

# WHY WEREN'T 9/11 RECOVERY WORKERS PROTECTED AT THE WORLD TRADE CENTER?

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## HEARING

BEFORE THE

COMMITTEE ON

EDUCATION AND LABOR

U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

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HEARING HELD IN WASHINGTON, DC, SEPTEMBER 12, 2007

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## **WHY WEREN'T 9/11 RECOVERY WORKERS PROTECTED AT THE WORLD TRADE CENTER?**

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**Wednesday, September 12, 2007  
U.S. House of Representatives  
Committee on Education and Labor  
Washington, DC**

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The committee met, pursuant to call, at 10:07 a.m., in Room 2175, Rayburn House Office Building, Hon. George Miller [chairman of the committee] presiding.

Present: Representatives Miller, Scott, Woolsey, Clarke, McKeon, Fortuno, Foxx, Maloney and Nadler.

Staff Present: Aaron Albright, Press Secretary; Tylease Alli, Hearing Clerk; Jordan Barab, Health/Safety Professional; Alice Cain, Senior Education Policy Advisor (K-12); Lynn Dondis, Senior Policy Advisor for Subcommittee on Workforce Protections; Michael Gaffin, Staff Assistant, Labor; Peter Galvin, Senior Labor Policy Advisor; Thomas Kiley, Communications Director; Alex Nock, Deputy Staff Director; Joe Novotny, Chief Clerk; Rachel Racusen, Deputy Communications Director; Michel Varnhagen, Labor Policy Director; Cameron Coursen, Minority Assistant Communications Director; Ed Gilroy, Minority Director of Workforce Policy; Rob Gregg, Minority Legislative Assistant; Richard Hoar, Minority Professional Staff Member; Victor Klatt, Minority Staff Director; Alexa Marrero, Minority Communications Director; Molly McLaughlin Salmi, Minority Deputy Director of Workforce Policy; Linda Stevens, Minority Chief Clerk/Assistant to the General Counsel; and Loren Sweatt, Minority Professional Staff Member.

Chairman MILLER. The Committee on Education and Labor will come to order for the purposes of holding a first hearing on worker health issues raised in the aftermath of the terrorist attack on the World Trade Center on September 11th, 2001. I want to thank my colleagues for joining us this morning and in advance thank the witnesses for being here, for your testimony.

This hearing will review the events immediately following the attacks focusing on what lessons we have learned from the recovery from that event and how we can apply those lessons to protecting workers in future large-scale disasters and terrorist events. This will be the first in at least two hearings on how the country protects its response and recovery workers in the aftermath of large terrorist attacks or other disasters such as Katrina.

Much has been debated about actions that were taken and actions that were not taken to protect the workers' health following

9/11. We will continue that discussion today by hearing from those who were responsible for worker protection, health experts, workers themselves and their representatives. We will explore the decision making of some of those who have the responsibility for worker protection, the decisions made and the reasoning behind those decisions. This was an extremely important subject, not just because thousands of 9/11 responders continue to suffer from the aftermath of that tragic event, but we need to make sure that first responders know that we will do everything we can to protect them during a national catastrophe like we faced as a result of terrorism 6 years ago and as a result of the hurricane 2 years ago.

There are things we already know. There are a few things—there are some things and a few things—I sound like Donald Rumsfeld—there are some things we already know. As a result of the hazardous materials emitted in the air following the collapse of the World Trade Center, we are faced today with thousands of workers suffering from serious health problems resulting from exposure they suffered in the hours, days, weeks and months they worked at Ground Zero. We also know that, 6 years after 9/11, this country has yet to provide for the long-term serious health care needs for these workers. We will be hearing from one of these workers today as well as an expert heading up the efforts to monitor and treat those workers.

There is general agreement that communications from our government did not clearly communicate the hazards of the dust and fumes to workers and residents. We know that many workers throughout the clean up did not wear respirators that could have protected their health.

As I stated earlier, the goal of this hearing is to look at the response of the Federal Government and other agencies responsible for worker health during the national emergency. As our first rule of rescue states, “don’t create more victims,” here are the questions I hope this hearing will clear up: First, are current OSHA standards, both their chemical exposure limits and other standards, like hazardous waste operations and emergency response standards, adequate to protect workers in situations where it is difficult to determine what workers are exposed to?

It is clear that OSHA chose not to enforce its safety and health standards, particularly in respiratory protection standards even in the months following 9/11. Where were the legal obstacles to enforcement or political issues or both? Would the enforcement of OSHA regulations have been more effective than offering advice? Was focusing exclusively on technical assistance better than enforcing the law? If these standards are not adequate, is there anything that we in Congress can do to assist OSHA to better protect workers in the future? The City of New York was clearly responsible for managing the rescue and recovery, but to what extent were they also in charge of workplace safety? Can OSHA cede such a story to the city as it was apparently done in this case?

These are the issues that are not unique to New York. We faced the same issues following Katrina and will explore those issues in future hearings.

I also want to mention one more item that will be the subject of future work of this committee. On Monday, the Department of

Homeland Security released their near final draft of its National Response Framework. We were very disappointed to see that worker protection is not given the importance that it deserves in this document, and we will discuss this issue with the Homeland Security officials. Finally, I want to reassure the witnesses, particularly Ms. Clark from OSHA, that in no way are we intending to devalue the valiant efforts the OSHA staff made during these crises. We recognize the countless hours that your agency and your office dedicated to protecting workers, particularly following the destruction of OSHA's Manhattan office area, office number 6, at the World Trade Center. We are most impressed that not a single life was lost in the immediate rescue and recovery efforts, which we certainly considered one of the most dangerous in this Nation's history. This was a significant accomplishment due largely to the enormous and good work done by the dedicated employees of OSHA.

Nevertheless, thousands of workers are sick today, and some have died. Similar safety and health problems have occurred during Katrina, and it is incumbent upon us as law makers to draw out and to apply whatever lessons can be learned from this tragic event and its aftermath.

I would like to recognize the senior Republican on this committee, Mr. McKeon, for an opening statement.

**Prepared Statement of Hon. George Miller, Chairman, Committee on  
Education and Labor**

I want to welcome you to the first hearing held by this committee on the worker health issues raised in the aftermath of the terrorist attack on the World Trade Center of September 11, 2001.

This hearing will review the events immediately following the attack focusing on what lessons we have learned from the recovery from that event and how we can apply those lessons to protecting workers in future large scale disasters and terrorist events.

This will be the first of at least two hearings on how this country protects its response and recovery workers in the aftermath of large terrorist attacks and other disasters such as Katrina.

Much has been debated about actions that were taken, and actions that were not taken to protect workers health following 9/11. We will continue that discussion today by hearing from those who were responsible for worker protection, health experts, workers themselves and their representatives. We will explore the decision making of some of those who had responsibility for worker protection, the decisions made and the reasoning behind those decisions.

This is an extremely important subject, not just because thousands of 9/11 responders continue to suffer from the aftermath of that tragic event. We need to make sure that first responders know that we will do everything we can to protect them during a national catastrophe like we faced as a result of terrorism six years ago and as a result of a hurricane two years ago. There are a few things we already know:

- As a result of the hazardous materials emitted into the air following the collapse of the World Trade Center, we are faced today with thousands of workers suffering from serious health problems resulting from the exposures they suffered in the hours, days, weeks and months that they worked on Ground Zero.
- We also know that, six years after 9/11, this country has yet to provide for the long-term serious health care needs of these workers. We will be hearing from one of those workers today, as well as an expert heading up the effort to monitor and treat those workers.
- There is general agreement that communication from our government did not clearly communicate the hazards of the dust and fume to workers and residents.
- We know that many workers throughout the cleanup did not wear respirators that could have protected their health.

As I stated earlier, the goal of this hearing is to look at the response of the Federal government and other agencies responsible for worker health during a national emergency. As the first rule of rescues states, "Don't create more victims." Here are the questions I hope this hearing will help clear up:

- First, are current OSHA standards, both their chemical exposure limits, and other standards, like the Hazardous Waste Operations and Emergency Response standard adequate to protect workers in situations where it is difficult to determine what workers are exposed to? It is clear that OSHA chose not to enforce its safety and health standards—particularly its respiratory protection standards—even in the months following 9/11.

Were there legal obstacles to enforcement or political issues, or both? Would enforcement of OSHA regulations have been more effective than offering advice? Was focusing exclusively on technical assistance better than also enforcing the law?

- If these standards are not adequate, is there anything that we in Congress can do to assist OSHA to better protect workers in the future?

- The City of New York was clearly responsible for managing the rescue and recovery. But, to what extent were they also in charge of workplace safety? Can OSHA, cede such authority to the City, as was apparently done in this case?

These are issues that not unique to New York. We faced the same issues following Katrina and we will explore these issues in a future hearing.

I also want to mention one more item that will be the subject of future work of this committee. On Monday, the Department of Homeland Security released the near-final draft of its National Response Framework. We were very disappointed to see that Worker Protection has not been given the importance that it deserves in this document and we will be discussing this issue with Homeland Security officials.

Finally, I want to reassure the witnesses, particularly Ms. Clark from OSHA, that in no way are we intending to devalue the valiant efforts of OSHA staff during this crisis. We recognize the countless hours that your agency and your office dedicated to protecting workers, particularly following the destruction of OSHA's Manhattan Area Office in #6 World Trade Center.

And we are most impressed that not a single life was lost in the immediate rescue and recovery efforts, which would certainly be considered one of the most dangerous operations in this nation's history. This was a significant accomplishment, due largely to the enormous effort and good work done by the dedicated employees of the Occupational Safety and Health Administration.

Nevertheless, thousands of workers are sick today, some have died.

Similar safety and health problems occurred during Katrina and it is incumbent upon us, as this nation's lawmakers, to draw out and apply whatever lessons can be learned from this tragic event and its aftermath.

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Mr. MCKEON. Thank you, Chairman Miller.

Yesterday, we commemorated a somber anniversary, 6 years ago, the United States suffered the most devastating terrorist attack in our Nation's history. It was a day of tragedy but also a day of heroism. In the minutes, hours, days and weeks following the attacks on our Nation, thousands of responders, workers and volunteers converged on the sites of the attacks in an effort to rescue the wounded and to recover those who were lost.

In New York, the brave men and women who rushed to the World Trade Center found themselves facing an incomprehensible scene of destruction, the likes of which no one could have anticipated. On that horrific day, the only concern on the minds of responders was preventing further loss of American lives. The topic of today's hearing is health and safety conditions at the time of the attack and in its aftermath. Certainly we all look back at the devastation and consider the dangers encountered at this site among the tragic consequences of the attack against this great country.

However, in hindsight, we must try to remember the unprecedented circumstances thrust upon our responders, workers and volunteers and on the safety officials overseeing that effort. We must try to comprehend the challenges they faced and the decisions they made in the split seconds after terrorists carried out an unthink-



able attack. That is not to say that the health and safety of those on the scene weren't a critical concern then as they are today; nor is it meant to imply the safety personnel did not act quickly to address these challenges. Indeed, OSHA took action immediately after the attacks to assess safety conditions and provide guidance and assistance in the creation and implementation of a safety and health plan.

Along with the coordination of donations of and distribution of personal protective equipment to workers at the World Trade Center site responders did the best they could with the procedures and equipment available to them following the attacks, but the simple reality is that the personal protective equipment and the rescue and recovery procedures were not designed for what they found at the World Trade Center collapse. The unprecedented nature presented the recovery team with unprecedented challenges. I appreciate the purpose of today's hearing, which is to hear the stories of those who may be suffering as a result of the conditions at the attack site, as well as to hear about what was done to protect those participating in the recovery and what may be done in the event of future disasters.

The title of today's hearing asks why the workers were not protected. I believe that title suggests a lack of concern for the health and safety of the brave rescue workers, a suggestion which is unfair and inaccurate. I hope today we can take a step back to look also at what protections were offered and to acknowledge the impossible choices that face safety personnel trying to protect rescuers without standing in the way of those who needed to be rescued.

I am mindful that help came in many forms following the 9/11 attacks, many independent contractors and industries sent heavy machinery, personal protective equipment and workers to New York to assist in the rescue and recovery. This outpouring of support was no doubt instrumental in the response, and I feel strongly that we must not take any steps that could prevent or delay future private sector aid from reaching disaster areas as quickly as it did after September 11th. We all agree that protecting the brave individuals who respond to disasters is a top priority.

Today as we discuss the health and safety conditions at the site of this despicable terrorist attack in New York, we have an opportunity to once again offer gratitude to those who aided in the rescue and recovery efforts 6 years ago. I would like to thank the witnesses for being here, and I look forward to their testimony.

With that, I yield back the balance of my time.

**Prepared Statement of Hon. Howard P. "Buck" McKeon, Senior Republican Member, Committee on Education and Labor**

Thank you Chairman Miller.

Yesterday we commemorated a somber anniversary. Six years ago, the United States suffered the most devastating terrorist attack in our nation's history. It was a day of tragedy, but also a day of heroism.

In the minutes, hours, days, and weeks following the attacks on our nation, thousands of responders, workers, and volunteers converged on the sites of the attacks in an effort to rescue the wounded and recover those who were lost. In New York, the brave men and women who rushed to the World Trade Center found themselves facing an incomprehensible scene of destruction the likes of which no one could have anticipated.

On that horrific day, the only concern on the minds of responders was preventing further loss of American lives. The topic of today's hearing is the health and safety conditions at the time of the attack and in its aftermath. And certainly, we all look back at the devastation and consider the dangers encountered at that site among the tragic consequences of the attack on this great country.

However, in hindsight, we must try to remember the unprecedented circumstances thrust upon our responders, workers, and volunteers, and on the safety officials overseeing the effort. We must try to comprehend the challenges they faced and the decisions they made in the split seconds after terrorists carried out an unthinkable attack.

That is not to say that the health and safety of those on the scene weren't a critical concern then, as they are today. Nor is it meant to imply that safety personnel did not act quickly to address these challenges. Indeed, OSHA took action immediately after the attacks to assess safety conditions and provide guidance and assistance in the creation and implementation of a safety and health plan, along with the coordination of donations of and distribution of personal protective equipment to workers at the World Trade Center site.

Responders did the best they could with the procedures and equipment available to them following the attacks. But the simple reality is that the personal protective equipment and the rescue and recovery procedures were not designed for what they found at the World Trade Center collapse. The unprecedented nature of the attacks presented the recovery team with unprecedented challenges.

I appreciate the purpose of today's hearing, which is to hear the stories of those who may be suffering as a result of the conditions at the attack site, as well as to hear about what was done to protect those participating in the recovery, and what may be done in the event of future disasters. The title of today's hearing asks why workers were not protected. I believe that title suggests a lack of concern for the health and safety of those brave rescue workers; a suggestion that is both unfair and inaccurate. But, I hope today we can take a step back to look also at what protections were offered, and to acknowledge the impossible choices that faced safety personnel trying to protect rescuers without standing in the way of those who needed to be rescued.

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I'd like to thank the witnesses for being here and I look forward to their testimony. With that, I yield back the balance of my time.

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Chairman MILLER. I thank the gentleman for his statement. I want to recognize that the committee will be joined today by Congresswoman Carolyn Maloney and Congressman Jerrold Nadler, both of New York, who have been deeply involved in this issue and have requested not only their participation in the hearing but also that the hearing in fact take place, and they will be recognized in regular order with the members of the committee.

I would like to introduce our panel, we will hear first from Freddy Cordero. He is a World Trade Center recovery worker in the Bronx, New York. He was a school fireman in New York City Board of Education for over 21 years. On 9/11, he was assigned to the Board of Education to help clean up and maintain three public schools near Ground Zero that were being set up to provide shelter for rescue workers.

Dr. Philip J. Landrigan is professor and chairman of Mount Sinai's Department of Community and Preventative Medicine in New York City. He oversees the World Trade Center Medical Pro-

grams at Mount Sinai. Dr. Landrigan received his medical degree from Harvard Medical School.

Patricia Clark is the OSHA Regional II director in New York City. She is responsible for the direction, management and control of programs and goals set forth in the Occupational Safety and Health Act of 1970. Ms. Clark received her Bachelor's degree from Ursinus College and her Masters Degree from Drexel University.

Dr. Brian A. Jackson is the associate director of Homeland Security Programs for the Rand Corporation in Arlington, Virginia. His current research activities include ongoing project and personal protective technology for emergency responders for NIOSH and in preparation of the post-9/11 lessons learned report on protecting emergency workers on terrorist incident sites. Dr. Jackson received his Masters Degree from George Washington University and a Ph.D. From the California Institute of Technology.

Dr. James Melius is the director of the New York State Laborers' Health and Safety Fund in Albany, New York. He currently serves as chair of the World Trade Center Medical Monitoring Steering Committee which oversees the program for World Trade Center responders. Dr. Melius received his medical degree from the University of Illinois.

Welcome to all of you. Your entire written statements will be placed in the record in their entirety, we will provide you 5 minutes for your opening statements. When you start, there will be a green light on the small indicators in front of you. When there is a minute to go, a yellow light will come on; and a red light, which we would like you to finish your thoughts, but we obviously want you to complete your thought in a coherent fashion.

Mr. Cordero, my understanding you asked for an additional 2 minutes because you are concerned whether you can read and breathe at the same time, so that is not a problem, we will provide you 7 minutes at the outset. You are recognized, welcome.

**STATEMENT OF FREDDY CORDERO, WORLD TRADE CENTER  
RECOVERY WORKER**

Mr. CORDERO. Good morning, my name is Freddy Cordero. I want to thank Chairman Miller and the members of the committee for the opportunity to speak to you today. I was a school fireman for the New York City Board of Education for over 21 years. I have been a member of Local 94 International Union of Operating Engineers for over 15 years. I also have an extensive background in safety and an asbestos handler's certificate and other safety certificates needed for my work.

On September 12th, 2001, I was called by the Custodians Union to see if I was willing to leave my regular school assignment in northern Manhattan and work to support the rescue and recovery effort near the World Trade Center site the next day. As a citizen of New York, I wanted to serve my city and my country however I could.

We assembled a team of cleaners, engineers and firemen to join our Board of Education workers on the bus provided by the city to go to perform work at the World Trade Center site. We were only asked to bring as many buckets as we could carry.

When we got there on September 13th, we were assigned to work on the bucket brigade at Ground Zero. I am sure you have all seen the video of the pit that horrible first day.

The next day, September 14, our assignment was to clean up the three public schools within the World Trade Center area. Those included P.S. 234, P.S. 89 and Stuyvesant High School, all within blocks of the site. The schools were going to be shelter for many men and women during the rescue and recovery work. When we arrived at the schools, they were covered with World Trade Center dust and very smoky from the fires that were burning nearby.

Our job was to make each school clean enough so that the workers and volunteers would have a place to eat and sleep. In all, I worked both as an employee and volunteer for 1 month. When I left the bucket brigade after 2 days, I continued to work as a volunteer at the school after my paid shift.

Though I own my own respirator, I didn't take it with me the first day. To be honest, I forgot it. On the following day, I couldn't get back to my usual school to get it, but I also assumed that there would be masks available for those rescue and recovery teams working at lower Manhattan.

Both on the 13th on the bucket brigade and on the 14th in the schools, the only masks provided were paper masks. I wore my mask and changed it frequently, as it got clogged and dirty. At the end of each day, when I threw out the last mask and blew my nose, I was amazed at the amount of black soot that I had breathed in. A few days later, we given regular half face masks with cartridges. I think it was my union that made sure that we had those respirators.

Everyone I worked with from the Board of Education had the same respirator when they were available. It was our responsibility to get new cartridges as needed. There were a lot of people around those first days. I cannot say for sure if anyone from OSHA or PESH was there.

One other thing that concerns me is that I was going home covered in toxic dust to my wife and my 3-year old son. By September 15th, or 16th, I took the matter into my own hands and bought four or five disposable suits. I did not want to endanger my family with the dust. I continued using them and the face mask with the cartridges until I left the Ground Zero area.

In spite of everything I did, my health has suffered greatly from this work after 9/11. Within 3 days, my family noted that I had a dry cough that many people now call the World Trade Center cough. My family doctor prescribed a few medications, but they didn't really help me that much.

In 2003, I began getting treatment at Mount Sinai World Trade Center Medical Screening and Treatment Program. They have been testing me a few times a month for 5 years. I have been diagnosed—they diagnosed me with scarring of the lung, asthma, post-nasal drip and other respiratory illnesses. They also diagnosed me with a narrowing of the esophagus and reflux disease. I now take five or six medications regularly. I have been taking them for the past 5 years. I don't know what I would've done without the Mount Sinai Medical Screening and Treatment Program.

Prior to 9/11, I was an extremely healthy, an avid swimmer and had never had to take any medicine. My pulmonologist has told me that the reason I am still around is that I was never a smoker but that I have the lungs of an 80 year old. And it is not just me. Of my team of 26 men that I worked with, I believe 11 are also suffering some illnesses.

I consider myself fortunate. With the help of my family, my caregiver at Mount Sinai and the support of my new employer, I am able to lead a happy and productive life. I was not able to stay employed at the Board of Education job that I loved. The chemical, boiler and other hazardous exposures stopped me from staying there. I am now fortunate enough to have a part-time job at a senior citizen facility that allows me to continue supporting my family without exposing myself to hazards. I think I took a large financial cut to take this job, but I am grateful to have it.

I know my time is up, but I am happy to answer any questions you may have about my work at the World Trade Center site, the wonderful care that I got at Mount Sinai or my ordeal with Workers' Compensation, which it took 5 years to settle as the different parties argued about their responsibility. Thank you for your interest and your support of the 9/11 rescue, recovery and clean-up workers. Thank you.

[The statement of Mr. Cordero follows:]

**Prepared Statement of Freddy Cordero, World Trade Center Recovery Worker**

Good morning. My name is Freddy Cordero. I want to thank Chairman Miller and the members of the Committee for the opportunity to speak to you today.

I was a school fireman for the New York City Board of Education for over 21 years, and I have been a member of Local 94 of the International Union of Operating Engineers for over 15 years. I also have an extensive background in safety. I have an asbestos handler's certificate, and other safety certificates that were needed for my work.

On September 12th, 2001, I was called by the Custodians Union to see if I was willing to leave my regular school assignment in northern Manhattan and work to support the rescue and recovery efforts at and near the World Trade Center site starting the next day. As a lifelong citizen of New York, I wanted to serve my city and my country however I could.

We assembled a team of cleaners, engineers, and firemen, and joined other Board of Education workers on a bus provided by the City to go to perform work at the WTC site. We were only asked to bring as many buckets as we could carry.

When we got there on September 13th, we were assigned to work on the bucket brigade on the Pile at Ground Zero. I'm sure you've all seen video of the pit that horrible first day.

The next day, September 14th, our assignment was to clean up the three public schools within the World Trade Center area. These included PS 234, PS 89, and Stuyvesant High School, all within blocks of the site. The schools were going to be shelters for the many men and women doing the rescue and recovery work. When we arrived at the schools, they were covered with World Trade Center dust, and very smoky from the fires that were burning nearby.

Our job was to make each school clean enough so that the workers and volunteers would have a place to eat and sleep.

In all, I worked both as an employee and volunteer for one month. When I left the bucket brigade after two days, I continued to work as a volunteer at the schools beyond my paid shift.

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it got clogged and dirty. At the end of each day, when I threw out the last mask and blew my nose, I was amazed at the amount of black soot that I had breathed in. A few days later, we were given the regular half-face masks with cartridges. I think it was my union that made sure that we had these respirators.

Everyone I worked with from the Board of Education had the same respirators once they were available. It was our responsibility to get new cartridges as needed. There were a lot of people around those first days. I can't say for sure whether anyone from OSHA or PESH was there.

One of the things that concerned me is that I was going home covered in toxic dust to my wife and my 3-year old son. By September 15th or 16th, I took matters into my own hands and brought four or five disposable suits. I did not want to endanger my family with the dust. I continued to use them, and the face mask with cartridges, until I left the Ground Zero area.

In spite of everything I did, my health has suffered greatly from my work after 9/11. Within about 3 days, my family noticed that I had a dry cough that many people now call World Trade Center cough. My family doctor prescribed a few medications, but they didn't really help that much.

