Asthma is the most common chronic disease of childhood, affecting approximately seven percent of children in the United States. Evidence suggests that social factors and the physical environment contribute to asthma prevalence as well as asthma-related morbidity. Geographic information systems (GIS) is a useful and facile framework to explore the relative contributions of community-level factors that contribute to the disease burden. This talk will highlight the factors that contribute to asthma related morbidity, the use of GIS in asthma studies, and how the implementation of a GIS in a cohort of adolescents provided a refined understanding of ecological-level exposures on asthma diagnosis and exacerbations. Methodological issues related to asthma epidemiology will also be discussed along with GIS technology developed to address these challenges.