical discussion of a community-based response to a community health problem. Thank you Mr. Chairman.

Chairman Waxman. Thank you, Mr. Davis.

[Prepared statement of Mr. Davis follows:]

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Chairman Waxman. We're going to limit the opening statements to just the two of us because of time constraints. But without objection, all members will be given an opportunity to insert an opening statement in the record. Representative Matheson, who has been a very important leader in this whole effort, but is not a member of our committee, will be participating in the hearing, and I would like to ask unanimous consent that he be permitted to do so.

Our first witness today is the distinguished head of the Centers for Disease Control and Prevention, Dr. Julie Gerberding. Dr. Gerberding, we want to welcome you to our hearing today. While it seems awkward to put you under oath, it is the practice of this committee that all witnesses that testify before us testify under oath. So thank you for rising.

**STATEMENT OF JULIE GERBERDING, M.D., M.P.H., DIRECTOR OF THE
CENTERS FOR DISEASE CONTROL AND PREVENTION**

[Witness sworn.]

Chairman Waxman. The record will indicate that you answered in the affirmative. Your prepared statement will be made part of the record in its entirety, and we want to

recognize you to make your opening oral presentation.

Dr. Gerberding. I am very happy to provide a chance to provide a CDC perspective on this really important health problem. Preventable infectious diseases are always an issue. Preventable drug resistant infections are an even more critical public health issue. And this particular problem with methicillin-resistant staph aureus, or MRSA, in both hospitals and communities, is a problem that deserves our full attention. It is always tragic when young healthy people acquire any preventable disease and it upsets the community and the schools, and people really do get alert to a problem.

In this case, this problem is not as new as it seems from the news. It is a problem that actually has been going on for more than a decade. But we are grateful for the chance to shine this bright light on it and hopefully think through what else we can do to help prevent such tragic deaths. If I can have my first graphic, I would like to just make a couple of really important framing points. I started my training at San Francisco General Hospital in the laboratory with one of the world's experts on staph aureus, Dr. Henry Chambers. So I worked with this organism from the very first days of my infectious disease training. And I know this organism. It is a bad bug. I like to think of it as the cockroach of bacteria because staph aureus are

everywhere, they're survivors, they last a long time on surfaces and it is just about impossible to get rid of them.

Staph infections generically are a very important cause of both health care and community-acquired blood infections. And when it enters the blood, it causes a high mortality. It is also, by far, the most common cause of skin and soft tissue infections, the kind of ordinary things that we grew up with and that people get whenever they have a skin wound. Antibiotic resistance and staph aureus emerged from the very beginning of the penicillin era.

In the late '50s, early '60s, our Nation was mesmerized by the problem of penicillin resistant staph aureus in nurseries and spread into the community. These organisms evolve resistance much faster than we can evolve immunity or evolve new drugs and vaccines to combat them. So they will always be one step ahead of our drug store. And that is fundamentally the challenge.

If we use the antibiotics, we eventually lose their effectiveness. And so the overarching lesson here is that we've got to learn to be much more prudent in our use of antibiotics and only use them when they're absolutely essential. On the next graphic, I'm illustrating another very important point about staph aureus. And that is that it is everywhere. On this graph, we have gone across the United States and screened people's noses for staph in their

nose. And what you can see is that about a third of the people in our country at any given time have staph aureus in their nose.

So if you look to the right of you and look to the left of you, one of the three of you has a good chance of being a carrier of staph aureus, at least at this moment in time. So it is an everywhere organism. And it isn't the kind of thing that we're going to be able to completely eliminate. But very subtly, this graphic also shows that in 2001/2002, only a small proportion of our population was carrying the methicillin-resistant staph. And it has only gone up to be about 1-1/2 percent. But that is an increase, and it is a statistically important increase, and it represents more than a million people. So we do have this organism colonizing people's noses everywhere around our country every day. And that means that we have to look at that as the generic issue.

On the next graphic, I am showing a report from CDC's MMWR, which we have used to constantly and continuously update people on the problem of staph aureus. But this is really the first report that identified fatal infections among children who had inquired this community methicillin-resistant staph aureus. And when this report came out, I think a lot of people were skeptical. They thought oh, no, no, no, these kids must have had some

connection with the hospital because that's where most of these drug resistant organisms are.

But in this case, there was no association with the hospital. And it was the Sentinel that told us that this bad bug was circulating in the community, and although rare could certainly, on occasion, cause very serious and fatal diseases in kids. So on the next slide, we had to change our vocabulary. We had to distinguish from the location where bacteria are acquired; i.e., some bacteria are acquired in hospitals, some bacteria are acquired in communities from the places where infections actually develop.

So some infections occur in the hospital, but that bacteria might have been obtained in the community. Some infections occur when people are in the community, but they might have actually picked the bacteria up during their last hospitalization. So it has gotten very complicated to sort out where are they being acquired versus where does the infection actually manifest itself. And part of that is because you can acquire it and carry it for a long period of time before you actually develop the disease. One of the helpful things that by chance has aided our understanding of how these organisms spread is that most of them that are causing this community problem that is the focus of our attention today belong to a particular family. And they

have a unique fingerprint. And so we can track them by their fingerprint. It is called the USA300 strain. But we can track them because they are different from the vast majority of staph that occur in the hospitals.

So we are able, in our special laboratories, to say this particular staph probably arose from the kind that we would see affecting patients in hospitals and long-term care settings versus this one over here is the pattern that we generally see in the community.

Now, of course, they still mix up because people in the community end up going to the hospital and then that organism can secondarily spread. But we know a lot about these community staph aureus because we can track their fingerprints. And what we have learned about them so far on the next slide is that they are a very common cause of garden variety minor skin and soft tissue infection, which usually doesn't require any treatment at all; just simply cleaning the wound with soap and water or draining it if there's a boil or an abscess.

Serious invasive disease like we're hearing about in the news this week is fortunately extremely rare, but it is tragic and it is preventable, and when you look at it over time it does represent a serious threat. Generally, these community infections occur in healthy people. You don't have to be debilitated or have a chronic disease. They tend

to sometimes occur in outbreaks like athletes that share athletic equipment, are injured with turf burns or have the kinds of cuts and scrapes that linemen get on the football team. They occur in clusters of Native Americans, native Alaskans and aboriginal Australians.

We don't know exactly why that is, but some of it has to do with shared personal items. In one of the native Alaskan outbreaks it was related to sweathouses where the staff were colonizing the benches that people sat in when they were in their communal sweathouses, and so there may have been a tendency to move the staph from one person to the other that way. And there have been some very serious outbreaks in prisons where people are crowded together. They share toiletries, razors, towels, and, in some cases, they don't actually have soap.

So hygiene in those environments is a very key factor in preventing or promoting transmission. I think the bottom line here is that not all staph are alike. Some of them tend to cause worst disease than others. Some are adapted to hospitals, some are adapted to the community. But all of them can be prevented. And that's what I wanted to emphasize in my last graphic. CDC has aggressive programs in the health care environment for preventing infections of all types. And we have proven beyond a shadow of a doubt that you can drive staph infections down to a minimum,

particularly the invasive ones caused by catheters that infect the bloodstream.

But we also believe that in the community, there's a lot we can do. And I have a number of the educational materials and posters that we've been using for schools and coaches and athletes. There's great material on the Web. This is out also on the Education Department Web sites disseminated to schools around the country. Just trying to send the message that we have to get back to basics. As you said, Mr. Chairman, in your opening statement, it is hand hygiene, it is not sharing personal materials that could be contaminated with someone's staph, it is taking care of wounds and keeping them covered, it is noticing when a wound looks angry and purulent and then seeking medical attention to be sure that it doesn't require treatment.

For doctors it means when you are going to use an antibiotic for a wound like this you probably need to culture it so that we know what the organism is and whether it is in the resistant family. And I think one macro point to make in the context of these children who have been affected and the concern about the schools is that we need school nurses. In our country today, only about a third of schools have a full-time school nurse.

We in the government are depending on schools to be involved in nutrition and fitness, in safety, in hygiene as

it pertains to these kinds of problems, in pandemic preparedness, in immunization programs. And our schools just simply don't have access to the health professionals that they need to recognize the prevention tools and to take the steps necessary to protect our children from this and any other health threat that could be emerging among our school children. So that is something I wanted to draw your attention to, because it hasn't been part of the conversation so far, and I think it is very, very important for a broad set of health issues and particularly this one. So thank you for allowing me to have a chance to frame the issues and I look forward to answering your questions.

Chairman Waxman. Thank you very much for that excellent presentation.

[Prepared statement of Dr. Gerberding follows:]

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Chairman Waxman. Let me start off the questioning by asking you how worried should parents be, how worried should people be about getting these infections that are resistant to antibiotics? Is there a range of infection and are there some that we need to worry more about and others less about? Well, put it in perspective. Is MRSA the tip of the iceberg of more problematic infections and what would you advise parents to do.

Dr. Gerberding. It is hard to put this into perspective, even with us with our expertise. But I think it is important that parents recognize that kids get scrapes and cuts and minor wound infections all the time. And the vast majority of these are the same that we grew up with and are not a cause for alarm or concern. They need to be handled with common sense; keep the wound clean, keep it covered and seek help if it looks bad or gets pussy. But I also recognize that when something like this tragedy occurs in your community, it does raise everybody's sensitivity and concern.

And we want to assure parents that schools are taking the steps to protect them. But protection also has to occur in the home. There are the same issues around hygiene and hand-washing and wound care in our households that we are concerned about in the schools. So the common sense back to

basics are the way to manage the threat. And just to not wait if a child has a wound that looks particularly bad, but to get it checked out.

Chairman Waxman. So MRSA sounds like it is more a skin problem than any other kind of infection, is that what we're concerned about?

Dr. Gerberding. These community MRSA are almost entirely skin and soft tissue. They tend to stay on the surface of the skin. There's some biological reasons for it. The bacteria probably has adapted some characteristics along with its resistance that allow it to be particularly good at infecting skin and relatively efficient at being transmitted from one skin problem to another.

So the bacteria itself is designed to do this very well. But sometimes it does have the trick, the unfortunate trick of being able to invade more deeply and cause very severe ugly skin infections very quickly or it can enter the bloodstream and cause infection of the whole blood system called blood poisoning if you will, and that, of course, is a very, very serious disease and very difficult to treat.

Chairman Waxman. Is it also very rare?

Dr. Gerberding. It is fortunately very, very rare. We don't have complete data for the United States, but we estimate that about 200 children will get a serious MRSA infection, and even of those 200 people who get the

bloodstream form of this the vast majority of them will be treated and survive.

So we're not talking about thousands and thousands of kids, but we're talking about some children. And we have to take each one of these children to heart and try to do the prevention steps that will help.

Chairman Waxman. Now, I cited earlier that there's a recent Center for Disease Control work that was published in the Journal of American Medical Association and there are 94,000 serious MRSA infections each year, there are 18,000 deaths from MRSA, more than from AIDS. Now, when you hear a figure like that, that sounds pretty serious. That's not the kind of thing you're describing as being routine.

Dr. Gerberding. The paper is a very important first study of the problem. But there is a little bit of apples and oranges mixed in there, because it is describing both the community MRSA that's our focus today, as well as the MRSA that occur in the hospital. So we are adding them all together to get the 94,000 figure. That is a high number and we can bring that number down. In fact, we have some evidence that probably the number of these infections in hospitals is going down because of the emphasis on improving safety in hospitals and preventing some of the underlying causes of these infections.

So this study has sent an alarm that is a big problem

that we need to address it aggressively. But the piece of it that is the discussion we're having today is a small proportion of that 94,000.

Chairman Waxman. When we hear about antibiotic resistant infections and people dying from those infections should parents think that that's what's going to happen to their children if they have some contact with a bug?

Dr. Gerberding. Absolutely not. As I mentioned, about a third of the people in this room have staph. And even the nonresistant staph can still cause very, very serious disease. And the vast majority of us will never have a staff infection because we don't have the predisposing conditions or because our immune system is able to protect us. So they're everywhere if you look, but they don't cause disease very often, and when they do they generally cause this very minor form of disease.

Chairman Waxman. Thank you very much. Mr. Davis.

Mr. Davis of Virginia. Could you explain the difference between the community-based MRSA we're talking about and the hospital? Are they transferrable? Are they mutations of the same? Are they just germs that act the same?

Dr. Gerberding. This is a fascinating perspective and there are some controversies in here, so I'm going to share with you my understanding based on my previous work and what

I've been able to accumulate from experts. But there are people who see this a little bit differently. In the hospital, the staph aureus have been transmitted there for a long time. And they're resistant to many things besides methicillin. Most of them are resistant to anything we have in the hospital, except one or two drugs. So they're highly resistant.

Mr. Davis of Virginia. They're just mutations that have survived; everything else is killed off along the way?

Dr. Gerberding. Exactly. Because we use so many powerful antibiotics in the hospital that only the survivors persist. I like to think of them as somewhat weak staph in the sense that they probably aren't as capable of causing disease in healthy people as their sensitive cousins because they've had all this evolutionary pressure to evolve and adapt. And they pay a price for having all this resistance. They're not in their native staph. Don't get me wrong, they can still cause very important infections. But they tend to evolve infections in people who have catheters, which allow the staph to crawl into the bloodstream, or people who have to be injected with needles or on dialysis for their diabetes, or just people who are generally weakened and quite ill.

They're vulnerable because they're sick, but they're also in an environment where they have lots of catheters

that create an independent way for the staff to gain entry. And they're surrounded by an ecology of staph in the hospital where those hospital strains live.

Now, in the community, you don't have those factors. I mean, we're talking about healthy children here. And the community staph are resistant to penicillin and their resistant methicillin, but fortunately, they're usually very easily treated with other inexpensive garden variety antibiotics. So they haven't had this tremendous pressure to change that we're seeing in the hospital environment. Perhaps they're a little bit fitter, meaning they are more robust and they can be more easily transmitted to one healthy person to another.

Mr. Davis of Virginia. And can be more virulent as a result?

Dr. Gerberding. Well, the virulence is tricky, but they do tend to have a particular toxin. It's called the PVL toxin. You'll probably hear from an expert about this, Dr. Daum. But most people believe that this toxin probably does increase the ability of this, at least USA300 community strain to cause more skin disease. What it does is it basically explodes your white blood cells that surround the infection, and that sets off a cascade of inflammation and puss and the kinds of things that you would associate with a more severe skin infection. Whether that's the only

explanation or not, we're still learning.

Mr. Davis of Virginia. About 22 States require that MRSA cases be reported, but it is not a nation-wide reporting requirement. I understand that the CDC doctors get data from the States on a voluntary basis, is that correct?

Dr. Gerberding. There are several ways that we get data. But the information we published was from a set of States that we pay to do very thorough and intensive surveillance. That's why we have such confidence that in those areas we have a complete picture on this invasive staph aureus. Part of the reason that we did that was to find out what value there would be in making staphylococcal infections reportable.

I have a bias from a CDC perspective that if you measure things they tend to improve. So I'm always going to lean in the direction of measurement. But the question is not should we measure and report, the question is what should we measure and report. We can't report everybody who's got staph in their nose because that would be a third of our Nation. We can't report every skin infection that comes in because we would just have nothing but reams of paper coming in. But we probably could take a look at the value of reporting the invasive infections, the ones that enter the bloodstream or those that cause fatalities.

