breakout ABSTRACT

VISION to REALITY 2005

TITLE

Analyses of Spatial and Temporal Clustering in the Incidence of Selected Cancers in New Jersey

THEME

Advance Environmental Public Health Science and Research

KEYWORDS

cancer, environmental health, tracking, surveillance

BACKGROUND

Cancer clusters are of great community concern. The New Jersey Department of Health and Senior Services (NJDHSS) convened a Cancer Cluster Task Force in 2003 to examine trends in cancer incidence and mortality, evaluate cancer cluster investigation protocols, and make recommendations for implementation of best practices. The Task Force noted that a comprehensive strategy for cancer cluster surveillance was needed, and that the NJDHSS should assess the feasibility of conducting cancer cluster surveillance, based on incidence data at an appropriate geographic and temporal scale. As part of a tracking demonstration project, the NJDHSS is evaluating spatial and temporal cluster detection methods.

OBJECTIVE(S)

1) To examine spatial and temporal clustering of selected cancers that may be related to environmental risk factors, and 2) To evaluate the utility of cluster output results for environmental public health tracking.

METHOD(S)

Cancers for analysis were identified based on epidemiologic evidence that environmental factors play an etiologic role and consideration of possible human exposure to potentially causative environmental factors. Spatial and temporal clustering was examined using sex-specific incidence data at the census-tract level. Cluster analysis was conducted using SaTScan.

RESULT(S)

Six cancers were selected for geographic analysis: mesothelioma; thyroid; leukemia; bone and joint; brain and central nervous system; and bladder. Mesothelioma showed strong geographic clustering around locations where historical industrial use of asbestos is known. The presentation will show cluster analysis results for each of the six cancers.

DISCUSSION/RECOMMENDATION(S)

The presentation will discuss issues and challenges regarding availability and use of population and geographic data, interpretation of cluster analysis results, appropriate public health follow-up of results, and communication of findings. The discussion will include illustrations of differing results found depending on the parameters of the SaTScan analysis.

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