Strictly Speaking

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Year 2000 Health-Care Issues

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(Testimony before the U.S. Senate Special Committee on Year 2000 Compliance, July 23, 1998)

I appreciate the opportunity to testify before you on the health-care issues and on the potential risks to patient safety that are posed by Year 2000 (Y2K) technology compliance problems. My comments are especially directed toward biomedical equipment and medical devices, and are based on the experience of the veterans health-care system in defining the extent of the Y2K problem for hospitals and health-care systems.

Background. Technology has been responsible for many of the advances of modern health care, so it is ironic that this same technology now may present hazards to patient care when the 21st century begins.

Most medical devices, like other information technologies, were designed when there was little concern about how year references were reflected in hardware or software. Historically, most dates programmed in computers and medical devices have been based on a two-digit year, i.e., "97" rather than "1997." This was done in the early days of computing because of the high cost of data storage, and the practice was continued until relatively recently.

The essence of the current Y2K problem stems from the fact that when the year "2000" is entered as "00," systems and devices may not recognize this entry as a correct year, and thus programs may fail, they may not perform as designed, they may reject legitimate entries or they may yield erroneous results. Thousands of medical devices may be affected by one or more of these problems that constitute what I have called the "Millennium Bug Syndrome" or "MBS."

The MBS may occur with technology-related processes that sort by date or that require a comparison by dates, processes that calculate age or processes that perform other date-related tasks. For example, an incorrect date or time sequence in the output of a blood gas analyzer could cause confusion when interpreting the sequential results, causing errors in diagnosis and treatment. Likewise, an incorrect age calculation which is stamped on an automated chest X-ray could prompt unnecessary further testing or even cause a misdiagnosis.

Hospital information management systems; building systems controlling heating, ventilation and air conditioning, security, and elevators; and billing and accounting systems also are all subject to the MBS. All such systems and devices must be thoroughly checked and repaired or replaced as required before Jan. 1, 2000.

While most of the problems identified to date are relatively minor and can be repaired, many health-care institutions across the country are not positioned to accomplish these needed repairs. More importantly, though, is that at this time too many health-care institutions do not yet know whether they have a problem, or how big of a problem they have.

General Health Care Y2K. For the health-care industry, the inability of many comput-

ers to process date information later than Dec. 31, 1999, is more than just a computer or information management problem. For hospitals and health-care systems, Year 2000 problems originating from both internal and external sources may, if left unattended, threaten the whole institution, not just those departments that are concerned directly with information technology. Uncorrected Year 2000 problems could compromise patient care, disrupt core business functions and create substantial liability exposure.

I believe the health-care industry is at greater risk than many of the other industries that are also grappling with the Y2K problem because there are so many information systems in hospitals — from admissions to discharges, transfers, medical records, inventory control, clinical informatics and billing — which may be affected by Y2K problems and which may have both direct and indirect effects. For example, delays in payments from third-party payers could be crippling if cash-flow problems result in staffing shortages. Similarly, if a Year 2000-induced error causes a piece of laboratory equipment to skip a function, or perform a function twice, a patient could get the lab results of the patient who preceded or succeeded him or her, with potentially adverse consequences. Likewise, without proper dating systems, inventory reorder dates will be impacted with the consequent risk of running out of needed supplies. This could be particularly problematic for hospitals, since they typically maintain a minimal depth of inventory for perishable items such as sutures and blood products.

Further, modern health care depends on many external information technology systems, so simply fixing a hospital's in-house systems and biomedical equipment will not necessarily guarantee a smooth transition into the new millennium. For example, every health-care system depends upon suppliers for goods and services. What if the linen service, food suppliers, ambulance services, power management systems, oxygen suppliers and reference labs, to name some, have problems in their systems that make it difficult or impossible to take orders, to manage inventory and to deliver what a hospital and its ancillary systems need? Failure or malfunction of any of these systems could potentially disrupt patient care.

VHA's Approach to the Y2K Problem

VHA Size and Scope. Within the U.S. Department of Veterans Affairs (VA), the Veterans Health Administration (VHA) operates the largest fully integrated health-care system in the United States. A wide range of electronic information systems, biomedical equipment, facility management systems and other computer-based system products provide vital support to the delivery of health care and other services to veterans at over 1,100 sites of care delivery. (VA medical care assets include 171 hospitals, over 600 ambulatory and community-based clinics, 133 nursing homes, 40 domiciliaries, 206 counseling centers and 73 home health programs, as well as various contract treatment programs.)

VHA currently has an installed inventory of over 125,000 models of medical devices with an acquisition value of several billion dollars. The inventory is diverse and ranges from the most general, such as suction machines and sphygmomanometers to the more complex, such as magnetic resonance imaging systems and extracorporeal lithotripters.

VHA's diverse systems and equipment inventory includes hospital information systems and applications, corporate information systems and databases, commercial off-the-shelf (COTS) hardware and software, communications systems and networks, biomedical equipment, laboratory and research systems and other computer-controlled facility equipment. There are many data interfaces among the systems and thousands of types of equipment and devices in this extensive inventory. At the core of VHA's systems environment is the Veterans Health Information Systems and Technology Architecture (VISTA). VISTA is a critical element

of the total systems environment that provides information management support to VHA health-care facilities. It is continually being developed and enhanced.

VHA Approach. To address potential Y2K problems, VHA established a Year 2000 Project Office in 1996. The Project Office prepared "The VHA Year 2000 Compliance Plan" in April 1997, which included a structured compliance plan for all categories of VHA's systems and equipment inventory, assigned responsibilities for all actions and provided performance tracking and reporting requirements.

To ensure coverage of all affected VHA medical devices, systems and software, we prepared plans tailored to specific classes of products, as follows:

VISTA software applications. The Veterans Health Information Systems and Technology Architecture (VISTA) is the heart of VA medical facilities information resource management activities. VHA's VISTA application development requirements in effect since 1984 dictate a standard method of storing and deriving date information through the use of a pre-existing database management system known as VA File Manager.

VA File Manager uses a seven digit date field that has three digits for the year (rather than the common two-digit year field in most legacy systems) and two digits each for the month and day (date format is YYYMMDD). The year is specified according to the number of years from the year 1700.

Because of the decision to use the VA File Manager date standard, the core VHA application systems were expected to be able to support date information through the year 2699. This expectation was confirmed in our assessment phase. Our programming approach eliminated most of the two versus four digit year issues for the majority of software applications at VHA medical facilities. The databases used by and linked to these applications, interfaces between these applications and other systems and equipment, and other system products that do not use the VA File Manager date format have been carefully assessed for Year 2000 compliance. VISTA is a vital part of the total computer systems environment that provides information resources and support at VHA health-care facilities.

VHA in-house staff assessed, repaired, tested and are now installing needed repairs at our hospitals. Assessment, repair and testing were done centrally, while implementation is being done locally.

Local software applications. Many special purpose programs have been developed in VHA. These have been written by local Information Resource Management staff or other system users on-site, or they have been imported from other VA medical centers. These programs generally meet a local need or extend the functionality of nationally released software. These software applications have more non-compliant code, but have fewer users and less mission and financial impact. Such programs are being assessed and repaired at the local level, and many of these local applications have been discarded as a result of the Y2K analysis.

