NYC Health

Testimony

of

Carolyn Greene, MD
Deputy Commissioner for Epidemiology
New York City Department of Health and Mental Hygiene

before the

New York City Council
Committee on Civil Service and Labor,
Committee on Lower Manhattan Redevelopment and
Committee on Mental Health, Mental Retardation, Alcoholism, Drug Abuse and Disability Services

regarding

Oversight: Examining the NYC World Trade Center Medical Working Group 2011 Annual Report on 9/11 Health

January 30, 2012

250 Broadway
Committee Room, 14th Floor
New York, NY

Good morning. I want to thank Chairs Sanders, Chin, and Koppell, as well as the other distinguished members of the Council for convening this hearing examining the NYC World Trade Center (WTC) Medical Working Group's 2011 Annual Report on 9/11 Health.

My name is Dr. Carolyn Greene. I joined the NYC Department of Health and Mental Hygiene (DOHMH) in January 2008 and was appointed Deputy Commissioner nearly two years ago. I oversee the work of the WTC Health Registry and represent the Department on the WTC Medical Working Group, which is co-chaired by Deputy Mayor Linda Gibbs and Health Commissioner Thomas Farley.

When I testified last year before the Council, the *James Zadroga 9/11 Health and Compensation Act* had recently become law. This was due to the extraordinary efforts of the New York Congressional delegation, New York City officials, including you and other Council members, and labor and community advocates who worked tirelessly here and in the nation's capital to ensure that thousands of World Trade Center responders and survivors would have access to integrated physical and mental health services through at least 2015. As you are well aware, prior to enactment of the Zadroga Act, New York City's three clinical WTC Centers of Excellence and the patients they treated did not know from one year to the next whether or not the federal government would provide the funding necessary to ensure their continued care.

A critical component of the City's strategy in pushing for passage of the Zadroga Act was the appointment of the WTC Medical Working Group by Mayor Bloomberg in 2007. Mayor Bloomberg charged the WTC Medical Working Group with reviewing the peer-reviewed literature and publishing an annual report synthesizing key findings so that policymakers, the media and the public would better understand what science can tell us to date about the health impacts of 9/11.

I am pleased to serve with 15 other members of the WTC Medical Working Group who, in addition to Deputy Mayor Gibbs and Commissioner Farley, include representatives of NYC's three WTC Centers of Excellence, as well as scientists and 9/11 health experts from inside and outside of City government. Our 2011 report coincided with the publication of new research published around the time of the 10th commemoration of September 11 terrorist attacks. This gave us an opportunity to summarize an entire decade's worth of research findings and the important lessons that we have learned.

The findings have been remarkably consistent across the 300 studies that we reviewed through September 2011, which also saw the publication of the first cancer and mortality analyses in WTC-exposed cohorts. These analyses are ongoing, and will yield greater insights about the long term health impacts of WTC exposure as more time passes.

Mental Health Conditions

Results from large epidemiologic studies, including one based on WTC Health Registry research and published by the *Journal of the American Medical Association*, show that probable post-traumatic stress disorder or PTSD is the most common WTC-related health effect among exposed adults, and that it often co-occurs with respiratory illness. Several studies have suggested that the severity of symptoms may vary over time and that factors not related to 9/11, such as prior or subsequent trauma, job loss and lack of social support may influence symptom severity. The research also teaches us several important lessons about how to decrease trauma risk for first responders in future disasters, including limiting the number of hours they can work at a disaster site to the extent possible, and making sure that both first responders and volunteers receive adequate training for their assigned tasks.

Depression, anxiety and substance use disorders have not been as well studied as PTSD among WTC-exposed people. However, the limited research to date indicates that a substantial number of people with WTC-related PTSD also are experiencing these other mental health conditions.

Physical Health Conditions

Dozens of studies demonstrate that respiratory symptoms, sinus problems, asthma, and loss of lung function were diagnosed in or reported by many who were exposed to WTC dust, including nearly 60,000 rescue and recovery workers, residents and office workers who have enrolled in 9/11 health programs. For many, these conditions have persisted for nearly a decade.

In September the *Lancet*, a leading British medical journal, published an important longitudinal study of more than 27,000 rescue and recovery workers who sought treatment at the New York/New Jersey WTC Clinical Consortium, based at the Mount Sinai School of Medicine. Researchers conducted detailed physical exams of each worker and analyzed self-reports of physician diagnoses from 2002 to 2010. Among those workers still in treatment, nearly 2,000 had active asthma; and more than 2,000 had sinusitis. Workers who reported greater levels of exposure at the WTC site were at higher risk for these conditions.

In my testimony last year, I mentioned that a Fire Department of New York study published in the *New England Journal of Medicine* showed that the steep declines in pulmonary function among firefighters and emergency medical service workers within a year of 9/11 have largely persisted even among non-smokers. More recent studies also have identified persistent abnormal pulmonary function in other WTC rescue and recovery workers, including police, and in Lower Manhattan residents and area workers. A new study from the WTC Health Registry that analyzed the health impacts of the World Trade Disaster on volunteers also shows that lay or unaffiliated volunteers, who were more likely to have been present in Lower Manhattan and experienced the dust

cloud on 9/11, were at higher risk for a post 9/11 diagnoses of asthma or reactive airways dysfunction syndrome.

The persistence of respiratory illness among rescue and recovery workers and volunteers emphasizes the importance of making sure they are trained in the use of respiratory protection prior to future environmental disasters, and that when these disasters occur they are provided with adequate protection and are required to wear it. A 2011 study of nearly 10,000 rescue and recovery workers and volunteers enrolled in the WTC Health Registry found that fewer than 20% of workers reported using a standard respirator on 9/11. Nearly 5,000 workers and volunteers didn't use any kind of face covering at all that day. Workers and volunteers without respiratory protection were more likely to report recurrent respiratory symptoms and some respiratory disease than workers who used respirators.

However, use of adequate respiratory protection isn't the only lesson that we have learned from the experiences of WTC rescue and recovery workers. Several studies also have suggested that shift rotation, to the extent possible, can help prevent respiratory illness **and** posttraumatic stress disorder among rescue and recovery workers by limiting the duration of their exposure to horrific events and environmental contaminants.

Co-morbidity

In fact, new clinical research from the Fire Department and the NY/NJ WTC Clinical Consortium published last year shows that a substantial number of WTC rescue workers continue to suffer from **both** mental and physical health effects related to their exposure. A study of nearly 11,000 firefighters 7 to 9 years after 9/11 found that 42% of those reporting symptoms of probable PTSD, also reported a physician diagnosis of asthma, bronchitis or COPD/emphysema. Researchers at the NY/NJ WTC Clinical Consortium identified similar comorbidity in their *Lancet* study: nearly half of 1,500 workers with asthma and a third of 2,000 workers with sinusitis also reported at least one mental health condition, including PTSD, depression or panic disorder.

Two recent studies from the NY/NJ WTC Clinical Consortium and the WTC Health Registry suggest an association between WTC exposure and sarcoidosis, an inflammatory disease that can affect any organ, but typically affects the lungs. This association was first noted in firefighters; the new research found the association in other rescue and recovery workers, and that the risk for sarcoidosis increased significantly for those who worked on the debris pile at the WTC site.

Cancer & Mortality

The scientific literature summarized by the WTC Medical Working Group extensively addresses the short- and mid-term health effects of 9/11. However, only now, a full decade after the attacks, has enough time elapsed for research to begin emerging about the potential long-term health effects, including cancer and premature mortality.

The special 9/11 edition of the *Lancet* included the first WTC cancer risk study to be published. Fire Department researchers looked at nearly 9,000 male firefighters who responded to the WTC disaster. They found 263 new cases of cancer from 9/11 through 2008, 25 more than would have been expected among men of similar age, race and ethnicity in the general population. When FDNY researchers compared WTC-exposed firefighters to non-exposed firefighters, they found a 19% increase in cancer overall after controlling for potential biases that might have contributed to the increase.

The same issue of the *Lancet* also included the first study of mortality among people exposed to the WTC disaster. WTC Health Registry researchers identified 790 deaths from 2003 through 2009 among nearly 42,000 adults who resided in New York City when they enrolled in the Registry. The death rate from all causes among Registry enrollees was 43% lower than among New York City residents. The large number of workers and volunteers who were likely healthier than the general population when they enrolled in the Registry may help explain this finding.

However, this mortality study also showed that among Lower Manhattan residents, area workers and passersby in the Registry, those with higher levels of WTC exposure may be at greater risk for death from all causes and cardiac related death in particular compared to those with intermediate or lower levels of WTC exposure.

The WTC Medical Working Group noted that additional studies are needed to determine if the early findings from these initial cancer and mortality analyses are replicated in different populations with different exposure levels and if they change over time.

These cancer and mortality studies highlight one of the most significant challenges that WTC researchers have faced: the difficulty in measuring, with any precision, how much and what type of exposure different people had to the traumatic or environmental impacts of 9/11. More precise exposure measurements would have helped researchers establish whether or not a dose/response relationship exists between WTC exposure and any kind of illness. Another challenge to understanding the relationship between WTC exposure and illness is the variability in the broad exposure measurements that do exist depending on the population being studied.

This variability in available exposure measurements became even more apparent in the past year when members of the WTC Medical Working Group representing the Health Department, the Fire Department and NY/NJ WTC Clinical Consortium and the WTC Environmental Health Center completed an extensive analysis of exposure variables for rescue, recovery and clean-up workers based on the different surveys each of us has used in our research. We were able to identify only three common exposure variables: dust exposure on the day of 9/11; work periods at the WTC site; and work activities at the WTC site. This effort has taught us the importance of establishing cross-study collaborations at the outset for future disasters, something that may be difficult to do in the immediacy of a disaster.

Progress on WTC Medical Working Group Recommendations

The 2011 WTC Medical Working Group annual report also reviews the progress that has been made in implementing the group's recommendations. By passing the Zadroga Act, Congress implemented our 2008 recommendation to secure long-term funding for World Trade Center-related health services and research.

In addition, members of the WTC Medical Working Group have made enormous progress in increasing awareness of WTC-related symptoms and the availability of clinical resources for people who were exposed to the disaster. This fulfilled a key recommendation to improve outreach efforts among anyone who might have been exposed to the disaster. These efforts include a subway advertising campaign that has significantly increased the number of WTC survivors seeking treatment and the publication of clinical guidelines for primary care providers to improve the diagnosis and treatment of WTC-related illnesses among adults, children and adolescents exposed to the WTC disaster. Our report cites many other examples of this progress in educational initiatives.

Much of the research recommended by the WTC Medical Working Group in our 2008 and 2009 reports is now published in the scientific literature, including the preliminary cancer and mortality findings that I have already mentioned; research estimating the burden of WTC-related illness; research about the persistence of both mental and physical health conditions; and research about the impact of tobacco use on WTC-exposed populations.

Despite the enormous progress researchers have made in understanding the health effects of the 9/11 attacks during the past decade, the WTC Medical Working Group also identified a number of areas that need to be more fully addressed. These include:

- assessing the mental and physical health of WTC-exposed children, and the children of WTC-exposed first responders, most of whom have now aged into young adulthood
- evaluating the effectiveness of treatment for patients with WTC-related conditions
- obtaining a better understanding of co-morbid mental and physical conditions and how this co-morbidity may influence disease progression, functioning and recovery

The good news is that the Zadroga Act also expanded funding for research. In addition to the federally funded, periodic, population-based health surveys that the WTC Health Registry has conducted among people directly exposed to the WTC disaster, the WTC Centers of Excellence and other scientific researchers can apply for grants to conduct clinical investigations and treatment outcome evaluations. Both FDNY and Mount Sinai already have received grants to continue their ongoing cancer analyses.

WTC Health Registry

In conclusion, I also would like to update you on the recent progress of the WTC Health Registry, one of most valuable epidemiologic tools available to WTC researchers and whose staff now has contributed nearly 25 articles to the scientific literature. This research, in turn, has informed our understanding of key WTC health effects, and has supported the continued availability of services at the WTC Centers of Excellence. It has also led to the development of the policy recommendations to protect the health of workers and volunteers that I mentioned earlier.

By September 11 of last year, we sent all 68,000 of the Registry's adult enrollees our 3rd major health survey which takes just 20-30 minutes to complete. We designed this survey in collaboration with numerous health care experts, including the entire membership of the WTC Medical Working Group, as well as labor and community advocates. In November, the Registry began surveying more than 1,200 adolescents and their parents for the 3rd time as well.

I am very pleased to report that nearly 39,000 adults—more than 56%— have returned their surveys to date. The response rate among adult enrollees who also responded to both of our previous surveys has been even stronger at nearly 73%. From an epidemiologic perspective, this very high response rate among those who responded to the 1st two surveys is critical because it means that we will have comprehensive health data at 3 points in time for large numbers of rescue and recovery workers, including volunteers, Lower Manhattan residents, area workers, students and passersby who comprise the Registry's cohort.

Increasing the response rate before the survey ends in March, especially among adolescents and Lower Manhattan residents, is currently the Registry's highest priority. In addition to calling enrollees who still haven't completed their surveys, we actually will be knocking on some of their doors during the next two months. We want to make sure that as many of our enrollees as possible provide us with latest information about the current state of their mental and physical health, their functional status and the quality of their lives a decade after the 2001 terrorist attack on the nation.

Our enrollees will help us better understand the persistence or resolution of posttraumatic stress disorder and respiratory illness, the two most common health effects associated with WTC exposure. And by helping us answer new questions about asthma control, sleep apnea, other respiratory diseases, cardiovascular diseases, autoimmune disorders and other potential late-emerging conditions, the findings from our 3rd survey will help inform future screening, diagnosis and treatment for the more than 60,000 patients currently enrolled in the WTC Health Program.

Thank you again for giving me this opportunity to speak on behalf of the WTC Medical Working Group.

Statement of the Patrolmen's Benevolent Association of the City of New York ("PBA") before the City Council Committee on Health and Mental Health regarding the 2011 Annual Report on 9/11 Health. – January 30, 2012.

Delivered by Frank Tramontano, Research Director for the PBA

Good morning my name is Frank Tramontano and I am the Research Director for the Patrolmen's Benevolent Association of the City of New York ("PBA"). I am here with Valerie Dabas, World Trade Center Health Coordinator for the PBA and a member of the WTC Health Program Scientific Technical Advisory Committee created in the James Zadroga 9/11 Health and Compensation Act, which was signed by the President in January 2011, and Chris McGrath an attorney for the Patrolmen's Benevolent Association who has been working on 9/11 health issues for over 6 years. We would like to thank Speaker Christine Quinn, Chairmen Oliver Koppel and James Sanders and Chairwoman Margaret Chin and their staffs for having this hearing and putting forth a committee report on this extremely important subject of the health effects of exposure from the attack on the World Trade Center over 10 years ago.

The fact is after ten years there are still thousands of people suffering from illnesses from the attack on 9/11. Currently, certain illnesses are being treated under the federal program established by the Zadroga Act. However, those who are arguably the most sick, those suffering with a myriad of cancers, have been denied treatment under the Zadroga Act. Why? Because after ten years and millions and millions of dollars in taxpayer expenditures to monitor the health effects of 9/11, after countless meetings, reports, and newspaper articles, there has been just 1 cancer study – and that is the one coming from the FDNY that considers firefighter data through 2008. More troubling, there has been no comprehensive and coordinated effort to gather data identifying all responders who are suffering from cancer.

Cancers, unlike other illnesses, have simply not been acknowledged by the City or Federal governments as having any relationship with the exposures at the WTC. Most diseases covered under the Zadroga Act have not required any level of proof to be covered under the Zadroga Bill. By contrast, a high threshold of proof has been fixed in order for cancer to be considered a covered illness. No such threshold level of scientific proof was required before it was determined that PTSD, carpal tunnel syndrome, or other illnesses be covered for treatments. Why are illnesses treated differently and why would you treat less favorably those suffering the most?

Under the Zadroga Act, the Program Administrator of NIOSH must conduct a periodic review of all scientific and medical evidence published in peer reviewed journals to determine if cancer should be added as a covered illness. When the Program Administrator was required to make his first such determination regarding cancer in July of last year, there were remarkably no published cancer reports. Since that time there has been a single firefighter study, which showed an increase of 32% more cancers in WTC exposed firefighters vs. non exposed firefighters.

