



# Ohio addiction policy inventory and scorecard

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Overdose reversal and other forms of harm reduction

HPIO  
Addiction  
**Evidence**  
Project



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## HPIO Addiction Evidence Project

This report is part of HPIO's [Addiction Evidence Project](#). Other resources released by HPIO as part of this project include:

- [Addiction Overview and Project Description](#) (12-page policy brief)
- [Evidence Resource Page: Prevention, Treatment and Recovery](#) (online hub for expert consensus statements and guidelines, evidence registries and model policies)
- [Ohio Addiction Policy Inventory and Scorecard: Prevention, Treatment and Recovery](#) (40-page scorecard report)
- [Evidence Resource Page: Overdose Reversal and Other Forms of Harm Reduction](#) (online hub for expert consensus statements and guidelines, evidence registries and model policies)

# Ohio addiction policy inventory and scorecard

## 2 Overdose reversal and other forms of harm reduction

### Executive summary

Drug overdose deaths are among the most visible and troubling signs of Ohio's addiction crisis. Ohio has consistently had one of the highest drug overdose death rates in the country, with a total of 4,854 Ohioans dying in 2017. Newly-released data shows that deaths peaked in early 2017 and then declined (see figure ES 1 on page 5).

In addition to overdoses, many other addiction-related harms have increased dramatically in Ohio in recent years, such as the following downstream consequences of injection drug use:

- **Hepatitis C** is a liver disease caused by a virus that can be spread through needles and syringes used to inject heroin and other drugs. In 2016, 23,577 Ohioans were newly diagnosed with hepatitis C, **up 49 percent** from 2014.
- **HIV**, the virus that causes AIDS, can also be spread through shared needles. The number of new HIV diagnoses among people who inject drugs **increased by 108 percent** from 2013 to 2017 in Ohio.
- **Endocarditis** is a bacterial heart infection associated with injection drug use. From 2008 to 2017, there was a **41-percent increase** in endocarditis hospital encounters in Ohio.

Methamphetamine, cocaine, alcohol and tobacco use also have downstream harms, such as violence, property crime, homelessness, drunk driving crash deaths, child maltreatment and cancer.

Addiction-related harms are costly to state and local governments. For example, the state Medicaid program is paying to treat rising numbers of hepatitis C and endocarditis cases, and local governments are shouldering the costs of rising child welfare caseloads.

Harm reduction strategies can mitigate these consequences and related costs. The purpose of harm reduction is to save lives, improve the quality of life of people who use drugs and improve the overall health and safety of communities. While Ohio has embraced overdose reversal—one form of harm reduction—the state has been reluctant to act on other forms of harm reduction.

In order to provide policymakers and other stakeholders with the information needed to take stock of the policy response to addiction, this report reviews state-level policy changes related to overdose reversal and other

## 3 key findings for policymakers

- **Cautious optimism and continued action on overdose deaths.** For the first time since the opioid crisis began, Ohio's monthly overdose deaths started to decline markedly in the second half of 2017. Ohio's strong policy focus on overdose reversal has likely contributed to this good news, but hundreds of thousands of Ohioans still struggle with addiction, and more can be done to save lives.
- **Hepatitis C presents major challenges for policymakers.** Largely due to injection drug use, rates of hepatitis C have increased in recent years. Given the high price of drugs that treat hepatitis C, state policymakers will need to find sustainable ways to cover treatment for thousands of Medicaid enrollees with this disease, and should invest in harm reduction to prevent future infections.
- **Evidence-based harm reduction is an underutilized tool.** Ohio can do more to incorporate harm reduction strategies as part of a comprehensive,

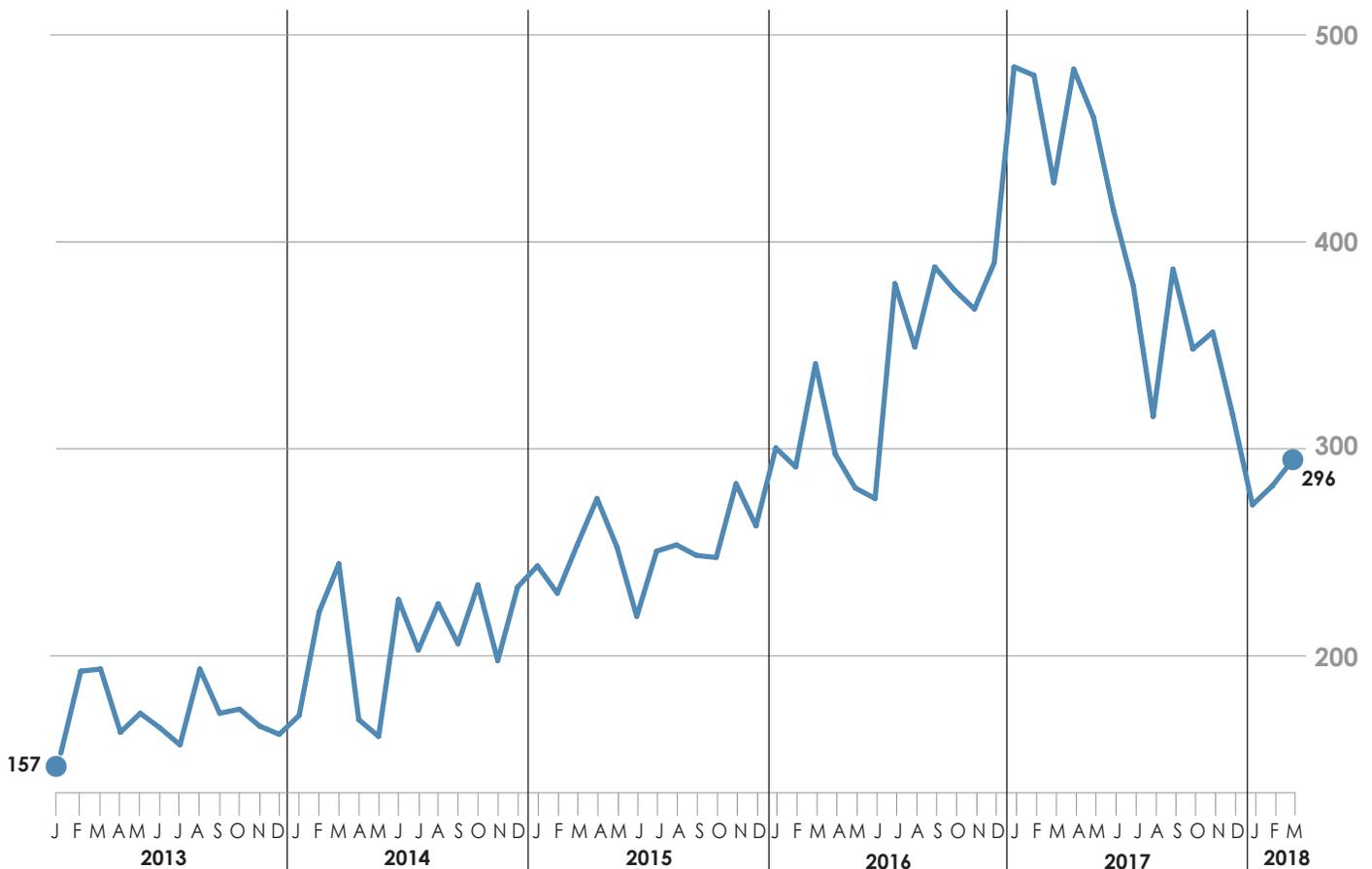
forms of harm reduction enacted in Ohio from January 2013 to May 2018. It includes:

- **An inventory** of policy changes (legislation, rules and state agency initiatives, programs and systems changes)
- **A scorecard** that indicates the extent to which Ohio is implementing strategies that are proven effective by research evidence (see figure ES 2 on page 6)
- **Opportunities for improvement** in both the public and private sectors

### What is harm reduction?

Harm reduction is both a framework for understanding substance misuse and a set of policies and programs that aim to reduce the adverse health, social and economic consequences of drug use. Harm reduction addresses the conditions and consequences of drug use and incorporates a range of strategies, including safer drug use and abstinence, in order to meet the needs of all people with substance use disorder.

Figure ES1. Number of unintentional drug overdose deaths, Ohio, Jan. 2013 - March. 2018



Note: 2018 data is provisional

Source: Ohio Public Health Data Warehouse, data accessed Nov. 5, 2018

### Harm reduction strategies with strong evidence of effectiveness

- **Overdose reversal:** The rapid reversal of an opioid overdose using naloxone, the medication that binds to opioid receptors in the brain and reverses the effects of opioids.
- **Syringe services programs (SSPs):** Also called syringe or needle exchange programs, SSPs provide people who inject drugs with referrals to treatment and new, sterile needles to reduce the transmission of infectious diseases like HIV and hepatitis C.
- **Strategies to reduce motor vehicle crashes from drunk driving:** A range of evidence-based strategies are effective in reducing injuries and deaths related to drunk driving, including sobriety checkpoints, ignition interlocks and blood alcohol concentration (BAC) laws.
- **Housing First:** Rapid rehousing that provides people who are homeless with permanent housing first, and then provides additional supports as needed, such as drug treatment.

### What are the strengths of Ohio’s policy response?

State policymakers have focused on reversing the upward trend in overdose deaths in Ohio and have taken initial steps to reduce infectious disease rates and other harms associated with addiction. The following strengths stand out:

- **Strong focus on overdose reversal.** State policymakers have implemented several policy changes designed to increase the use of naloxone, the overdose reversal medication, including Project DAWN (Deaths Avoided with Naloxone) expansions and legal protections for professionals who dispense or administer naloxone.
- **Initial steps to curb infectious disease associated with injection drug use.** Ohio permits local health departments to establish syringe services programs (SSPs), and 18 counties now have SSPs.
- **Efforts to reduce drunk driving.** Ohio’s blood alcohol concentration laws are consistent with research-based recommendations, and Ohio law requires ignition interlocks for repeat offenders convicted of alcohol-impaired driving.
- **Strong investment in Housing First.** Ohio policymakers have emphasized a Housing First approach to rapid rehousing, including the Permanent Supportive Housing model, which has been expanded in Ohio over the past 10 years.

Figure ES 2. **Summary scorecard rating: Extent to which Ohio policies and programs align with research evidence and reach Ohioans in need**

Subtopic	Rating
Naloxone distribution, access and awareness	Moderate
Immunity for naloxone prescribing and dispensing and Good Samaritan law	Moderate
Syringe services programs	Weak
Hepatitis C and HIV screening and treatment	Moderate
Other harm reduction strategies (drunk driving prevention and Housing First)	Strong

**Note:** Rating based on evidence alignment and implementation reach. See Part 6 of the full report for details.

### What are the gaps in Ohio’s policy response?

Despite these strengths, Ohio continues to struggle with high drug overdose death rates and increasing rates of addiction-related harms, such as hepatitis C and HIV. In Ohio’s policy response to curb these trends, the following gaps remain:

- Barriers to naloxone.** Some Ohioans still lack adequate access to naloxone. For example, there are at least 28 counties without a Project DAWN site, and some sites have limited programming. Community organizations and lay people face barriers to distributing or obtaining naloxone, largely due to the complexity of Ohio’s policies and lack of organizational capacity.
- Minimal prevention response to surge in hepatitis C cases.** Despite sharp increases in the number of Ohioans with hepatitis C and the high cost of hepatitis C treatment, there are no significant statewide efforts to increase awareness, prevention, screening or treatment of hepatitis C. Eighty percent of Ohio counties do not have a syringe services program, including eight that are identified as high-risk for hepatitis C and HIV outbreaks.
- Life-saving hepatitis C treatment has been limited for Medicaid enrollees.** Through 2018, Ohio Medicaid coverage for hepatitis C treatment has been inconsistent with clinical guidelines and more restrictive than Medicaid coverage in several other states. Starting in January 2019, an important restriction will be lifted, allowing patients to get treatment before experiencing serious health problems caused by liver disease.
- Harm reduction “deserts.”** Seventeen rural Ohio counties have higher rates of addiction-related harms compared to other counties, but fewer harm reduction programs, such as Project DAWN sites and syringe services programs. Stigma and limited funding are likely keeping harm reduction strategies from being implemented in these communities.



### About the HPIO Addiction Evidence Project

This report is part of HPIO’s **Addiction Evidence Project**, which provides policymakers and other stakeholders with information needed to improve strategies to address substance use disorders in a comprehensive, effective and efficient way. This inventory and scorecard addresses two topics (harm reduction and overdose reversal). The first report addressed prevention, treatment and recovery, and future editions will address the other topics listed below, including criminal justice reform.



## Opportunities for improvement

Public and private partners in Ohio can work together to:

- 1. Continue to increase naloxone distribution across the state to ensure that all Ohioans have access to overdose reversal medication, including improved access for community organizations and lay people.**
    - a. Increase the number of community sites that can distribute naloxone, including Project DAWN sites and other community-based organizations, so that there is better coverage across Ohio, particularly in counties with the highest overdose rates.
    - b. Expand the types of entities that are eligible to become Project DAWN sites, including non-profit organizations that serve people who inject drugs.
    - c. Allow community organizations to distribute naloxone without a Terminal Distributor of Dangerous Drugs (TDDD) license and/or provide assistance to entities so that they can obtain a TDDD license.
    - d. Increase naloxone distribution by continuing to integrate Project DAWN and other distribution models with addiction treatment settings, re-entry from prison and jail and SSPs.
    - e. Establish additional methods for distributing naloxone in the community, such as by storing and maintaining naloxone in automated external defibrillator (AED) cabinets.
    - f. Simplify Ohio's Good Samaritan law and reduce the restrictions on Good Samaritan immunity so that bystanders are encouraged to call for help during an overdose.
    - g. Create civil liability protections for lay persons who administer naloxone to a person experiencing an overdose.
    - h. Expand the current media campaign to inform the public, including drug users, family members and friends of drug users and community groups, of the availability of naloxone, Ohio's Good Samaritan law and other legal immunities related to naloxone distribution and administration.
    - i. Increase the sustainability of the Project DAWN program by establishing a pathway for Project DAWN sites to bill insurance providers for the naloxone they distribute.
  - 2. Launch an intensive initiative to reduce the spread of infections associated with injection drug use, including increased awareness of the importance of prevention, treatment and harm reduction.**
    - a. Create an integrated state plan to reduce hepatitis C transmission and reinfection, similar to the Ohio HIV Prevention and Care Integrated Plan.
    - b. Increase the number of syringe services programs in Ohio, particularly in counties with the highest rates of hepatitis C and HIV.
    - c. Identify sustained funding sources to support syringe services programs and explore ways to capture downstream savings to Medicaid and the Ohio Department of Rehabilitation and Correction to reinvest in infection prevention.
    - d. Establish a statewide coordination hub for syringe services programs that can assist local programs with information sharing, technical assistance, evaluation and quality improvement.
    - e. Develop a campaign to reduce stigma for harm reduction approaches.
  - 3. Continue to improve access to hepatitis C treatment for Medicaid enrollees, while exploring strategies to control treatment costs.**
    - a. Remove or reduce restrictions related to sobriety timeframes and specialist providers.
    - b. Engage primary care providers, including Federally Qualified Health Centers (FQHCs), in providing direct-acting antiviral treatment for patients with hepatitis C.
    - c. Increase screening efforts for hepatitis C and HIV across the state, particularly for priority populations, including people who inject drugs.
    - d. Implement strategies identified by the National Governor's Association to ensure fiscal sustainability of hepatitis C treatment in the Medicaid program, such as by incorporating value assessments into policies and purchasing approaches.
- In addition, state policymakers can do more to:
- 4. Reduce the number of alcohol/drug-impaired motor vehicle crashes.**
  - 5. Improve surveillance and evaluation to ensure that the state is investing in effective strategies.**

# Part 1. Purpose and process

The purpose of this inventory and scorecard is to provide policymakers and other stakeholders with information needed to take stock of Ohio's policy response to the opioid crisis, particularly as it relates to overdose reversal and other forms of harm reduction. The report provides information on how well this response aligns with evidence and identifies next steps to reduce addiction-related harms and improve the overall health of Ohioans. More specifically, this report:

- Reviews addiction policy changes relevant to overdose reversal and other forms of harm reduction enacted in Ohio from Jan. 2013 to May 2018
- Assesses the extent to which policy changes align with evidence on what works
- Assesses the extent to which policies and programs are reaching Ohioans in need
- Identifies Ohio's policy strengths, challenges and opportunities for improvement

This inventory and scorecard focuses on two elements of a comprehensive policy response to addiction, highlighted in red in figure 1: harm reduction and overdose reversal. In April 2018, HPIO released an **addiction policy inventory and scorecard** on the first three elements: prevention, treatment and recovery. HPIO plans to develop similar inventories and scorecards for the other key elements of figure 1 in 2019.