VHA corporate systems. These systems and databases involve a wider range of programming languages (including OS/VS COBOL, COBOL II, and ALC) than the VISTA application suite. VHA defines corporate systems as applications that gather information from one or more field facilities, and the supported database(s). An example would be the National Mental Health Database System, which runs on a PC at the Pittsburgh (Highland Drive) VA Medical Center. This system is used for performance measurement purposes, and it is updated weekly by 97 substance abuse treatment programs and 73 post-traumatic stress disorder (PTSD) programs that are located at 120 medical centers. These types of corporate systems are being assessed by their sponsors and repaired either by in-house staff or contractors.

COTS software. There are over 3,000 COTS software packages in use at VHA facilities. These include various versions of PC operating systems, office automation products, communications software, desktop publishing software and project management software. There are also clinical software packages for such applications as intensive care unit monitoring or nurse scheduling. In addition, there are server operating systems and utilities, Internet services packages, network management tools, database and software development environment tools, and operating systems utilities. While we have done some testing of these software packages ourselves, because of the number of such products, VHA, like other health-care organizations, is dependent on manufacturers to disclose the Y2K compliance status of such products.

Databases and data archives. There may be as many database files as there are application programs in the VHA inventory. Today's relational database structures encourage large numbers of interrelated files. If any file has a two-digit year field, then it must be thoroughly assessed. If one database must be changed in order to be made Year 2000 compliant, then databases and programs linked to it may also need to be changed. Data archives might have to be converted if the databases to which they refer are upgraded for Year 2000 compliance. Local owners of databases and files are responsible for their assessment and repair.

Computer and communications hardware. In addition to personal computers on employees' desks, there are servers for printer and file sharing, automated phone systems, voice mail and fax back services, computers for electronic mail, computers in fax machines and in-network hubs and switches, and computers that monitor system activity. These systems are often highly interlinked and interdependent. Assessment of said equipment has been done through testing and from information from manufacturers. Repair and replacement is a local business decision.

Facilities-related systems and equipment. Facilities-related equipment systems are vitally important to VHA in providing quality health-care service. These include those systems that control elevators; heating, ventilating, and air conditioning equipment; lighting; security; and disaster recovery. Staff from engineering, information resources, facilities management, acquisition and administration are being involved to ensure that facility-related equipment will be Year 2000 compliant.

Biomedical equipment. Biomedical equipment includes a myriad array of devices that record, process, analyze, display and transmit medical data. Ex-amples of such equipment and devices include computerized tomographic (CT) and nuclear magnetic resonance imaging (MRI) systems, cardiac monitoring systems, tissue and blood gas analyzers, cardiac defibrillators and various laboratory analyzers, to name a few. Some devices interface and exchange data with VISTA application systems and other VHA system products. In addition to the medical devices used in clinical care, those devices and equipment used in medical research facilities also are being inventoried and assessed for Year 2000 compliance.

The Safe Medical Devices Act of 1990 requires manufacturers of medical devices to track and resolve problems with medical equipment that may threaten a patient's well being. As a result, most recently manufactured medical devices should be unaffected by the Year 2000 problem. However, most hospitals and health-care systems utilize a wide range of devices that have been manufactured over the past two or three decades. In an effort to define the extent of VHA's potential problem with biomedical equipment, early last summer we identified over 1,600 manufacturers from whom we had purchased equipment or devices over the years; this is out of a universe of over 16,000 medical supply and device manufacturers. Over the past ten months, we have solicited data from these manufacturers as many as four

times (depending on the manufacturer's response). The dialogue continues with manufacturers whom we have not heard from or who have advised us that their product is noncompliant.

VHA has established multi-disciplinary oversight teams to investigate medical devices for compliance at each VA medical center. These Medical Devices Integrated Product Teams include a radiologist, a pathologist, a cardiologist, a surgeon, a nuclear medicine physician, engineers, acquisition specialists and administrative personnel.

VHA has developed a process for identifying, inventorying, assessing, and evaluating VHA medical devices at risk for the millenium change. We have also developed a Year 2000 patch for the VISTA software module used in inventory and our preventive maintenance programs. The software patch for Y2K compliance provides additional fields needed to conduct assessment, track the status and complete necessary compliance reports for Y2K activities.

VHA Results. VHA is currently on target to achieve Year 2000 compliance for its mission-critical systems within the schedule imposed by the Office of Management and Budget (OMB). This includes complete renovation of both VISTA and Corporate Systems, with implementation scheduled for March 1999. The renovation of all VISTA and Corporate Systems applications is projected to cost less than $2 million.

The results of VHA's assessment revealed that approximately 8 percent of the total VISTA code required renovation to achieve compliance. Renovation was contained in 66 applications, with none of the renovation work being categorized as more than minor repair; renovation is now 100 percent complete. Hospitals are currently averaging 72 percent implementation of the 61 enhancement or modification patches released to bring VISTA applications into compliance.

In the biomedical equipment and medical device area we can now report that:

- 694 manufacturers have certified to us that their products are Y2K compliant, meaning that there should be no problems because the device does not rely on date coding or they have already addressed the issue. (Many of these devices are items manufactured in recent years.)
- 34 manufacturers have reported that a total of 182 models of equipment or devices are not Y2K compliant and are no longer supported by the manufacturer. These models are considered obsolete and will not be fixed by the manufacturer, even though in many cases the device is still functional and commonly used.
- 102 manufacturers have reported that they produce a total of 673 models that currently are not Y2K compliant, but that they intend to repair or otherwise fix the device. In most cases, though, the manufacturer has not stated how the Y2K noncompliance will affect the function of the device or exactly what will be done to fix it. The manner in which the manufacturers will be providing the fix — e.g., whether they will charge for it, send a repair technician to the facility or require the product be sent back, etc. — varies widely among the manufacturers.
- 53 manufacturers reported they are still doing analyses of their products and thus we don't know what to expect from them.
- Inquiries to 201 manufacturers were returned to VHA marked "Return to Sender." After four tries over a 10-month period, we are assuming, at this point, that we will never know about the devices produced by these manufacturers.
- We have also identified 96 manufacturers who we believe have gone out of business or have been acquired by another entity since we initially acquired their products.
- The remaining 233 manufacturers have not responded to us despite our multiple

inquiries.

Thus, overall, we know at this time that we have 855 models of devices and equipment that are not compliant, and about 20 percent of these will not be made compliant by the manufacturer. And even after four separate queries, we have not been able to get a response from about 30 percent of manufacturers. In interpreting these figures, please keep in mind the size of customer that VHA is and thus the business interest of the manufacturers to be responsive to us. Other than that, we have no reason to believe that our experience is not, or will not be, typical of other health-care providers.

Other Efforts

VHA is working closely with the Office of the Assistant Secretary of Defense for Health Affairs to optimize the sharing of information with the DOD health-care system. VA is also working closely with the National Institutes of Health, Centers for Disease Control, and Food and Drug Administration within the Department of Health and Human Services, who share common Year 2000 problems in the areas of biomedical and clinical equipment and laboratory facilities.