In 2003, I began getting treatment at Mount Sinai's World Trade Center Medical Screening and Treatment Program. They have been treating me a few times a month for five years. They have diagnosed me with scarring of the lungs, asthma, post-nasal drip, and other respiratory ailments. They have also diagnosed a narrowing of the esophagus, and reflux disease. I now take at least 5 or 6 medications regularly. I've been taking them for the past five years. I don't know what I would've done without the Medical Screening and Treatment Program at Mount Sinai.

Prior to 9/11, I was extremely healthy, an avid swimmer, and never had to take any medicine. My pulmonologist has told me that the reason I am still around is that I was never a smoker, but that I have the lungs of an 80-year old.

And it is not just me. Of my team of 26 men that I worked with, I believe 11 are also suffering some illnesses.

I consider myself fortunate. With the help of my family, my caregivers at Mount Sinai, and the support of my new employer, I am able to lead a happy and productive life. I was not, however, able to stay employed in the Board of Education job that I loved. The chemicals, boilers, and other hazardous exposures stopped me from staying there. I am now fortunate enough to have a part-time job in a senior citizen facility that allows me to continue supporting my family without exposing myself to hazards. I took a large financial cut to take this job, but I am grateful to have it.

I know my time is up, but I am happy to answer any questions you may have about my work at the WTC site, the wonderful care I got at Mount Sinai, or my ordeal with Workers' Compensation, which took five years to settle as the different parties argued about their responsibility. Thank you for your interest and for your support of the 9/11 rescue, recovery, and clean-up workers.

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Chairman MILLER. Thank you.  
Dr. Landrigan.

**STATEMENT OF PHILIP J. LANDRIGAN, M.D., M.S.C., PROFESSOR AND CHAIRMAN, DEPARTMENT OF COMMUNITY AND PREVENTIVE MEDICINE, MOUNT SINAI SCHOOL OF MEDICINE**

Dr. LANDRIGAN. Thank you, Mr. Chairman.

I am Dr. Philip Landrigan. I am professor and chairman of the Department of Community and Preventive Medicine at the Mount Sinai School of Medicine in New York City. As you said in your introductory remarks, it is our department that has major responsibility for directing those medical programs that are providing diagnosis and treatment to Mr. Cordero and many thousands of other of the men and women who responded on 9/11 and in the days and weeks that follow.

The workforce that responded to 9/11 was a very, very diverse workforce. It included people who were trained in response, fire-

fighters, police, paramedics and the National Guard. It also included construction workers, transit workers, sanitation workers, workers like Mr. Cordero from the Board of Education, volunteers. People came from across the country. They came from New York, New Jersey and southern New England but also from the Midwest, California, and they came in fact from every State in the Union. And there are people from every State in the Union who are currently registered in the various network of medical programs that the Federal Government has established since 9/11.

The mix of chemicals that these workers and volunteers were exposed to is very complex; two-thirds of the mass of the dust consisted of pulverized concrete, which is a very nasty substance. It has a pH of between 10 and 11, which makes it very alkaline, very caustic. It seers the upper and lower respiratory tract when it is inhaled, and it seers the esophagus when it is swallowed. Also there were millions of microscopic shards of glass. There was asbestos. There were dioxins. There were polycyclic aromatic hydrocarbons. The first couple of days when there was still unburned jet fuel at the site, there were organic solvents, most notably Benzene. Concentrations were very high, and the mixture of chemicals is a mix that has never previously been encountered.

Our doctors at Mount Sinai and some of our sister institutions around New York and New Jersey began to realize within a matter of days that we were going to be seeing people with illnesses and injuries from their work at the World Trade Center site. And indeed on September 13th, 2001, just 2 days after the attack, a group of our doctors convened at the home of one of the docs to begin to plan our strategy.

In the fall of 2001, we first began to see patients. We did that initially using our own resources and some funds that we had on a standing basis from the New York State Department of Health, State legislature. Federal funds through NIOSH first became available in the late spring of 2002. NIOSH funds for monitoring and screening of workers have continued from 2002 to the present. We also have a treatment program. It was stood up initially in 2003 with private philanthropy, Federal money through NIOSH has come on stream to support the treatment program since a year ago, since September of 2006.

To date, we have seen 21,000 of the men and women who responded to 9/11. Those 21,000 have been seen in a consortium of institutions in the greater New York area that is based at Mount Sinai, and we have seen approximately 80 percent of this total number. Actually another 8,000 of those responders have come back for a second visit, and now a smaller number beginning in the last few months to come back for a third visit.

We have seen a range of adverse health affects in these workers which basically involve three organ systems, the respiratory tract, the gastrointestinal tract and mental health. The respiratory problems, which are undoubtedly the consequence of the inhalation of the toxic dust that I just described: First of all, 46 percent of the workers have new symptoms that didn't exist on September 10th, 2001, involving their lungs, bronchi, lower respiratory tract. This is mainly cough, shortness of breath, new cases of asthma; 62 percent have symptoms involving the upper respiratory tract, very in-

tense nasal irritation and sinusitis; and in the aggregate, 68.8 percent have upper or lower respiratory problems. There are also mental health problems. We published these findings in September 2006, in *Environment Health Perspectives*, a peer reviewed medical journal published by the National Institutes of Health.

In addition to those symptoms, workers also had objectively documented abnormalities of pulmonary function. When we did breathing tests we found that five times more responders had restrictive lung disease than would be expected in the general American population. I should note that our findings are very, very similar to findings that have been documented in two other independent studies; that which was done by the fire department of New York and that which has been done by the New York City registry by the New York City Department of Health, all have found upper and lower respiratory problems, GI problems and mental health problems.

I conclude by saying that the future is uncertain for the health of the responders. There are fundamentally two categories of question: The first question is, will the illnesses that we are now seeing in the workers persist? Will they get worse or abate? We don't know, only continued follow-up and properly established centers of excellence will answer that question.

The second big unanswered question is, what about new illnesses, will diseases of lung latency emerge in future years as more time passes, as the chemicals that these workers inhaled have time to interact within their bodies and react with their cells and DNA. We don't know the answer to that question either, and the only way to resolve that question is, again, through continued, meticulous monitoring of the health of these brave men and women through properly established centers of excellence. Thanks very much.

[The statement of Dr. Landrigan follows:]

**Prepared Statement of Philip J. Landrigan, M.D., M.Sc., Professor and Chairman, Department of Community and Preventive Medicine, Mount Sinai School of Medicine**

Good morning.

Mr. Chairman and Members of the Committee, I thank you for having invited me to present testimony before you today on the question of "Why Weren't World Trade Center Rescue and Recovery Workers Protected?"

My name is Philip Landrigan, M.D. I am Professor and Chairman of the Department of Community and Preventive Medicine of the Mount Sinai School of Medicine in New York City. I am a board certified specialist in Occupational Medicine as well in Preventive Medicine and Pediatrics. My curriculum vitae is attached to this testimony.

In my capacity as Chairman of Community and Preventive Medicine at Mount Sinai, I oversee the World Trade Center (WTC) Medical Monitoring and Treatment Program as well as the World Trade Center Data and Coordination Center, two closely linked programs that are based in my Department and supported by grants from the National Institute for Occupational Safety and Health (NIOSH). It has been the responsibility of our programs at Mount Sinai and of WTC Centers of Excellence in New York, New Jersey and across the United States, with which we collaborate closely, to diagnose, treat and document the illnesses that have developed in the workers and the volunteers who responded to 9/11.

Today, I shall present a summary of our medical findings in the 9/11 responders. I shall comment also on the critical need for continuing support for Centers of Excellence that have the expertise and the hard-won experience that is essential to sustain high-quality medical follow-up and treatment for these brave men and women.



The Diverse Population of 9/11 Responders. In the days, weeks, and months that followed September 11, 2001, more than 50,000 hard-working Americans from across the United States responded selflessly—without concern for their health or well-being—when this nation called upon them to serve. They worked at Ground Zero, the former site of the World Trade Center, and at the Staten Island landfill, the principal depository for WTC wreckage. They worked in the Office of the Chief Medical Examiner. They worked beneath the streets of lower Manhattan to search for bodies, to stabilize buildings, to open tunnels, to turn off gas, and to restore essential services.

These workers and volunteers included traditional first responders such as firefighters, law enforcement officers, paramedics and the National Guard. They also included a large and highly diverse population of operating engineers, laborers, ironworkers, building cleaners, telecommunications workers, sanitation workers, and transit workers. These men and women carried out rescue-and-recovery operations, they sorted through the remains of the dead, they restored water and electricity, they cleaned up massive amounts of debris, and in a time period far shorter than anticipated, they deconstructed and removed the remains of broken buildings. Many had no training in response to civil disaster. The highly diverse nature of this workforce, and the absence in most of the groups who responded of any rosters to document who had been present at the site, posed unprecedented challenges for worker protection and medical follow-up.

The 9/11 workforce came from across America. In addition to tens of thousands of men and women from New York, New Jersey, and Connecticut, responders from every state in the nation stepped forward after this attack on the United States and are currently registered in the WTC Medical Monitoring Programs. Particularly large numbers came from California, Massachusetts, Ohio, Illinois, North Carolina, Georgia, and Florida.

The Exposures of 9/11 Responders. The workers and volunteers at Ground Zero were exposed to an intense, complex and unprecedented mix of toxic chemicals. In the hours immediately after the attacks, the combustion of 90,000 liters of jet fuel created a dense plume of black smoke containing volatile organic compounds—including benzene, metals, and polycyclic aromatic hydrocarbons. The collapse of the twin towers (WTC 1 and WTC 2) and then of a third building (WTC 7) produced an enormous dust cloud. This dust contained pulverized cement (60-65% of the total dust mass), uncounted trillions of microscopic glass fibers and glass shards, asbestos, lead, polycyclic aromatic hydrocarbons, hydrochloric acid, polychlorinated biphenyls (PCBs), organochlorine pesticides, furans and dioxins. Levels of airborne dust were highest immediately after the attack, attaining estimated levels of 1,000 to > 100,000 mg/m<sup>3</sup>, according to the US Environmental Protection Agency. Firefighters described walking through dense clouds of dust and smoke in those first hours, in which “the air was thick as soup”. The high content of pulverized cement made the dust highly caustic (pH 10–11).

The dust and debris gradually settled, and rains on September 14 further diminished the intensity of outdoor dust exposure in lower Manhattan. However, rubble-removal operations repeatedly re-aerosolized the dust, leading to continuing intermittent exposures for many months. Fires burned both above and below ground until December 2001.

Workers and volunteers were exposed also to great psychological trauma. Many had already lost friends and family in the attack. In their work at Ground Zero they commonly came unexpectedly upon human remains. Their stress was compounded further by fatigue. Most seriously affected by this psychological trauma were those not previously trained as responders.

The World Trade Center Medical Monitoring and Treatment Program. Although New York has an extensive hospital network and strong public health system, no existing infrastructure was sufficient to provide unified and appropriate occupational health screening and treatment in the aftermath of September 11. Local labor unions, who made up the majority of responders, became increasingly aware that their members were developing respiratory and psychological problems; they initiated a campaign to educate local elected officials about the importance of establishing an occupational health screening program. In early 2002, Congress directed the Centers for Disease Control and Prevention (CDC) to fund the WTC Worker and Volunteer Medical Screening Program.

In April 2002, the Irving J. Selikoff Center for Occupational and Environmental Medicine of the Mount Sinai School of Medicine was awarded a contract by the National Institute for Occupational Safety and Health (NIOSH), a component of the CDC, to establish and coordinate the WTC medical program. The Bellevue/New York University Occupational and Environmental Medicine Clinic, the State University of New York Stony Brook/Long Island Occupational and Environmental Health

Center, the Center for the Biology of Natural Systems at Queens College in New York, and the Clinical Center of the Environmental & Occupational Health Sciences Institute at UMDNJ-Robert Wood Johnson Medical School in New Jersey were designated as the other members of the regional consortium based at Mount Sinai. The Association of Occupational and Environmental Clinics was designated to coordinate a national examination program for responders who did not live in the New York/New Jersey metropolitan area.

In addition to this consortium, there is a parallel program based at the Fire Department of New York (FDNY) Bureau of Health Services, also supported by the federal government through NIOSH. This program has provided medical examinations to over 15,000 New York City firefighters and paramedics. The FDNY and Mount Sinai programs collaborate closely and use closely similar protocols for monitoring the health of 9/11 responders. A great strength of the FDNY program is that it had collected extensive baseline data on the health of each firefighter and paramedic through a periodic medical examination program that long predated September, 2001.

Nearly all of what we know today about the health effects of the attacks on the WTC has been learned through these medical programs that were developed in Centers of Excellence funded by the federal government.

The Centers that comprise the consortium based at Mount Sinai provide free comprehensive medical and mental health examinations for each responder every 18 months. Examinations are undertaken according to a carefully developed uniform protocol, and all of the data obtained on each responder are entered into a computerized database. The goals of the program are two:

1. To document diseases possibly related to exposures sustained at the World Trade Center;
2. To provide medical and mental health treatment for all responders with WTC related illnesses, regardless of ability to pay.

To date, thanks to federal support, over 21,000 WTC responders have received initial comprehensive medical and mental health monitoring evaluations in the Centers of Excellence that comprise this consortium. More than 7,250 of these responders have also received at least one follow-up examination. Demand for the program remains strong. Even now, six years after 9/11, approximately 400 new workers and volunteers register for the program each month. In August 2007, 771 new participants, persons whom we had never previously seen, registered for the program through our telephone bank.

Our WTC Medical Treatment Program has also been active. We launched this program in 2003 with support from philanthropic gifts. Philanthropic support provided the sole financial base for the treatment program from 2003 to 2006. Since September, 2006, we have begun to receive support for this program from the federal government. To date over 6,300 responders have received 47,000 medical and mental treatment services through this program.

Health Effects Among WTC Responders. Documentation of medical and mental health findings in 9/11 responders followed by timely dissemination of this information through the peer-reviewed medical literature are essential components of our work. Documentation of our findings enables us to examine trends and patterns of disease and to assess the efficacy of proposed treatments. Dissemination of our findings and our recommendations for diagnosis and treatment to physicians across the United States permits us to share our knowledge and to optimize medical care. Such documentation and dissemination would be well nigh impossible in the absence of federally funded Centers of Excellence.

In September 2006, the Centers of Excellence that comprise our consortium published a paper in the highly respected, peer-reviewed medical journal *Environmental Health Perspectives*, a journal published by the National Institutes of Health. This report detailed our medical findings from examinations of 9,442 WTC responders whom we and our partner institutions had assessed between July 2002 and April 2004. I have appended this study to my testimony for your review, and I would like to direct your attention to a few key findings:

- Among these 9,442 responders, 46.5% reported experiencing new or worsened lower respiratory symptoms during or after their work at Ground Zero; 62.5% reported new or worsened upper respiratory symptoms; and overall 68.8% reported new or worsened symptoms of either the lower and/or the upper respiratory tract.
- At the time of examination, up to 2½ years after the start of the rescue and recovery effort, 59% of the responders whom we saw were still experiencing a new or worsened lower or upper respiratory symptom, a finding which suggests that these conditions may be chronic and that they will require ongoing treatment.
- One third of responders had abnormal pulmonary function test results. One particular breathing test abnormality—decreased forced vital capacity—was found 5

times more frequently in WTC responders than in the general, non-smoking population of the United States.

- We found that the frequency and severity of respiratory symptoms was greatest in responders who had been trapped in the dust cloud on 9/11; that frequency and severity were next greatest in those who had been at Ground Zero in the first week after 9/11, but who had not been caught in the dust cloud; and that frequency and severity were lower yet in those who had arrived at Ground Zero after the first week. These findings fit well with our understanding of exposures at the site and thus lend internal credibility to our data.

- Findings from our program released in 2004 have attested to the fact that in addition to respiratory problems, there also exist significant mental health consequences among WTC responders.

External Corroboration of our Findings. The peer-reviewed article that we published one year ago in *Environmental Health Perspectives* gains further credibility by virtue of the fact that the findings we report in it are consistent with findings on 9/11 responders that have been reported by highly credible medical investigators outside of our consortium. The FDNY has published extensively on the burden of respiratory disease among New York firefighters. They have seen a pattern of symptoms that closely resembles what we observed. Forty percent of FDNY firefighter responders had persistent lower respiratory symptoms, and 50% had persistent upper respiratory symptoms more than one year after 9/11. FDNY noted that rates of cough, upper respiratory irritation and gastroesophageal reflux were highest in those firefighters who had been most heavily exposed on 9/11. FDNY physicians have also noted reactive airways disease, and highly accelerated decline in lung function in firefighters as well as in other responders in the year following 9/11.

Our findings receive further corroboration from reports released recently by the New York City Department of Mental Health and Hygiene from the WTC Registry that the health department has established with support from CDC. These reports noted increased rates of asthma and of post-traumatic stress disorder.

Current Medical Findings in 9/11 Responders. To provide a “snapshot” that portrays in near real time the patterns of illnesses that we are currently seeing in 9/11 responders, we have recently performed an analysis of responders whom we saw for treatment in our federally funded consortium Centers of Excellence in the 3-month period between April 1, 2007 and June 30, 2007. During this time, 2,323 patients were seen in 4,693 visits. Findings among these responders who sought medical treatment included:

- Lower respiratory conditions in 40%. This includes asthma and the asthma-like condition known as reactive airways disease (RADS) in 30%. Other lower respiratory conditions include chronic cough (7%) and chronic obstructive pulmonary disease (5%).

- Upper respiratory conditions in 59%. This includes rhinitis (chronic nasal irritation or “runny nose”) in 51%, chronic sinusitis in 20% and chronic laryngitis in 5%.

- Gastrointestinal conditions in 43%. Most of these were cases of gastro-esophageal reflux disorder (GERD).

- Mental health problems in 36%. This includes PTSD, in 21% and depression in 11.6%.

- Social disability was also commonly encountered. More than 30% of previously healthy responder patients were either unemployed/laid off, or on sick leave/ disability during the 3-month time period of observation. And 28% had no medical insurance at some point during this period.

Future Health Risks and Unanswered Questions. Two major unanswered questions confront us as we consider the future health outlook for the brave men and women who responded to 9/11:

1. Will the respiratory, gastrointestinal and mental health problems that we are currently observing in responders continue to persist? For how long? And with what degree of severity and associated disability? These questions are especially important in the case of those responders who sustained very heavy exposures in the dust cloud on 9/11, in those who served in the first days after 9/11 when exposures were most intense, and in those who had prolonged exposures in the weeks and months after 9/11?

2. Will new health problems emerge in future years in responders as a consequence of their exposures to the uniquely complex mix of chemical compounds that contaminated the air, soil and dust of New York City in the aftermath of 9/11? Responders were exposed to carcinogens, neurotoxins, and chemicals toxic to the respiratory tract in concentrations and in combinations that never before have been encountered. The long-term consequences of these unique exposures are not yet known.

Concluding Comments. Six years following the attacks on the World Trade Center, thousands of the brave men and women who stood up for America and who worked on rescue, recovery, and clean up at Ground Zero are still suffering. Respiratory illness, psychological distress and financial devastation have become a new way of life for many.

The future health outlook for these responders is uncertain. The possibility is real that illnesses will persist, at least in some, and that new conditions—diseases marked by long latency—will emerge in others.

Only continuing, federally supported medical follow-up of the 9/11 responders through Centers of Excellence that are equipped to comprehensively evaluate responders, to document their medical findings, and to provide compassionate state-of-the-art treatment will resolve these unanswered questions.

Thank you. I shall be pleased to take your questions.

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Chairman MILLER. Thank you.

**STATEMENT OF PATRICIA CLARK, REGIONAL  
ADMINISTRATOR, OSHA REGION II**

Ms. CLARK. Thank you for this opportunity to discuss OSHA's role in protecting workers after the tragic events at the World Trade Center on September 11th. OSHA's mission is to assure safe and healthful working conditions for employees in this Nation. Within hours of the attack, OSHA joined with other Federal, State and local agencies as well as safety and health professionals from contractors and trade unions on the site to help protect workers involved in recovery, demolition and clean-up operations. The site was not a typical demolition project, workers needed immediate protection from hazards, the scope and severity of which were unpredictable.

Working under perilous conditions, OSHA began coordinated efforts to protect the health and safety of workers. Our initial actions included conducting worker air monitoring, distributing PPE and finding and fixing safety hazards. OSHA dedicated over 1,000 safety and health professionals to the response. Our employees remained on site for 10 months providing a 24-hour, 7-day-a-week presence. We collected more than 6,500 air and bulk samples to test for asbestos, lead other heavy metals, silica and other inorganic and organic compounds totaling 81 different substances. We performed over 24,000 tests of individual samples to quantify worker exposure. Worker sampling was conducted around the clock for workers on and near the Pile. OSHA's reading and sample results were well below the agency's permissible exposure levels, PELs, for the majority of the substances tested.

To keep workers fully informed about potential risk, OSHA distributed sampling studies to trade unions, site contractors and agencies during daily safety and health meetings. Personal sampling results were mailed directly to employees along with OSHA contact information. Those whose sample results exceeded a PEL were encouraged to seek medical consultation. We also posted all results on our Web site.

Workers on the site were required to wear appropriate respirators selected based on extensive risk assessment. OSHA, along with site safety and health professionals, agreed on a high level of protection requiring a hazmat negative pressure respirator with high efficiency particulate organic vapor and acid gas cartridges. This was communicated through orders and notices posted

throughout the site. I now call your attention to Exhibits 1 through 7 and the posters on the easel.

Distribution of respirators to workers posed challenges. OSHA initially deployed staff by foot with bags of respirators, following by mobile teams and all-terrain vehicles; see Exhibit 8. We also established distribution points at the fire department of New York staging areas. We opened multiple equipment distribution locations throughout the 16-acre site; see Exhibits 9 and 10. At the peak of the operation, we gave out 4,000 respirators a day. We distributed more than 131,000 respirators during the 10-month recovery period. OSHA conducted over 7,500 quantitative fit tests for respirators, including nearly 3,000 for FDNY personnel; see Exhibit 11. Fit tests included instruction on storage, maintenance, the proper use and the limitations of respirators; 45,000 pieces of other protective equipment was given out as well. More than 3.7 million work hours were expended during this highly dangerous rescue-and-recovery mission with only 57 non-life threatening injuries and not one fatality during the recovery. This is remarkable given the nature and complexity of the work at this site.

OSHA recommended the establishment of a joint labor management safety and health committee which was key to worker protection. This resulted in an unusually high level of safety and health oversight and direct involvement of workers. Building trades, contractors, union stewards and OSHA met weekly, developed and distributed safety bulletins to workers and held tool-box talks; see Exhibits 12 and 13. OSHA and the building trades collaborated to provide mandatory safety and health training for all workers on the site.

We learned many lessons at the World Trade Center site that have helped the agency and the Nation improve emergency preparedness. Worker safety and health must be integrated into the planning and operations of emergency responses. To that end, OSHA requested that worker protection be specifically included in the new National Response Plan. A worker safety and health support annex was added in 2005 designating OSHA as the designating agency. OSHA continues to work with the emergency response community at all levels to promote worker safety and health in future responses.

Mr. Chairman, in addition to my concern for workers at the WTC site, I have a personal interest in the effects of exposures because my staff and I spent so much time there. Our Manhattan area office was destroyed when the North Tower of the WTC collapsed onto our building. Our employees were exposed to all of the same potential contaminants in the atmosphere as others who were in lower Manhattan that day.

I can say with confidence and with pride that OSHA's staff did everything humanly possible to protect the workers during recovery efforts at the WTC. I would be pleased to answer any questions.

[The statement of Ms. Clark follows:]

**Prepared Statement of Patricia Clark, Regional Administrator,  
Occupational and Safety Health Administration, U.S. Department of Labor**

Mr. Chairman, Members of the Subcommittee: Thank you for this opportunity to discuss OSHA's role in protecting workers after the terrorist attacks at the World Trade Center (WTC) on September 11, 2001.

My name is Patricia Clark and I am the OSHA Regional Administrator for Region II, which covers New York, New Jersey, Puerto Rico and the U.S. Virgin Islands. OSHA's mission is to assure safe and healthful working conditions for employees in this Nation. The attack on the World Trade Center was an unprecedented catastrophic event, and the vast majority of victims were on-the-job. The size and scope of the response to the attack involved response workers, uniformed services as well as private contractors, all of whom were engaged in a rescue and recovery operation. Within hours of the attack, OSHA joined with other Federal, state and local agencies, as well as safety and health professionals from contractors and trade unions on site, to assist in protecting workers involved in the recovery, demolition and clean-up operations.