The reason we are bringing this point up here before the City Council is because it is our sincere opinion that the City of New York has done nothing to facilitate any cancer study, and has been actively working to prevent a comprehensive examination of the issue. For example, they have outright refused to provide data to Mt. Sinai, which we are told is about to publish its cancer study. As a result, we expect the Mt. Sinai study to be seriously flawed simply because the report will not be able to identify all the responders who are cancer victims. The City can and should do more. The City has acknowledged that they have a database of all those police officers who were at the various WTC sites. The City also administers the PICA health benefit in which all police officers who receive chemotherapy would presumably be listed in that

database. We are also told the NYPD and Police Pension Fund maintain statistics on cancers in the police responder group. Allowing full access to these data sources, while also protecting the police officers' privacy interests, would result in a more comprehensive data set for police officers.

As the Committee may know, the PBA has been at the forefront of efforts to pass the Zadroga Act and to have cancer added as a WTC-related illness. In April 2009, it was the PBA that first expressed reservations about the Zadroga bill because it did not cover cancers. As a result of the PBA's efforts, language was added to the law that requires the Program Administrator of the WTC Health Program to conduct periodic reviews to determine if cancer should be a covered illness. Ironically, those lawmakers advocating for the bill repeatedly cited the numerous cancers as a reason for their colleagues to pass the bill. Later that year, at the request of PBA and other unions, the City Council amended RESO 1924 to include language calling on Congress to consider adding cancer as a qualifying condition for free treatment. We are here today once again to ask the City Council to assist us in moving this critical life and death issue forward. As we sit here, hundreds of WTC responders, some in their 30's and 40's, are suffering from a plethora of cancers, the unique variety of which, in our view, points to WTC exposures as the cause. Sadly, while the City and Federal governments have dragged their feet on the cancer issue, many NYC Police Officers have lost their lives to cancers.

We have been saying for years now we should not wait for scientific proof to provide for coverage and treatment of cancers. However, we believe that if a comprehensive set of data are properly studied, it will confirm that cancer is a health condition caused from exposure to the toxins from the terrorists attack on the World Trade Center. Why do we believe this to be the case? Because we see the considerable anecdotal proof. Hundreds of relatively young officers

have been stricken with cancers. Over 50 that we are aware of have lost their lives to cancer. We have 3 officers with nasal cancer when the rate is less than 1 for every 100,000 in the general population, 3 confirmed cases of bile duct cancers when the rate is 2 for every 100,000 in the general population..... We also know that the Benzene, asbestos, PCB's and various other toxins present at the site have been linked to the cancers we have seen in NYC Police Officers. There is no dispute that these carcinogens cause cancer and some of the highest levels of carcinogens ever recorded were at the WTC sites. And we know that responders, especially police officers, were at those sites without any protective gear.

Waiting for the conclusion of epidemiology studies, which can take up to 30 years, will result in a lost opportunity to treat those who are ill. Responders who have cancer, as a result of their exposure, need treatment now. We have already lost far too many responders who have not had the benefit of quality treatment under the Zadroga Act and as a result have suffered medically and financially. We believe the facts are clear and treatment should be provided to cancer victims.

So, in conclusion, we ask the City Council to reaffirm its commitment to the position that cancer be a covered illness based on the number and type of cancers we already have seen, without the need for further scientific study or proof. Second, in the event the Federal government does not adopt that position, we need the City to do all it can to make its cancer data available to enable decision makers to reach a just and proper determination that cancer should be funded for treatment. The City has acknowledged they have various databases of police officers that would reveal relevant information. We are asking the assistance of the City Council to help us to bring about the release of those databases and other data and information bearing on the issues of cancers in our police officers.

Thank you for your time and attention today. We will gladly answer any questions you may have at this time.

The City of New York
Manhattan Community Board 1
Julie Menin CHAIRPERSON | Noah Pfefferblit DISTRICT MANAGER

The New York City Council Committee on
Lower Manhattan Redevelopment Jointly with the
Committee on Civil Service and Labor and the
Committee on Mental Health, Mental Retardation, Alcoholism,
Drug Abuse and Disability Services

Oversight Hearing on
Examining the World Trade Center Medical Working Group's
2011 Annual Report on 9/11 Health

Testimony by
Catherine McVay Hughes, Vice Chairperson
Manhattan Community Board 1

Monday, January 30, 2012, 10:00 AM
250 Broadway, Committee Room, 14th Fl., New York, NY

Good morning. Thank you Chairpersons Chin, Koppell and Sanders for holding this very important hearing on 9/11 Health. I am Catherine McVay Hughes, Vice Chairperson of Manhattan Community Board 1 (CB1) and Chair of the CB1 WTC Redevelopment Committee. Thank you for the opportunity to testify today.

We continue to appreciate the important work done by the 9/11 Medical Working Group that is Chaired by Deputy Mayor Gibbs and Health Commissioner Farley, and includes representation from the WTC Centers of Excellences, the Fire Department of New York (FDNY), NYC Health and Hospitals Corporation, Mount Sinai, the 9/11 Health Registry, as well as other 9/11 health experts. This forth report issued to date summarizes a decade of research, including more than 300 studies, and monitors studies and emerging evidence about health impacts from 9/11. Last month at our WTC Redevelopment Committee, CB1 received a detailed summary about the 2011 Report from Jeffrey Hon, World Trade Center Health Coordinator of the New York City Department of Health and Mental Hygiene.

We are concerned about some of the findings in the report, including the persistence of post-traumatic stress disorder (PTSD), respiratory illness and numerous other conditions among the responder and survivor communities. As the Community Board representing the area surrounding the World Trade Center, we are troubled that children are understudied and that many exposed adults are being treated for persistent multiple conditions. In addition, many Lower Manhattan residents, area workers and passersby with high or moderate exposure had increased risk for all-cause mortality, and cardiac-specific mortality in comparison to those with lower exposure (and no exposure-related differences found among rescue and recovery workers). It will be important for the Medical Working Group to continue to monitor these trends through

49 Chambers Street, Suite 715, New York, NY 10007-1209
Tel. (212) 442-5050 Fax (212) 442-5055
man01@cb.nyc.gov
www.nyc.gov/html/mancb1

the WTC Centers of Excellence and the 9/11 Health Registry and other means, given the evidence linking WTC exposure to such a wide range of conditions including sarcoidosis, gastroesophageal reflux symptoms (GERS), depression, anxiety and substance abuse.

In light of these ongoing indications about significant health impacts in the survivor population, we believe there is a clear need for additional medical studies of the survivor population, and children in particular, who have been studied much less than responders. The James Zadroga 9/11 Health and Compensation Act of 2010 includes funding for this population, and we passed unanimously at our meeting on Tuesday, January 24 a resolution in support of proposals submitted by the WTC Health Program at the World Trade Center Environmental Health Center of Excellence (WTC EHC) at NYC Health and Hospitals Corporation for funding of four studies of the survivor population, including the following:

1. **Pediatric** - An in-depth evaluation of pediatric effects of exposure, including pulmonary, mental health, developmental and endocrine effects during this vulnerable growth period which has thus far been unstudied.
2. **Blood Bank** –Ability to save blood for DNA, RNA and protein analyses so that they can be used by multiple investigators in future studies of susceptibility to diseases including lung and other cancers.
3. **Disease Mechanisms** - Studies to understand mechanisms producing symptoms reported by patients in the WTC Health Program.
4. **Data Center Analytic Funding** - The Data Centers need additional funding for center-specific analyses on questions such as latency of symptom onset and a case series of cancers in programs with continued cohort recruitment.

When the James Zadroga 9/11 Health and Compensation Act of 2010 (Act) was implemented in 2011, cancer was not included in the list of "WTC-Related Health Conditions" covered under the diseases, although as early as 2009 the first peer-review medical journal study on cancer reported, "... we observed an unusual number of MM [multiple myeloma] cases in WTC responders under 45 years. This finding underscores the importance of maintaining surveillance for cancer and other emerging diseases in this highly exposed population..." [1] Multiple myeloma is when "plasma cells [which normally would help your body fight infection by producing proteins called antibodies] grow out of control in the bone marrow and form tumors in the areas of solid bone. The growth of these bone tumors makes it harder for the bone marrow to make healthy blood cells and platelets." [2]

In July 2011, the "First Periodic Review of Scientific and Medical Evidence Related to Cancer for the World Trade Center Health Program" was released by the National Institute for Occupational Safety and Health (NIOSH) of the Centers for Disease Control and Prevention (CDC) finding that "insufficient evidence existed at this time to propose a rule to add cancer, or a certain type of cancer, to the List of WTC Related Health Conditions." [3] However,

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[1] Moline, Jacqueline, M., MD, MSc, *"Multiple Myeloma in World Trade Center Responders: A Case Series,"* Journal of Occupational and Environmental Medicine., 2009; 51:896-902

[2] http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001609/

[3] http://www.cdc.gov/niosh/topics/wtc/prc/prc-1.html

"...it is important to point out that the current absence of published scientific and medical findings demonstrating a causal association between the exposures resulting from the September 11, 2001, terrorist attacks and the occurrence of cancer in responders and survivors does not indicate evidence of the absence of a causal association..."[4]

According to NIOSH's 2011 cancer report, "287 chemicals and chemical groups were identified by environmental sampling of the area around the WTC in NYC after 9/11..." Categories of these chemicals include asbestos and glass fibers, crystalline silica, various metals, volatile organic compounds, polychlorinated polycyclic compounds, and polycyclic aromatic hydrocarbons. Some of the chemicals identified through environmental sampling are known to be human carcinogens or are reasonably anticipated to be human carcinogens ... have been associated ... with a number of different types of cancers, such as **lung cancer including mesothelioma**; **skin cancer**; **bladder cancer**; **hematopoietic cancers**; **testicular cancer**; **prostate cancer**; and **liver and biliary cancer**."[5]

The November 2011 FDNY presentation based on published medical articles states, "WTC exposure is a known cause of acute and chronic inflammatory illnesses (asthma, COPD, sinusitis, and GERD). Chronic inflammation in turn has been associated with various cancers (non-Hodgkin's lymphoma, prostate, thyroid, melanoma)."[6]

Since cancer is not a covered WTC illness, victims may not report information about cancer or participate in WTC monitoring and treatment programs that do not treat the disease and . . . in addition, the most recent data on the New York State Department of Health (NYSDOH) Cancer Registry website is from 2008-- so there is a several year time lag between disease diagnoses, data collection and release.

As a result, at our meeting on Tuesday, January 24, we also unanimously passed a resolution urging members of the WTC Health Program Scientific Technical Advisory Committee (which was established to review scientific and medical evidence and make recommendations to the WTC Program Administrator -- to strongly consider the emerging medical evidence of cancer among 9/11 responders and survivors and the scientific evidence for a biologically plausible link between cancers and WTC exposure and the experiences of those who responded so selflessly on September 11, 2011 and during the enormous, hazardous clean-up and rebuilding of the WTC. This request was also made on September 7, 2011, by the New York Congressional delegation including our two U.S. Senators and Rep. Nadler who represents our district, when they petitioned Dr. John Howard, NIOSH Director and Administrator of the WTC Health Program, for "... an immediate review of new medical evidence showing increased cancer rates among firefighters who served at ground zero."

I would also like to add a quick update on the impact of The James Zadroga 9/11 Health and Compensation Act of 2010 which was implemented this past year. Due to their different NIOSH

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[4] http://www.cdc.gov/niosh/topics/wtc/prc/prc-1.html; p. 40
[5] http://www.cdc.gov/niosh/topics/wtc/prc/prc-1.html; p. 39
[6] Prezant, David, "FDNY: World Trade Center Health Studies," presentation November 9, 2011. http://www.cdc.gov/NIOSH/topics/wtc/stac/meetings/Nov2011.html

grant end dates, the programs for responders and survivors were implemented on different dates, July 1, 2011 and September 29, 2011 respectively. The survivor program had a deadline of contract deliverables on December 31, 2011. The survivors programs at NYC Health and Hospitals Corporation include three clinical sites where care is available, including Bellevue, the first and largest site, and also Gouverneur and Elmhurst.

We understand that it was a challenge to implement brand new bill in such a short space of time. However, since NIOSH started taking a more individual approach with the Centers, it has made it possible to begin to resolve administrative and clinical issues and achieve the best level of care possible. There has been a doubling from about 40-50 new patients per month to 80. Contrary to what people may believe, the survivor population is hard to reach and diverse socially, economically and linguistically and more importantly, psychologically, because some people are in denial. Therefore, anecdotally, although the new patients have the same reported illnesses, their illnesses are more severe, perhaps because they did not seek prior medical care or their other doctors did not have a sufficient background in WTC-related conditions.

For the past eight years, CB1 has continually and vigorously supported health services for residents, children and workers exposed after 9/11. We are grateful to the advocates and allies who have worked tirelessly to address the physical and mental health concerns of all those who were affected by the 9/11 attacks, and we hope this testimony encourages you all to further support and expand these very important studies and services. Thank you for the opportunity to testify today.

RONALD PODOLSKY
Attorney at Law
400 East 20th Street
New York, N.Y. 10009
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(347) 298 3269

Education: BA, New York University, Washington Square College, 1954
J.D. New York University School of Law, 1957.
U.S. Army, 3d Infantry Division, Wurzburg, Germany , 1957-1959.
Admitted to Bar, First Department, December 7, 1959. Currently Registered.

Professional Experience:
1960-1962 Law Office of Max Guertzman, 116 John St. New York, N.Y. pleadings, motions and Trial attorney mostly subrogation tort litigation and some defense.
1962-present: Private practice, solo practitioner; Maintained offices at 15 Park Row, New York, N.Y. Now thanks to internet, works at home. Thoroughly experienced in drafting of pleadings, motions, legal documents; trials and appeals. Cases often involved constitutional law issues of employment discrimination, whistleblower retaliation and constitutional rights of employees and criminal appeals. Attached is a partial listing of cases from Westlaw. Can do all phases of litigation and court conferences.

Among the cases which were handled from initial interview, through pleadings, motions, trials and appeals are two United States Supreme Court cases: Gardner v Broderick, 292 U.S. 273 (1968) in which all twelve state judges held against me, I argued and won 9-0 in the Supreme Court of the United States. It was a 5th Amendment public employee right case.

I also instituted and personally litigated and argued the appeal in Marino v Ortiz, 484 U.S 301 (1988). After losing in the district court and in the 2d Circuit, I argued and lost in the then eight-member Supreme Court of the United States by a split equally divided 4-4 decision.. The next case Martin v Wilks (which used my brief) my point won 5-4 when Justice Kennedy voted with the majority. The transcript and oral argument audio of the Marino case is at
http://www.oyez.org/cases/1980-1989/1987/1987_86_1415/argument It was a reverse discrimination case.

I also tried on Court TV the case of Piesco v City of New York. In that case the District Court Judge dismissed the case, I appealed to the 2d Circuit. which reversed, 933 F.2d 1149 C.A.2 (N.Y.),1991. On jury trial and the verdict was in favor of plaintiff for $1,900,000.00. The case was a First Amendment whistleblower retaliation case. Court TV Tapes of the trial are available.

SYNOPSIS OF TESTIMONY OF RONALD PODOLSKY, ESQ. JAN 30, 2012. EMAIL WITH ATTACHMENT.

In the late 1980s and early 1990s I represented Dr. Judith Piesco, Phd in psychometrics who was Director of Examinations of the NYC Personnel Department. She had been given outstanding evaluations and maximum discretional salary increases until she was fired. The case was a major headline story for months...she had been called before the Goodman committee of the State Senate whereat, under oath, she was questioned about the police entry examination. At that hearing it was her opinion that, because it was a multiple choice question exam with no penalty for wrong answers, the passmark demanded by Police Commissioner Ward was so low that a "functional illiterate" could pass it. [Statistics after the examination showed that her mark yielded about 47% passers whereas Commissioner Ward's mark would have resulted in over 70% passing.] I brought litigation and got her some decent results. However, it was not just the passmark that caused the change in attitude against her.