VHA has participated in national meetings and made presentations on our activities to the Association for Advancement of Medical Instrumentation, the American Society of Healthcare Engineers, and the Joint Commission on Accreditation of Healthcare Organizations' (JCAHO) Seminars on Y2K Compliance Activities.

More recently, VHA has been working with other members of the National Patient Safety Partnership (NPSP) to increase awareness of the Millennium Bug Syndrome within the health-care industry. For example, two weeks ago, we joined with the American Hospital Association, the American Medical Association, the American Nurses Association and JCAHO in calling on the nation's medical equipment manufacturers, medical equipment sales and retail industry, retail pharmacies and other organizations that place medical devices in use to join in the effort to identify and address potential patient safety problems resulting from Y2K problems.

At the press conference two weeks ago the NPSP called for four things.

First, the Partnership called on all health-care practitioners and medical treatment facilities to survey their equipment and seek information from their relevant medical equipment, devices or systems manufacturers about their products' Y2K compatibility.

Second, the Partnership called on all health-care consumers who use medical devices at home to check with the health-care provider about the product's Y2K compatibility. As you know, a very large amount of health care is now provided at home.

Third, the Partnership called upon the nation's medical equipment manufacturers to take immediate action — if they have not done so already — to identify their devices' compliance. We urge in the strongest possible terms that equipment and device manufacturers provide this information no later than Jan. 31, 1999, so that there will be ample time to address identified problems.

And fourth, the Partnership calls for the establishment of a single, national clearinghouse from which this information can be readily accessed by anyone.

Conclusion

In closing, let me reiterate that while the Millennium Bug Syndrome has implications for nearly every industry and many households nationwide, it is particularly critical for health care, since health care today is so dependent on the use of biomedical equipment and medical

devices that rely on embedded, date-dependent information technology. Moreover, we now know that many medical devices are not Year 2000 compliant, and a significant number of these will not be made compliant by their manufacturers.

We also know that when the clock rolls forward to the 21st century, 526 days from today, about 3.8 million Americans each day will receive health care at hospitals, clinics and nursing homes, with many more being treated at home; each of these patients will typically have multiple different interactions – sometimes hundreds – with equipment, devices and/or information technology systems. When you consider the extraordinary number of such interactions with technology, then it begins to become clear how large is the potential for adverse events to occur, even if the problem involves only a small percentage of devices or systems. Fortunately, we still have time to ensure that no patient suffers harm as a result of the Millennium Bug Syndrome if concerted and aggressive action is taken in the months ahead.

We thank the Committee for its assistance in helping to resolve this technological problem.

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Strategies That Work

JOSEPH THOMPSON
Under Secretary for Benefits

(At Federal Executive Board Marketplace of Ideas Conference, Philadelphia, Pennsylvania, June 19, 1998)

I often get the question, "What do you like best – Philadelphia, New York, or Washington?" While I've enjoyed them all, New York is my home, and a very special and unique place. I like to tell this story, which I think captures the essence of New York City. I worked in Midtown Manhattan and I often walked up Seventh Avenue to a little deli for lunch. I would always pass this same very elderly lady selling fruit. She was not in very good shape, and frankly the fruit wasn't much better. But, every day as I passed I'd give her fifty cents, the cost of the fruit, even though I never actually took a piece. I'd say good afternoon and keep going.

One day as I passed by, said good afternoon, and left the fifty cents, I heard this tiny voice over my shoulder say "Excuse me, Sir, can I ask you a question?" I said, "Sure, you want to know why I come by every day, leave fifty cents and never take any fruit?" She said "No, I wanted to ask you if you knew the price of fruit is now seventy-five cents." If you've ever visited New York, you'll clearly understand that story.

I would like to commend Jack Ratcliffe (Executive Director of the Philadelphia Federal Executive Board) and the FEB for holding this conference. I think it is very important to meet and to share experiences. It enables us to learn from each other, and helps us steer through the chaos that is public service, circa 1998.

I believe that we can, even though the way may be somewhat murky, get to where we want to go. I like to use the analogy of a car traveling through dense fog. As long as you stay within range of your headlights, you may not be comfortable, you may not be able to see exactly where everything is, but you can negotiate the road. That's the kind of tack I think we need to take, as we make our way through what are very, very interesting times.

I'll preface my remarks with this: I'm not a consultant and I'm not an expert. I couldn't come to your organization, look at what you're doing, and then give you a report a month later detailing everything you need to do to become a raging success. That's not what I do. I'm a fellow federal employee, just like you. What I want to do this morning is share some experiences with you. I'll try to do two things. First, provide a framework of how I try to look at the world and offer that up for your consideration as a way of figuring out what's going on. And second, I'll offer advice on some successful strategies that work.

To start off with the good news, whatever it is you're going through today, you're not alone. Even though this may fall under the heading of misery loves company, the forces that are at play in our organizations are largely common forces, largely the same. They are macro level forces. I want to describe three of those forces that I believe influ-

ence much of what goes on in the Federal Government today.

First, I'll start by agreeing with Alvin Toffler, the futurist, that we're at the start of the third great wave of the reorganization of human society. The first wave began ten thousand years ago when we discovered farming, which led to the creation of villages and cities and towns and the growth of society; and the second wave began some three hundred years ago, with the advent of the Industrial Revolution, where we learned to replace human labor with machines, which revolutionized all of society's organizations. Today the knowledge revolution and information technology is doing the same exact thing in our society that those two earlier changes accomplished.

I believe the first force at play in today's change process and the difficulty we're having with that, is the fact that our world is still shaped by an industrial mind-set or model. As this industrial model and mind-set confronts the information age, we find it difficult to make the shift from one to the other. Why? Because many of us grew up with an industrial age mentality while the computer age was growing all around us. We are constantly trying to reconcile that.

If you think of how the industrial age taught us to look at organizations, it will give you a framework for looking at how we view our organizations today. We know we can't teach a machine to build a chair. While you may be able to provide training in carpentry to an individual such as Paul Koons and then say, "Paul, build a chair," which he does, you can't do that with a machine. If you want a machine to accomplish a similar task, you have to divide the labor up into separate tasks — as in preparing the wood, cutting out the parts, and then assembling the chair.

That mind set, the division of labor, looking at people, capital and equipment as part of a giant machine, is the legacy of the industrial age. We've also viewed organizations themselves as machines. Now this view also fit very well with our knowledge of physics before this century. Isaac Newton also believed that the world is organized like a giant clock. If you knew how all the component parts fit together, you could have a hundred percent predictability. We looked at organizations the same way — you could organize them very much like a giant clock.

In this century, Frederick Taylor, a gentleman who worked in Philadelphia, took that machine model and he said you could really make a science out of labor. He invented something called scientific management. He said you could find the single best way to do every job. And he believed if you systematized that, put rigid controls in place, you could not only get a consistent product; you could be highly productive. Taylor was right. His theories led to the creation of the modern assembly line and an extraordinary increase in productivity in society. While it did exactly what Taylor said, there were some unintended consequences. Maybe he understood it. Maybe some others did. But there were very important by-products of that mind-set that helped shape the way we look at the world today.

