

# SPATIAL EPIDEMIOLOGICAL ANALYSIS ON OPIOID OVERDOSE

Opioid overdose deaths increased fivefold in Massachusetts between 2011 and 2016. There has not been a lot of research on the geographic distribution of fatal and nonfatal opioid overdose. This project applied spatial epidemiological approach to look at variables that increase burden on the opioid overdose and create hotspot analysis to identify areas with consistently high opioid overdose.

The 2 maps on the bottom left show the distribution of fentanyl prescription and concurrent opioid and benzodiazepine prescription. People who prescribe fentanyl and benzodiazepine might potentially increase the opioid overdose burden. The map below on the top right shows the geographical distribution of nonfatal overdose rate per 100,000 residents over 2011-2015 and the map on the bottom right shows areas with high emergency department encounters. Emergency department encounters are also strongly associated with the opioid epidemic. The Hotspot analysis on the right highlights areas with consistently high nonfatal overdose.

