

# VITAL SPEECHES

— OF THE DAY —

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**338 Lessons Learned from “A Good War”**  
Address by RANDALL J. LARSEN, USAF  
(Ret.) Colonel, National Security Advisor,  
Center for Biosecurity, University of  
Pittsburgh Medical Center

**345 Storms on the Horizon**  
Address by RICHARD W. FISHER, president  
and CEO, Federal Reserve Bank of Dallas

**349 Who Took My Workforce?**  
Address by BARRY SALZBERG, CEO,  
Deloitte & Touche USA, LLP

**352 Who Will Care for Us?**  
Address by JENNIE CHIN HANSEN,  
president, AARP

**357 Postgraduate Life**  
Address by HARVEY MACKAY, best-selling  
author and motivational speaker

**360 Inseparably Bound**  
Address by ALEXIS C. LIVANOS, president,  
Northrop Grumman Space Technology

**362 Challenges in International Security**  
Address by GENE M. SMITH, president,  
Smith Brandon International Inc.

**364 The Future of Global Financial Systems**  
Address by VIKRAM PANDIT, CEO,  
Citigroup

**368 The Current State of Radiology**  
Address by BARRY PRESSMAN, MD, FACR,  
president, American College of Radiology,  
chairman, Department of Imaging, Cedars-  
Sinai Medical Center

**373 Designing America’s Bridge**  
Address by NANCY H. NIELSEN, MD, PhD,  
president, American Medical Association

**377 Learning from History**  
Address by R. DAN EDWARDS, retired  
professor of Accounting and Economics

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## Speech of the Month

**380 Building a Business for the 21st Century**  
Address by NEVILLE ISDELL, chairman  
and CEO, The Coca-Cola Company

*THE BEST THOUGHTS OF THE BEST MINDS ON CURRENT NATIONAL QUESTIONS*

**IMPARTIAL · CONSTRUCTIVE · AUTHENTIC**

## Lessons Learned from “A Good War”

### THE GLOBAL SMALLPOX ERADICATION PROGRAM AND HOMELAND SECURITY

Address by RANDALL J. LARSEN, USAF (Ret.) Colonel, National Security Advisor, Center for Biosecurity, University of Pittsburgh Medical Center  
 Delivered to National Center for Simulation (NCS) Medical Technology, Training, and Treatment Conference, Lake Buena Vista, Florida, June 2, 2008

Thank you, Russ. Last October, Judith Riess asked me to serve as the opening keynote for this conference. We talked about a speech on the challenges of 21st century biosecurity—an appropriate topic considering my background, and this conference.

I realize that the phrase biosecurity can be a bit unsettling, even downright scary, particularly if I were to focus my remarks on the dark side of biosecurity—bioterrorism. However, the theme of my remarks this morning is about the positive side of biosecurity—like the great work you do—and most importantly, the potential that is in this room for extraordinary contributions in medical technology, training and treatment during the years ahead.

For the past several years I have had the opportunity to work on two projects—two things I wanted to do for many years—write a book, and make a movie. For most of 2006 and 2007, the majority of my waking hours were spent on these two projects—projects that—when I first thought about them—seemed to deal with two completely different subjects.

The book, *Our Own Worst Enemy*—published in September of '07—is based on more than a dozen years of research, writing, and teaching the subject of homeland security. The first half of *Enemy* provides a strategic perspective and analysis. The second half addresses the practical concerns—how corporations, communities and families can take action. My favorite chapter—and the title summarizes my overall approach—is “New Thinking, New Rules, New Organizations.”

The other project—a screenplay that will now become a Hollywood movie—was completed in March of this year. It is the story of one of the greatest scientific and humanitarian achievements of all-time—the eradication of smallpox. We hope to begin filming in the spring of 2009, with release in May 2010, the same month that the World Health Organization will celebrate the 30th anniversary of the eradication.

The title that my movie project co-author, Jessica Hatchigan, and I chose for our screenplay is *A Good War*. We call it a good war, because we, the human race, were victorious. The war against smallpox overcame seemingly insurmountable odds. Most people, including the director of the World Health Organization, said it was a “bad war”—a war that could never be won.

They were wrong.