Part of the reason for doing that is that it is an indicator we need to look at where that infection was acquired. Maybe there is a problem with the disinfection of athletic equipment, or maybe that's the tip of the iceberg of a cluster that we need to engage in so that we can protect other people in the short-run and learn things that we can adapt in other similar environments. So the purpose of reporting is mostly to try to intervene in a way that protects other people from infection.

Mr. Davis of Virginia. Are you satisfied with the reporting requirements that -- not requirements -- I'd say that the lists that you're getting are accurate?

Dr. Gerberding. The Sentinel study that we published, I have a great deal of confidence in those data. And the people who did that study are looking at, okay, we know we can't afford to do this kind of intensive assessment everywhere. That would not be a good use of taxpayers' dollars. So what can we do that is feasible? And we move into this era of electronic laboratory reporting and electronic health records, reporting will get much easier, much less burdensome. CDC has actually demonstrated that the tool that we were using for biosense for surveillance for terrorism attacks is easily adapted to look at methicillin-resistant staph infections.

So when you make reporting inexpensive and automatic

and not detracting from health care providers' time, then we'll be able to, I think, have a conversation about a very robust system that makes sense.

Mr. Davis of Virginia. The schools are using bleach-based cleansers. Are there other effective cleansers that can be used?

Dr. Gerberding. There are a number of surface disinfectants that are approved by the Environmental Protection Agency for disinfection, and it is written on the bottle so it is easy for someone who has that responsibility to know whether it is an improved germicide and for what use.

Mr. Davis of Virginia. That's why school nurses --

Dr. Gerberding. Exactly, where you need that kind of expertise.

Chairman Waxman. Thank you, Mr. Davis.

Mr. Towns.

Mr. Towns. Thank you very much, Mr. Chairman. Let me thank you so much for coming and sharing, and I respect the fact that you've been involved in this for so many years. What can you tell us about what causes antibiotic resistance like MRSA? How does this develop in the community?

Dr. Gerberding. Bacteria multiply very fast, so they go 2, 4, 8, 16, 32, 64. They're just constantly growing. That's their business. And every time they divide, there's

a chance that they could make a genetic mistake despite a random chance. Sometimes those genetic mistakes cause them to die. They're lethal. But sometimes those genetic mistakes give them an advantage if they happen to be exposed to an antibiotic. So mutations occur frequently because they're always growing. And if you have one resistant bacteria in your body, that bacteria probably will eventually just go away on its own. But if we gave you an antibiotic, that bacteria would survive and the rest would be killed and then that bacteria would take over and grow 2, 4, 8, 16, 32 and become the dominant bacteria.

So it is a practice of survival of the fittest. And over time, this happens enough in a population of patients or in a community where there's antibiotic use that you end up switching from most people having the sensitive bacteria to most people having the resistant bacteria. Now, staph also have another trick, because once they figured out how to do this, you know, to get the genes to create the resistance, that gene doesn't stay put.

And they have developed a very clever strategy for moving that gene in a little piece of DNA called a cassette. And they can transfer it to other staph bacteria that aren't already resistant. So those bacteria don't have to go through the process of evolution, they can just pick up this new piece of genetic material because it gives them a

selection advantage when they're exposed to antibiotics as well. So one part of it is just evolution of bacteria, but the big piece is that we expose these bacteria to drugs, and the survivors are the ones that have the preexisting capacity to be drug resistant.

Mr. Towns. I'm concerned about coaches, for instance, in these little leagues that just sort of really have no idea what's going on. And when you say that, well, it was posted on the Web site, these are people that don't have computers. What can we do to be able to get information out? I'm concerned about the fact that --

Dr. Gerberding. These are the kinds of things that we're sending out to schools through the athletic associations. We're working in partnership with organizations that support coaches and trainers and athletes, little leagues, those sorts of things. So we're trying to get the information out. And individual schools are picking these things up and also getting them out to the school system. I'm not satisfied that we've gotten this information everywhere that it needs to be. And not to harp on the issue of school nurses, but I think in a school environment, you need somebody who is really thinking about the health aspects of the athletic program or the health aspects of the classroom. And that is a really important resource for making sure that the school is doing the right

thing for athletes or for any other potential hazard.

Mr. Towns. Do you feel that we need a national registry? I'm sort of thinking, now that we're focusing on this, and I really appreciate the fact, Mr. Chairman, that you and the ranking member are having this hearing, because I think it provides us an opportunity to really focus on this. Because I'm wondering, this has been going on for a long time and now we're beginning to sort of focus on it more. Because I can think on my own in terms of situations of strange deaths with people back over through the years. And I just sort of wondered, and now wondering, did it have anything to do with -- and I'm sort of saying, if we don't have a central kind of registry, we don't really know in terms of how much is going on. And does that bother you that we don't have a central registry?

Dr. Gerberding. Well, separate the community from the health care environment. Because in the health care environment, CDC has a registry. We have a system to allow us to track infections that occur among patients in hospitals. And several States now are reporting all of their hospital infection data to CDC using this kind of tool. And we hope that soon they'll be reporting it publicly so that if we see the results, people will be more motivated to do the things necessary to improve.

But in the community it is harder. We have some

diseases that are nationally reportable. But I think we're going to be able to do a lot better with that. Again, when our laboratories are connected electronically, this will become something that can be generated automatically and doesn't require someone to fill out a report every time they see a patient with an infection.

So we're just on the brink of being able to do this in a much more efficient way so that people in the local health department can know there's a problem in their community as it is emerging. They don't have to wait until, in retrospect, we figure it out.

Mr. Towns. Mr. Chairman, I see my time has expired. But I still feel that we need to have a central person that's going to be responsible for this. I notice the state of New Jersey has moved forward with legislation. And of course, I think that's really -- I'm sure they're doing it out of frustration, but I think it should be done at the Federal level.

Dr. Gerberding. I don't disagree with you. I think it should be done at all levels. The school needs to know what's going on in the school. The local health department needs to understand the community. The State has great responsibility for prioritizing things in the State. But we do, too, at CDC. And we fund and support and we create national and international guidelines. And yes, we would

very much like to be able to have a comprehensive picture of the whole problem, not just the MRSA problem, the whole problem of preventable infectious diseases. Again, if we measure it, I know we will be able to fix it. But if we don't know the scope and magnitude it is very difficult to guess where we should put our effort.

Chairman Waxman. Thank you, Mr. Towns. You said you appreciated our holding this hearing. As I mentioned earlier, this was at the suggestion of Representative Tom Davis. But I do want to indicate that the idea was staff driven. Mr. Issa.

Mr. Issa. Thank you Mr. Chairman. Thank you for holding this hearing, regardless at whose insistence it was at. I would like to characterize, not just your testimony, but sort of the picture that you laid out. Because I think, hopefully, as the "Committee on Government Oversight and the Reforms Necessary," perhaps should be our name, it will lead to something positive. This is a 50-year old problem that the finest minds, our physicians and health care professionals, have either been unable to successfully end, they've only coped with, and in some cases, since you're still printing the plastic card today that says get the catheters out, they've been a participant in the delivery of that.

Because a catheter, for example, is not just about --

it is a pathway, it is a pathway where fingers touch. And in fact, the person putting it in or adjusting it or taping and retaping may be part of the process too that helps get it there. So our hospitals, even though you want to separate these, and I think it is appropriate to separate, it has got a number 300, does that mean that there's a 299, a 298 and so on?

Dr. Gerberding. There's 100, 200, 300, 400, 500.

Mr. Issa. And then there's subgroups?

Dr. Gerberding. Yes.

Mr. Issa. There's a lot of these?

Dr. Gerberding. Yes.

Mr. Issa. Basically staph kills more people in America than AIDS, all staph, including all the hospital staphs. More people die in which that's the primary cause leading to their death. So this is not an insignificant problem as a whole. You've been dealing with it for 50 years and you haven't vaccinated and you haven't successfully killed staph. Nor from your testimony do I think you're going to, is that fair to say?

Dr. Gerberding. I think it is very unlikely we're going to eliminate staph aureus as a human pathogen. But I do believe that we can have a tremendous impact on the infections that it causes, particularly, those infections in health care environments.

Mr. Issa. I'm viewing the less sanitary world outside the hospital and saying, okay, we failed in the hospital where essentially ever since we got the curtains out of the operating room, we've been cognizant of these things and trying to fight them.

So as much as I would like to believe that every gym locker room is going to get cleaned based on public awareness, I'm not buying it. What I am concerned about are what we should be funding your organization or you as an umbrella organization should be working with other organizations to do in the way of vaccine development. Particularly, I would like you to comment on the impact this could have on the military because they don't have any of the luxuries of really good hygiene at certain times in a war effort.

They certainly don't have the ability to spread out and isolate each other at will. And if, in fact, somebody were to use the ugliest of staph infection ever found, could they potentially weaponize it. So looking at it from a standpoint of where we put our funding into vaccines, into reserve antibiotics that would be used, only in a case of an outbreak, or only when we see something where nothing else is working and we want to stop an epidemic, if you will.

So I've given you a lot of questions, but I would like you to characterize it. What my concern is we have the

50-year problem that we haven't been able to do anything but work with. It is now out in the community in a less-informed and harder to inform, and even if informed and even if they did everything that a doctor would do or his health care professional team would do in a hospital, you wouldn't do any better than you would in a hospital which is, in some ways, a miserable failure since that's where you go to get staph infections that can really be nasty. Can you put it in that light so that we get some inkling not what you are doing, which is important, but of what we should be empowering you to do beyond that?

Dr. Gerberding. I would like to start with the perspective of the hospital or the health care environment. Because one thing that's changed in about the last 5 years is that this is becoming unacceptable to have one of these infections in the hospital. And that simple change in attitude is resulting in some phenomenal changes in infection rates. We have in our reporting system half of some of our intensive care units have had no staphylococcal infections in the last year, so they truly are eliminating the problem.

Mr. Issa. So it is like the curtains out of the operating room?

Dr. Gerberding. So you can do something about it? So I don't want to lose sight of that, because the key to that

is the commitment and the believe that you should not have staph infections when patients come to the hospital. But I think your broader question is really important. Our vaccine story for staph is not robust. There was a vaccine that went into clinical trial in a very hard to vaccinate population of people, dialysis patients. And unfortunately the vaccine did not prove to be effective at preventing staph infections in that group.

Not many vaccines are effective in people that ill. But we have some prototype work underway, not CDC, but many people have prototype work under way for second generation vaccines. But they're not getting the boost that I would like to see them have. They're not getting the focused attention. And there's actually a very tight coupling here between pandemic influenza and staphylococcus. Because one of the things that we have observed is that when children get influenza, they're prone to get complicated bacterial infections.

When adults get influenza, they're prone to get complicated pneumonias. Very often, it is a staphylococcus pneumonia. So as we're preparing for pandemics and stockpiling antivirals, we've got to think about stockpiling drugs to treat the complicating bacterial infections, including MRSA, since that's likely to be a big killer in the context of any serious outbreak. So the antibiotic

pipeline is not robust. It is not robust for anything right now. But it is certainly not robust in this direction.

So we need to look at our vaccine pipeline, both in the research that NIH is doing, as well as the work that goes on in the private sector. We need to look at the drug development pipeline. And then I think we've got to think about new approaches. Traditionally, the approach to a bacterial problem was to kill the bacteria. And unfortunately, as I've already said, that results in replacement with a resistant form, or substitution with a different player, not necessarily a better one. There are novel approaches in investigation right now that don't concentrate on trying to kill the bacteria. They actually concentrate on trying to prevent it from doing damage. And so they're like lasers going in to destroy certain parts of the bacteria as opposed to a bomb that blows the whole thing up. And I think those novel, you know, next generation strategies are not proven yet, but really something that needs a lot more attention and focus. And it is exciting to me what I've learned so far, but the pipeline is long and it is not very wide.

Mr. Issa. Thank you. Thank you Mr. Chairman. This was very informative.

Chairman Waxman. Thank you, Mr. Issa.

Mr. Cummings.

Mr. Cummings. Yes. Thank you, Doctor, for your testimony. I just want to -- this whole thing of hospitals and infections should concern all of us. A person goes in the hospital trying to say, for example, address a hernia, and the next thing, you know, they are sicker than they would have been if they had not gone into the hospital. And you've said something just a moment ago that I just want to know the extent of it. You said operating rooms have become better at dealing with staph infection. Is that what you said?

Dr. Gerberding. I said intensive care units.

Mr. Cummings. Intensive care units. And what is your measuring tool? Number one. And are there best practices? Johns Hopkins is located smack dab in the middle of my district, and I know they had some kind of campaign trying to get doctors to do more with regard to washing their hands and things of that nature. But I think we need -- I mean, that's very significant, because you've got healthy people who are literally going in, and I'm not just talking about Johns Hopkins, of course. But I'm just saying what have you all learned from that, that intensive care less staph infections, what have we learned that we can put out there to transfer to other hospitals?

Dr. Gerberding. We've learned a lot. And that little card you have in front of you is a summary of some of the

science that we have accumulated that defines certain best practices that we believe are really critical. So we've learned, first of all, that the most important step is to commit to the concept that it is not okay to have these infections that you've got to do something about and you've got to drive the infection rate down.

The second very important factor is that you can't just do one thing. You have to take a comprehensive approach and not think that there's a magic bullet. Oh, we'll all wash our hands more or we'll all screen patients. Those things are not magic bullets. You've got to systematically exhibit the best practices across the board. You've got to control antibiotic use. You've got to get the catheters out of patients because they're the biggest risk factor. And very often patients have catheters for convenience, not because they actually require them medically for as long as they're left in. But the science that supports these recommendations has been codified in a document called the Infection Control Precautions For Multi-Drug Resistant Organisms. And we have put out the recommendations of what the best practices are. But we've also said in your hospital you must measure these things. And if you find that your infection rates are not going down, then you need to do the next generation of interventions, which are even more important.

Mr. Cummings. Is that information out to the public? Because one of the things that I've noticed just from living is that people seem to be driven by money. So if a hospital has a record of infecting its patients, and the patients know about it and the patients have choices, and in Baltimore, you've got 50 million advertisements for hospitals and so apparently somebody is competing for patients, it seems as if that would be not only -- cause them to say, wait a minute, we're going to lose business, we're going to have some problems if we don't address it. So is there some database that a patient could go to? And if there's not would that be a good idea?

Dr. Gerberding. It is coming. More and more States are requiring that this information be reported. And some States are requiring that it be made public right away. CDC is facilitating that with our tools because we do know how to make these measurements accurate and reliable. But I also want to just read you a headline from something that came out in August of 2007, because the headline is: New Medicare Regulations Are Adopted to Reduce Hospital Infections and Medical Errors. Medicare will withhold payments to hospitals for failing to keep patients safe. So what CMS is preparing to do, at Secretary Leavitt's insistence, is not paying for things that are avoidable applications of care.

Mr. Cummings. I see my time is running out, but let me ask you this: Should we in the Congress back that up? Because you have got a Leavitt, now you're going to have another Secretary in a year and a half. Do you understand what I'm saying.

Dr. Gerberding. I believe I do.

Mr. Cummings. Are those things that we ought to be doing? Because this goes to the health of our people. And I'm just wondering what you think.

Dr. Gerberding. First of all, these are regulations and they last for a long time once they're enacted. But I think I would like to have a conversation. We would really like to sit down and think, okay, we've done this so far, what else could we do to really make this a permanent part of hospital culture, and, for that matter, any health care setting. So that we are not only relying on best practices in kind of a proactive way, but there's also an incentive in that we're aligning the payments that we make for care with the quality and safety of the care that's provided.