Number one, when you say, "Here's your job; do it this way; don't vary from that," you separate thinking from doing, thus creating a cadre of thinkers and a cadre of doers. You also separate planning from execution. You also take away the responsibility for the final product. Now ultimately the responsibility can only rest with the senior person in charge. The people actually doing the work are not responsible for its outcome.

And if you look at what's inherent in your organization, you'll see the residue of that thinking. You'll see that mental mind set at play in many government organiza-

tions today: "I'm the boss, you do your job; I'll think about the best way to do it." By the middle part of this century, academicians and a number of organizations began to abandon that model. They said this may have been great when you had waves of immigrants coming into this country who would work for pennies a day, who couldn't speak the language, and who were perceived as not worth the investment anyway. But today, you're giving away the most valuable resource you have in your organization if you hold this view, you're giving away your human capital. You're squandering them. You need to capitalize on their abilities.

As far as the one best way, even by the 1950's, that notion was becoming defunct. Things were beginning to change much too quickly for us to continue to systematize a single best way of doing any particular job. Today, if you asked the best organizations in this global economy what they do, they would tell you the one best way is probably good for about an hour in most of their business processes. They look at benchmarking, they look at best practices, and they continuously change to get better.

They have absolutely abandoned that mind set. They don't look at organizations as machines. If you want a physicist who can give you a mental model, look to Albert Einstein — the world isn't built like a clock. When he studied subatomic particles, he found, in fact, a paradox in change from the norm and the way the universe is constructed.

When we think of organizations today, we think of them in those terms, they are complex systems, not machines. These systems have varying, interwoven parts, parts that you may never ever be able to fully understand. You just need to deal with them.

One of my favorite authors is Peter Drucker, considered to be the father of modern man in this part of the 20th Century. I'd like to share a quote with you from his book, *Post Capitalist Society*: "Every few hundred years throughout Western History a sharp transformation has occurred. In a matter of decades, society altogether rearranges itself, its world view, its basic values, its social and political structures, its arts, its key institutions. Fifty years later, a new world exists."

People born into that world cannot even imagine the world in which their grandparents lived and their parents were born. That's the one we're in today. I'll guarantee you, your grandchildren will never be able to fully understand the world you were born into. It will be that different for them. Drucker says we can expect at least another 15 or 20 years of that kind of change before things settle down.

That, to me, is the first force at play. And that's true for both the public and private sector; it doesn't matter where you work. This force is at play in all organizations.

There's a second force that's more specific to the federal government. That's the changing nature of civil service — federal civil service. This, too, has gone through dramatic shifts over time. Twenty years after George Washington was the President, the federal government consisted of 126 employees; two decades after Washington, it was still very small. The only test for a job was fitness of character, which meant, by definition, you had to know somebody.

In 1828, Andrew Jackson said, "I'm going to democratize the Civil Service and open it up to common people. You don't need to be part of the Good Old Boy Network, we're going to open this up and make it more professional." Unfortunately, it led to what we all know to be the spoils system. Over decades this system so thoroughly corrupted the federal government, it was almost brought to its knees.

The Bureau of Pensions, VA's predecessor, paid pension claims to Civil War sol-

diers. When you filed your claim, they'd ask, "How do you plan to vote?" It was that corrupt. It took the assassination of President Garfield by a disgruntled job holder to focus the nation's attention on how far out of control its Civil Service had gotten. It was corrupt, incompetent, bloated, inefficient and every other negative adjective you could imagine. Consequently, the Pendleton Act was passed. The Pendleton Act was designed to rid the civil service of political influence. To ensure that folks didn't lie, cheat and steal, we set about creating the merit principles. We designated how to hire and advance civil servants. Rules were put in place to make sure that corruption would never be the norm again.

One hundred years later, these same rules hamstring the federal government from being nearly as good as it could be. And much of what you see today with changing the way we procure things, changing the way we hire and use of demonstration projects is a reaction to the fact that we fixed the 19th Century problem in the 20th Century. It's murdering us because it doesn't give us the ability in the federal civil service to do what needs to be done to do a good job. I'm not telling any of you any secrets. We're in the midst of that great change as well and that's at play continuously in the federal civil service.

The third great force — of which I don't know its origins, but I'll say came into being for the federal government in a big way when Ronald Reagan was elected — is the devolvement of power and authority from the federal government down to another level of government or to the private sector. This is currently taking place and will continue to take place. I think, on balance, it's a good thing. I also think this will settle down some time in the next 10 to 20 years. At which time we'll have achieved the proper role for the federal government.

But right now the American people have spoken pretty clearly — they think much of what we do belongs someplace else. And that's okay. This government was quite different at its birth in 1776 than it is today. It has evolved to this point and it will evolve into something else.

I can tell you what the perspective is in Washington now. I can tell you that from the questions asked of the federal government every day. Why are you in this business? Can't someone else do that? Can't the state do that? Can't counties do that? Can't the private sector do that? Those questions are asked all the time, and I don't expect it to go away.

Those three things are at play here. The changes to the Civil Service System are a kind of the knowledge revolution, a revolution that begs the question: What is the proper role for the federal government? All of this contributes to the confusion, and forces sometimes seem out of control.

What will the future bring? I quote from one of my favorite philosophers, Dan Quizenberry, the relief pitcher for the Kansas City Royals. He said, "I've seen the future, and it's just like the present, only longer."

That's what I know about the future. I'm convinced that we're a generation or more from settling down, from coming up with some organization that is going to stay put for a little bit. One that won't change again tomorrow. For most of us in this room today, this will happen after we've left the civil service and gone on with our lives.

The question is not whether it's going to be there. I think it will be there. The question is what do you do about it. I'll offer some strategies for you to think about. I won't tell you they're the only things to think about. You can accept or reject them. But

I'll tell you the way I try to look at it in my current job. You're going to get engaged in change efforts. You're going to have to make choices about what's right and what's wrong, what you want to do or don't want to do.

I suggest in all of these efforts that you keep three groups in mind at all times: your customers, whomever they may be. You produce goods or a service for someone. If you don't, then I think you really have to question what your organization is doing. We all like to think that we focus on customers. My observation of most of the organizations I've worked in is that's easier said than done. We often pay lip service to it. But we truly need to pay attention to them and their needs.

Secondly, taxpayers. You always have to keep in mind that you are the stewards. We've been entrusted by the American people to shepherd their resources wisely, to do the right thing with the money they've given us. That is your responsibility.

Third are your own employees. You must absolutely never lose sight of them. Long after the bricks and mortar have been blown to dust, the only real capital investment you have in your organization are the people. It's the only thing that makes the organization. Whatever you do, you must look at customers, taxpayers and employees. You have to keep your focus and balance the interests which sometimes compete with each other. You need to keep their interests in mind. That would be strategy number one.