While working on the book and screenplay, I considered them completely independent projects. It was not until both were completed that I realized that the lessons learned during the victory over smallpox were quite similar to the key themes in my book. This was not something I did consciously—but this linkage must have been percolating below the surface.

## VITAL SPEECHES

— OF THE DAY —

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And that is what I want to talk about today, how we must apply these lessons learned from the smallpox eradication program to our quest for securing the American homeland in the 21st century.

I think you will also find that these four “lessons learned” have significant relevance to the great work you do today.

First—a little background. Smallpox, as you know, is a disease that had terrorized the human race for more than 3,500 years. According to the WHO, one billion people were afflicted with smallpox in the 20th century. Three hundred million died. Most of the survivors were horribly scarred, and many were left blind.

Three hundred million—that is a difficult figure to comprehend. To better put this in perspective, a study by the New York Times stated that the total death toll from warfare in the 20th century—from both direct and indirect causes—was one hundred million.

By the late 1950s, smallpox was a disease that primarily affected third world populations, but as long as it remained alive in any corner of the globe, it posed a threat to the entire human race. The rapid increase in international air travel—the jet age—amplified that threat to all nations.

One of the last outbreaks to occur in the U.S. was in 1947, when a single visitor from Mexico brought the disease to New York City. As a result, more than 6 million people were vaccinated that month. Six died from adverse reactions to the vaccine -- three more than those who died from smallpox. But without the vaccine, thousands would have died.

During the winter of 1961-62, an outbreak in the United Kingdom required 5.5 million vaccinations and 18 deaths from vaccine reactions.

In 1972, a Muslim cleric returned to Yugoslavia from a pilgrimage to Iraq. He brought back smallpox to a country that had not seen a single case in over 40 years. This one case led to 175 cases and 34 deaths from smallpox. No figures are available on how many died because of the vaccine, but out of a population of 20.8 million, 18 million were vaccinated during a three-week period.

Incredibly strict quarantine was conducted throughout Yugoslavia under the iron-fisted rule of Marshall Tito, and all surrounding nations closed their borders with Yugoslavia during the crisis.

According to the CDC, in 1969 the US was spending \$150 million per year for smallpox prevention in the US—that is \$978 million in today’s dollars—and the costs were more than what is measured in dollars and cents.

At that time, we were still vaccinating all children before they entered the first grade. The vaccine was killing 10-15 children per year, and more than 300 were hospitalized with serious complications. Adults could not travel internationally without proof of recent vaccination.

However, because of the international effort led by

Dr. D. A. Henderson from 1967 to 1977, not a single human has been infected with smallpox for more than a quarter of a century. This “good war” has saved more than 50 million lives. Smallpox remains today, the only disease ever eradicated by human effort.

The success of the smallpox eradication program should be an inspiration to us all.

When facing challenging times, we often recharge our spirits by reminding ourselves, “We won World War II, and we put a man on the moon.” Yes, these are certainly great examples of success over incredible odds, but I think the eradication of smallpox—an extraordinary international effort—a “good war”—should be added to the list.

I also think there are valuable lessons to learn from Dr. Henderson’s success—lessons that apply to the challenges of securing our homeland—and lessons that apply to your efforts in medical technology, training and treatment.

The first lesson: understanding the importance of asking the right questions.

Quite often, particularly when dealing with a new challenge, one can end up asking the wrong questions. And what seems intuitively right, can sometimes be very wrong.

When Dr. Henderson began his war on smallpox, he was well aware that, for decades, there had been an effective smallpox vaccine.

Obviously, all that was needed was more commitment to mass vaccination—right? And that was the intuitive question, asked by most public health officials: “how do we improve efforts in mass vaccination?”

However that was the wrong question.

In 1964, three years before the World Health Organization began its eradication program, Dr. Henderson wrote a report for WHO where he outlined an entirely new concept—surveillance and containment through ring vaccination.

D.A.’s theory was that the top priority for the war against smallpox was similar to how General Powell described the battle plan for defeating the Iraqi Army in Desert Storm, “First we are going to cut it off, then we’re going to kill it.”

That is precisely what Dr. Henderson wanted to do to smallpox.

Unlike malaria or Yellow Fever, humans were the only host for the variola virus. The best way to kill it—was to cut it off from its host.