Consistent with the Federal Response Plan and National Contingency Plan, OSHA "made available safety and health specialists to provide safety-specific assistance," including "safety consultation and training programs, air contaminant sampling and analysis and other services" during rescue and recovery work at the WTC site and later at the Staten Island Landfill. It was apparent that workers engaged in these operations would not be working in a conventional setting and that the WTC site was not a typical construction or demolition project. Employees at the WTC site needed immediate protection from safety and health hazards, the scope and severity of which were unpredictable.

OSHA's primary responsibilities at the site were to perform personal air monitoring, characterize exposures, distribute and fit respirators along with other personal protective equipment, and conduct safety monitoring. Throughout the course of the recovery and clean-up phase, OSHA dedicated more than 1,000 safety and health professionals to the response. Our employees remained on site for ten months, providing a 24-hour presence, seven days a week. OSHA staff spent more than 120,000 hours at the site while the OSHA's Technical Center in Salt Lake City also worked around the clock to expedite sampling analysis and results.

Between September 2001 and June 2002, OSHA conducted more than 24,000 analyses of individual air samples to quantify worker exposure to contaminants. Personal sampling was conducted around the clock each day by industrial hygienists and supplemented by bulk samples, area samples, and direct instrument readings. The agency collected more than 6,500 air and bulk samples to test for asbestos, lead, other heavy metals, silica, as well as inorganic and organic compounds, totaling 81 different analytes.

OSHA coordinated its sampling with that done by safety and health professionals from other environmental and health agencies of the Federal government, New York State and New York City, and from trade unions and contractors. Employee exposure to respiratory hazards was measured during search and recovery operations, heavy equipment operations, torch cutting of structural steel, manual debris removal, wash-station operations and concrete drilling. Debris from the WTC site was taken to a landfill on Staten Island for sorting and disposal. OSHA conducted safety and health monitoring at that site as well.

OSHA's breathing zone samples revealed exposures well below the Agency's Permissible Exposure Limits (PELs) for the majority of chemicals and substances tested. For example, OSHA collected more than 1,400 air samples to test for the presence of asbestos. All results were well below OSHA's PEL for that substance. In more than 700 samples taken to test for the presence of organic compounds such as formaldehyde, benzene, and acrylonitrile, only one benzene sample of the 244 taken was found to be near OSHA's PEL. About five percent of the 1,331 samples taken to test for the presence of metals collected on the site exceeded the PELs for copper, iron oxide, lead, zinc oxide, antimony and cadmium. While OSHA does not have the authority to mandate the use of respiratory protection for everyone working on the site, the WTC Emergency Project Environmental Safety and Health Plan, established in partnership with unions, contractors and federal, state and local agencies, required respiratory protection for workers covered by the Plan.

OSHA employed a variety of methods to keep workers fully informed about potential hazards and risks. OSHA distributed sampling-result summaries to workers and their trade unions, site contractors, and all responding public agencies, such as the New York City Police Department and the Fire Department of New York, during daily safety and health meetings. Employees whose exposures were sampled were asked to provide OSHA with their mailing address and were notified in writing of their personal sampling result. They were also given a contact number at OSHA to use if they desired follow-up information. Employees whose sample results exceeded the PEL were encouraged to seek medical consultation. OSHA also posted sample results on its Web site ([www.osha.gov](http://www.osha.gov)) within eight hours after they were determined.

The respirators workers were provided were selected jointly with safety and health professionals from a variety of organizations including the New York City Department of Health, the National Institute for Occupational Safety and Health (NIOSH), private contractors, and trade unions. All stakeholders agreed on a high level of protection, requiring a half-mask, negative-pressure respirator with high-efficiency/particulate/organic vapor/ acid gas cartridges. The requirement, along with other safety measures, was communicated through notices posted throughout the site. (See Exhibits 1-7) OSHA continued to conduct extensive risk assessment through air and bulk sampling and monitoring to verify that the respirators were providing an appropriate level of protection. For example, when sample results for jack-hammering and concrete-drilling operations indicated that a higher level of protection was necessary, a full face-piece respirator was required for those operations.

Shortly after the terrorist attack, the New York City Department of Health requested that OSHA be the lead agency for distributing, fitting, and training for respirators for the recovery workers. OSHA assisted 4,000 workers daily at the peak of recovery operations. During the ten-month recovery period, OSHA distributed more than 131,000 respirators. OSHA also worked closely with the private sector by requesting respirator donations from the leading manufacturers, and many responded generously.

Distribution of respirators to workers posed challenges. OSHA initially deployed staff by foot with bags of respirators, followed by mobile teams on all terrain vehicles (Exhibit 8). We also established a distribution point at the Queens Marina, which was the Fire Department of New York's staging area. OSHA opened multiple equipment distribution locations throughout the sixteen acre site (Exhibits 9 and 10).

During the recovery, OSHA conducted more than 7,500 quantitative fit-tests for respirators, including nearly 3,000 for FDNY personnel (Exhibit 11). Fit-testing included a facial analysis and a user-seal check as well as instruction on the best way to store and maintain the respirators. OSHA also advised employers and workers on the proper use and limitations of respirators. In addition to respiratory protection, OSHA distributed 11,000 hard hats, 13,000 pairs of safety glasses and more than 21,000 pairs of protective gloves to workers on the site.

Despite the highly dangerous rescue and recovery mission at the WTC, there was not one fatal accident during the 10-month clean-up operation. During this period, OSHA identified more than 9,000 hazards and saw that those hazards were corrected. More than 3.7 million work hours were expended during this hazardous and lengthy rescue and recovery mission, yet only 57 injuries were recorded, none life-threatening. This is a remarkable achievement given the nature and complexity of the work at this site including thousands of construction and emergency-response workers laboring each day in close proximity to heavy construction and demolition equipment. OSHA played a critical role in protecting these workers.

The key to success at the WTC site was working in close partnership. OSHA collaborated with city, state and other federal agencies, as well as contractors, unions and trade associations. This collaboration was formalized in the WTC Emergency Project Partnership Agreements, signed in November 2001 and April 2002. They brought together OSHA, the New York City Department of Design and Construction, the Fire Department of New York, the Building and Construction Trades Council of Greater New York, the Building Trades Employers Association, the Contractors Association of New York and the four prime contractors at the site. Through the partnerships, a joint-labor-management committee dealing with safety, health and environmental issues was established to identify hazards and recommend corrective actions. One of the most important results of these partnerships was the very high level of safety and health oversight, training and direct involvement of workers at the site. The development of a strong Labor-Management Health and Safety Committee combined with a steward system created an effective mechanism for worker concerns to be expressed and addressed. The end result was that the lost workday injury and illness rate (3.1 per 100 workers) was significantly less than the national rate for workers in industries such as demolition (4.3 per 100 workers).

The unique command and control structure at the WTC site created the need for considerable communication, coordination, and cooperation among all involved parties at the site. The OSHA partnership agreements and the WTC Emergency Project Environmental Safety and Health Plan provided the framework and structure for coordinated communication among all involved parties. Weekly reports that tracked the injuries and illnesses at the site were compiled by the Labor-Management Committee and safety-orientation training was provided for all new workers. Safety and health monitoring data were shared among all parties. Safety and health discussions reached individual workers through a weekly bulletin that highlighted issues

of concern. (Exhibits 12 & 13) Union stewards met weekly, distributed bulletins directly to workers and held toolbox safety briefings based on topical issues.

Formal safety and health training for workers on the project was provided. OSHA and the Center to Protect Workers' Rights (CPWR), the health and safety division of the Building Trades Department of the AFL-CIO, created an Orientation Subcommittee to give safety and health training to all workers at the site. More than 50 instructors were trained to deliver the program to 2,000 workers.

OSHA learned a great deal at the WTC site—lessons that will improve preparations for future national emergencies. First, we confirmed that worker safety and health must be proactively integrated into the planning and operations of emergency response. OSHA requested that worker protection be specifically included in the new National Response Plan, which sets forth procedures for the Federal government in responding to emergencies. A Worker Safety and Health Support Annex was included in the National Response Plan, designating OSHA as the coordinating agency. The Support Annex activities mirror the worker protection efforts implemented at the WTC, including such features as health and safety monitoring, worker training and use of personal protective equipment.

Second, OSHA realized its need for resources and expertise to address worker hazards associated with weapons of mass destruction. OSHA created four Specialized Response Teams comprised of highly trained professionals qualified to assess and mitigate worker risks associated with Chemical, Biological, Radiological and Structural Collapse hazards.

Third, OSHA reaffirmed that employers need effective emergency evacuation plans for their worksites and that they should regularly practice evacuations and review their procedures.

Fourth, OSHA issued its National Emergency Management Plan. This policy directive reiterates OSHA's long standing policy of providing technical assistance and support in the aftermath of disasters. It also required each of OSHA's Regions to develop, implement and execute their own Regional Emergency Management Plan.

Fifth, OSHA's experience at the WTC brought home the importance of routinely fit-testing respirators for emergency responders at all levels of government. It is important to build familiarity with negative-pressure, air-purifying respirators among employees who might not

typically use them. OSHA is endeavoring to establish a culture that emphasizes proper respiratory protection for emergency responders so that they wear properly fitted and maintained respirators when they respond to worksites, similar to the WTC, which may have multiple chemical exposures. A respirator that does not fit properly is not effective. OSHA developed the Disaster Site Worker Training Program to help prepare workers for emergency response and is working with the CPWR to provide skilled-support personnel with the requisite training.

Sixth, OSHA fully supports the National Interagency Management System and its focus on uniformity of response structure and protocol centered on the Incident Command System. OSHA worked with the Department of Homeland Security to define the role of the Safety Officer in the Incident Command System. OSHA has developed in-house expertise and has trained the vast majority of its field staff to intermediate and advanced levels of ICS.

Finally, OSHA and other agencies now realize, as never before, the value of emergency preparedness and response partnerships among federal, state and local agencies, with clear lines of authority for all functions. It is particularly important to improve channels of communication among various levels of government. To be most effective, relationships must be established before the next emergency occurs. That is why OSHA has begun reaching out to the emergency response community throughout this nation. No government agency or private entity can handle catastrophic emergencies alone. We are all in this together.

Mr. Chairman, in addition to my concern for workers at the WTC site, I have personal interest in the short- and long-term effects of exposures there because my staff and I spent so much time at the site. OSHA's Manhattan Area Office was destroyed when the North Tower of the WTC collapsed on top of us. During evacuation, the agency's employees were exposed to all of the same contaminants in the atmosphere as others who were in lower Manhattan that day.

I can say with confidence and with pride that OSHA staff did everything they believed humanly possible to protect the workers during recovery efforts at the WTC site.

Mr. Chairman, I would be pleased to answer any questions from members of the Committee.



Chairman MILLER. If you would provide us copies of the exhibits that you cited so we don't have to lug around the poster boards.

Ms. CLARK. Oh, I'm sorry. Absolutely, I thought they were provided with the testimony.

Chairman MILLER. No, they have not been. Thank you.

**STATEMENT OF BRIAN A. JACKSON, PH.D., ASSOCIATE DIRECTOR, HOMELAND SECURITY PROGRAM, RAND CORPORATION**

Dr. Jackson.

Dr. JACKSON. Thanks very much.

Mr. Chairman and distinguished members of the committee, thank you for inviting me to participate in today's hearing. I should begin by saying that my remarks are based on remarks carried out by RAND and the National Institute for Occupational Safety and Health. Our work began in December of 2001 when the 9/11 response operations were still ongoing and continued over the next 4 years. Many members of the responder community assisted us and contributed to our research. My testimony draws both on my work and that of my co-authors as well as the contributions of our studies' participants, but my specific remarks are my responsibility alone.

The main message I want to convey is twofold: First, to protect emergency workers at any multi-agency disaster response, there must be an incident safety management structure that can make difficult safety decisions and has the authority needed to implement and enforce them. The only way this can work is if the needed framework has been put in place beforehand in planning and preparedness efforts. The simple answer to why response workers were not sufficiently protected at the World Trade Center is that the preparedness efforts that were in place to do so were not designed for an incident of that magnitude.

Second, although the experience of the 9/11 response has taught us a great deal about what needs to be done to protect workers at future incidents, many of those lessons not yet reflected in current practice. Some steps have been taken, and a number of Federal preparedness documents, including the workers safety annex that was just mentioned, now do contain a much better blueprint for responder safety management, but to actually protect responders at future disasters, we can't just describe what the system should look like, we actually need to build it and make sure it will work.

I will talk about a bit more in detail about the question posed by the title of the hearing and then discuss some of the steps that need to be taken to prepare for future incidents. Workers at the World Trade Center were not appropriately protected for a number of reasons. The problems with providing protective equipment to responders at the site are well known. Much of the equipment that they had wasn't suited to the complexity of that hazard environment. And since responders perceived it as hindering their ability to act, it was often not used.

Logistics operations were also chaotic, and there were major problems in providing workers essential supplies like cartridges for respirators. But in spite of the seriousness of the equipment problems, responders told us that the breakdowns in other key safety

functions, hazard assessment, making safe decisions, and implementing and enforcing them, which we have collectively called safety management, were as, at least, detrimental to worker safety.

The lack of a single integrated safety management structure to effectively coordinate the many separate response organizations at the site was the main problem. For example, there were multiple organizations involved in environmental monitoring, and many response organizations had to rely on those technical agencies for their hazard assessments. But since there wasn't a coordinating structure for that effort, different agencies reported somewhat different results which produced confusion. Responders spoke of waves of concerns going through the site about different hazards as the assessments changed over time. The lack of an integrated safety management structure also meant that some of the most difficult safety decisions did not or could not get made. All response operations are driven initially by the goal of saving lives, as was mentioned in some of the opening remarks, which does involve responders taking risks. At some point, rescue must transition into recovery when it becomes less likely that lives can be saved. The responders told us that transition came too late at the World Trade Center, if at all.

Finally, responders told us that the lack of clear integrated command authority significantly hindered the enforcement of safety measures, because different organizations made their own decisions about what their members should do.

When it comes to what we can do to help prevent these safety problems at future disasters, the fundamental message is that we must successfully adopt an integrated multi-agency approach to safety that was missing at the WTC response. Elements of what is required to do so are included in documents prepared since 9/11 lack the National Response Plan, but to implement those plans, we need to do more.

I will briefly discuss three of the recommendations that came out of our work that are necessary to make this a reality. First, there is a need to really pilot test doing safety management at the State and local level. Although the Federal Government can lay the groundwork for this, the fact that all response operations do start locally, even large disasters, means that State and local responders must act first when the incident occurs. As a result, figuring out the details about how to do this right needs to be done at the State and local level.

Second, there is a need to conduct preparedness exercises that realistically address responder safety management, because the focus of most exercises are on the operational parts of response, safety is frequently ignored or given very cursory attention. Finally, we recommend identifying and training disaster safety managers to fill the key safety management roles at major incidents. Playing the role successfully requires knowledge and expertise that most members of the response community are unlikely to get incidentally in their day-to-day activities. That suggests the need for specialized training in preparation in a Federal role in supporting their implementation.

When our studies were released, the recommendations were broadly supported by key Federal safety organizations as well as

by lawmakers on both sides of the aisle and representatives of the responder community. In spite of that support, many of the priorities they identified have not been acted upon. A few problems, like Hurricane Katrina, demonstrate that the system the county needs is not yet in place. I would like to thank you again for the opportunity to address the committee on this topic and look forward to the questions.

[The statement of Mr. Jackson follows:]

**Prepared Statement of Brian A. Jackson,<sup>1</sup> Ph.D., Associate Director,  
Homeland Security Program, the RAND Corp.**

*Protecting Emergency Responders at Large-Scale Incidents Lessons Learned from the  
Response to the Attacks on the World Trade Center<sup>2</sup>*

Mr. Chairman and distinguished Members of the Committee: Thank you for inviting me to participate in today's hearing on this important subject. With the collapse of the Twin Towers of the World Trade Center, the attacks of September 11, 2001, claimed the lives of more than 400 emergency responders. From its first moments, one of the defining features of this attack was the toll it took on the emergency response community—men and women we rely on to protect us when disaster strikes. The health consequences that have continued to develop for response and recovery workers in the years since the attacks have meant the impact of 9/11 on the responder community and on the nation is continuing to mount. Assessing the breakdowns that led to this situation is important for understanding what happened that day and in the months that followed but is also critical in preventing history from repeating itself in future responses to large-scale terrorist events or disasters.

In the weeks after September 11, a research team at the RAND Corporation—in cooperation with, and supported by, the National Institute for Occupational Safety and Health—initiated a quick-response study of responder safety issues at the 9/11 response operations. In December 2001, while the response and recovery operations were still ongoing, we held a group discussion with responders in New York City. The goal of the discussion was to collect information and gather firsthand insight from the individuals directly involved in the safety problems that were occurring while the knowledge was still immediate and fresh.

That effort was the beginning of more than four years of in-depth research that examined emergency responder safety concerns in much more detail, all of which was carried out in close collaboration with members of the emergency response community. The results of that work have been published in a set of RAND reports, which contain much more detail on the issues and recommendations summarized in my testimony.<sup>3</sup> Today, I will focus on the findings reported in the first and third volumes of that series. My remarks therefore draw both on my work and that of my co-authors, as well as on the contributions of all the members of the responder community who participated in the projects; of course, the specific content of my testimony is my responsibility alone.

For the remainder of my remarks, I will address two questions: First, the question posed in the title of this hearing, "Why weren't 9/11 recovery workers protected at the World Trade Center?" and second, drawing on the lessons from that response and other disaster response operations, "What do we need to do to ensure responders are protected at future large-scale incidents?"

The basic message I want to convey today in answering those questions is twofold. First, to protect emergency workers at any major disaster, there must be an incident safety management structure in place that can make difficult safety decisions and has the equipment, capabilities, and authority needed to implement and enforce them effectively. This did not happen at the World Trade Center response for a number of reasons, and, as a result, the response workers there were left unprotected from many of the risks at the site. Second, although the experience of the 9/11 responses taught us a great deal about what needs to be done to protect workers at future incidents, many of those lessons are not yet reflected in current practice. Some steps have been taken, and a number of federal policy and preparedness documents now contain a much better blueprint for responder safety management at major incidents. But to actually protect responders at future disasters we can't just describe what the system to do so should look like, we actually need to build it and make sure it can work effectively before the next disaster strikes.

*Why Weren't 9/11 Recovery Workers Protected at the World Trade Center?*

Based on information we received directly from responders themselves in 2001 and data gathered in the years since, along with the benefit of hindsight and additional study, the reason why response workers were not protected at the World Trade Center is that the plans and preparedness measures in place for protecting them were simply not designed for an incident of that magnitude and complexity.

Protecting responders is not just a concern at large events like the 9/11 attacks. Emergency responders face risk when they respond to “routine emergencies” like fires or traffic accidents. As one responder put it to us, “If things were safe, we wouldn’t need to be there.” Response organizations have procedures to address the danger that is inherent in what they do. But a disaster like the World Trade Center collapse was unprecedented in the experience of every emergency response organization involved in the response. At such major disaster response operations, many routine strategies for protecting responders break down, and, if they are not replaced with approaches better matched to the situation, responders are put at risk. When the attacks occurred, the nation did not have a safety management system in place to effectively make that transition from routine ways for protecting responders to approaches that would work at a major disaster like the collapse of the Twin Towers. Unfortunately, despite useful steps that have been taken since 2001, that is still the case.

Protecting emergency workers requires four things: (1) figuring out what dangers exist in the response environment, (2) making decisions about tolerating or mitigating known risks, (3) getting the equipment or other resources needed to address the danger, and (4) implementing and enforcing the decisions.

Given the publicity about shortages of safety equipment at the World Trade Center immediately after the attacks, when RAND went to New York in December of 2001 we expected that the main problems we would hear about would be in the third category, e.g., that the responders did not have the right facemasks and respirators to protect them from the hazardous smoke and dust at the scene. However, although there were equipment problems, the responders told us that equipment problems were not the most important safety problem. Instead, they told us that serious breakdowns in assessing risks, making decisions about what protective actions should be taken, and implementing those decisions—which we group together here as problems in the way safety was managed—were at least as important, if not more critical.

Based on the experiences and insights provided by the responders who participated in our workshop, I will now discuss some of the problems in both of these areas and their impacts on responder safety.

*Equipment Problems*

It is well known that there were major problems with safety equipment available at the World Trade Center. Responders to the incident faced a major structural collapse scene with a huge variety of dangers—fire, rubble, dust, biological hazards, and other hazardous materials. At the World Trade Center and other major disaster operations, the definition of responder must expand beyond the groups we usually think of when we say that word to include members of the construction trades, health and safety agencies, and other federal and state organizations. For those responders who had protective equipment, much of that gear was not designed for such a complex hazard environment. Some other responders came to the scene with limited or no protective equipment or the training to use it when it was provided.

Much of the equipment that was readily available was not practical to use. Firefighters operating at the scene came with structural firefighting gear, designed to be worn for short periods and designed for firefighting, not for rubble removal and search operations that stretched into weeks and months. One firefighter said, “Firefighting equipment is designed to work well for firefighting operations that typically last 30 minutes \* \* \* or an hour. But when you have fires burning for six, eight, or nine weeks, bunker gear gets to be pretty cumbersome.”<sup>4</sup> Wearing such heavy gear could result in fatigue and heat exhaustion; as a result, some responders told us they just took it off. Similar problems were observed for respiratory protection. The equipment that could provide complete protection—the self-contained breathing apparatus that firefighters use to enter burning buildings—was impractical for extended use; moreover, there were not enough units to protect all responders at such a large incident in any case. Even less cumbersome respiratory protection, when it became available, was sometimes viewed as impractical. Said one firefighter, “I have to be able to talk to my guys. \* \* \* [s]o five times a day I’m pulling [the respirator] off just to tell them something. Next thing you know, it comes off one time and it doesn’t go back on.”<sup>5</sup>

There was also major uncertainty about even what equipment was needed because of the lack of definitive information about the hazard environment. Responders spoke of “waves of concern” going through the site about different hazards as assessments changed. Said a firefighter, “We went from ‘there is asbestos’ to ‘there isn’t asbestos,’ to ‘there is this,’ ‘there isn’t that,’ and the levels of protection changed.”<sup>6</sup> Even when some organizations did have data on hazards, there were not always clear ways of getting that information either into incident decisionmaking or to responders. A representative of a federal organization involved in assessing hazards told us he saw a greater change in safety behavior when risks were reported in the media than when there was an attempt to pass safety information through the incident command system.<sup>7</sup>

Finally, systems were not in place to manage the logistics of keeping such a large response operation supplied with the needed safety equipment over long time periods; for example, there was the need to make sure there were replacement cartridges for the respirators that were being used as the operation stretched into weeks and months. Because logistics plans were not in place before the event occurred, organizations had to improvise, and the end result was not as effective as it should have been. An equipment supplier told us: “We got calls from every federal agency you can possibly name, and some that I’ve never even heard of, saying that they were in control of two, three different [logistics] sites. \* \* \* And [you just had to] take your best guess that that product was going to get out to the World Trade Center site.”<sup>8</sup> There was similar chaos for those receiving equipment; one discussion participant described trying to manage the influx of supplies as “a nightmare. People were offering everything and stuff was coming from everywhere. I didn’t know who had what, where it was, or how to get it to where it was needed if I did know where it was.”<sup>9</sup> The lack of an organized management system meant that responders who needed safety equipment had to spend time searching for it and, as a result, some chose to go without.

#### *Breakdowns in Safety Management*

Even though having the right equipment is necessary to protect emergency workers at events like the response to World Trade Center attacks, responders to that event and to other disasters emphasized that just having equipment is not enough. The responders stressed that there must be a safety management or command authority responsible for the safety of responders at the scene who can effectively assess risks, make safety decisions, and ensure those decisions are implemented and followed.

The scale and the complexity of the World Trade Center site required that many separate response organizations were involved in the operations there. Some brought capabilities for the large-scale tasks that were required, such as moving rubble, others brought specialized abilities for search and rescue, and others brought technical skills for assessing the environment and helping understand the scene. Ideally, all these separate organizations should have been managed by a single, unified incident management structure so their activities—and the management of the safety of the people they brought to the scene—could be coordinated effectively. However, responders told us that this did not happen quickly at the World Trade Center site for a variety of reasons, not least of which was the loss of key individuals from the Fire Department of New York in the collapse of the towers.<sup>10</sup>

For safety management, ad hoc committee structures were developed over time to coordinate across organizations, but responders we spoke with differed about how effective they thought those structures were and whether they were even linked to the operational management of the response and recovery operations.<sup>11</sup> In any case, the fact that they had to be developed during the incident delayed coordination and hurt efforts to protect the responders at the scene. Without a clear safety management structure for the entire operation, organizations in many cases adopted more routine approaches to safety where they focused on their own activities and the safety of their own members. While all organizations have clear responsibilities for protecting their own, this approach is not sufficient for large-scale operations like this one that involve many organizations working together.

