

Statement of

Joan Reibman, MD

**Associate Professor of Medicine and Environmental Medicine
Director NYU/Bellevue Asthma Center
Director of Bellevue Hospital WTC Environmental Health Center**

**Bellevue Hospital
New York University School of Medicine**

**The Long-Term Health Impacts from September 11: A Review of Treatment,
Diagnosis and Monitoring Efforts
March 21, 2007**

**Before the
Senate Health Education Labor and Pensions (HELP) Hearing**

Thank you Chairman Kennedy, Ranking Member Enzi, and members of the Health Education Labor and Pensions committee:

My name is Joan Reibman, and I am an Associate Professor of Medicine and Environmental Medicine at New York University School of Medicine, and an Attending Physician at Bellevue Hospital, a public hospital on 27th Street in NYC. I am a specialist in pulmonary medicine, and for the past 15 years, I have directed the Bellevue Hospital Asthma Program. Most of my patients come from Lower Manhattan, which, though replete with office towers, is also a major residential community; almost 60,000 residents of diverse race and ethnicity backgrounds live south of Canal St. alone (US census data). The residents are economically diverse, some living in large public housing complexes, others in newly minted coops.

The destruction of the WTC towers resulted in the dissemination of dusts throughout Lower Manhattan. These dusts settled on streets, playgrounds, cars, and buildings. Dusts entered apartments through windows, building cracks, and ventilation systems. The WTC buildings continued to burn through December. Some residents hired professional cleaners to remove the dusts; many cleaned their own apartments. Thus individuals living in the communities of Lower Manhattan had potential for prolonged exposure to the initial dusts, to re-suspended dusts and to the fumes from the fires. As pulmonologists in a public hospital, we naturally asked whether the collapse of the buildings posed a health hazard for these residents. Although levels of dust particles and particle components were being measured, it seemed to us that the only way to measure the true impact was to monitor the residents.

With funds from the Centers for Disease Control, we collaborated with the New York State Department of Health to examine whether there was an increase in the rate of new respiratory symptoms. The study was designed, implemented and completed 16

months after 9/11/01 and the results have been reported in two publications (Reibman et al. The World Trade Center residents' respiratory health study; new-onset respiratory symptoms and pulmonary function, *Environ. Health Perspect.* 2005; 113:40-411. Lin et al. Upper respiratory symptoms and other health effects among residents living near the world trade center site after September 11, 2001, *Am. J. Epidemiol.* 2005; 162:499-507). We surveyed residents in buildings within one mile of Ground Zero, and, for purposes of control, other lower-risk buildings approximately five miles from Ground Zero. Lung function testing, consisting of screening spirometry, was performed in a subgroup of individuals in the field. Analysis of the 2,812 residents in the exposed area revealed that approximately 60% of individuals in the exposed area compared to 20% in the control area reported new onset respiratory symptoms such as cough, wheezing, or shortness of breath, at any time following 9/11. The more important question, however, was whether these symptoms resolved over time, or persisted. To address this question, we examined whether symptoms persisted in the month preceding completion of the survey (8-16 months after 9/11) with a frequency of at least twice/week. Such new-onset and persistent symptoms as eye irritation, nasal irritation, sinus congestion, nose bleed, or headaches were present in 43% of the exposed residents, more than three times the number of exposed compared to control residents. New-onset persistent lower respiratory symptoms of any kind were present in 26.4% versus 7.5% of exposed and control residents respectively; a more than three fold increase in symptoms. This included an increase in new onset, persistent cough, daytime shortness of breath, and a 6.5-fold increase in wheeze (10.5 % of exposed residents versus 1.6% of control residents respectively). These respiratory symptoms resulted in an almost two-fold increase in unplanned medical visits and use of medications prescribed for asthma (controller and fast relief medications) in the exposed population compared to the control population.

There were some potential limitations to our studies. Because of the unexpected nature of the disaster, we had to rely on self-reported health information. One must keep in mind that during the time of the study, the postal service was not functioning in Lower Manhattan and often mail did not reach residents – we resorted to hand delivery. Residents were moving in and out of the buildings, were emotionally distraught, and were being bombarded with a variety of forms for housing services, clean-up services etc. Our response rate, though low, is comparable to that of the US Census and we confirmed our data, by targeting a few buildings in the exposed and control areas with more intense outreach that resulting in a better response rate (44%). The data from this group was similar to that from the overall study.

This study was one of the few studies, and particularly one of the few with a control population, to describe the incidence of respiratory symptoms among residents of Lower Manhattan after 9/11/01. It suggested that many residents had new onset symptoms in the immediate aftermath, with persistence of symptoms in the year after the event. Our findings are similar to those now described through the NYCDOHMH WTC Registry.