Instead of using all resources to vaccinate large numbers of people, whether they were in danger of infection or not—a strategy difficult to implement even under the best of circumstances—D.A. wanted to focus on surveillance—targeting actual outbreaks. In the military we call this, “riding toward the sound of gunfire.”

Once the outbreaks were discovered, all of those who had close contact with those infected would be vaccinated.

Depending on the situation, this ring plan would only require a few hundred vaccinations in a small village. In urban areas it would sometimes require thousands, even tens of thousands, but never would it require the vaccination of entire populations—a procedure that many countries were attempting—but failing.

This theory was first tested—and validated—in western Africa and then Brazil. Once proven, the surveillance/containment strategy became the core of the eradication program.

The wrong question was: “How do we improve our mass vaccination efforts?”

The right question was: “How do we prioritize who should receive the vaccine?”

One of the greatest mistakes we are making today in the field of homeland security is this: Too many people are asking the wrong questions.

For instance, last summer Congress passed legislation requiring 100% radiological scanning of shipping containers entering the United States.

Just like those who called for mass vaccination, 100% percent scanning is not the answer to the problem. The reason Congress called for 100% radiological scanning is because they asked the wrong question.

They asked, “what do we do to prevent al Qaeda, or any other terrorist organization, from smuggling a nuclear weapon into the United States?”

That’s the wrong question.

Do we really believe that if a terrorist organization got their hands on one or two nuclear weapons they would actually put them in a shipping container, put a real good padlock on the door, and then turn it loose into a global transportation system—a system in which numerous different companies would at one time or another touch that container en route to the United States. I don’t think they are that stupid.

Neither does the chief of security at the Port Authority of New York and New Jersey, Beth Anne Rooney. She talks about how foolish it is to scan 100% of the shipping containers coming into the port, but do nothing about the 880,000 cars that come into the port every year on roll-on roll-off ships, and drive out of the port without any scanning whatsoever. The critical components of a Hiroshima-sized nuke can easily fit into a small car.

The fact is, if al Qaeda gets their hands on nuclear weapons, they will never take their hands off them. They will charter a small jet or small boat, and bring the materiel directly to America. As some have said, the best way to smuggle a nuclear weapon into the United States is to hide it inside a bale of marijuana. The drug runners seem to have no problem getting marijuana into the country.

Or even if they were stupid enough to put a nuclear weapon in a shipping container, they would most likely be smart enough to put quarter-inch of lead around

it, which will prevent any of our current or planned radiological scanning devices from detecting it. By the way, I usually say a quarter inch of lead. Last month’s Scientific American said as little as one millimeter of lead will defeat these detection systems.

And by the way—they don’t have to get the nuke into the US to change the world. If they set it off ten miles out from our coastline, or mid-ocean, or even on the far side of the globe—once we know we are dealing with a nuclear armed terrorist organization, the entire international security equation will change forever.

Therefore, the right question is: “how do we prevent Al Qaeda, or any other terrorist organization, from becoming a nuclear power?”

The answer to that question is far different from the answer to the question, “How do we prevent them from smuggling nukes into this country?”

Initiatives such as the Nunn-Lugar Cooperative Threat Reduction program can provide far better returns on investment than 100% scanning. However, today we spend only about one billion dollars a year on Nunn-Lugar type programs to prevent terrorist organizations from becoming nuclear powers. That is what we spend every two to three days in Iraq. And according to the report from the bi-partisan Robb-Silberman Commission, “The United States has not made intelligence collection on loose nuclear material a high priority.”

Can anyone here tell me what might be a higher priority?

Now I don’t have anything against research and development on improved scanning devices. I fully support these efforts. Highly enriched uranium is a very low emitter of radiation, and it will require a substantial technological breakthrough to be able to find highly enriched uranium that is shielded. Therefore, I fully support R&D—but I am totally opposed to deploying ineffective technologies and concepts.

We must understand that the very concept of 100% scanning violates all principles of risk management.

Smuggling nukes is just one example of where we are asking the wrong questions.

My book contains more than a dozen other examples of wrong questions, including this one: “What must we do to prevent a biological attack on America?”

In fact, in January 2005, the Chairman of the House Committee on Homeland Security asked me to arrange an off-site workshop for the entire committee to answer that very question.

I will tell you the same thing I told Chairman Chris Cox. We can’t prevent a biological attack.

