

Lung Cancer Incidence Near Chromium-Contaminated Waste Sites

Health Consultation

by

N.J. Department of Health and Senior Services

N.J. Department of Environmental Protection

U.S. Agency for Toxic Substances and Disease Registry

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Purpose

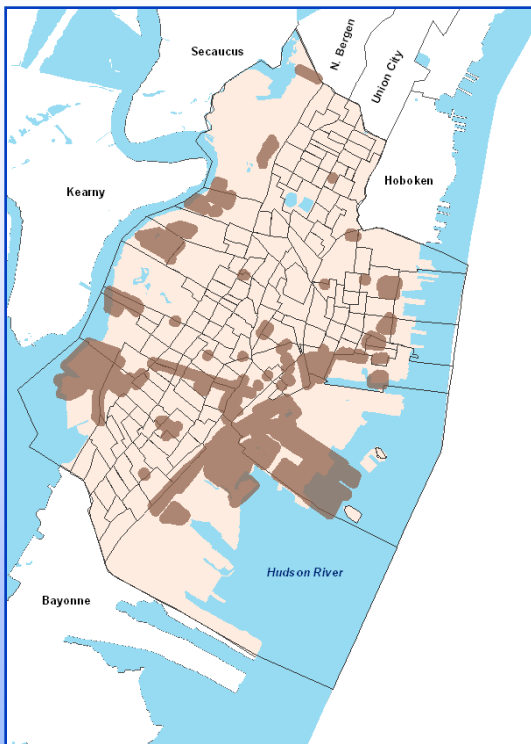
- Examine whether lung cancer incidence rates differ within Jersey City, by distance from chromium waste sites

Methods:

Population and Cancer Case Data

- **Population**
 - Jersey City residents by U.S. Census block group
- **Time Period**
 - 1979—2003 (25 years)
- **Cancer Cases**
 - Lung cancer cases in Jersey City from 1979—2003
 - New Jersey State Cancer Registry
 - Assigned to U.S. Census block group based on residence at the time of diagnosis

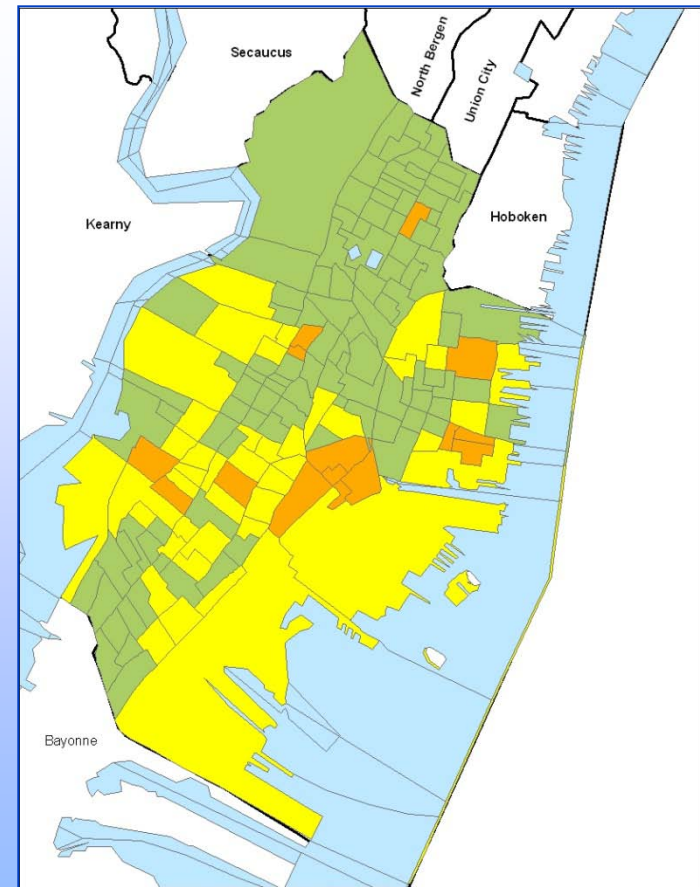
Methods: Exposure Assessment



- Mapped site boundaries
- Classified sites based on chromium concentration
- Drew 300 foot buffers around site boundaries
- Calculated proportion of the residential area in each census block group that fell within a 300 foot buffer

Methods: Comparison of Rates

- Characterized and combined census block groups into exposure categories (none, low, or high)
- “High” exposure category was defined in four alternative ways
- Compared lung cancer incidence rates in “high” and “low” to “none”



Example (method 3)

Findings

- Rates of lung cancer comparing “high” areas to “none”:
 - Males: 7% to 17% higher
 - Females: 0% to 10% higher
 - Chance could explain the differences
- Numerous limitations to this type of investigation
- Findings do not demonstrate a cause-effect relationship
 - Important risk factors could not be accounted for
- Note: Historic potential for exposure to chromium does not represent current conditions in Jersey City

Next Step

- Conducting similar analysis for other cancers:
 - Oral, esophagus, stomach, small intestine
 - 1979-2006 (28 years)
- Report being drafted by NJDHSS for review by ATSDR