Dr. Piesco was very vocal against the fact that then Mayor Koch, while the city, then in financial stress and subject to state takeover, learned that the city medical examiners, Dr. Elliot Gross and Dr. Michael Baden, who held their positions as civil servants by reason of competitive examination were making truthful autopsy reports in various cases where death occurred by possible city employee negligence or brutality by reason whereof it was costing the city millions in civil damage cases. Mayor Koch then had the city council take the position out of civil service and make it a political appointment position. Drs. Gross and Baden were fired and Mayor Koch appointed Dr. Michael Hirsch, who still is chief medical examiner of the city of New York. Somehow the autopseys began to be more city oriented and suspicion arose that medical problems were being solved by political solutions.

Fast forward to 2007. Detective Zadroga who performed police functions at the scene of premeditated mass murder at the world trade center attack of September 11, 2001, thereafter complained of ever increasing lung problems and ultimately was retired on disability while in his 30s. He died in New Jersey and an autopsy was performed by the medical examiner there. The conclusion was that he died of contaminants inhaled at the world center site. Apparently this report was viewed as a prelude to thousands of possible cases by first responders either by way of disablitly claims or by way of autoseys performed in the future which would cause the city to pay money for pension or death claims. Having no jurisdiction whatever, Dr. Hirsch, gratitutiously rendered an opinion without any personal involvement in the autopsy, made the politically and financially oriented comment that the Detective did not die from inhaled contaminants but by misuse of medications. The NY Times report is at :
http://www.nytimes.com/2007/10/26/nyregion/26autopsy.html?ref=charlesshirsch
It should be noted that the article states that Dr. Baden disagreed with his successor medical examiner, Dr. Hirsch, and concluded that the findings of the on site New Jersey Medical Examiner to be correct. The political solution to a medical problem by blaming the victim is not unlike the defense of a defendant in a rape case blaming the woman. Moreover the article does not explain that the medications allegedly causing the death were for treatment of lung conditions which various first responders to the WTC site were experiencing.. One can speculate as to why Dr. Hirsch felt it necessary to become involved in an autopsy outside his jurisdiction. It presented an insult to the competency of the doctor who actually performed it.

I recently represented Detective John Brown in an Article 78 proceeding contesting the determination of the Police Pension Board of Trustees denial of his application for a disablilty retirement pension (Line of Duty) as well as denying the Police Commissioner's application to have him retired for ordinary disability. Both Det. Brown and the Police Commissioner agreed

that he was disabled but differed as to cause. The medical reports showed that Det. Brown had dimninished lung capacity, sinisitus, and restrictive airway dysfunction and ground glass opacities in his lungs. Such conditions raise a rebuttable presumption that it was caused by the WTC activities under the WTC legislation. The denial took place in 2009. Prior thereto the Police Commissioner in 2003 applied to have the Detective retired involuntarily on ordinary disability because of loss of lung capacity which was opposed by Det. Brown. That was granted but overturned by the Medical Board after Det. Brown had certain medical procedures performed. The latest report has his lung capacity back to where it was when they tried to retire him on disability but now they claim he is not disabled...he retired for service after 22 years on the job.

Detective Brown was a non-smoker...he was hospitalized on two occasions when he had to break down doors to rescue inhabitants of various residences. Had he been a smoker all his adult life, he would probably have qualified for the disability if his exposure was with lungs already impacted by tobacco use. Detective Brown is now retired for service and not on disability pension. The only difference between him and most for service retirees is that he has conditions specifically listed as giving rise to world center causation presumptions. Because the Board determined that Det. Brown did not meet "department" standards for disability retirement his applcation was deneied. The WTC legislation lists conditions where the presumption arises: having responded within the first 48 hours and having spent 50 hours or more at the site. Det. Brown was a few blocks from the site going towards it before, during and after the collapse. He and his fellow officers continued towards the site for rescue, and recovery efforts and thereafter at Staten Island Landfill for forensic cleanup and evidence recovery. He spent over 150 hours at such work. That Det. Brown performed such duties and that there was and is a diminished lung capacity with WTC presumptive causation conditions can be verified by the **Court decision in his case which is an attachment hereto.** The Court relaying on the Borenstein case upheld the decision of the Board of Trustees and its medical board. That case holds that if the city has any contrary medical opinion, it can adopt it to deny the application. Det. Brown should not have to await autopsy in order to receive justice here.

As more and more first responders have their conditions revealed by passage of time or death it is expected that the Courts will be called upon to make decisions in thousands of cases. It is the object of my testimony to address not only this problem but to get justice for those suffering and who will suffer in the future. It is a finite number of first responders.

During that litigation I complained that there was a conflict of interest on the part of the Corp. Counsel who represented the Board of Trustees that claimed Det. Brown was not disabled and the Police Commissioner whose application for ordinary disability pension was denied. In short both Det. Brown and the Commissioner agreed that he was disabled but disagreed on the cause. The WTC presumption of causation does not kick in until a finding of disability is made...It is a rebuttable presumption. When during the litigation I asked if Det. Brown would have been physically qualified to respond to the Times Square aborted attack had it succeeded there was no response. When I asked if an entry level candidate who did well on the police exam would be physically qualified to be appointed, there was no response.

The subject of this testimony is on behalf of Det. Brown and hopefully will lead to justice not only to him but other first responders. . There are ways to address these concerns by legislation where a fair treatment of these claims will not cost the city a dime. My client has authorized me to reveal these solutions at the hearing on January 30.

Respectfully Submitted:

Ronald Podolsky.

SUPREME COURT OF THE STATE OF NEW YORK — NEW YORK COUNTY

PRESENT: JAFFE BARBARA JAFFE J.S.C. PART 5

Index Number : 113641/2010
BROWN, JOHN
VS.
BD OF TRUSTEES OF NEW YORK CITY
SEQUENCE NUMBER : 001
ARTICLE 78
CAL # 26

INDEX NO. _____
MOTION DATE _____
MOTION SEQ. NO. _____
MOTION CAL. NO. _____

this motion to/for _____

	PAPERS NUMBERED
Notice of Motion/ Order to Show Cause — Affidavits — Exhibits ...	1
Answering Affidavits — Exhibits	2, 3,
Replying Affidavits	4, 5, 6

Cross-Motion: ☐ Yes ☒ No

Upon the foregoing papers, it is ordered that this motion

DECIDED IN ACCORDANCE WITH
ACCOMPANYING DECISION / ORDER

UNFILED JUDGMENT
This judgment has not been entered by the County Clerk and notice of entry cannot be served based hereon. To obtain entry, counsel or authorized representative must appear in person at the Judgment Clerk's Desk (Room 141B).

Dated: 5/3/11
MAY 03 2011

BARBARA JAFFE J.S.C.

Check one: ☒ FINAL DISPOSITION ☐ NON-FINAL DISPOSITION

Check if appropriate: ☐ DO NOT POST ☐ REFERENCE

☐ SUBMIT ORDER/ JUDG. ☐ SETTLE ORDER/ JUDG.

MOTION/CASE IS RESPECTFULLY REFERRED TO JUSTICE
FOR THE FOLLOWING REASON(S):

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK : PART 5

----------x

In the Matter of the Application of JOHN BROWN,

Petitioner,

For an Order and Judgment Pursuant to Article 78, CPLR,

-against-

THE BOARD OF TRUSTEES OF THE NEW YORK CITY POLICE PENSION FUND, ARTICLE II, THE CITY OF NEW YORK, MICHAEL BLOOMBERG, Mayor of the City of New York, and RAYMOND KELLY, Police Commissioner of the City of New York,

Respondents.

----------x

Index No. 113641/10

Motion Date: 3/1/11
Motion Seq. No.: 001

DECISION & JUDGMENT

BARBARA JAFFE, JSC:

For petitioner:
Ronald Podolsky, Esq.
400 E. 20th St.
New York, NY 10009
347-298-3269

For respondents:
Ilyse Sisolak, ACC
Michael A. Cardozo
Corporation Counsel
100 Church St.
New York, NY 10007
212-788-0752

By notice of petition and verified petition dated October 15, 2010, petitioner brings this Article 78 proceeding seeking an order annulling respondents' denial of his application for an accident disability pension and upgrading his pension to an accidental disability pension. Respondents oppose the petition.

I. BACKGROUND

Commencing on July 15, 1986, petitioner was employed by the New York City Police Department (NYPD) as a police officer. During his employment, he twice suffered smoke

inhalation that required medical attention while trying to rescue people from buildings on fire. On September 11, 2001, petitioner went to the World Trade Center site to assist with rescue operations. Betwteen September and November 2001, petitioner worked at the site and the Freshkill Landfill depository on Staten Island for approximately 159 hours, and while smoke and particles permeated the air, he was not given and did not use any protective gear. (Petition, dated Oct. 15, 2010 [Pet.]).

Afterward, petitioner resumed his normal activities but began to feel tired and fall asleep without warning, and his breathing became labored and shallow. He sought medical attention beginning in October 2001 and continuing to the present. (Pet.).

On February 10, 2004, the NYPD recommended that a survey be conducted in order to determine whether petitioner was incapacitated from performing his duties and should be retired, observing that petitioner had been on sick/restricted duty since February 10, 2004 with a complaint or diagnosis of obstructive sleep apnea. (Verified Answer, dated Dec. 7, 2010 [Ans.], Exh. 2).

On April 12, 2004, petitioner completed a line of duty injury report, stating that "[o]n 5/11/03, [petitioner] was treated by Dr. S. Racof, chief, Division of Pulmonary and critical care medicine. This was part of the 911/WTC screening . . . [Petitioner] was diagnosed with restrictive airway disease." Petitioner stated that his injury was sustained while working at the World Trade Center site in 2001, that he was initially examined in October 2001, and after the 2003 examination, he was diagnosed with restrictive airway disease, a permanent lung condition. (*Id.*, Exh. 6). On June 2, 2004, the Commanding Officer of the NYPD'sMedical Division denied designation of petitioner's injury as a line of duty injury. (*Id.*, Exh. 6).

On June 22, 2004, the NYPD issued an "Ordinary Disability Examination" order, directing respondents' Medical Board to examine petitioner to determine whether he should be retired; in the order, petitioner's disability is described as obstructive sleep apnea. (*Id.*, Exh. 2).

On July 21, 2004, the Medical Board unanimously determined that petitioner was disabled from working as a police officer based on a diagnosis of obstructive sleep apnea, and approved his application for an ordinary disability retirement (ODR). (*Id.*, Exh. 7).

On October 13, 2004, November 10, 2004, and February 9, 2005, respondent Board of Trustees tabled a vote on petitioner's ODR application. On April 13, 2005, the Board remanded the application to the Medical Board for re-examination as petitioner had undergone surgery and new evidence would be submitted. (*Id.*, Exh. 8).

On May 25, 2005, the Medical Board reviewed petitioner's new evidence, consisting of an operative report following the insertion of a laparoscopic lap band in petitioner's stomach to help him lose weight, and a note from a pulmonologist stating that since the lap band surgery, petitioner's apnea had nearly completely resolved and that petitioner "no longer [had] a problem from a pulmonary perspective." The pulmonologist also stated that petitioner's pulmonary functions were restricted and observed that petitioner had "a long history of asthmatic bronchitis, smoke inhalation and environmental allergies" and that he had been diagnosed with an exacerbation of his respiratory ailments due to his work at the World Trade Center site. The Medical Board delayed a determination on petitioner's application pending a letter from his pulmonologist stating whether it was his opinion that petitioner could perform the full duties of a police officer. (*Id.*, Exh. 9).

On August 3, 2005, after reviewing a letter from petitioner's pulmonologist in which he

stated that petitioner no longer had any apnea-related symptoms and was able to resume full police duties, the Medical Board rescinded its prior decision and disapproved petitioner's ODR application. (*Id.*, Exh. 10). On November 9, 2005, the Board of Trustees upheld the Medical Board's disapproval. (*Id.*, Exh. 11).

Between November 9, 2005 and July 29, 2009, petitioner missed only four days of work due to illness. (*Id.*, Exh. 12).

On July 29, 2009, petitioner applied for an ADR pursuant to Chapter 93 of the Laws of 2005, known as the WTC Disability Law or WTC Law, describing his disability as "a pulmonary condition which causes me to have shortness of breath, dizziness and blackout upon physical exertion." (*Id.*, Exh. 4). On July 31, 2009, petitioner retired from the NYPD on a twenty-year service retirement. (Pet.; Ans., Exh. 13).

By Ordinary Disability Examination order dated October 14, 2009, the NYPD asked the Medical Board to determine if petitioner should be retired on an ODR, with his disability described as a pulmonary derangement. (Ans., Exh. 5).

On November 13, 2009, the Medical Board reviewed petitioner's ADR application and examined him, observed that petitioner's pulmonary function tests between 2005 and 2009 showed a mild restrictive defect, and detailed petitioner's history with sleep apnea and the lap band surgery. Based on a lack of objective evidence that petitioner suffered from a pulmonary disability, it denied unanimously petitioner's application for an ADR or ODR, finding that:

> It is the opinion of the [Medical Board] that serial pulmonary function studies since 2003 through 2009 show no significant change and no significant deterioration consistent with a mile restrictive pattern secondary to his weight. There is no evidence of obstructive lung disease and he has never been given any medication. Episodes of near syncope are not well-documented and may be cough syncope. Except of one episode in 2003, these have never been reported to the Police Department.

(*Id.*, Exh. 14).

On January 13, 2010, the Board of Trustees remanded the matter to the Medical Board to consider new evidence. (*Id.*, Exh. 15). On April 23, 2010, the Medical Board re-examined petitioner and considered a letter from petitioner's pulmonologist, in which he stated that:

> "as [petitioner's] lung volumes have not improved, despite his significant weight loss, it is unlikely that his restrictive process is related to his weight. It is most probably related to intrinsic lung disease. Should weight have played a significant role in the restriction, they [sic] should have been a significant improvement in [petitioner's] lung volumes following the loss."

The Medical Board also reviewed petitioner's chart and observed that petitioner's lung capacity improved after his weight loss and decreased once he re-gained some weight, noting that "considering that six years have passed, there should have been actual deterioration in these readings since there is normally a fall in pulmonary function over time." It observed that November 2007 and May 2008 CT scans of petitioner's chest showed no significant pulmonary disease, that petitioner's lungs were clear with minimal linear scarring in his right lower lobe, and that most importantly, there were no interstitial fibrotic changes or bronchiectasis. Petitioner's pulmonary function tests had also consistently shown normal diffusion capacity, indicating against interstitial lung disease. The Medical Board thus unanimously reaffirmed its denials of petitioner's ADR and ODR applications, finding that there was "no evidence of any intrinsic lung disease with normal chest CT scans and normal diffusion capacity and no evidence of oxygen desaturation on exercise." (*Id.*, Exh. 16).

On June 9, 2010 and July 14, 2010, the Board of Trustees delayed a vote on petitioner's application, and on August 11, 2010, affirmed the Medical Board's disapproval. (*Id.*, Exh. 17).

II. CONTENTIONS

Petitioner argues that the evidence before the Medical Board indicated that he had lung problems, that his deteriorated health resulted directly from his employment as a police officer including his work at the World Trade Center site, and that respondents' denial of his ADR application was arbitrary and capricious, unreasonable, and illegal. (Pet.).

Respondents contend that the Medical Board's determination is based on credible evidence as it fully reviewed petitioner's application and the submitted evidence, including the new evidence submitted to it on remand, and that the credible evidence establishes that petitioner was not disabled from performing police duties. Respondents observe that petitioner's pulmonologist's conclusion that his lung condition was not related to his weight was based on his erroneous observation that petitioner's lung function had not improved after he lost weight. They also argue that the results of petitioner's examinations by the Medical Board and statements made by him indicate that he is not disabled, as his vital signs were normal, he was not taking any medication, and he could walk slowly or up two or three flights of stairs, and observe that petitioner was able to perform all of his duties between 2005 and 2009, having missed only four days of work due to illness during that time. (Ans.; Memo. of Law, dated Dec. 7, 2010 [Memo.]).

In reply, petitioner maintains that it is undisputed that his condition arose while he was performing official police functions, and observes that one of his medical reports reflects that he had ground glass opacities in his lungs and he surmises that his lungs may contain other contaminants from the World Trade Center site. He also states, upon information and belief, that his lung function is reduced by an amount that would qualify a New York City firefighter for an ADR and that treating a police officer differently constitutes a constitutional violation, and

contends that the medical conditions and symptoms from which he suffers are recognized medical problems linked to exposure to the World Trade Center site thus entitling him to a statutory presumption of disability, and that the NYPD's submission of an ODR on his behalf reflects its belief that petitioner was unable to perform his duties, which conflicts with the Medical Board's determination of no disability and has not been addressed by respondents. And, as the NYPD's opinion conflicts with the Medical Board's determination, petitioner argues that Corporation Counsel's simultaneous representation of both entities constitutes a conflict of interest. (Verified Reply, dated Dec. 23, 2010).