And that is not just my opinion. That is what the Defense Science Board stated in 2001, and it is the conclusion of a National Intelligence Estimate in 2006. The biotechnical revolution has given capabilities to terrorist organizations in the 21st century that were previously limited to super powers in the 1960s.

I proved this rather dramatically at the White House, just nine days after 9/11. I and two of my colleagues from the Center for Biosecurity, UPMC, Drs. Tara O'Toole and Tom Inglesby, were asked to provide our assessment of al Qaeda's capabilities to launch a biological attack on America. About 15 minutes into our discussion, Vice President Cheney asked, "What does a biological weapon look like?" I reached into my briefcase and pulled out this test tube. I said, "It looks like this, and by the way, I just smuggled this into your office."

Incidentally, I had been retired from government service for more than a year, so I had no special clearance for entry to the White House. For all intents and purposes, I was a regular civilian. I needed two forms of photo ID to match the name on the guest list, and then went through the most thorough screening I have ever received. You can imagine how tight security was nine days after 9/11.

A Secret Service agent thoroughly inspected my briefcase. In one compartment was a surgical mask, and this test tube, containing weaponized bacillus globigii.

This is weaponized bacillus globigii. It is harmless, but genetically it is nearly identical to bacillus anthracis—anthrax. It was produced in a government program in 1996 to demonstrate that a small group of people—with a budget no larger than what some of you spend on a luxury car—are now capable of producing a sophisticated biological weapon.

Which item do you suppose caught the attention of the Secret Service agent? He pulled out the surgical mask and asked, "Why are you carrying this?"

He asked the wrong question. He should have asked about the "weapon of mass destruction" that I was about to carry into the Vice President's office.

Just like Chairman Cox, and unfortunately, many other leaders—people continue to ask the wrong question about biodefense.

For biodefense, the right question is: "How do we rapidly recognize, respond and recover from a bioattack?"

And folks, we do need to be better prepared for an attack with anthrax. I am convinced that al Qaeda was responsible for the anthrax letters of October 2001. I will be happy to discuss this issue during Q&A, but let me point out one interesting, little known fact. Mohammad Atta, the operational commander of the 9/11 attacks and the pilot of American Flight 11 that struck the north tower of the World Trade Center had a roommate in his Venice Florida apartment—Ahmed Alhaznawi. On 9/11 Alhaznawi was at the controls of United Flight 93 when it crashed in Pennsylvania. Three months earlier—in June of 2001—Alhaznawi was treated for cutaneous anthrax at Holy Cross Hospital in Ft Lauderdale, Florida.

I am worried about the threat of bioterrorism, but if we as a nation take proper actions, we can

use the biotechnical revolution to our advantage to prevent bioterrorism from becoming a weapon of mass destruction. By using technology to rapidly recognize an attack, we can also rapidly respond in a manner that will move the decimal point a critical distance to the left.

Instead of casualties in the hundreds of thousands, we can reduce it to tens of thousands, or thousands, or even perhaps hundreds. We could reduce casualties from an attack on a city to less than what we lose on the highways on a three-day weekend. We can remove bioweapons from the category of WMD—weapons of mass destruction.

But to do so, we must ask the right questions.

Bottom-line, we must ensure that the new Congress and the Administration that take office in January of 2009 ask the right questions about securing our homeland—and, of course, you must ensure you are asking the right questions as you develop tomorrow's medical technology, training and treatment programs.

Another important lesson learned from the smallpox eradication program? The importance of setting and enforcing standards.

When Dr. Henderson first set up WHO's eradication program in 1967 he began testing the smallpox vaccine. The results were shocking. With the exception of the vaccine produced in the United States, the Soviet Union and several Western European nations, 90% of the vaccine produced was ineffective.

D.A. established strict guidelines for testing—which also meant he had to fight a lot of political pushback in certain sectors. Some countries felt that requiring testing for their vaccine was an insult. However D.A. knew that there would be no chance for eradication without standards. With a bit of a twinkle in his eye, D.A. will tell you he started an early version of what later became known as "Trust, but verify".

Setting standards is where we have seen some success in homeland security since 9/11.

