poster ABSTRACT

TITLE

LINKING ASTHMA EXACERBATION AND AIR POLLUTION DATA: A STEP TOWARD PUBLIC HEALTH AND ENVIRONMENTAL DATA INTEGRATION

TRACK

Technology

OBJECTIVES

- How environmental hazard and asthma exacerbations data are integrated.

- How near real-time environmental exposure associated with increased asthma exacerbations is monitored, analyzed, and reported.

SUMMARY

Studies have shown that reducing exposure to triggers such as air pollutants can reduce symptoms and the need for medication in asthma patients. However, systems that track asthma are generally not integrated with those that track environmental hazards related to asthma. This lack of integration hinders public health awareness and responsiveness to these environmental triggers. The current study is a collaboration between health and environmental professionals to utilize NASA-derived environmental data to develop a decision support system (DSS) for asthma prediction, surveillance, and intervention. The investigators link asthma morbidity data from the University of Mississippi Medical Center (UMMC) and Mississippi Department of Health (MDH) with air quality data from the Mississippi Department of Environmental Quality (MDEQ) and remote sensing data from NASA. Daily ambient environmental hazard data for PM2.5 and ozone are obtained from the MDEQ air quality monitoring locations and are combined with remotely sensed data from NASA to develop a state-wide spatial and time series profile of environmental air quality. These data are then used to study the correlation of these measures of air quality variation with the asthma exacerbation incidence throughout the state over time. The goal is to utilize these readily available measures to allow real-time risk assessment for asthma exacerbations. GeoMedStat, a DSS previously developed for biosurveillance, will integrate these measures to monitor, analyze and report the real-time risk assessment for asthma exacerbation throughout the state.

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