Right now, perversely, if someone has a surgical procedure, they may be reimbursed at a certain rate. If that procedure is complicated by an infection, more money is paid. Well, that's perverse. It doesn't result in a strong incentive to solve the problem.

Mr. Cummings. Thank you very much, Mr. Chairman.

RPTS JOHNSON

DCMN SECKMAN

[10:15 a.m.]

Chairman Waxman. Thank you, Mr. Cummings.

The Congressman from Tennessee, Mr. Duncan.

Mr. Duncan. Thank you, Mr. Chairman.

And I am sorry I didn't get here in time to hear your testimony. But there was a Washington Post story from October 19th that said these MRSA staph infections are reaching epidemic levels. And just trying to skim through your testimony, I see that you have a sentence in here that says, in 2005, there were 94,360 serious MRSA infections. Maybe you have covered this already when I wasn't here, but has this reached epidemic levels? And I think I did hear you say just a minute ago something about some progress or good efforts that were being made. But is this 94,000 number, would that be higher today, and is this going up fast or --

Dr. Gerberding. Short answer, sir, is I don't know because that was the first time we ever took a look that way, and we have to repeat it to know whether it is going up or down. But we can make some inferences: 85 percent of those patients in that study were people who acquired their infection in the hospital. And we have, from other kinds of

information sources, the suggestion that hospital infections are going down and that the proportion of them related to this particular bacteria may be going down as well. Right now, about 8 percent of all preventable infections in hospitals are associated with this bug.

But on the community side, I believe we would guess that the infections are increasing. I am saying that because AHRQ has data showing there are more visits for skin and soft tissue infections generically over time, and the small proportion of those that actually get swabbed and cultured so we know what the bacteria is, the proportion that are caused by MRSA is increasing. So we suspect there are more skin infections in some communities and that a greater proportion of those may be caused by this organism. But we don't have quite the solid evidence for that. There is a bit of extrapolation in that statement, and we need to do more studies to verify that as a broad issue. Certainly true in certain communities, but we don't know nationally whether that is the case.

Mr. Duncan. Even as we speak, just this past weekend a member of my staff here came down with a staph infection, but they told her that this is not a MRSA staph infection, and they have told my other staff members that they don't need to do anything or don't need to be worried. Are there many, many different kinds of staph infections?

Dr. Gerberding. Yes. There are many different kinds. And that is one of the fascinating things about this bacteria. They are not all alike. We lump them together when we talk about them, but they are independent families of staph, and they behave in different ways. So when we have the specialized laboratory resources, we can predict certain things about a particular strain of staph. For example, if your colleague had a methicillin-sensitive staph, it is unlikely to be related to this problem we are talking about today with these serious infections in healthy kids. But there is not always a way to know that up front. And I think the most important message is, again, kind of back to basics that you should respect skin and soft tissue infections, take care of them, keep them covered, try not to touch them, and if you do, be sure you clean your own hands and don't pass your staph onto somebody else. But more importantly, especially in communities where this problem has emerged, to make sure that if you see a wound that is getting angry or filling with pus or the surrounding area is getting redder and redder or the person has a fever, then not to wait and to get to the doctor.

Mr. Duncan. Well, I first heard about this just a few years ago in a meeting with some Members of Congress. And one former Member from Missouri told us that a 57-year-old county executive or county mayor of a suburban county to St.

Louis had gone into the hospital for some minor surgery and had gotten a staph infection. And 3 weeks later, he died. And since then, I have heard and read a lot of things about this, and it is getting kind of -- there is a lot of concern about this. And so I am glad we are holding this hearing. But I will tell you, maybe this is a little impolite or unpleasant to bring up, to bring up at this time, but I remember 5 or 6 years ago, Dateline had a hidden camera in a men's rest room at one of the major airports, and they obscured everybody's faces, but they showed that something like two-thirds of the men were leaving the rest room without washing their hands. And everything I read and hear, hand washing is about the best thing that you can do to try to hold this down.

Dr. Gerberding. I couldn't agree with you more. I think soap and water is, you know, the cheapest intervention that we have and extremely effective. Hand hygiene of any kind, the alcohol preps, I think you have one sitting up there, that is a very important part of just constantly disinfecting your hands. What happens is, especially in hospitals, if you touch something that is carrying one of these staph, it is sitting on your fingers. You may not end up carrying it yourself, but you can pick it up and move it someplace else. And that is where the hand washing just becomes so important, because you eliminate that transfer.

If you are a carrier of staph, you protect others. And if you happen to be in an environment where someone else has been present with the staph, then you won't pass it onto yourself or someone else.

I also want to emphasize, however, that this isn't something that is just floating around in the air or that we need to exaggerate the way it is spread. It is spread by very close personal contact. And primarily the major force of transmission outside the hospital are skin wounds.

Mr. Duncan. Well, I think it is important that we call more attention to this.

And thank you, Mr. Chairman.

Chairman Waxman. Thank you very much, Mr. Duncan.

Ms. Watson?

Ms. Watson. I want to thank you, Mr. Chairman, and ranking member for having this hearing today. We have all been following the stories in the local area about schools closing down. And I just want you to clarify for us, we see those beautiful, colorful posters that you hope to get out. When should a school close down and disinfect? What are the signs? Not all schools, you have already made that point, have the health care personnel there. And I don't think they are going to have them in anytime soon. We found on our desk these cards. Would it be a good thing to send these cards out to every school? Should the school

personnel carry these cards? Should we send them home when we find one case of staph? Should we close down the whole school and disinfect? Can you clarify the procedures for us?

Dr. Gerberding. Thank you. You know, we have a lot to learn about this, so I am going to tell you our best perspective right now, and we will learn more as we investigate behind the scenes. In general, when there is a case of this kind of staph infection in a school, it is linked to something like the athletic program or to some potential environmental exposure. And it is a signal for schools to take a look at their general housekeeping and particularly the housekeeping in the gymnasium or the locker rooms or areas where kids who have skin wounds might come in contact with each other. I mean, the wrestling room is a great example of that. The wrestling mat, for example, needs to be properly disinfected at periodic intervals. So this is a point where the school should review their procedures for environmental hygiene. There is generally no need to go in and disinfect the whole school, because that isn't how this organism is transmitted. From a public health perspective --

Ms. Watson. Let me just query that a bit. We don't know how it is transmitted. And I was going to ask you about soaps and disinfectants.

Dr. Gerberding. The local health officers who are involved --

Ms. Watson. Let me just say this, so you can give me a more comprehensive answer. We are talking about schools where children come from all kinds of environments and they are there. It could be spread through athletic activities, it could be brought from home and so on.

Dr. Gerberding. Exactly.

Ms. Watson. What guidance do you give the school personnel, since we have had two incidents in the surrounding areas? And I am just wondering, and you mentioned prisons before, too, and the fact that some of them don't even have soap. Are there some guidelines that we could send out to our schools? Maybe this ought to be distributed. So can you be a little clearer as to how we can protect, prevent in our schools?

Dr. Gerberding. The card that you have is targeted for hospitals. But it would be very easy for us to make a tool like that for schools. And I think that is a great idea, and we will look around and see how we can afford that. But I think we can figure out a way to get something like that accessible to teachers and trainers and coaches and anybody else who has a stake in keeping the school a safe and hygienic place. You asked me the question about closing schools. And I don't want the impression to be that, if

there is a case of this infection, that it is necessary to close the school. Sometimes a decision is made to close the school because you do need to pause and buy some time to go in and inspect and understand what happened and also to reassure parents that you are taking every step. So I would never say it is wrong to close a school for a variety of reasons. But it is not necessary, generally speaking, from an infection prevention perspective, to do that. It is necessary to assure that the school has a proper hygienic environment, using common sense principles of hygiene. And many have presented those. And I have, you know, these examples of various posters that you will find in a lot of schools already. They are made in collaboration, this one, for example, is with the Massachusetts Department of Public Health, the CDC and HSS, and this is for athletics on a football team. And these kinds of things are in the locker rooms and reminders of avoiding skin, keep your hands clean, shower after you play a sport, use a clean towel, keep your cuts and scrapes clean. So we are using a multimedia effort to inform students as well as schools, but I think we can do a lot more, and I want to be able to do that. So this is an opportunity for us to really have a broad campaign around preventing infections in schools and homes. And MRSA is a good hook for getting that message across.

Ms. Watson. My time is almost up. And I just want to

say this, as a former teacher and school psychologist and administrator, I know that current budgets -- I am from the State of California -- current budgets don't allow auxiliary personnel, because our constitution in our States only require two people in a classroom, the student and the teacher. So the first to go are the school nurses and other auxiliary personnel. Is it possible that CDC can put out some guidelines to the public health departments in counties throughout the country or to States so that they then will take some action to prevent this? It is awful frightening, with the news coverage that we have today, to know that young people are contacting the staph aureus, and they are dying. And I think we can prevent it. And I think, you know, you go into some schools, the toilets are dysfunctional, they don't have soap in them. So it might be, you know, we can require -- of course, we can't do it Federally, but they certainly could do it statewide -- require that there is disinfectant soap in every single rest room. We have got to do something so these new growths of pathogens don't take a foothold and spread across this country in an epidemic fashion, which can happen very easily in schools. And thank you so very much.

Dr. Gerberding. Thank you. My mom was a teacher, and most of the members of my family were teachers. And I know exactly what you are talking about in terms of school

budgets and the priorities that have to occur there. And I was impressed when I was learning about the school interface with this problem how much guidance and evidence has been produced by CDC and Department of Education and many State health departments. But I don't think that we have systematically assured it has gotten to all the places, to the PTAs, to the parents' groups. And this is a really good reminder for us we have to market more effectively what we have and fill in the gaps that we are missing. Thank you.

Chairman Waxman. Thank you, Ms. Watson.

Mr. Lynch?

Mr. Lynch. Thank you, Mr. Chairman. I also want to thank the ranking member for his work on this. And thank you, Dr. Gerberding. I want to sort of turn the question around a little bit. If these infections were indeed treatable, if these infections were not drug-resistant, we wouldn't be here today. And there seems to be a real history of inaction on the FDA's part to incentivize the development of vaccines and other antibiotics that would be able to treat these new infections. Now the fact of the matter is there are some countries, Mexico, countries in Central America, South America, where you can actually buy antibiotics over the counter like we do aspirins. And so what is happening in those countries is there is a breeding ground, basically, for super bugs, because they evolve over

time and become resistant to those antibiotics. But there are some things that we are doing in our own country that I think are problematic as well. And I wanted to talk to you this morning about some of these antimicrobial soaps. I have one here. It is a hand sanitizer. This one is Avant, I guess; it uses ethanol. It has alcohol in it. And it physically disrupts the bacteria on the skin. There is another one out there, Purell, that is similar to this. And that is fine; it doesn't use antibiotics. But there is another one here; this is antibacterial soft soap. And what is happening is, commercially, some of these producers, manufacturers are actually capitalizing on the fear that is out there. And this one has triclosan or triclosan in it. And that is, you know, that is an antibiotic that doesn't need to be in this. But what we are fearful of is that this is contributing to the problem, and that the more products that are out there that have antibiotics in them and don't need to, it is creating, you know, more resistance out there in the pathogens that we see. So what I want to know is what are we doing about this? Here we are allowing producers, manufacturers in this country to put out stuff that has, you know, antibiotics in it, creating more of a problem. And there are obviously some very -- this one has ethanol in it, you know, it is a green product, where it is doing the job. I mean, can we ask these people to take this

stuff off the market? And what is the efficacy of those efforts, if any?

Dr. Gerberding. Let me first say that you are bringing up a dimension of this that is very sophisticated, it is the dimension of the balance between pretending that we could possibly live in a sterile environment and common sense that would dictate, let us do the sensible things that we learned in kindergarten to try to protect ourselves and others from infections. And I do agree with you from a societal perspective, we are enjoying the marketing of the fear for any number of health hazards that is feeding a lot of unnecessary motivation to use many of these types of products. And right now, we don't have any evidence of resistance emerging to the compounds that are in these products. For example, alcohol, it would be almost impossible for a bacteria to develop resistance to alcohol just by the mechanism of how it works. So they are relatively unlikely. Although with triclosan, there has been some very preliminary worrisome suggestion that certain bacteria are developing the ability to exude it from the cells, and they could become resistant. It is not a problem, and we have been using these drugs for a long time, these compounds. So I am not going to say, it won't happen. But that is not my major concern with them right now. My concern is that we are creating an environment where people

are misunderstanding the hazards that actually exist, and they are misapplying this kind of technology and these kinds of products in ways that actually don't result in better health and, in some cases, might make matters worse. I mean, just an extreme example of that, if your hands are filthy and you rub some alcohol on it, you are really not cleaning your hands. You may be removing some things but are actually not able to disinfect your hands properly. So you need soap and water to be able to accomplish that. So I recognize that we are delivering a message that says hand hygiene is important, soap and water, and there is a role for these products.

We know from science in hospitals, where we have looked at their use and what happens to infections when they are used properly, that they can really be an important contributor to patient safety. But their overuse in other environments is not necessarily constructive and really diverts people from important steps.

Mr. Lynch. Thank you. I have limited time, so let me just ask you the other side of this, the first question I mentioned. What are we doing? I am working with a group called the Alliance for the Prudent Use of Antibiotics. And they are concerned that there aren't enough manufacturers out there that are trying to develop new antibiotics. They say we have got a small family of tools in our toolbox, and

we need more. What are we doing to help that effort to have drug manufacturers look at some of this stuff? It may not be the most lucrative stuff, but government does have an ability to incentivize research and development in certain areas. And if you would, would you share with us any thoughts on that? Are we doing anything in that direction? Thank you.

Dr. Gerberding. I would just say that Dr. Levy from the Alliance is a good friend of mine. And so I am well aware of the work that is going on with the Alliance. And there is some very important steps that are being taken there. The pipeline for antibiotics is attenuated for a lot of reasons. In part, the reasons have to do with the complexities of drug development and the fact that there aren't very many blockbuster ideas around anymore. They have sort of run out of new approaches to defeating these bacteria. And so the great ideas seem to be drying up. I don't believe that that is the end story here, but I think there has been a dramatic attenuation of what is in the pipeline to try to solve these problems. And part of the recognition is that these drugs have a shorter and shorter life span of utility because the bacteria are so quickly able to develop resistance. And it is so expensive and so legally expensive to try to bring a drug to market that it gets very complicated. I think we can do more. And as I

mentioned, the investments that NIH and the private sector are making in completely different approaches that are much more laser in orientation as opposed to blasting the bacteria in orientation, there are some very exciting and innovative strategies. I personally think for staph aureus we need a vaccine. There are people we know are at risk for this infection. And if we can develop a vaccine that prevents invasive disease and reduces the infection rate we will really save lives. And I think we need a concerted and very aggressive effort in that regard.

Mr. Lynch. Thank you. I yield back.

Chairman Waxman. Ms. McCollum.

Ms. McCollum. Thank you.

