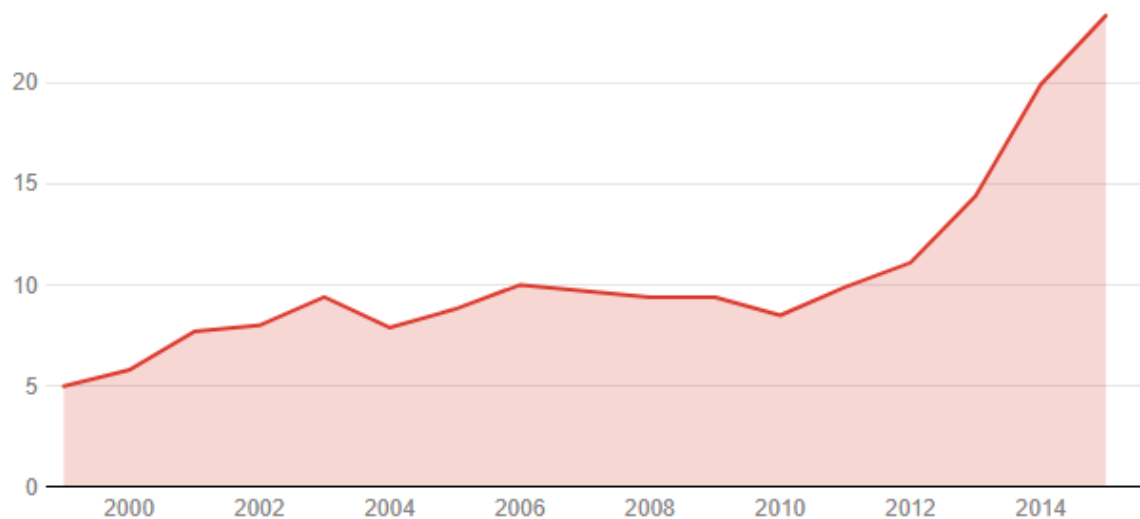


Opioid epidemic causing rise in hepatitis C infections and other serious illnesses

September 26 2017, by Thomas J. Stopka

Opioid-related deaths in Massachusetts

The state's rate per 100,000 people has steadily climbed over the past several years.



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Source: [Massachusetts Department of Public Health](#)

Many Americans now know that, over the past decade, opioid addiction and deaths from [opioid overdose](#) in the U.S. have skyrocketed.

But we don't hear as often about the other epidemics intertwined with this [public health](#) crisis. In [rural Scott County, Indiana](#), for example, [prescription opioid injections](#) have been linked to overlapping outbreaks of HIV and the hepatitis C virus.

This is a "syndemic": multiple diseases feeding off of one another, compounding a community's [health](#) burdens.

Syndemic theory – [first introduced](#) by medical anthropologist Merrill Singer more than a decade ago – explains how epidemics interact with one another. The interplay of these diseases increases the risk for a number of [infections](#), like sexually transmitted infections and [HIV](#).

There are many interrelated epidemics within the "[opioid](#) syndemic." Together, they make up perhaps the biggest public health challenge in the U.S. since the advent of the AIDS epidemic.

What we need to know

Before we can tackle this challenge, we need to understand where the opioid syndemic is most intense.

In the U.S., we have many [public health surveillance](#) systems that assess changes across geography and time. For example, [AIDSVu](#), an online interactive map, tracks HIV data across U.S. counties. In some regions, the data maps across ZIP codes and census tracts.

Systems such as these help us compare disease outcomes across different places and demographic groups. However, when it comes to the opioid syndemic, we need to do more to identify local hotspots. Hotspots are places where outbreaks cluster together in a statistically significant way, in adjacent neighborhoods or communities with elevated disease rates.

Scientists like myself have started using a range of geospatial and statistical approaches to improve our understanding of the opioid syndemic. These tools allow us to find patterns in data on related health issues. We can also determine which characteristics of an individual, community or social network – such as syringe sharing and unsafe sex – are associated with hotspots.

These analyses can help public health departments and clinicians target local responses where they are most needed, when they are most needed and with the local subpopulations that most need them.

Finding hotspots

In Massachusetts, where I am based, opioid overdose deaths quintupled over the past 15 years. The state Senate and Governor Charlie Baker have established a new [legislative mandate](#) to systematically assess the key factors associated with the opioid syndemic.

There are [many health issues](#) associated with opioid use, including HIV, hepatitis C, STIs, soft tissue infections, mental illness and neonatal abstinence syndrome, which is related to exposure to drugs in the womb. For example, [hepatitis C infections](#) nationwide have nearly tripled since 2010.

Working alongside local and state public health departments, academic institutions and community-based agencies, we study the distribution of these [health issues](#) across Massachusetts and beyond. Our "risk maps" help us better understand the geographic distribution of opioid syndemic illnesses over time.

We measure risks by the burden of disease (e.g., the number of fatal overdoses) and rates (e.g., the number of hepatitis C infections per 100,000 people) across local communities. We also measure and map

risk behaviors – such as syringe sharing, unsafe sex and doctor shopping – through surveys with health care professionals and people in the throes of addiction.

We have identified a number of hotspots tied to the opioid syndemic. For example, some hotspots for prescription opioids appear to overlap with [drug overdoses](#).

We've identified cities and towns with significant clusters of [hepatitis C](#) and [HIV](#). Springfield, Boston, Fall River, New Bedford and parts of Cape Cod, for instance, have notable overlapping hotspots for opioid overdose deaths, hepatitis C and HIV.

Among youth and young adults, we've also noted an increase in [infectious endocarditis](#), an infection of the heart valve often caused by reuse and sharing of contaminated syringes.

How hotspot mapping can help

Mapping the opioid syndemic and related hotspots, we can better inform public health policy decisions, as well as clinical decisions for health care workers.

Such analyses can help to pinpoint the locations, communities and specific behaviors that could most benefit from interventions. For example, peer navigators who have "been there and done that" could visit overlapping hotspots and make it easier for high-risk populations to access sterile syringes, condoms, hepatitis C treatment and naloxone, the overdose reversal drug.

Additional programs could focus on educating medical providers, pharmacists and patients in hotspots, to improve opioid prescribing practices and increase disease testing rates.

[Released inmates](#) have some of the highest risks for [opioid overdose](#). Corrections facilities could try to improve their transitions back into local [hotspot](#) communities, by facilitating direct referrals to drug treatment programs and job training programs.

Of course, it will take continued collaboration and enhanced funding from governments and foundations to see these efforts forward. But there is no better time than the present to address one of our nation's largest health crises.

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