In sur-reply, respondents maintain that petitioner may not raise new issues in his reply papers, and that in any event, the Medical Board considered the report which indicated that petitioner had ground glass opacities in his lungs, and that petitioner is not entitled to the World Trade Center statutory presumption as the Medical Board found in the first instance that he was not disabled. Respondents also argue that New York City firefighters and police officers have different ADR requirements, and deny that there is any conflict of interest in Corporation Counsel representing both the NYPD and the Medical Board as the NYPD did not determine that petitioner was disabled but only recommended that he be examined to determine if he was disabled and it had a representative at the meetings of the Board of Trustees when the Board upheld the Medical Board's decision. (Sur-Reply, dated Jan. 10, 2011).

III. ANALYSIS

A. Applicable law

The only questions that may be raised in a proceeding to challenge action or inaction by a state or local government agency are, in pertinent part, whether a determination was made in

violation of lawful procedure, was affected by an error of law or was arbitrary and capricious or an abuse of discretion . . . (CPLR 7801, 7803[3]). The determination of an administrative agency, "acting pursuant to its authority and within the orbit of its expertise, is entitled to deference, and even if different conclusions could be reached as a result of conflicting evidence, a court may not substitute its judgment for that of the agency when the agency's determination is supported by the record." (*Matter of Partnership 92 LP & Bldg. Mgt. Co., Inc. v State of N.Y. Div. of Hous. & Community Renewal*, 46 AD3d 425, 429 [1st Dept 2007], *affd* 11 NY3d 859 [2008]).

In reviewing an administrative agency's determination as to whether it is arbitrary and capricious, the test is whether the determination "is without sound basis in reason and is generally taken without regard to the facts." (*Matter of Pell v Bd. of Educ. of Union Free School Dist. No. 1 of Towns of Scarsdale & Mamaroneck, Westchester County*, 34 NY2d 222, 231 [1974]; *Matter of E.W. Tompkins Co., Inc. v State Univ. of New York*, 61 AD3d 1248, 1250 [3d Dept 2009], *lv denied* 13 NY3d 701; *Matter of Mankarios v New York City Taxi and Limousine Commn.*, 49 AD3d 316, 317 [1st Dept 2008]; *Matter of Soho Alliance v New York State Liq. Auth.*, 32 AD3d 363, 363 [1st Dept 2006]; *Matter of Kenton Assocs., Ltd. v Div. of Hous. & Community Renewal*, 225 AD2d 349 [1st Dept 1996]).

If the court determines that the administrative determination has a rational basis, the court's inquiry is complete; it may not substitute its judgment for that of the administrative agency. (*Paramount Communications, Inc. v Gibraltar Cas. Co.*, 90 NY2d 507 [1997], *rearg denied* 90 NY2d 1008). Moreover, where a determination has a rational basis, "an administrative agency's construction and interpretation of its own regulations and of the statute under which it

functions are entitled to great deference." (*Matter of Arif v New York City Taxi and Limousine Commn.*, 3 AD3d 345 [1st Dept 2004], *lv granted* 2 NY3d 705, *appeal withdrawn* 3 NY3d 669).

Pursuant to Administrative Code § 13-252, a police officer may retire with an ADR upon application to the commissioner stating that the applicant:

> is physically or mentally incapacitated for the performance of city-service, as a natural and proximate result of such city-service, and certifying the time, place and conditions of such city-service performed by such member resulting in such alleged disability and that such alleged disability was not the result of wilful negligence on the part of such member and that such member should, therefore, be retired.

The determination of an ADR application requires consideration of two factors. First, the Medical Board decides whether the applicant is disabled and should be retired (*Matter of Meyer v Bd. of Trustees of N.Y. City Fire Dept., Art. 1-B Pension Fund*, 90 NY2d 139, 144-145 [1997]). It must then decide whether the disability resulted from a service-related accident, and certify its recommendation on this issue to the Board of Trustees. (*Id.* at 144-145). The Board of Trustees must then determine whether the disability was caused by a service-related accident. (*Id.*).

Pursuant to the WTC law:

> if any condition or impairment of health is caused by a qualifying World Trade Center condition as defined in section two of the retirement and social security law, it shall be presumptive evidence that it was incurred in the performance and discharge of duty and the natural and proximate result of an accident not caused by such member's own willful negligence, unless the contrary be proved by competent evidence.

(Admin Code 13-252.1[1][a]).

B. Is the Medical Board's determination arbitrary and capricious or irrational?

The Medical Board's determination will be sustained unless it lacks a rational basis or is arbitrary or capricious, and it must be based on "some credible evidence." (*Matter of Borenstein v New York City Empls.' Retirement Sys.*, 88 NY2d 756, 760-761 [1996]). The Medical Board

has the authority to resolve any conflicting medical evidence or opinions, and in reviewing the Medical Board's decision, the court may not examine the medical evidence and substitute its own judgment for that of the Medical Board. (*Id.*).

Here, the Medical Board's conclusion that petitioner was not disabled was based on its examinations of him and review of his medical reports including any new evidence submitted to it on remand, which reflected that petitioner's restricted lung functions were related to his weight and not to any intrinsic lung disease. Particularly significant is petitioner's improvement in lung function after his weight-loss surgery and his physician's opinion that he was able to resume full police duties, and the fact that petitioner subsequently missed only four days of work during the four years before he retired. The Medical Board's opinion was thus based on credible evidence. (*See Matter of Lewis v Kelly*, 22 Misc 3d 1137[A], 2009 NY Slip Op 50477[U] [Sup Ct, New York County 2009] [while petitioner suffered lung impairment after working at World Trade Center site, Medical Board's finding that impairment did not rise to disability supported by credible evidence, including medical evidence showing either normal test results or mild restrictive lung function]; *see also Matter of Meyer*, 90 NY2d at 139 [Medical Board's detailed and fact-based reports explaining basis for determination constituted credible evidence]; *Matter of Borenstein*, 88 NY2d at 761 [as Medical Board "detailed what medical proof had been considered, specified the nature of respondent's complaints and outlined the results of its physical examinations of respondent," determination was based on some credible evidence and was not arbitrary or capricious]; *Matter of Christian v New York City Empls.' Retirement Sys.*, 56 NY2d 841 [1982] [Medical Board explained reasoning behind decision which was warranted by evidence before it]; *Schwartz v Kelly*, 36 AD3d 563 [1st Dept 2007] [Medical Board's decision

that petitioner not disabled supported by some credible evidence including its own examinations of petitioner and medical reports]; *Matter of Goffred v Kelly*, 13 AD3d 72 [1st Dept 2004] [finding of no disability supported by credible evidence as Medical Board considered petitioner's application six times and each time it reviewed medical evidence and examined petitioner]).

The sole evidence to the contrary, the letter from petitioner's pulmonologist, was based on the erroneous assumption that petitioner's lung capacity had not improved after he lost weight. However, even if petitioner's pulmonologist's opinion was based on a correct assumption, the Medical Board was entitled to disregard it. (*See Khurana v Kelly*, 73 AD3d 497 [1st Dept 2010], *lv denied* 15 NY3d 715 [finding of no disability based on credible evidence as Medical Board considered petitioner's case four times and each time Medical Board examined petitioner and reviewed medical evidence, and Medical Board not bound by petitioner's experts' contrary opinions]; *Matter of Finkelstein v Kelly*, 41 AD3d 122 [1st Dept 2007] [Board properly considered conflicting medical evidence]; *Matter of Dittrich v Bd. of Trustees, Police Pension Fund, Art. II*, 37 AD3d 342 [1st Dept 2007] [conflicts in medical evidence were for Medical Board to resolve]).

And as the Medical Board found that petitioner is not disabled, the statutory presumption set forth in the WTC law is inapplicable. Moreover, petitioner submitted no evidence showing that he was treated differently than New York City firefighters, and the NYPD's submission of an ODR application on his behalf is irrelevant as the NYPD made no finding or determination that petitioner was disabled. Similarly, there is no conflict of interest in Corporation Counsel's representation of the NYPD and the Medical Board as both ultimately determined that petitioner was not disabled. Thus, petitioner has failed to establish that the Medical Board's determination

is arbitrary or capricious or irrational.

C. Is the Board of Trustees's determination arbitrary and capricious or irrational?

The Board of Trustees is bound by the Medical Board's determination as to whether an ADR applicant is disabled but must make its own determination as to whether the disability was caused by a service-related accident. (*Matter of Canfora v Bd. of Trustees of Police Pension Fund of Police Dept. of City of N.Y., Art. II*, 60 NY2d 347 [1983]). Here, as the Medical Board determined that petitioner was not disabled, the Board of Trustees was required to uphold that determination.

IV. CONCLUSION

Accordingly, it is hereby

ORDERED and ADJUDGED, that the petition is denied and the proceeding is dismissed.

ENTER:

Barbara Jaffe, JSC

BARBARA JAFFE
J.S.C.

DATED: May 3, 2011
New York, New York

UNFILED JUDGMENT

This judgment has not been entered by the County Clerk and notice of entry cannot be served based hereon. To obtain entry, counsel or authorized representative must appear in person at the Judgment Clerk's Desk (Room 141B).

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

In the Matter of the Application of

JOHN BROWN,

Petitioner,

For an Order and Judgment Pursuant to Article 78, CPLR,

- against -

THE BOARD OF TRUSTEES OF THE NEW YORK CITY POLICE PENSION FUND, ARTICLE II, THE CITY OF NEW YORK, MICHAEL BLOOMBERG, May of the City of New York, and RAYMOND KELLY, Police Commissioner of the City of New York,

Respondents.

SUR-REPLY AFFIRMATION OF ILYSE SISOLAK IN OPPOSITION TO PETITIONER'S VERIFIED REPLY AND MEMORANDUM OF LAW

Index No. 113641/10

ILYSE SISOLAK, an attorney admitted to practice before the courts of the State of New York, affirms the following to be true under penalty of perjury pursuant to Rule 2106 of the Civil Practice Law and Rules ("CPLR"):

1. I am an Assistant Corporation Counsel in the Office of MICHAEL A. CARDOZO, Corporation Counsel of the City of New York, attorney for the respondents in this matter.

2. This affirmation is submitted in opposition to petitioner's Verified Reply, dated December 21, 2010 ("Verified Reply"), and Petitioner's Memorandum of Law, dated December 23, 2010 ("Petitioner's Memo"), and in further support of respondent's Verified Answer, dated December 8, 2010 ("Verified Answer") and Respondents' Memorandum of Law, dated December 7, 2010 ("Respondents' Memo").

of 2004 and then underwent laparoscopic Lap-Band surgery and lost 70 pounds, but the Lap-Band had to be removed because of erosion in January of 2005. He also had ear, nose and throat surgery with removal of tonsils in March of 2005. In May 2005 and again in August 2005, the Medical Board felt that the detective could return to full duty because his sleep apnea had resolved. Serial pulmonary function tests showed a restrictive defect and at its previous meeting the Medical Board felt that serial pulmonary function studies from 2003 to 2009 had shown no significant change and no significant deterioration, consistent with a mild restrictive pattern secondary to his weight.

4. The new medical evidence provided by the detective for this evaluation includes a letter from Dr. Vlassi Baktidy, a pulmonologist, dated December 21, 2009, which stated "the exact damage caused by this is difficult to ascertain at this point, as his lung volumes have not improved, despite the significant weight loss, it is unlikely that his restrictive process is related to his weight. It is most probably related to intrinsic lung disease. Should weight have played a significant role in the restriction, they should have been a significant improvement in the patient's lung volumes following the loss."

5. After reviewing the detective's chart, the Medical Board saw that his forced vital capacity in May of 2003 was 4.16 liters, (69% of predicted), and FEV1 was 3.51 liters or 74%. Following his Lap-Band surgery there was an improvement in a test done on April 26, 2005, when he weighed 245 pounds. His vital capacity was 4.59 liters or 75% of predicted and FEV1 was 3.70 liters (75% of predicted). Total lung capacity at that time was 79% of predicted. He subsequently gained weight back and his vital capacity had returned to pre Lap-Band readings with a forced vital capacity of 4.06 liters, and FEV1 of 3.32 liters. Considering that six years have passed, there should have been actual deterioration in these readings since there is normally a fall in pulmonary function over time.

6. A chest CT scan which was done on November 29, 2007 showed no significant pulmonary disease. Lungs were clear and there was minimal linear scarring in the right lower lobe. Most important, there were no interstitial

Ex 16

fibrotic changes or bronchiectasis noted. A subsequent CT scan performed on May 9, 2008 was similar and stated that there were no new nodules or infiltrates present. Furthermore, pulmonary function tests had always shown normal diffusion capacity which is also against any interstitial lung disease. The last available measurement was October 15, 2008, at which time the forced vital capacity was 4.01 liters, FEV1 was 3.24 liters both 67% of predicted, total lung capacity was 71% of predicted and diffusion was 98% of predicted.

7. On interview today, the detective states that he retired in July of 2009. His weight was still approximately 300 pounds. He has taken up camping as a new activity and can walk to camping sites slowly and can walk two to three flights of stairs but cannot run. His past history of Lap-Band surgery and oral surgery were reviewed and he feels that his sleep apnea has been cured. He is taking no medication because he has found nothing would help his pulmonary condition.

8. On physical examination today, the detective's blood pressure was 150/90. Pulse was 92. Resting oxygen saturation was 96%. His was a somewhat plump male who weighed 300 pounds. He was 74 inches tall. His blood pressure was 150/90. He was in no distress. Lungs were clear. Heart tones were normal. There was no clubbing, cyanosis or edema.

9. The Medical Board finds that based on available material that his pulmonary function tests did improve following Lap-Band surgery and then have returned to pre Lap-Band measurements, and are stable at present and do not meet department standards for pulmonary disability. There is no evidence of any intrinsic lung disease with normal chest CT scans and normal diffusion capacity and no evidence of oxygen desaturation on exercise. Therefore, the Article II Medical Board reaffirms its previous decision and recommends disapproval of the detective's own application for Accident Disability Retirement and disapproval of the Police Commissioner's application for Ordinary Disability Retirement.