Number two is focusing on the values of your organization. This is not squishy stuff. It may sound like smoke and mirrors, or too touchy-feely. It's difficult. It's very difficult to pay attention and focus on the fundamental values of the organization. Some of you may have value statements. Some organizations do, some don't. But you all have values, implicit values in your organization. I would bet that if you took the time to sit and write what you thought would be excellent values for your organization to attain, you would find a significant gap between your current reality and what you see as the ideal. Your role as federal employees, or as leaders of organizations, is to close that gap. That is the glue that holds the organization together. In my opinion, it is the single biggest determinant of whether an organization will succeed or fail in its endeavors — more than any other single thing. I'd recommend and urge that you focus on it.

The third strategy I would suggest is be a leader. You may have a formal title and hold the position of leader, but I think it's incumbent on everyone in the organization to be a leader. I'm no expert on leadership; but I've worked in the federal government for 23 years and I've seen many people who are leaders. I've observed some similar strategies and behaviors that were most effective and I'll share them with you. I hope they help you.

First, leaders are not always sure they're right, but they're willing to admit that. Willingness to admit you don't know what you're doing takes great strength. It takes great strength. Anyone who's ever had a child and had to confess to them on occasion that they really didn't have the answer understands this. You need to develop strong subordinates and let them do what you expect them to do. Stay out of their way and allow them to do a good job. That's a successful component of leadership.

Leaders have three key jobs. The first job is to define reality. You need to tell people what the world really looks like. The last job is to say thank you. In between, you must be the servant of the people that appear below you on the organizational chart. You may think they were put on this earth to work for you. You have it exactly

backwards. You are here to enable them to do their jobs. That's your job. Give them the strength and capacity to do a good job. Leadership is about relationships. Relationships are much more important than organizational charts.

As my good friend Paul Koons will tell you, I've never been very good at keeping organizational charts up-to-date. They've never seemed like a very important thing to me. How people treat and react and work with each other is infinitely more important than the organization. Leaders don't inflict pain. They bear pain. When you see someone abusing an employee, I don't care what the outcome is, what the results are, that's unacceptable. And your job isn't to make other people feel your pain. Your job is to absorb it and go on and try to keep them isolated from it, if you can.

Leadership is about long-term commitment to change. I don't think it can be taught, but it can be learned. I think you can find someone that you respect and admire and the opportunity will come to observe what they do. I think you can learn. I think it's the obligation of all of us, because nobody brings all these cards to the table. It's the obligation of all of us to learn these leadership strengths and to bring them into the organization.

We talked about a couple of things. We talked about some of the forces at play in the federal civil service, the knowledge revolution, the changes in the civil service, movement and responsibilities. We talked about some leadership strategies. We talked about values. We talked about the groups you need to keep in mind when you're going through change. When I look at the federal government, I realize we're part of an incredibly complex organization that affects the lives of people in ways that we are not even aware of. There probably isn't one citizen, including all of us in this room, that really knows all the ways the federal government touches their lives.

About four or five years ago in New York, I met the government tea taster. He works for the Food and Drug Administration. You may not know the government has a tea taster, but it does indeed. He sits at a table with a Lazy Susan top. He carefully measures out an amount of tea in each cup, a measure of hot water at a certain temperature, he drinks it, and spits it out. He now decides whether it's tea or not. He's a very courtly man, probably 80 years old, and his palate is so refined he can not only tell you the tea and its country of origin, he can also tell you the province in which it was grown. His decision determines whether that boatload out in New York Harbor is tea or ground up bark. He decides whether the United States will allow it to be imported for consumption or to tell the ship to turn around and go home.

We do that. We also put men on the moon. We provide for the safety, welfare, national defense, and we provide income support. We do all of those things many times a day. That's what the federal government does, it's an enormous responsibility. And again, most people are only dimly aware. They know about the IRS. They know about Social Security. If they're veterans, they may know about VA. We all know about the Postal Service. But much of what we do is largely unknown by the American public. We serve in ways that are really oftentimes, I won't say unrecognized, but dimly recognized.

But remember this, each of us in the jobs we do affect people's lives in important ways. That's what the federal government does. It has made this country strong. I don't think it's an accident that as we go into the 21st Century, this is the strongest and greatest nation on this planet. That's not an accident. It's due, in large measure, to the federal civil service. I always liked the Adlai Stevenson quote that says, "Your civil

servants serve you right." You get exactly what you deserve in the civil service, no better or worse. You have served America right. This federal civil service has done the right thing. It has made this country strong and prosperous, prosperous and free. I thank you all for doing that.

I'll leave you with a thought. I know this is all about change. I know this conference is about how you take organizations and make them better and try to deliver better services to your customers, the taxpayers and help your own employees reach their potential. But, I would give you this advice: Don't give counsel to your peers. Some of this stuff is scary. You may even be afraid of ridicule. I'll leave you with the thoughts of a preeminent philosopher of the 20th Century, Gracie Allen. She said, "You know, they laughed at Joan of Arc, but she went ahead and built it anyway."

# # #

African-American Civil War Memorial Dedication

WILLIE L. HENSLEY, JR.
Director, Center for Minority Affairs

(Dedication of Civil War Memorial at Arlington, Va., July 16, 1998)

Colonel McMiller, my friend, thank you for the kind introduction and thank you, ladies and gentlemen for the warm reception. Chairman Smith and members of the Civil War Memorial Freedom Foundation; General Gaskill, other distinguished leaders and honored guests; fellow veterans, ladies and gentlemen: On behalf of the Secretary of Veterans Affairs, the Honorable Togo D. West, Jr., I am deeply honored to join you today, at this place of great honor for our nation's heroes.

This is an important day for all of us, as we inaugurate a powerful statement about the crucial involvement of African Americans in the development of our nation and our society. We give voice today to a generation of black warriors who, in the words of poet Langston Hughes, said: "I, too, sing America." I'd like to further explain that quotation, after two orders of business.

First I want to acknowledge the descendants of Civil War soldiers and sailors — because many of them are here today. For them, I hope that this event represents a day of pride, of satisfaction and comfort — because we are dedicating an ongoing tribute to their ancestors, a tribute that will speak to the contributions of Civil War African-American veterans for years to come — well into the next century.

The second order of business is to recognize the inherent value of memorials and monuments. We learned much about the value of memorials after the war in Vietnam. Vietnam left an open wound which many people believe began to improve only with the building of the Vietnam Veterans Memorial many years later.

And so we discovered their great healing power and how memorials and monuments tend to draw the nation together — similar to the manner in which we have gathered — to honor its heroes and to recognize their sacrifices.

Memorials and monuments are society's way of expressing gratitude to those who contribute to the victory and most importantly, a way of saying thanks to America's sons and daughters who fell in combat.

I am delighted that Chairman Smith and the Civil War Memorial Freedom Foundation is shining the national spotlight on African Americans who stood up for America, at a time when America did not stand up for them.

In his second inaugural speech, President Lincoln spoke of the task of binding up the nation's wounds in the aftermath of war. It is this larger duty that we are finally addressing today.

And that leads me to the further explanation of those words, "I, too, sing America." I don't mean that "U.S. Colored troops" actually sang the words to "America the Beautiful." For author Katharine Lee Bates was only a child during the Civil War, and her moving hymn

was written years later. But I believe those black soldiers and sailors had some of the concepts already in their hearts and minds – and the way they felt about them help explain their selfless service.