Figure 2 provides an overview of this document, as well as supplemental materials posted on the HPIO website that provide additional detail.

Figure 1. Key elements of a comprehensive policy response to addiction



Source: Health Policy Institute of Ohio adapted from Addiction Policy Forum (2017)

Figure 2. HPIO Addiction Evidence Project: Overdose Reversal and Other Forms of Harm Reduction



## Part 2. Harm reduction basics

### Overview

This section provides a basic introduction to harm reduction by answering the following questions:

- What is harm reduction?
- What is the role of harm reduction within a comprehensive approach to addiction?
- Why is harm reduction important in Ohio?

### What is harm reduction?

Harm reduction is both a framework for understanding substance misuse and a set of policies and programs that aim to reduce the adverse health, social and economic consequences of drug use.<sup>1</sup> Harm reduction addresses the conditions and consequences of drug use and incorporates a range of strategies, including overdose reversal, safer drug use and abstinence, in order to meet the needs of all people with substance use disorder. The harm reduction framework is grounded in a belief in, and respect for, the rights of all people, including people who use drugs.<sup>2</sup>

The purpose of harm reduction is to save lives, improve the quality of life of individuals who use drugs and improve the overall health and safety of communities. The harms associated with addiction (see figure 3) result in negative health consequences for people who use drugs, as well as the communities in which they live. For example, the spread of hepatitis C and increased motor vehicle crashes resulting from drunk driving are individual and community-level harms associated with addiction. Harm reduction seeks to alleviate these problems and improve quality of life for all people.

Figure 3. **Examples of addiction-related harms**

Opioids <sup>3</sup>	Methamphetamine, cocaine and other psychostimulants <sup>4</sup>	Alcohol <sup>5</sup>	Tobacco <sup>6</sup>
<ul style="list-style-type: none"> <li>• Fatal and nonfatal overdose</li> <li>• Neonatal Abstinence Syndrome</li> </ul>	<ul style="list-style-type: none"> <li>• Fatal and nonfatal overdose</li> <li>• Tooth decay and gum disease</li> <li>• Convulsions and seizures</li> <li>• Paranoia, delusions and anxiety</li> </ul>	<ul style="list-style-type: none"> <li>• Alcohol poisoning</li> <li>• Fetal Alcohol Syndrome</li> <li>• Violence</li> <li>• Liver disease (fibrosis, cirrhosis, liver cancer)</li> <li>• Dementia</li> <li>• Motor vehicle crash injuries and death</li> </ul>	<ul style="list-style-type: none"> <li>• Cancer (lung and many other types)</li> <li>• Heart disease</li> <li>• Stroke</li> <li>• Chronic obstructive pulmonary disorder</li> <li>• Diabetes</li> <li>• Male erectile dysfunction</li> <li>• Low birth weight</li> <li>• Sudden Infant Death Syndrome</li> </ul>
<b>Injection drug use (opiates and/or psychostimulants)<sup>7</sup></b> <ul style="list-style-type: none"> <li>• Hepatitis C</li> <li>• HIV/AIDS</li> <li>• Endocarditis (heart infection)</li> </ul>			
<b>Other downstream harms</b> <ul style="list-style-type: none"> <li>• Homelessness</li> <li>• Job loss and reduced worker productivity</li> <li>• Child maltreatment and loss of custody</li> <li>• Prostitution, sexual exploitation and sexually transmitted infections</li> <li>• Crime and incarceration</li> <li>• Secondary trauma for first responders and behavioral health workforce</li> </ul>			

This report focuses primarily on the following harm reduction strategies that affect a large number of Ohioans and have strong evidence of effectiveness:

- **Overdose reversal:** The rapid reversal of an opioid overdose using naloxone, the medication that binds to opioid receptors in the brain and reverses the effects of opioids. Naloxone is available in injectable, auto-injectable and nasal spray forms.
- **Syringe services program (SSPs):** Also called syringe or needle exchange programs, SSPs provide people who inject drugs with referrals to treatment and new, sterile needles to reduce the transmission of infectious diseases like HIV and hepatitis C. Approximately half of people who inject drugs are estimated to be infected with hepatitis C.<sup>8</sup>
- **Strategies to reduce motor vehicle crashes from drunk driving:** There are a range of evidence-based strategies that are effective in reducing and preventing injuries and deaths related to drunk driving, including sobriety checkpoints, ignition interlocks and blood alcohol concentration (BAC) laws.
- **Housing First:** A rapid rehousing approach that provides people who are homeless or housing insecure with independent and permanent housing first, and then provides additional supports as needed, such as drug treatment.

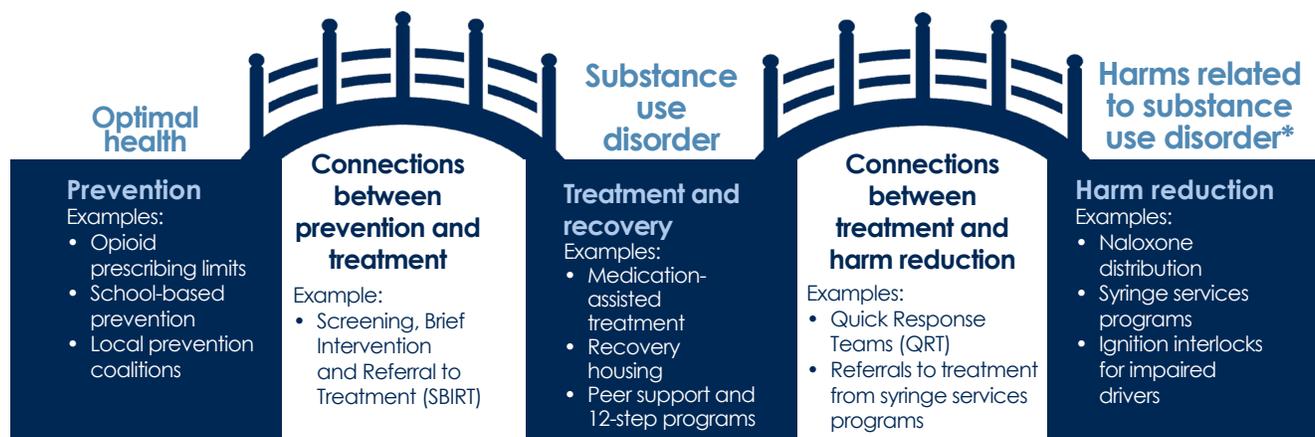
See HPIO's [Evidence Resource Page: Overdose Reversal and Other Forms of Harm Reduction](#) for more information on the evidence of effectiveness of these and other harm reduction strategies. Note that Neonatal Abstinence Syndrome and Fetal Alcohol Syndrome will be addressed in the child welfare phase of the Addiction Evidence Project.

## What is the role of harm reduction within a comprehensive approach to addiction?

Harm reduction is one component of a comprehensive approach to addiction. Prevention, treatment and recovery are other necessary components of this comprehensive approach. (See figure 1 for all the key elements of a comprehensive policy response to addiction.)

Figure 4 outlines the relationship between prevention, treatment, recovery and harm reduction. For people with optimal health, prevention strategies reduce the risk of future addiction. For people living with substance use disorder, treatment and recovery services help them to stop using or abusing drugs and to regain overall health. For people with substance use disorder who are experiencing or at risk for additional harms related to addiction (such as overdose, hepatitis C or

Figure 4. **Role of harm reduction in a comprehensive approach to addiction**



\* For a list of harms related to substance use disorder, see figure 3.

injury from drunk driving), harm reduction strategies prevent or address these harms.

### **Connections to treatment and recovery**

Harm reduction strategies often include connections to treatment and recovery. For example, Quick Response Teams combine overdose reversal strategies with connections to treatment in order to provide ongoing care after an overdose. Additionally, SSPs and Housing First initiatives often partner with addiction treatment providers to offer more comprehensive services to clients. These partnerships are a critical step in addressing all aspects of the addiction crisis in Ohio.

### **Trauma-informed care**

Trauma-informed care is another example of a strategy that is linked to harm reduction. Trauma results from events or circumstances that are “experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual’s functioning and mental, physical, social, emotional or spiritual well-being.”<sup>9</sup> Many drug users and their families experience trauma related to overdoses and other addiction-related harms. In addition, first responders and behavioral health treatment providers that interact frequently with drug users may experience “secondary” or “vicarious” trauma as a result of indirect traumatic exposure, such as witnessing overdose deaths or child maltreatment.<sup>10</sup>

Trauma-informed practices and policies are designed to prevent re-traumatization by screening for trauma, educating providers and creating safe environments, such as quiet waiting rooms.<sup>11</sup> Trauma-informed approaches can be implemented in health care, education, criminal justice and other settings.

### **Cost effectiveness**

In addition to having a positive impact on health outcomes, research demonstrates that many harm reduction strategies are cost effective. For example, the Centers for Disease Control and Prevention (CDC) includes access to clean syringes as one of

its Hi-5 Interventions—a set of recommended interventions that have been shown to improve health within five years and have evidence of cost effectiveness and/or cost savings over the lifetime of the population.<sup>12</sup> A 2014 study on clean syringe access estimated a return on investment of \$7.58 for every \$1 spent.<sup>13</sup>

Housing First is another cost-effective harm reduction strategy. A systematic review of research studies published from 2007 to 2015 found that Housing First initiatives significantly offset costs associated with homelessness, including shelter, emergency department, hospitalization and criminal justice costs.<sup>14</sup> The review found that Housing First is a more efficient use of resources than traditional housing services.

### **Why is harm reduction important in Ohio?**

Large numbers of Ohioans die by overdose or have other health conditions related to addiction, such as chronic liver disease and endocarditis. Ohio recently experienced historic highs on the following indicators:

- 4,854 Ohioans died from unintentional drug overdose in 2017<sup>15</sup>
- 23,842 Ohioans were newly diagnosed with hepatitis C in 2016<sup>16</sup>
- 5,146 Ohio hospital encounters were for endocarditis in 2017<sup>17</sup>

While addiction prevention and treatment are extremely important, the harm reduction approach acknowledges that individuals who have not been successful in recovery or otherwise continue to use drugs are at high risk of disease and death. Harm reduction is an important component of a comprehensive approach to addiction because it mitigates downstream consequences of drug use.

## Part 3. Key findings

### Overview

This section identifies five opportunities for improvement based on the following questions:

- What are the strengths of Ohio's policy response?
- What are the gaps in Ohio's policy response?

In addition, this section highlights:

- Potential threats and changes on the horizon
- The state of evidence on effective overdose reversal and other harm reduction policies and programs

### What are the strengths of Ohio's policy response?

**Strong focus on overdose reversal.** At the state level, the legislature and executive branch have enacted a series of policies and programs designed to expand use of naloxone, the overdose reversal medication, including:

- Continued expansion of Project DAWN (a well-established naloxone education, outreach and distribution program started in 2012)
- Strong legal protections (immunity) for prescribers, pharmacists and emergency responders who dispense or administer naloxone
- A Good Samaritan law that provides immunity for minor drug possession offenses for bystanders of a drug overdose who call for help

At the local level, first responders, local health departments (often Project DAWN sites) and other community partners have worked hard to reverse overdoses in their communities. For example, Ohio EMS providers administered over 47,000 doses of naloxone in 2017.<sup>18</sup> Project DAWN sites are partnering with syringe services programs (SSPs), HIV testing sites and county jails to provide naloxone to the populations who are most at risk.

Data from the Ohio Department of Health (ODH) indicates that these efforts may have contributed to a decline in overdose deaths during 2017, with preliminary data showing reductions into early 2018 (see figure ES 1).

**Initial steps to curb infectious disease associated with injection drug use.** Although Ohio has a long way to go to fully address

hepatitis C, endocarditis and other bloodborne infections, the state has taken some steps to support evidence-based approaches to reducing harms related to injection drug use:

- As of 2015, local health departments are permitted to establish SSPs to prevent the spread of bloodborne infectious diseases. The number of SSPs has increased from four in 2014 to 18 in 2018.
- In July 2018, ODH submitted a "Determination of Need" letter, which was approved by the CDC, requesting the opportunity to use existing federal funds to support SSPs. This may result in increased resources for local SSPs.
- In the 2018-2019 budget, the state dedicated all General Revenue Fund spending for HIV (about \$6 million in SFY 2018-2019) to HIV prevention, including education, training and screening. (Federal funds are allocated to treatment.)

**New efforts to increase access to hepatitis C treatment.** The Ohio Department of Medicaid (ODM) has been actively addressing the challenge of rising hepatitis C rates and the high cost of treatment. ODM participated in a project led by the National Governors Association Center for Best Practices which identified strategies to increase pharmaceutical access, including drugs for hepatitis C treatment, while ensuring fiscal sustainability. In November 2018, ODM issued a policy change that will increase access to hepatitis C treatment for Medicaid patients who do not yet have liver damage, starting in January 2019. This is a step forward in preventing the spread of hepatitis C, as well as preventing liver damage in those who have contracted the hepatitis C virus.

**Efforts to reduce drunk driving.** Motor vehicle crashes are a common harm associated with excessive alcohol use. Ohio's blood alcohol concentration (BAC) laws are consistent with research-based recommendations. In addition, Ohio requires ignition interlocks for repeat offenders convicted of alcohol-impaired driving. Ignition interlocks, an example of evidence-based harm reduction, are devices that can be installed in vehicles to prevent operation by a driver who has a BAC above a specified level.

**Strong investment in Housing First.** To address addiction among people experiencing homelessness, Ohio policymakers have emphasized a Housing First approach of rapid rehousing. The Housing First approach connects people to housing as quickly as possible, while making treatment and recovery services readily available so that families can become stable and secure. One model within a Housing First approach is Permanent Supportive Housing. Permanent Supportive Housing units have increased in Ohio over the past 10 years, with a 60 percent increase from 2007 to 2016 (10,502 beds to 16,751 beds).<sup>19</sup> Research finds the Housing First approach reduces homelessness and hospital utilization, while also improving mental health and wellbeing and increasing utilization of addiction treatment.<sup>20</sup>

## What are the gaps in Ohio's policy response?

**Barriers to naloxone.** While there have been many efforts to increase access to naloxone through first responders, pharmacies, Project DAWN sites and other local organizations, Ohio's high number of fatal overdoses indicate that gaps remain. Specifically:

- At least 28 counties do not have a Project DAWN site, and some sites have very limited programming. For example, due to limited staffing and funding, some sites are only open once a week, meaning some Ohioans still lack adequate access to naloxone.
- There is no consistent statewide tracking of naloxone distribution and administration. It is therefore difficult to assess the extent to which naloxone is reaching those in need.
- In Ohio, most entities must have a Terminal Distributor of Dangerous Drugs (TDDD) license in order to possess or control "dangerous drugs," including naloxone, for any purpose other than personal use or consumption. Law enforcement agencies are exempt from this requirement, but community organizations (also called **service**

**entities**), such as local health departments, community addiction service providers and homeless shelters, have difficulty distributing naloxone without a TDDD license.

