Abusive head trauma (AHT), commonly referred to as “Shaken Baby Syndrome,” is the leading cause of fatal inflicted injury among infants. Previous attempts to estimate the incidence of fatal AHT have used inconsistent definitions, resulting in varied estimates of the number of infants affected by AHT each year. This descriptive study examined the incidence of fatal AHT in the state of Missouri by applying standardized CDC definitions of AHT to death record data for a 10-year period from 2000-2009. This exploratory ecological study utilized Missouri Death Record Data for infants and children less than 5 years of age. White male infants were most commonly the victims of fatal AHT during the period under study. No difference was found between the rates of AHT before and after the implementation of the statute being studied. These findings suggest that more stringent legislation is needed to reduce the incidence of AHT in Missouri. Further study of the CDC definition in small populations is also needed to determine its utility and effectiveness.