Dorothy Kunstadt, M.D.
Chairman
Police Pension Fund Article II

Reply-Reaffirm Previous Decision
Disapprove-Own-Accident Disability
Disapprove-PC-Ordinary Disability ←

Harold Bernanke, M.D.
Department of Health

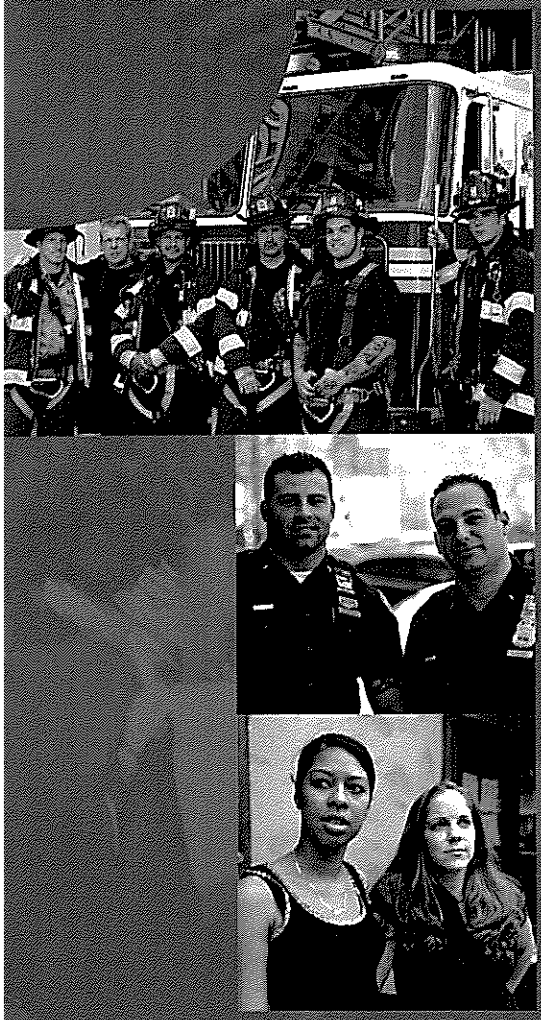
Reply-Reaffirm Previous Decision
Disapprove-Own-Accident Disability
Disapprove-PC-Ordinary Disability ←

Lawrence Scharer, M.D.
Dept. of Citywide Admin. Services

Reply-Reaffirm Previous Decision
Disapprove-Own-Accident Disability
Disapprove-PC-Ordinary Disability ←

cg

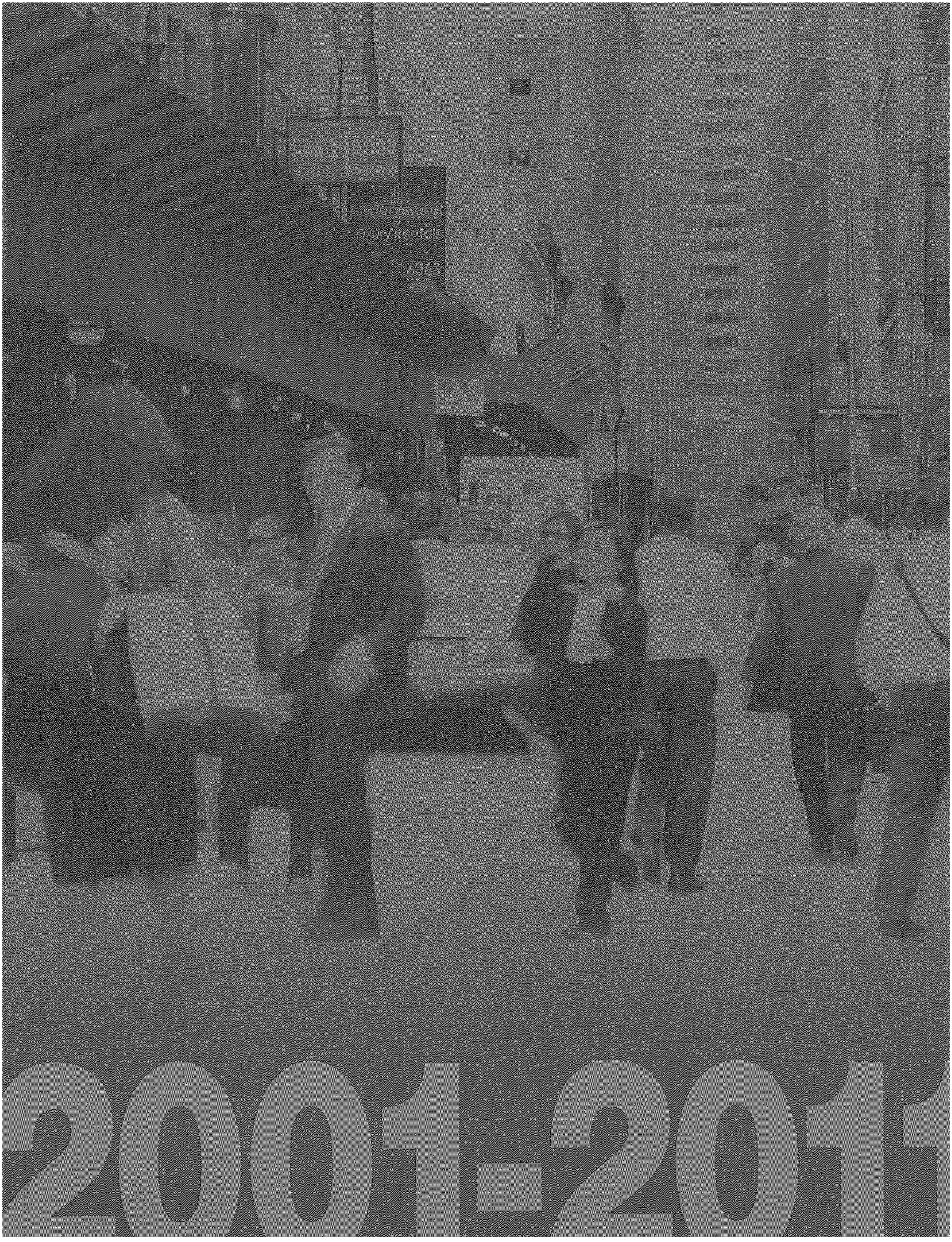
World Trade Center Medical Working Group of New York City



2011 Annual Report on 9/11 Health

November 2011

NYC
Michael R. Bloomberg
Mayor



2001-2011

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Mayor Bloomberg celebrated passage of the James Zadroga 9/11 Health and Compensation Act in Lower Manhattan with Senators Schumer and Gillibrand, Representatives Maloney, King and Nadler, first responders and survivors.

Credit: Ed Reed

Letter to Mayor Bloomberg

November 2011

Dear Mayor Bloomberg:

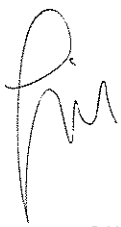
Since the publication of our 2010 annual report, New York City achieved one of its major policy goals at the federal level: passage of the James Zadroga 9/11 Health and Compensation Act, which President Obama signed into law in January. We take pride in the fact that our ongoing review of the World Trade Center (WTC)-related literature documenting adverse health effects in WTC responders and survivors, and our assessment of the healthcare services needed to address these issues, as summarized in our annual reports and distributed to all members of Congress for the past two years, supported your vigorous advocacy of this legislation.

In addition to ensuring that health monitoring and treatment will continue uninterrupted for anyone who has become ill after their exposure to the WTC collapse, we are pleased that the Zadroga Act also affirms the need for continuing and expanding WTC-related research by the WTC Centers of Excellence, the WTC Health Registry and other entities.

Our previous reports have identified some important opportunities for WTC-related research, particularly in the area of treatment efficacy. We are hopeful that this information will be of use to the National Institute for Occupational Safety and Health (NIOSH), which is responsible for administering the WTC Health Program, as well as to independent researchers.

The Zadroga Act also establishes a Scientific/Technical Advisory Committee for the WTC Health Program, appointed in September 2011, which will review the scientific literature for the federal government as we have done for New York City over the past four years. The Committee will be assuming an even more critical role as it issues recommendations, also based on scientific evidence, to the Program Administrator about adding WTC-related health conditions that can be treated by the WTC Health Program.

In this report, we update you on the progress we have seen regarding the implementation of our recommendations since 2007, when we began reviewing the WTC literature and assessing the adequacy of services, and we summarize a decade's worth of research findings. The timeline of 9/11 health milestones that introduces this report shows how the City's ad hoc partnership with the federal government has built a solid scientific foundation for the expansion of 9/11 health services over the past decade. We are confident that even more can be accomplished in the years to come under the Zadroga Act.



Linda Gibbs, Co-Chair
New York City Deputy Mayor for Health and Human Services

Thomas Farley, MD, MPH, Co-Chair
New York City Health Commissioner

World Trade Center Medical Working Group Membership

Mayor Bloomberg appointed the World Trade Center (WTC) Medical Working Group in June 2007. Members meet regularly to review clinical and research findings on the health effects of WTC exposure. In addition to publishing an annual report, they also review the adequacy of physical and mental health services available to WTC-exposed persons, and they advise city government on approaches to communicating health risk information related to WTC exposure.

Membership

Linda Gibbs, Co-Chair
New York City Deputy Mayor for Health and Human Services

Thomas Farley, MD, MPH, Co-Chair
New York City Health Commissioner

Thomas K. Aldrich, MD
Professor of Medicine, Pulmonary Division, Montefiore Medical Center and Albert Einstein College of Medicine
Chair, New York State September 11th Worker Protection Task Force

Mitchell Cohen, PhD
Associate Professor, Department of Environmental Medicine, NYU School of Medicine

JoAnn Difede, PhD
Director, Program for Anxiety and Traumatic Stress Studies
Associate Professor of Psychology in Psychiatry, Weill Cornell Medical College

Kitty H. Gelberg, PhD, MPH
Chief, Epidemiology and Surveillance Section, Bureau of Occupational Health, New York State Department of Health

Carolyn Greene, MD
Deputy Commissioner, Division of Epidemiology, New York City Department of Health and Mental Hygiene

Eli J. Kleinman, MD, MPH
Assistant Professor of Medicine and Hematology, Albert Einstein College of Medicine
Supervising Chief Surgeon, New York City Police Department

Philip J. Landrigan, MD, MSc, DIH
Dean for Global Health
Professor and Chairman, Department of Preventive Medicine
Professor of Pediatrics, Director, Center for Children's Health and the Environment, Mount Sinai School of Medicine

R. Richard Leinhardt, MD, FACS
Chief Surgeon, New York City Department of Correction
Clinical Associate Professor Emeritus of Otorhinolaryngology, New York Medical College

David Prezant, MD
Chief Medical Officer, Special Advisor to the Fire Commissioner for Healthy Policy, Co-Director, WTC Medical Monitoring & Treatment Programs, New York City Fire Department
Professor of Medicine, Albert Einstein College of Medicine

Ramanathan Raju, MD*
Chief Executive Officer, Cook County Health and Hospital System

Joan Reibman, MD
Medical Director, WTC Environmental Health Center, New York City Health & Hospitals Corporation
Associate Professor, Medicine and Environmental Medicine, NYU Medical Center Bellevue Hospital Center

Pablo Sadler, MD
Mental Health Medical Director, New York City Department of Health and Mental Hygiene

Michele S. Slone, MD
Clinical Assistant Professor, Department of Forensic Medicine, New York University School of Medicine
City Medical Examiner, Office of Chief Medical Examiner, City of New York

Lorna Thorpe, PhD
Associate Professor
Director, Epidemiology and Biostatistics Program CUNY School of Public Health at Hunter College

*Dr. Raju left the NYC Health and Hospitals Corporation in September 2011

9/11 Health Services & Research: A Decade of Milestones

A decade of milestones in health services and research related to the September 2001 terrorist attacks on America illustrate a steady progression of private and public commitment to assist the 410,000 individuals[1] estimated to have been exposed to the collapse of the World Trade Center.

2001

- The federal government funds health screening and mental health treatment for Fire Department of New York (FDNY) members.

2002

- The federal government funds screening for non-FDNY rescue, recovery and clean-up workers at the Mount Sinai School of Medicine.
- 9/11 Mental Health and Substance Abuse Program, an insurance-like benefit, is launched with private funding to increase access to treatment for anyone in the nation directly affected by the September 2001 terrorist attacks.
- The *New England Journal of Medicine* publishes FDNY research defining World Trade Center (WTC) cough and noting other respiratory symptoms in firefighters.

2003

- Mount Sinai begins treating rescue, recovery and clean-up workers for WTC health problems with private funding.
- The New York City (NYC) Department of Health and Mental Hygiene (DOHMH) and the federal government establish the volunteer WTC Health Registry to monitor the health of people directly exposed to the WTC disaster.
- The New York Academy of Medicine publishes research about the mental health of NYC residents during the first six months after the attacks.

2004

- The federal government establishes the WTC Medical Monitoring Program to screen and monitor rescue, recovery and clean-up workers at FDNY, Mount Sinai and several other institutions.

2005

- Researchers from Bellevue Hospital and the New York State Department of Health publish studies reporting an increase in new, post-9/11 respiratory symptoms in Lower Manhattan residents.
- Private philanthropy funds treatment for rescue and recovery workers in the NYC area and elsewhere in the US, and for Lower Manhattan residents, area workers and students at a Bellevue Hospital asthma clinic.
- Columbia University researchers publish a study on WTC mental health impacts among NYC schoolchildren.

2006

- Mount Sinai and other members of the WTC Medical Monitoring Program publish research showing that more than 50% of rescue, recovery and clean-up workers being monitored continued to have respiratory symptoms up to 2.5 years after 9/11.
- The federal government provides funding to treat rescue, recovery and clean-up workers for the first time and establishes the WTC Medical Monitoring and Treatment Program.
- The NYC Department of Health and Mental Hygiene publishes and distributes *Clinical Guidelines for Adults Exposed to the WTC Disaster.*
- Legislation is introduced in Congress to provide long-term physical and mental health care for WTC survivors and responders regardless of their ability to pay.

2007

- As private funding for WTC services is exhausted, NYC Mayor Bloomberg accepts all 15 recommendations in *"Addressing the Health Impacts of 9/11,"* a special report he commissioned to ensure that everyone with WTC-related health problems gets the care they need.
- NYC establishes the WTC Environmental Health Center at Bellevue Hospital Center, Gouverneur Health Care Services, and Elmhurst Hospital Center to treat Lower Manhattan residents, area workers and students.
- Mayor Bloomberg appoints the WTC Medical Working Group to review clinical and research findings on 9/11 health effects.

2008

- The WTC Health Registry publishes a study examining physical health among WTC-exposed children.
- The insurance-like benefit program begun with private funding is extended as the NYC 9/11 Benefit Program for Mental Health and Substance Use Services for local residents.
- The WTC Medical Working Group publishes its first annual report on 9/11 health that summarizes findings from more than 100 studies published since 2001.
- The federal government establishes the WTC Responder Health Program to monitor and treat rescue and recovery workers who live outside the New York City area.
- The federal government provides funding for the first time to treat Lower Manhattan residents, area workers and students at the WTC Environmental Health Center.

2009

- The *Journal of the American Medical Association* publishes WTC Health Registry research estimating that as many as 88,600 adults have had symptoms of posttraumatic stress disorder and as many as 40,000 adults have developed new asthma as a result of their WTC exposure.
- The Health Department publishes *Clinical Guidelines for Children and Adolescents Exposed to the WTC Disaster.*

2010

- The *New England Journal of Medicine* publishes FDNY research showing that decreases in pulmonary function in firefighters and EMS workers have persisted for seven years, even among non-smokers.
- Congress passes the James Zadroga 9/11 Health & Compensation Act which provides federal funding for 9/11-related health monitoring, treatment and research through 2015.
- 53,485 responders and 5,130 survivors have enrolled in federally funded health monitoring and treatment services as of December 31.[2]

2011

- In compliance with the Zadroga Act, the National Institute for Occupational Safety and Health issues the *First Periodic Review of Scientific and Medical Evidence Related to Cancer for the World Trade Center Health Program.* It summarizes current scientific and medical findings in the peer-reviewed literature about exposures resulting from the WTC attack and cancer studies, and determines that it cannot currently propose a rule to add cancer to the list of WTC-related health conditions.
- 9/11 anniversary-themed scientific publications highlight current findings. *The Lancet* addresses the comorbidity of mental and physical health conditions and includes early reports on cancer and mortality.
- The federal government appoints the WTC Scientific/Technical Advisory Committee to review scientific and medical evidence and make recommendations to the WTC Health Program administrator about changing eligibility criteria and covering additional health conditions.
- WTC responders and survivors throughout the United States have access to federally funded treatment for both physical and mental health conditions for the first time through the federal WTC Health Program.

(2008 – 2011)

Progress on WTC Medical Working Group Recommendations

The World Trade Center (WTC) Medical Working Group has made a series of recommendations about 9/11 health treatment and services since its formation in 2007. These recommendations fall into three broad categories: funding; research and evaluation; and education. The WTC Medical Working Group remains committed to seeing these recommendations implemented in their entirety. The progress made up to the tenth anniversary of the September 2001 terrorist attacks is summarized below.

Funding Recommendations

- Advocate for long-term federal funding so that the following critical activities can continue:
  - Treatment of WTC-exposed populations including rescue, recovery and clean-up workers, Lower Manhattan residents, area workers (including commuters living outside of New York City), and students for illnesses related to WTC exposure at the Centers of Excellence
  - Regular monitoring of firefighters, police, correction, sanitation and other rescue, recovery, and clean-up workers for WTC-related mental and physical health conditions
  - Tracking the health of 71,000 people enrolled in the WTC Health Registry, who now reside in all 50 states

- Advocate for federal funding to increase scientific knowledge about WTC-related health impacts including:
  - Research at the WTC Centers of Excellence, including the development of population-specific mental health screening tools
  - Investigations to identify how environmental conditions such as the WTC collapse can cause illness, specifically through laboratory experiments using stored or generated environmental dust samples
  - Research to identify biologic indicators of specific 9/11 exposures
  - Other research as needed to identify people at higher risk for illness due to WTC exposure

Funding Progress

By passing the James Zadroga 9/11 Health and Compensation Act, signed into law by President Obama in January 2011, Congress implemented a 2008 recommendation of the WTC Medical Working Group: long-term federal funding for WTC-related health monitoring, treatment and research. Prior to passage of this legislation, the WTC Centers of Excellence and the WTC Health Registry relied on an uncertain mix of private funding, annual Congressional appropriations and New York City funding to continue health programs that began soon after 9/11, and others that developed as the mid-term health impacts of the attacks became evident.