- Ohio's Good Samaritan law could be improved to do more to encourage bystanders to seek help for someone experiencing an overdose. For example, Ohio law states that individuals can only receive immunity under the Good Samaritan law twice. Although this provision is difficult to enforce, it may discourage bystanders from calling for help.
- There are no civil liability protections for lay persons who administer naloxone to a person experiencing an overdose. Lay administrators are therefore vulnerable to lawsuits if they negligently cause harm during an attempted overdose reversal.
- The complexity of Ohio's overdose reversal policies is a barrier to naloxone utilization among community organizations and laypersons. This complexity also makes clear communication about naloxone availability and legal protections difficult.

**Minimal prevention response to surge in hepatitis C cases.** Hepatitis C cases increased 119 percent from 2013 to 2017, with 21,882 Ohioans being newly diagnosed in 2017.<sup>21</sup> Injection drug use is the largest driver of new infections.<sup>22</sup> The disease is curable, but at significant cost due to high pharmaceutical prices.

Despite sharp increases in the number of Ohioans with hepatitis C, there are no significant, statewide efforts led by ODH, the Ohio Department of Mental Health and Addiction Services (OMHAS) or ODM to increase awareness, prevention or screening for hepatitis C.

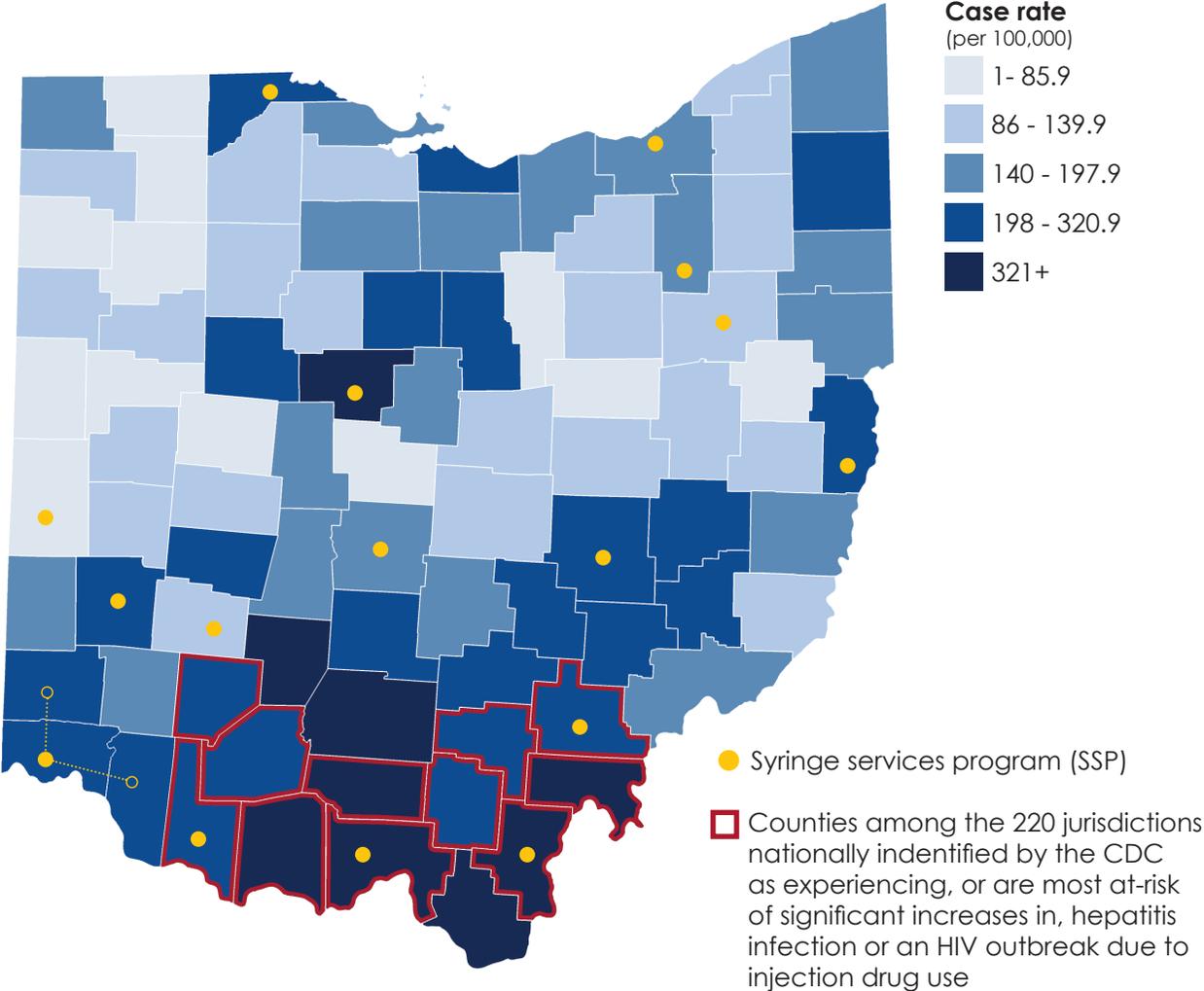
SSPs are an evidence-based strategy to prevent transmission of hepatitis C, HIV, endocarditis and other infectious diseases. Eighty percent of Ohio counties, however, do not have an SSP, meaning that people who inject drugs are at extremely high risk for contracting and spreading these infections through shared needles. Major gaps include:

- Seven of the 11 Ohio counties identified by the CDC as being at highest risk in the nation of a hepatitis C and/or HIV outbreak do not currently have an SSP. All seven counties are rural counties in southern Ohio. People who use injection drugs in these counties are therefore extremely vulnerable to bloodborne infections (see figures 5 and 6).

- SSPs rely upon local and private funding; little state or federal funding has been allocated specifically to support SSPs in Ohio. Resources are limited to support the supplies and staffing needed to run effective SSPs, particularly in rural counties.
- Stakeholders report a lack of coordination and information sharing among local communities regarding SSPs, which makes it difficult for communities to start or improve SSPs.

Notably, between 25 and 40 percent of the population in each of the high-risk counties without an SSP (shown in figure 5) is enrolled in Medicaid.<sup>23</sup> In order to reduce the spread of hepatitis C, and reduce Medicaid spending on liver disease, counties at-risk of, or currently experiencing, a hepatitis C outbreak should consider establishing SSPs.

Figure 5. **County-level hepatitis C case rate per 100,000 population, 2016 and location of Syringe Services Programs**



**SSP Source:** 18 and counting: Another Ohio county starts syringe exchange, Harm Reduction Ohio; Syringe Exchanges in Ohio, Harm Reduction Ohio

**Hepatitis C sources:** Vulnerable Counties and Jurisdictions Experiencing or At-Risk of Outbreaks, Centers for Disease Control and Prevention; Ohio Department of Health, Hepatitis Surveillance Program, data reported as of June 17, 2017.

Figure 6. Ohio’s harm reduction “deserts”: Counties with insufficient access to overdose reversal or other harm reduction strategies

Counties with higher overdose death rates and no Project DAWN site (see figure 21 on page 33)	Counties with higher overdose death rates and lower naloxone administration reported by EMS (see figure 20 on page 32)	Counties identified by CDC as at-risk for hepatitis C or HIV outbreaks and with no syringe services program (SSP) (see figure 5 on page 15)
<ul style="list-style-type: none"> <li>• <b>Darke</b></li> <li>• Fayette</li> <li>• Huron</li> <li>• <b>Pike</b></li> <li>• Preble</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Clinton</b></li> <li>• Columbiana</li> <li>• Crawford</li> <li>• <b>Darke</b></li> <li>• Hancock</li> </ul>	<ul style="list-style-type: none"> <li>• Jefferson</li> <li>• Marion</li> <li>• <b>Pike</b></li> <li>• Richland</li> </ul>

**Note:** Bolded counties appear in more than one category

**Harm reduction “deserts” in some rural communities.** Figure 6 lists Ohio counties that have high rates of addiction-related harms, such as overdose deaths and hepatitis C, but few harm reduction programs or services, such as Project DAWN sites, naloxone administered by EMS and SSPs. All of the counties identified by this analysis are rural and likely share similar barriers to establishing harm reduction programs and services, such as inadequate funding, limited local health department capacity and stigma.

**Life-saving hepatitis C treatment has been limited for Medicaid enrollees.** Through 2018, Ohio Medicaid coverage for hepatitis C treatment has been inconsistent with clinical guidelines and more restrictive than Medicaid coverage in several other states.<sup>24</sup> For example, Ohio Medicaid fee-for-service and managed care organizations currently require patients to:

- Have moderate to severe liver damage before they are eligible for treatment. (This requirement will end in January 2019.)
- Demonstrate sobriety from drugs and alcohol for at least six months.
- Receive a prescription from or in consultation with a specialist (such as a hepatologist, gastroenterologist or infectious disease specialist), which can be a barrier for patients in rural areas that do not have these specialists or those who cannot find a specialist who accepts Medicaid.

As a result, many Ohioans diagnosed with hepatitis C may not be able to obtain needed treatment. People with untreated hepatitis C can continue to infect others, increasing the prevalence of the disease in Ohio.

Ohio Medicaid and Medicaid managed care organizations have implemented these restrictions due to the extremely high prices of the drugs used to treat hepatitis C. The combination of the surge in hepatitis C cases and trends in pharmaceutical pricing presents a major challenge for Ohio policymakers seeking to control Medicaid spending.

### Opportunities for improvement

While Ohio has embraced overdose reversal, the state has been slower to act on other forms of harm reduction. Given the severe downstream consequences of drug use, particularly injection drug use, Ohio policymakers can do more to incorporate the harm reduction framework and strategies as a component of a person-centered response to the addiction crisis.

More specifically, public and private partners can work together to:

1. **Continue to increase naloxone distribution across the state to ensure that all Ohioans have access to overdose reversal medication, including improved access for community organizations and lay people.**
  - a. Increase the number of community sites that can distribute naloxone, including Project DAWN sites and other community-based organizations, so that there is better coverage across Ohio, particularly in counties with the highest overdose rates.
  - b. Expand the types of entities that are eligible to become Project DAWN sites, including non-profit organizations that serve people who inject drugs.
  - c. Allow community organizations to distribute naloxone without a TDDD license or provide assistance to entities so that they can obtain a TDDD license.

- d. Increase naloxone distribution by continuing to integrate Project DAWN and other distribution models with addiction treatment settings, re-entry from prison and jail and SSPs.
- e. Establish additional methods for distributing naloxone in the community, such as by storing and maintaining naloxone in automated external defibrillator (AED) cabinets.
- f. Simplify Ohio's Good Samaritan law and reduce the restrictions on Good Samaritan immunity so that bystanders are encouraged to call for help during an overdose.
- g. Create civil liability protections for lay persons who administer naloxone to a person experiencing an overdose.
- h. Expand the current media campaign to inform the public, including drug users, family members and friends of drug users and community groups, of the availability of naloxone, Ohio's Good Samaritan law and other legal immunities related to naloxone distribution and administration.
- i. Increase the sustainability of the Project DAWN program by establishing a pathway for Project DAWN sites to bill insurance providers for the naloxone they distribute.

**2. Launch an intensive initiative to reduce the spread of infections associated with injection drug use, including increased awareness of the importance of prevention, treatment and harm reduction.**

- a. Create an integrated state plan to reduce hepatitis C transmission and reinfection, similar to the Ohio HIV Prevention and Care Integrated Plan.
- b. Increase the number of SSPs in Ohio, particularly in counties with the highest rates of hepatitis C and HIV (see figure 6).
- c. Identify sustained funding sources to support SSPs and explore ways to capture downstream savings to ODM and the Ohio Department of Rehabilitation and Correction (DRC) to reinvest in infection prevention.
- d. Establish a statewide coordination hub for SSPs that can assist local programs with information sharing, technical assistance, evaluation and quality improvement.
- e. Develop a campaign to reduce stigma for harm reduction approaches.

**3. Continue to improve access to hepatitis C treatment for Medicaid enrollees, while exploring strategies to control treatment costs.**

- a. Remove or reduce restrictions to direct-acting antiviral (DAA) treatment related to sobriety timeframes and specialist providers. For more information, see pages 33 and 34.

- b. Engage primary care providers, including Federally Qualified Health Centers (FQHCs), in providing DAA treatment for patients with hepatitis C.
- c. Increase screening efforts for hepatitis C and HIV across the state, particularly for priority populations, including people who inject drugs.
- d. Implement one or more of the strategies identified by the National Governor's Association<sup>25</sup> to ensure fiscal sustainability of hepatitis C treatment in the Medicaid program, such as by incorporating value assessments into policies and purchasing approaches.<sup>26</sup>

**4. Reduce the number of alcohol/drug-impaired motor vehicle crashes.**

- a. Require ignition interlocks for first offense of alcohol-impaired driving, as recommended by the CDC.
- b. Collect and analyze data about motor vehicle crashes caused by drivers impaired by methamphetamine, cocaine, marijuana, opiates and other drugs.

**5. Improve surveillance and evaluation to ensure that the state is investing in effective strategies.**

- a. Include measurable policy goals in legislation and integrate tools to track implementation and outcomes into the policymaking process.
- b. Improve access to real-time data on the drug supply to provide first responders, local health departments, community organizations and drug users with information about the presence of carfentanil, fentanyl, fentanyl analogues and other particularly lethal substances.
- c. Improve tracking of naloxone distribution and use, including non-fatal overdoses, in order to evaluate and improve overdose reversal efforts statewide in a consistent way. For example, see House Bill 535 (page 26).
- d. Evaluate emerging harm reduction approaches, such as fentanyl test strip (drug checking) programs. If successful in achieving outcomes, replicate these programs across the state.
- e. Monitor research on safe injection sites to see what lessons can be learned from other countries and states.

## Potential threats and changes on the horizon

The following trends pose a potential threat to Ohio's efforts to reduce addiction and addiction-related harms:

- **Illicit psychostimulants.** Emerging changes in substances being abused, including increased use of methamphetamine, cocaine and other psychostimulants that present unique challenges for law enforcement and families, such as psychosis, delusions and violence
- **Prescription psychostimulants.** Increasing amounts of prescription amphetamines dispensed<sup>27</sup> and high rates of amphetamine prescribing for children enrolled in Medicaid for treatment of ADHD<sup>28</sup>
- **Fentanyl throughout the illicit drug supply.** Increasing presence of fentanyl and fentanyl analogues in non-opioid drugs, such as cocaine and methamphetamine, which increases the risk of overdose and has implications for racial disparities in overdose deaths
- **Medicaid spending on new pharmaceuticals.** Continuing tension between policymaker efforts to control Medicaid spending and high prices for some new pharmaceuticals, including those used to cure hepatitis C
- **Long-term impact of incarceration on families.** Continuing downstream consequences of incarceration for Ohioans with substance use disorder, including difficulty securing employment, disrupted family relationships and adverse childhood experiences for their children
- **Public costs of incarceration.** Increasing spending by state and local government to incarcerate Ohioans charged with drug possession, use and trafficking
- **Limited local capacity.** Continuing lack of capacity among some local health departments and other local government entities, which may limit their ability to provide naloxone distribution programs, SSPs and other harm reduction services, particularly in rural communities
- **Stigma.** Persisting stigma toward people with substance use disorder, particularly people who inject drugs, and reluctance to embrace harm reduction approaches

## State of the evidence

The evidence base for the effectiveness of harm reduction varies widely by approach. There are decades of research on the effectiveness of SSPs to reduce HIV and other bloodborne infections, and on various strategies to reduce the harms of excessive alcohol use, such as drunk driving. Housing First, which provides rapid access to permanent housing without pre-condition of addiction treatment, also has a well-established research base showing that it improves health outcomes.