Not all response organizations have the capabilities to assess the complex hazards that were present at the World Trade Center—and they should not be expected to. Putting every possible technical capability that might be needed in every response organization would be prohibitively expensive and unlikely to succeed in any case. Therefore, many organizations needed to rely on the results of hazard monitoring by other technical organizations that responded to the incident. However, since there was no unifying structure and authority that brought everything together and coordinated the effort, independent technical organizations reported different results, which added to the confusion about the risks and what equipment choices

should be made.<sup>12</sup> As one responder put it: “[A]ll the experts have got to come up with a common theme. I can’t have [one federal agency] telling me, ‘You need Level A protection for this,’ and [another agency] telling me that a half-face respirator and latex gloves are sufficient.”<sup>13</sup> Some of the disagreement and confusion was even ascribed to turf battles among the safety organizations operating at the scene.<sup>14</sup> There were also problems in “translating” the results of technical monitoring into something responders could use: “We would ask them to interpret [safety information] into plain English for us. Please stop speaking OSHA-speak [or] EPA-speak. Speak English so we know what to do.”<sup>15</sup>

Responders told us that the absence of a single, unified management authority also meant that some of the most difficult decisions about responder safety did not—or could not—get made. Early-stage response operations at any disaster are driven by the goal of saving lives, and—as responders repeatedly told us—it is appropriate “to risk a life to save a life.” As a nation, we need and depend on responders who are willing to put themselves at risk to save others. The fact that many of the missing were fellow responders themselves made the situation all the more emotional. Put simply by one responder at the workshop, “All we were worried about was getting our guys out.”<sup>16</sup> This singular focus contributed to individuals working to the point of exhaustion and making the choice to discard protective equipment that they perceived as hindering their ability to search quickly.<sup>17</sup>

However, in all disasters, at some point rescue must transition to recovery where it is no longer acceptable for responders to take on as much risk themselves. Responders told us that transition came too late at the World Trade Center, if it ever came at all. As one safety and health agency responder put it:

We understood completely that when people are running in initially to try to potentially save someone’s life, there’s a lot of health and safety protocols that you would normally follow that are going to get thrown right out the window. \* \* \* But there came a point in this effort where it became brutally clear to everyone that you are not going to save anybody’s life. There was no one left to save. And at that point, I think some things needed to change from the health and safety point-of-view. And they didn’t. Not as fast as they should have.<sup>18</sup>

Put more simply by two of the responders at the workshop, even after it was relatively clear there would be no more survivors found, “You had to pry people off the piles for the first two or three weeks. You had to pry them off the pile \* \* \* [b]ecause you had hopes that there was going to be someone in there.”<sup>19</sup>

At virtually every significant incident, the decision will have to be made that operations need to transition from rescue to recovery, when the chance that there are still lives to be saved is no longer high enough to justify responders putting themselves at high risk of injury, illness, or death. For that difficult—but critically important—decision to be made there must be a command authority in place to make it. Furthermore, for the decision to have an effect on responder safety, the organizations participating in the response, as part of that unified command structure, must take the actions needed to implement it. Given the high pressure environment that exists after any large disaster—and even more so after the September 11 attacks—unless the groundwork for such a unified approach to safety has been put in place beforehand, it is doubtful whether it could be imposed in the period after the disaster has occurred.

Finally, responders told us that the lack of clear and unified command authority significantly hindered the enforcement of safety measures at the site. All organizations have responsibilities for protecting their members and for enforcing compliance with the safety measures that are necessary to do so. However, responders told us that the participation of many separate response organizations at a large incident scene can make safety enforcement very difficult. If one organization does not require particular measures (respiratory protection, for example), members of others may wonder why they should use them—essentially, “He isn’t wearing it, why should I?”<sup>20</sup>

Responders also indicated enforcement issues were linked to challenges in controlling the perimeter of a site as large as the World Trade Center area. Even in a complex multi-agency response, control of the perimeter can be a powerful way to enforce safety measures across organizations if a central authority sets clear rules for what protective measures workers must have as their “admission ticket” to the scene and remove workers who do not follow them.<sup>21</sup>

#### *What Do We Need to Do to Ensure Responders are Protected at Future Large-Scale Incidents?*

Given the problems in protecting emergency responders at the World Trade Center—the price of which we are only now beginning to fully understand—the second important question is, what must be done to ensure that responders are protected

at future large-scale incidents. As a country, we should not allow this to happen again. This was the specific focus of one of the other research efforts RAND carried out in collaboration with and supported by NIOSH in the years since September 11, 2001. Again, in direct cooperation with members of the responder community, that project developed recommendations describing what is required to manage responder safety at disaster and large-scale terrorism response operations.<sup>22</sup>

My remarks here describe four of the recommendations based on the results of that study: one strategic-level recommendation, and three specific recommendations. Since September 11, 2001, some steps have been taken to implement these recommendations, but much more remains to be done. Congressional direction and support could make key contributions in completing the process to reduce the chances that similar safety management problems will affect responses to future incidents.

#### *An Integrated Approach to Safety Management*

For managing the safety of emergency responders to disasters and large-scale terrorist attacks like the World Trade Center, our most important overarching recommendation is that safety must be approached as a multi-agency effort that is part of overall incident management, not something that individual organizations do on their own for their own members. We refer to this as an integrated approach to safety management. Protecting responders at large events requires not just addressing the complexities of having many agencies involved in a response operation but also taking advantage of the full range of technical, protective, and other capabilities all those organizations bring with them to the event. All the responders at a disaster should be able to benefit from the best safety capabilities available.

Building on the concept of unified command for the operational elements of response, integrated or unified safety management requires that all responding organizations at an incident be part of a single safety management structure that can coordinate the safety assets of different organizations, that can manage hazard assessment and build a common view of protective choices, that is vested with the authority to resolve problems and address safety concerns, and that is linked to the incident management structure, so safety decisions can be implemented and enforced.

While this is easy to say, past experience has taught that interagency coordination at major incidents is often difficult to put into practice. For it to work effectively in the chaotic environment after a disaster or major terrorist incident, it must be planned for and practiced beforehand. Responder organizations and agencies with responder safety responsibilities must be prepared to put the necessary coordination and management structure in place that all organizations can “plug into” when they get to the scene.

To protect responders, this structure must be stood up and activated very quickly. In many incidents, and the World Trade Center was no exception, the environment is at its most dangerous in the earliest hours and days of the incident, perhaps before exact analysis information on the specific hazards that are present is even available.<sup>23</sup> During those initial phases of response, state and local response organizations will likely be largely on their own, given the deployment time required for federal response and safety assets to arrive at a disaster scene. As a result, to protect responders, the key initial steps must be taken by state and local response organizations, both to manage safety during those first phases of the response and to put the structure in place so federal resources can reinforce the effort at the scene and productively contribute to safety efforts when they arrive. This requires that safety management efforts be a planned and practiced element of preparedness efforts, not an ad hoc activity that is developed after an incident already has occurred.

Important steps have been taken since September 11 that provide key parts of the blueprint for such a multi-agency safety effort:

- The National Response Plan (NRP) specifies that safety management must be coordinated across organizations at major incidents. It includes the position of Safety Coordinator to ensure federal incident managers receive “coordinated, consistent, accurate, and timely safety and health information and technical assistance,” coordinate safety and health resources for other response managers, and ensure the safety of the federal personnel at the joint field office.<sup>24</sup>
- The Worker Safety and Health Support Annex (WSHSA) to the NRP emphasizes response organizations should “plan and prepare in a consistent manner and that interoperability [of their safety efforts] is a primary consideration for worker safety and health.”<sup>25</sup> It also defines federal roles for helping to assist in coordination among organizations at the “Federal, State, local, and tribal governments and the private sector involved in incident characterization, stabilization, and clean-up.”<sup>26</sup>

- In the National Incident Management System (NIMS), the responsibilities given to the safety officer at large incidents include “coordination of safety management across jurisdictions, across functional agencies, and with private-sector and non-governmental organizations,” with the intention that “each entity [contribute] to the overall effort to protect all responder personnel involved in incident operations.”<sup>27</sup>

Other DHS planning documents, notably the current draft of the Target Capabilities List (TCL), define responsibilities, performance targets, and capabilities needed for safety management personnel and resources.

These documents include some of the key elements required for effective safety management, but not all of them; for example, although effective safety enforcement is mentioned in the draft TCL, none of the documents addresses how that key function would be put in place at future incidents. Furthermore, there is a big difference between addressing issues in policy and planning documents and being ready to put those plans into practice. Safety management performance at subsequent incidents such as Hurricane Katrina has demonstrated that there is a great deal more that must be done before the components necessary to effectively protect emergency responders are truly in place.<sup>28</sup>

#### *Implementing an Integrated Approach to Safety Management: Key Ingredients*

What is needed for safety management to be implemented effectively at future incidents? The basic structures are in place for doing so, but using them successfully requires efforts to implement and practice so that we are ready for future disasters. Based on our research and the input we received from the responder community, part of the answer to that question is captured in three practical recommendations from our study:

Pilot efforts implementing integrated safety management. Although our research lays out the principles for integrated safety management, more is required to employ this approach in future incidents. Response organizations must work out all the practical implementation requirements to effectively protect responders at different types of incidents: what safety and response organizations need to cooperate, what safety capabilities they need to bring and how rapidly they are needed, what plans must be modified or written, what agreements must be put in place, and so on. This process must take into account the real differences that exist across the country, but it must also build the national commonality needed so other response organizations can plug in to reinforce a local effort when they come to assist at a large-scale disaster. This learning and testing effort cannot happen inside the federal government, but it could be facilitated and supported by federal action. More specifically, we viewed this pilot effort as one involving federally funded efforts to implement safety management structures and preparedness measures in a number of representative areas, from large metropolitan to rural areas, with information-sharing mechanisms to transfer the lessons learned from those areas to other responder organizations.

- Conduct preparedness exercises that address responder safety management. Emergency preparedness exercises are a key part of both building and testing the systems and capabilities in place to respond to disasters. However, because the focus of most preparedness effort is on the operational elements of response—what is needed to help the victims of disasters or terrorist incidents—responders who participated in our research told us exercises often ignore or give only cursory attention to responder safety concerns. This means that key organizations with responsibility for protecting responders are frequently left out of planning or out of the exercises themselves, meaning these key functions are seldom—if ever—practiced or assessed.<sup>29</sup> Given the importance of exercises for building the interagency links needed for effective multi-agency response, safety concerns and safety management processes must be realistically included in exercises. If we do not provide the chance for individuals and organizations to practice safety management, we cannot expect them to perform well after a disaster has struck.

- Identify and train disaster safety managers to play central roles for safety management at major incidents. Although planning is a necessary ingredient for performing in incident response, it is not a sufficient condition for success. Execution of even the best plans relies on people with the right knowledge and expertise. Our work suggested the need for a specific group of individuals, who we called disaster safety managers, to play the central role for managing responder safety and coordinating safety effort across organizations at a multi-agency response operation. These individuals would be trained and experienced responders that could play the coordinating and “bridging” role among different agencies and organizations with safety responsibilities and capabilities in incident management. Playing this role successfully requires knowledge and expertise that most members of the response community are unlikely to get in the standard training available to them and their day-to-day operations; this suggests the need to develop specialized training and prepa-



ration efforts. Our work did not specify where such individuals should be drawn from, although they would need to be based around the country to build and maintain relationships across response organizations likely to participate in disaster operations in their region. Such responders are needed to fill key safety roles described in the NRP and NIMS. The current draft TCL specifically calls out the need for a group of such individuals, although it also acknowledges that their characteristics and role have not yet been completely defined. We need to do so and take the steps needed to prepare these key people to respond to future incidents.

### *Conclusions*

When disasters strike, members of the public rely on emergency responders to protect them from harm. For responders to play that critical role, systems and equipment must be in place to protect them as they do their jobs. The safety management system that was in place at the World Trade Center after the 9/11 attacks was not sufficient to the task, and the country is still paying the price.

In the years since, some progress has been made. In addition to multi-agency safety management being included in the planning documents I mentioned earlier, other efforts have also contributed to addressing equipment problems that made protecting responders at the World Trade Center site so difficult. For example, changes in respirator standards made since then have made it technically possible for cartridges from different brand respirators to be used interchangeably in an emergency response operation, thus simplifying the challenge of providing respiratory protection to emergency workers at such incidents.

The experience at the World Trade Center response and recovery operation—and the serious breakdowns in safety management that occurred there—have also taught us lessons about what we must do to protect responders in future large-scale incidents. We now know what we need to do. When the results of our studies came out, they were broadly supported by key safety federal organizations, such as OSHA and NIOSH, as well as by lawmakers on both sides of the aisle and representatives of the responder community. But despite that broad agreement, many steps that are needed to actually implement the recommendations have not been taken. For there to be a system in place to protect responders to future disasters, we cannot just describe what that system should look like—we actually have to build and maintain it. Performance at more recent disasters like Hurricane Katrina demonstrates that the system that is needed has not yet been built and, as seems all too often the case, the lessons about what we need to do to protect responders that were bought so dearly in the 9/11 response operations may be yet another set of lessons collected, but not yet lessons learned.

I would like to thank you again for the opportunity to address the committee today on this important topic, and look forward to answering any questions you might have.

### ENDNOTES

<sup>1</sup>The opinions and conclusions expressed in this testimony are the author's alone and should not be interpreted as representing those of RAND or any of the sponsors of its research. This product is part of the RAND Corporation testimony series. The series records testimony presented by RAND associates to federal, state, or local legislative committees; government-appointed commissions and panels; and private review and oversight bodies. The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

<sup>2</sup>This testimony is available for free download at <http://www.rand.org/pubs/testimonies/CT291>.

<sup>3</sup>Protecting Emergency Responders: Lessons Learned from Terrorist Attacks, B.A. Jackson, D.J. Peterson, J.T. Bartis, T. LaTourrette, I. Brahmakulam, A. Houser, and J. Sollinger, RAND Science and Technology Policy Institute, CF-176-OSTP/NIOSH, 2002, available at: <http://www.rand.org/pubs/conf-proceedings/CF176/>. Protecting Emergency Responders, Volume 3: Safety Management in Disaster and Terrorism Response, B.A. Jackson, J.C. Baker, M.S. Ridgely, J.T. Bartis, and H.I. Linn, RAND Science and Technology and National Institute for Occupational Safety and Health, MG-170-NIOSH, 2004, available at: <http://www.rand.org/pubs/monographs/MG170/>. Protecting Emergency Responders, Volume 4: Personal Protective Equipment Guidelines for Structural Collapse Events, H.H. Willis, N.G. Castle, E.M. Sloss, and J.T. Bartis, RAND Infrastructure, Safety, and Environment, MG-425-NIOSH, 2006, available at: <http://www.rand.org/pubs/monographs/MG425/>, Protecting Emergency Responders, Volume 2: Community Views of Safety and Health Risks and Personal Protection Needs, T. LaTourrette, D.J. Peterson, J.T. Bartis, B.A. Jackson, and A. Houser, RAND Science and Technology Policy Institute, MR-1646-NIOSH, 2003, available at: <http://www.rand.org/pubs/monograph-reports/MR1646/>, and Review of Literature Related to Exposures and Health Effects at Structural Collapse Events, E.M. Sloss, N.G. Castle, G. Cecchine, R. Labor, H.H. Willis, and J.T. Bartis, RAND Infrastructure, Safety and Environment, TR309-NIOSH, 2005, available at: <http://www.rand.org/pubs/technical-reports/TR309/>

- <sup>4</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 22.
- <sup>5</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 24.
- <sup>6</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 39.
- <sup>7</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 52 and personal interviews.
- <sup>8</sup>Protecting Emergency Responders: Lessons Learned from Terrorist Attacks Workshop, December 2001, previously unpublished comments.
- <sup>9</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 10.
- <sup>10</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 45-6; Protecting Emergency Responders: Lessons Learned from Terrorist Attacks Workshop, December 2001.
- <sup>11</sup>Protecting Emergency Responders, Volume 3: Safety Management in Disaster and Terrorism Response, p. 75-6.
- <sup>12</sup>Protecting Emergency Responders, Volume 3: Safety Management in Disaster and Terrorism Response, p.
- <sup>13</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 39.
- <sup>14</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 39-40.
- <sup>15</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 61.
- <sup>16</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 12.
- <sup>17</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 21-22.
- <sup>18</sup>Protecting Emergency Responders: Lessons Learned from Terrorist Attacks Workshop, December 2001, previously unpublished comments; also Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 47.
- <sup>19</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 17.
- <sup>20</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 51.
- <sup>21</sup>Protecting Emergency Responders, Volume 1: Lessons Learned from Terrorist Attacks, p. 48-49. Responders participating in our research drew a distinction between responses at the Pentagon on 9/11 and at the site of the Oklahoma City bombing, where perimeters were successfully put in place and safety enforcement was therefore much easier.
- <sup>22</sup>Protecting Emergency Responders, Volume 3: Safety Management in Disaster and Terrorism Response, B.A. Jackson, J.C. Baker, M.S. Ridgely, J.T. Bartis, and H.I. Linn, RAND Science and Technology and National Institute for Occupational Safety and Health, MG-170-NIOSH, 2004, available at: <http://www.rand.org/pubs/monographs/MG170/>.
- <sup>23</sup>See Protecting Emergency Responders, Volume 4: Personal Protective Equipment Guidelines for Structural Collapse Events.
- <sup>24</sup>National Response Plan, December 2004, pp. 35-36.
- <sup>25</sup>National Response Plan: Worker Safety and Health Support Annex, December 2004. p. WSH-1.
- <sup>26</sup>National Response Plan: Worker Safety and Health Support Annex, December 2004. p. WSH-2.
- <sup>27</sup>National Incident Management System, March 1, 2004, p. 17.
- <sup>28</sup>See, for example, Government Accountability Office, "Disaster Preparedness: Better Planning Would Improve OSHA's Efforts to Protect Workers' Safety and Health in Disasters," GAO-07-193, March 2007.
- <sup>29</sup>This remains a problem. See, for example, discussion about the inclusion of safety organizations in preparedness exercises in Government Accountability Office, "Disaster Preparedness: Better Planning Would Improve OSHA's Efforts to Protect Workers' Safety and Health in Disasters," GAO-07-193, March 2007, p. 31.

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Chairman MILLER. Thank you.

**STATEMENT OF JAMES MELIUS, M.D., DR.PH, ADMINISTRATOR,  
NEW YORK STATE LABORERS' HEALTH AND SAFETY TRUST  
FUND**

Dr. MELIUS. Thank you, honorable Chairman Miller, other members of the committee who are here. I greatly appreciate the opportunity to speak to you today. I am Jim Melius. I currently work for the New York State Laborers' Health and Safety Fund. It is a labor management fund that focuses on issues for union construction laborers in New York. It has been mentioned that I currently serve as chair of the steering committee for the World Trade Center Medical Monitoring and Treatment Program.

Immediately after 9/11, I became involved in working with our members and with our contractors to try to provide protection. We had over 2,000 members who were involved in the initial response within the initial few weeks at the World Trade Center. Some were there immediately; many coming in over the next few weeks into the site, and ended up eventually with close to 4,000 members working at the site.

In my testimony, I point out, we tried to obtain information on the degree to which they need to be protected. It was very difficult. The Federal government was not initially sharing information. And we were actively involved in the site safety committee that Ms. Clark has already mentioned and actively involved in working to provide our members with protective equipment, eye protective equipment, as well as with appropriate safety training. But it was under very difficult circumstances. Things were not well organized, and it took a great deal of effort.

And I think that effort could not be implemented for several weeks or months into the course of the initial clean up. For example, the safety training for members there, that was several months after the initial event before that became required for people working at the site.

As has been pointed out, OSHA played an important role there, and they had large numbers of people there working very hard. However, it was always a consultative role. There was no enforcement of standards, and therefore, as Dr. Jackson has pointed out, compliance varied quite a lot. And there was very little coordination of what the different people were doing.

Now, that approach was also what was taken by the City of New York, which was apparently in charge of the site, but they also, in terms of health and safety, played what I would describe as a consultative role in that. While that approach worked in terms of preventing major injuries, it was an extremely dangerous site. And I think it is remarkable how low the injury rate was.

At the present time, we are now faced with thousands of workers who are now suffering from pulmonary disease, other health problems, as a result of their exposures at the site. These problems are widespread and serious, as Dr. Landrigan has pointed out, and they cannot be solely contributed to exposures the day of the event or the immediate few days after the event. People continued to be exposed for many months after that. The compliance with consultative requirements was not always 100 percent. It was not as good as when there is an actual enforcement.

I would also point out that the hazards at the site, the respiratory hazards, were not new. They may be unique, and they may be very complicated. When I worked at OSHA—excuse me, at NIOSH over 25 years ago with Dr. Landrigan, we issued an alert about the respiratory health hazards of alkaline dust, the very kind of cement dust that was present at the World Trade Center site. It should not have been a surprise to anybody that there was a possibility of respiratory disease from exposure to that. I think, looking back, again retrospectively, we just have to admit that we failed to provide the proper protection. Not, as Dr. Jackson pointed out, it is not only the use of respirators. It was a comprehensive approach to safety at the site that included enforcement. I don't

think that you can protect people in those circumstances without a strong enforcement; there are too many groups involved.

My recommendations for moving forward is that we need to make sure that we have the kind of incident safety management plan that Dr. Jackson has pointed out, some of the other needs for coordination and preplanning, but we also need a very strong OSHA involvement in these incidents that includes the ability to, one, comprehensively assess hazards at the site; to enforce the appropriate standards of protection for people; and that would have a place that, no work at that site would go forward without OSHA certification that people are being appropriately protected during that work.

We do have to recognize that there is sort of a rescue phase that immediately occurs after an incident such as the World Trade Center. We need to prepare for that. We need the training and so forth for people to have proper equipment ahead of time so that they are properly protected, but that should be part of this overall safety planning process and enforcement of appropriate health and safety standards at the site.

In the case of the World Trade Center, there is no reason that work could not have been stopped there after the rescue phase until it could have been organized and we could have had a proper safety program that could be enforced throughout that site. I will also add that given, follow-up to Dr. Landrigan, we also need comprehensive medical follow up program for people involved in these incidents. We know that. We see that in other instances. We would hope that it would not need to be as extensive as we have for the World Trade Center, but it is something that I think is very appropriate and very badly needed in terms of following up.

Thank you. I will be glad to answer any questions.

[The statement of Dr. Melius follows:]

**Prepared Statement of James Melius, M.D., Dr.PH, Administrator, New York State Laborers' Health and Safety Trust Fund**

Honorable Chairman Miller and other members of the Committee. I greatly appreciate the opportunity to appear before you at this hearing.

I am James Melius, an occupational health physician and epidemiologist, who currently works as Administrator for the New York State Laborers' Health and Safety Trust Fund, a labor-management organization focusing on health and safety issues for union construction laborers in New York State. During my career, I spent over seven years working for the National Institute for Occupational Safety and Health (NIOSH) where I directed groups conducting epidemiological and medical studies. After that, I worked for seven years for the New York State Department of Health where, among other duties, I directed the development of a network of occupational health clinics around the state. I currently serve on the federal Advisory Board on Radiation and Worker Health which oversees part of the federal compensation program for former Department of Energy nuclear weapons production workers.

I have been involved in health issues for World Trade Center responders since shortly after September 11th. Over 3,000 of our union members were involved in response and clean-up activities at the site. One of my staff spent nearly every day at the site for the first few months helping to coordinate health and safety issues for our members who were working there. When the initial concerns were raised about potential health problems among responders at the site, I became involved in ensuring that our members participated in the various medical and mental health services that were being offered. For the past four years, I have served as the chair of the Steering Committee for the World Trade Center Medical Monitoring and Treatment Program. This committee includes representatives of responder groups and the involved medical centers (including the NYC Fire Department) who meet

monthly to oversee the program and to ensure that the program is providing the necessary services to the many people in need of medical follow-up and treatment.