Mayor Bloomberg and several members of the WTC Medical Working Group testified before Congress in support of the Zadroga Act, along with labor and community advocates who lobbied tirelessly for the bill in the nation's capital. In addition, the Congressional sponsors of the legislation distributed copies of the 2009 and 2010 annual reports of the

WTC Medical Working Group to educate their colleagues in both the Senate and the House of Representatives about the growing body of scientific literature documenting the need for continued health services and national outreach.

The Zadroga Act establishes the WTC Health Program and funds it through at least 2015, with New York City paying ten percent of the overall cost. Implemented by the National Institute for Occupational Safety and Health in July 2011, the WTC Health Program serves both eligible responders and survivors, no matter where they live now in the United States.

Research opportunities addressing 9/11-related health issues are also expanded under the Zadroga Act. In addition to the kind of periodic, population-based health surveys that the WTC Health Registry has conducted with federal funding among people directly exposed to the disaster, the WTC Centers of Excellence and other scientific researchers also will be able to apply for grants to conduct clinical investigations and treatment outcome evaluations. It isn't yet clear if the Zadroga Act covers research to study how specific environmental factors may have caused WTC-related illness and to identify biologic indicators specific for 9/11 exposures.

Research and Evaluation Recommendations

- Expand research on the prevalence of WTC-related conditions and determine their persistence. Document WTC-related treatment needs and effectiveness by:
  - determining the extent to which people with potential WTC-related health conditions are receiving treatment, and by identifying coverage gaps.
  - evaluating the effectiveness of treatment among patients with WTC-related mental and physical health conditions.
  - estimating the number of people who may seek mental and/or physical health treatment to help policy makers project future treatment costs.
- Determine whether cancer, chronic illnesses and other late-emerging diseases are elevated among WTC-exposed populations by comparing incidence and mortality rates among WTC-exposed populations to estimated background rates for New York City.
- Consider using the following methods when conducting cancer investigations among WTC-exposed populations:
  - Compare the number of cancer diagnoses among members of WTC cohorts who were highly exposed to the WTC disaster to the number of diagnoses among less exposed members when possible. Use of internal comparisons is expected to be more meaningful scientifically than external comparisons to other groups because of the difficulty in identifying comparable, non-exposed populations.
  - Develop a common WTC exposure matrix where possible, so that the degree of exposure within and across cohorts can be categorized more consistently when analyzing cancer and other late-emerging illnesses.
  - Schedule the timing of periodic cancer analyses in advance to ensure that this choice is independent of the results. Researchers also should consider conducting formal analyses no more frequently than every five years because of the length of the induction period between environmental exposures such as the WTC disaster and the development of cancer. However, during the interim, monitoring and tracking of the data can continue so that researchers would detect and share developments of interest.

- Consider using other New York City data sets (including birth and school records) in addition to the WTC Health Registry in order to conduct cancer analyses of sufficient statistical power among pediatric populations exposed to the WTC disaster.
- Consult with other WTC researchers on an ongoing basis about the cancer analyses within WTC cohorts and coordinate the reporting of data and/or research. This kind of collaboration can help reduce confusion among the public when the results of these analyses are published and reported by the media.

- Expand research on the impact of 9/11 on mental health and substance use by:
  - collecting additional data on the prevalence of WTC-related depression, suicide and substance use among WTC-exposed populations.
  - assessing the impact of chronic WTC-related physical health conditions on long-term mental health.
  - studying the impact of tobacco use on WTC-related respiratory conditions.
- Increase research on mental and physical health effects on vulnerable populations who were exposed to the WTC collapse including children who went to school or who lived in the area, had first responder parents, or lost family members on 9/11.

Research and Evaluation Progress

Members of the WTC Medical Working Group—or the institutions they represent—have contributed more than 125 articles to the scientific literature. Although many of these articles were published prior to the MWG's formation in 2007, subsequent research, including articles published by such prestigious journals as the *New England Journal of Medicine*, the *Journal of the American Medical Association* and the *Lancet*, has focused on areas specifically recommended by the MWG.

This includes research estimating the burden of WTC-related illness to help policymakers allocate resources rationally; research about the persistence of both mental and physical conditions; research into co-occurring mental health conditions such as depression and substance use; research about the impact of tobacco use on WTC-related illness; and research about cancer and mortality risk among WTC-exposed populations. In addition, researchers not affiliated with the MWG have published studies on post-9/11 suicide rates.

Only now has sufficient time elapsed since 2001 to begin research into the potential long-term and late-emerging health impacts associated with WTC exposure, including cancer and premature mortality. Although the long-term health impacts of this exposure may not be fully understood for decades, if ever, the MWG already has begun to lay a foundation of shared methodological approaches for cancer research. After soliciting recommendations about methodological approaches from a group of nationally recognized experts including biostatisticians, environmental health scientists and cancer epidemiologists in 2010, MWG members representing each of the WTC Centers of Excellence and the WTC Health Registry formed a WTC Analytic Methods Workgroup that also includes labor and community advisers.

The WTC Analytic Methods Workgroup completed an analysis of exposure variables for rescue, recovery and clean-up workers and volunteers collected by its members from

responses to a variety of surveys asking for similar information in different ways, and developed an exposure matrix that identifies just three common exposure variables: dust exposure on the day of 9/11; work periods at the WTC site; and work activities at the WTC site. The difficulty encountered in retrospectively aligning exposure measurements across cohorts underscores the importance of establishing cross-study collaborations at the outset for future disasters.

The WTC Analytic Methods Workgroup also produced common rules for classifying cancers. Abstracts describing both Workgroup efforts were presented at the June 2011 meeting of the Council for State and Territorial Epidemiologists and emphasized the importance of collaboration among institutions studying an already complex health issue.

Other areas of research recommended by the MWG must be more fully addressed. These include: assessing the mental and physical health of WTC-exposed children, and the children of WTC-exposed first responders; evaluating the effectiveness of treatment for WTC-related conditions; obtaining a better understanding of co-morbid mental and physical conditions and how this co-morbidity may influence disease progression, functioning and recovery; and initiating investigations into the relationship between WTC environmental contaminants and specific physical illnesses and the establishment of biologic indicators specific for WTC exposures.

Education Recommendations

- Increase awareness of WTC-related symptoms and the availability of clinical resources among people who were exposed to the disaster.
- Increase awareness of *Clinical Guidelines for Adults Exposed to the WTC Disaster* among health care professionals, especially in areas where large numbers of WTC-exposed individuals may reside.
- Develop and disseminate clinical guidelines for children exposed to the WTC disaster.
- Educate policy makers, the media and the public about the difficulty in establishing a direct cause-effect relationship between WTC exposure and any one individual's illness for most diseases, especially those that are relatively rare.
- Gather and publish lessons learned after 2001 terrorist attacks on the World Trade Center about preventing and treating disaster-related health conditions (see section beginning on page 11).

Education Progress

Members of the MWG have made enormous progress in increasing awareness of WTC-related symptoms and the availability of clinical resources among people who were exposed to the disaster. Major accomplishments since 2007 include the following:

- New York City's 311 system offers direct transfers to the NY/NJ WTC Clinical Consortium and the WTC Environmental Health Center for people seeking WTC-related services.
- The Department of Correction established a special unit to refer current employees and retirees who participated in WTC operations to appropriate treatment, and to assist them in filing for workers' compensation and pension disability.

- FDNY published *WTC Health Impacts on FDNY Rescue Workers*, an illustrated, easy-to-understand report about findings from the first six years of monitoring and treatment, and will be publishing a ten-year update.
- The NY/NJ WTC Clinical Consortium conducts extensive outreach including commemoration of Responder Day in June; distributes *The WTC Responder Health Watch*, a quarterly newsletter for all program participants; and hosted a successful conference to explain health services under the Zadroga Act.
- NYPD created a members-only website centralizing information about all WTC-related services, including the department's own on-site health monitoring program, and established a toll-free number for additional information about the availability of services.
- The NYC Department of Health and Mental Hygiene launched a "one-stop shopping" 9/11 health website with regularly updated information about WTC-related research and services which receives an average of 4,000 visitors each month; publishes a bi-monthly 9/11 health e-newsletter with nearly 9,000 current subscribers; and distributed two brochures City-wide: *"Is 9/11 Affecting Your Health?,"* a Health Bulletin describing WTC-related symptoms and services, and a *9/11 Resource Guide*, listing dozens of organizations offering various kinds of assistance.
- The WTC Environmental Health Center awarded grants to ten community-based organizations to conduct outreach; developed "Lived There? Worked There? You Deserve Care," a subway advertising campaign and brochure; held health forums for potential adult patients and parents of exposed children and adolescents; and worked with the Department of Education to inform 15,000 Lower Manhattan parents who had children in school on 9/11 about the WTC pediatric program at Bellevue Hospital.

With input from MWG members at FDNY, the NY/NJ WTC Clinical Consortium and the WTC Environmental Health Center, as well as community and labor advisers, the NYC Department of Health and Mental Hygiene revised the *Clinical Guidelines for Adults Exposed to the World Trade Center Disaster* it first published in 2006, and also developed *Clinical Guidelines for Children and Adolescents Exposed to the WTC Disaster* in conjunction with child health experts.

The Health Department distributed these guidelines to physicians and pediatricians throughout New York State. In addition, the National Institute for Occupational Safety and Health distributed the adult guidelines to all state health departments in the US. The Health Department mailed the child and adolescent guidelines to more than 200 college health clinics in the northeastern US with a cover letter encouraging physicians to consider the potential impact of WTC exposure on student health.

Lessons Learned

The September 11, 2001 attack on the nation's largest city by international terrorists—only the second time such an event has occurred on US soil, and one with far more devastating consequences than the 1993 bombing of the World Trade Center—altered life for millions of Americans. Government agencies, health care providers and researchers have learned a number of lessons about the health preparedness and response to environmental disasters in urban areas. Some of these lessons, broadly categorized below, have led to greater collaboration among these entities and resulted in important policy or program changes in New York City during the last decade.

- **The need to protect first responders by:**
  - restricting disaster-site access to individuals with the proper qualifications and training, identifying these individuals and recording the times they work for health follow-up.
  - providing and enforcing use of adequate personal protective equipment, including pre-disaster training in the need for, and use of such protection.
  - limiting the duration of physical and mental health exposures of individuals during rescue, recovery and clean-up efforts (to the extent possible) through shift rotation.
  - providing early post-traumatic stress disorder (PTSD) screening for responders with known risk factors, such as a prior history of trauma.
- **The need to protect the health of all populations at risk by:**
  - promoting quality, evidence-based post-disaster services effectively.
  - determining as early as possible those who were potentially exposed and registering them so that a clearly defined population risk is known and so that needs can be assessed and services provided.
  - delivering exposure-appropriate physical health services for acute and chronic injuries/illnesses.
  - providing counseling through rapid mobilization of community-based mental health organizations and major medical centers.
  - referring anyone at higher risk for post-traumatic stress disorder and other mental health conditions for comprehensive, early psychological evaluation using standardized clinical assessment tools and providing evidence-based interventions if indicated.
  - offering culturally competent mental health services.
  - exploring how internet-based technology may help increase the capacity of evidence-based mental health providers, particularly among affected individuals who may not be comfortable seeking traditional services.
  - implementing education and outreach programs to reduce the stigma associated with mental health treatment.
  - providing appropriate social support services to facilitate physical and mental health recovery.

- investing in advertising and outreach, both community-based and personalized, to reach exposed individuals with unmet healthcare needs when disaster-specific services are available at no cost.
- translating and providing culturally appropriate outreach materials for affected communities.

The need to collect high quality data by:

- maintaining a roster of the names, addresses, affiliations and duration of work of all responders from the very beginning of the response effort to establish a baseline for future follow-up and research.
- implementing real-time hospital surveillance systems to track disaster-related injuries and illnesses.
- coordinating a citywide effort to begin collecting and maintaining data about exposed individuals.
- involving labor and community stakeholders to facilitate health registry development and recruitment, and to encourage appropriate monitoring and treatment from the outset, thereby increasing transparency, credibility, and enrollment.

Overview of 9/11 Health Findings: 2001-2011

The World Trade Center (WTC) Medical Working Group has reviewed more than 300 studies published from 2001-2011 (as of September 30, 2011) that are relevant to its mission.

In general, the health findings summarized below are remarkably consistent across WTC studies.

Physical Health

- Dozens of studies indicated that respiratory symptoms, sinus problems, asthma, and loss of lung function were diagnosed in or reported by many who were exposed to WTC dust, including nearly 60,000 rescue and recovery workers, residents and office workers who have enrolled in 9/11 health programs. For many, these conditions have persisted for nearly a decade.
  - Epidemiologic studies indicate that diagnoses of new asthma among exposed groups peaked during the first 16 months after 9/11.
  - Clinical studies demonstrate that the steep declines in pulmonary function first detected among firefighters and EMS workers within a year of 9/11 have largely persisted even among those who never smoked; compared to pre-9/11 data, four times as many firefighters and twice as many EMS workers had below-normal lung function for their ages six to seven years after 9/11.
  - Recent studies also have identified persistent abnormal pulmonary function in other WTC rescue and recovery workers, including police, and in Lower Manhattan residents and area workers.
  - Both epidemiologic and clinical studies have identified substantial co-occurrence, or comorbidity, of mental health conditions with respiratory illness.
- Intense dust cloud exposure on the morning of 9/11 increased the risk for developing respiratory problems across all WTC-exposed groups. Other risk factors among specific WTC-exposed groups included:
  - *Rescue, recovery and cleanup workers:* arriving early or working for long periods of time at the WTC site. In addition, lung function declines were slightly greater among the relatively few firefighters and EMS workers who were active cigarette smokers before and after 9/11 than for nonsmokers.
  - *Residents:* not evacuating their homes or experiencing a heavy layer of dust in their homes.
  - *Office workers:* experiencing a heavy layer of dust in their offices.
  - *Both residents and office workers:* living and working in Lower Manhattan.
- Several studies have shown that WTC exposure is associated with sarcoidosis (an inflammation that can affect any organ, but typically affects the lungs) among rescue, recovery and clean-up workers, especially those who worked on the debris pile.
- Many WTC-exposed adults were also diagnosed with or reported having heartburn, acid reflux or other gastroesophageal reflux symptoms, often but not always in conjunction with other respiratory or mental health symptoms. Researchers have identified early arrival at the WTC and intense exposure to the dust cloud as risk factors. Acid reflux, however, is common among the general population; further research is needed to understand the relationship between reflux symptoms, WTC exposure and other WTC-related health conditions.

- Findings have been inconsistent regarding the impact of WTC exposure on birth outcomes. Some studies suggest that reduced fetal growth found in some women who were pregnant on 9/11 may be related to the stress caused by the attacks. Other studies, however, found no impact of WTC exposure on birth outcomes.
- Few studies have addressed the impact of WTC exposure on child/adolescent health, especially physical health.
- Research about cancer and mortality in WTC-exposed populations is in its initial stages because it takes a longer time for these potential health consequences to become evident. Additional studies are needed to determine if early results are replicated, if they are replicated in different populations with different exposure levels, and if they change over time.
  - The first WTC cancer risk study to be published found that firefighters with WTC exposure may be at greater risk for cancer than firefighters who weren't exposed.
  - The first mortality study to be published showed that persons in the WTC Health Registry were less likely to die in the eight years of follow-up than in the general New York City population. The study, however, also showed that among Lower Manhattan residents, area workers and passersby in the Registry, those with higher levels of WTC exposure may be at greater risk for all-cause mortality and cardiac-related mortality in particular compared to those with intermediate or lower levels of WTC exposure.
- WTC-related illness, especially respiratory illness, has resulted in considerable disability and increased pension costs for New York City.