Research on the effectiveness of policies and programs that increase access to and use

of naloxone is growing and indicates that these strategies can save lives. For this reason, several national organizations recommend widespread use of naloxone. (See the [Evidence Resource Page: Overdose Reversal and Other Forms of Harm Reduction](#) for more information.)

The evidence base for safe injection sites and drug checking, by contrast, is emerging because these are newer approaches with limited implementation in the U.S. These topics are not yet addressed by U.S.-based expert consensus statements or evidence registries.

# Part 4. Status of addiction-related harms in Ohio

## Overview

This section describes the current status of the following addiction-related harms that affect a large number of Ohioans and have corresponding strategies with strong evidence of effectiveness:

- Overdose deaths
- Hepatitis C
- HIV/AIDS
- Endocarditis
- Drunk driving
- Homelessness

## Overdose deaths

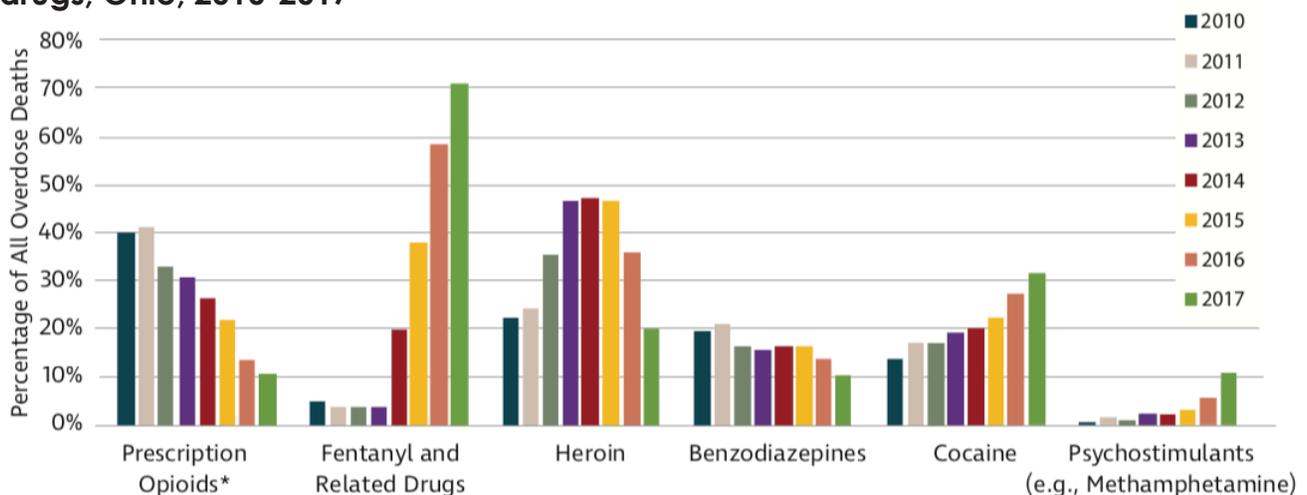
In 2017, 4,854 Ohioans died from unintentional drug overdose. This is an historic high for Ohio, having climbed steadily from 2000 to 2017, led most recently by increases in deaths from fentanyl and related drugs (see figure 7). Additionally, the gap in the overdose death rate between black and white Ohioans narrowed during 2017 because the black rate began to approach the white rate.<sup>29</sup>

The monthly number of drug overdose deaths reached its highest point in January 2017, and data from ODH and CDC indicate that the number of overdose deaths began to decline through 2017, with preliminary data showing reductions into early 2018 (see figure ES 1 and

Figure 8). Based on provisional data released by the CDC in October 2018, Ohio had a 3.1 percent decline in the number of drug overdose deaths from the 12-month period ending March 2017 to the 12-month period ending March 2018 (see figure 8). Ohio was one of 20 states and Washington DC that experienced a decline during this time period.<sup>30</sup>

This may be the first sign that Ohio's many efforts to prevent and reverse overdoses are beginning to have a positive impact on population-level outcomes. Still, overdose deaths are the "tip of the iceberg" when it comes to the impact of addiction on Ohioans. As the rate of fatal overdose begins to decrease, there are still many people struggling with substance use

Figure 7. **Percentage of unintentional drug overdose deaths involving selected drugs, Ohio, 2010-2017**

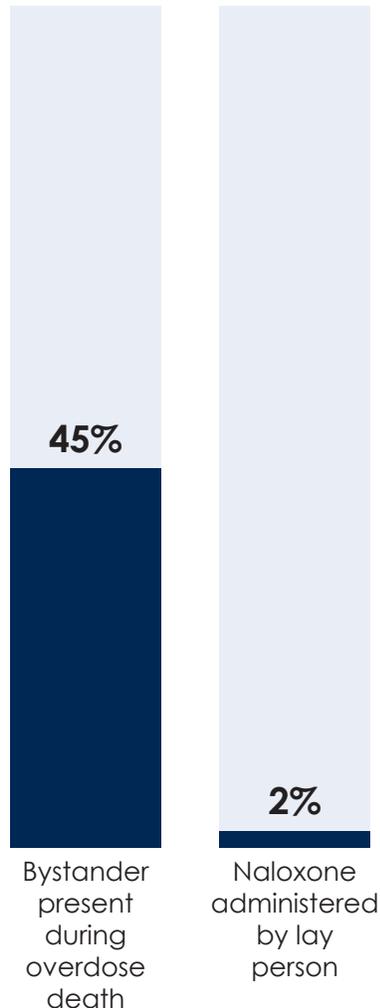


\*Prescription opioids reflect ICD-10 codes T40.2-T40.4, T40.6. Deaths are captured in this category only if there is no mention of fentanyl and related drugs (reflected in T40.4 and T40.6) on the death certificate, even if the death involved natural & semi-synthetic opioids (T40.2) or methadone (T40.3).

Source: Ohio Department of Health, Bureau of Vital Statistics, analysis conducted by ODH Violence and Injury Prevention Program



Figure 9. **Bystander present and naloxone administered by a lay person during overdose death, Ohio, 2016**



**Source:** Enhanced State Opioid Overdose Surveillance (ESOOS) data, provided by the Ohio Department of Health, Oct. 11, 2018

Hepatitis C is an important state health policy issue because a large and increasing number of Medicaid enrollees are affected by the disease. The number of Ohio Medicaid enrollees diagnosed with and receiving treatment for hepatitis C rose from 43,169 in 2015 to 50,730 in 2017 (see figure 11).

Hepatitis C rates are also high among Ohio’s prison population. In 2017, 6,336 inmates—32 percent of inmates who were screened—tested positive for hepatitis C.<sup>37</sup> This means that approximately 13 percent of the prison population in Ohio was newly diagnosed with hepatitis C in 2017.

There are two stages of hepatitis C:

- **Acute:** Initial onset of hepatitis C, usually involving mild or no symptoms. People with acute hepatitis C are typically unaware that they are infected and may be unlikely to visit a healthcare provider.
- **Chronic:** HCV infection has persisted for six months or longer. Symptoms are often still mild and non-specific, allowing the disease to progress slowly.

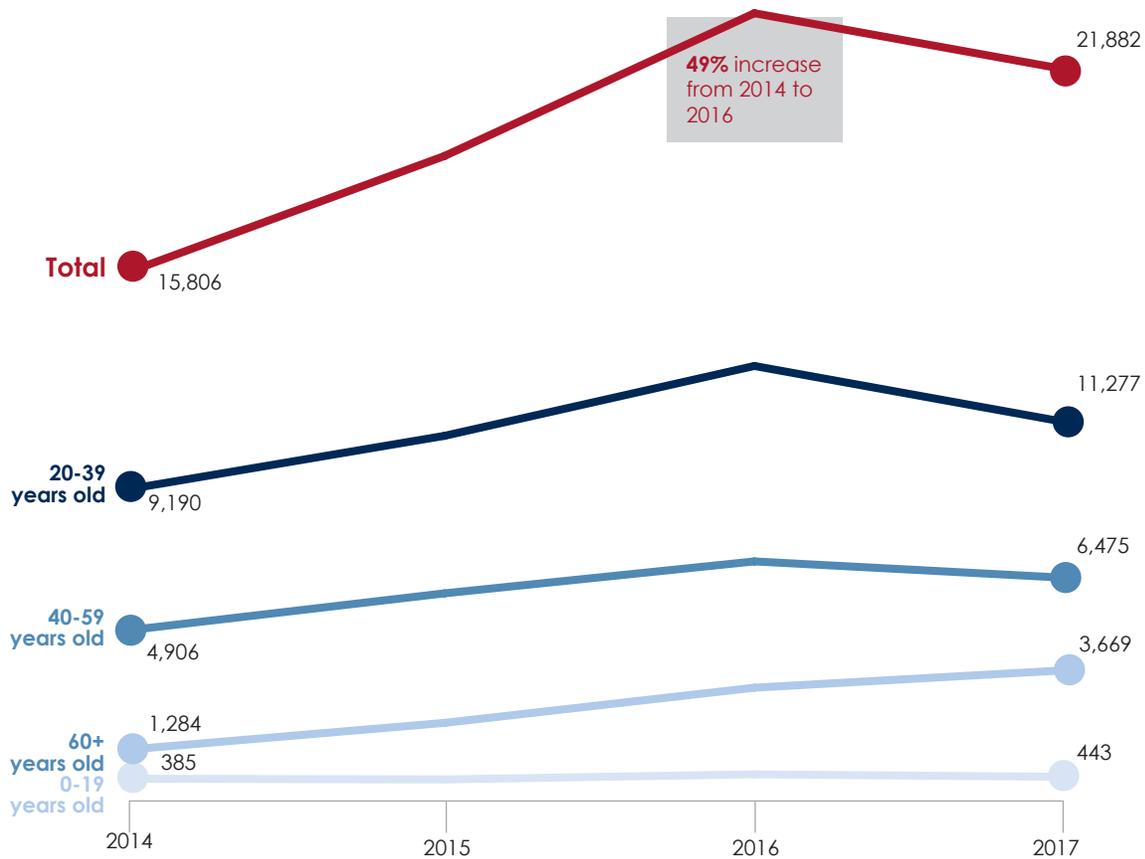
Over time, hepatitis C leads to fibrosis—scarring of the liver—and then cirrhosis—permanent scarring of the liver that impairs function. Cirrhosis can lead to advanced liver disease and/or liver cancer, which may require a liver transplant. If untreated, patients can die from liver disease, a leading cause of premature death in Ohio.<sup>38</sup>

The U.S. Prevention Services Task Force (USPSTF) recommends that all people who are at high risk for infection receive screening for hepatitis C.<sup>39</sup> The most important risk factor for infection, according to USPSTF, is past or current injection drug use.

A patient who has been screened and diagnosed with hepatitis C can be treated with a combination of drugs called direct-acting antivirals (DAAs). DAAs have shorter treatment times (8-12 weeks), higher cure rates and fewer side effects than previous treatment options. DAAs are, however, very expensive.<sup>40</sup> The list price of one course of treatment for some commonly-used DAAs include \$26,400 (Mavyret)<sup>41</sup>, \$54,600 (Zepatier)<sup>42</sup> and \$74,760 (Epclusa)<sup>43</sup>, although rebates reduce the cost of DAAs to the Medicaid program.<sup>44</sup> Notably, a person can have a recurrence in hepatitis C following DAA treatment if re-exposed to the virus.

To prevent mortality from liver disease, and the high costs associated with liver disease and transplant, Ohio should focus on prevention and screening for hepatitis C infection. Figure 12 outlines the progression from risk of HCV infection to liver disease for people who inject drugs, as well as examples of the costs associated with prevention and treatment at each stage.

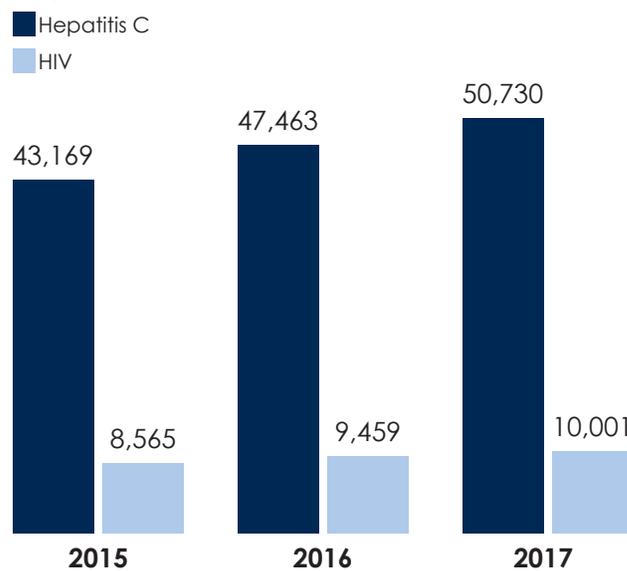
Figure 10. New hepatitis C cases\* in Ohio, by number of cases, 2014-2017



\*Includes all hepatitis C cases, both "acute" and "past or present" for 2013-2015 and both "acute" and "chronic" for 2016 and 2017.

Source: Ohio Department of Health, Hepatitis Surveillance Program Data. 2014-2017 data reported through June 25, 2018.