I remember visiting the Center for Domestic Preparedness in Anniston, Alabama, prior to 9/11. The director, L.Z. Johnson, expressed his frustration with the fact that there were no national standards for most of the equipment used by first responders. He gave us examples of how firefighters would buy personal protective equipment that would provide them adequate protection from liquid hazards, but not from vapors. This problem has been fixed. Today, there are national standards.

A recently promoted firefighter in Lubbock, Texas, who is now suddenly in charge of acquisition can go to a website, the Responder Knowledge Base, developed and run by the Memorial Institute for the Prevention of Terrorism in Oklahoma City, and funded by the Department of Homeland Security. Not only can he or she find out what equipment is approved by DHS they can also find contact information for first responders

around the United States who recently purchased the equipment—to get some first-hand comments on the equipment from the frontline responders already using it.

The standards that DHS has developed in the past few years for the National Incident Management System (NIMS) have provided great benefits to America. Bob Stephan, a retired Air Force colonel, and one of the longest serving senior leaders in DHS, used California's State Emergency Management System as a model—a model that had evolved from years of experience fighting wild fires. This has provided the nation's first responders and emergency managers with a common template. Along with the National Response Framework, and the new national planning guidelines, DHS has made great strides forward in helping America's 77,000 jurisdictions learn to work together.

However, one area where we have failed in standardization is in identification. The 9/11 Commission recommended changes, and Congress passed the REAL ID Act. The President signed it into law. Unfortunately, push back from the states has made implementation unlikely until 2014.

This is not a program for a national ID card—something I oppose—but it does require national standards for state drivers' licenses—standards that would make them very difficult to alter or counterfeit. Seven of the 9/11 hijackers used Virginia drivers' licenses to board their flights on that Tuesday morning in September 2001, but none lived in Virginia. Let's face it—today, any 19-year old college student who is not smart enough to make his own ID card that will allow him to buy a can of beer is probably not smart enough to be in college. We need national standards for identification.

Speaking of standards, what standards are members of the medical community developing for mass casualty care? During a prolonged health care crisis, such as a flu pandemic, we will need standards for issues such as triage and management of scarce resources such as ventilators, vaccines, and therapeutics. We need to be working on these standards today, not during the heat of battle.

Another lesson learned in the smallpox eradication program—ensure the proper use of technology. Technology must be the servant, not the master.

Americans are in love with technology—and I am one of the worst examples of that infatuation. I have a Blackberry, a Kindle (an electronic book—for those of you who are Gutenberg-age holdouts), a GPS in my car, and a system that lets me dictate directly into my word processing program—the list goes on and on.

I love technology—and I realize I am preaching to the choir on this issue—however, we must also realize the fact that our infatuation with technology sometimes puts the cart before the horse—with technology driving policy and operations instead of the other way around.

You think I exaggerate? Why is it we have an

undersecretary for science and technology since the creation of the Department of Homeland Security, but we still do not have an undersecretary for policy? I guarantee you, DHS is not the only department where S&T drives policy. Technology will answer many of our problems, but we must ensure proper use.

Let's look back at an intriguing—almost anti-intuitive—example from smallpox eradication.

In the 1950s and 60s health workers used painful five-pronged needles and lancets to administer the vaccine. They then discovered a new technology - pioneered by the military in the 1960s—the airgun injector—a stainless steel electronic vaccination gun. It provided a far more efficient, and less painful, means of vaccination.

Those of you who served in the military during the 60s probably remember these devices. I remember walking down the hallway with people standing on both sides pressing airgun injectors into both arms. On one day I received 10 vaccinations for various diseases in little over a minute. That is efficiency!

In the late 1960s D.A.'s teams discovered they could significantly increase the number of people being vaccinated if they used these airgun injectors. However, they also discovered that working in remote, third-world villages was far different than working on military bases in the US. The airgun injectors required electricity—and technicians to repair the complicated machinery when they broke down, as they inevitably did. D.A.'s team initially overcame the problem of lack of electricity with foot pump-operated airguns—but they still ran into numerous mechanical breakdowns.

What they needed was improved technology.

In today's technological environment, if someone asked our national labs for an improvement on an airgun injector for use in austere environments, they might find themselves provided with a nuclear-powered, laser-fired injector that would only cost a million or two per copy. Right?

But we need to understand that sometimes improved technology can mean “simple” technology - technology that state and local governments can afford—not only to buy, but to maintain.