Thank you, Dr. Gerberding. I want to just follow up on two issues about how we go about identifying this type of staph that we are talking about today. One of the things that some States have been doing, Minnesota has been doing, and I quote from a Pioneer Press article, one of our newspapers, proposed State guidelines would require hospitals to test all high-risk patients for MRSA, isolate those with positive tests, and encourage all workers and visitors to stop the spread of disease by washing their hands. It goes on to site one hospital, Southdale has cut its hospital-acquired infections this year partly because it screens all patients in the intensive care for the presence

of this before it becomes a problem. All caregivers are paying more attention to infection control. And I am assuming by caregivers they are even including those who will be giving care possibly at home further instruction on hand washing and that as well. But then it goes on to say that the strains of this in hospitals are somewhat wimpy compared to the strains circulating in the community. And that is what has everybody I think really, you know, with heightened awareness with these unfortunate two deaths. But community cases often surface as skin infections in healthy people. Hospital cases often attack patients already weakened by surgery or other illnesses. So I am just wondering, just to make sure that -- because we go out and talk to people in the community -- just so that we are clear, the hospitals, what is the testing? I saw something just for a few seconds on television, it was a nose swab. What is the CDC talking to hospitals about doing? To follow up on another Congress Member's suggestion, what should we be doing to work with either with the Governors Association, State boards of health or with you so that there is a unified message going out? We don't have so many things tripping over themselves that nothing happens. And then here again even with the schools, school nurses are something that I am very upset that we have seen disappear in our schools for a whole host of reasons, this being one

of them. But maybe you could speak to that and what the CDC might want Congress to do or not to do to be helpful here again with schools, school nursing, school administrators, coaches' renewal, coaches' certificates which States certify and offer. What can we do to be helpful? And what are the types of things that you would want a Member of Congress, if a mom came up to me worried about their child in school, if a person came up to me worried about a loved one in a hospital, what do I need to know so that either I point them in the right direction and so that I don't give out misinformation?

Dr. Gerberding. Let me start with prevention in the hospital and other health care settings. What CDC has done is to bring the best experts together and to really look at the science and the best practices and try to draw conclusions about, what do we know is at least the basic set, we call them the tier one recommendations, that everybody should do? And we have published those, like we do our other infection control guidelines, and they are picked up by infection control professionals, which we do have in hospitals, thankfully, to implement them. What those recommendations say are basically you need to measure your problem and you need to reduce it. And if you are not reducing it with the basic recommendations that we have offered, you have to move to a much more aggressive and

expensive set of interventions, which include aggressive screening, aggressive isolation, and a variety of other steps.

Now you might ask, why wouldn't we screen and isolate everyone up front? And there are several reasons for that. First of all, the evidence indicates that that is not necessary to drive your infection rates down. There are many hospitals that have seen 60-plus percent reduction without taking that particular approach. But more importantly, in hospitals where this has happened, they have been able to show that patients in isolation get less care. And what happens is the doctor doesn't go in as much. The nurses don't go in as much. The bed sores go up. The other infection and safety problems increase. And so there is a yin and a yang. If you are going to isolate someone, you have got to commit to making sure that you provide the same attention and care that you would be able to provide them if they weren't in a room that was filled with barriers that you had to change your clothes to go in and out of and so forth. So there are aspects of this from a comprehensive approach to patients that I worry about. I was a hospital epidemiologist. It was my job to execute these kinds of programs at San Francisco General Hospital. And one of the things that I am aware of is that about 8 percent of the problem is staph, but there are a whole lot of other

bacteria that also cause deadly infections in hospital patients. And you have to have a program that deals with infections, not just with this particular bacteria, if you really want to improve the safety of your patient care. So the problem is much bigger than what we are addressing today. And it takes a comprehensive and a generic solution. But it can be done. And our whole point is, do it. And let us measure and report that you are successful while you are at it.

Chairman Waxman. Thank you, Ms. McCollum.

Mr. Sarbanes?

Mr. Sarbanes. Thank you, Mr. Chairman.

Thank you for your testimony. I became aware of MRSA when I was first elected last year. A lawyer who was in my law firm gave me a like 10-page handwritten discussion of this and sort of handed it to me and said, nobody's talking about this; you need to know about it. And so when the hearing was called, I was very anxious to come and understand more about the issue. We have had some questions about how the various practices that are out there that are increasing the resistance to antibiotics are something that we need to be concerned about. I want to just focus a little bit on what is being done with respect to animal feed and the introduction of fairly heavy antibiotic use in animal feed within that industry, and whether that is

contributing to this kind of resistance. Maybe you could just speak to that generally. And then I have a specific question on that.

Dr. Gerberding. This has been a subject of a great deal of scientific scrutiny from people in the agriculture side of the House as well as on the public health side of the House. And I think particularly deep analysis has been done in some European countries. I believe the evidence strongly indicates that the use of certain antibiotics in animal feed were a major driver for one of our most feared drug-resistant organisms, vancomycin-resistant enterococci, but that there is also an association with drug use in animal feed with the emergence of resistance in some more common enteric pathogens like salmonella. And so just as what happens in people is, if you have an infection and you treat it, eventually the bacteria will learn to be resistant to it. Of course, the same thing happens in the intestinal track of animals. Over time, they become resistant to these antibiotics. And the problem is, they are not over there, and they are over here. We are all mixed together. They are in our food supply. We work with them on farms. We have very intimate contact. That is why most of the new infectious diseases people have developed in the last 20 years have come from animals. So, of course, our drug-resistant infections could emerge from animals, or the

genes that cause that resistance could move from an animal bacteria to a human bacteria. So it is an important issue.

And I think, in Europe, where they have tackled it in a very systemic way, they have been able to show that you still get good yields from your chicken production or your pork production, and that it actually doesn't interfere with the livelihood and productivity of your industry if you do this in a sensible and prudent way. Beyond that, what I can say about the United States and the current status of our own regulations around certain antibiotics and animal feed, I am not up to date on that, so I would have to get back with you on the current status, but I know we have taken similar steps in the United States.

Mr. Sarbanes. I appreciate that. I guess there is an antibiotic that treats meningitis called Ceftriaxone, and there is a very close drug to that which is being used in animal feed called cefquinome. And I mean, meningitis is something that causes, obviously, high anxiety in the public. And right now, we are in a position to treat it with this one particular antibiotic, or at least it is a key antibiotic in the treatment regimen to combat meningitis. Are you concerned that the FDA allowing the use of this cefquinome in animal feed could create a problem with the treatment of meningitis?

Dr. Gerberding. I am not properly briefed on that, so

I would need to get back to you for the record on this particular issue. I will just say, generically speaking, wholesale use of antimicrobials drives drug resistance, and if we are creating an ecology of resistance that is relevant to human health, then it is a concern to me.

Mr. Sarbanes. Is the FDA, as it is regulating the use of antibiotics in animal feed, are they working into that analysis the effect it could have on the antibiotics that are being used to treat human conditions?

Dr. Gerberding. There are several organizations that have a stake in this; FDA, USDA, CDC among them. But about 5 years ago, people came together -- actually a little bit longer than that now -- and developed a comprehensive plan for dealing with antimicrobial resistance, which really should be revisited because it was a fantastic, comprehensive approach to systematically addressing the problem on a national and international scale. And this was one of the main issues in that report. And there were ten Federal agencies that contributed to it. It is quite good, and I would be happy to make it available to you.

Mr. Sarbanes. I appreciate that. I know the AMA and Infectious Disease Society have addressed this issue of cefquinome and their concerns about it, and they are hoping that the FDA will regulate against that usage. So I would be encouraged to hear more information about that.

Dr. Gerberding. Thank you.

Mr. Sarbanes. Thank you, Mr. Chairman.

Chairman Waxman. Thank you, Mr. Sarbanes.

As I indicated earlier, Mr. Matheson is joining our committee for this hearing. He is on the committee that has legislative jurisdiction over these issues and has been a leader with legislation to deal with resistant strains of antibiotics.

Mr. Matheson, I want to recognize you for questions.

Mr. Matheson. Thank you, Mr. Chairman.

And thank you for the opportunity to participate on this hearing's committee today. Dr. Gerberding, I want to ask you about the Federal response to the problem of drug resistance. It is not a new problem. In 1995, a report from the Office of Technology Assessment said that drug resistance was a growing problem and we needed some basic, commonsense public health measures to address the issue. In 1998, the Institute of Medicine also put out a report on drug resistance and said some similar things to the OTA report. In 1999, the GAO reported that data on drug-resistant bacteria were limited and raised concern this problem might get worse. So, in 2000, Congress enacted a law that set up a task force to coordinate Federal programs on antimicrobial resistance. I understand that the CDC played an informal leadership role for this task force. The

task force identified some top priority items, like creating a national surveillance program. And that was 7 years ago. I want to know, in your view, in the past 7 years, has the administration done a good job in addressing this problem and in implementing the recommendations of that task force that was set up?

Dr. Gerberding. You know, I would have to go back and look one by one at the recommendations. And I didn't prepare that. I was part of that task force, so I am very familiar with the process. And you know, the experience of bringing ten agencies together with the whole universe of stakeholders was something that I don't think had ever really been done before in government. And I do know that some aspects of the program were funded, and that my division, the division I initially directed when I came to CDC, was one of the beneficiaries of the investment in the antimicrobial resistance budget line for CDC. So, clearly, some things have happened. But CDC will be working with our other partners to reconvene that task force this winter. And we expect to go line item by line item through it and understand, okay, what did we do? What remains to be done? And where do we go from here? What was resourced? What wasn't resourced? What are the gaps? And let us refresh this and get the show on the road.

Mr. Matheson. I appreciate that. I will offer you a

couple of gaps that were key recommendations that the task force made that haven't been implemented, such as a comprehensive national antibiotic resistance surveillance plan, and I think there is still a need to research the most effective infection control practices. And I am glad to hear the task force is going to be coming back together.

Dr. Gerberding, as you may know, I have introduced legislation, and Chairman Waxman has cosponsored as well, called the STAAR Act. And it is an effort to strengthen our response to antimicrobial resistance. I am just wondering if you have had a chance to review this legislation, and if so, what you think of the provisions related to surveillance, prevention, control and research.

Dr. Gerberding. Yes, I did have a chance to review it, and thank you. I would say that there is one perspective that is good news and will make this a lot easier. And that is, we are in the process of switching from traditional approaches to surveillance to very contemporary approaches to surveillance, relying on electronic medical records and the connectivity that we have created. CDC is going to be funding eight enormous contracts with large States or health care organizations to be able to utilize anonymized data about various things, including infections and drug resistant infections that will allow local health officers and State health officers to have much quicker and much more

efficient and much, I think, more robust information in a timely way about these problems as they emerge. So the technology now allows us to do something very inexpensively that before we would have had to invest a ton of money to even get off the ground. That is exciting, and we are doing it. The other provisions in the act I think also reflect a comprehensive approach. And it would be good to compare what is in the proposed legislation with what the task force thinks the priorities are so that we could refresh and stay in lockstep as that moves forward.

Mr. Matheson. Sure. I certainly am open to any suggestions that you have for that legislation as we try to move it forward. So I make that just a general request of you and am interested in your input.

Dr. Gerberding. Thank you. Thank you.

Mr. Matheson. Again, Mr. Chairman, I thank you for the opportunity to participate in the hearing, and I yield back.

Chairman Waxman. Thank you very much, Mr. Matheson.

Mr. Bilbray.

Mr. Bilbray. Thank you, Mr. Chairman.

Doctor, as the Chairman well knows, in my previous life, before coming here, I supervised the health program for 3 million people in San Diego County. And obviously, my information is very dated, so I would ask you to sort of update me on the latest. One of the issues that we were

addressing was the creation of these resistant strains through incomplete treatment, antibiotic treatment. Is that still a concern out there about the fact that a patient's ceasing treatment after the symptoms have left but not completing the entire treatment?

Dr. Gerberding. That certainly is one of the factors that promotes resistance, incomplete killing of the organism and leaving some of the stragglers around to benefit from their reduced susceptibility and emerge. That probably has not been an important issue for staph infections, but it probably is an important contributor to some streptococcal infections and some other common community problems. So when people are prescribed an antibiotic, they must take it for the duration that the doctor prescribes it.

Mr. Bilbray. Okay. I want to say this, because I think it is important that the Chairman and the committee keep it in mind when we talk about other things, one of the big concerns we had, Mr. Chairman, was that, especially in the population of the homeless community, where you had mental illness, substance abuse and basically a feeling of not wanting to be under the jurisdiction of anybody, we had a real problem with trying to maintain a lot of people in the homeless community to finish their treatment. And our health department was always concerned about that. And we were sort of caught in between the ability to protect the

public health but not wanting to step on the civil liberties of the homeless. And I think that we almost err so far over to one side, because the public's perception of civil liberties was so that it doesn't affect us if somebody doesn't finish their treatment. And I think that we need to talk about this openly that, yes, it does. And just as we require people to be vaccinated if they are going to go to school and expose other people's children, we need to be a little more outspoken about the fact that, even if it means requiring people to finish treatment, we need to be a little more forceful on that than we have in the past. Is that still a legitimate concern?

Dr. Gerberding. I like to answer questions like this with science. And I can certainly say the quintessential example of a scientific yes is in the case of tuberculosis. You have to finish your tuberculosis treatment in order to be protected from TB and prevent the emergence of drug resistance. And it is important for the individual, but it is of essential importance to public health as well. So to the extent that the science would support aggressive interventions, we would certainly -- we would want to go in that direction.

Mr. Bilbray. I appreciate that, and I think you have given us sort of a guidance there in that we need to make sure that our civil law and our criminal law and our

resources for treating are reflected by good science and that we make sure that we move into those areas of requiring people to finish treatment when and where it is only proven to be needed for the public health, as opposed to doing it universally or to ignore the problem universally, which is to a large degree, none of us have wanted to take on that tough public relations problem, explaining to the media why this person had to be put into custody because they were chronic violators of the, you know, the finish-the-treatment argument. And that has been a concern in that population. And it is one that I think we just need to be frank and brave enough to raise.

Dr. Gerberding. You are raising an issue that I think is very important for the committee to understand. And that is the kind of research that you are describing is very practical research. This isn't the kind of thing that excites people to write RO1 NIH grants, but this is such important knowledge. And we need mechanisms to be able to ask and answer these very, very down-to-earth, in-the-trenches kind of questions about what is working, what isn't working. It is the application of all this biomedical knowledge in the communities and in the streets, in your case, that we just need to take our science that last step so that we can answer these questions. We call it learn-as-you-go research. But it is kind of the evaluation

and the applied evidence to answer the question, well, what is the best way to do this? Or what is the harm from taking that step? Or what does it cost? Or what is the best method for getting things disseminated? And we have some real gaps across the board in all of these issues related to preventable infections and drug resistance, whether it is what works in the hospital or what works in the community or what works in the school. We need to get answers so that we are able to provide something other than it is common sense when so much is at stake.

Mr. Bilbray. Thank you, Doctor. And I will just say that one of the great privileges I had as chairman of the county was to go and work 1 day in a certain department. And when going out into the community with the health expert to triage and, you know, make contact with the homeless community specifically for health reasons, that is only through their practical knowledge and their practical application was I able to learn that. So I hope to be able to bring that to the forum. Thank you very much.

And thank you, Mr. Chairman, and I yield back.

Chairman Waxman. Thank you, Mr. Bilbray.

Dr. Gerberding, that completes the questions from the members of the committee. You have done an outstanding job and given us a better perspective of this issue. And I thank you so much for it.

Dr. Gerberding. Thank you.

Chairman Waxman. We have a second panel that we are going to hear from and question, but we are going to break now and return at noon, or as soon thereafter as the Joint Session of the Congress has been completed. So we stand in recess until 12 noon.