Mental Health

- Results from large epidemiologic studies have consistently shown that probable post-traumatic stress disorder (PTSD), identified by a positive screening using a standardized psychological assessment tool, is the most common WTC-related health effect among exposed adults, and that it often co-occurs with respiratory illness. Severity of symptoms may vary over time, however, and a face-to-face interview is required to make an individual diagnosis.
- Screening positive for PTSD was more likely among those who were:
  - caught in the dust cloud released by the buildings as they collapsed.
  - injured as a result of the attacks.
  - directly exposed to the events of 9/11, including proximity to the WTC site, witnessing horrific events, or knowing someone who was killed or injured in the attacks.
- Other PTSD risk factors include:
  - Among rescue and recovery workers, early arrival at the WTC site, working there for a long time, or doing tasks outside of their trained area of expertise.
  - Among WTC evacuees, being on a high floor in the towers, initiating evacuation late, or working for an employer that sustained fatalities.

- Trauma before or after 9/11 unrelated to the terrorist attacks, such as urban or domestic violence, was also associated with PTSD or with greater symptom severity. Lack of adequate social support was associated with reduced recovery from PTSD.
- Firefighters with probable PTSD (see definition on previous page) were significantly more likely than those without PTSD to report difficulty functioning at work or at home up to four years after 9/11.
- Police officers, firefighters and emergency medical technicians generally had lower rates of PTSD than untrained volunteers because of prior training and experience with emergency response.
- Despite widespread evidence of PTSD among exposed groups, suicide rates at the population level in New York City did not increase in the first four years after 9/11.
- Depression, anxiety and substance use disorders have not been as well studied as PTSD among WTC-exposed people. The studies to date, however, suggest that the prevalence of these conditions increased shortly after 9/11 and there is significant co-morbidity with PTSD in WTC-exposed populations.
- The PTSD impact of 9/11 on the US population who experienced it indirectly through media coverage may have been briefer and far smaller than studies conducted in the immediate aftermath of the attacks suggested.

Sources: 2008, 2009, 2010, 2011 WTC Medical Working Group annual reports, which can be accessed on line at www.nyc.gov/9-11healthinfo.

Detailed Summary of Most Recent WTC-Related Research

The World Trade Center (WTC) Medical Working Group identified 90 published papers related to health among the WTC-exposed in the scientific literature since its 2010 annual report, including numerous studies that were published in conjunction with the commemoration of the 10th anniversary of the September 2001 terrorist attacks. Thirty-five looked at mental health, including six child studies; 17 looked at physical health; nine looked at both mental and physical health; four reported on environmental exposures and 23 examined other issues, such as the locations, tasks and experiences of responders, a sociopolitical analysis of WTC health issues from a community perspective and the emotional content of text messages on 9/11. Just two studies evaluated treatment efficacy, which the MWG previously identified as a major gap in the literature.

New research with the greatest relevance to the work of the MWG is summarized below. Research published by institutions represented on the MWG is noted in boldface type throughout the research summaries.

Physical Health

Mid-Term Impacts (5-9 Years after 9/11):

A longitudinal study of more than 27,000 rescue and recovery workers who sought treatment at the **New York/New Jersey WTC Clinical Consortium** (based at the Mount Sinai School of Medicine) conducted detailed physical examinations on each worker and also assessed workers' self-reports of physician diagnoses from 2002 to 2010. Nine years after the terrorist attacks, among those still in treatment, 18.1% (1,893) still had active asthma; 20% (2,042) had sinusitis, and 32.6% (3,195) had gastroesophagael reflux disorder (GERD). All three conditions were associated with higher levels of WTC exposure among workers.[3]

FDNY researchers demonstrated that eight years after 9/11, the prevalence of several physician-diagnosed respiratory conditions among 10,999 WTC exposed male firefighters remained high in comparison to men in the general population. Firefighters 44 or younger were much more likely to report sinusitis/rhinitis (17.2% vs. 8.4%); bronchitis (13.2% vs. 3.3%) and COPD/emphysema (1.5% vs. 0.3%). Firefighters ages 45-65 were much more likely to report sinusitis/rhinitis (19.5% vs. 12.2%); current asthma (14.5% vs. 4.9%); bronchitis (13.2% vs. 3.2%); and COPD/emphysema (7.6% vs. 3.2%).[4]

Spirometry, an objective test to measure how well the lungs' large airways are functioning, validated subjective respiratory symptoms in a group of nearly 19,000 rescue and recovery workers being monitored at the **NY/NJ WTC Clinical Consortium**. Workers reporting persistent cough, wheezing, or difficulty breathing upon exertion were more likely than workers without symptoms to have lower lung function and a higher rate of bronchodilator responsiveness during their first clinical visits between 2002 and 2008.[5] The nine-year cumulative incidence for spirometric abnormalities among 5,769 responders at risk in the **NY/NJ WTC Clinical Consortium** was 41.8%; three-quarters of these abnormalities were low forced vital capacity, a measurement taken when the responders were asked to exhale all the air in their lungs as forcefully as possible.[6]

In a longitudinal study of 139 **NYPD** emergency service workers who responded to the WTC disaster, researchers found evidence of moderate declines in lung function six years later, in comparison to pre-9/11 baseline data. Abnormal spirometry, seen in 5.3% of the cohort, was associated with earlier arrival and longer duration at the WTC site. The greatest declines were seen in smokers and workers without respiratory protection.[7]

The **WTC Health Registry**, in collaboration with the **WTC Environmental Health Center**, also found abnormal lung function in Lower Manhattan residents and area workers who

reported persistent respiratory symptoms seven to eight years after exposure to the WTC disaster. In a case control study using spirometry and oscillometry, a test to measure how well the lungs' small airways are working, researchers found that 180 enrollees with persistent respiratory symptoms (cases) were more likely to have abnormal lung function than nearly 500 enrollees (controls) who had not reported any new respiratory symptoms since 9/11. Oscillometric abnormalities were found even among cases with normal spirometry.[8]

Twelve patients with suspected interstitial lung disease or abnormal lung function underwent lung biopsies four to seven years after 9/11 at the **WTC Environmental Health Center**, which treats symptomatic Lower Manhattan area workers and residents. Pathologic findings included various degrees of interstitial lung disease, small airways disease and emphysema even though only four of the patients had a history of smoking. Researchers also noted the presence of particulate matter in lung tissue with a composition similar to that found in analyses of dust collected from the WTC site after the collapse of the buildings.[9]

Researchers at the **NY/NJ WTC Clinical Consortium** found an increased incidence of sarcoidosis among nearly 20,000 rescue and recovery workers who sought care for 9/11-related health problems in comparison with other published background rates, although no association was found with date of arrival at the WTC site, or exposure to the dust cloud released by the collapse of the buildings. Thirty eight new cases were verified from 2002 to 2007, with the highest incidence occurring two and three years after 9/11.[10]

Using biopsy results, **WTC Health Registry** researchers confirmed 43 cases of sarcoidosis among adults in its cohort of rescue and recovery workers, Lower Manhattan residents, area workers and passersby. A nested case control study found that working on the WTC debris pile significantly increased the sarcoidosis risk for rescue and recovery workers; no risk factors were identified for other groups.[11]

Researchers investigating obstructive sleep apnea (OSA) at the **NY/NJ WTC Clinical Consortium** compared a group of 50 rescue and recovery workers with aerodigestive symptoms who reported habitual snoring six to seven years after 9/11 to a similar group of men without WTC exposure who also snored habitually. OSA was associated with body mass index (BMI) and weight in the group without WTC exposure but not in the WTC workers, suggesting that factors other than obesity may contribute to OSA among WTC responders with aerodigestive disorders.[12]

In a study of more than 37,000 adults enrolled in the **WTC Health Registry** who reported no pre-9/11 gastroesophageal reflux symptoms (GERS), 13% reported that new GERS had persisted up to six years after 9/11. GERS were positively associated with higher levels of WTC exposure, asthma and PTSD but occurred even among enrollees who didn't report asthma or PTSD, suggesting for the first time an independent association with WTC exposure.[13]

Short-Term Impacts (1-4 Years after 9/11):

Two literature reviews focusing on birth outcomes among WTC-exposed pregnant women suggest that environmental exposure or attack-related stress reduced fetal growth in some women, a finding similar to that in studies of birth outcomes after other terrorist attacks, environmental/chemical disasters and natural disasters. Disaster literature not specific to 9/11 indicates that child development may be more influenced by maternal mental health than by direct effects of disaster-related pre-natal stress.[14,15] A newer study not included in these reviews compared two groups of women who were pregnant between September 11 and December 1, 2001: 500 women who were enrolled in the **WTC Health Registry**, and 50,000 women who lived at least five miles from the WTC site. Although researchers found similar birth weight and gestational age at delivery in the groups, Registry enrollees with probable PTSD were more likely than women without PTSD to deliver premature or underweight babies.[16]

Mental Health

Mid-Term Impacts (4-9 years after 9/11):

Rates of chronic post-traumatic stress disorder (PTSD) among WTC responders vary significantly by worker category nine years after 9/11:

- The prevalence of probable PTSD among more than 11,000 firefighters in the **FDNY WTC Medical Monitoring and Treatment Program** was four times higher than in the general population, 7.4% compared to 1.8%. Early arrival at the WTC site, exercising less and drinking more alcohol were associated with the persistence or onset of PTSD symptoms, as were co-occurring respiratory or gastroesophageal reflux symptoms.[17]
- Researchers at the **NY/NJ WTC Clinical Consortium** report that workers, excluding police responders, continued to screen positive at high rates for PTSD (19.2%), depression (17.9%) and panic disorder (12.3%). Police responders had much lower rates of these conditions: PTSD (5%), depression (4.5%) and panic disorder (4.8%).[18]

The **FDNY WTC Medical Monitoring and Treatment Program** screened nearly 2,000 retired firefighters, the majority of whom were disabled, for depression, PTSD, and alcohol problems four to six years after 9/11. Among those at elevated risk for depression (23%) or PTSD (22%), 70% were at elevated risk for both conditions. Problem alcohol use and early arrival at the WTC site were identified as unique risk factors for depression and PTSD, respectively.[19]

Short-Term Impacts (1-4 Years after 9/11):

A longitudinal study suggests that modest increases in drinking and the use of psychotropic medication were associated with PTSD onset in New York City up to two years after the attacks on the World Trade Center. Among a representative sample of nearly 1,700 adults in New York City who were interviewed in late 2002 and again a year later, those with PTSD consumed one more drink per month and took psychotropic medication 20 more days per year.[20]

Researchers at the **WTC Health Registry** estimate that 15% of 3,271 civilians who evacuated either of the WTC towers on 9/11 had PTSD two to three years later. Being on a high floor in the towers, initiating evacuation late and working for an employer that sustained fatalities were among the exposures that increased their risk for PTSD.[21]

A longitudinal study of more than 5,600 firefighters at the **FDNY WTC Medical Monitoring and Treatment Program** that began six months after 9/11 found that those with PTSD up to four years after 9/11 were nearly 20 times more likely than those without PTSD to report substantial difficulty functioning at home or work. Among the 15.5% firefighters with PTSD, nearly half developed it after the first six months.[22]

Two studies conducted by **Weil-Cornell Medical College** researchers based on more than 3,000 mostly male utility workers who were screened for mental health conditions at their place of employment offer new insights about traumatic stress among WTC recovery workers:

- Ten to 22 months after 9/11, eight percent of 2,960 workers had symptoms consistent with full PTSD, 6% with depression, 3.5% with anxiety and 2.5% with panic disorder. Believing that their life had been in danger was the best predictor of PTSD among these workers.[23]

- 216 workers with trauma symptoms who didn't meet the criteria for full PTSD within the first two years of 9/11 were screened again one and two years later. 29% met the criteria for sub-threshold or full PTSD at Time 2 and 24.5% met these criteria at Time 3. In addition, workers with sub-threshold PTSD reported levels of impairment roughly four times greater than workers with no PTSD symptoms.[24]

Among a sample of 455, mostly female patients who were screened for mental health conditions when they sought primary care at a general medicine clinic in New York City, the PTSD rate decreased significantly from 9.6% one year after 9/11 to 4.1% three years later. Patients who reported pre-9/11 depression, the only significant predictor of PTSD trajectory, were 10 times more likely to have PTSD four years after the WTC attacks than those who didn't.[25]

Research published soon after 9/11 reported elevated rates of PTSD among the US population ranging from 4.3% to 17%. However, data from a national epidemiologic survey conducted from 2004 to 2005 and including nearly 35,000 people suggests that indirect experience of 9/11, such as witnessing the attack on television, had the lowest risk of PTSD, 1.3%, of 32 traumatic events listed. Other events included sexual assault as an adult or child (PTSD risk 40.2%), being stalked (PTSD risk 19.5%) and experiencing a natural disaster (PTSD risk 5.1%).[26]

Co-Morbidity

Substantial co-morbidity across physical and mental health conditions exists among firefighters. In a study of nearly 11,000 firefighters seven to nine years after 9/11, **FDNY** researchers found that 41.8% of those reporting symptoms of probable PTSD also self-reported a physician diagnosis of obstructive airways disease (OAD), which includes asthma, bronchitis or COPD/emphysema; 33.3% with probable PTSD or depression also self-reported a physician diagnosis of OAD. Among those with depression alone, 28.5% self-reported OAD. The researchers found similar results when they used medical records instead of self-reports for the analysis.[27]

Rescue and recovery workers who sought treatment at the **NY/NJ WTC Clinical Consortium** from 2002 – 2010 also reported substantial co-morbidity: in a clinical population of more than 27,000 workers, nearly half with asthma (1,459 workers) also reported at least one mental health condition, as did more than a third of workers with either sinusitis (2,006 workers) or gastroesophageal reflux disease (2,348 workers). Similarly, around 70% of workers who reported PTSD (2,806 workers), depression (2,153 workers), or panic disorder (1,129 workers) also reported a physician diagnosis of at least one physical disorder.[28]

Cancer and Mortality

FDNY researchers confirmed 263 new cases of cancer from September 11, 2001 through 2008 among 8,927 male firefighters who responded to the WTC disaster, 25 more than would have been expected among men of similar age, race and ethnicity in the general population according to the National Cancer Institute Surveillance Epidemiology and End Results (SEER) reference population. When researchers compared the WTC-exposed firefighters to unexposed firefighters they found a 19% increase in cancer overall, after making an effort to correct for both potential surveillance bias (due to changes in medical screening tests given after 9/11) and lead time bias (it is unlikely that any WTC-related cancer would develop within two years of 9/11). Lack of statistical power prevented the researchers from drawing any conclusions about specific types of cancer.[29]

WTC Health Registry researchers identified 790 deaths from 2003 through 2009 among 41,930 adults who resided in New York City at the time of their enrollment in the Registry. The all-cause death rate among Registry enrollees was 43% lower than among NYC residents as a whole.