I'm not talking about the early stanzas of the hymn; the ones most of us readily remember. We all appreciate the physical beauty of this land — the waves of grain, the majestic mountains and all the rest, from "sea to shining sea."

However, I don't think these were the words and thoughts that encouraged over 200,000 African Americans to join in the war. Because, as we know, those black soldiers — and their counterparts, the black sailors on union ships – did not have full access to all the splendor described in "America the Beautiful." Let's just say America's "good" was not exactly "crowned with brotherhood" for all its citizens.

Yet these soldiers and sailors had a vision, a dream that today provides the platform for our celebration — they helped shape our nation. Today, some 135 years later, America's eyes are opened to one of the greatest freedom movements this nation has ever witnessed. A movement not clearly defined in our school history books.

I am delighted that our youth, students, are here with us today. You know, as a little boy, growing up in Louisiana, I recall that our history books didn't address the contributions of African Americans in the Civil War. As a matter of fact, the contributions of African Americans in the making of our great nation were missing from our books.

Our books focused on the discovery of a land already found and inhabited, on the stamp act and sugar act, rather than the courageous acts and deeds of African Americans in the Civil War at places like Fort Wagner, Port Hudson and Vicksburg.

Much emphasis too, was placed on projecting the Civil War as a war between the North and South and the war that divided our nation. But it was, also, a war that unified America, a war that generated a powerful freedom movement. A movement that explains why so many African Americans were so determined to defend the nation that had doled out its blessings in smaller portions to people of color. It explains why young Elijah Marr, a slave, left the Robinson plantation, in Shelby County, Kentucky, with 26 other slaves to join the union army.

My friends, I suggest to you, that the words in the hearts and minds of U.S. Colored Troops were from the lesser known stanza of "America the Beautiful":

America, America,
God mend thy every flaw;
Confirm thy soul, in self-control;
Thy liberty in law.

This is what I believe was in the hearts of black soldiers and sailors, in their own words. They knew that America was not a perfect country. Yet they held strong hope that the flaws eventually would be mended. That the soul of the nation would be restored as self-control was exerted. And that liberty would be assured by law.

But they did not sit back waiting for change, waiting for freedom. They stepped forward, right up to the front lines. Over 200,000 African Americans, lead by white Union officers, decided that they would rather die fighting for freedom, than die a slave. They fought in hopes of correcting a major flaw in our society, the enslavement of a people. They fought for respect, acceptance and citizenship.

They were ill-equipped, untrained, and received very little pay. They were labeled as unworthy of combat and unable to handle the rigors of war. Yet they stood at the edge of the

battlefield, sometimes with fixed bayonets, against buckshot, bullets from muskets.

In almost every instance, they had to defend against positions that were indefensible and they charged against enemies that had superior tactical advantages. Yet, their bravery and courage were unmatched. They answered a call for service with pride and dignity. And they proved time and time again that there is no greater love — than to fight and even die for your country.

They were tested at every turn! In over 41 major battles and more than 400 minor engagements. Most notably was their stand at Fort Wagner, where 40 percent of the 54th Massachusetts Colored Infantry, commanded by Col. Robert Shaw, was lost.

Certainly there is no greater love than that displayed by men like Sgt. William Carney, a Medal of Honor recipient, who at the battle of Fort Wagner retrieved the nation's flag after being wounded in both legs and in his chest and right arm. Yet he clinched to the symbol of a nation still standing, still fighting. He clinched to the symbol of freedom, justice and democracy — principles and concepts that could not be realized by African Americans.

And even as they fought, their relatives were being persecuted, terrorized and even hung. But they stayed focused on mending the nation's flaws.

"To their great joy but certainly not contrary to their own expectations, they triumphed, not only over enemies armed with guns and swords, but also over the sharp and cruel prejudices" of the time.

Over 37,000 of them gave up their lives for freedom and for the unity of the nation. 4,000 of them are buried here at Arlington, along with over 12,000 other Civil War veterans. And because of their legacy, today black men and women are still standing up for America.

Well, ladies and gentlemen, today their time has finally come. The Foundation has provided all Americans with a way to say thanks, a way to highlight their contributions and a way to give full meaning to the words, "I too, sing America." For we know here today, that America is truly the "land of the free," because it was the home of some 200,000 brave African-American Civil War patriots. Black men and women in uniform today realize that they stand on the shoulders of those who answered the call and who stood up for America yesterday.

We at the Department of Veterans Affairs and our Secretary, the Honorable Togo D. West, Jr., thank the Foundation and all its supporters for bringing great honor and dignity to African-American veterans of the Civil War. May God continue to bless you, and may God continue to bless those who serve our great nation, and those whose echoes still ring loudly with the words, "I too, sing America." Thank you.

VA's Public Affairs Mission

JAMES H. HOLLEY
Deputy Assistant Secretary for Public Affairs

(Remarks at Public Affairs Training Conference, July 21, Baltimore, Md.)

Usually at this point each year, I offer a State of the Union — or State of Public Affairs, as it were — an overview of the issues we have in common, the challenges we face, the quirks of the job, the year past and the year ahead. But this year I want to cover something different and, believe it or not, more important.

No matter the level of your expertise, there is something else each of us has in common that we can lose sight of if we get bogged down in our daily duties, chained to our routines, overwhelmed by work, frustrated by negative coverage or even elated over success. And that's what I want to cover for just a couple of minutes.

Did you ever have one of those days? One of those, "What the heck am I doing — Why am I putting up with this — If one more thing lands in my inbox I'll scream," days? I do. And unless you're superhuman, I'll bet you do too.

And how do you cope with it? I'll tell you what I do. I shut my door for just a few moments and think about the objective. What is it? To get information and benefits into the hands of veterans and to be a burr in America's butt when it appears to be forgetting them.

That is our ultimate goal. That should be the product of all we do. From the newsletters and news releases we prepare, to the interviews with local reporters, to our community relations efforts, to the defense of our facilities and programs, to the promotion of our activities — it all should come to one thing: Are veterans benefiting? Are they better off for what I have done today? Are their lives made better because of something I've achieved?

That is the single most important thing you and I have in common in our work, the single most important objective: Helping veterans. If we aren't doing that, then we aren't doing our jobs as public affairs practitioners. Bringing credit to our respective facilities or to VA is just a means, it's not the goal.

Now wait a minute. I can hear you saying, "I flew across the country to a conference just to hear somebody preach to me that serving veterans is our goal?"

Yeah.

Most of you in this audience are very fortunate. You encounter, visit with and see veterans face to face daily. You know firsthand their stories, their struggles, their laughter, their pride.

Those of us sequestered in our offices inside the Washington Beltway forget sometimes who it is we're serving. I'll bet it happens to you too.

Not intentionally. It's just that we get so wrapped up in paperwork and policies and the negatives and such that we can't see beyond our own desks. I work hard not to let that happen. At the end of the work day, sometimes during it, I never fail to ask myself: Did I help veterans today? Did my work affect their lives today?

Not "what did I do for the Administration?" I am an appointee, after all. Not "what did I do the Secretary or VA or Public Affairs today?" That is not my first concern. I'm sure they'll be surprised to hear that.