[10:58 a.m.]

[Recess.]

[12:10 p.m.]

Mr. Towns. [Presiding.] I would like to welcome our second panel.

STATEMENTS OF JAMES BURNS, M.D., M.B.A., CHIEF DEPUTY COMMISSIONER FOR PUBLIC HEALTH, VIRGINIA DEPARTMENT OF HEALTH, RICHMOND, VA; ELIZABETH A. BANCROFT, M.D., S.M., MEDICAL EPIDEMIOLOGIST, LOS ANGELES COUNTY DEPARTMENT OF HEALTH SERVICES, LOS ANGELES, CA; ROBERT S. DAUM, M.D., PROFESSOR OF PEDIATRICS, UNIVERSITY OF CHICAGO, CHICAGO, IL; STEVEN L. WALTS, ED.D., SUPERINTENDENT OF SCHOOLS, PRINCE WILLIAM COUNTY SCHOOLS, MANASSAS, VA; ERIC GAYLE, M.D., BRONX REGIONAL MEDICAL DIRECTOR, INSTITUTE FOR FAMILY HEALTH, NEW YORK, NY.

Mr. Towns. As with our first panel, it is our committee policy that all witnesses be sworn in. So please

rise and raise your right hand.

[Witnesses sworn.]

Mr. Towns. Let the record show that each witness answered in the affirmative. I would briefly introduce each witness. Dr. James Burns is Chief Deputy Commissioner for Public Health at the Virginia Department of Health.

Welcome.

Dr. Elizabeth Bancroft is a medical epidemiologist from Los Angeles County Department of Health Services.

Welcome.

Dr. Robert Daum is a professor of pediatrics at the University of Chicago.

Welcome.

Dr. Daum. Thank you.

Mr. Towns. Dr. Eric Gayle is a family physician in New York City who practices at a community health center in the Bronx.

Dr. Steven Walts is Superintendent of Schools in Prince William County, Virginia. And of course, he is from the ranking member's district.

Let me begin with you, Dr. Burns.

Welcome all of you.

Dr. Burns.

STATEMENT OF JAMES BURNS, M.D., M.B.A.

Dr. Burns. Mr. Chairman, distinguished members of the committee, I am honored to be testifying before you today. And I would like to thank the chair and the committee members for convening this hearing on a very timely public health topic and for providing Virginia with the opportunity to discuss the public health impact of community acquired methicillin-resistant *Staphylococcus aureus*.

The recent death of a teenager in Virginia and the closing of several schools as a result attracted intense media interest in MRSA, the likes of which we have not seen in Virginia since we had three cases of inhalational anthrax in 2001. We were contacted by numerous local, State and national news organizations, and our central office staff and local health directors gave countless interviews. Conservatively, we spent more than 2,000 staff hours, over 2 weeks, on this issue.

Community concerns were not limited to parents and students. A local office of the Department of Motor Vehicles closed when an employee was reported to have a MRSA infection on her arm. The closure was despite the recommendation of her physician and the Health Department to not close the office.

In addition to many individual contacts with the media, citizens, local and State officials, and a statewide press

briefing, the Health Department provided many online resources, worked with the Department of Education to draft guidance for local school divisions, which was transmitted to them, and worked with the State Human Resources Department to provide guidance to State agencies. And that is in addition to all the individual contacts that the local health departments had with those similar situations at the local level.

The messages we have emphasized in our communications are ones that we have heard here today; that, in spite of this unfortunate case, serious MRSA infections are generally associated with hospital patients receiving invasive procedures, and that skin and superficial MRSA infections are generally mild. Also, those wishing to decrease their relatively small chances of becoming sick from MRSA should wash their hands frequently, cover cuts and scrapes until they are healed, avoid contact with other people's wounds and dressings, and to not share personal items, such as towels and razors. We emphasized that the spread of MRSA was mostly person to person, so general environmental cleaning is not generally indicated, though cleaning of certain kinds of exercise equipment between users and similar measures are reasonable.

Among the most frequently asked questions by the public and media was how many MRSA infections occurred in Virginia

each year. MRSA was not a reportable disease, and we could not answer that question. There was intense interest at all levels of the government in introducing legislation to address the public's concern. Governor Kaine determined that the most appropriate and the most effective strategy was for the Health Commissioner to use his existing statutory authority to add MRSA to the list of diseases required to be reported by laboratories. An emergency regulation was issued by the Commissioner on October 24th to establish this goal.

Antibiotic resistance has been on our radar screen in Virginia for many years. Beginning in 2000, the Virginia Department of Health began working with the Centers for Disease Control and managed care providers in Virginia on an antibiotic resistance prevention program designed in two parts; a public education campaign and a health provider campaign. The public education campaign focused on convincing patients not to ask for antibiotics when they went to a doctor with respiratory infections, and emphasized the importance of finishing the entire course of antibiotics. We also evaluated physicians' prescribing patterns for pharyngitis, usually a viral infection not requiring antibiotics, and we were able to show a statistically significant decrease in those inappropriate prescriptions. The campaign received national recognition

at the National Press Club in April of 2001. We received grant funding from the CDC to support this effort. And our campaign continues today through a partnership with Anthem Foundation, that is the Blue Cross/Blue Shield company in Virginia, and the Medical Society of Virginia Foundation. We believe that such a campaign in every State would be useful in reversing, or at least slowing, the troubling trend towards increasing drug resistance.

I would be remiss without taking this opportunity to thank the many Health Department employees in our local offices, the Office of Epidemiology and the Office of Public Information, who worked so hard to determine that there was no increased risk to the public as a result of this unfortunate case, and to communicate accurate and timely information to all requesting it. I also deeply appreciate the support provided by the Association of State and Territorial Health Officials, and the great support provided by our colleagues at the Centers for Disease Control. Thank you.

[Prepared statement of Dr. Burns follows:]

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Mr. Towns. Thank you very much, Dr. Burns.

Dr. Bancroft, we will hear from you now.

STATEMENT OF ELIZABETH A. BANCROFT, M.D., S.M.

Dr. Bancroft. Thank you. I am pleased to be here to present a public health context of community MRSA.

As has well been testified earlier today, the recent CDC study estimated there is approximately 94,000 invasive infections of MRSA in the United States each year. And this is greater than the combined number of infections caused by the most invasive bacterial organisms that we commonly follow in public health, including group A strep and pneumococcal disease, which is another important antibiotic-resistant infection. Furthermore, the number of estimated deaths associated with MRSA, approximately 18,000, exceeds the number of deaths due to HIV/AIDS, though all of those death with MRSA may not have actually been due to that organism. On the other hand, the estimated number of deaths due to MRSA is only half the estimated number of deaths due to influenza in the United States, to help put this disease into perspective.

Community MRSA has been well described, occurs in those who have not had any significant exposure to healthcare in

the year prior to their infection. It comprises only 14 percent of all invasive MRSA infections and has a rate of infection in the community, at least for the invasive kind, within the range of other significant community organisms. Furthermore, only 6 percent of community MRSA cases results in invasive disease. The vast majority of community MRSA cases are skin and soft tissue infections, and many of these infections can be cured by a simple drainage procedure and may not even require antibiotics. In fact, we would prefer that doctors hold off on treating many of these cases with antibiotics so as not to have the organism develop further resistance to the antibiotics.

Despite all the media attention on children with MRSA, the two CDC studies have demonstrated that school-age children 2 to 17 years are at lowest risk for being diagnosed with community MRSA, at lowest risk for having invasive disease due to community MRSA and at lowest risk for dying due to community MRSA. So while the media attention is understandable on the children, the children actually have the lowest risk of acquiring this disease. Though community MRSA is relatively benign compared to healthcare MRSA, outbreaks of skin infections due to this organism tax the public health system, as can you see what happened in Virginia.

In Los Angeles County, we have been addressing

community MRSA since 2002, when we first investigated outbreaks of skin infections due to this organism in diverse settings, including the jail, men who have sex with men and an athletic team. We have developed extensive health education for consumers and healthcare workers, including some really gross pictures of skin infections in order to get people's attention. In conjunction with the CDC, we developed guidelines for preventing the spread of staph in community settings. And back in 2004, we actually disseminated those prevention guidelines to homeless shelters, schools and gyms.

Though there has been a lot of media attention on children, our largest outbreak has actually been in the Los Angeles County Jail, where more than 3,000 cases of MRSA skin infections have been diagnosed in each of the past several years. The county has spent literally millions of dollars trying to reduce the spread of MRSA in the jail. And only now, after 5 years, are we seeing a leveling off of these infections, though I doubt we are actually going to completely eliminate these infections because of the close, crowded living conditions in the jail, because of the substandard hygiene that is often in a jail, and because these infections are often reintroduced into the jail by people in the community who have the infection and bring it into the jail.

Separately, we have also had to address concerns by firefighters, police, paramedics, social workers and sheriffs' deputies and other first responders who are worried about getting this infection on the job. For example, I recently had a call by a social worker who refused to go into the home of a foster child because that child had MRSA. So there is a lot of hysteria surrounding this disease, especially in our first responders.

Controlling community MRSA, as you have heard, or any outbreak of skin infections is not rocket science. We know the basics: hand washing, maintaining good hygiene, limiting sharing of personal items and keeping draining infections covered with a clean, dry bandage. However, there are still questions as to the role of the environment and the transmission of this infection; if and when to perform surveillance for MRSA, there are many pros and cons for performing surveillance; and how best to control outbreaks with minimal interventions and maximal impact. And we want and are looking forward to working with CDC and other public health agencies to address these questions. Thank you.

[Prepared statement of Dr. Bancroft follows:]

***** INSERT 2-2*****

Mr. Towns. Thank you very much, Dr. Bancroft.

Dr. Daum?

STATEMENT OF ROBERT S. DAUM, M.D.

Dr. Daum. Good afternoon. I am delighted to have this opportunity to communicate information about what I consider to be epidemic community-associated MRSA disease that we are experiencing in Chicago. I apologize. Can I start again?

Mr. Towns. Go ahead.

Dr. Daum. I am delighted to have this opportunity to communicate information regarding what I consider to be epidemic community-associated MRSA disease in Chicago and in most locales in the United States. I am a pediatrician. I take care of patients, children with MRSA and severe MRSA infections all the time. I also have a laboratory, where I look at both basic and applied research questions related to MRSA.

I am here today on my own support, because I feel that this is an important question that should be sort of discussed and dealt with. It is important to recognize that I have been in practice, in hospital-based infectious disease practice, in pediatrics since 1978, and I have never seen anything like what I have seen in the last decade. The

problem is here; it is certainly not going away. In the last 6 weeks at our institution alone, we admitted five children to the hospital with severe invasive MRSA infections that require prolonged stays in the hospital, prolonged antibiotics and prolonged use of medical resources.

When MRSA was first recognized in 1960, shortly after the introduction of it as an antibiotic, we had the good luck of having it remain confined largely to healthcare environments. But the situation changed dramatically in the mid-1990s when we started noticing MRSA infections in perfectly healthy children and adults in the community who had not had any healthcare exposure at all. These infections might be just skin and soft tissue infections for the most part, and that is true, but in fact, they are frequent and often require hospitalization for aggressive surgical drainage and prolonged antibiotics.

What we realized fairly shortly after the onset of this epidemic in the community around the year 2000 was that the MRSA strains that were in the community were not what everybody thought was happening at first, and that is to say, the hospital strains migrating out into the community. These were novel strains that had arisen in the community, and they are both antibiotic-resistant, and they have virulence factors and virulence properties that the hospital

strains do not have.

It is important to understand that nothing is black and white, and the hospital strains have migrated out into the community to some extent. But what is driving epidemic disease at our center and in most centers around the United States is in fact these novel strains that are out in the community. Work is going on as to try and identify what the toxins are, what the genes are that these novel strains have that are able to make it cause severe disease, but to date, they have not been found.

I would like to call attention to a couple of slides very quickly that I brought. This is my assistant's concept of a pyramid. And you can see, as you heard this morning -- I won't belabor it -- that asymptomatic colonization is the most common manifestation by far and then skin and soft tissue infection. But at the top of that pyramid is a substantial health burden, in children and adults, of severe invasive disease that is really beginning to tax our healthcare system. We don't know a lot of information that we need to know about how this organism is so successful at spreading in the community. Household contacts are frequently themselves involved with these MRSA infections, implying that this is a very contagious disease. Other examples of close contact situations that you have heard about include daycare centers, military installations,

correctional facilities and athletic facilities.

Before this MRSA epidemic began, such evidence of spread in these groups was extremely rare and hardly ever described. In addition, there may be some racial and ethnic group predisposition. Native Americans, Pacific Islanders are two examples of groups that might possibly have some predisposition to this. Careful epidemiology badly needs to be done to determine what the exact risk of various members of our community are.

We heard this morning that colonization rates asymptotically are .9 or 1 or 2 percent. In some institutions where they are having epidemic disease, colonization rates of 9 or 10 percent have been reported. In most U.S. cities, community MRSA is now the most common pathogen isolated from skin and soft tissues presenting to emergency rooms. And USA 300, the so-called community strain, is responsible for 97 percent of them.

So if we could see the next slide really briefly, and hit the first PowerPoint, whatever, necrotizing pneumonia is one of the severe community syndromes. That is normal lung on the left. It looks like a sponge. Those white spaces are where we exchange oxygen. If we could press it again. This is a child with necrotizing pneumonia who died. Necrotizing pneumonia is all too common with this. And you can see those blue things in the field are staphylococcal

colonies, and the red stuff is blood.

Next slide, please. This is a child who died and with a novel staphylococcal syndrome caused by community MRSA strains. You can see the rash that he had made it look like a kind of meningitis called meningococcal disease that patients and teenagers are known to die from. This is a novel finding that has not been described before among staphylococcal disease.

Next, and finally, these patients who died, this is the adrenal gland, which is an endocrine gland, sits on top of the kidney, nice normal layers of cells on the right. Next you can see that is this adrenal hemorrhage. And this is a mode of death from severe community MRSA disease. This was novel enough to get published in the New England Journal of Medicine. Before the onset of epidemic community MRSA, this was never seen before.

So just to go very briefly to a couple more points, the MRSA epidemic has changed the paradigm of clinical practice. No longer can we use penicillins and cephalosporins for routine treatment of putative staph infections. We are forced to rely on older drugs like clindamycin and Bactrim now as the front line drugs. These drugs have not been adequately evaluated for community MRSA. They are tough horses to ride. They are old antibiotics. Vancomycin, the so-called antibiotic of last resort used to treat inpatients

with severe community MRSA disease that needs hospitalization, is starting to erode, with global decreasing resistance noted across the country. Screening tests, people have been desperate enough to do something about this that they felt like they have to institute procedures that don't make a lot of sense to me personally, screening tests performed at the entrance to the hospital. The epicenter of community MRSA is no longer in the hospital. We spent the morning talking about it. But the problem has now shifted to the community. Identifying carriers at the door of the hospital has created a lot of anxiety among people that are colonized and not sick. They call, and they e-mail me, what should they do now? We have no answers for them. We don't know what the notion is that someone is identified as a carrier, what their disease attack rate is.