*Protection for 9/11 workers*

Providing initial protection for our members who initially responded to the WTC attack was very difficult. Many of our union members working nearby or hearing about the collapse of the buildings rushed to the scene with their construction tools and equipment. Many worked long hours at the site trying to rescue anyone who might have survived the collapse of the building. Some brought respirators and other protective equipment with them, but most did not have such equipment readily available. Gradually, respirators were made available to them. Over the next few weeks, our union worked with our contractors to organize a respirator program for people working at the site and provided respirators, eye protection, and other needed equipment. Other organizations did the same. During this time period, I visited the site several times to observe working conditions and to help organize our response.

I personally tried to obtain information on the results of air sampling being done by EPA and other agencies near the site. For a short time, I was permitted access to some of these results on an EPA web site and was permitted to participate in conference calls discussing these results. However, after a short time, my access to this information ceased, and I was unable to obtain any information on these results until much later. Similar to those working on the site and those directing that work, I assumed that the results did not indicate any serious problems.

Once the City took control of the site and more formally organized the construction work, safety efforts also became more organized. Access to the site was restricted, and daily safety meetings involving contractor and labor representatives were held. As I mentioned, a member of my staff attended each meeting. Much of the focus of those meetings was on the prevention of traumatic injuries at the site, a very important consideration given the nature of the site. However, it was several months before a safety training program for every one at the site was developed and provided to the workers.

During my visits to the site, I occasionally saw OSHA representatives. Often they were standing outside of the secure area, observing the work. However, later I saw some OSHA staff at the actual work site. I believe that they also participated in the daily safety meetings.

*OSHA enforcement*

OSHA handled the work at the World Trade Center site in a "consultative" role throughout the recovery and clean-up. Although the City of New York managed the recovery and clean-up, their role regarding health and safety issues at the site was also "consultative". Through their management of the construction activities, the City tried to take into account the safety of the people working at the site. They also promoted efforts such as the daily safety briefings to ensure a safe work site. However, I observed little evidence that they assumed full responsibility for health and safety protections at that large job site.

This "consultative" approach by OSHA and the City seemed to work in regards to major injuries at the site. Given the nature of the job site (unstable structures, etc), the low rate of serious injury on this job site is remarkable. However, as has been pointed out in this hearing, thousands of the workers at the site are now suffering from pulmonary disease and other health ailments. These health problems are not isolated among just a few workers or in a particular work group. They are widespread and quite serious leading to many of these workers being disabled and unable to work. The health problems cannot be attributed solely to exposures in the immediate day or to after September 11. Studies show that prolonged exposure even starting several days after September 11 increases the risk of developing respiratory disease.

The lack of more comprehensive OSHA involvement at the World Trade Center site including enforcement contributed to the development of these health problems. A serious health hazard was not recognized and properly controlled.

I would add that this problem with OSHA enforcement involves not only the World Trade Center site. Shortly after September 11, our union was involved with the anthrax mail problem. We represent mail handlers and clean-up workers. Both groups were exposed to anthrax in mail facilities or during the clean-up of contaminated buildings. We asked OSHA to get actively involved in protecting our workers, and they refused leaving it to health and environmental agencies to address the problems. Fortunately, the anthrax mailings ceased. More recently, I went to the New Orleans area and met with many fire fighters who were ill because of their

exposures in follow-up to Katrina. The lack of proper steps to protect the health of workers after this natural disaster contributed to their health problems.

*What needs to be done*

I would propose two major initiatives in response to this failure.

The first is preventive. We need a process that ensures OSHA involvement including enforcement starting with the early response to an incident similar to the WTC. This would require OSHA to make a complete evaluation of the hazards at this type of disaster site and to take the proper steps including enforcement action to fully protect the people working at the site. This protection should extend to all workers. It makes no sense to exclude federal workers or state and local government workers from these provisions. No work at the site should be allowed to go forward until OSHA has certified that the people doing the work will be protected. In the case of the World Trade Center, OSHA enforcement could have been phased in after the initial rescue phase. For example, work at the site could have been halted or slowed down until all workers had been appropriately trained about work requirements (including protective equipment) and then the work restarted with strict enforcement.

We need to recognize that situations such as the World Trade Center also involve the possible rescue of people at the site. Inappropriate delays could endanger the lives of those people, and there often will not be time for a careful deliberate approach to this phase of the work. Therefore, we must also ensure that we prepare for these situations including health and safety protections for those involved. We need proper planning for these potential situations, appropriate training of all groups that may be involved (including construction workers as we learned at the WTC site), and the availability of proper protective equipment for those who will be responding. We also need to develop better protective equipment such as lighter weight respirators that can be worn for longer time periods and better chemical protective clothing.

The second need is to ensure proper medical follow-up of the people responding to these disasters. In the World Trade Center situation, we have relied on a fragmented system utilizing private philanthropy, health insurance, line of duty disability retirement, and workers' compensation along with some federal funding to support the necessary medical monitoring and treatment for the thousands of people whose health may have been impacted by their WTC exposures. If the federal funding ends, this fragmented approach will inevitably leave many of the ill and disabled rescue and recovery workers without needed medical treatment and will only worsen their health conditions. We need a comprehensive approach. The legislation just introduced by Representatives Maloney, Nadler, and Fossella provides the framework and support needed for this comprehensive program for these workers and for the residents, school children, and others whose health has been harmed by the failure to recognize and address the health hazards from this incident. It is unfortunate that the failure to properly protect these people at the time of the incident makes this program necessary.

Thank you for your time and attention, I would be glad to answer any questions.

Chairman MILLER. Thank you very much, and thank you to all of you for your testimony. Certainly to all of you for your work on this problem at the time of the incident and since that time, we deeply appreciate it.

Ms. Clark, in your testimony, you really describe a dazzling array of activities that OSHA was engaged in from the moment you could first be on the site in terms of the conducting of worker exposure samples and air samples and contaminant samples, and at some point, I think you say 24,000 or 30,000 combined samples of the air for all of these various materials. And some we knew would be in the building as a result of the collapse and the content of the buildings and so forth.

What was done with those samples? I mean, those were used how?

Ms. CLARK. The samples were analyzed by our laboratory in Salt Lake City, and as soon as we could, we would provide that information back to all of the safety and health professionals at the site; the contractors, the unions, the other city, State and Federal agen-

cies. We had daily meetings. We met in P.S. 89, one of the schools that Mr. Cordero mentioned. That was our on-site command post. We would meet there daily in the morning to discuss the latest issues that were arising, sample results from the various agencies.

Chairman MILLER. Were those samples, I don't know if I am phrasing this right, but were they translated into the on-site experience? We have standards—correct me if I am wrong, and I probably am—but we have standards where this is exposure over 8 hours, this is exposure over periodically during a lifetime, we have different—was there an effort to relate that to what workers were experiencing at the time on the site?

Ms. CLARK. Absolutely. We reported our results the same way we report any other worker safety standard or analysis. What we did was we took personal samples in the breathing zone. That is how we do it in any work site. In the particular situation there, we wanted to err on the side of caution, so we did not use zero exposure for the time frame if the sample was not in 8 hours. So, in essence, we reported the highest levels. We reported actual exposure levels. And that was shared with everyone. It was also explained to all of the people there. It was done in separate steward meetings. We actually brought together the stewards on the site for the first time late in September at a meeting, particularly to go over these results.

Chairman MILLER. But, at no time, apparently—I am sort of short-handing this—but at no time, apparently—let me ask you, was there any discussion that these samples and the work site and the exposure ever added up to, we should be enforcing adherence to the use of respirators or other safety equipment?

Ms. CLARK. Well, one of the reasons I brought some of these posters that we mentioned before was to show you—

Chairman MILLER. No, that is advising people to do things.

Ms. CLARK. No, this was the requirement. This was enforced by the site, on the site by the City of New York, by the contractors. These are orders. You see the middle one is an order from the Department of Health requiring personal protective equipment. These were orders. They were, as you see in the one with the picture—

Chairman MILLER. Were they enforced?

Ms. CLARK. They were not allowed to enter into the site areas. They were enforced. I will tell you that in the early days, it was very difficult to enforce because there were a lot of entry points into the site. There was also a lot of discussion between myself and my staff about what was the appropriate method to take here. We considered the issue of issuing citations, but we decided that would not work under these circumstances. And this was not a one-time discussion. We referred to this over a period of time.

Chairman MILLER. Ms. Clark, let me ask you this, in the documents that we have received, there is a consistent request from Mr. Kelly McKinney, who I guess was joining with union representatives, Liberty Mutual Life Insurance Company, asking OSHA to taking enforcement actions. And that starts in October. We are talking in early October. The event was obviously September 11th. Early October and those continue on for a month, constant requests and no action, so at no time did OSHA invoke its ability to take enforcement action during that time frame.

Ms. CLARK. We did not issue citations. We worked through—  
Chairman MILLER. Did you take actions with respect to enforcement?

Ms. CLARK. We considered appropriate actions under the act. The act allows us to—gives us the discretion to do nontraditional enforcement, which is what we did here. We provided technical assistance. We worked with the other people at the site to establish a safety and health program with mandatory requirements that exceeded our standards. We would not have been able to issue citations except in a very, very few number of instances. We did not have over-exposures. If we were to issue any citations, the employer has the right to contest those.

Chairman MILLER. I understand that.

Ms. CLARK. During the contest period, they do not—

Chairman MILLER. I am trying to lay down a baseline, as I said in my opening statement, the question is, why, and we raise the question, are there legal impediments when we have what we consider a nontraditional site and a catastrophic site? So you are saying for the moment here, and I want to go to Mr. McKeon, for the moment you did not feel you could issue—I am putting words in your mouth—issue enforceable citations given the law at that moment.

Ms. CLARK. I did not feel we could issue citations that would provide immediate protection to workers. I could not force immediate protections through the citation process, through issuance of penalties. That would not have provided the immediate protection because the law allows employers to contest. Contest periods can take 2 to 7 years to go through the appeal process. We needed to protect those workers immediately, and that was why we did not choose to issue citations.

Chairman MILLER. We will come back to that point.

Mr. McKeon.

Mr. MCKEON. Thank you, Mr. Chairman.

I remember, like all of us do, watching on television as this unfolded. It was I am sure a lot different watching it on television than being on the site, because we, on television, didn't have the smell. I remember when I visited Manhattan, visited the site a month later, it was the first time I had ever been to Manhattan. And still the smell was permeating all of the area, and I think it is difficult to comprehend what a huge problem this was.

And I appreciate the Chairman's questions about enforcement, but it seems to me that people rushed to the site to help, and just as Mr. Cordero, they are paying a price for it. But you probably would have had a difficult time trying to stop them from trying to help other people, because everybody was just so concerned with trying to help others, they weren't considering their own safety. And I understand it is OSHA's, one of their responsibilities among other people's responsibilities to try to protect at that time, but I have a couple of letters here. I think they came to you, Mr. Chairman. I don't know if you entered them into the record. I would like to have them entered in the record; one from John Graham and one from Rick Ostrander. They were people who showed up to help. And Mr. Graham is permanently disabled because of the stuff that he breathed and came into his lungs and caused him problems, but



he gives some specific things about what OSHA inspectors did on the site to try to protect people, and I think it would be good to have that in the record.

Chairman MILLER. Without objection, we will make them part of the record.

[The letters referred to follow:]


Ex. 14

My name is Rick Ostrander. I am a Dock Builder and have been a union member of Local 1456 for twenty two years. On the morning of September 13<sup>th</sup>, I left my home in Bangor, Pennsylvania and went up as a volunteer to the World Trade Center disaster site. On September 14, the City divided the site into four sections and I was hired and assigned to the second shift to work for Turner Construction on building number 7 of the World Trade Center. I was involved in cutting steel and removing debris through November of 2001. In December, I began working on the slurry wall in the pit installing tie backs. I continued to work at the site for the duration of the World Trade Center Emergency Project, that is, through July of 2002.

I came to this project with a great deal of cynicism and distrust of government employees. This job completely changed my point of view. I have never witnessed such dedication, such commitment and such courage in the face of constant challenges and significant resistance. You have to remember that in the early hours, early days and even weeks of the disaster, any attempt to modify our ability to work fast and efficiently was forcefully rejected. We are construction workers. We know how to get a job done and in the face of such an attack we were more determined than ever to work tirelessly and without interference. OSHA, on the other hand, had a completely different attitude and unwavering mission. OSHA made it clear from the beginning and I was there, so I can tell you from a first hand account, that OSHA's message to workers on that site is that no more lives will be sacrificed. Not one. Yes, respirators are uncomfortable and unwieldy but you will wear them. Workers were provided with and told repeatedly by OSHA to wear their hard hat, respirators, goggles and gloves. Posters were placed throughout the site reviewing these requirements.

Later in the project, a joint labor management health and safety committee was established and met weekly. Weekly union steward meetings were held in addition to the site safety and health committee meetings. I participated along with representatives from the other trades, in a weekly walk around inspection of the site. If we identified a hazard, it was corrected on the spot. On some rare occasions, if the correction required several steps, it would take an hour or so.

My life has been changed by this experience. If I was asked what could have been done differently, what should have been done differently, I would want the focus to be on the kinds of respirators made available to workers on a disaster site like this. I think we could come up with better designed respirators that are easier to use. Respirators that provide protection without being cumbersome and reliant on the user's ability to understand and comply with a good fit and regular filter changes. What I would not want to change is the deep commitment I witnessed by OSHA employees who repeated day in and day out to everyone on that site that the rescue stage is over. There is no such thing as an acceptable risk to workers on this site, not while OSHA is on the job.

Respectfully,  
  
 Rick Ostrander, August 2, 2007

Ex. 15

## John Graham Statement

My name is John Graham. I have been a member of the NYC District Council of Carpenters for almost 20 years. In 2001, I was employed as a Health and Safety instructor and field inspector for the Carpenters Union. On September 11<sup>th</sup>, 2001, I responded as an Emergency Medical Technician for the Carpenters Union. I arrived at the WTC prior to the impact of the second plane. Despite the horrific conditions, I survived the collapse of all three buildings. At one point, I was vomiting from the dust and debris that I had breathed in while struggling with other responders to find cover. I am still suffering health effects to this day and am totally disabled as a result. *I want to make it clear however, that I do not attribute my health effects to anything OSHA did or did not do on this site. Like so many first responders, we were exposed to the greatest assault on our respiratory system in those first few hours as the buildings exploded down around us. We were not wearing respiratory protection and air quality was the last concern, of all the very pressing concerns on my mind during this period.*

I continued to report to work at the WTC Emergency Project for the duration of the project. My assignment was to be a field investigator and to respond to Carpenters and Dock Builders' health and safety concerns. In this capacity, I conducted walk around inspections *wearing appropriate respiratory protection at all times* with OSHA and contractor health and safety staff. In addition, I was also asked by my union to provide asbestos restricted handler training and orientation classes for all the workers on the site. Given my background as a certified trainer in the OSHA 500, hazardous waste worker, asbestos, lead, confined space and fall protection, I was able to immediately jump in and provide this training to workers on the site.

Although I had worked with OSHA in the past in my capacity as a health and safety instructor, I had never worked as closely or with so many OSHA staff under such perilous conditions. One of my most vivid memories is of a site walk around where we came across a crane that was lifting a heavy load with a nylon sling that was worn and fraying. The OSHA inspector walked over to the crane operator and directed him to bring the load down to the ground. He then explained that he had identified this problem an hour earlier and since he had not corrected the hazard, the OSHA inspector proceeded to cut the sling and disable it completely. Henceforth and forever that hazard was removed. Although there were no citations issued for this violation, I felt as a worker on this site where I had observed the most dangerous conditions I had ever witnessed in my life, that this was a completely appropriate action. *The choice/decision to correct hazards rather than fill out paperwork about them made the agency relevant and effective in my opinion.* The commitment and passion I observed by OSHA staff on this site was incredible. For example, on one occasion, during a walk through of the WTC site, an OSHA inspector encountered a manager wearing no respiratory protection. When it was pointed out to the manager that he was violating the rules of the site and that OSHA expected managers as well as workers to adhere to the requirements, the inspector was met with resistance and rude language. Despite this tense exchange, the OSHA inspector held firm and required the manager to comply or vacate the site. It was a fairly heated exchange which reflected the level of stress and tension that everyone was working

under. I witnessed this kind of passion and dedication to protecting the health and safety of workers by OSHA on a daily basis.

I've heard people say that OSHA didn't enforce standards on this site for exposure to asbestos and silica but do they understand that the majority of the air sampling results on this site did not exceed the OSHA permissible exposure limits? How can this be addressed in the future for other emergency responses? Standards developed for construction sites may not meet the needs of workers laboring under extraordinarily difficult and unusual circumstances. And, some OSHA standards are simply outdated and inadequate as many were promulgated in the 1970's, at least thirty years ago.

In closing, I feel very proud of the time I spent working on this site with the all of the well-trained, professional and dedicated OSHA staff. I believe that OSHA did an extraordinary job. Although they lost their office on 9/11, they picked up the pieces and established a formidable presence on this site which I believe made the difference between life and death for my members and all of the construction workers on this extremely dangerous and unparalleled site. Thank you.

John Graham

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Mr. MCKEON. I appreciate the Chairman's questions, and I appreciate the atmosphere that is here, that this is really—I sense that this hearing is not a gotcha type hearing, that we are really sincerely trying to find out what happened and what we can do to make things better in the future. I apologize; I am going to have to leave early. I appreciate you being here and your testimony. I know there will be other questioners here to ask other questions, and I, again, thank you for being here.

I am sorry, Mr. Cordero, for your problem. I have asthma, and I have reflux, but just as a result of, I was born with asthma, and the reflux came through other things.

Ms. WOOLSEY. Old age.

Mr. MCKEON. I could mention a few other things, too, but I applaud you for your diligence and being there to help others at the risk of your own health. And I am sorry that you had this problem, and others are dealing with those problems, but I hope as a result of this incident and Katrina and others that we have had, that we can make things better in the future. Although I don't know how we could have foreseen all the different things that happened. Dr. Melius, you talked about a report you issued a few years ago. Probably a few doctors read it. I don't know if everybody takes those warnings to heart until we are faced with a problem. Again, thank you.

Chairman MILLER. Thank you very much. We now recognize the subcommittee chair, Ms. Woolsey.

Ms. WOOLSEY. Thank you, Mr. Chairman. It is so obvious that disaster changes everything, and 9/11 and Katrina, we can't really unlink the two because the same thing virtually happened in both areas. Proves to us that we have to have systems in place so when something that disastrous happens, we can rely on those systems to the best of our ability, not make it worse. There are going to be other disasters of one kind or another and there are going to be future heroes.

So what we have to do from 9/11 is learn, not get defensive. We have to learn what should have been done. We have to learn what can be done in the future and what must be done for our workers for their health effect, because it is a three-part solution we have to be looking at here.

I thank you all for what you provided us today. But when you have a near miss—and I know that OSHA, this is part of OSHA's strategy, you learn from a near miss. Well, we have a lot to learn from the OSHA response.

And my question—and I am going to ask this of all of you, because I am sure you have an opinion. When we talk about comprehensive enforcement—and I am going to start with you, Dr. Melius—when we look for comprehensive enforcement, who should be in charge? We have got to have somebody in charge. Is it OSHA, is it EPA? Where was FEMA? Or is it the local folks? Who do you think should be in charge? What should the hierarchy be? Because when major decisions are being made during a major disaster, we need to know who is in charge.

Dr. MELIUS. I believe OSHA should be in charge of ensuring worker safety at the site of a disaster and the follow-up to that disaster. And they need to be able to comprehensively assess the hazard, they need to be able to then decide what needs to be taken in terms of protecting people, advise people of what that protection should be, what steps should be taken. They need to then be able to enforce and make sure that that protection is implemented.

One of the problems here is that when that enforcement is delegated to different agencies, like the city here, the contractors, different city agencies involved, is that the rate of compliance was very—if one visited the site as I did repeatedly and just observed, you will see some groups, using respirators as an example, there was excellent compliance. Ninety percent of people are in respirators or higher. In other groups, nobody was wearing respirators, and it was extremely frustrating because it was very con-

fusing for people on site. People were still believing EPA Administrator Whitman's pronouncement that the air was safe, so there was a lot of skepticism over the need for providing protection. And one needs one strong central authority to be able to do that.

And I just add that I don't believe that if there was enforcement action, you can assume that every agency on site is going to contest the enforcement actions. I think most of them actually would have complied. And I think really, in reality, most people would have welcomed a single strong voice that was in charge of safety at that site.

Ms. WOOLSEY. Thank you. Dr. Jackson?

Dr. JACKSON. Well, in thinking about who should be in charge for safety, we in our work sort of went to look at the operational side of response for an example. In that case you have the incident command system, where who is in charge of the incident is the incident commander. Fundamentally, the responsibility for safety at any incident is with the operational commander, because they are the ones who are making the risk decisions about what needs to be done and what risks need to be taken to do it. But in order for that to work, the model that we talked about in our work is that you actually need a multiagency approach to doing that.

As it has been mentioned, OSHA wasn't the only agency that was doing hazard monitoring. The EPA was there, NIOSH was doing some hazard monitoring. And the point was that for all of that to work, for hazard monitoring to be credible, for people to act on it, there had to be a structure to bring that together, rationalize it, figure out what the one answer was, and then implement based on it. So really from our perspective, it is not just a question of who should be in charge, but how you put that structure in place to bring together everything that needs to support that person who is in charge.

Ms. WOOLSEY. So then, Ms. Clark, why don't you talk to us about if it falls on OSHA, what do you need to be able to hold that together to be that agency?

Ms. CLARK. Well, like Dr. Jackson, I understand that we are going to be working in an incident command system. It is usually a unified command when it is something of this magnitude with many agencies at all levels, Federal, State and local. Under the current National Response Plan with the implementation of the Worker Safety and Health Annex, we now have the coordinating role; in other words, the lead role. That is something we recommended as a lesson learned from World Trade Center. In fact, within the Annex, it talks about what that Annex covers and it covers all of the things I mentioned we did at the World Trade Center. That is how we put those recommendations together.

We have the lead, but there are coordinating agencies such as NIOSH, the Centers for Disease Control, EPA, the Corps of Engineers, the others ones who would be working with us at the Federal level. This is all handled through a joint field office which is established where all of the Federal agencies are located. There also is a State coordinating official because, as I think Dr. Jackson also mentioned, responses are local. That is how they start. Even for incidents of national significance, that is where they start. Eventually there may be a recommendation that goes up to the

President to make it a nationally recognized disaster. But you need to start with the locals. We are working with them very closely in New York City and in the rest of the country to try to coordinate these things.

But I think that the Worker Safety and Health Annex is a very good start. It was used in Katrina in the early days. It was the very first time we were not exercising it, but implementing it. We learned a lot from that and we are learning more and more.

Now the Response Plan is being recrafted. I think the Chairman referred to the fact that there is a national response framework now that is being put together. And we are working on that as well. So I think it is really important that we do have a coordinating role, a lead role, but that we have to recognize it is going to be a unified command, and the locals are going to be very instrumental in having the lead on this.

Chairman MILLER. Time has expired. Ms. Foxx.

Ms. FOXX. Thank you, Mr. Chairman.

And I want to say that I appreciate what Mr. McKeon was saying before. I don't like to come to these hearing, where they are "gotcha" kinds of hearing, but where we will get some ideas of how we can do things better. And I appreciate the title of Dr. Jackson's comment, lessons learned from the response, because if we don't learn lessons and implement those lessons, then we are just going to continue to do these hearings where we try to figure out who to blame. And we want to stop doing that and figure out what to do better. So I appreciate the comments that are being made.

But I would like to ask, Dr. Jackson, how did the number of incidents of on-site rescue workers' injuries compare to other responses or even other construction and demolition sites? Has somebody kept track of those records? I know that has got to be somewhat of a challenge, but tell me about the comparison data that we have.

Dr. JACKSON. Well, in our work we compared four major incidents: the two 9/11 responses, Hurricane Andrew and the Northridge earthquake. And, unfortunately I have to mainly answer your question we don't really know. And that is partially because of the difficulties in collecting data about what happens at those incidents. It means that there is a dearth of actual accounts of what injuries occurred.

