Environmental Public Health Tracking in Florida: Using Geographic Information Systems to Link Environmental Hazard Data with Health Outcome Data

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Background: The Florida Department of Health is participating with the Centers for Disease Control and Prevention (CDC) on the design, implementation, and evaluation of environmental and health effects tracking projects in support of developing the National Environmental Public Health Tracking (Surveillance) Network. The FDOH is applying information technology to data management, integration and dissemination to link environmental hazard with health effects data in order to better understand how environmental factors may be associated with chronic disease.

Objective: Establish a representative group of medical, academia, environmental, governmental and non-governmental, not-for-profit advocacy and local county health department experts to assist FDOH with developing an environmental public health tracking surveillance system. Utilize GIS to link environmental data with health data information. Display using visual graphs and maps that will provide a comparison of areas with environmental exposures to the location of the health outcome cases.

Method: This is an ecological analysis linking existing environmental hazard data and health outcome data. The environmental hazard data has been obtained from the federal Environmental Protection Agency's (EPA) Toxic Release Inventory, the FDEP's Statewide Ambient Air Monitoring data, and data from the FDOH Statewide Well Water Surveillance program. The specific health outcomes that will be linked to the environmental data include selected cancers, birth defects and developmental disabilities and link them with specific environmental hazards in Florida.

Results: Throughout the course of the project, the Advisory committee, coordination committee and individual workgroups have identified and selected specific health outcomes for selected environmental hazardous chemicals. Utilizing GIS and spatial analysis the health outcome cases and environmental data will be mapped and statistically analyzed.

Conclusion: Upon project completion, the results will show possible associations between various environmental hazards and specific health outcomes. The collaborative relationships required to complete these projects will promote new data mergers and promote ongoing collaboration between the involved agencies and organizations at the local, state and national level in support of the National Environmental Public Health Tracking (Surveillance) Network.

Evaluation: Environmental Public Health Tracking has emerged as an increasingly important public health concern in the United States. It is important to consider the potential environmental risk factors that could be associated with asthma, cancers, birth defects and developmental disabilities. Although this analysis is ecological and cannot be generalized at the individual level, it is in an important first step in establishing hypotheses and establishing surveillance methods that may be further examined in the future.

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