. If that is for me, I just want to finish by saying that I think this is the epidemic now. This is not like bird flu, which I am not denigrating the importance of that, which is something we do need to work on and prepare for, but this is happening now. Dr. Bancroft and the CDC authors of the JAMA paper concluded that this is a major and enormous public health burden. We need to fill the resources in with the multiple information gaps with how MRSA is spreading in our community. We don't know how that

is happening, and we have a lot, a lot of missing information. Both the NIH and the CDC, in my opinion, have to massively increase their agenda and fund efforts to control this infection. The STAAR Act, as part of the Infectious Disease Society of America initiative, will go a long way to fill in this huge amount of missing information. I apologize for going over and thank you very much.

[Prepared statement of Dr. Daum follows:]

***** INSERT 2-3 *****

Mr. Towns. All right. Thank you.

Dr. Walts.

STATEMENT OF STEVEN L. WALTS, ED.D.

Mr. Walts. On behalf of Prince William County's 72,654 students and their families, our 10,000 employees, our school board and our community, I thank the members of the House of Representatives Committee on Oversight and Government Reform, and in particular Ranking Minority Member Tom Davis, for inviting me to speak with you today.

I am going to give you a firsthand account from the perspective of a school system and a school superintendent on dealing with the drug-resistant MRSA, which has affected us as the second largest school division in the State of Virginia. I am sure that I speak for every public school superintendent when I say that safety and security of our students is of the utmost importance. Without a safe learning environment, teaching and learning cannot happen.

When most of us grew up, safety and school were synonymous. That has changed a little bit over the last 10 years, and we can take nothing for granted. Talking about safety, from senseless and desperate acts of violence to infectious diseases, school personnel have had to renew

their diligence in keeping their environments safe. This is obviously a challenge, as most of our employees are teachers and are in roles that directly support instruction. We are not in the law enforcement business, nor are we of the medical profession, although we do have a number of school nurses who quietly perform heroic tasks each and every day. So we have to lean heavily on our partnerships that we have established with other agencies. And for the most part, those partnerships are working well. And then there is the challenge of making sure we are keeping our parents and our school communities and our larger public informed about what is going on in the school division. Of course, this ranges from many positive recognitions and awards to urgent communications, such as we have faced with the increase of MRSA cases.

As I know you are aware, in addition to the legal implications, there is a delicate balance that we are required to walk from communications, privacy issues and the creation of public hysteria, which is pretty easy to happen with medical matters. In Prince William County Schools, as of Friday, November 2nd, we had 21 documented cases of MRSA, with 7 cases still considered open, meaning the student or employee has not received clearance from their doctor to return to school. And although we weren't required to do this, we began voluntarily reporting these statistics as a

public service. While we feel this is our responsibility to our public, unfortunately there are some negative consequences to this. We do not know that any of these cases were actually contracted at our schools. But because we are reporting that people have the infection, the public may naturally make assumptions like, these were caught at school, and inadequate cleaning was a source of the infection. Like the flu, it is virtually impossible to know exactly where someone picked up the infection. But I can assure you, we are very diligent with our cleaning practices, and I am confident we are doing everything we can to keep our schools and facilities free of MRSA.

The challenge and response, there is an excellent summary on our Web site, www.pwcs.edu, under announcements. There is a lot of information there, and you can see exactly what we have been communicating to our public. Initially, two athletic-related cases of MRSA showed up within about a week of each other in mid-September at one of our 10 high schools. It is not uncommon for one or two cases to show up in a school environment each year. So this did not seem to be out of the ordinary. In fact, our athletic trainers have been on the leading edge of preventing and treating MRSA, since the athletic community was an area where this topic first became an issue. The school nurse and the athletic trainers sent a letter home to parents of the sports team

involved, informing them of the case, and providing tips and precautions they should take.

We also had an employee at a different school report a case of MRSA during the same time frame. About 2 weeks went by, and then a student in another school reported a case of MRSA. And it just went on and on and on. The following week, a student in Virginia, not in our school division, actually died of MRSA, which greatly increased the public awareness of this. And then there were other cases that were generated, and a school, again not in Prince William County, closed.

So, around October 17th through 19th, we had five more reported cases in Prince William County, and it was all over the national news media. So issues began to surface rapidly. We triggered a comprehensive division communication plan, and we have had countless staff members and departments basically working on this 7 days a week for the past 3 weeks. I am pleased to say that we are diligently communicating with our public, and we daily update on our Web site each afternoon all the established cases.

We also have standards and protocols for each of our 86 schools. So if a case arises, the principal can quickly put on a telephone recording automated message, send home a letter to students, post the information on their school Web

site and work with us centrally to update our school division Web site.

We have a lot of cleaning protocols that we use. We are paying particular attention to areas, such as gyms, showers, locker rooms, desktops, water fountains, door knobs and panic bars. We are following the procedures, and our schools are being disinfected as they are being cleaned nightly. Buses at schools with known MRSA cases have also been disinfected.

Talking a little bit about the health issues, the Virginia Department of State Health has been in close contact with us, and we are working with our own medical consultant every step of the way. Our division communication plan focused on good hand washing, and included a parent tip sheet and other health-related precautions.

Unless our school personnel observe an unusual skin lesion firsthand, we are dependent upon the students or their families to inform us of an infection. And in some cases, we were not made aware of this until after the fact. Based on the inquiries of our own health service staff, we discovered that, initially, some of the students diagnosed with MRSA did not actually have that strain of the disease, but they were being prescribed with the antibiotics anyway. And of course, this strain of staph infection is already

resistant to antibiotics, so to be assured that we can confidently communicate to the parents, we need to be confident that the medical community is treating these cases using best medical practice. Because staph in general and the MRSA strain included can be found anywhere at any time, in fact most of us most likely are carrying it on us today, the medical community cannot say definitely that the person infected is MRSA free without reculturing. And from what we know, that is not always being done. However, doctors are clearing students for school because it is not contagious if a sore is not open and since it is not an airborne infection. Since we know that MRSA can spread by contact with an infected open, oozing wound, we did decide not to let any students diagnosed with a confirmed case of MRSA participate in sports or physical activity if they had any wound whatsoever.

A few final observations. I have asked what could be done to help school divisions in the future to better respond to our communities on such health-related issues, and I would respond with the following: The government, Federal, State, local, could help us to serve as a calming force with the public by alleviating unfounded fears, possibly through public safety announcements. Local, State or Federal health agencies could be out in front of the media so the media does not end up driving the message

without the proper professional guidance and perhaps create a public hysteria in the process. A good example is our working relationship with law enforcement agencies and the media. If a criminal incident occurs at a school, the media asks us school-related questions and the law enforcement agencies questions pertaining to the criminal nature of the incident. The medical community, CDC, State and county health departments could quickly speak to the facts.

Mr. Towns. Could you sum up, Dr. Walts? Could you sum up?

Mr. Walts. Yes. In the case of MRSA, reinforcing with the public how it is contracted, and even when a student is diagnosed does not mean the infection was actually contracted at school. So we feel we have communicated our issues well, but we have those suggestions as other ways we could collaborate to work through these kinds of issues in the future. Thank you.

[Prepared statement of Mr. Walts follows:]

***** INSERT 2-4*****

Mr. Towns. Thank you very much, Dr. Walts.

Dr. Gayle.

RPTS MERCHANT

DCMN ROSEN

[12:40 a.m.]

STATEMENT OF ERIC GAYLE, M.D.

Dr. Gayle. Thank you for the opportunity to address the critical subject of methicillin-resistant staph aureus, or MRSA, as it is commonly called, particularly in the context of how this affects vulnerable communities like the Bronx and the role that community health centers can play in this regard. I am a family physician who has practiced primary care in the Bronx, New York for the past 9 years, and the Bronx Regional Medical Director for the Institute For Family Health, an organization that provides over 75,000 people in New York State, most of them ethnic minorities, and the majority on Medicaid or uninsured.

I am here today to provide testimony that speaks to the specific needs of my community in respect to MRSA and the critical role that community health centers play in the management of contagious diseases such as this. My most recent contact with community acquired MRSA was June 2007. Let me reassure you, as I reassure my patients, that MRSA has been in the community for many years and has been successfully treated well by community health center

physicians for the most part without much fanfare. MRSA is significant to the health of the individual and to the community, mainly if it goes unrecognized and thus is improperly treated. The problem for community health center physicians is that oftentimes we are called upon to evaluate a patient only after the infection has significantly progressed and the patient is already ill and possibly toxic.

This is because community health centers are known as places where people can seek care, even if they are uninsured or if they need care in their own language or even if they become ill in a crisis. We are truly a major part of what has been termed the community's health care safety net. Community health centers do their best work when they are involved in the prevention of illnesses. One can never do enough in the education of our patients and the public so that once there is a question about any illness or malady that they know that they need to contact their primary care provider immediately.

This is the role that community health centers play and play so well. We are often the first contact for our patients for whatever their health concerns are. But tragically many families do not have a medical home, do not have a community health center such as ours to go to. We need to continue to grow and develop these vital community

resources so that they are available everywhere. Where else will patients be educated to take care in their personal health, particularly as it relates to communicable diseases?

We advise them that if they have open sores or rashes that they ought not to participate in contact sports activities, advise the kids not to share towels in gym or not to go to school or to work with any contagious illness.

With MRSA now seemingly more prevalent, community health centers with electronic health record capabilities can closely monitor the patients they are seeing for possible outbreaks within a particular community and similarly alert community providers of any clusters of infections being seen. With the dramatic media coverage of this infection, MRSA, there is no better place for the community and for patients to receive important information about this disease and the necessary precautions that one must take than their local community health center. Emergency rooms and hospitals have neither the time nor the opportunity to spend in the education of the patients about properly hygiene techniques. Most of which we have heard already today. I would caution all that we need to remember that we are living in time where our communities are constantly being reminded of the many other serious and contagious illnesses that are out there.

In communities where there are immigrants from multiple

nations and where international travel is common these include West Nile virus, Avian flu, tuberculosis and the risk for both epidemics and pandemics. Community health centers are the medical home for millions of patients nationally. And our patients are provided not only high quality accessible and affordable health care, but extensive health education. In the case of MRSA, a major role has been the dispersal of large quantities of reassurance.

I want to mention one other point in closing. The Institute For Family Health where I work has installed a state-of-the-art electronic medical record system which is integrated into the central surveillance system of the New York City Health Department. Every night, all the patient encounter information from the day's visits stripped of any identifying information is downloaded to the Health Department for analysis. The Health Department looks for any symptoms like rash or boils that might be appearing at the higher than normal frequency that day.

This kind of network gives the Health Department and thus all physicians in the community a jump-start on containing an outbreak of infection illness. My patients, your constituents, deserve this type of investment in their health. This can only occur if there is funding provided for electronic medical records in the community health centers allowing for integration of health center systems

with public health departments to get more accurate and more timely information out to the public.

Thank you for listening and for the opportunity to address the committee. Continued support to provide a community health center home for all vulnerable people and to provide information technology and support of the providers who work there will ultimately work to contain any spread of communicable disease in the community and any spread of the panic that may accompany it. Thank you.

[Prepared statement of Dr. Gayle follows:]

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Mr. Towns. Thank you very much, Dr. Gayle. Let me thank all of you for your excellent testimony. Now we move into the question and answer period. And let me start with you, Dr. Walts.

You know, when a situation occurs in a school, parents get up in arms. And they will say, well, I'm not taking my son or my daughter back to that school. And of course, others will get involved and say you should not. And then somebody from the school will indicate the fact that the school is now safe. And then they will say to you, you are not a medical doctor, you're not in a position to evaluate whether or not the school is safe. How do you handle a situation like that? Because we always look at things legislatively and want to know if you need any help in terms of legislation.

Mr. Walts. Well, we use a variety of strategies. We communicate with people in different ways because different ways of communication people can relate to. For example, we have an auto-dialer system. Again, it is up to the parent if they choose to be a part of that. But we'll put out a message using that auto-dialer system. We've got a very good web site where we have a link. In fact, this was our lead story.

If you pulled up the Prince William County Web site

during the height of this, that's the leading link. And there again, it would talk about facts related to MRSA. Preventive things, like the washing of the hands with soap and water, because you almost have to barrage people with a variety of communication methodologies talking about the facts, because otherwise they jump to conclusions that are just simply not helpful. And thinking, for example, that you have to close the school down, we were already using the chemicals that schools that have closed to disinfect were using because they weren't using that beforehand, so there was no reason to close schools. But when you see something on the news that some other school division is doing, then you're right, it really gets to almost a public hysteria point of view.

We work a lot with the press through this also to help us get the messages out. Of course, some of the issues with that is you never get them enough information fast enough. So that's why we would like to have more help from health departments and that sort of thing in terms of getting on the front lines of these kinds of issues.

Mr. Towns. Thank you very much. Thank you. Dr. Daum, I understand you've done a significant amount of research in this area. I wanted to learn more about why these infections are becoming resistant. I also want to understand if this is a situation that is actually getting

worse or it is a situation where we have better reporting at the present time.

Dr. Daum. Thank you for the question. I'll take the first part of the question, first question first. It turns out that what the community MRSA epidemic represents in my mind is a convergence of antibiotic resistance and virulence so that the resistance happens by means of a small piece of DNA, which we call a cassette, which actually can move from strain to strain. And when it moves from strain to strain, the sensitive strain it lands in becomes a resistant one. So the organism is obviously looking to acquire these cassettes because there's lots of antibiotics in our environment and it is better able to survive.

But it also turns out that virulence is a factor as well. And so that a strain that receives a cassette becomes a more fit pathogen, better able to survive on our bodies and in our environment if it also has virulence genes that allow it to do so. So what you have here is really two forces working against us humans. And that is that it is both antibiotic resistant and more virulent. The second part of your question I think had to do with -- can you remind me? I'm sorry.

Mr. Towns. Actually, in terms of a better record reporting, better reporting now. Do we have a better reporting, period?

Dr. Daum. I think it was related to how I know it is increasing. We did a study at our institution where, in a period of 3 years in the late 1990s, we showed that it had increased 25-fold at our institution. And that's not as good as population based data to be sure, but it does give you a sense of what's going on. At Texas Children's Hospital, Dr. Kaplan and his colleagues have reported a similar very dramatic increase. At Driscoll Children's Hospital in Corpus Christi, they have also counted MRSA infections and it is a dramatic increase. And these are all healthy people or, for the most part, healthy people coming in from the community.

So I think there's at least three institution-based data that I can summon quickly to mind that suggest that it is increasing dramatically. I'll toss in my own clinical experience, if you would. And that is before this started in the late 1990s I never saw anything like this. I didn't see these severe syndromes I showed you, and I also didn't see children coming by the flocks to have their abscesses drained or getting admitted to the hospital at the rate that they are now.

Mr. Towns. Thank you very much. I yield to the ranking member, Mr. Davis.

Mr. Davis of Virginia. Thank you, Mr. Towns. Dr. Burns, let me ask you, with regard to the MRSA case in

Bedford, it is unclear from your testimony whether the young man succumbed to CA MRSA or HA MRSA. Do you have any definitive answer on that?

Dr. Burns. I don't have a definitive answer. And as you appreciate, I'm sure better than I, that talking about an individual case creates some HIPA issues. However, the mother did hold up the death certificate on television, so I think she's kind of provided that document in the public. And that document lists the cause of death as staph aureus sepsis.

In an individual case, as we heard this morning, it's virtually impossible to determine where this strain came from; whether it originated in the community and was acquired in the community, whether it originated at a hospital and was acquired in the community and the various combinations. I'm not sure this individual case would inform our decision-making. Certainly, we would be more comfortable using a series of cases. I think that's all I can tell about this case.