And people mentioned the World Trade Center site because it was a centralized location. There was some data collection. And in some cases there were fewer numbers of injuries than you might have expected. But that was actually something we actually called out in our study as one of the things that needs to be done at future disasters is to better collect that data, not just so we know afterwards how we are doing, but to get that data as quickly as they can into the response commander's hands, so that if you know a lot of injuries are happening in one way, you can change what you are doing to try to reduce them.

Ms. FOXX. Mr. Chairman, just one other comment, if I could. I appreciate also, Ms. Clark, your comments about the importance of the local folks. I just think we are not very well equipped at the Federal level in most cases to deal with handling on-the-ground-things. The coordination is very important. But, again, I think it is going to be critical that we have in the National Response Plan

ways that we respond with coordination and also have some flexibility there so that people are able to take advantage. Every situation is going to be different. You can't possibly plan ahead for every possible contingency, but that there be ways for folks to understand how to utilize—particularly the local people, and give them as much authority and responsibility as possible. But probably, ultimately, somebody has got to be put in charge. I can't understand how you can do these things when you have multiple people in charge. Somebody has to make some final decisions and take the responsibility.

Thank you.

Chairman MILLER. Ms. Clarke?

Ms. CLARKE. Thank you very much, Mr. Chairman. As you know, I am a new member here and a resident of New York City. So this hearing is of great importance to me and my constituents. And I want to thank you for gathering us here today.

Let me just say from the outset that I became a member of the city council just after 9/11 and was sworn in there January of 2002, and I can tell you that the air was not clear in Lower Manhattan, even at that point. So that, you know, as we talk about this, we really have to put it in context. This was an event that lingered for many, many months in the city of New York and was transportable to other parts of the city, including parts of Brooklyn.

I thought Lynn Woolsey really pulled an important point forward and that was about who was in charge. Some of it has to do with perception, quite frankly. When the President of the United States shows up and stands on a pile and says to the world, you know, that we are going to take care of business, we expected the business that is going to be taken care of includes the people of the city of New York, and I think that that is very important. And we also expect that our agencies are going to use maximum skill, talent and expertise to tell the people the truth.

And what we are finding is that we could not rely on the intelligence and the information and the sentiment that was brought forth in New York City after 9/11, and that is quite disappointing. But we are moving on and we are not placing blame. We do want to get to the point where we can rely on our Federal entities to be of service to the people that we are supposed to serve.

So my question is actually to you, Ms. Clark. Earlier this week when the Department of Homeland Security released the final draft of the national response framework, OSHA was relegated to a support annex rather than an emergency support function. Support annexes are generally administrative functions by financial management and press affairs. Emergency support functions, on the other hand, provide the structure for coordinating Federal interagency support. What this means in plain English is that instead of worker protection being an automatic part of every emergency response, OSHA has to wait for support annexes to be activated by FEMA before becoming involved in emergency response. It also means that OSHA is not at the table during national and regional disaster planning and exercises.

Why is OSHA not part of the emergency support function?

Ms. CLARK. I am not sure that I am the person to ask that question. I guess you would have to ask the Department of Homeland

Security. I can tell you that we went to Homeland Security after 9/11 and talked about what we had done there and what we felt our role was and the fact that we felt that worker safety and health needed to be elevated in the new plan. And you are correct that it is a support annex. Would it be more nicer for us if it was perhaps an ESF [Emergency Support Function]? You are probably correct.

I will say that we are very much involved in planning and working on exercises and other activities. We are not sitting back and waiting to be activated. We are working fully. We are at the table. We are inserting ourselves. But clearly it is a support annex, and that has a particular way of activation. And I am not able to explain why—

Ms. CLARKE. I think my time is winding down. I think some of the concern is that we need to know who to hold accountable. And I think, Dr. Jackson, you really raised some critical pieces here when you talk about the integrated safety management system. The perception out there is that OSHA is the agency with the big stick. You have the individuals with the capacity, the understanding, the know-how to really get in there and enforce and make sure that workers are protected, that communities and family are protected.

People talk about the folks that went to the pile. There are numbers untold. But there are residents, there are families, there are workers outside of the immediate pile that were exposed as well. We don't know the breadth and depth of exposure of people from New York and what the latent diseases will be as a result of us not really focusing the way we should, using the intelligence that we have to save lives. And I hope that there is a lesson that we learn from this and that we move forward with the integrated management system that Dr. Jackson has spoken about.

Thank you very much, Mr. Chair.

Mr. FORTUNO. Thank you, Mr. Chairman. And I commend you for this hearing and I thank the witnesses. I apologize for not being here earlier, but I certainly have gone through your statements.

Before I ask a question, I would like, if I may, to express my sincere appreciation to all of those that participated in the recovery efforts of 9/11, including 15 of my own constituents, the most established firefighters from Puerto Rico that were there. Today, 6 years after those attacks, as we are discussing many of their long-term effects, we must come together to find ways to help all of those who were affected, especially the brave men and women that were part of the recovery efforts at Ground zero.

The 15 firefighters who are my constituents were sent to New York City the day of the attacks to be part of the recovery efforts. They spent 10 days working at the site for shifts of 12 hours each. Unfortunately to this day, only 14 of them remain alive. Last year, one of them died due to a bacterial infection. During the autopsy, high levels of metal were found in his body. The remaining 14 Puerto Rican firefighters who joined the recovery efforts have been living with serious health problems which have been proven by medical professionals to be directly related to time spent at Ground Zero during the recovery process.



We all need to ensure that all of those that participated in the recovery efforts after the attacks are taken care of accordingly. The best way we can show our respect and gratitude for their support and commitment through our Nation's most difficult time is by providing them with the means to cope with the problems that they are facing today as a result of the valiant sacrifices in a time of need.

I have a question, if I may. We have a New York Times article, dated September 7th of this year. And if we may, Mr. Chairman, introduce it into the record. Thank you.

[The information follows:]

[From the *New York Times*, September 7, 2007]

### **Accuracy of 9/11 Health Reports Is Questioned**

By ANTHONY DEPALMA and SERGE F. KOVALESKI

Much of what is known about the health problems of ground zero workers comes from a small clinic in Manhattan that at the time of the trade center collapse had only six full-time doctors and a tiny budget.

Yet in the weeks after 9/11, its doctors stepped into the fray in the absence of any meaningful effort by the city, state or federal government to survey, interview or offer treatment to potentially sickened recovery and cleanup workers.

Since then, the clinic, the Irving J. Selikoff Center for Occupational and Environmental Medicine, based at Mount Sinai Medical Center, has examined more than 15,000 workers and volunteers and has overseen the examination of 5,000 more at clinics elsewhere.

Those programs have received more than \$100 million from the federal government for tracking and treating those workers. The clinic's doctors published the largest and most often quoted study of recovery workers' ills. And they have testified about the health problems before city and federal committees.

But six years after the disaster, it is clear that while the center's efforts have been well meaning, even heroic to some, its performance in a number of important areas has been flawed, some doctors say. For years after 9/11, the clinic did not have adequate resources or time to properly collect detailed medical data on workers exposed to ground zero dust.

The clinic's doctors presented their findings in what other experts say were scientifically questionable ways, exaggerating the health effects with imprecise descriptions of workers' symptoms and how long they might be sick.

Researchers in this field say that the clinic's data collection was so badly planned that its usefulness may be limited. Others say that doctors at the clinic, which has strong historical ties to labor unions, have allowed their advocacy for workers to trump their science by making statements that go beyond what their studies have confirmed.

Dr. Albert Miller, a pulmonologist who spent more than three decades at Mount Sinai before moving to Mary Immaculate Hospital in Queens in 1994, worries that the actions of the center's leaders have harmed the legitimate cause of workers who might be in need of help. "They are doing the workers a disservice," he said, "because any time you veer from objective and confirmable statements, you're destroying your own case."

"They are people with a cause," Dr. Miller said.

Even now, there is debate about how harmful the dust was, and whether it could cause cancer or debilitating chronic diseases, although there is emerging medical consensus that workers who arrived at ground zero early and stayed longest were at greatest risk of getting sick. Medical studies by the Fire Department, and most recently by the city health department, show that the dust has caused diseases like asthma and sarcoidosis (a lung-scarring disease) in a small percentage of rescue workers.

Although the Selikoff clinic's research has found signs of ill health in more workers than other studies, it generally tracks the same trends. But that has not lessened the skepticism of critics.

The clinic's leaders acknowledge that their efforts were troubled. But they challenge anyone facing the same hardships to have done better. The doctors point out that they took on ever-increasing responsibilities with federal financing that came in fits and starts. They had to continue their clinical care while collecting data, and clinical care had to come first. They tackled an unprecedented epidemiological challenge with too little money, too few records and too little time to plan properly.

"I'll accept that we could have done some things better and there's always room for improvement," said Dr. Philip J. Landrigan, who has overseen the clinic's efforts to help ground zero workers. "You have to have a thick skin in this business."

While organized labor has steadfastly supported and praised the Selikoff Center's efforts, other doctors say its missteps have heightened the anxiety of New Yorkers who expected the center to answer medical questions that have unsettled the city since 9/11.

There remains confusion about whether government officials should have done more to protect workers from toxic materials at ground zero. The city is still contesting thousands of lawsuits from workers who claim they were sickened while working at ground zero, even as it is providing millions of dollars to Bellevue Hospital Center to treat people sickened by the dust.

And experts agree that the clinic's imperfect work—done alone and under difficult circumstances—might have long-lasting consequences if the poorly collected data eventually skew the results of future studies. Should the clinic come to conclusions different from other medical researchers, say experts, those contrary findings would confuse the overall health picture, delaying scientific consensus. The city would then have lost valuable time in developing a precise picture of diseases from this kind of disaster and the public health response needed.

Dr. Steven Markowitz, who runs a ground zero screening and monitoring program at Queens College, and who worked at the Selikoff Center in the 1980s, says there is no doubt that the clinic, for all it has accomplished, has also let people down.

"Frankly," he said, "it was reasonable for the public to expect more."

#### *A Logical Choice*

Forty-eight hours after the attack, Dr. Robin Herbert, Dr. Stephen Levin and other Mount Sinai doctors met at a Westchester County home to figure out how to respond to the disaster at ground zero. They agreed to volunteer extra hours to see sickened workers, and to gather medical information on them. And in the weeks and months that followed, the Selikoff Center was virtually the only place for workers to turn to.

While federal officials warned those on the pile to protect themselves from the dust, they also said that the chance of developing serious long-term illnesses was low. And city officials stressed that the risk of illness from exposure was minimal. They also faced enormous legal liability if workers on the smoldering pile got sick.

Thomas R. Frieden, commissioner of the New York City Department of Health and Mental Hygiene since 2002, said in a recent interview that the threat of lawsuits in no way shaped the city's response. Rather, he said, the city did not step in more forcefully because clinical treatment is not one of the department's responsibilities. But, he said, it was something the Selikoff Center did well.

Few people in New York's medical community were surprised that the center had taken the lead. After all, the Selikoff Center, named after a pioneering asbestos researcher who died in 1992, was founded in the mid-1980s with political backing from New York labor leaders. It was well known for serving injured union workers, including those with lung diseases, a major concern of Dr. Selikoff's.

But on 9/11, the center was focused mostly on repetitive strain injuries, the workplace hazard of the moment. Still, ground zero workers complaining of a persistent cough started showing up on Oct. 2. It was not until April 2002, six months later, that the Federal Emergency Management Agency provided the center with \$12 million to support a program to give physical and mental health examinations to 9,000 workers.

But the clinic got no money to begin a comprehensive research program, or to make any long-range plans for tracking or caring for injured workers.

"We were told very unequivocally that we were not being funded to do research," recalled Dr. Herbert, who has been a part of the screening program since its inception. "We were being funded to do screening."

Without money or time to plan, they started collecting data anyway, knowing that it would be necessary to track the rise of symptoms related to dust exposure. But the medical history questionnaire they pulled together was an unwieldy 74 pages long, full of questions that were too vague to be useful. When combined with X-rays and breathing tests, the examination process took more than three hours and scared off many workers. Some of the data was collected on paper and stored in boxes.

"It took me three months just to figure out where the information was and how it had been kept," said Dr. Jeanne Mager Stellman, a medical researcher who was hired as deputy director of the data center in April 2006. "I don't think they knew what they were getting into."

Dr. Stellman resigned last November for personal reasons but continued to work on several mental health studies of ground zero workers. "This is a program that's

done enormous good for 20,000 people,” she said, “but it’s a program that has not yet met expectations.”

The clinic’s doctors also faced significant problems because critical information was simply not available. There were no records of how many people worked at ground zero or for how long. No one knew exactly what was in the dust or how much contamination each person at the site breathed in. And since many workers had not seen a doctor regularly before Sept. 11, there was no reliable way to confirm when respiratory symptoms and ailments started.

By contrast, the New York Fire Department, which monitors its 15,000 firefighters, knew exactly how many firefighters had been exposed. And mandatory annual checkups provided precise medical histories.

It was not until 2004 that the Mount Sinai clinic started to receive federal financing for analysis—about \$3 million a year for a data and coordination center. The money was part of \$81 million in federal aid for medical tracking—half to cover firefighters, and the rest for ground zero workers.

By then, it was too late to undo some of the missteps made early on.

#### *A Misleading Impression*

The Selikoff Center has been criticized for blurring the line between scientific observation and alarmism in acting like an advocate for worker causes. But its doctors say that an aggressive approach is necessary in occupational health because employers tend to challenge complaints about workplace safety.

“I’ve spent my whole professional life walking that line,” said Dr. Landrigan, who founded the center in 1986 with Dr. Selikoff. “You can collect facts and be rock-solid certain about those facts, but you know quite well that those facts are only a piece of the puzzle. The intellectual question then is: ‘Do I have enough information to issue a call for action?’”

Last year, as the fifth anniversary of the attack approached, the center produced a major report that was published in *Environmental Health Perspectives*, a scientific journal of the National Institute of Environmental Health Sciences, a federal agency. The report said, and Dr. Landrigan declared at a major press conference, that 69 percent of 9,442 responders examined had reported “new or worsened respiratory symptoms.”

In fact, a chart accompanying the report showed that 46.5 percent reported the more serious lower respiratory symptoms, which lung specialists consider to be indications of significant health problems (17 percent reporting shortness of breath, 15 percent reporting wheezing, and 14 percent listing cough with phlegm), while 62.5 percent of the workers reported minor upper respiratory symptoms like runny noses and itchy eyes.

The decision to combine the two categories of symptoms was criticized by medical experts, but it made a powerful—and misleading—impression on the public and the press about the nature and scale of the health problems.

“There is not a scientific reason to lump those two together,” Dr. John R. Balmes, a professor of environmental health and medicine at the University of California, San Francisco, who reviewed a version of the report before it was published, said in a recent interview. “Science is better served separating them.”

Dr. Miller, who called the press conference a “public relations extravaganza,” said: “I’m not as worried about a runny nose as I am about shortness of breath.”

In fact, the 69 percent figure—though it deals with symptoms, rather than actual diseases—suggests a more alarming picture than other studies. For example, a report by the city health department released last week showed that about 4 percent of 26,000 ground zero workers reported developing asthma after working on the pile. And the Fire Department’s sarcoidosis study focused on 26 new cases of the disease since 9/11.

Dr. Landrigan, in an interview, defended the way he presented the findings, maintaining that symptoms like a persistent runny nose could have indicated more serious lower respiratory problems.

The clinic was also criticized for suggesting that the symptoms were longer lasting than their own evidence indicated at the time. No symptom, major or minor, had persisted for more than two and a half years when the study was done, and a condition is not generally considered chronic until it lasts at least five years, doctors say. Yet Dr. Herbert said at the press conference that many workers would “need ongoing care for the rest of their lives.”

Newspapers, including *The New York Times*, gave prominent play to Dr. Herbert’s statements about the lasting nature of the problems. For some experts, her words went too far.

“It’s very hard to predict the future,” said Dr. Markowitz. “I know people want answers, and I know people want to give answers, but we really have to stick to the scientific method if we want to understand the truth.”

One thing is certain. The press conference galvanized many more workers to seek medical exams. More than 1,000 additional workers signed up for monitoring and 500 new workers continue to enroll each month even now.

Dr. Landrigan said he and his colleagues did not exaggerate their findings to scare workers. But other experts said the doctors may have caused a panic.

“We have patients constantly saying after one of these pronouncements, ‘Am I going to die?’” said Dr. David Prezant, deputy chief medical officer of the New York Fire Department, who has overseen several epidemiological studies for the department.

Dr. Prezant said that the Selikoff clinic’s statistics sometimes so worried workers that they neglected proven treatments to seek unorthodox cures that have questionable results.

In what many critics regard as the clinic’s most disturbing recent miscue, Dr. Herbert said in a 10-minute audio interview posted in May on the Web site of *The New England Journal of Medicine* that she was seeing the beginning of a “third wave” of disease, referring to cancer. In her interview, which accompanied a separate article on ground zero health effects by doctors not affiliated with the Selikoff Center, she named specific types of cancer—leukemia, lymphoma, multiple myeloma—and expressed concern about “synergistic effects” caused by chemicals in the dust, a controversial contention among medical experts.

She was instantly criticized by doctors outside Mount Sinai, who felt her comments were irresponsibly speculative because there is no evidence yet to conclusively link exposure to the dust to cancer. But the city’s tabloid newspapers seized on Dr. Herbert’s comments, prompting another panic among some recovery workers.

In an interview last month, Dr. Herbert defended her comments, explaining that she was speaking as a clinician and sharing her observations about diseases she was seeing with other clinicians.

“I feel that it is our job to communicate as clearly as we can what we do know, what we worry about, what are possible red flags,” Dr. Herbert said. “We have to strike a balance between not exaggerating and not waiting to act until we have absolute proof.”

#### *Praise From Unions*

Today, union officials stand by the work the Selikoff Center has done.

“Sinai should be canonized for the services it is providing,” said Micki Siegel de Hernandez, the health and safety director for District 1 of the Communications Workers of America. “The doctors have really established relationships with responders who walk in. This is the place where workers know that the people care and have the expertise.”

Only late last year did the center and the other clinics begin getting federal money to treat ill workers—\$17 million then and more on the way. About 10,000 are now receiving treatment, which generally consists of prescription medication or counseling.

Most days, dozens of ground zero workers make their way to the clinic on East 101st Street. Dr. Jacqueline Moline, who now directs the programs, said some workers show up to be examined for the first time. Others come back to be re-examined. All of them expect answers, but for most, uncertainty has become a constant part of their lives. The center continues to collect data from each of them, and Dr. Landrigan said he expected to publish as many as 10 new reports within the next 18 months.

Eventually, doctors and scientists analyzing the long-term effects of the dust will take into account not only Mount Sinai’s studies but those of the Fire Department, the city’s health department and other sources. Clinical studies will continue for decades.

The Selikoff doctors acknowledge their mistakes, but they do not apologize for speaking out aggressively about the potential health dangers.

“If our advocacy has brought in people and we’ve saved their lives because we’ve identified health problems, whether they’re World Trade Center-related or not, I’ll take that any day of the week,” said Dr. Moline. “And if that’s our epitaph—that we talked loudly and we brought people in for health care—so be it.”

Mr. FORTUNO. In that article, Dr. Landrigan, you are quoted as saying that Mount Sinai’s World Trade Center survey could have done some things better and there is always room for improvement.

That is one of the reasons we are here. If you could go into how you do that, exactly what you were referring to.

Dr. LANDRIGAN. Thank you, Mr. Congressman.

Well, we are extremely proud of what we were able to do at Mount Sinai. And up until this point with good, consistent support from the National Institute for Occupational Safety and Health, we have been able to examine more than 21,000 of the responders at least once. We have seen 8,000 of these people a second time. And we are beginning now, after 6 years, to see some of them in fact for a third time.

Also, more people are arriving every month. We are getting 4- to 500 new responders, people who we never previously have seen before, calling us each month, qualified responders who were indeed there at the site and who had not previously come in.

We are also extremely proud of the careful documentation that we have made of these workers. We have documented that 46 percent have lower respiratory problems, 62 percent upper, and 69 percent have one or the other. In the aggregate, this is a high prevalence of self-reported symptoms. And those symptoms are corroborated by abnormalities in pulmonary function testing in these workers.

Moreover, our findings at the Mount Sinai School of Medicine are corroborated by very similar findings from two other independent studies that were conducted by the fire department of the City of New York. The fire department has 15,000 New York City firefighters. They have found pretty much the same percentages of abnormality that we did. They have got about 40 percent lower respiratory and 50 percent upper. Very similar to ours. And the New York City Health Department has a registry that now encompasses 71,000 people in New York and they are seeing findings very similar to ours.

One thing that could have been done better is we could have established down at the site—probably not in the first 48 to 72 hours, but after that—we could have established a roster of all of those who came into the site. One of the difficulties that has confronted us in our medical efforts is that, apart from a few highly disciplined groups, uniformed services like the firefighters, we don't really know who was down there. People came, people went, volunteers appeared and they departed. There simply does not exist today, 6 years after the fact, a comprehensive list of who was there and consequently there is uncertainty about the actual number of folks who were there as well as their names.

Moreover, a consequence of that lack of a roster is that in many instances we don't know how long people were there. Was it a day? Was it a week? Was it a couple of months? It obviously makes a difference in terms of the level of exposure that they sustained. And it becomes difficult medically to assess some of the symptoms if you don't know the duration of the exposure. But I think on the medical side—

Chairman MILLER. I am going to ask you to wrap up this answer, Dr. Landrigan.

Dr. LANDRIGAN. We are proud of what we have done medically.

Chairman MILLER. That is a good wrap. Mr. Scott?

Mr. SCOTT. Thank you, Mr. Chairman.

Ms. Clark, one of the concerns we have got is the fact that things were so upbeat. The EPA issued a statement that said that “sampling conducted on Tuesday and Wednesday have been very reassuring about the potential exposure of rescue crews and the public to environmental contaminants. It is unlikely to cause significant health effects.”

Those are the kind of things that—we know the people are sick, and that wasn’t really the case. In your testimony, I was intrigued when you said OSHA’s breathing zone samples revealed exposures well below the agency’s permissible exposure limits for the majority of chemicals and substances tested. Is that your testimony?

Ms. CLARK. That is correct.

Mr. SCOTT. What does the word “majority” mean.

Ms. CLARK. Well, I can tell you that, for instance, in asbestos, all of those samples were below the exposure levels. And, in fact, 95 percent were below the detection levels of our analysis.

Mr. SCOTT. Well, the majority of the substances tested as being well below the exposure limits suggested for a minority some may have been well above—for a minority, well above.

Ms. CLARK. That is not what that means actually. What it means is that there were a small number of all of the samples taken, of the 6,500 samples and the 24,000 analyses. I can tell you, for instance, for metals there were only 13 samples out of all of the metals that were taken, which was a very large sampling.

Mr. SCOTT. Well, if you can provide for the committee a number which describes what the word “majority” means, I would appreciate it, because the sentence suggests that a minority of the chemicals tested were not well below the agency’s permissible exposure level.

Now, you mentioned asbestos particularly. Is there an acceptable level of exposure for asbestos?

Ms. CLARK. OSHA has a standard for asbestos that is what we regulate on.

Mr. SCOTT. And so you can detect asbestos and take no action if it is below—what is that level?

Ms. CLARK. .1 fibers per cubic centimeter of air. And I have to emphasize that this is an air sample. It is asbestos in air. It is not a piece of asbestos that is sitting on the ground or a piece of debris that might have come out of the buildings. It is in air.

Mr. SCOTT. Let me ask, Dr. Landrigan, is there an acceptable level of exposure to asbestos that you would consider safe?

Dr. LANDRIGAN. Well, Mr. Scott, I think you have to distinguish between medically acceptable level and an OSHA standard. From a medical point of view, there is no acceptable level of exposure to asbestos. Asbestos is a carcinogen. A proven carcinogen. All types of asbestos cause human cancer. No level of exposure is safe. Even very low levels of exposure to asbestos have the potential to cause a particularly aggressive form of malignancy called malignant mesothelioma.

Mr. SCOTT. Thank you.

Ms. Clark, if you have all these air samples tested for each and every chemical, did you consider that although each and every chemical may be under the limit, but in combination the air would be dangerous?

Ms. CLARK. We did look at that actually. Within the industrial hygiene profession, there is a mixture formula where you look at the target organ of the substance, what organ they affect, and then you do a combined projection of that and you consider whether or not that would be over the requirement. And we looked at that on all of the substances and we did not find any of those that would have exceeded our standards.