Figure 11. Number of Ohio Medicaid enrollees diagnosed with and receiving treatment for hepatitis C and HIV, 2015-2017\*

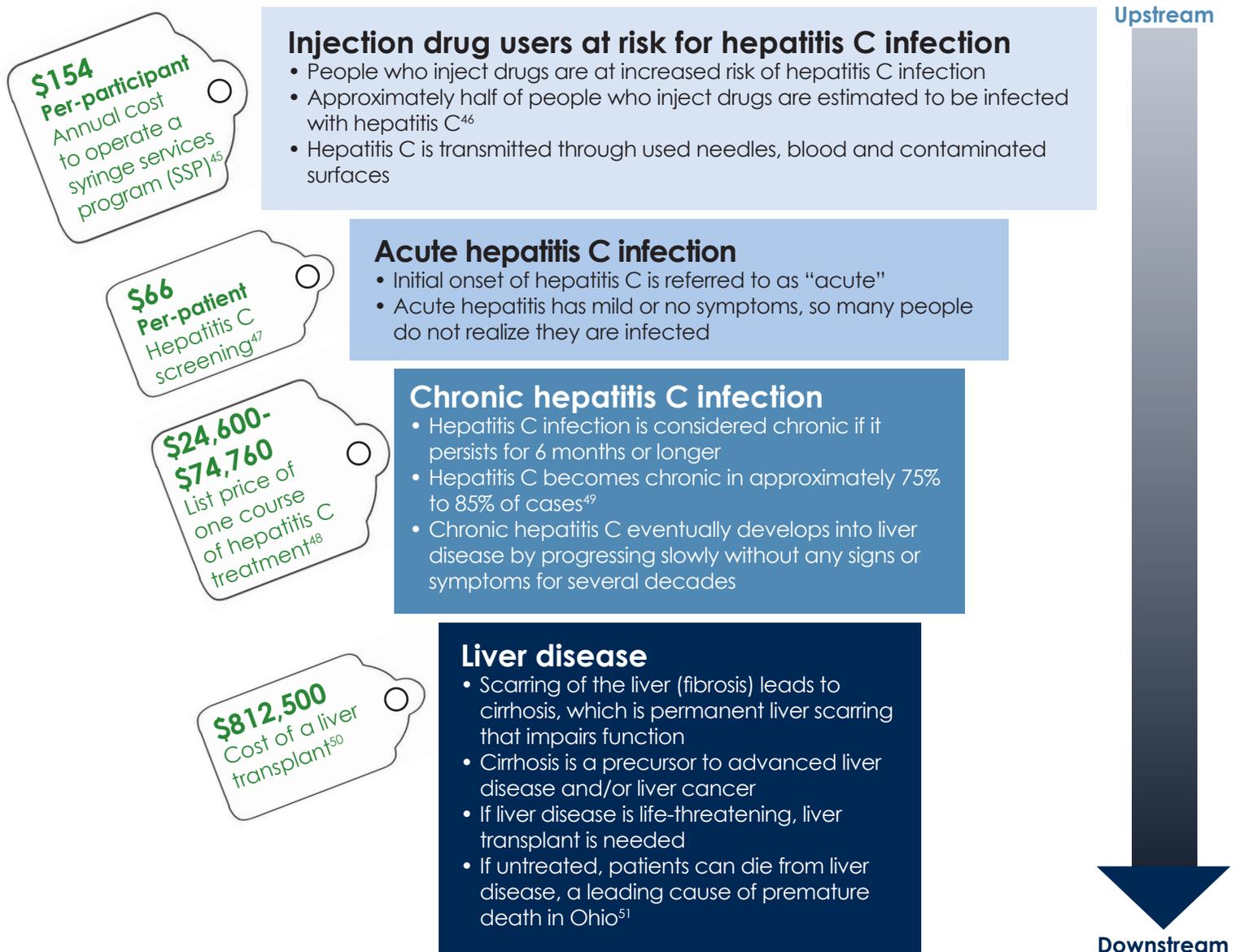


\* Calendar year

Note: Data includes fee-for-service and managed care enrollees of all ages

Source: Ohio Department of Medicaid, 2018

Figure 12. **Cost of hepatitis C prevention and treatment for people who use injection drugs**



## HIV/AIDS

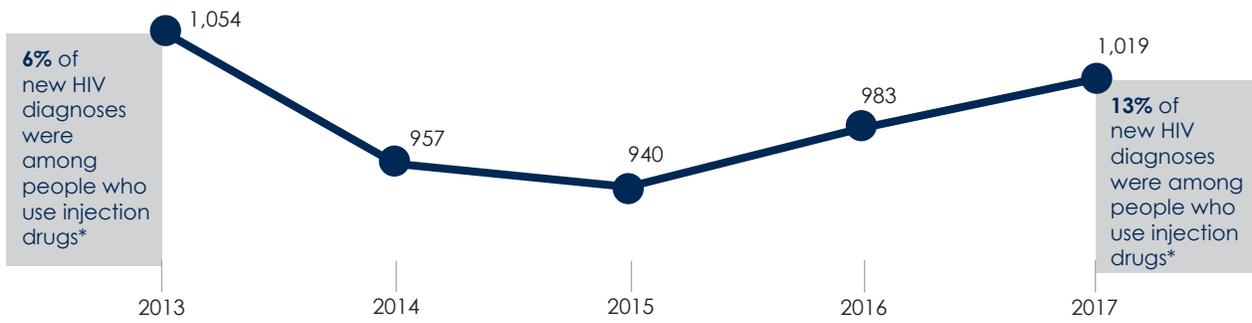
Human immunodeficiency virus (HIV) is a virus that weakens the body's immune system and prevents it from fighting off infection and disease. Over time, if untreated, HIV leads to acquired immunodeficiency syndrome (AIDS).

People who inject drugs are at higher risk of contracting HIV. Like hepatitis C, HIV is transmitted through needles and other equipment used to inject drugs. HIV can also be sexually transmitted, and people who use drugs are more likely to engage in risky sexual behaviors, which may increase risk of contracting HIV.<sup>52</sup>

Although new diagnoses of HIV had been decreasing in Ohio up until 2015, rates have increased over the last several years (see figure 13) and increasing numbers of Medicaid enrollees have been diagnosed with HIV (see figure 11). In 2017, 13 percent of new HIV diagnoses were among people who use injection drugs. From 2013 to 2017, there was a 108-percent increase in the number of new HIV diagnoses among people who inject drugs.

There is also a significant disparity in the gender of people diagnosed with HIV. In 2017, 81 percent of Ohioans newly diagnosed with HIV were male, while 19 percent were female.<sup>53</sup>

Figure 13. **New diagnoses of HIV infection in Ohio, 2013-2017**



\*Exposure categories for people who use Injection drugs include injection drug use only; male-to-male sex and injection drug use; injection drug use and heterosexual contact; and male-to-male sex, injection drug use and heterosexual contact.

**Source:** Ohio Department of Health, HIV/AIDS Surveillance Program. Data reported through June 30, 2018.

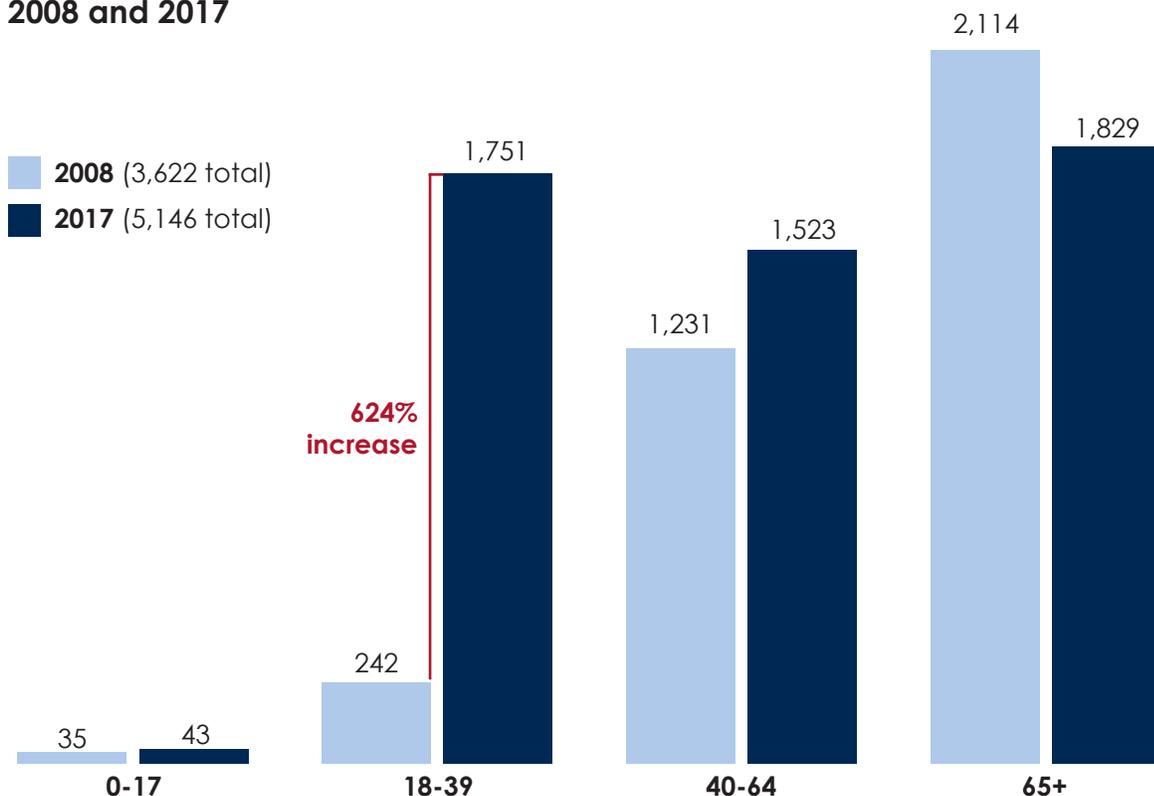
### Endocarditis

Endocarditis is an infection caused by bacteria that enter the bloodstream and settle in the heart.<sup>54</sup> Bacteria can enter the bloodstream through a break in the skin caused by an injury, dental procedure or skin prick with a needle.<sup>55</sup> People who inject drugs are therefore at increased risk of developing endocarditis.

Over the last 10 years, there has been a large increase in the number of Ohio hospital encounters with patients diagnosed

with endocarditis (see figure 14). In 2008, there were 3,622 inpatient endocarditis encounters, and in 2017, there were 5,146 endocarditis encounters—a 42 percent increase.<sup>56</sup> This increase was largest for patients in the 18-39-year-old age group—the group most likely to use injection drugs.<sup>57</sup> Although the hospital encounter data is not able to specifically identify the endocarditis encounters caused by injection drug use, the age distribution of the trend indicates a relationship with the opioid epidemic.

Figure 14. **Ohio hospital encounters for patients with endocarditis, by age group, 2008 and 2017**



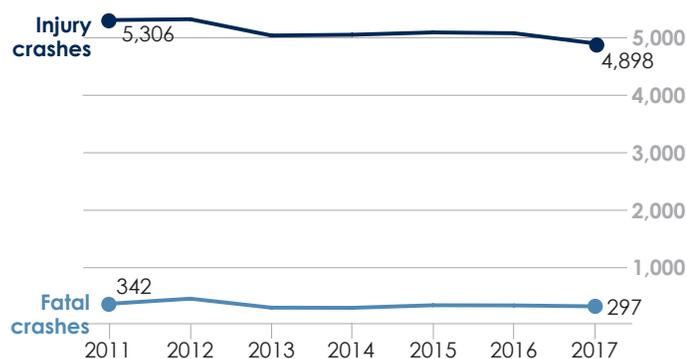
**Source:** Ohio Hospital Association

This same trend is occurring nationally. A 2016 Health Affairs study found that the number of hospitalizations related to opioid abuse and dependence that also had an associated serious infection—including endocarditis—increased by 91 percent from 2002 to 2012.<sup>58</sup> Not only are the number of encounters increasing, but the cost of these hospitalizations is high. In 2012, the estimated total charge per hospitalization for patients with opioid abuse/dependence and associated infection was \$107,217, while the average cost for opioid abuse/dependence hospitalization without associated infection was \$28,543.<sup>59</sup> Because the most common payer for this group of patients is Medicaid, the state is covering most of these costs. In fact, only 14 percent of discharges among patients with opioid abuse/dependence and associated infection were covered by private insurance.<sup>60</sup>

### Drunk driving

Alcohol and other drug use increase the risk for motor vehicle crashes. Every day, 29 people in the U.S. die in motor vehicle crashes that involve an alcohol-impaired driver.<sup>61</sup> In Ohio, there were 4,898 injury crashes and 297 fatal crashes related to alcohol in 2017.<sup>62</sup> The number of injuries and deaths from alcohol-related motor vehicle crashes has stayed relatively stable since 2011 (see figure 15). Stakeholders report concerns about increased crashes caused by drivers impaired by other substances, including opioids and methamphetamine, although Ohio motor vehicle crash data related to drugs other than alcohol is not currently available.

Figure 15. Alcohol-related motor vehicle crashes resulting in injury and fatality, Ohio 2011-2017



Source: Ohio Department of Public Safety

### Homelessness

Lack of housing exacerbates substance use disorder in people experiencing homelessness. Addiction can cause and prolong homelessness, and the experience of homelessness makes it difficult for individuals to engage in treatment. Drug overdose is also a leading cause of death for people experiencing homelessness.<sup>63</sup>

### Other addiction-related harms

There are many other harms related to addiction, including:

- **Tooth decay and gum disease:** Methamphetamine, particularly when smoked, can lead to severe tooth decay and gum disease, which may result in tooth loss.
- **Psychosis:** Methamphetamine stimulates the central nervous system, which can cause paranoia, delusions and anxiety.
- **Liver disease:** Addiction to alcohol can lead to fibrosis, cirrhosis, liver disease and liver cancer. Liver disease is discussed further in the hepatitis C section.
- **Cancer:** Tobacco use increases a person's risk for many types of cancer, including cancer of the lung, larynx (voice box), mouth, esophagus, throat, bladder, kidney, liver, stomach, pancreas, colon and rectum, and cervix, as well as acute myeloid leukemia.<sup>64</sup>
- **Heart disease and stroke:** Tobacco use also increases risk for cardiac conditions, such as heart disease, stroke and chronic pulmonary obstructive disorder.<sup>65</sup>
- **Harms to infants:** Drug use during pregnancy can result in drug-related harms to infants, such as Neonatal Abstinence Syndrome (due to opioid use), Fetal Alcohol Syndrome, low birth weight and Sudden Infant Death Syndrome (due to tobacco use).

There are also addiction-related-harms that impact the social and economic environments of people who use drugs as well as others in communities, including:

- Job loss and reduced worker productivity
- Violence
- Child maltreatment and loss of custody
- Prostitution, sexual exploitation and sexually transmitted infections
- Crime and incarceration
- Secondary trauma for first responders and behavioral health workforce

# Part 5. Policy inventory summary

## Overview

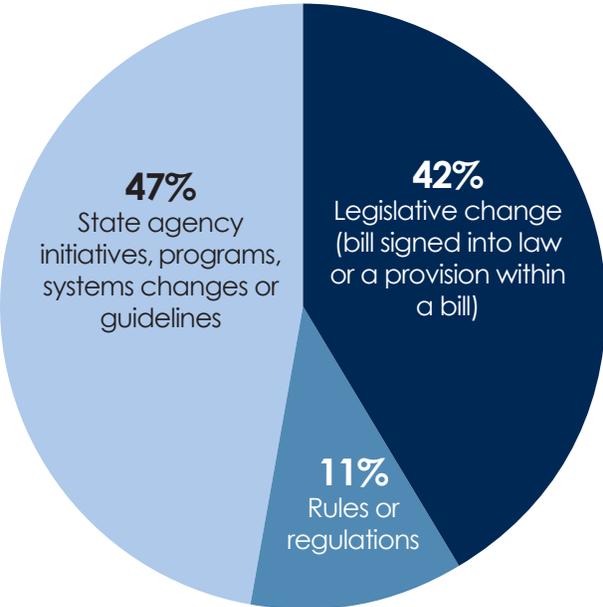
This section highlights key findings from the policy inventory, including the volume of policy changes and public spending for overdose reversal and other forms of harm reduction.

A complete list of specific policies, programs and services, including descriptions and links for more information, is available in the **Detailed Policy Inventory [link]**.

## Inventory process and methodology

To develop the policy inventory, HPIO researchers conducted a structured review of policy changes that occurred at the state level from Jan. 2013 – May 2018 (130<sup>th</sup> and 131<sup>st</sup> General Assembly and the 132<sup>nd</sup> General Assembly as of May 2018). See appendix for a list of the search terms used.

Figure 16. **Number of policy changes related to overdose reversal and other forms of harm reduction in Ohio, by type of policy change, Jan. 2013 – May 2018** (n=53)



**Source:** HPIO review of Ohio legislation, regulations, Governor’s Cabinet Opiate Action Team timeline and other policy summaries

Of the policy changes identified, 42 percent were legislative changes, 11 percent were rules or regulations and 47 percent were new or expanded state agency initiatives, programs, systems changes or guidelines (see figure 16).