Do these symptoms persist today, over five years after the attack and some three and a half years after our study? When it comes to residents and local office workers, we have little information. The NYCDOHMH WTC Registry, which was implemented after our study was completed, and closed in 2004, found a similar pattern of symptoms in residents and office workers, but did not address the issue of persistence. This question is now being addressed with a second study implemented by the NYCDOHMH WTC Registry and we look forward to the results, which will help shed light on this question.

While we await more survey information, we are cognizant of what we are seeing in our clinics. After 9/11, we began to treat residents who felt they had WTC-related illness

in our Bellevue Hospital Asthma Clinic. We were then approached by the Beyond Ground Zero Network, a coalition of community organizations, and together began an unfunded program to treat residents. We were awarded an American Red Cross Liberty Disaster Relief Grant to set up a medical treatment program for WTC-related illness in residents and responders, which began functioning in September 2005. In September 2006, Mayor Bloomberg announced new initiatives to provide for evaluation and treatment of individuals with suspected World Trade Center-related illnesses and this city funding of \$16 million over 5 years has allowed us to expand the program.

To date, we have evaluated and are treating over 1000 individuals. In the past month alone, with minimal outreach, we received over 400 calls to enter the program. We have a wait list of hundreds. These requests are from local residents of diverse socioeconomic status, some of whom were evacuated, but others who were left in their apartments, with no place to go. We also receive calls from office workers, many of whom were caught in the initial dust cloud as the towers disintegrated and then later returned to work. And we have a large contingency of clean-up workers, the individuals who removed the layers of dusts that had infiltrated the surrounding commercial and office spaces in order to allow the city to function.

An individual has to have a physical symptom to enter our program; we are not a screening program for asymptomatic individuals. Most of our patients have symptoms that began after 9/11 and consist of upper respiratory symptoms such as sinus congestion (45%), or lower respiratory symptoms, such as cough (52%), shortness of breath (65%) or wheezing (36%), for which they are still seeking care, five years after 9/11. We have individuals like J.K., a former broker in government securities, who was working at 80 Pine Street, just east of the towers, and was caught in the dust cloud on 9/11. He returned to work 1 week later and soon after developed a persistent unremitting

cough. He sought care by a variety of physicians and was told of recurrent bronchitis, pneumonia, and finally one year ago, was told that he had reactive airways dysfunction. Last year alone, he required 5 courses of prednisone – a steroid medication. Now, no longer working, and on chronic inhaled medications, on a good day, he can walk 5 blocks.

Or M. R. a 37 year old resident of Beekman Street, just east of the towers, who went 10 years without a sick day and trained for the marathon. He stayed in Lower Manhattan, having no place else to go, cleaned his dust-covered apartment and 1 year later, noted the onset of shortness of breath and wheezing. He now requires daily high dose inhaled steroids to control his symptoms.

Or J.F. a healthy man, a carpenter at the NY Stock exchange, caught in the dust cloud, who helped clean up the exchange, now with lung function that is 60% of normal.

Whereas many of these individuals have symptoms that can be treated like asthma, others have a process in their lungs that we do not fully understand and may consist of a granulomatous disease of the lung like sarcoid, or fibrosis, which is a scarring in the lungs. And although we call ourselves a “treatment” program, many questions remain. We do not know how best to evaluate and monitor the symptoms. We do not know which medications work best. We do not know how long we will need to treat these individuals and if the symptoms will completely resolve. We do not understand the underlying mechanism or pathology of the symptoms. Only rare individuals, those with atypical presentations or a failure to respond to treatment, have had invasive tests, which may help reveal the underlying pathology. Finally, we do not know whether other diseases will emerge, the threat of cancers, particularly those of the blood or lymph nodes, remains a concern. We know that many residents and workers of downtown Manhattan were subjected to environmental insults on a large scale and many will require continued

screening and treatment for years to come. Our unanswered questions suggest the continued need for epidemiologic, clinical and translational research studies to help answer these questions.

I thank Mayor Bloomberg and Members of Congress for their efforts to provide funding for monitoring and treatment and Members present for having this important hearing. We need continued support for treatment programs for residents, local workers, and individuals involved in rescue, recovery, and debris removal.

Joan Reibman, MD

Pertinent funding to Joan Reibman, MD.

- 2001-2002 CDC, World Trade Center Residents Respiratory Survey (Institutional P.I, Lin P.I.)
- 2001-2003 NIH, NIEHS, World Trade Center Residents Respiratory Impact Study: Physiologic/Pathologic characterization of residents with respiratory complaints (P.I.)
- 2004-2005 CDC, NIOSH WTC Worker and Volunteer Medical Monitoring Program (P.I.)
- 2005-2007 American Red Cross Liberty Disaster Relief Fund (P.I.)
- 2006-2011 New York City funding for Bellevue WTC Environmental Health Center