Mr. Davis of Virginia. The question is if you identify a MRSA case, but you don't know exactly what kind of strain it is or what antibiotic it is going to respond to, isn't that correct, isn't that one of the difficulties in this?

Dr. Burns. Well, you're asking kind of two questions.

Mr. Davis of Virginia. I'm asking anybody who can

answer two.

Dr. Burns. You're asking the genetic question and the antibiotic resistant question. By definition, MRSA has been going to the laboratory and antibiotic sensitivity has been determined, so you know it is resistant to methicillin. And usually, if you've made that determination, you've done a complete sensitivity on it, so you know other antibiotics that it is both sensitive to and resistant to.

And that would virtually always be the case when you're culturing staph that you would be doing a sensitivity on it, especially in this day and age. Doing the genetic testing is a completely different issue. That wouldn't routinely be done for community strains.

Mr. Davis of Virginia. But early diagnosis is important and treatment in some of these cases, is that fair to say? Does anybody want to take a shot at that? Dr. Gayle.

Dr. Gayle. I want to say that it is going to take a couple of days at least. Because you can look at the presentation of the case and still not be certain whether or not you're dealing with community acquired MRSA. You have to do the culture. And you may presumptively begin treatment. But then, once the culture and sensitivity comes back and identifies the strain and what medications are -- the bacteria sensitive to that, then you can make changes in

the management. But I don't think you're going to be able to look at the case and say specifically that it is MRSA.

Mr. Davis of Virginia. Dr. Walts, let me just ask on your Prince William cases. You mention in your testimony you've had a strong working relationship in place with local law enforcement. That kind of goes with the job out there. I've seen that work. Not the same relationship with the public health community and in the relationship with the media. Could you try to describe each of those? With the public health community, what was preexisting, how we are changing that and then managing the media is a difficult issue in a time like this.

Mr. Walts. I would say with the health community, what I would like to see is them stepping up and taking more of a proactive role in helping the community to understand it from a medical perspective. The preventive care, the realities and the factual information around what this is to prevent hysteria. Because again, as you pointed out, I'm not a medical expert. So when I'm out there delivering all the information from the school division, I think it would be helpful to parents and certainly helpful to us to have the medical experts out there in the same way that we've carved that kind of a relationship with law enforcement.

Any time we have a criminal type of matter, we will talk about it from the education perspective, but then the

police cover the criminal perspective. A lot of times we'll even do joint interviews with the press, that sort of thing. So that would be really helpful. Right now there hasn't been a lot of that.

Mr. Davis of Virginia. Dr. Gerberding talked about school nurses and how important they are. Can you give me, from a school superintendent's perspective, where they fit into this?

Mr. Walts. Well, I will say absolutely they're critically important. And with the complexities of health care these days and the issues that have occurred in schools, the complexities of medications and that sort of thing, I have a lot more confidence when I know that I have a full-time nurse in every school. I wish I could say that we did in Prince William County, but I'm glad to say that we have 69 nurses covering 86 schools. And we've increased the numbers of nurses every year pretty dramatically. I'm going to tell you, I'll say before I've even told my own school board, I'm going to be asking for more next year, because simply managing these issues over the last few weeks has just put the system on absolute overload.

Mr. Davis of Virginia. I'll be happy to join in a letter in support of that with the new school board. Could I just ask one last question. Dr. Daum, you talked about in your testimony that MRSA really has not invaded all the

regions of the country. Which regions are the lucky ones who have been spared at this point?

Dr. Daum. That's a great question, and I don't know every little one. But I can tell you that most people believe that we in the Midwest were the first to notice it in the late 1990s. And you heard from Dr. Gerberding that the four children that died in Minnesota and North Dakota, we actually had described it in the Journal of the American Medical Association a year before that. So the Midwest, I think, is blamed or credited with being the first place to really observe this rapid upswing. Next, reports became clear from many centers in Texas and the gulf coast that they were having the same kind of problem with a greatly increased volume of skin and soft tissue infections with the occasional severe infection and death.

The west coast appeared to come up to speed next, along with Alaska. And the California centers almost up and down the west coast have had trouble with community MRSA. And curiously, the east coast, the Northeast in particular, have been the last to sort of come up to speed. But Atlanta now is reporting a huge problem. And we didn't get to see Dr. Gerberding's data this morning, but in her JAMA paper, the city of Baltimore was such an outlier in terms of having higher rates than every other region in her network that they actually didn't include them in the mean calculations

because they were so high.

So I think the important thing with regard to your question is that every place where it comes it hasn't gone away and it is coming to new places every day.

Mr. Towns. Thank you very much. Congresswoman Norton.

Ms. Norton. Thank you, Mr. Chairman. I'm troubled by, indeed, what you just said about how the disease just seemed to emerge first in the Midwest and then you said the west coast came up to speed. And I know we in the east coast had this great knowledge to come forward only recently. And you mentioned in the 1990s when it was first noted. Of course, we're not talking about the new disease. This isn't like AIDS. This isn't that kind of new thing that everybody ought to believe is the end of the world. And that, therefore, is something that we would have thought we would have known of as a nation. That's really my question.

These statistics, which apparently have emerged for the first time, and I'm pleased that professionals of CDC did the JAMA article that told us about the 90-some thousand cases. 18,000 deaths, that's very troublesome. A disease that's been known for a long time, known to be drug resistant for a long time. My interest is in how the public health system works so that, yes, it is very workmanlike, very professional. And I commend CDC for going to a peer review journal, informing the profession. But again, this

is not -- basically what they told us about was the incident of the disease. The reason I'm particularly concerned, frankly, is that this committee and one of my other committees, the Homeland Security Committee, have been very concerned about how people get to know that they should take precautions in a period when all kinds of deliberate carrying of germs could occur.

After 9/11 everybody is alert for that possibility. Even have had testimony here about what began as some attempt by the administration to control -- to vaccinate some professionals ahead of time, and that stalled. But what I'm trying to find out is whether you believe that the present system of monitoring and informing the public is sufficient. When we hear -- we do get everybody's attention once someone sits down and does the statistical work. But one is left to wonder whether we are now waiting for the next JAMA article to find whether there is a disease in our midst.

Should the CDC have told us about what was beginning, maybe this is for Dr. Bancroft, in the midwest. What, is it Dr. Daum's testimony, then became very visible in the midwest. Well, I'm sitting over here in the east coast with a lot of folks and it has become a real issue here only recently.

One would wonder why once you begin to see a trend in

one part of the country, whether there is a mechanism for alerting people throughout the country, especially when some of what can be done washing hands and the rest of it, might have prevented some of these 18,000 deaths or the spread from wherever they occur, in hospitals, prisons, wherever they are. So I'm really concerned about the early warning capability of the CDC and whether it is working.

Dr. Bancroft. Well, speaking as a local public health official, I will say that this entity of community MRSA has been written up in medical journals and public health journals since the 1990s. And we've been working with CDC since early 2002 when it was first identified in Los Angeles County, as had many other groups. In fact, the CDC has sponsored quite a bit of research on this. Dr. Daum is a recipient of CDC grants researching and looking at the prevalence of this.

I think one of the reasons it came to such public attention now where it has been otherwise quite vigorously described in the medical and public health literature, but why it has come to media attention now, was it was almost a perfect maelstrom of information of the JAMA article coming out the same week that a child died of MRSA, of community, or what we assume to be, but don't know to be community MRSA in that same week. I think for the public --

Ms. Norton. How might it have happened? How might the

entire country have become alert before somebody died and we had a kind of crisis atmosphere, at least created here for a while?

Dr. Bancroft. You know, it's a great question, because we've been trying to work with the media in Los Angeles County, the school districts, for example, for many years on this. We sent out our guidelines for the prevention of how to prevent spreading this bug back in 2004 to the school districts, and have been giving lectures to doctors in school districts.

Ms. Norton. Well, did CDC send anything out that time? Did CDC send out anything in the 1990s for example when it began to develop in the Midwest?

Dr. Bancroft. It did have that MMWR, which is basically a public health notification, it is an official CDC notification, in 2000, about the deaths that occurred in 1999 in the Midwest. And subsequently there have been multiple MMWRs and multiple articles in the CDC journal emerging infectious disease about this.

Ms. Norton. I'm trying to find out whether or not your school superintendent, your congresswoman, your mayors, your laypeople who do not have access and do not want access to the professional literature were alerted, should have been alerted, whether or not our system in the post 9/11 period has a way to say nationally, look everybody, there's

something out there, it is not a crisis, but this is what is occurring in some parts of our country. The reason I ask this from the point of view of the layman is we aren't talking about something only doctors can deal with.

You tell me that there are precautions that children can take in school, that people can take in restaurants, God help us people can take in hospitals that I don't think they understood they could take because you were left to deal in LA County to hear your testimony, and others of course dealt as they should have where they were located. This is a Nation. We're not dealing with how this hops from one country to another as in Europe.

So I'm just trying to find out if you have a national public health network, is it working here and what can this committee do to make sure that before there is an outbreak, before there's something sensationalized in the papers that now we got to go into our neighborhoods and say, just a moment, this is not like AIDS, this 18,000 people dying. So then you leave it to laypeople like us to have to put it back in perspective, because there's been no national understanding of what has happened.

That is my complaint. Not that they didn't do the professional job. That was excellent what they did. But they didn't tell me, they didn't tell my constituents, they didn't tell the people who come in contact with the very

people who may be spreading it.

Dr. Daum, did you have something you wanted to say?

Dr. Daum. Yes. I think the most important message I would like to give at this point is that to be constructive about this. And that is to say that if you believe the perspective that I've tried to provide, that the epicenter of MRSA is not now in the hospitals, but it is actually in the community. I think you've heard threads of that over and over again.

Ms. Norton. We have a school, a whole school, and those kids haven't been in the hospital.

Dr. Daum. I understand. We have our jail facilities, we have the households of patients, we have a lot of evidence of spread to new people, new kinds of folks that weren't really MRSA high-risk people before this began.

Mr. Towns. The gentlewoman's time is expired. I would be delighted to give her second round.

Ms. Norton. Thank you very much Mr. Chairman.

Mr. Towns. Definitely. Let me move forward.
Congressman Matheson.

Mr. Matheson. Well, thank you, Mr. Chairman. Again, I appreciate the opportunity to participate in this hearing as not a regular member of the committee, and I'm pleased to have a chance to participate today. Dr. Daum, you're probably aware, my wife is a pediatric infectious disease

doctor in Salt Lake City.

Dr. Daum. She's probably unsupported.

Mr. Matheson. Well, that's a discussion I hear a lot at the family dinner table. I appreciate your being here today, and wanted to ask you a couple questions. First, it is my understanding that Illinois is the only State in the country that's passed legislation that requires active surveillance of MRSA in hospitals. Do you think that's a model that other States and other countries should be following? What do you see the strengths and weaknesses of the Illinois model.

Dr. Daum. First of all, let me begin by saying thank you for being one of the sponsors of the Star legislation. I think that's an important step to really getting the resources that this community, MRSA and other infectious disease antibiotic resistant infections really requires of us. I'm not pleased with our law in Illinois. What's happened, for those that don't know, in the last couple of years is a screening test is now available where you can take a swab of someone's nose and determine whether they have a MRSA DNA in their nose secretions. And while on the one hand one could conjure of some valuable things to investigate with that test, knowing that the germ or the DNA more properly is in someone's nose, does not really inform about the risk for subsequent infection. And so, first of

all, it is a very expensive intervention. It costs several hundred dollars a test. The bill in Illinois, the price of it is being charged to the patients.

Second of all, our law is on admission only to ICUs. And I've already begun to field phone calls from people who are well, had a positive test and don't know what to do. They've been to doctors. They can't get rid of it. We don't know what the intervention is to tell someone about with a positive test. There's one. And now a new university hospital in our state is contemplating screening of everyone standing at the door of the hospital and screening everyone who comes in. And again, you can imagine a healthy woman coming to deliver a baby gets screened, finds out she's positive, she's perfectly well and goes crazy with anxiety about what she should do now and there's no intervention we have.

So although at first glance it sounds like it is a good thing to do. And in intensive care units it may have some use in decreasing spread in that high-charged environment. The epicenter of the problem is in the community now. And screening at the entrance to the hospital is not going to do anything but spend a lot of money and create a lot of anxiety.

Mr. Matheson. That's helpful. You mentioned the Star Act that I've introduced, along with Congressman Waxman. I

was wondering if you could just describe what you see as the strengths in the bill and can you speak in particular about the antimicrobial resistance, clinical research and public health network.

Dr. Daum. So I think that MRSA, community MRSA, the epidemic we're having, coupled with other ongoing problems, most of which are at this moment based in hospitals, such as extended-spectrum beta-lactamases and organisms like klebsiella, which are nosocomial infections, are health care problems that we've approached in a piecemeal way. And what excites me about the Star Act is the idea that we as a society will take a proactive approach and create centers around the country with a central focused office and bureau here that will start to proactively look at the magnitude of these issues so that we're not getting a paper like the one that came out in JAMA well into the epidemic and saying, wow, these numbers are really high. We'll know all along.

They also provide for novel interventions to try and contain the spread of antimicrobial resistance infections. That part of it excites me as well. And the part that excites me the most, and is also part of this, is to create novel research strategies in the lab and at the bedside to understand why resistant organisms are so successful making their way in our community and intensive care units with the goal to try to prevent that from happening. I see this bill

as potentially resulting in new therapeutic strategies, new infection control strategies and ultimately perhaps even new prevention strategies. So I'm very excited about its scope and the idea that it creates a diverse effort from investigators and public health people around the country.

Mr. Matheson. That's very helpful. I need to take you around with me when I'm trying to get people to co-sponsor the bill.

Dr. Daum. Let's talk.

Mr. Matheson. One last quick question. My time is expired. Can I just get one quick one in? Do you feel right now the Federal Government has, in place, an adequate -- has the capability to adequately -- is able to respond to antimicrobial resistant germs when they manifest itself somewhere? Do you think the Federal Government is set up to deal with that right now?

Dr. Daum. I think that the JAMA paper for me was very exciting in that it gave numbers to what I believe I've been seeing clinically for the last ten years. And the numbers are incredibly high. And I believe that this declares what I've been saying, is that this is an epidemic. It is an epidemic in our communities of MRSA infections, and they're novel infections. They're not the hospital germs that have moved out into the community. They're new germs. And I think that it gives us a real chance to immobilize. I think

the mechanisms, to answer your question, are in place. NIH knows how to put out notices that were interested in research in a certain problem. CDC has begun to more aggressively fund extramural programs, and needs to continue to do that to look for better ways to deal with this.

So I think that if the agencies that are in place respond and say this is an epidemic, this is not about the hospitals, this is not about disinfecting a school or two, this is a major epidemic and we need to understand why and intervene, that yes the mechanisms are in place. But they need to be resourced. The Star bill is a mechanism of doing that. There are probably others. And they need to be mandated. And I hope that that's something that comes out of this hearing today. That we've convinced you that there is an epidemic on, that the epicenter is in the community and that some of our public institutions, like the jails and the military and the athletic facilities are clearly involved in this, but we need to understand exactly how.

Mr. Matheson. Thank you, Mr. Chairman. I yield back.