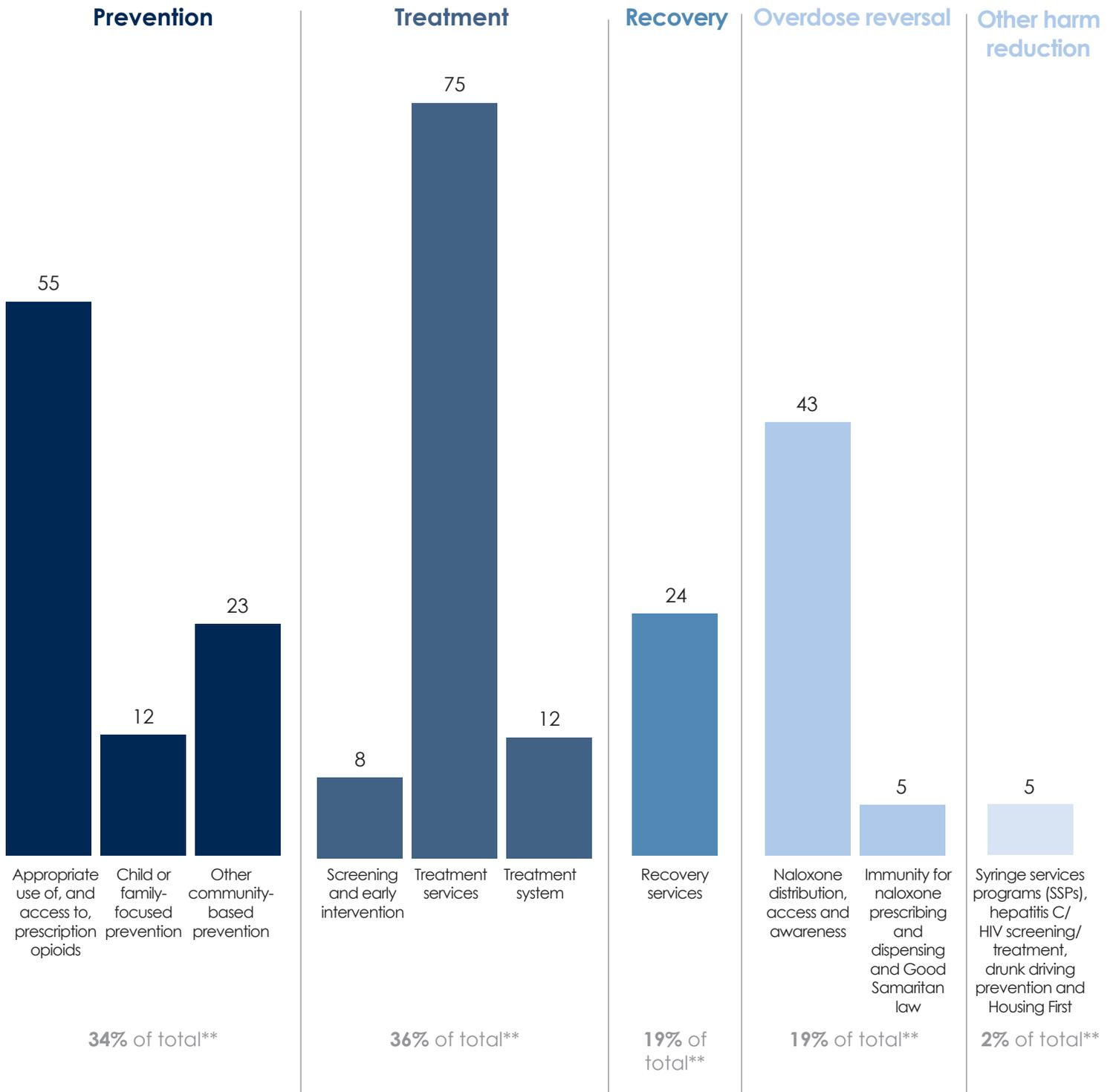
## Volume of policy changes, by topic

Figure 17 displays the number of policy changes enacted between Jan. 2013 and May 2018 that impact overdose reversal and other forms of harm reduction. Overall, naloxone distribution, access and awareness received the largest amount of policy attention, while immunity for naloxone prescribing and dispensing received less attention. There was also less policymaking activity regarding other harm reduction strategies, which includes syringe services programs (SSPs), hepatitis C and HIV screening, Housing First, drunk driving prevention, drug checking and safe injection sites.

## Pending legislation

In addition to the overdose reversal and other harm reduction policies that appear in the inventory, there is legislation currently being considered in the Ohio General Assembly that would impact the overdose reversal landscape in Ohio. House Bill 535 (HB 535)<sup>66</sup>, sponsored by Rep. Gavarone, would require hospitals across the state to report the number of drug overdose cases brought to the hospital for treatment each month. The bill would also require the Ohio Department of Public Safety to report any information it collects on naloxone administered by EMS each month. These reports would be sent to

Figure 17. Number of addiction-related policy changes in Ohio, by topic, January 2013 to May 2018\*



\* Overdose reversal and other harm reduction policies were identified through May 2018, while prevention, treatment and recovery policies were identified through December 2017.

\*\* Percents exceed 100 percent because some policies were counted in more than one category.

**Note:** See [detailed inventory tables](#) for further description of these categories.

**Source:** HPIO review of Ohio legislation, regulations, Governor's Cabinet Opiate Action Team timeline and other policy summaries

ODH; the hospital overdose data would be posted publicly on the ODH website and the EMS data would be compiled and released to each local board of alcohol, drug addiction and mental health (ADAMH). HB 535 passed unanimously in the House of Representatives in June 2018 and is currently being heard in the Senate Committee on Health, Human Services and Medicaid.

## State agency spending

State agencies involved in funding the overdose reversal and harm reduction activities described in this report include Ohio Department of Health, Ohio Mental Health and Addiction Services (OMHAS), Ohio Department of Medicaid (ODM), Ohio Department of Rehabilitation and Corrections (DRC) and the Ohio Attorney General's Office (AG).

The AG, for example, has spent \$255,972 in reimbursements for naloxone rebates to public entities and \$41,750 related to impaired driving in state fiscal year (SFY) 2017. The AG's office is also administering a \$3 million grant from the SFY 2018-2019 state budget that is being used to replicate or expand Drug Abuse Response Teams (DARTs) and Quick Response Teams (QRTs). Funds went to **40 law enforcement departments** in Sept. 2017.

Spending amounts from ODH, OMHAS and ODM were unavailable for this report.

Over the past six years, Ohio's prison system has seen increased spending on hepatitis C treatment. DRC spent \$1 million on hepatitis C treatment in SFY 2018, up from \$650,000 in 2013.<sup>67</sup>

## Local and private spending

Local law enforcement and emergency medical services pay for the purchase of naloxone out of local funds in many cases. SSPs are largely funded by local health departments, other local government entities and private philanthropy.

Notably, local governments are largely responsible for infectious disease prevention activities, such as SSPs. The costs of not doing effective disease prevention, however, accrue

primarily to the state Medicaid program and state prisons. Given that ODM and DRC have considerably more resources than local health departments, incentives are not aligned to support prevention and harm reduction.

Rather, current spending patterns result in high state and federal spending on downstream consequences of addiction, such as HIV/AIDS treatment and liver transplants, and minimal investment in upstream infectious disease prevention. Downstream costs of addiction-related harms will therefore present a significant challenge to state budgets for the foreseeable future unless resources are reallocated and/or appropriated to reduce the spread of infectious diseases.

# Part 6. Policy scorecard summary

## Overview

The policy scorecard summary tables in this section rate Ohio's overdose reversal and other harm reduction policies and programs on a three-point scale (see key below) based on the extent to which they:

- Align with research evidence on what works to reduce addiction-related harms, and
- Reach Ohioans in need (implementation reach, including number of counties served)

In addition, the scorecard summary tables in this section highlight key strengths and gaps related to evidence alignment and implementation reach or utilization of evidence-based services. High-priority opportunities for improvement are listed in the right-hand column and additional opportunities are described in the **Detailed Policy Scorecard [link]**.

## Scorecard process

To develop the list of evidence-based policies and programs in the scorecard, HPIO consulted rigorous reviews of available research literature, including:

- **Expert consensus statements and recommendations** from independent expert panels convened by organizations such as the U.S. Surgeon General; the National Academies of Sciences, Engineering and Medicine (NASEM); and the CDC
- **Clinical guidelines** from medical associations such as the American Medical Association and the Infectious Disease Society of America
- **Evidence registries and clearinghouses**, such as What Works for Health
- **Gray literature reports** from private sector organizations, such as the Network for Public Health Law and the National Center for Addiction and Substance Abuse

HPIO then reviewed the inventory to identify policies and programs implemented in Ohio that were relevant to the specific evidence-based approaches and assessed the extent to which Ohio's efforts align with the evidence and are being implemented in a widespread way. Although guided by specific criteria (see appendix), this assessment was largely qualitative.

HPIO sought and received input from state agencies and other stakeholders to ensure that the description of policy implementation in Ohio was accurate, although information about the number of Ohioans reached or fidelity to evidence-based models was often not available. See appendix for further description of limitations.

### Key: Scorecard summary rating for evidence alignment and implementation reach\*

<b>Strong</b>	Most policies, programs and services in this category are consistent with evidence on what works and some are being implemented in a widespread way.	<b>Moderate</b>	Many policies, programs and services in this category are consistent with evidence on what works, but overall implementation reach may be limited.	<b>Weak</b>	For many of the policies, programs and services in this category, alignment with evidence and/or implementation reach is weak, mixed or unknown.
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\*See appendix for scoring methodology. See **Detailed Policy Scorecard [link]** for list of specific policies, programs and services reviewed.

Figure 18. **Overdose reversal scorecard summary**

		Strengths	Gaps	Opportunities for improvement
<b>Moderate</b>	<b>Naloxone education, outreach and distribution</b>	<ul style="list-style-type: none"> <li>• Project DAWN is a well-established naloxone education, outreach and distribution program that has existed in Ohio since 2012.</li> <li>• First responders have strong access to naloxone and are administering the drug in communities across the state.</li> <li>• Physicians in Ohio can authorize pharmacists to dispense naloxone without a prescription, using an approved protocol. There are pharmacies in 87 counties that can dispense naloxone under a physician protocol.</li> </ul>	<ul style="list-style-type: none"> <li>• Although EMS, pharmacies and Project DAWN sites are distributing naloxone, there is no consistent tracking of naloxone distribution.</li> <li>• Available data indicates that some counties with high overdose rates do not have adequate naloxone distribution through EMS or Project DAWN (see figures 20 and 21).</li> <li>• Entities such as local health departments and community organizations have difficulty distributing naloxone without a TDDD license.</li> <li>• Unlike most other states, Ohio has not issued a statewide standing order for naloxone to be distributed via pharmacies.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase the number of community sites that can distribute naloxone, including Project DAWN sites and other community-based organizations, particularly in counties with the highest overdose rates.</li> <li>• Simplify naloxone distribution policies for lay people, service organizations and community groups to expand community distribution.</li> <li>• Establish a statewide standing order so that all pharmacists in Ohio can prescribe naloxone without a prescription and without the need for physician protocols.</li> </ul>
<b>Moderate</b>	<b>Immunity for naloxone prescribing and dispensing and Good Samaritan law</b>	<ul style="list-style-type: none"> <li>• Ohio law provides civil, criminal and disciplinary immunity for medical professionals who dispense, personally furnish or administer naloxone in good faith.</li> <li>• Ohio has a Good Samaritan law in place that provides immunity for bystanders to drug overdoses who call for help. These bystanders are immune from arrest, charge and prosecution for minor drug possession offenses.</li> </ul>	<p>Ohio's Good Samaritan law includes several restrictions and could do more to encourage bystanders to seek help for someone experiencing an overdose. For example, Ohio law states that individuals can only receive immunity under the Good Samaritan law twice. Although this provision is difficult to enforce, it may discourage bystanders from calling for help.</p>	<ul style="list-style-type: none"> <li>• Assess the impact of Ohio's Good Samaritan law, including the restrictions on Good Samaritan immunity, and adjust the law as needed so that bystanders are encouraged to call for help during an overdose.</li> <li>• Increase public education about Ohio's Good Samaritan law so that people know that immunity may be available to them.</li> </ul>

**Note:** Rating based on evidence alignment and implementation reach

**Acronyms in figure 18**

TDDD: Terminal Distributor of Dangerous Drugs

Figure 19. **Other harm reduction scorecard summary**

		<b>Strengths</b>	<b>Gaps</b>	<b>Opportunities for improvement</b>
<b>Weak</b>	<b>Syringe services programs (SSPs)</b>	<ul style="list-style-type: none"> <li>Local health departments are permitted to establish SSPs if warranted by community conditions. The number of SSPs has increased from 4 in 2014 to 18 in 2018.</li> <li>In July 2018, ODH submitted a "Determination of Need" letter, which was approved by the CDC, requesting the opportunity to use existing federal funds to support SSPs. This may result in increased resources for local SSPs.</li> </ul>	<ul style="list-style-type: none"> <li>Most Ohio counties do not have an SSP, meaning that people who inject drugs are at extremely high risk for contracting and spreading bloodborne infections such as hepatitis C, HIV and endocarditis.</li> <li>SSPs rely upon local and private funding; little state or federal funding has been allocated specifically to support SSPs in Ohio.</li> </ul>	<ul style="list-style-type: none"> <li>Increase the number of SSPs in Ohio, particularly in counties with the highest rates of hepatitis C and HIV.</li> <li>Identify sustained funding sources to support SSPs and explore ways to capture downstream savings to ODM and DRC to reinvest in infection prevention.</li> <li>Create an integrated state plan for hepatitis C, similar to the Ohio HIV Prevention and Care Integrated Plan.</li> </ul>
<b>Moderate</b>	<b>Hepatitis C and HIV screening and treatment</b>	<ul style="list-style-type: none"> <li>In 2016, ODH led the creation of the Ohio HIV Prevention and Care Integrated Plan, 2017-2021. The integrated plan addresses the needs, gaps, and barriers to HIV prevention and treatment within the state.</li> <li>Health insurance for current and retired state employees (through DAS and OPERS) provides coverage for hepatitis C treatment that is consistent with clinical guidelines.</li> <li>As of Jan. 1, 2019, ODM is eliminating the liver disease severity restriction (fibrosis score) for hepatitis C treatment, which will likely increase access to evidence-based care and curb the spread of hepatitis C in the future.</li> </ul>	<ul style="list-style-type: none"> <li>There are no significant, statewide efforts to increase awareness, prevention, screening or treatment of hepatitis C.</li> <li>Through 2018, Ohio Medicaid coverage for hepatitis C treatment has been inconsistent with clinical guidelines and more restrictive than Medicaid coverage in several other states (see figure 22).</li> <li>In 2016, only 34 percent of adult Ohioans had ever been tested for HIV<sup>68</sup></li> </ul>	<ul style="list-style-type: none"> <li>Launch an intensive initiative to prevent hepatitis C transmission and reinfection, including awareness of the importance of prevention, treatment and harm reduction.</li> <li>Continue to improve access to hepatitis C treatment for Medicaid enrollees by reducing restrictions related to sobriety time frames and specialty providers.</li> <li>Increase screening for HIV in accordance with USPSTF recommendation.</li> </ul>
<b>Strong</b>	<b>Other harm reduction strategies (including drunk driving prevention and Housing First)</b>	<ul style="list-style-type: none"> <li>Ohio's blood alcohol concentration (BAC) laws are consistent with research-based recommendations.</li> <li>OHFA has a pool of funding specifically for PSH, which utilizes a Housing First model. 43 counties in Ohio have at least one PSH development.</li> </ul>	Although Ohio law requires ignition interlocks for repeat offenders convicted of alcohol-impaired driving, it does not require them after the first offense of impaired driving, as recommended by the CDC.	<ul style="list-style-type: none"> <li>Require ignition interlocks for first offense of impaired driving, as recommended by the CDC.</li> <li>Extend the reach of PSH and the Housing First model to more counties in Ohio.</li> </ul>