Researchers detected exposure-related differences in mortality rates among those in the Registry: lower Manhattan residents, area workers and passersby with intermediate or high levels of exposure, including those with two or more injuries on 9/11, had elevated all-cause and heart disease mortality risks in comparison to those with intermediate or lower levels of exposure. The study did not detect exposure-related mortality differences among rescue and recovery workers even when internal comparisons were conducted.[30]

Children

A survey of more than 8,200 New York City schoolchildren in grades 4 to12 conducted six months after 9/11 indicates that 40% of their families experienced at least one of five disruptions: family relocation, job loss, restricted travel, school closure and school relocation. After adjusting for sociodemographic characteristics, WTC exposure and prior trauma, youth reporting that their parents allowed them to travel less freely around the city after 9/11 were three times as likely to have PTSD as youth whose parents allowed them to travel without restrictions. Youth reporting family job loss were twice as likely to have PTSD as those who didn't.[31]

Volunteers

A longitudinal study of 4,974 adult volunteers enrolled in the **WTC Health Registry** draws distinctions between affiliated volunteers and lay volunteers. Compared to affiliated volunteers, lay volunteers were:

- more likely to have been present in lower Manhattan, experienced the dust cloud, witnessed horrific events, had an injury on 9/11 and reported unmet health care needs.
- nearly twice as likely to have reported an early post-9/11 mental health diagnosis or a diagnosis of asthma or reactive airways dysfunction syndrome.
- more than twice as likely to have had chronic PTSD, late-onset PTSD, or new or worsening lower respiratory symptoms.[32]

Respiratory Protection

A longitudinal study of 9,296 rescue and recovery workers enrolled in the **WTC Health Registry** who worked at least one shift on the WTC debris pile offers new insights into the use of respiratory protective equipment (RPE):

- Fewer than 20% of workers reported use of standard respirator models on 9/11 and half of the workers wore no facial covering of any kind on that date.
- The strongest predictors of using adequate RPE were affiliation with construction, utilities or environmental remediation organizations, and prior training in the use of RPE.
- Workers who reported no respiratory protection were more likely to report recurrent respiratory symptoms and some respiratory disease compared to those who used respirators.[33]

Treatment

Prior research has established the effectiveness of prolonged exposure therapy, a form of cognitive behavioral therapy, in treating PTSD.[34] Researchers at the New York State Psychiatric Institute/Columbia University recruited 37 WTC-exposed patients for a randomized clinical trial comparing prolonged exposure therapy plus paroxetine, a selective serotonin reuptake inhibitor, to prolonged exposure therapy plus placebo. Although the study was small, it suggests that patients treated with therapy and paroxetine showed greater improvement in PTSD symptoms and remission status in ten weeks than the patients treated with therapy alone during this period.[35]

A study of 300 young people ages five to 21 drawn from a larger group of youth who had been exposed to the WTC disaster and referred to mental health services suggests that matching treatment intensity to need is effective. Researchers compared outcomes for youth with more trauma symptoms who received trauma-specific cognitive behavioral therapy (CBT) to youth with milder symptoms who received a brief CBT skills intervention over an 18-month period following the attacks. Trauma symptoms decreased in both groups six months after they began treatment; rates of improvement were similar even though the severity of need differed.[36]

Disability

The **FDNY WTC Medical Monitoring and Treatment Program** assessed quality of life among a group of 275 disabled firefighters who retired because of lung problems and compared the results to active firefighters and retired firefighters without disability pensions, all of whom were exposed to the WTC collapse, six to eight years after 9/11. Among the three groups, disabled retirees were more likely to score lower on both physical and mental health quality of life measures, but the difference between the disabled firefighters and the other two groups was less pronounced for mental health.[37]

An analysis of retirement pensions awarded by **FDNY** found that in the seven years prior to 9/11, 48% of these pensions were for accidental disability. In the seven years after 9/11, accidental disability pensions comprised 66% of the total, with 47% (1,402 pensions) related to the WTC attacks and mostly due to respiratory illness. The FDNY study also estimated that WTC-related FDNY pensions added $826 million in increased costs to the system.[38]

Environmental Exposures

Toxicological studies conducted at **New York University** using dust samples gathered from the WTC site within 48 hours of the buildings' collapse clearly show that particles of a size likely to have been inhaled had an adverse effect on human cell function that may have contributed to chronic lung disease, either by themselves or in combination with 10% cigarette smoke extract.[39]

Federal researchers investigating chemical contamination of the Hudson-Raritan Estuary (HRE) before and after 9/11 found that measurements of eleven trace elements, including arsenic, copper, lead and zinc, in blue mussels were significantly higher in the HRE than elsewhere in the nation, but post-WTC attack measurements were not significantly higher than pre-attack measurements. However, high ambient levels of trace elements in the HRE may have the made the impact of the WTC collapse less discernible.[40]

Strengths and Limitations of Published WTC-Related Research

Much of the data presented in this report were gathered and analyzed by scientists and clinicians associated with a select number of institutions that recognized the need to monitor the health of individuals affected by the World Trade Center (WTC) collapse early after the disaster.

Particular strengths of this body of research include the fact that many different studies have found similar physical and mental health effects across exposed groups, and that research findings are gleaned from several large longitudinal cohorts, in addition to numerous one-time surveys. Weaknesses stem predominantly from the absence of pre-existing data in most populations and the lack of initial funding for studies.

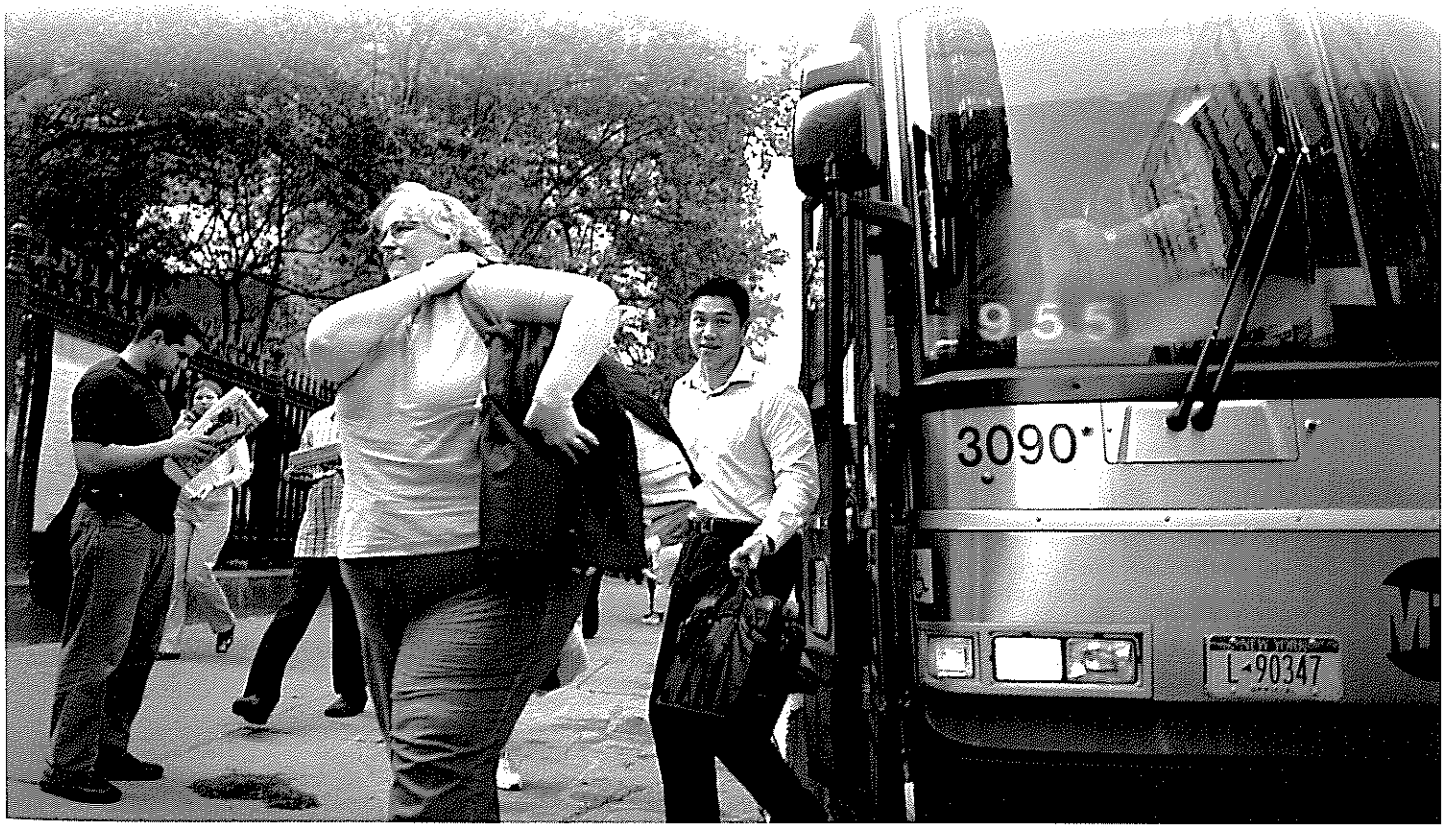
Some of the largest WTC study groups include:

- Nearly all FDNY responders who responded to the disaster. All have pre- and post-9/11 medical records, and the population is restricted to FDNY rescue workers, thus minimizing recruitment bias. The group receives ongoing clinical monitoring with strong participation, even among retirees, indicating limited bias from longitudinal dropout.
- A large cohort of responders enrolled in the New York/New Jersey WTC Clinical Consortium at the Mount Sinai School of Medicine, the State University of New York at Stony Brook, New York University/Bellevue Hospital, Queens College and the University of Medicine and Dentistry of New Jersey for clinical screening, monitoring and treatment. This Consortium collects similar data to FDNY to facilitate comparisons across worker groups.
- A high percentage of NYPD members were exposed to the disaster at various locations. The NYPD Medical Division, like FDNY, has pre- and post-9/11 medical records for these individuals. The pre-9/11 exposure of this cohort is similar to that of New York City residents which makes study findings relevant to the larger population.
- A growing cohort of symptomatic patients who include residents, area workers and clean-up workers at the WTC Environmental Health Center at Bellevue Hospital Center, Gouverneur Health Care Services and Elmhurst Hospital Center.
- The WTC Health Registry, the largest post-disaster exposure registry in US history, enrolling more than 71,000 exposed individuals to be tracked for an expected period of 20 years. The diverse cohort includes rescue, recovery and clean-up workers; residents; office workers; students; and passers-by.

Several significant challenges also affect the ability to conduct accurate research on 9/11 health effects. It is important to highlight these limitations as they characterize many but not all of the published studies described in this report, and to review these limitations when planning data collection efforts after future disasters:

- With the exception of the FDNY cohort, the exact size and composition of the population affected by the disaster remains unknown, although estimates have been developed and published. This, along with selective participation in cohorts, can affect calculation of incidence rates and comparison of these rates across groups.
- It is difficult to measure how much and what type of exposure different people had to traumatic or environmental impacts of 9/11. All exposure measurements remain imprecise.

- Many studies are conducted on volunteer or clinic-based samples, which may not be representative of the true population of exposed people. Depending on the enrollment criteria of specific studies, they may suffer from recruitment bias with over-representation of those who are ill.
- People with post-traumatic stress disorder (PTSD) may be under-represented in studies because avoidance of anything that reminds them of 9/11 can be symptomatic of the condition.
- It is difficult to determine the incidence and prevalence rates for many potentially WTC-related conditions, including persistent cough, dyspnea, sinusitis, gastrointestinal symptoms, PTSD and depression because confirmatory laboratory or diagnostic testing is either not available or because an acknowledged "gold standard" does not exist for diagnosing a condition.
- Many studies rely on self-reports of a range of non-specific symptoms and conditions to measure the burden of these conditions in exposed populations without verification of diagnoses.
- The high frequency of certain conditions in the general population, especially acid reflux, as well as the absence of background incidence or pre-9/11 data in most WTC-exposed populations, make it difficult to draw firm conclusions about whether or not post-9/11 diagnoses can be attributed definitively to WTC exposure at a clinical level.
- Increased monitoring and diagnostic testing of WTC-exposed populations in comparison to the general public may result in a detection bias for some conditions, such as sarcoidosis and cancer.
- Few studies have examined the physical effects of WTC exposure on children and adolescents.



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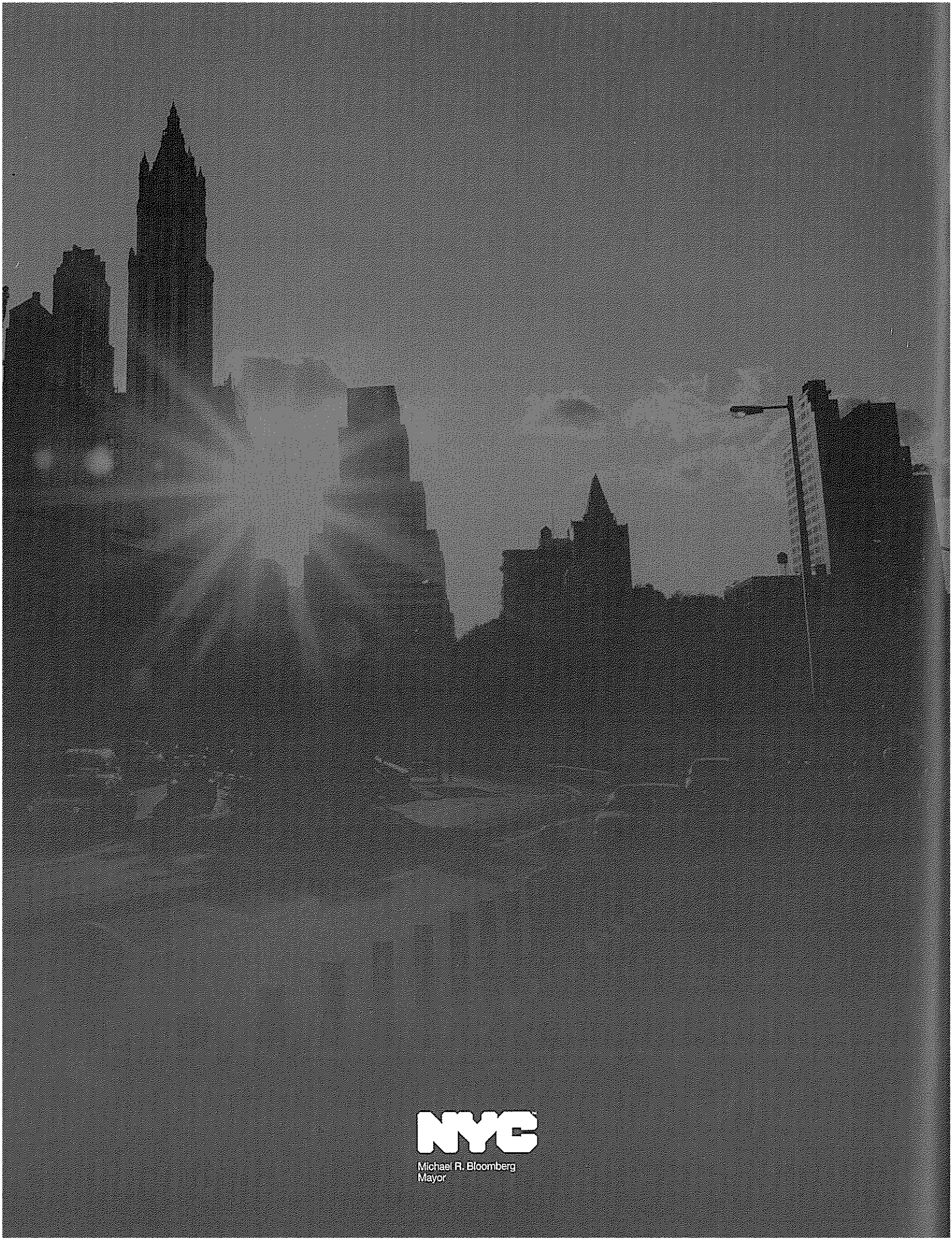
For more information about the research and services described in this report, please visit www.nyc.gov/9-11HealthInfo.



NYC

Michael R. Bloomberg
Mayor

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. ______ Res. No. ______

☐ in favor ☐ in opposition

Date: 1/30

(PLEASE PRINT)

Name: Jeffrey Hon

Address: 42-09 28th St, Queens, NY 11101

I represent: World Trade Center Registry / Dept. of Health

Address: 42-09 28th St, Queens, NY 11101

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. ______ Res. No. ______

☐ in favor ☐ in opposition

Date: 1/30/12

(PLEASE PRINT)

Name: FRANK TRAMONTANO

Address:

I represent: PATROLMEN'S BENEVOLENT ASSOCIATION

Address: 125 BROAD ST. 9/11 RESPONDER

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. ______ Res. No. ______

☐ in favor ☐ in opposition

Date:

(PLEASE PRINT)

Name: Catherine McVay Hughes

Address:

I represent: FealGood Foundation 9/11 Responder

Address:

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 1/30/12

(PLEASE PRINT)

Name: Catherine Molloy Hughes

Address: _____

I represent: CBI

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 1/30/12

(PLEASE PRINT)

Name: RONALD PODOLSKY

Address: 400 E 20th St. NYC 10009

I represent: RETIRED POLICE OFFICER

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: Jan 30 2012

(PLEASE PRINT)

Name: Carolyn Gruene

Address: Gotham Center, 42-09 28th St. Queens NY 11101

I represent: NYC Dept of Health + Mental Hygiene

Address: As above

Please complete this card and return to the Sergeant-at-Arms