Dr. Bancroft. May I add something to what Dr. Daum said, which is I think it is important to have the Federal Government have the resources to respond to this epidemic, but also to support the local and state public health resources. Because we're really the front lines of this epidemic. The first calls come to us when there's a

problem. And what we look forward to CDC is to help set up the science behind the recommendations that then we will be applying on a regular daily basis. So I appreciate that there needs to be support for the Federal Government, but also for local and State health centers.

Mr. Towns. Thank you very much. On that note, Dr. Bancroft, do we really have the mechanism in place to determine how many cases?

Dr. Bancroft. That's a great question. As Dr. Gerberding said earlier today, in those areas where they did the surveillance that the JAMA article is based on, yes they had a great mechanism for determining every case of invasive MRSA. But that particular mechanism took a lot of resources. Most of us at local and states don't have that resources to follow every case of MRSA.

Mr. Towns. Thank you. Dr. Gayle, isn't there a short window for treating invasive MRSA? You talk about administering a culture. How long will that take?

Dr. Gayle. Well, the culture and identification and sensitivity of any bacteria generally takes about 3 days. And any clinician, if they're suspicious of something that's going on, something that doesn't look quite normal, will begin treatment. Whether the treatment is adequate is going to be determined by the sensitivity of the bug.

So you basically have 3 days in which you can start

treatment, which could probably quiet the infection but not get at it to kill it. And then after you've identified the strain and the sensitivity, change the antibiotic that will effectively kill the bacteria.

Mr. Towns. Thank you.

Dr. Daum. I think that Dr. Gayle's points are right on the money, but they apply to the common manifestation of community MRSA, which is the skin and soft tissue infection. Unfortunately, that is the commonest manifestation, as I showed you on the slide. I just want to remind everybody that fortunately uncommon, but there is a manifestation of this disease that does not present as a skin and soft tissue infection, but presents as an overwhelming body-wide infection and has the potential to cause death in previously healthy people in 12 to 24 hours.

I showed you a picture of one of the children who died. I showed you the skin rash and the adrenal glands and the lungs of such a child. We work with some of the parents who this has happened to. Because as you might imagine, they're kind of overwhelmed. But there's no quick test to do, which is what your question goes to, I think, to diagnose those children. Our emergency room is on very high alert, as are probably most other ERs now in our country for these severely ill folks. We have the antibiotics ready to go, the fluids ready to go. The supportive care evidence based

or not ready to go. But the mortality is still high. And that's one of the reasons people have called repeatedly today, and I among them, for a vaccine. Because the tip of the iceberg of this epidemic, fortunately less common, I don't want to be an alarmist here, kills faster than we can treat it.

And it is not just a question about better antibiotics. And I just wanted to emphasize that because it goes to your question. It also has changed, to come back to Dr. Gayle's point one more time, this epidemic has also changed how we practice medicine. It used to be we had a skin and soft tissue infection or an abscess and we could take a penicillin or cephalosporin compound and reliably treat, didn't need to do a culture. The MRSA epidemic has changed that.

We now recommend a culture. Incision and drainage, as Dr. Bancroft said. But that the antibiotic has to be guessed at, and it takes several days to know whether it is the right choice or not. And it is not a penicillin or a cephalosporin. It is one of these old-timey drugs that we don't even know how well they work. So it isn't about antibiotic resistance in that sense. That it has changed how clinicians must respond to a skin and soft tissue infection now as compared with 10 years ago. I hope that's helpful.

Mr. Towns. Very helpful. A couple of you indicated that the government should do certain things. And I think you were talking about government agencies. But you know we're government too. So what specific suggestions do you have to us? And I know you might have some concerns about Members of Congress getting their nose under the tent. Are there any specific recommendations or suggestions?

Congressman Matheson, of course, and Congressman Waxman have a piece of legislation, I think, that you're looking at. But are there any other suggestions or recommendations that you feel that Congress should be involved in or should get involved in legislation of any sort? So let's go right down the line. I know, Dr. Walts, you have already made your request.

Mr. Walts. I've got one more.

Mr. Towns. You have one more? Dr. Burns. Let me just go right down the line. And I know your situation is a little different.

Dr. Burns. Not surprisingly, my first request would be continued support for health departments at the local level, because that is where the rubber meets the road. I thought it was almost breathtaking that the centers for Medicaid and Medicare services did what they did for nosocomial acquired infection. So basically they're saying if your practices are such that you're creating a nosocomial infection in the

hospital, again, focus on the hospital. But if that happens in the hospital, you're not going to get paid for that patient. I think that's an incredibly powerful tool. I think it sends a great message.

And I think that and 100,000 Lives Campaign are two very effective methods to get the attention of the hospital system. I think it is not as obvious how such a kind of simple idea could affect community acquired infections, because it is kind of everybody doing what we do that creates the risk. It is back to the issue about what kind of resources do we have to get the public's attention. And I think that's the issue. It is not the fact that people at the Federal level, the State level and the local level aren't trying to get these messages out. But we have an almost unlimited number of public health messages that we want to get out, and we're competing with a very noisy and effective advertising world where they're trying to get their message out too.

So there's a limited capacity for people to hear messages. And it tends to happen around something like this. Where for reasons that I still don't understand something gets the public's attention and then they start paying attention. And if we could figure out how we could get people to pay attention I think we could be much more effective in getting our messages out. You obviously can't

legislate that.

Mr. Towns. Dr. Daum, and I'm on Congressman Davis' time now. Go ahead.

Dr. Daum. Does that mean I shouldn't talk or I should talk fast?

Mr. Davis of Virginia. No, take your time.

Dr. Daum. I think there's a number of things that you can do. The first thing, as you've heard from the different vantage points seated at this table, and I think we all have slightly different stakeholders in this problem, that education and the ability to cope with the need for education by the public is a major problem and needs to be resourced and expanded. So that we need to understand better how to react to hearing that a case came from the school or that this screening program is being proposed for the hospital and educate the public about what's going on. I know that's easy to say. But I think that we've heard this morning and this afternoon that we haven't done a very good job of it despite our best intentions.

More importantly -- sorry. A larger scale of the problem, I think, is really accepting. And I heard all day long that we're having trouble accepting this. Really accepting that what's new about this is that it is not about dirtier hospitals, it is not about better recognition of infections in hospitals. It is a community-based epidemic.

The hospital problem has always been there. It needs attention, it needs work, it needs to be enhanced. But the community problem is new. And we have -- we're a very wealthy country and we have the ability to resource these things and create programs to ask the research questions to find out what we need to know and then the interventions to act.

What's happened is we don't have the knowledge base. And so when a case comes from the school that close it and disinfect it, well, people are angry and upset, those are natural kinds of impulses, but they won't help control MRSA epidemics in the community to appreciable extent.

So what can you do? I think that you can say there is an epidemic on, it is in the community and we need resources to deal with it. We need the CDC to mobilize and say this is a problem now; new programs, new money directed at this, and other antibiotic resistance infections as well. We need the NIH to ask what are the science questions that we need to know. Someone asked this afternoon how are these strains causing this trouble in the community, what do they have? Those are basic science questions. But we need to know them. Perhaps they're vaccine targets when we find out the answers.

So NIH also needs to create problems that says there's a community MRSA epidemic on, antibiotic resistance is a

problem, we need expanded programs to deal with it. The Star bill is one way to do it, it's a good way to do it, but there's other ways. And so what can you do? I think that you can say this is an epidemic and it needs attention and it needs it now.

Mr. Towns. Thank you very much. Dr. Walts.

Mr. Walts. In addition to the ones I already gave, I know that you had distributed this morning a card, and it was a sample of something that had been distributed to hospitals throughout the country. And someone raised the question, do you have something similar that's been developed for schools, a tip sheet? And the doctor said, well, that's a good idea, we could see if we can try to locate resources for that.

So again, from my perspective as a school person, that to me would be an outstanding thing to have and probably fairly easy thing to do if there was just the money to put it together and distribute it. So sometimes simple things can really help tremendously inform the public, especially from a school perspective.

Mr. Towns. Thank you. Thank you very much. Dr. Gayle, and very quickly.

Dr. Gayle. I would say that you need to be able to identify the community-based centers. And the only way to do it is if its through central surveillance. And I'll give

you an example. I work in the Port Chester section of the Bronx. And this past summer, there was at least three cases of Legionnaire's disease that were identified. Because we are hooked into the New York City Department of Health, once they were notified that there was a cluster of that particular infection in that particular community, they sent out a bulletin immediately to my two medical centers in that community and said this is what we're seeing, look for these signs for Legionnaire's disease.

So each time a patient presented with symptoms that looked like Legionnaire's disease, there was a best practice alert that popped up on the computer screen that says think of this as a possibility for this particular patient. And so the doctor had it right there in front of his mind while he's seeing the patient whether or not this particular case could have been a Legionnaire's case. So central surveillance right at the point of care where you get information from the community as to what's happening now and then sending out the information to the respective centers in that particular community could be a great deal of help in identifying cases early.

Dr. Bancroft. Quickly two areas. One, CDC does have money for some surveillance given to local and State health departments for surveillance in teaching about antibiotic resistance. But frankly it is not enough. There are

limited funding for those positions in the State and local health departments. And I think it is extremely important to better delineate the epidemiology who is getting this disease. But not just the basic demographics of who is getting the disease, but being able to interview the patients themselves and ask about the risk factors, their practices, their behaviors that may be underlying why they're getting that disease.

So CDC needs additional funds to be able to distribute out to better do those studies, and also to support surveillance. And the second area really comes down to hospital MRSA. Dr. Daum has talked about the new epicenter of this disease being in the community. But still, as of this point, 85 percent of MRSA, at least the invasive MRSA is hospitals. Right now in the local health departments, we inspect restaurants far more regularly than we inspect hospitals. That's true on a national level as well. We'll inspect restaurants one to four times a year. We inspect hospitals once every 3 years. I think more resources to inspect hospitals in order to help them have better oversight that they meet those inspection control standards that we know if applied will decrease MRSA and other infections.

Mr. Towns. Thank you. I yield to the ranking member. It is all yours.

Mr. Davis of Virginia. Thank you. I'll try to be brief, but I very much appreciate what the panel has had to offer. Dr. Burns, the emergency reporting requirements that were issued a few weeks ago required labs do the reporting. How did Virginia officials settle on that as being the best means for tracking?

Dr. Burns. As you could imagine, it did take a lot of debate and discussion to decide on the most efficient method to do it. But it came down to the fact that to diagnose MRSA you had to have a laboratory test. So it is not a clinical diagnosis, it is a laboratory diagnosis. So since it is a laboratory diagnosis, why make the doctor report it when the laboratory already has the data, and the laboratories are generally much more oriented toward just adding another disease to the list of diseases they report, and then it happens automatically. There's not a one at a time kind of situation. So it is cheap, it is exactly the data we want, it is effective, the system is already in place, it was easy.

Mr. Davis of Virginia. What do we do with the data reported? Are school districts made aware of the reported cases.

Dr. Burns. What we're asking the labs to report is MRSA from a normally sterile part of the body. So it doesn't include all the skin and superficial infections. So

we're looking at bone, bloodstream, things like that. We don't anticipate that this will be a tool that will be useful at the school level. But we do think that it will be useful in helping us keep track of the tip of the iceberg. And by understanding what the tip of the iceberg is doing, both over time and by location, we can better target our deeper investigations to see what's actually going on.

And the thing I forgot to mention earlier about the other reason why it is real attractive to do the laboratory data is in public health we always like to know the denominator, we like to know something about the population that the number of diseases comes from.

So if you just take the number of diseases coming into the emergency room and you haven't thought about what part of the community they represent, you really kind of just have a popularity contest about who goes to that hospital. So by doing this laboratory-based reporting we know that we have the entire universe and so we will have valid data for us to make conclusions on over time.

Mr. Davis of Virginia. Thank you. Dr. Daum, you mentioned in your testimony that the skin and the soft tissue infections associated with MRSA often resemble spider bites. Now, if a physician were to look at this, this skin infection as a spider bite and treat it that way, is that a potentially fatal misstep for the patient.

Dr. Daum. It is true that spider bites are commonly the story that patients will tell who come in with a community MRSA skin and soft tissue infection. I had a slide but not enough time to show it today that shows the mismatch of where epidemic diseases occurring and where those kinds of spiders live in our country. And it is amusing to hear in Chicago where the spiders do not live how often patients will nevertheless tell you that this started with a spider bite. And what I've learned to do then is say, have you seen the spider, and the answer is no.

So I guess it is recognition of something that looks like a spider bite in a place where they don't live is helpful. It is a bit of a conundrum here, because when anything that breaks the skin, including an insect bite, can actually predispose the staphylococcal infection. Staph loves broken skin. So that it is possible that a spider bite in sections of the country where they do live, could, in fact, set off a community MRSA infection as well.

So I think a physician has to be concerned when he or she sees something that looks like a spider bite that this could be a community MRSA infection. I think that your question though goes to an issue of progression. And in the skin and soft tissue infection, a very, very small percentage of them progress to more severe disease. So that I think that physicians need to be thoughtful about what

they're seeing, but that an abscess today does not mean you're going to have a severe sepsis tomorrow.

Mr. Davis of Virginia. I'm just confused on -- this is going to be my last question. Dr. Gerberding, in the first panel, talked about how these staph, these germs are everywhere. They're in people's noses and all over. And you're talking about how they're more regional in their manifestations.

Dr. Daum. So we're both right.

Mr. Davis of Virginia. I knew that. I was just trying to get it together and understand how you were both right.

Dr. Daum. So staphylococcus aureus, which is what we are really talking about today, and MRSA is a subset of those, is a very well adapted human pathogen. My guess is if the history book could be open, it has been living in us and on us for centuries. And a well-adapted pathogen doesn't want to kill everybody. That's the last thing in the world it would want to do, because then it has no place to live. So what staph really are happiest doing is living in your nose usually, but could be on your skin or even somewhere else rarely, and just sit there. Eat what you eat, breathe what you breathe, and its ultimate goal, divide. It really doesn't want to cause disease.

Disease is an unfortunate result of breakdown between our body's defenses and a germ's ability to live on us in

peace. Dr. Gerberding is absolutely right. Staphylococcus aureus is everywhere. About a third of us right now have it on our bodies, even though presumably none of us have kind and soft tissue infections. And that's true. That's changed a little bit because now there's sometimes MRSA, a methicillin-resistant staph aureus. But it is the same staph aureus. Any disease is an uncommon outcome of interaction between this bug and one of us. It likes to just live peacefully among us.

So I think that goes to your question that she sort of posed. The difference is as if they perceive that they don't have enough food, they perceive that the conditions where they're living aren't the right ones, then they begin to secrete their toxins and begin to destroy tissues. The body then begins to respond to it and you get something that a doctor would call an infection.

Mr. Davis of Virginia. Thank you. That's it. Thank you all very much.

Mr. Towns. Thank you very much. Let me just say that the chairman has indicated we will have another hearing in the spring on hospital acquired MRSA and resistant strains. I also would like to thank all the witnesses for their testimony. And I hope that this hearing has provided some comfort to the public that while MRSA is a genuine concern, there are some practical simple steps that people can take

to protect themselves and their children. At the same time the witnesses have made a very compelling case that we have to do more to combat infections in the community and in the health care setting. And also that we need to take the issue of antibiotic resistance very seriously. I look forward to pursuing these issues in the coming months. And as I've said that there will be another hearing in the spring. Without objection the committee stands adjourned.

[Whereupon, at 1:35 p.m., the committee was adjourned.]