**Note:** Rating based on evidence alignment and implementation reach

**Acronyms in figure 19**

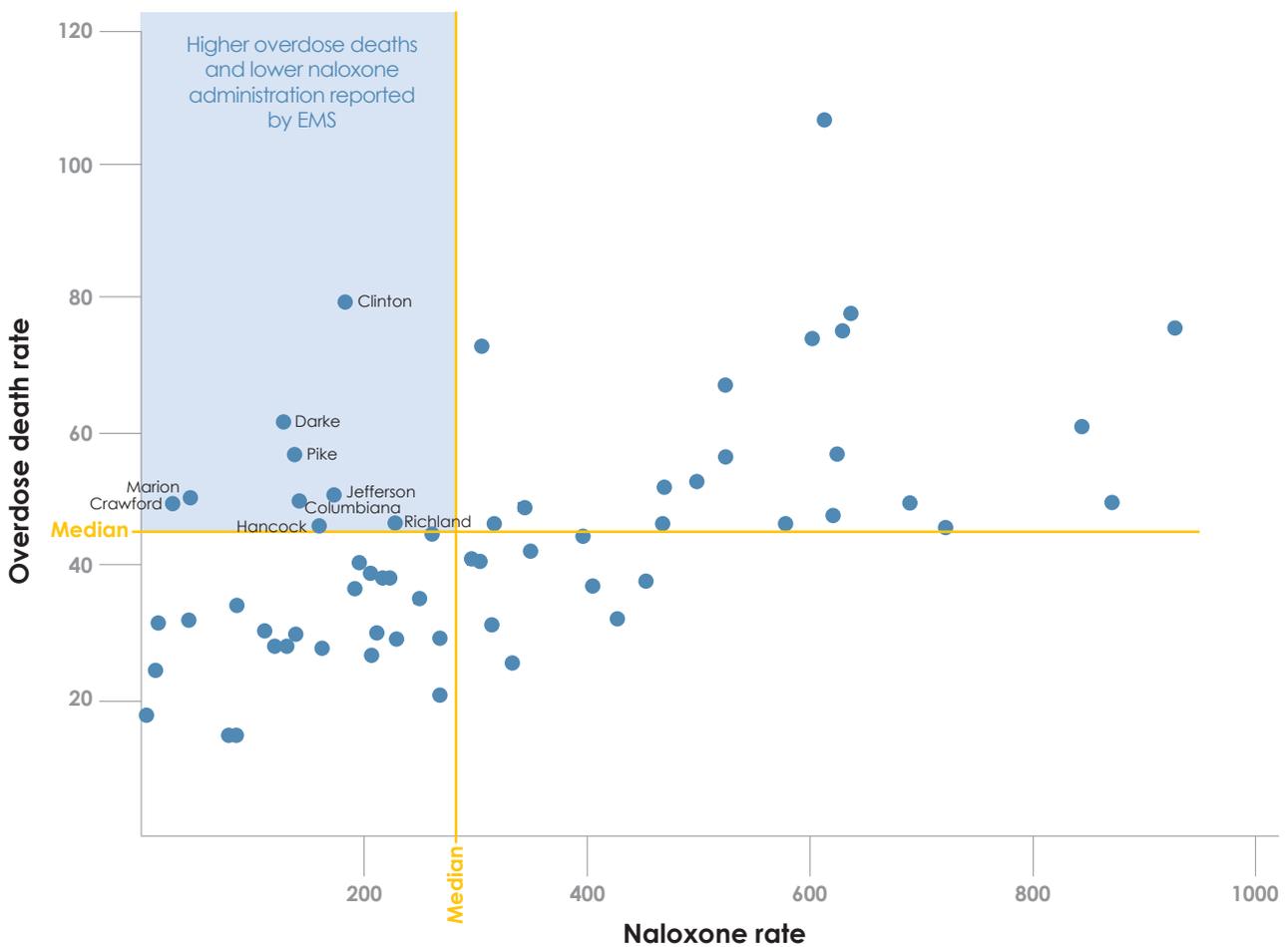
- CDC: Centers for Disease Control and Prevention
- DAS: Ohio Department of Administrative Services
- DRC: Ohio Department of Rehabilitation and Correction
- FQHC: Federally Qualified Health Center
- ODH: Ohio Department of Health
- OPERS: Ohio Public Employees Retirement System
- PSH: Permanent Supportive Housing
- USPSTF: U.S. Preventive Services Task Force

## Implementation reach

Figures 20 and 21 illustrate important gaps in implementation reach discussed in the scorecard summary. Despite efforts to increase naloxone distribution across the state, there are several Ohio counties that appear to lack adequate access to naloxone, based on available data. Figure 20 compares county overdose death rates to the rate of naloxone

administered by EMS in each county. The counties in the top left quadrant have low reported EMS naloxone administration<sup>69</sup> relative to the rate of overdose deaths. Similarly, figure 21 shows counties with Project DAWN sites and overdose death rates by county. Five counties on this map have higher overdose death rates (28.4 or higher), but lack a Project DAWN site, indicating areas in need of improvement.

Figure 20. **Rate of naloxone administered by Ohio EMS Providers and unintentional overdose death rate, by county, 2017**

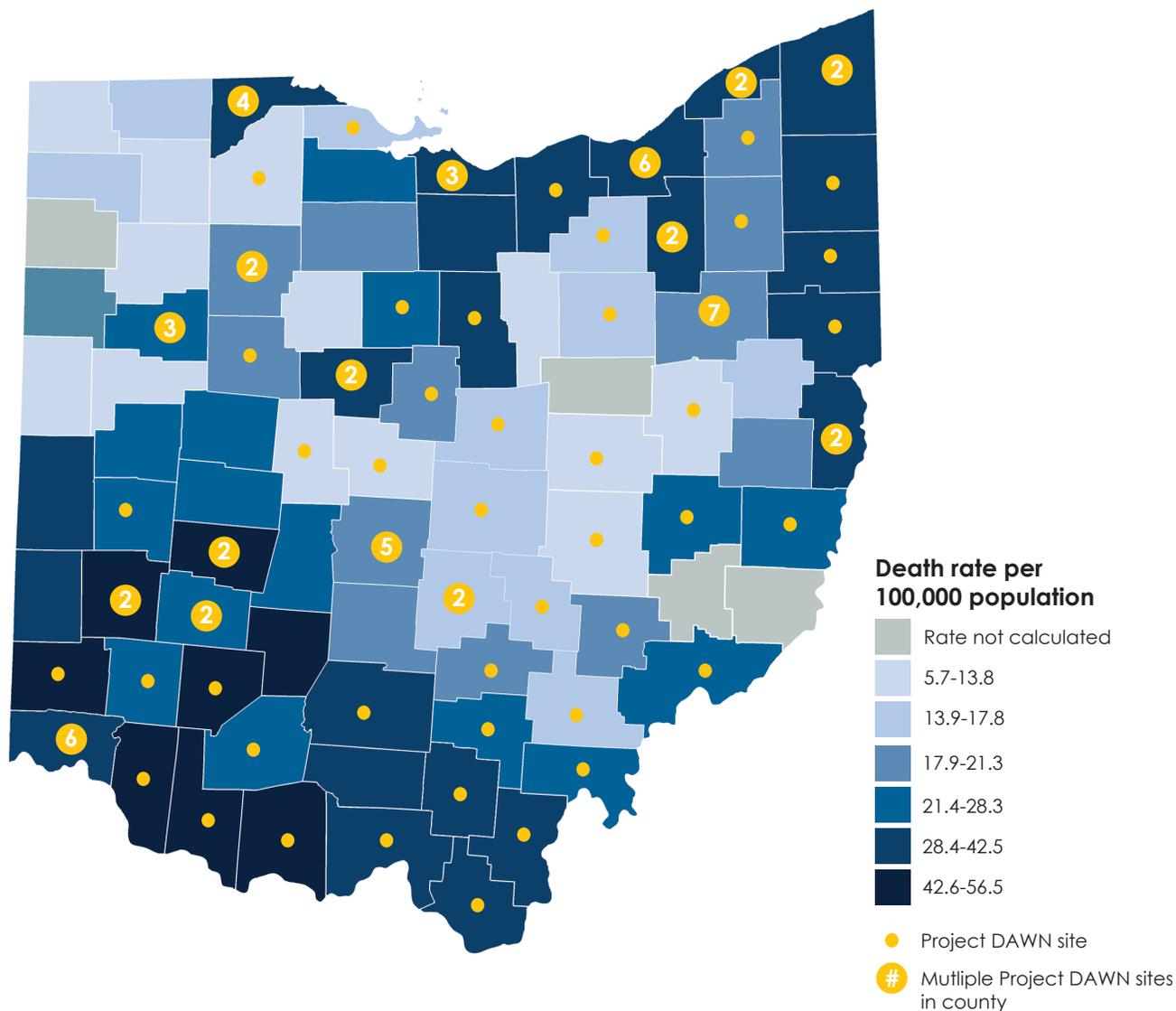


**Note:** Twenty five counties are not included due to low overdose death rates (ODH suppresses the rate when there are fewer than 10 total deaths per year in a county). Clark and Fayette counties are outliers (very high naloxone administration rates) and have been removed from this analysis. Naloxone administration and overdose death rates are per 100,000 population.

**Overdose source:** Ohio Public Health Data Warehouse, Ohio Department of Health, accessed Sept. 26, 2018

**EMS source:** Naloxone Administration by Ohio EMS Providers by County, Ohio, 2017, Ohio Department of Public Safety, EMS data received as of Nov. 5, 2018.

Figure 21. Overdose death rate, by county, 2012-2017 and Project DAWN sites



**Note:** Includes Ohio residents who died due to unintentional drug poisoning (underlying cause of death ICD-10 codes X40-X44). Rate suppressed if less than 10 total deaths for 2012-2017.

**Overdose source:** Adapted from “2017 Ohio Drug Overdose Data: General Findings.” Ohio Department of Health. Data source is Ohio Department of Health, Bureau of Vital Statistics; Analysis by ODH Injury Prevention Program; U.S. Census Bureau (Vintage 2016 population estimates)

**Project DAWN source:** Project DAWN, Ohio Naloxone Distribution and Training Sites, Ohio Department of Health, as of Oct. 24, 2018.

## Ohio policies for which there is evidence of ineffectiveness

Current Ohio Medicaid and Medicaid managed care organization restrictions on the provision of curative treatment for hepatitis C direct-acting antivirals (DAAs) are the most significant example of Ohio implementing a harm reduction policy that conflicts with research evidence. The American Association for the Study of Liver Diseases and Infectious Disease Society of America recommend use of DAAs to cure hepatitis C for almost all patients with chronic HCV infection and

recommends initiating the medication as early as possible, noting that patients with a lower fibrosis score (less than F2) benefit more from treatment than those with more advanced liver disease.<sup>70</sup> In addition to being cost-effective in the long run for each patient who is cured<sup>71</sup>, DAA treatment also reduces transmission of the disease to others and can therefore reduce the overall incidence of hepatitis C among injection drug users.<sup>72</sup>

Medicaid enrollees, however, have had difficulty accessing this curative treatment because of restrictive policies put in place by ODM and some

managed care plans in response to the high cost of DAAs.<sup>73</sup> In order to receive treatment, Medicaid patients have needed to demonstrate some level of liver damage (fibrosis score), observe a period of sobriety and visit with a specialist who can prescribe DAAs. Many patients must travel outside their county to visit one of the approved specialists<sup>74</sup>:

- 37 Ohio counties have no applicable providers
- 43 Ohio counties have no gastroenterologists
- 61 Ohio counties have no infectious disease specialists
- 85 Ohio counties have no hepatologists

In response to high rates of hepatitis C in the state and increased rebates on DAAs, ODM has issued a policy change that will allow Medicaid patients diagnosed with hepatitis C, but who do not yet have

liver damage, to access DAAs starting January 2019. The liver damage restriction will be removed for fee-for-service and managed care enrollees, but the sobriety and prescriber restrictions shown in figure 22 will continue. Other state Medicaid programs have less restrictive policies regarding the coverage of DAAs. For example, 10 states (including Indiana and Utah) do not have a sobriety requirement and 14 states (including Missouri and Wisconsin) do not require DAAs to be prescribed by or in consultation with specialists.<sup>75</sup>

State employees and retirees who are insured through DAS and OPERS do not have liver damage or sobriety restrictions, but must be prescribed DAAs by a specialist or in consultation with a specialist.

Figure 22. **Restrictions for patient access to hepatitis C medication, Ohio public payers, 2018**

Health insurance provider	Liver Damage (Fibrosis) Restriction	Sobriety Restriction	Prescriber Restriction
<b>Medicaid (Fee For Service and Managed Care)</b>			
<b>Fee-for-service</b>	Moderate liver damage (F2)*	6-month sobriety from alcohol and substance use	Specialist only
<b>Buckeye Health</b>	Unclear*	30-day sobriety from alcohol and substance use (includes lab test)	Specialist or in consultation with a specialist
<b>CareSource</b>	Moderate liver damage (F2)*	No restriction	Specialist or Nurse Practitioner Specialist
<b>Molina Healthcare</b>	Severe liver damage (F3)*	6-month sobriety from alcohol and substance use	Unclear
<b>Paramount</b>	Moderate liver damage (F2)*	3-month sobriety from alcohol and substance use (includes urine test)	Specialist only
<b>UnitedHealthcare</b>	Severe liver damage (F3)*	6-month sobriety from alcohol and substance use	Specialist only
<b>State employees</b>			
<b>Ohio Department of Administrative Services (DAS)</b>	No restriction	No restriction	Specialist or in consultation with a specialist
<b>State retirees</b>			
<b>Ohio Public Employees Retirement System (OPERS)</b>	No restriction	No restriction	Specialist or in consultation with a specialist
<b>State prison inmates</b>			
<b>Ohio Department of Rehabilitation and Correction (DRC)</b>	Severe liver damage (F3)	N/A	N/A

\* Medicaid policy change to be implemented Jan. 1, 2019: No liver damage restriction (FD) for fee-for-service and managed care

**Medicaid source:** *Hepatitis C: The State of Medicaid Access*, Center for Health Law and Policy Innovation, Harvard Law School, 2017

**DAS, OPERS and DRC source:** Information obtained by HPIO directly from the state agencies

The state prison system monitors all chronic hepatitis C patients and recommends inmates for treatment once liver damage has become severe. See figure 22 for more detail.

## **Harm reduction strategies with emerging or mixed evidence**

### **Drug checking (such as fentanyl test strips).**

Drug checking technologies for drug users, such as fentanyl test strips, are relatively new.<sup>76</sup> Evidence of effectiveness in reducing overdose deaths is therefore limited. There are approximately six cities in Ohio that have fentanyl strip drug checking programs<sup>77</sup>, and there are currently no state-level policies or programs focused on drug checking in Ohio.

