

Reported Overdoses 2012-2017 in Tapestry Health's Narcan Enrollment Program

Introduction

Overdoses (OD) from opioid abuse have been on the rise across the country, and Massachusetts is no exception (CDC, 2017). In Massachusetts, deaths from opioid abuse had been steadily climbing from 2010-2016, with a dip in 2017 (Mass DOH, 2018). Tapestry Health, a statewide nonprofit organization that provides access to naloxone, education on overdose identification and reversal, and referrals to drug treatment programs (among other health services), has been collecting data over the past ten years on overdose rates in the western part of the state. This project looked at the reported overdose counts from people participating in Tapestry's programs across five years, 2012-2017.

Methods

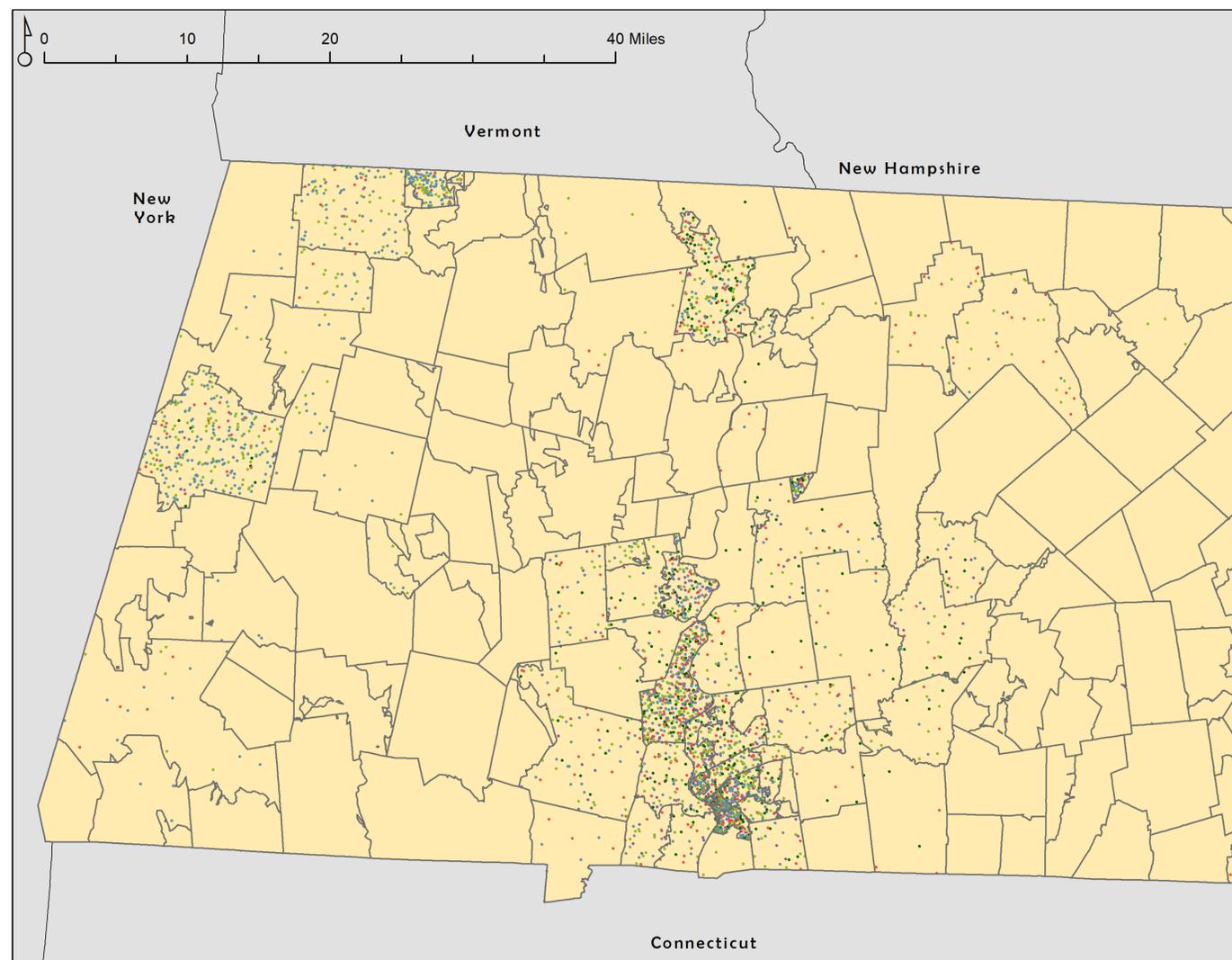
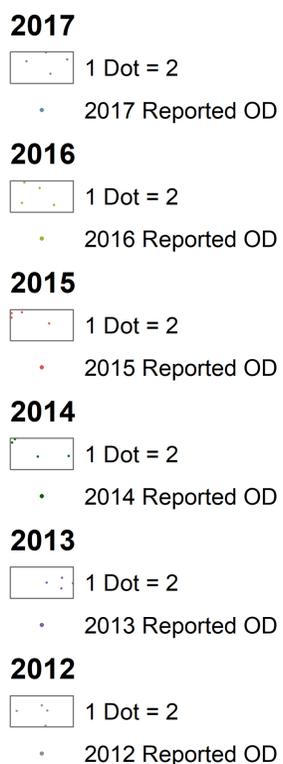
State boundary and zip code data were obtained from MassGIS; OD data was given from Tapestry Health and spans the years 2012-2017. Data were first cleaned to establish gross sums of OD counts per zip code per year (any counts below 5 per zip code were omitted per IRB agreement), which were then imported into ArcMap as tables to be joined to MassGIS's zip code shapefile by their shared zip code column. Each year's results were saved as a layer file and symbolized as dot density maps with different color dots. These maps were exported at 300 DPI in one combined map and six individual maps with data on each year.

Results

It appears there has been an increase in OD over this five year span; however, there were fewer last year than the year before. These OD are clustered in Springfield, Pittsfield, North Adams, Greenfield, Holyoke, and Amherst. In the future, it would be interesting to note gender differences across these differences, as well as OD by drug(s) used. These maps show that in Tapestry's program, OD were increasing, but may now be starting to level off. More data, and time, will be needed to know for sure.

Discussion

These findings suggest that while the number of overdoses has indeed been increasing, that trend may be leveling out. The number of OD for 2017 is lower than in 2016, though we will need more data over the next few years to accurately assess this. The limitation of the data is that it only covers participants in Tapestry Health's programs; this is not a comprehensive assessment of the number of OD in the state. For future research, seeing how the enrollment in Tapestry's overdose prevention program changes alongside total overdoses that occur to those who are enrolled would be interesting to see if any changes correlate, and to see, on one level, how effective the program might be.



Above: Dot density map of reported drug overdoses in various zip codes across western Massachusetts.

Below: Inset map of New England



Left: From left to right, top to bottom, individual dot density maps of each year 2012-2017.

Year	OD Count
2012	345
2013	544
2014	847
2015	1,180
2016	1,625
2017	1,691

Table of aggregate OD counts per year. Note: These do not necessarily mean deaths, just an OD event reported.

Cartography by Madison Wierzel
 Data from: MassGIS
 ESRI
 US Census
 May 4, 2018
 PH 262: GIS for Public Health
 Thomas Stopka

References
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 New England State bounds: US Census TIGERLINE, 2017.
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 Inset Map: ESRI, 2010. M Drive.
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