



# **A community-medical partnership following an urban environmental disaster; role of the public hospital**

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## **Collapse of two 107 story World Trade Center buildings on 9/11/01**

- **1.2 million tons of building materials**
- **Pulverized cement, asbestos, glass, fiberglass**





**Fires burned until  
December 19, 2001**



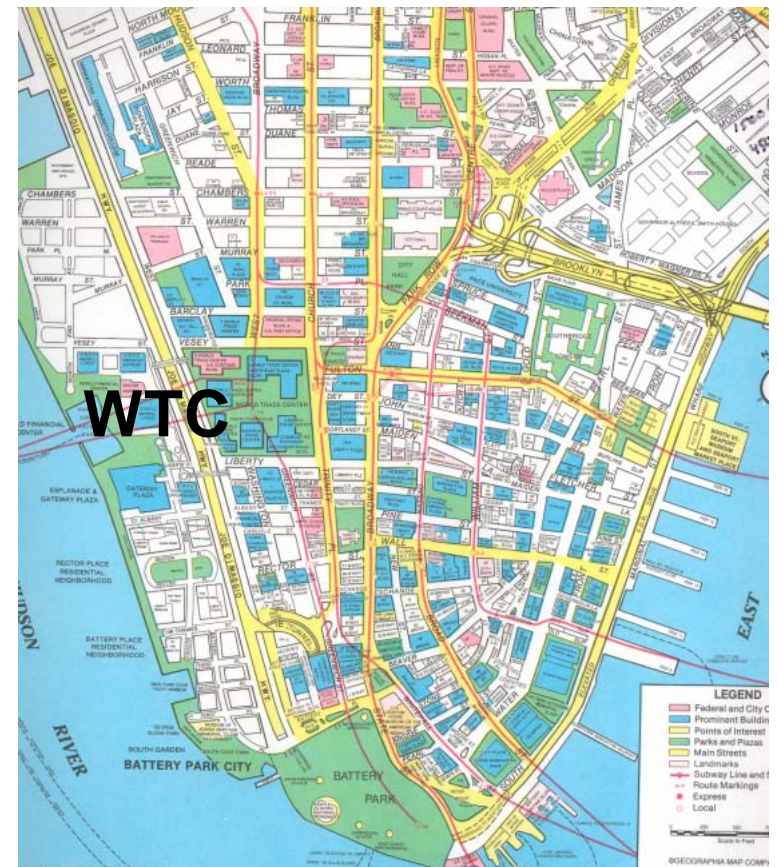
# Multiple populations at risk for adverse health effects

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- Rescue workers
  - Risks now well-described
  - Many respiratory symptoms documented
- Additional populations at risk
  - Residents
  - Local workers
  - Clean-up workers

# Residents

- 60, 000 residents south of Canal Street (US census data)
- Diverse socioeconomic levels
- Diverse race/ethnicity
- Diverse housing stock (large apartment buildings, small residential buildings, lofts)



# Local workers




- > 360,000 Local workers/office workers, commuters in the area on 9/11

# Clean-up workers

- Unknown number of clean-up workers
- Surrounding commercial spaces and residential spaces all needed cleaning
- Offices and Wall Street opened 1 week after 9/11





# Problem identified: adverse health effects in non-rescue worker population

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- Residents

- 3.5 fold increase in persistent respiratory symptoms 16 months after the event

Reibman et al., Environ Health Perspec 113: 406;2005

Lin S. et al., Amer J Epidemiol 162:499;2005

- Local building occupants

- respiratory symptoms in > 50%

Brackbill et al. MMWR surveillance summ. 55:1; 2006

- Clean-up workers

- Respiratory symptoms common

Malievskaya et al. Am J. Indus. Med 42:548;2002





# Community response

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- Coalition of community based organizations
  - Beyond Ground Zero Network
- Tenants organizations
- Environmental organizations
- Advocated for:
  - Recognition of adverse health effects in non-rescue worker population
  - need for medical treatment in a non-rescue worker population



# Medical and community barriers to care

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- Medical side
  - Absence of any health service for WTC-related illness for non-rescue workers
- Community side
  - Lack of familiarity with the health care system
  - Non-English speaking
  - Lack of insurance
  - Immigration status



# Medical and community response

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- Medical response
  - Bellevue Hospital, largest NYC Public Hospital
  - New York University School of Medicine
  - Used an existing asthma clinic to develop an unfunded collaborative pilot program to meet identified needs
- Community groups (Beyond Ground Zero Network)
  - Provided advocacy
  - Patient navigation



## American Red Cross Liberty Disaster Relief Fund (2005)

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- \$2M Funded clinic to treat residents and clean-up workers
- Interdisciplinary medical and mental health evaluation and treatment program
- Simultaneous translation services and multicultural, multilingual staff
- Community group interface to facilitate access to care



# Medical and community advocacy for funding

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- Advocacy funding to community groups
  - American Red Cross Liberty Disaster Relief Fund
- Funding for treatment program
  - American Red Cross Liberty Disaster Relief Fund
  - City of New York (5 year funding)



