

Title: Using Syndromic Surveillance Data to Better Understand Maine's Opioid Crisis

Background: Maine is experiencing an opioid crisis involving illicit and prescription drugs. Heroin is widely available in Maine, causing deaths and substance abuse treatment admissions. In 2016, the number of confirmed fatal opioid-involved overdoses rose to 317 from 164 in 2014, a near-doubling over two years.

Methods: Maine has an existing syndromic surveillance system that receives data from in-state emergency room encounters, ambulance runs to in-state locations, and death certificate registrations for Maine resident decedents. For emergency room data, information on the chief complaint (what the person says upon arrival at the hospital emergency department) and discharge diagnosis codes are used to classify visits into syndromes. For ambulance runs, information on the chief complaint and preliminary diagnosis are used to classify visits into syndromes. Maine CDC developed three syndromes to help monitor the opioid crisis: suspected overdoses involving any drug, suspected overdoses involving opioids, and suspected overdoses involving heroin. Maine CDC validated these syndromes through collaboration with the substance abuse prevention team at Maine CDC, as well as with subject matter experts at federal CDC. These syndromes are applied to emergency room encounters as well as ambulance runs. Death certificate data is queried using key word searches in the cause of death fields.

Results: Through syndromic surveillance emergency room data, Maine CDC determined rates of suspected overdoses per 10,000 persons for the first six months of 2017. These rates were 15.3 for all drug overdoses, 4.3 for opioid overdoses, and 2.2 for heroin overdoses. Using syndromic surveillance ambulance run data, Maine CDC determined the rate of suspected overdoses per 10,000 persons for the first three months of 2017. These rates were 5.3 for all drug overdoses, 0.3 for opioid overdoses, and 0.2 for heroin overdoses. Focusing on fatal opioid overdoses in the death registry data, Maine CDC determined a rate of 0.4 suspected opioid overdoses per 10,000 persons for the first six months of 2017. All data are preliminary and further analysis and refinement of syndromes is ongoing.

Conclusions: Syndromic surveillance of emergency department visits and ambulance runs is a promising new method for improving situational awareness of the opioid crisis in Maine. Maine is now able to quantify suspected drug overdoses in near real-time (within 24 hours for emergency room data, within three days for ambulance run data, and within 24 hours of the filing of the death certificate for death data). These timely data allow for improved analysis of data including by geography (at county or zip code level) which may help identify areas with high rates (hotspots) which can lead to better targeting of prevention resources.

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