Mr. SCOTT. Dr. Landrigan, at the rate that you are seeing problems now—I know that asbestosis takes years, even decades, before you see symptoms. If we are seeing these symptoms now, what does the future look like for the people exposed?

Dr. LANDRIGAN. Well, I can't predict the future with certainty, sir, but I think we are seeing enough illness and disability today in workers. My patient, Mr. Cordero, is an example.

I think there is an absolute need to continue in the years ahead, for the Federal Government to support the centers of excellence across the country that are providing expert care to workers. I think it is terribly important that these centers be maintained because the centers do two things. They bring together people from the multimethod specialties—pulmonary, gastroenterology and psychiatry—who are the principal providers of care to these men and women. And the second thing that the centers do that no other entity can do is that they have the ability to collect, analyze and publish the data so that we can make sense out of the patterns of disease that we are seeing.

Chairman MILLER. Mr. Nadler?

Mr. NADLER. Thank you. Let me begin by expressing my appreciation to the Chairman for conducting this hearing, to Mr. Cordero for your sacrifice and your great work, and, through you, all the other first responders; Dr. Landrigan, for the great work that Mount Sinai has done and some of the other centers of excellence.

Ms. Clark, let me begin by expressing my astonishment at your testimony that all the breathing zone samples revealed exposures well below the permissible exposure limits. The majority. The Department of Environmental Protection, State of New York, ASTDR, EPA, University of California at Davis, all found highly toxic results on the pile and off the pile. Even Christine Todd Whitman who has said everywhere in Lower Manhattan was safe, says but this did not mean on the pile and the pile was highly toxic.

Why do you disagree with that? Very quickly, because I have about six more questions for you.

Ms. CLARK. I am merely reporting the facts, sir. I gave you the analysis.

Mr. NADLER. That is enough. Okay. You are reporting facts. I don't believe you.

Second, if these are the facts, doesn't this—in light of the fact that 70 percent of the first responders are now sick, doesn't this simply suggest that your permissible exposure levels are completely off base? If everything there was below the permissible exposure levels and everybody is getting sick, doesn't this suggest that your permissible exposure levels ought to be reconsidered?

Ms. CLARK. The respirators that we selected in concert with all of the other safety and health professionals at the site would have protected every substance at the lowest level possible. I have to say

that there are many studies which show that the vast majority of the people seriously affected were there within the first 48 hours. I agree absolutely that they received an incredible assault to their respiratory system.

Mr. NADLER. Dr. Landrigan, has it been your observation that there is a substantial amount of sickness of people beyond the 48 hours, or is it true that only those who were there for the first 48 hours before things could be done are getting sick.

Dr. LANDRIGAN. Rates of illness are certainly highest in the people that were there during the first 48 hours, but there is also plenty of disease in people who arrived after 48 hours.

Mr. NADLER. Okay. Thank you.

So, Ms. Clark, I ask you again: Doesn't this suggest that your permissible levels are off base?

Ms. CLARK. I don't think that is what it suggests.

Mr. NADLER. Okay.

You also state that OSHA does not have the authority to mandate the use of respiratory protection for everyone working on the site. Now, at the hearings that my subcommittee held, it was Mr. Henshaw, who used to be the head of OSHA, that testified that OSHA did not have the authority to mandate the use of respiratory protection or enforce safety standards on city of New York employees.

Did you not have the authority on all private employees, as well as—except the city of New York employees?

Ms. CLARK. Private sector, that is correct. However, we have to have overexposures to issue citations.

Mr. NADLER. So you had the authority.

Ms. CLARK. Yes. We never relinquished that authority.

Mr. NADLER. Can you explain to me why at the Staten Island landfill there was 90 to 100 percent compliance of respirator use, and why the law was enforced by OSHA at enforcement level at the Pentagon, but at the World Trade Center site you chose not to enforce the law as an enforcement mechanism, and the respiratory compliance was less than 50 percent for a period of over 7 months.

Ms. CLARK. Well, I think some of your facts are incorrect. First of all, there was no issuance of citations at either the Pentagon or the Staten Island landfill. And also, they were very different sites. I think anyone who has looked at any of the TV coverage or saw what was happening those days would say that both the Pentagon and Staten Island were very controlled areas.

Lower Manhattan, as you know—it is your district—was very chaotic for the first several weeks at least, and it was an entirely different situation. Furthermore, Staten Island, there was only one difference in the safety and health plan between Staten Island and the World Trade Center. That was the wearing of Tyvec clothing. We considered Tyvec clothing—all of the safety and health professionals considered it and decided it would be too much of a safety risk. It was too hot to wear, there was slippery issues. All of the other requirements—

Mr. NADLER. Excuse me, I would like to ask another question, please.

Chairman MILLER. Let her finish the sentence, though. You can cut her off at the end of a sentence.



Ms. CLARK. Thank you. All of the other requirements, respirators, everything else, was identical. Thank you.

Mr. NADLER. Why is it that the city of New York, starting at least as early as October 7th—because we have Mr. McKinney of DEP requesting OSHA to start taking enforcement action at the World Trade Center site as early as October 7th—repeatedly requesting this? And we know that at the Pentagon you were taking enforcement action, you were in that mode. Why is it that OSHA kept saying “no” to the city of New York’s request?

Ms. CLARK. As I indicated before, we did not issue citations, we did not at the Pentagon. I want to make that clear. As far as Mr. McKinney’s requests, we discussed those. We discussed those with my staff and myself. You are talking about industrial hygienists, safety professionals who have over 30-plus years individually of experience. We considered that. We looked at what would happen if we were to do that, if we were to find overexposures that would allow us to do that. And we decided that was not the way to get immediate protection.

I have been an industrial hygienist for 30-plus years. I am a career industrial hygienist. I have led some of the largest enforcement inspections, issued egregious citations, very high penalties. My staff is very aggressive in that matter. If any of us had thought that it would have worked, we would have done it. I assure you, it was not workable.

Chairman MILLER. Thank you. Ms. Maloney?

Mrs. MALONEY. Thank you. And first and foremost, I want to thank my good friend, Chairman Miller, for holding this tremendously important hearing just one day after the sixth anniversary of 9/11, and for graciously allowing those of us who are not members of this committee to participate.

Looking back, to understand why the World Trade Center rescue and recovery workers were not protected is so tremendously important as we work in Congress to provide for the health care that sick workers now need and as we try to learn from this tragedy.

I would like to follow up on Congressman Fortuno’s questioning. He mentioned the 14 sick firefighters who are now sick because of their work at 9/11. I would like to note that every single State sent professionals and volunteers to 9/11 and that practically every single congressional district—just yesterday, I met with Earle Pomeroy who traveled from North Dakota to be at the anniversary with sick workers from North Dakota. And they are all supporting the efforts of Jerry Nadler and Yvette Clarke and other members of the delegation to pass comprehensive health care, that surely these volunteers who risked their lives should get adequate health care.

This week, we hope to introduce the 9/11 Health Care Act and Compensation Act to move forward. And I first of all, want to thank Mr. Cordero for your work and your heroic work on the really legendary bucket brigade that was so helpful. We need to make sure that you and others in the bucket brigade get the health care you deserve.

I found it ironic that Mr. Fortuno is calling me and asking me to amend the bill to include Puerto Rico, which we are doing literally today, Mr. Chairman. We are amending the bill to include the sick workers from Puerto Rico so that they can be covered, and

hopefully legislation that will move forward; yet was critical of yet really the leading hospital that is providing monitoring and treatment, Mount Sinai.

I want to publicly thank Mount Sinai for your heroic and pioneering work in environmental health care and for coming forward and providing health care and monitoring and treatment long before you were funded by the Federal Government or the State or the city. And I know that in the Federal dollars that we have worked for the World Trade Center consortium, it is only for monitoring. We just recently got treatment. So I do not believe you get one Federal dollar for your research; is that correct?

Dr. LANDRIGAN. Yes, ma'am. The research has been entirely supported with other funds that we have been able to pull in from within Mount Sinai. But for the first 4 years, we had quite strict instructions from the Federal Government not to undertake research on the data that we were collecting.

Mrs. MALONEY. And I know that because I have had conversations with the Chairman that one of the things we want to accomplish is research that will help us answer questions and get us prepared for, God forbid, another tragedy that may happen in the future, whether it is a hurricane or another terrorist attack.

So I am very grateful to Mount Sinai for going forward and conducting research with no support from the Federal Government. And I want to note that the research coming from Mount Sinai really is similar and tracks the research from the New York City Fire Department, which is tracking a very controlled group of people and the New York City Health Department.

And I just wanted to make that clear that there have been some skeptics out there, but overall your work has been needed and really quite wonderful.

I would like to ask Dr. Melius, we have been working together for many years within a consortium with Jerry Nadler and Yvette Clarke and many others from the New York delegation to try to come forward with a plan to provide health care, and we now have a bill which we hope it introduce this week.

Would you say that this bill should be a top priority for providing health care? Do you believe this bill will reach the goal of monitoring everyone who was exposed to the deadly toxins and providing treatment for everyone who is sick? Could you explain your work on this bill and whether or not you think this will address the challenges that Mr. Cordero and many others are facing now?

Dr. MELIUS. Absolutely. As I said in my testimony, I think it is extremely important in these instances that we provide the medical follow-up for people that are involved, and particularly in this instance where people weren't properly protected, weren't afforded the protections that really were necessary at the site. I think that we should assure that they have the full medical monitoring and medical treatment for conditions that they developed that are related to the site. And we know that there are literally thousands of people with these conditions that are currently being monitored in treatment.

There may be many more. As Dr. Landrigan has said, over 500 people are signing up every month, and over half of those are being

found to be sick. These are new people coming into the program over the last several months, so we know this is a large problem.

And I believe that the bill that your staff, Mr. Nadler's staff, and others have been working on, I think will provide the kind of framework for the comprehensive follow-up for providing medical monitoring, providing treatment not only for the workers and responders who were at the World Trade Center site, but for the residents and other workers who were exposed in areas away from the site and around the site; the workers that did cleaning up their office, their homes, and the people there that were exposed in many different way. It includes school children also. And they also deserve the same type of follow-up and treatment.

We also need to be able to reach out to people in other parts of the country, many thousands of people that came in to help out, such as the firefighters from Puerto Rico that we heard about. And the bill that is being developed, I believe, will provide the framework and the capability for those people to get the same type of monitoring and treatment for World Trade Center conditions that we have been fortunate through Mount Sinai and the Federal support that we have been able to get to be able to provide. So I think it will actually provide that kind of program that is so badly needed.

Mrs. MALONEY. My time is up. Thank you.

Chairman MILLER. Clever construction of a run-on sentence. Very clever of you.

And I want to thank my colleagues from New York and the gentleman from Puerto Rico. And I was encouraged that the Speaker, Congresswoman Pelosi, when she was in New York expressed support for this effort to get health care to these individuals who are all across the country.

In my earlier days in Congress, I had the honor of working with Dr. Irving Selikoff on asbestos and the disclosure of John Mansfield's activities and later removal of asbestos from schools. And obviously standards have developed around asbestos, EPA standards, OSHA standards. And I am always amazed that when we go to remove asbestos, if somebody wants to remodel their home, we tape off the home, we throw a cloth up, we protect the public, people have to wear clean suits, respirators and all the rest of this to remove what may be friable or nonfriable asbestos. But at the World Trade Center site we couldn't make a determination—given all that we know about latency, given all that we know about the condition of the workers when they were exposed to asbestos and the very vile nature of asbestos in any form to individuals' lungs and health, that we couldn't figure these things out.

I understand, Ms. Clark, you said that we would have been sued. Sometimes you have to step up and have to say "sue me," because I am going to err on the side of protection of the workers. You didn't do that and I understand why. You didn't believe you had the authority.

But let me ask another question here. I mean, you had the information coming to you from EPA, from UC Davis and other sources that were cited here. And I am not talking about the first 48 hours. But I am worried that the first 48 hours is always used as an excuse of why we didn't do anything in terms of enforcement. And

you have—it is an unfortunate name here—the HAZWOPER authority which is, as I understand it and if I remember correctly, legislative history is sort of put in exactly for these kinds of situations where you can't immediately characterize what is in place there, but it looks to be pretty bad, and provides you the authority to move forward with enforcement until such time. And I am just concerned that those kinds of actions were never taken where we erred on the side of the worker.

And, again, people will talk about the bravery, the skill, the tenacity, the emotion of the people who came to this site to try and rescue people and to clear the site. And we respect all of that. But at some point, this site changed form. And apparently it never changed form with respect to enforcement from OSHA, and that is what concerns me.

I am not saying that to lay that onto you. I am saying that because I think the point is raised in Dr. Jackson's report. And he says on page 7, "In all disasters, at some point rescue must transition to recovery, where it is no longer acceptable for responders to take on as much risk themselves. And responders told us that the transition came too late at the World Trade Center, if it came at all. And then he quotes somebody from one of the agencies.

And I think that is kind of what this hearing is about. At some point, somebody has to stand up and make that command decision. I am very concerned that the new operational form that we are referring to here really doesn't put OSHA in the right position to say at some point, folks, we better start thinking about the safety of these rescue workers. Because if we don't respond to the point raised by Dr. Jackson and the workers, I think we get a repeat performance of this down the road. And that is clearly what we want to permit. Was there a discussion of using the HAZWOPER authority?

Ms. CLARK. Yes. And what I want to make clear is that HAZWOPER, it would have required us—you know, you talk about the asbestos. This site was being wet down because that is one of the normal methods that you use to contain the dust. You couldn't put up a containment area on a 16-acre site.

Chairman MILLER. I understand. I am just saying the levels to which we believe people in much less toxic sites must be protected when they engage that environment, whether it is school children, pedestrians, workers, families, whatever, we made a decision and it cost a lot of money for people to engage in that activity. I understand the nature of this site. We all understand it.

Ms. CLARK. I was trying to explain what we did. And we did require the highest level of respiratory protection that would be appropriate for asbestos under HAZWOPER or anything.

Chairman MILLER. I am talking about the enforcement where at some point you decide that access at this workplace is going to require certain things.

Ms. CLARK. And that is what the safety and health plan, which was signed off by the two co-incident commanders, the Fire Department of New York and the Department of Design and Construction required. It required entry to the site—as you can see, you had to have these things.

Chairman MILLER. I understand that is what it required. But the fact in place, that was not taking place by all of the testimony that people have received.

Ms. CLARK. And I just want to make it clear, when you say that I didn't want to be sued, it wasn't a question of having a contest. The effect of having a contest would basically have removed us from that site while the contest is pending. It is not like with MSHA where they can direct something immediately to be done to have the mine closed. We cannot do that under our act. The employer has the right to contest that citation. While it is in contest, we cannot issue other citations against that same thing. We cannot compel enforcement.

The only other alternative would be to go into Federal District Court and to seek a temporary restraining order to stop the site, as I think Dr. Melius might have suggested we needed to do. My staff and I did not believe that was a viable alternative in New York City at that time. There was a—

Chairman MILLER. I am going to stop you there. I am sorry. I am using other people's time and I want to ask Dr. Jackson if he would respond.

Again, when you look at what has been proposed, where we have been, I think you—as obviously I said, you raise a very important point, at which some point the characterization of the site must change for the maximum protection of those who are going to continue to be at that site.

Dr. JACKSON. Yes, that is absolutely true. It does have to change. Making that change is difficult. And at the World Trade Center site, it was even more difficult because a lot of the victims who were being searched for were responders themselves. So that is why where we came back to is the importance of putting all of this in place beforehand, because the intense emotional situation that exists after a disaster has already struck, you have to have everyone agree who is going to come in and say that transition has to be made.

Chairman MILLER. There were transitions made this time and it sounds very grisly to talk about, but the question of how they would proceed with bulk removal, whether or not they found whole bodies or parts—I mean, they were making these delineations about this site along those lines at that very same time, according to the safety meetings that were taking place.

Dr. JACKSON. Yes, that is true. And certainly decisions were being made. But in terms of the implementation and the enforcement, because of the many organizations and agencies that were involved, if you don't have the buy-in beforehand that everyone is going to accept when that transition is made, it is going to make the changes in the way they are doing things. It is not the sort of emotionally intense time after the disaster has already struck when you can sort of put that in place. So we came back to if it is going to be OSHA who is going to be expected to be in the lead role for that, or if it is going to be the local responders—who is the incident commander—you have to have that agreement among all of these multiagencies that are going to be at a disaster beforehand so everyone is on the same page, so when the decision is made it is actually implemented.

Chairman MILLER. Do you think the new proposals from Homeland suggest that that can be done?

Dr. JACKSON. I am encouraged by the documents that we have seen since 9/11. They have what I would call sort of the blueprint for doing this. They at least have the words in there that it is going to be a multiagency function and that you do have to have sort of a unified command for safety, if you will. There is a big difference between having those words in a policy document and being ready to do it. We went to sort of the issues of exercises and having key people trained to play those roles in place as sort of the key elements for doing that. But as we saw in Katrina, there has been some progress made, but we are not to the point where we can implement it seamlessly and as quickly as we need to at a major disaster because of the intensity of the hazards early on.

Chairman MILLER. Thank you. Mr. Fortuno.

Mr. FORTUNO. Mr. Chairman, first I want to thank—even though I know she had to leave—my colleague, Carolyn Maloney, for mentioning our firefighters from Puerto Rico. I also understand, Ms. Clarke, that some of our own OSHA personnel were in New York assisting in these procedures.

Mr. Chairman, from the hearing and the testimonies, it is clear that, yes indeed, we must have a process by which we take care of not just our response to a crisis like this and that we engage in rescuing operations, but we also have to take care of our rescuers' health needs in the process. And I believe we have learned a lot from this. And what I would say is that we don't know what will be next, but we must make sure that regardless of the circumstances, whether it is a hurricane, whether it is a terrorist act, whatever, that indeed we here in Congress actually assist in the process of having a blueprint to be followed.

So for that I thank you again for the hearing.

Chairman MILLER. Mr. Scott.

Mr. SCOTT. Thank you, Mr. Chairman.

Ms. Clark, I am a little unclear. Did OSHA personnel know and see what everybody else saw, that people were wandering around the site without the proper equipment?

Ms. CLARK. I dedicated over 75 people a day. All 250 of my employees throughout my region, as well as another 800 from OSHA, came and helped us to have a 24-hour, 7-day-a-week presence on that site. We were in the pit. We were on the pile. We were everywhere the workers were. I had an industrial hygienist dedicated to doing compliance checks. We had people walk up to firefighters, who are outside of our normal jurisdiction; to construction workers; to anyone on the site.

I myself was down there. I worked the first 90 days. I went to that site. I went up to workers and said, please put on your respirator, please wear these safety goggles. I pulled people back. I did something about a fall hazard, an open pit area. We all worked very hard on this. Yes, there were people who did not wear respirators. We put people out on the pile with the respirators. We had gaters that went around to be able to go directly there because we were concerned that people may not come through every point where we had the respirators.

We were there, we understood that. We worked with the agencies, we worked with the union stewards. We had walk-arounds.

Mr. SCOTT. I guess part of the problem was people were wandering around without their equipment. However, if the message was communicated—because there were other messages communicated that there is no problem—obviously the communication was not made in such a way that people knew that they were almost killing themselves by wandering around without the appropriate equipment.

Ms. CLARK. I respectfully disagree with that. The message was loud and clear that any worker in that area was required to wear respiratory protection. These signs were posted everywhere. I had people there—not only my 75 people a day, but the Department of Design and Construction was there, the Department of Health. Stewards would go up to their employees. The fire department had safety people.

Mr. SCOTT. When you were giving that message, and the EPA had said “monitoring and sampling conducted on Tuesday and Wednesday have been very reassuring about potential exposure of rescue crews and the public to environmental complaints. Short-term, low-level exposure of the type that might have been produced by the collapse of the World Trade Center buildings is unlikely to cause significant health effects,” EPA and OSHA, who work closely with rescue and cleanup crews to minimize their potential exposure, but the general public should be very reassured by initial samplings.

Ms. CLARK. That quote was for the public outside of the project. Administrator Whitman went on to say, But employees working at the project, working on the pile, need to wear respirators. In every meeting I was in with EPA, we all were in agreement. If you were at that site, if you were working at that site, you needed to wear the high-level protection of respirators that I talked about. That was not a question. It was posted everywhere. We gave out notices, fliers with the sampling results.

Honestly, I can't tell you how many times we went to people and practically begged them. We had people refuse us. I had compliance officers threatened by some personnel on this site, telling them that if they reminded them again to wear a respirator, they were going to take action against them, hit them, throw them off the site.

Mr. SCOTT. Mr. Cordero, did the workers at the site get that kind of message?

Mr. CORDERO. I was mostly inside the school, and I am going to be very honest with you. I was amazed, because in front of me there were three rescue workers—I am not too sure they were firefighters. They were completely on the floor, sleeping. And a gentleman that came out directly from the pile, took off his suit. The only thing I could really see was really his eyes. He was completely filled with dust. He took off his jacket and everything else and just threw it on the floor. The dust just piled up in the air. I personally didn't remember anybody from the EPA or whoever department to come to the school with any type of monitoring equipment or just telling us to put the mask on. Most of those guys that came directly from the pile came into the school to wash up, to take a nap, to

eat inside the building. Most of those guys were filthy when they came in. We had hoses inside the bathroom so these guys could hose themselves down, so they can have something to eat and then go back to the site. I personally don't remember seeing anybody inside the school. I don't remember outside. I was mostly cleaning, doing the schools.

Mr. SCOTT. Thank you.

Mr. Chairman, if I could remind Ms. Clark, we want an answer on the clarification to the sentence, "OSHA's breathing zone samples revealed exposures well below the agency's permissible exposure limits for the majority of chemicals and substances tested." If you can give a clarification of that sentence in writing.

Chairman MILLER. We will follow up on that.

Ms. Clarke.

Ms. CLARKE. Thank you very much, Mr. Chairman. With all due respect, Ms. Clark, if what you say, that Administrator Whitman's statement was, is true, at best it sent a very mixed message to an extremely traumatized population that was really interested in making sure that we reached our loved ones as soon as possible. Telling the city of New York that the air was clear to breathe sent a message for people who probably would not have gone to the pile to begin with if there were a caution set up, and sent people across those bridges, through those tunnels to that pile and jeopardizing their health. My recollection is that she said the air was clean, end of story. There was no follow-up about anyone's caution with regard to equipment that needed to be utilized or anything like that.

Let me return to the issue of HAZWOPER. That is a very intriguing one and one that you said could not have been used unless the EPA declared the area a Superfund. I wanted to find out from you, is—OSHA's HAZWOPER standard states it covers the emergency response operations at any workplace when there has been a release or a substantial threat of a release of hazardous substances.

Wouldn't you agree that there was a release or a substantial threat of a release of hazardous substances here, even if you couldn't measure them all?

Ms. CLARK. I believe when I answered I think it was the Chairman's question about the HAZWOPER, that, in fact, the safety and health plan, that was enforced at the site by the coincident commanders who were responsible for the site.

Ms. CLARKE. Yes, but my question is—

Ms. CLARK. Required—required—the requirements that you would under HAZWOPER but for the Tyvec clothing. That is the other requirement that would not necessarily have worked there. We discussed it.

And so, in effect, they were using the wet-down methods, they were using the appropriate respiratory protection that you would do under the HAZWOPER standard. And that was the joint decision of all of the safety and health professionals, for all of the agencies, the contractors and the unions.

Ms. CLARKE. Okay, Ms. Clark, let me—

Ms. CLARK. There was this site safety and health committee that was union management that agreed to—



Ms. CLARKE. Let me just follow up with you. Again, I think that most people, ordinary citizens, perhaps even the workers there, would have looked to OSHA for leadership with respect to this matter. They often do. We are all familiar with the technical expertise that you provide.

But if you don't believe HAZWOPER was usable in this situation, is there a need for a different, enhanced HAZWOPER-type standard, especially considering the future response workers may have to face with respect to biological agent, dirty bombs, Avian flu epidemics? How can we provide adequate protection for these responders?

Ms. CLARK. I believe that is beyond the purview of my authority as the regional administrator who was at the World Trade Center for the future. But what I—

Ms. CLARKE. You talked about 30 years of experience and everything—

Ms. CLARK. To tie that—

Chairman MILLER. One at a time here. Let her finish the question, and then you will finish the answer.