# Bellevue Hospital WTC Environmental Center

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- Treatment program for WTC-related illness in residents, local workers, clean-up workers.
- Interdisciplinary treatment program (medical/mental health evaluation and treatment)
- Extensive counseling for provision of social services
- Extensive language resources (simultaneous translation system, multilingual staff)
- Ongoing community partnership with active community advisory committee



# Bellevue Hospital WTC Environmental Center

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- To date, >1700 individuals
- 1492 individuals enrolled between 8/05 - 7/07
- 1309 consented for study



# Patient Characteristics

(n = 1309)

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Age, y(mean) 47

Gender, %

Male 54

Female 45

Race, %

White 43

Asian 14

Black 13

No 28

answer

Ethnicity, %

Latino 47





# Patient Characteristics

(n = 1309)

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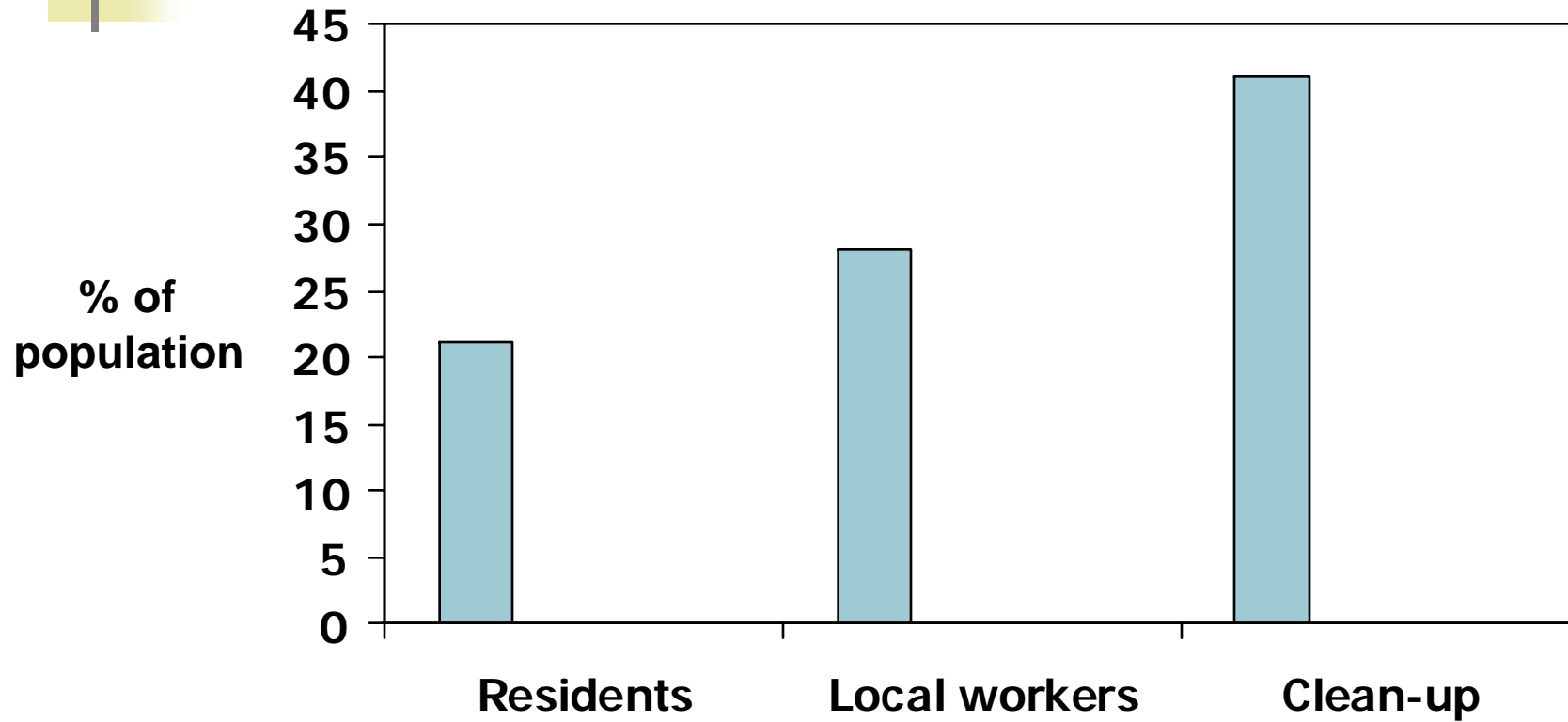
## Income, %

< 15K	51
15 - 30K	19
> 30K	30

## Insurance, %

None	46
Medicaid/are	14
Private/HMO	36
No answer	3

# Exposure categories




# Presenting symptoms at time of enrollment

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## Symptom, %

Cough	57
Wheeze	39
SOB	71
Chest tightness	48
Sinus	56
GERD	48



# Mental health symptoms at time of enrollment (n = 1088)

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## Symptom, %

PTSD	47
Depression	57
Anxiety	52



# Summary

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- Medical and community organizations identified an adverse health outcome to a disaster
- Community-medical partnership allowed for unfunded start-up program
- Community-medical partnership allowed for advocacy for funding
- Medical interdisciplinary treatment program
- Community access to a disenfranchised population



## Conclusion

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- Response to an environmental disaster requires joint community medical collaboration to advocate for health provision for populations at risk



# Acknowledgements

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