But "what did I do for veterans?" If I have a good answer to that question, then all those others will have been served well.

Since I can't seem to escape my desk too often, there are some very personal images I use to remind me who it is I work for:

I picture a young fellow waiting in the darkness of an assault landing craft, scared to death and not knowing if — when he steps out of it into the cold, choppy water in just a few moments — he will make it to the beach, much less make it back home. That was my Dad.

I picture a friend of mine; then a 19-year-old Army Air Corps sergeant when he was forced into the Bataan Death March, starved, and forced to watch the torture, beheadings and live burial of his comrades. He remained a prisoner for three and a half years. About his ordeal, he says, "Don't take anything for granted; appreciate everything. I learned a lot about myself. I don't want to see anyone else have to endure such a thing. But, I'll tell you this: If there were hostilities and any of us were called on, we still would be right there defending our country."

And the third image I often conjure is, in some ways, the most poignant: In my former job with Congressman Sonny Montgomery, then Chairman of the House Veterans' Affairs Committee, I traveled with him to many veterans' hospitals. He would visit with staff and patients while I stood dutifully in the background trying to stay out of the photograph.

I will never forget his entering one patient's room in a nursing home — a very frail, elderly gentleman, someone many of you see in your duties every day. He looked so weak and tired and pale — had all the tubes and such you expect of a very sick patient.

And as Congressman Montgomery, a retired major general, entered his room, this man's eyes sparkled and he snapped to with a salute. It was just one of those moments in time. I will never forget that picture.

That is who I work for. That is who you work for. That is who we all work for.

And that — that is what we need to carry to America. The courage and tenacity and love of country in the hearts of our veterans. Not so much their deeds as the human beings who carried them out.

We in VA have a responsibility to help. We have a responsibility to do more than just publicize our programs and activities. That is why every year the Office of Public Affairs sends kits to more than 100,000 schools to help teachers plan activities for their students centered around one topic: veterans.

So on those days when things get to you, when you feel isolated in the storm, or even if you think you have the world by the tail — step down the hallway into a patient area, or visit the waiting room, or gaze across the grounds at a burial service, and remember why we're in business.

VA is in the business of administering benefits and services and making sure they reach veterans in a timely manner. But we also must be veterans' advocates. Some disagree with that, but I don't think you can honestly do your job in VA if you are not an advocate.

The only way veterans' benefits and services will survive and grow stronger is through effective communication, not just about the services themselves, but about the recipients.

Veterans' programs depend on our effectively communicating their worth, their value, their being morally right. Veterans' programs depend on our effectively communicating who our constituency is.

America doesn't think any less of its warriors; it just thinks about its warriors less. And we have a role in reversing that.

The images of war and its participants are remote to many. They saw it on the news or

perhaps watched a movie. When history classes focus on America's major wars, it is a discussion of real estate or mineral rights or politics — but they leave out the most important part — people. The people who fight the battles? What about them? Who are they? They are those who remember:

— being so hungry, fatigued and disoriented that you don't want to go another step or live another day;

— leaving a young bride for two, three or four years; to give up your education and job, say goodbye to your family, and take up the discipline and hardship of military life just because your country asked.

— risking your life each and every day to ensure freedom.

— and coming home to a jubilant victory celebration or the silent tarmac of the local airport.

Those are the people I work for. Those are the people you work for. And we should be proud of what we do. There is no more noble job in public service nor a more important constituency than ours. Period.

Think about that the next time your morning alarm goes off or you're having one of those days.

We owe it to all the nation's veterans to stand up for what they deserve and for what VA does to meet that commitment.

It all comes down to this: public perception.

Veterans' benefits and services will live or die on public perception. What the American public thinks is linked directly to survival of the system. And what the American public thinks is tied directly to what you and I say about the system and about those who need it and use it.

What you do is vital. Every day. And every day, I hope you'll ask yourself, "Did what I accomplish today help a veteran?" It's a simple test.

Our curriculum in this week's conference is designed to help you pass it.

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Gulf War Research

DR. ROBERT H. ROSWELL
Executive Director, Persian Gulf Veterans Coordinating Board

(Summary remarks at Conference on Federally Sponsored Gulf War Veterans' Illnesses Research, June 19, 1998)

It has been almost eight years since Iraq occupied Kuwait. In that eight-year interval, we have learned a great deal but we have also failed to provide veterans of the Gulf War with answers that they deserve and that we would like to give them. I would like just a moment in closing the conference to share my personal perspective both as a physician who has cared for Gulf War veterans and as an administrator with the U.S. Government. Although I am with the Department of Veterans Affairs, I am also in the active reserve and work very closely with the Department of Defense. But the comments that I will share with you this morning are strictly personal in nature, my own personal observations about a few lessons that we may have learned from the Gulf War.

Following the Iraqi occupation — and you all know this but I just wanted to try and highlight a couple of things — we deployed almost 700,000 troops into the Gulf War effort. Following the deployment and redeployment of those 700,000 troops, health problems surfaced as they often do following a military conflict. In response to this, first the Department of Veterans Affairs in 1992 and later the Department of Defense developed a health care registry for Gulf War Veterans — the Persian Gulf registry in case of the VA and the Conference of Clinical Evaluations Program in the case of DoD. Over 100,000 troops, roughly one in seven, who served in the Gulf War, participated in these registries. While most had the types of problems that we expected in a military age population, problems that were readily diagnosed and not particularly unexpected, it was the substantial and in fact an alarming number of individuals who had a variety of symptoms for which a ready explanation was not available. Almost one in four, or roughly 25,000 individuals, who served in the Gulf War fell in the group of unexplained illnesses. Concern over what might be causing these unexplained illnesses led to a lot of speculations and very quickly combat stress was put forward as a possible plausible explanation for this. I will tell you in all candor that this was rejected by the veterans groups, feeling that it was not stress related but rather there were physical reasons behind the problems experienced by Gulf veterans.

Soon information became available that indicated that Gulf War troops had been exposed to a variety of factors. One of many was pyridostigmine bromide. Pyridostigmine bromide, as you know, was issued to essentially all of the allied forces in the Gulf War and at least a third of the troops took one or more doses. While this drug is fully approved by the FDA, its indication and use as a preventive agent for protection against nerve agent is not FDA-approved and a lot of speculation came about that this was not a FDA- approved use of this particular drug. Could this be a factor of the Gulf War illnesses?

Later, information suggested that troops were exposed to depleted uranium. First, there were only a handful of individuals who were involved in friendly fire accidents who had known exposures to depleted uranium. But later, information became available suggesting that as many as 400,000 of the 700,000 deployed may have had at least some exposure to depleted uranium. Depleted uranium had never been used in a combat situation before. Ques-

tions arose about what role that might have on the subsequent health status of Gulf War troops.

The last thing that I want to talk about is anthrax vaccine, which as you know has just been recently discussed this morning. Anthrax vaccine was another factor that was involved. Almost one in four U.S. troops were immunized against anthrax because our intelligence correctly identified anthrax as a potential biological warfare agent in the Iraqi arsenal. The anthrax vaccine, even though it has been fully approved by FDA since the early 1970's, was given under a veil of secrecy. Many troops expressed great concern because of the way it was administered under a heavy cloak of secrecy and because it was not documented in a normal fashion in military personnel immunization records.