Ms. CLARKE. You just said to us you have 30 years of experience and all this other wonderful stuff about OSHA and its personnel. And I don't believe it is above your pay grade to project for the people who are really concerned about some of the mishaps that happened here what you could see as a tool that can make sure that an incident of this magnitude never happens again, and that you are equipped or some agency is equipped with the type of tools it needs, particularly in light of the fact that we are dealing in a time with biological agents, dirty bombs, Avian flu. We had Anthrax right after this event in New York City.

So we would really like to hear something from you with regard to that.

Ms. CLARK. Well, I appreciate your concern about the future, that is why, in our lessons learned, we looked at what we could do. And we strongly recommended that OSHA have the lead in dealing with worker safety and health in incidents of national significance.

That is why there is the Worker Safety and Health Annex. There is a question of whether it could be more, but I was at least encouraged that that is there. That does allow us to have that involvement, to have our expertise used, to have us in a position where we are the coordinating agency.

OSHA has also done things to prepare for many of the substances and issues that you talked about. We have specialty teams that can address biological, radiological, structural collapse and chemical issues. We have put those in place. We have had specialized training. We have actually trained in exercises. As Dr. Jackson mentioned, it is so important to know the other workers, the other responders, the other agencies. We have been working on that.

And you are absolutely right, I couldn't agree more, that it is very important that we take our lessons learned from World Trade and do better for the workers in all future activities. We see the Safety and Health Annex as a very big start in that. And we have done training. We have done worker site training for construction workers, so that they understand how better to protect themselves

in the future when they come forward as heroes, really, and volunteer in these situations to help out the responders.

We are doing a lot of work—

Chairman MILLER. The gentlewoman's time has expired.

I would just like to tack on to what Ms. Clarke—and we can follow up on this—but, again, in the documentation of the various safety meetings, the point is raised that the Teamsters raised questions regarding OSHA's role at the site. They indicated they would get better compliance from the workers if OSHA enforced the regulations.

OSHA explained that, "We are following existing protocols of catastrophic and emergency operations. We explained that we were at the site in an advisory capacity only. Captain Revella told the group that he understood that this has been OSHA's role in every emergency in which he and OSHA had been involved. Kelly McKinney again indicated that he understood our position, but he still felt that OSHA's enforcement would be useful very at the site."

Obviously, these are people who are responsible for other workers at the site who are saying your presence in an enforcement capacity we believe would bring about better compliance, in terms of the safety operational standards, whatever you agreed upon in this committee, at that site. AND I think that is the question that is being raised over and over by members of the committee, but we will follow up on that after the hearing.

Mr. Nadler.

Mr. NADLER. Thank you.

It was interesting to hear a moment ago that you said that, with respect to having the worker protection, at least a support annex, if not an emergency support function, you were glad you accomplished that much. I suppose in this administration getting worker protection mentioned at all is a great accomplishment, so I congratulate you.

In your testimony, Ms. Clark, you say the key to success at the World Trade Center site was working in close partnership. Do you consider what was done at the World Trade Center site a success?

Ms. CLARK. I do. And I don't think I speak alone from that. The two statements that Congressman McKeon mentioned that have been sent in by two of the union representatives who worked very closely with us at the site who were there I think attests to their opinion that it was a success. There also have been other documents from many of the unions that we worked closely with. The head of the—

Mr. NADLER. Ma'am, excuse me. I asked you yes or no. I have a number of questions. You said yes.

I simply want to comment that when 70 percent of the first responders are sick, it was a catastrophic failure. Maybe it wasn't the fault of OSHA or EPA or somebody or the city of New York or whoever—although I think it was, to some extent. But when 70 percent of the workers are sick, it was not a success; it was a catastrophic failure. And if you consider it a success, maybe that does not augur very well for future developments.

Let me ask you another question. You said, you testified a few moments ago, that you and OSHA did everything you could to get people to wear their respirators and so forth. You testified to that.

OSHA, however, passed out paper masks that said, "Warning: This mask does not protect your lungs."

Do you believe that paper filament masks provide adequate protection against asbestos or ultra-fine particles? And if you knew that respirators were necessary, why were you passing out the paper masks?

Ms. CLARK. I am sorry, I don't know what you are reading from that suggests we passed out paper masks.

Mr. NADLER. There was plenty of testimony at other hearings to that. There were plenty of testimony at other hearings from workers and others that that is exactly what OSHA was doing at various points.

Ms. CLARK. OSHA never passed out paper masks.

Mr. NADLER. All right. There is a conflict of testimony.

How many compliance letters did you issue for nonwearing of respirators?

Ms. CLARK. I would have to provide that for record. I don't know the number off the top of my head.

Mr. NADLER. Could you, please? Thank you.

Dr. Landrigan, obviously the air at the World Trade Center was highly toxic, or otherwise all these people wouldn't be—and a lot of tests show that otherwise all these people wouldn't be sick.

Could you comment, in light of what we now know, on the PELs, the permissible exposure limits, that OSHA was relying on? Did they, in fact, rely on those limits, or were those limits ridiculous? Or was something else the case?

Dr. LANDRIGAN. Well, it is axiomatic that those OSHA standards are set through a negotiated process, in which the medical input is only one component.

Mr. NADLER. The medical component is only one component.

Dr. LANDRIGAN. Yes, sir.

Mr. NADLER. What are other components.

Dr. LANDRIGAN. There are also issues of feasibility, issues of cost are considered—

Mr. NADLER. Issues of cost.

Dr. LANDRIGAN [continuing]. By OSHA when they set standards.

Mr. NADLER. So that the physical exposure limits may be medically unsafe if it is judged too costly to get it down to safe levels?

Dr. LANDRIGAN. Well, there are certainly documented instances in which the medical community, including NIOSH, the National Institute for Occupational Safety and Health, have recommended standards that ended up being substantially below the standard that OSHA adopted.

Mr. NADLER. And if those OSHA-adopted standards are substantially below what the medical community recommended, would that, in your judgement, pose medical threats to first responders and others in the area.

Dr. LANDRIGAN. Yes.

Mr. NADLER. Thank you.

Mr. Melius, in your testimony, you state that the lack of more comprehensive OSHA involvement at the World Trade Center site, including enforcement, contributed to the development of these health problems.

Now, we have heard testimony from Ms. Clark that they did the best they could, that they didn't think they should go into an enforcement mode because of various—we have heard all that testimony.

Could you give us your opinion on all of this?

Mr. MELIUS. Yes. I think that they absolutely needed to go into enforcement mode. When you see a situation where there is such limited compliance with the use of safety equipment and other safety measures, then I think that absolutely calls for stronger action.

And, again, I think, going forward, as we potentially face similar incidents like this, a number of other situations, dirty bombs, chemical attacks and so forth, we need to have a strong OSHA enforcement role at these sites. There needs to be at least one party that is officially responsible, and they have to have the ability to enforce health and safety requirements.

And if OSHA feels that they are limited by their current regulations in taking those steps, then they need to be changed. These are not times when we can spend 10 years in court arguing about a particular enforcement.

Mr. NADLER. Thank you.

Just one final question. Dr. Landrigan and Mr. Melius, do you think, in light of everything we know, would you agree with Ms. Clark that the enforcement actions at the World Trade Center were a success?

Mr. MELIUS. They obviously weren't. We are having so many people that are sick now, I think it speaks for itself.

Mr. NADLER. Dr. Landrigan?

Dr. LANDRIGAN. Too many people are sick.

Mr. NADLER. Thank you very much.

I yield back.

Chairman MILLER. Thank you.

Ms. Maloney?

Mrs. MALONEY. Thank you.

Mr. Cordero, you testified that you spent time at the site as a volunteer, in addition to your professional duties. And volunteers played a very, very important role at Ground Zero. To me, some of the most inspiring sites was the "bucket brigade," which was primarily volunteers, helping the fire, remove debris, trying to find people.

But right now OSHA does not cover volunteers. And do you think we need to change the law to cover volunteers, particularly in areas such as the terrible day of 9/11?

Mr. CORDERO. Absolutely. I personally think they should change the law on that, those people who go out there on their own and volunteer to help others. Sure, I think something should be done.

Mrs. MALONEY. I think it is important to put in perspective that 9/11 was a truly horrific day, but it was also probably the greatest rescue effort in the history of our country.

On 9/12, when I was down there at Ground Zero at the headquarters in one of the schools, the Mayor's office and the Governor's office were predicting that 25,000 to 65,000 people died. And we know that it was less than 3,000 innocent people lost their

lives that day. Yet thousands and thousands more lost their health due to the toxic particles that are now in their lungs.

That was why I was very pleased to join Denis Hughes, who was the president of the AFL-CIO for New York State, in a rally that we had this Saturday before 9/11, Mr. Chairman, at Ground Zero, in support of providing health care and monitoring for everyone who was exposed to the deadly toxins, and building on these centers of excellence that we have put in place.

And, very importantly, we are now only monitoring the responders. As we have heard from Mr. Cordero and others, we need to monitor the volunteers, the residents, the school children—everyone who was exposed to these deadly toxins.

We include in the bill the opening of the Victims' Compensation Fund. The Victims' Compensation Fund was there for the innocent people who lost their lives, but, in my opinion, the true heroes and heroines are those who made a decision to rush into a burning building, to go into a pile that burned for months, to work to help a recovery and to help try to find lives.

These are the true heroes and heroines of 9/11, yet they were not covered, are not covered, in the Victims' Compensation Fund. And many of us are working very hard to open up that fund and provide it for the true heroes and heroines of 9/11.

Dr. Landrigan, we have heard from Mrs. Clark and others that the most deadly fumes were there in the first 48 hours and that the vast majority of the health consequences came from that period, and, therefore, nothing could have been done to prevent the problems.

Do you believe this is an accurate observation? You know, obviously, in my opinion, the times I was down there, the fumes were there for months.

Dr. LANDRIGAN. The fumes were there for months. And the airborne suspended particulates and other toxic materials were there for months. After all, the fires burned until pretty much the end of December of 2001.

It is true, of course, that levels were highest on 9/11 itself, and the cloud levels were next highest in the following 48 hours. But people were exposed to unsafe levels of materials for weeks and months thereafter.

Mrs. MALONEY. Well, we have heard a great deal of discussion today about respirators and the need to have worn them at the site. But what else could have been done to help protect the workers?

I do want to point out that we did not lose one life in the recovery, which is really extraordinary, given the fact that it was probably the most dangerous recovery site in the history of our country.

But what else could we have done to protect workers? Shorter hours, no night shifts? What could we have done in addition to the respirators to have had a safer work environment?

Dr. LANDRIGAN. Well, first of all, I agree with you that the prevention of even a single fatal accident was a remarkable accomplishment.

And also, we have to recognize that many of the standard industrial hygiene practices that would be used in a static industrial set-

ting—workplace enclosure, protection of hazardous machinery—are simply not applicable here.

It is axiomatic in occupational medicine that when you can't use engineering controls, like process enclosure, to protect the workers, that you must equip the workers with proper personal protective equipment.

One of the things that happens on a work site is that average exposures over a work shift may indeed be below a pre-established legally mandated standard, but that doesn't gainsay the possibility that there are puffs of intermittent exposure in the course of that shift.

For example, when the construction workers pick up a beam and the asbestos-containing dust flies out, the aggregate exposure over the 8 hours may be way below the standard but the momentary exposure might be enough to permit significant inhalation of toxic dust.

Mrs. MALONEY. I thank you.

And my time has expired.

Chairman MILLER. Thank you.

It is the intent of the Chair to allow another round of questioning, but that round is going to end at 12:30.

So I just would like to ask one question of Dr. Melius, and that is back on the question of the HAZWOPER approach and whether this could have been used more effectively.

It apparently wasn't used, but the suggestion is the totality equals HAZWOPER and whether or not this could have been used.

Mr. MELIUS. It certainly was designed—I was involved in the writing of the HAZWOPER standard. I was actually a witness for OSHA when they promulgated it. And it was certainly originally designed to apply to these types of situations where there are multiple chemical toxic hazards, where it was difficult to fully assess those hazards in a timely way because they were so rapidly changing. And it certainly would have provided the level of protection, and it provided through the standard the enforcement of those protections. So I think it was very much applicable.

Now, whether over time OSHA has changed their interpretation of how it is applied, I don't know. But certainly, 20 years ago when Congress mandated that that be passed and when OSHA promulgated that standard, that was something that was put in place and designed for these types of situations and would have provided the proper framework and the proper protection if it had been enforced.

Chairman MILLER. I think it is important that we take another look at this. And I would say, as one who represents a district with multiple refineries, chemical plants—and I have Homeland Security traipsing through my district all the time with the Coast Guard and others—it doesn't take a long stretch of the imagination where we would have an uncharacterized event of substantial complexity, and the ability to be able to protect the responders who would respond to that, either inside a facility or in the community—you would not get a lot of time before you had to make a decision. And I think if the legal authority isn't clear, we have to take another look at this.

And I thank you for your response.

Mr. Fortuno?

Mr. FORTUNO. Thank you, Mr. Chairman.

Mr. Chairman, when I got to this hearing, I was the first one to bring up my concern with the health of those rescuers and everyone involved in this. And I think that has to be our prime goal here.

I am troubled, however, by the direction that some of the questioning has taken. And I want to put this into the proper perspective.

Our Nation hasn't faced anything like this probably since Pearl Harbor, and in an urban, civil environment probably since the British invaded our Nation's capital. So really, we have to put everything into perspective and actually try to learn lessons from what we did wrong, what we could have done better, but not to try to gain anything politically from this. Those that gave their lives in trying to do their best for our Nation deserve much better from us.

Having said that, Ms. Clark, we have dwelled a lot on what happened and what was done with those rescuers that weren't there at Ground Zero. We haven't talked however, and we should learn as well, from what was done and what should be done to address any hazards that were faced by workers outside the World Trade Center within Region 2, which I understand included States around New York City and the Virgin Islands and Puerto Rico, and what we have learned, what we should have done better and what we could have done better.

So if you could address that?

Chairman MILLER. You have to do it very quickly, and we would take your answer on the air, as they say.

Ms. CLARK. Okay.

We actually did have full enforcement issuance of citations in the area immediately around the site. There were buildings there that was not controlled by the project, that was not controlled by the safety and health plan. We went into full enforcement mode, with citations and inspections.

We also did inspections throughout the rest of my region. I had people—my 250 people worked during the week in their regular offices doing normal work, because we did not want to shortcircuit the other workers in the country. And then on weekends, they came to New York and worked there. That is why we brought in the people from outside the region to help during the week.

So we were conscious of the fact that we needed to protect all the workers, both those on the site and outside.

Chairman MILLER. Okay, thank you.

Ms. Clarke?

Ms. CLARKE. Thank you, Mr. Chairman.

I just want to, first of all, acknowledge—I didn't have an opportunity to—your heroics, Mr. Cordero. You responded to a call. Like many New Yorkers, you came from uptown all the way downtown, left your family to really do what you could to really help New York. And we owe you a debt of gratitude. I don't think there is enough that can be said or even financed to really demonstrate how grateful we truly are. And I wanted to express that for the record.

And to Dr. Landrigan, Mount Sinai and the work that you have stepped up and done, when no one else was thinking about the

health of the people of the city of New York, I want to salute you and Mount Sinai for your steadfast work on our behalf. Notwithstanding the lack of support or the understanding of what this ultimately would bring to the population of the people of the city of New York, you were there. You used your expertise, and you continue to do that today. I want to thank you, as well.

And just to close by saying, Mr. Chairman, that this is, unfortunately, a case study now. You know, it is an issue that our Nation will be facing for future generations. I hope that we can learn from this and that the expertise that has come to the table—the actual victims, survivors and heroes—will be a significant way for us, moving forward, leaving a legacy for future generations to be able to address any type of event that should occur and save life and do it safely.

Thank you very much, Mr. Chairman.

Chairman MILLER. Thank you.

Mr. Nadler?

Mr. NADLER. Thank you, Mr. Chairman. Let me again thank you for holding this hearing.

And I express my thanks to Mr. Cordero for his heroics; Dr. Landrigan for the Mount Sinai work; Mr. Melius for the wonderful work that the AFL-CIO in New York has done on this; Dr. Jackson, for your excellent report.

I want to make a comment given what was said a moment ago by my friend on the other side of the aisle. I think it is very important to go into what happened there, for several reasons: number one, to learn for the future, obviously. And I hope we are doing that; I hope we can learn proper lessons for the future.

But number two, the workers who worked there, the residents in the neighborhood, I think it is important to establish the moral debt that we owe them, the moral debt that we owe the workers, the Mr. Corderos of the world, not only because they went into a situation of danger to help us all, but also because many of them would not be sick today were it were not for the failures and the malfeasance of the Federal Government.

The Federal Government failed them. It lied to them. It told it was safe when it wasn't. It didn't enforce the law. It regards as a success a catastrophe where 70 percent of the people are sick.

And there is, therefore, a double moral debt to all these workers that establishes a necessity of our passing legislation to make sure that at least we, as in Abraham Lincoln's words, "care for him who shall have borne the battle" by providing proper long-term medical monitoring and medical coverage for the victims here, the victims of the Federal Government's malfeasance, as well as of the terrorists.

Thank you. I yield back.

Chairman MILLER. Ms. Maloney?

Mrs. MALONEY. I join my colleagues in thanking you, Chairman, and express my hope that you will follow up with legislative corrections in this area.

I thank all of the panelists.

And I would like to thank Mr. Cordero for his service and ask him: Could you tell us how important the World Trade Center monitoring and treatment program is for the responders, the true he-



roes of 9/11, in my opinion, those who made the decision to run in and help others? How important is this program?

And we are only funded, I believe, through the next year. So if we don't work together to continue funding, the program will not be there to help you and others.

How important is this program to you and to others who responded?

Mr. CORDERO. Well, this program, Mount Sinai medical treatment program, if it wasn't for them, to be very honest with you, I don't think I would be here. They really, really have done a wonderful job, with the psychiatrist, the pulmonologist specialist, the counseling, the right people to help you lead to the right direction—phenomenal doctors who understand, who took the time to pick up your call when you need it.

Most of the time, I didn't have the money to pay for my medicine. And this particular doctor, Dr. Afilaka, he just came in at 7:00 in the morning and prescribed me the medication that I needed because I didn't have the money that time.

It is a tremendous hospital that really, really helps those people like me, who cannot afford the medicines and the help.

Chairman MILLER. I want to thank—

Mrs. MALONEY. This is a difficult question—if I could follow up with him with one question. It's a difficult question to ask.

But given the sacrifice that you gave—you've lost your job, you've lost your health, you can only work in limited areas now—would you go back to that flaming pile again, knowing what you know now?

Mr. CORDERO. No. I would not go back, no.

Mrs. MALONEY. I yield back.

Chairman MILLER. Mr. Scott?

Mr. SCOTT. Thank you.

Just very briefly, Dr. Landrigan, based on the level and nature of the pollution at that site, are you surprised at the medical fallout?

Dr. LANDRIGAN. No. We were beginning to see people with cough and respiratory distress within a couple of weeks of the attacks at the World Trade Center. Firefighters, construction workers were already reporting cough. It was in all the papers very early.

So it was plain that people were inhaling material that was causing respiratory irritation. That is precisely why we set up the medical response programs that we did set up in the fall and winter of 2001, 2002.

We couldn't have predicted the actual number of workers sick whom we've seen. And, in fact, we have had to revise the number upward several times because more and more people keep coming in.

But we knew from very early on that there would be problems.

Mr. SCOTT. Thank you, Mr. Chairman.

Chairman MILLER. Thank you.

And I want to thank all of my colleagues on the committee and those who joined us this morning for the hearing.

As I mentioned at the outset, this is the first of at least two hearings but probably a series of hearings discussing other lessons learned and things to be done here in the future.

I also want to note that we invited the city of New York to testify, but because of their involvement in litigation, we were not able to work that out at this time.

And I want to thank you, the witnesses, for providing your expertise and your understanding of this situation. I hope that we will be able to continue to call on you as we move forward on this subject matter.

Thank you very much.

With that, the committee stands adjourned.

[The prepared statement of Mr. Altmire follows:]

**Prepared Statement of Hon. Jason Altmire, a Representative in Congress  
From the State of Pennsylvania**

Thank you, Mr. Chairman, for holding this hearing to explore the reasons why World Trade Center rescue and recovery workers were not better protected from health hazards at ground zero.

Approximately 91,000 people were involved in the rescue and recovery efforts at the World Trade Center in the nine months following the September 11, 2001 attack. Several studies of these rescue and recovery workers have documented a variety of health conditions that are likely related to exposure to the air at ground zero.

It is understandable that in the immediate aftermath of the September 11 attack rescue workers were not provided with and required to wear additional safety equipment; however, it is unclear why recovery workers were not required to wear respirators and other safety equipment to safeguard them from the polluted air at ground zero following the initial rescue efforts.

I hope that this hearing helps shed light on the decisions made by the Occupational Safety and Health Administrations in the aftermath of the September 11 attack on the World Trade Center, and that the lessons from this hearing can help ensure rescue and recovery workers are better protected in the future.

Thank you again, Mr. Chairman, for holding this hearing. I yield back the balance of my time.

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[The prepared statement of Mr. Fossella follows:]

**Prepared Statement of Hon. Vito Fossella, a Representative in Congress  
From the State of New York**

With the sixth anniversary of 9/11 having just past, it is time to reaffirm our commitment to "Never Forget." We must never forget the people that died on that day, and we must also never forget those who are sick and dying for being heroes and volunteers that day as well.

What many here in Washington have forgotten is that a silent killer is taking the lives of the rescue, recovery, and clean-up workers, as well as the volunteers, area residents and workers and students who were at Ground Zero. All of them breathed the toxic air created by the destruction of the towers, and many of them are suffering as a result.

A New York City Health Department study showed an increased incidence of asthma for those who worked the pile, and a Department of Health and Human Services (HHS) study reported that illnesses as a result of exposure to 9/11 toxins are on the rise.

Progress in helping the sick and injured can best be measured in small steps rather than giant leaps as critical needs continue to be unmet after six years. My colleagues and I have worked across party lines fighting for health monitoring for all who were exposed, adequate funding to treat those who are sick or injured and a comprehensive federal plan to ensure that anyone impacted by 9/11 gets the care he or she deserves.

We have encountered many obstacles along the way, but we have also achieved some successes. Working with Congresswoman Maloney in particular, we restored \$125 million in funding after it had been rescinded. Of that money, \$75 million was dedicated for treatment—the first-ever federal dollars to be directed for that purpose. We were also able to create a health czar, Dr. John Howard, to help coordinate and oversee the Federal response. In addition, we included \$50 million for federally-funded 9/11 health clinics in the Labor HHS appropriations bill to ensure that the unsung heroes of 9/11 have access to the care they need.

These are steps in the right direction, but there is still so much more to do.

That is why we have drafted H.R. 3543, the James Zadroga 9/11 Health and Compensation Act of 2007—a critical piece of legislation that addresses several key areas to help our heroes who are sick today as well as anyone who falls ill in the future. The bill:

- Ensures that everyone exposed to the Ground Zero toxins has a right to be medically monitored and all who are sick as a result have a right to treatment;
- Builds on the expertise of the Centers of Excellence, which are currently providing high-quality care to thousands of responders and ensuring on-going data collection and analysis;
- Expands care to the entire exposed community, which includes residents, area workers and school children as well as the thousands of people from across the country who assisted with the recovery and clean-up effort; and
- Provides compensation for loss by reopening the 9/11 Victim Compensation Fund.

Over the years, I have heard too many stories about a young firefighter who ran a 6-minute mile in his thirties, but now has trouble walking up a flight of stairs \* \* \* or the police officer who was forced to retire in his forties because he has become too sick to work.

America cannot turn its back on the men and women who were there to help America recover after the 9/11 attacks. I don't think it is the right thing to do, which is why this legislation is so important.

On a very personal level, I know too many people across Staten Island and Brooklyn who were willing to risk their lives. I know many who risked their lives and gave their lives on September 11. But the untold story, and it will be told for years and years to come, are about so many people who stayed there for the recovery and rescue effort and who now are in need our help. This legislation that we are proposing will help them give a degree of certainty.

I applaud the work of my colleagues for coming together to help those whose health is in danger because of exposure to ground zero on that fateful day. I pledge my full support of these efforts as we move forward, because I truly affirm to "Never Forget."

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[Whereupon, at 12:37 p.m., the committee was adjourned.]