One of the great lessons learned from smallpox eradication was that a simpler technology for vaccination was critical to the success of the program. It was called a bifurcated needle. It looks like a regular sewing needle, but the business end it has two small, sharp prongs. When this needle was placed into the vial containing the vaccine, the distance between the two prongs created surface tension that pulled out just the right amount of vaccine.

The sharp prongs were then used to make 15 very small punctures of the skin.

When using the old methods for vaccination—five-pronged needles, lancets and airgun injectors—an average of 25 doses could be given from a single vial. When using the bifurcated needle, a hundred doses

could be extracted from that same vial. The bifurcated needle needed no electricity or preventive maintenance. The only thing it needed was to be placed in boiling water for 15 minutes to prepare for reuse. It was made of a special type of steel so that the prongs would remain sharp and could be used over and over. Cost? Five dollars per thousand.

The other great advantage to the bifurcated needle was how easy it was to train people to use it. D.A. talks about how he was able to train African villagers in just 15 minutes so that they could vaccinate others. To borrow a phrase from one of my former sergeants, it was technology that was “colonel proof”.

Following the tragedy at Virginia Tech, I heard incredible stories of how universities were being sold a wide-range of high tech solutions for communicating with the faculty, staff, and students during emergencies. A better and simpler answer may have been something we used for years when deployed in the military—a simple public address system. Low-tech, efficient, effective and affordable.

One great, low-cost technology I have seen deployed is the “reverse 9-1-1 system”. This is where the 9-1-1 folks call homes in designated areas in a neighborhood or city to deliver critical messages. It was used very effectively for evacuations in southern California during last summer’s wildfires. It was also used by the sheriff’s Department in Brazos County, Texas, last year to quickly locate a missing boy. It can also be used for weather warnings and terrorist incidents.

Technology will play a huge role in securing our nation. Some of it will be very expensive, but expensive should not be our default position.

Technology can also mean taking a simpler path, a path state and local governments can actually afford to take. The nuclear-powered, laser-fired airgun injector may have been seen as a great leap forward in technology, but it was not the technology needed to achieve victory against smallpox. I ask you to keep this illustration in mind as you search for new technologies.

The last lesson learned that I will mention is the effective use of volunteers. Without an enormous group of volunteers, there would not have been a victory in the war against smallpox.

D.A. never had a paid staff of more than 150 people for the entire global effort, yet in India alone, he had 130,000 volunteers assisting in the WHO effort.

In my book I came up with a new term for volunteers. I stole it from Don Sowell, the Sheriff of Grimes County, Texas. I co-host a weekly radio show called *Homeland Security: Inside & Out*. In the past two years our guests have included: the Secretary of Homeland Security, Chairman of the House Homeland Security Committee, the commander of the US Coast Guard, numerous state adjutants general, governors,

mayors, fire chiefs, academics and reporters. But for me, none have been more memorable than Sheriff Don Sowell.

In terms of square miles, Grimes County, Texas, is one third the size of the state of Delaware, however the total population is only 27,000. I asked the Sheriff what he would do if there were a large-scale homeland security disaster in his county. How could he respond with just a handful of deputies?

Sheriff Sowell said that actually happened in 2005, when hurricane Rita approached Houston. Three million people evacuated along the coast, and more than 400,000 came through Grimes County. I asked, “Sheriff, how could you possibly handle a law enforcement challenge such as that?” Sheriff Sowell leaned forward to the microphone and said: “Son, you just posse up.”

You see, Sheriff Sowell had anticipated that one day Houston would be evacuated for a hurricane, and he had developed a plan. He had previously served as the president of the Texas Sheriffs Association. They created a program where if there were wildfires up in the panhandle, deputies from the south could go augment the force. Or if there were hurricane evacuations along the coast, deputies from the north could come down to provide assistance.

Sheriff Sowell also had made arrangements with the Commissioner of Fish and Wildlife in Austin—where game wardens—lovingly called “fish cops—also happen to be fully trained and licensed peace officers in the State of Texas. One phone call got him 83 game wardens the next morning. In fact, just two phone calls increased the size of his force more than 10-fold.

Posses are something that will provide great benefit to us in this nation for homeland security. D.A. used them to eradicate smallpox, and we can use them to secure America—and the majority of them will not be law enforcement posses.