There was also a great deal of concern about exposure to chemical agents, to nerve agents. You heard this morning about the alarms going off. The concerns that that raised in troops who heard those alarms and when they received the all clear did not know whether or not they had been exposed. Initially, there was denial of any significant troop exposure. But when subsequent information became available culminating in July 1997, the DoD after further information through CIA analyses indicated as many as 100,000 of the 700,000 troops who served in the Gulf War might have been exposed to low levels of chemical agents following the Allied destruction of captured Iraqi munitions at Khamasiyah after they ended the hostilities.

Basically what we had following the Gulf War is a large number of troops who mobilized. Many returned healthy, but unfortunately some returned ill. At least one in five have had illnesses for which we do not have ready explanations, illnesses characterized by a variety of common symptoms. Symptoms that are quite known in a normal population yet were particularly puzzling in this group because of the concern over the unique exposure that was inherent in this particular combat situation; exposure that did not occur in prior military conflicts. It was only natural for people to speculate and hypothesize that these factors were causing this large number of unexplained illnesses. Quite frankly I think that is a scientific failing. I think we as clinicians, as scientists, were too quick to jump to conclusions.
The real task, the task that is yet to be accomplished is to focus our efforts on those unexplained illnesses and try to understand better the nature of the unexplained illnesses. Are there consistent patterns of symptom constellations? Are there consistent physical findings? Are there consistent laboratory or other abnormalities? To date the answer is no, but I think our effort must persist on looking at the illnesses and not assuming that one exposure caused a wide variety of illnesses. I think once we have a better understanding of those unexplained illnesses, those symptom constellations, then it is appropriate to compare and hypothesize whether or not those risk factors may in fact be responsible for some of the more significant proportion of those illnesses.

So, lessons learned. Is there a unique Gulf War syndrome? No. Six separate scientific panels have told us that while the illnesses are real; there is no unique Gulf War syndrome. There's nothing unique or unusual about this Gulf War syndrome; a very important lesson.

The unexplained Gulf War illnesses represent a new consequence of combat exposure. Is this something that is unheralded? Is this a result of the many and unprecedented occupational military exposures that occurred during the Gulf War? The answer is no. In fact, similar physical ailments have been reported by veterans in all major U.S. conflicts dating back to the Civil War. In fact there is a striking similarity between not only the mental manifestations, the PTSD-like manifestations, but also the physical ailments and the physical symptoms reported by veterans of each of these U.S. conflicts back to the Civil War. So in fact we are not dealing with a new or unheralded manifestation of combat exposure.

Then why has our understanding of Gulf War illnesses advanced so slowly? A very important question. I believe the problem is the clinical case definitions have been difficult to develop without specific, consistent signs of pathology. In addition, the inability to identify unique illnesses left a lot of frustration. Frustration is totally understandable and would be expected. Unusual exposures associated with the Gulf War has fueled a great deal of speculation. Speculation that has been enhanced by media coverage and press coverage about possible causes of an undefined ailment. Without first defining that ailment, speculations of the cause of that ailment, I believe, may be premature.

Another problem has been the inability to replicate combat situations of the exposures in a controlled laboratory setting because of the intensity of the battle, because of the myriad of exposures that occurred on the battlefield — pesticides, oil spills. I could go on for half an hour, as you know. The ability to replicate each of those exposures in a controlled manner in the laboratory is virtually impossible. We simply do not have and never will have the capability to go back and accurately recreate those exposures. Does that mean that risk factor research is unimportant, that we should not believe any of our efforts on risk factor exposure research? The answer is no. In fact the risk factor research is extremely important. It's important not only for this generation of veterans but potentially is even more important for veterans who are mobilized or military personnel who are mobilized in future conflicts. Our failing is in expecting that risk factor research is going to explain all of the unexplained illnesses. My belief is that risk factor research may lead us to an explanation of some of those illnesses. But it is naive as scientists and clinicians to think the risk factor research will give us a silver bullet, a magic answer that will explain all of the unexplained illnesses.

What information is needed? Certainly we need a better understanding of symptoms and their relationship to health and disease. I am not talking mental disease or physical disease. I am talking about a complex interplay, symptom manifestation of the disease, physical ailments, and the interplay between stress and physical ailments. I think the role of stress is important in the manifestation of physical illnesses. I think it is extremely important in the individual patient's perception of illnesses and their perception of symptoms. But it is important to understand that while combat stress is what has received a lot of attention; it has been alluded to us in several occasions. Combat stress is not the only factor involved here. There were significant predeployment stresses. There were significant combat stresses in some situations. But there were also very major redeployment stresses and the readjustment stresses have lasted in many cases well beyond the period of the conflict. I believe too little attention has been paid to readjustment stresses of military personnel who mobilize. One thing that has been used as an argument against military occupational risk exposure and the subsequent onset of symptoms is the latency. It is true that many troops with unexplained symptoms did not have the onset of these symptoms until they were redeployed. In some cases, the symptoms did not occur until a year or more. In fact two, three or four years in some cases after the return from the Gulf War. Many would claim that that would argue against combat exposure and induction of symptoms. Yet the stress is associated with readjustment in
dealing with real veterans because those stresses in many cases continue and persist in these personnel who served in the Gulf War.

We also need replicable case control studies of real Gulf War veterans. That may sound obvious but it has been a major shortcoming. When several teams of neurologists described specific neurologic abnormalities, other groups looking at similar patients were unable to confirm the same neurologic manifestations in similar Gulf War veterans. When a group of

neuropsychologists described specific neuropsychological abnormalities, other neuropsychologists looking at essentially the same population of Gulf War veterans were unable to identify similar neuropsychological manifestations. Particular symptom complexes were associated with self-reported risk exposures by one group of investigators. Another group of investigators was unable to replicate the symptom complexes in association and correlation with self-reported exposure. That has been a major shortcoming in our efforts. While I think there has been a tremendous amount of excellent work and the ability to have replicable studies is a critical shortcoming in our efforts today. Again I believe we have to focus more attention on the ill Gulf War veterans as opposed to those factors that they may have been or may not have been exposed to in the Gulf.

We also need careful long-term follow-up studies. Obviously, these answers are difficult and are slow to come. It has been eight years. Veterans want answers. They deserve answers. We do not have those answers. We may never have those answers. But one thing that will help us is careful, accurate, long-term, follow-up studies.

Should we ever expect a thorough explanation of Gulf War illnesses? Well, as we all realize at this point, because of the complex interplay between physical and psychological factors coupled with all of the difficulties associated with this, we probably will never have a complete and thorough understanding of the problems associated with the Gulf War efforts.

Even though we may disagree on exposures, even though we may disagree scientifically about those factors which may contribute to Gulf War illnesses, above all else we must realize that the suffering of those men and women who served in the Gulf War is real. Although we choose to disagree scientifically, our efforts ultimately must be directed in alleviating the suffering and restoring the health of these men and women.

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