One of the great potential challenges we face in the field of biodefense would be rapidly distributing antibiotics in the case of an attack. Most experts agree that one of the most likely bioterrorism scenarios would be an attack with anthrax. If not quickly treated, inhalation anthrax is nearly always deadly, however, if quickly treated with antibiotics, it will not be a weapon of mass destruction.

Today we have “Push Packs” strategically located throughout the United States. They are containers packed with enormous quantities of antibiotics. I give the federal government a very high grade for the Push Pack Program. It identified the threat, it built the stockpiles, it rotates the stock so that the antibiotics are fresh, and the feds developed a system where the Push Packs would be rapidly delivered to a community. The problem is state and local governments have no effective means for rapidly breaking down the Push Packs and distributing the antibiotics.

In some communities, however we are beginning to see improvements—improvements through initiatives that Sheriff Sowell would describe as “posse up”. One of the organizations leading in this effort is called Business Executives for National Security (BENS). It is a great not-for-profit organization working in various communities around the country to bring in the private sector to help distribute these antibiotics.

A couple of years ago in Atlanta they discovered that public health personnel would only be able to distribute about 18% of the required antibiotics after a large-scale biological attack. BENS recruited 42 corporations to form a posse to aid in distribution during a major exercise last October—and, by the way, those employee volunteers and their families will be among the first ones in that community to receive those antibiotics. In other words, in addition to providing a great service to the community, these posses also provide a great service to their families.

We’ve also discovered that there’s really no need to deliver all of the antibiotics door-to-door. The volunteers will be great in helping get them to shut-ins, but if we improve our capabilities, through proper technology, to rapidly recognize an attack, the incubation period of the disease will give most of us the time to go pick up our own antibiotics. Where you ask?

Where do you normally pick them up? At the local pharmacy. Do you know that 90 percent of Americans live within 5 miles of a pharmacy? America’s chain drug stores have expressed interest in developing a corporate posse to help in this project, and, for the most part, they have just one request—which to me makes a lot of sense. They’re saying they don’t want to have to negotiate with 3,066 different counties about rules and regulations. What they’re asking for is a national standard. I refer you back to my second point.

You may have also heard about the recent Congressional hearings regarding medical surge capability—or I should say lack thereof.

During the January 2005 presidential inauguration there were exactly two ICU beds available in Washington, DC. At the Center for Biosecurity, University of Pittsburgh Medical Center, we are doing a study looking at hospital readiness. One of the early

things we have learned is that the key to success will be regional cooperation.

In the past, hospitals did very little planning for crisis response. Following 9/11, that increased, but for the most part, planning was limited to individual hospitals—which in reality makes as much sense as the players on a football team limiting their pre-game preparations to individual skills. Medical surge capability is a game that can only be won with well-planned and well-executed team work.

We are beginning to see progress in the regional cooperation of hospitals—another new type of posse for 21st century security—but we have a long way to go.

Okay—that is what I learned from a three-year study of the smallpox eradication program—four lessons learned for securing our nation in the 21st century. I hope you have learned something that applies to the important work you are doing in medical technology, training, and treatment—and that encourages you as you face your own particular challenges.

As a nation, we face many challenges and crises today—including threats from determined international terrorists, an energy crisis, an environmental crisis, a housing crisis, a health care crisis—the list goes on and on. It is easy to become gloomy, but these are not the first challenges America has faced.

After 14 years of studying homeland security, there are certainly times when I start to feel overwhelmed. When that happens, I remind myself to think of D.A. and the incredible challenge he faced back in 1967—very little money, a small staff, byzantine bureaucracy, lack of faith on the part of many “experts” that success was possible, no Internet to coordinate a global effort—in fact, D.A. will tell you he didn’t even have money in his budget to make overseas phone calls.

But nevertheless—a visionary leader overcame seemingly insurmountable odds by asking the right questions, setting and enforcing standards, ensuring proper use of technology, and perhaps, most importantly—by possessing up.

You, the people sitting in this room, also have the opportunity to change the world—perhaps not on the scale of Dr. Henderson—but who knows? There are no limits on what dedicated, talented, hard working people can accomplish. We should all strive to win A Good War. ♦