### **Safe injection sites (also known as safer consumption spaces or drug consumption rooms).**

Several U.S. cities are considering development of safe injection sites, however none are currently operating in the U.S. Research on the effectiveness of safe injection sites is emerging and this topic has not yet been addressed by U.S.-based expert consensus statements or evidence registries. Some studies have found positive outcomes related to reduced public drug use and associated nuisance and increased uptake of substance use disorder treatment services.<sup>78</sup> (See the [Evidence Resource Page: Overdose Reversal and Other Forms of Harm Reduction](#) for more information.)

**E-cigarettes.** A 2018 NASEM consensus study report concluded that completely switching from regular use of combustible tobacco cigarettes to e-cigarettes results in reduced short-term adverse health outcomes.<sup>79</sup> While there is evidence that completely switching from combustible tobacco to e-cigarettes reduces harm, there is also evidence that e-cigarette use among youth and young adults increases risk of ever using traditional cigarettes.<sup>80</sup>

Given that widespread use of e-cigarettes is relatively new, experts have not yet come to consensus on the best policy approach to encourage smokers to switch from traditional to e-cigarettes while also preventing use by adolescents. Future research will hopefully guide effective policymaking to reduce the many serious harms of tobacco use.

# Part 7. Evaluating the impact of Ohio's overdose reversal and harm reduction policies and programs

## Evaluation

Evaluation research assesses how a policy or program was implemented and whether it was effective in achieving desired outcomes.

Of the 53 overdose reversal and other harm reduction policies reviewed in this inventory, only eight (15 percent) included a clear reference to an evaluation component or some other provision for tracking implementation or outcomes (see figure 23).

Because it is very rare for state legislation to require evaluation, the impact of most policy changes is not assessed or documented in a systematic or rigorous way.

## Transparency of evaluation results

There is very limited access to information about the effectiveness of state policy changes related to overdose reversal and other forms of harm reduction. Based on HPIO's review of available evaluation results, including those provided by relevant state agencies, there are only two reports on the effectiveness of state-level overdose reversal/harm reduction policies and programs posted online. The first is an [evaluation of a Project DAWN pilot project in Lorain County](#) (supported by SB 57) which recommended that the project be continued. The second is an article in the [Journal of Pharmacy Practice](#) that describes the results of a study of the impact of HB 4 on pharmacist knowledge of Ohio law pertaining to naloxone dispensing.

## Surveillance

Surveillance refers to the continuous, systematic collection and analysis of data. Health-related surveillance is a core function of state and local health departments and can be used to assess the impact of policy changes over time.

ODH maintains or participates in several surveillance systems for addiction-related harms, including:

- **Vital Statistics:** Drug overdose death data available via [annual reports](#) and the [Public Health Data Warehouse](#)
  - **Ohio Violent Death Reporting System (OVDRS):** Collects information from multiple sources in order to better understand the circumstances surrounding violent deaths, including overdose deaths. Data will be publicly available through the [Public Health Data Warehouse](#) in 2019.
  - **Enhanced State Opioid Overdose Surveillance (ESOOS):** Ohio is one of 32 states participating in this [surveillance program](#) designed to provide more timely and comprehensive data on fatal and nonfatal opioid overdoses and risk factors associated with fatal overdoses.
  - **Hepatitis C Surveillance Program:** Ongoing monitoring of population-level data on hepatitis C virus infections, including [annual reports](#) on the number of new cases.
  - **HIV/AIDS Surveillance Program:** Ongoing monitoring of population-level data on HIV and AIDS, including [annual reports](#) on the number of new cases.
  - **Neonatal Abstinence Syndrome (NAS) Hospital Reporting:** ORC 3711.30 requires: 1) hospitals to report the number of infants diagnosed as opioid dependent at birth to ODH, and 2) ODH to report this data on an annual basis, posted [here](#).
- In 2015, ODH requested assistance from the Centers for Disease Control and Prevention (CDC) EpiAid program to investigate the increase in fentanyl-related overdose deaths. CDC deployed Epidemic Intelligence Service officers to work with ODH staff to conduct a comprehensive investigation and identify risk factors for fentanyl-related deaths. The [final report](#) includes recommendations to enhance surveillance and reduce overdose deaths.
- Additional surveillance databases maintained by state agencies or other state-level organizations include:
- **Ohio Automated Rx Reporting System (OARRS):** Ohio's Prescription Drug Monitoring Program, maintained by the [Ohio Board of Pharmacy](#).
  - **Ohio Substance Abuse Monitoring Network (OSAM):** Reports on substance abuse trends by region posted on the [OMHAS website](#).
  - **Naloxone Administration by Ohio EMS Providers:** [Quarterly and annual state and county-level data](#) provided by the Ohio Department of Public Safety.
  - **Overdose Data Sharing Program:** The Ohio Hospital Association's [interactive dashboard](#) with state, regional and county-level data on opioid overdose encounters at hospitals.
  - **Ohio Traffic Crash Facts:** [Annual reports](#) from the Ohio Department of Public Safety on motor vehicle crashes, including crashes involving impaired driving.

Figure 23. **Evaluation of state-level overdose reversal and other forms of harm reduction policies and programs**

Policy or program	Evaluation component	Evaluation results and availability
SB 57 (Lorain County Narcan Task Force Pilot Project)	SB 57 required the Lorain County task force and ODH to prepare a report on the effectiveness of the pilot project.	Project DAWN Lorain County prepared a year-end report, which is posted on the <a href="#">Alcohol and Drug Addiction Services Board of Lorain County website</a> . The report recommended that the project be continued.
Project DAWN expansions (2013-2015)*	ODH contracted with the Center for Health Outcomes, Policy and Evaluation Studies at The Ohio State University College of Public Health to evaluate Project DAWN implementation as of 2015.	The Center for Health Outcomes, Policy and Evaluation Studies completed an evaluation report in September 2015. The report, which is not posted online, provided recommendations for improving the effectiveness and sustainability of the program.
HB 4 (Naloxone access, including authorizations for physicians and pharmacists and prescriber immunity)**	<p>HB 4 is being evaluated by the University of Cincinnati researchers on behalf of ODH. The evaluation is currently in process.</p> <p>In addition, researchers from the University of Findlay College of Pharmacy authored an article <i>Journal of Pharmacy Practice</i> that assesses the impact of HB 4 on pharmacist knowledge and attitudes.</p>	<p>The University of Cincinnati report is not yet available.</p> <p>The <i>Journal of Pharmacy Practice</i> article is available <a href="#">here</a> (payment required for full text access). This study concluded that additional educational programs should be delivered to Ohio pharmacists to increase their understanding of state law and policies regarding naloxone dispensing.</p>
Good Samaritan law	In 2018, ODH added questions to the Behavioral Risk Factor Surveillance System survey designed to evaluate awareness of Ohio's Good Samaritan Law.	Results are not yet available.
Naloxone awareness campaign	In 2018, ODH added questions to the Behavioral Risk Factor Surveillance System survey designed to evaluate the effectiveness of the naloxone awareness campaign.	Results are not yet available.

\*Two policy provisions in the detailed policy inventory

\*\*Three policy provisions in the detailed policy inventory

## Appendix. Methodology

In order to compile the detailed policy inventory, HPIO researchers searched the Ohio Revised Code (ORC), Ohio Administrative Code (OAC), the Governor’s Cabinet Opiate Action Team (GCOAT) timeline ([Combatting the Opiate Crisis in Ohio](#)), state agency websites and policy summaries for other organizations. See figure 24 for examples of the types of policy changes reviewed.

HPIO researchers used the following search terms when reviewing the ORC and OAC:

- AIDS
- Blood alcohol concentration
- Bloodborne
- Determination of need
- E-cigarette
- Emergency public health order
- Fibrosis score
- Good Samaritan
- Harm reduction
- Hepatitis
- HIV
- Housing First
- Ignition interlock
- Immunity
- Injection
- Intravenous
- Naloxone
- Narcan
- Needle
- Overdose
- Overdose reversal
- Paraphernalia
- Sobriety checkpoint
- Syringe
- Vaping

Figure 24. **Types of policy changes reviewed**

Type of policy change	Examples	Sources searched or consulted
<b>Legislative change</b> (bills signed into law or a provision within a bill)	<ul style="list-style-type: none"> <li>• The 2016-2017 state budget (HB 64) permitting local health departments to establish bloodborne infectious disease prevention programs to prevent the spread of pathogens such as HIV and hepatitis C.</li> <li>• Provision of HB 4 allowing pharmacist, in accordance with a physician protocol, to dispense naloxone without a prescription to individuals at risk of experiencing an opioid-related overdose, or a family member or friend in a position to assist an individual at risk of overdose.</li> </ul>	<ul style="list-style-type: none"> <li>• State main operating budget documents*</li> <li>• General Assembly archives**</li> </ul>
<b>Rules or regulations</b>	OAC 4765-12-94 allows emergency medical responders to administer naloxone via intranasal route in accordance with written protocols.	<ul style="list-style-type: none"> <li>• OAC</li> <li>• Relevant state agency websites</li> </ul>
<b>New or expanded state agency initiatives, programs, systems changes or guidelines</b>	<ul style="list-style-type: none"> <li>• Ohio Department of Health funds additional Project DAWN sites</li> <li>• Ohio Board of Pharmacy issues guidance to hospitals on providing naloxone to patients upon discharge.</li> </ul>	<ul style="list-style-type: none"> <li>• GCOAT timeline (<a href="#">Combatting the Opiate Crisis in Ohio</a>)</li> <li>• State agency websites</li> </ul>

\* Including budget in detail, comparison document and final analysis by Legislative Service Commission.

\*\* Including legislation text and analysis by Legislative Service Commission. House and Senate bills only.

## Scorecard process

**Step 1: Rating for specific policies and programs in detailed scorecard.** HPIO researchers rated the specific policies, programs and services in the **detailed policy scorecard** based on five rating levels: strong, moderate, mixed, weak and unknown/more information needed. Each policy was given two ratings, one for alignment with evidence and another for extent of implementation reach. Figure 25 defines each of these ratings, as well as the score assigned to each rating.

Figure 25. **Definition of detailed scorecard rating levels**

Rating and score	Ohio alignment with evidence	Extent of implementation reach in Ohio
<b>Strong (4)</b>	Services, programs and policies being implemented in Ohio are highly consistent with the most rigorously-evaluated and effective evidence-based approaches in this category.	Services and programs are being implemented throughout the entire state (statewide or > 80 counties), are reaching a majority of intended groups of Ohioans and are funded at the level needed to implement widespread, effective programming with fidelity to the evidence-based model. Policies are being monitored, implemented and enforced as intended.
<b>Moderate (3)</b>	Services, programs and policies being implemented in Ohio are mostly consistent with recommended evidence-based approaches in this category.	Services and programs are being implemented in at least 40-80 counties, are reaching large numbers of intended groups of Ohioans and/or are funded adequately to meet current capacity and demand. Policies are likely being implemented and enforced as intended, although rigorous monitoring information may not be available.
<b>Mixed (2)</b>	Ohio is implementing some services, programs or policies with "strong" or "moderate" alignment with evidence, but is also implementing significant number of services, programs or policies with "weak" alignment.	Within this category, Ohio is implementing some services or programs with "strong" or "moderate" implementation reach, but is also implementing a significant number of services or programs with "weak" implementation reach. Some policies are being implemented as intended and enforced, while others are not.
<b>Weak (1)</b>	Ohio is implementing services, programs and policies that are not consistent with recommended evidence-based approaches within this category.	Services and programs are being implemented in fewer than 40 counties, are only reaching a small proportion of intended groups of Ohioans, and/or funding is inadequate to meet demand. Policies are not being implemented as intended and/or are not being enforced.
<b>Unknown/ More information needed (1)</b>	Adequate information to determine evidence alignment is not currently available.*	Adequate information to determine implementation reach is not currently available.*

\*Note that this information may be available within specific counties, but is not available for an overall statewide basis.

**Step 2. Summary score for subtopics.** In order to summarize the scorecard findings for this report, the scores for each policy and program in the detailed policy scorecard were averaged across sub-topics. For example, policies on immunity for naloxone prescribers and dispensers, immunity for emergency responders, immunity for lay administrators and Ohio's Good Samaritan law were averaged to calculate scores for the overdose reversal topic: "Immunity for naloxone prescribing and

*dispensing and Good Samaritan laws."* This method was replicated for each subtopic (see figure 26). The total score for a subtopic is a composite score of alignment with evidence and extent of implementation and reach. If the subtopic total score was 6.0 or higher, it received a strong rating. Subtopics with a score between 5.0 and 5.9 received a moderate rating and subtopics with a score below 5.0 received a weak rating.

Figure 26. **Final summary score and rating for prevention, treatment and recovery subtopics**

Subtopic	Alignment with evidence*	Extent of implementation reach*	Total summary score	Summary rating
Naloxone distribution, access and awareness	3.2	2.2	5.3	Moderate
Immunity for naloxone prescribing and dispensing and Good Samaritan laws	2.7	2.6	5.3	Moderate
Syringe services programs (SSPs)	1.7	1.0	2.7	Weak
Hepatitis C and HIV screening and treatment	3.0	2.2	5.2	Moderate
Other harm reduction strategies (drunk driving and Housing First)	3.8	3.2	7.0	Strong

\*Average score across specific policies/programs within subtopic

**Note:** Subtopics with a score of 6.0 or higher received a strong rating, subtopics with a score between 5.0 and 5.9 received a moderate rating and subtopics with a score below 5.0 received a weak rating.

## Sources of evidence

In order to identify the evidence-based policies, programs and practices listed in the scorecard, HPIO relied upon the most credible sources of information available. Rather than citing individual studies, HPIO turned to expert consensus statements, clinical guidelines and evidence registries whenever possible; these sources involve rigorous review of available research evidence by a group of experts who synthesize the information and make a recommendation or statement about what approaches are most effective. The types of sources used to develop the scorecard are listed below, in order of preference. For some topics, gray literature reports were used if expert consensus statements or clinical guidelines were not available:

- 1. Expert consensus statements or recommendations from independent expert panels** convened by organizations such as NASEM or a federal agency. These reports are based on rigorous, systematic reviews of research evidence and typically rate the strength of recommendations based on quality of the evidence base. Examples: NASEM consensus study report, *Pain Management and the Opioid Epidemic: Balancing Societal and Individual Benefits and Risks of Prescription Opioid Use*, and the U.S. Surgeon General report, *Facing Addiction in America*.
- 2. Clinical guidelines from professional/medical associations**, typically published in peer-reviewed journals. Example: American Medical Association (AMA), *Help Save Lives: Co-prescribe Naloxone to Patients at Risk of Overdose*.
- 3. Evidence registries and clearinghouses.** Searchable databases or other user-friendly compilations of evidence-based policies and programs. These registries use specific screening criteria to identify effective strategies and/or rate strategies on the strength of their available evidence of effectiveness. Example: What Works for Health (University of Wisconsin Population Health Institute and Robert Wood Johnson Foundation). (Note: Only programs with high ratings of evidence of effectiveness were included.)
- 4. Gray literature reports** from private sector organizations with recommendations based on review of evidence (although typically not a systematic review). Example:

The Network for Public Health Law, *Legal Interventions to Reduce Overdose Mortality: Naloxone Access and Overdose Good Samaritan Laws*

For a complete list of credible sources of evidence on effective addiction prevention, treatment and recovery, visit the HPIO Addiction Evidence Project [Evidence Resource Page: Overdose Reversal and Other Forms of Harm Reduction](#).

## Limitations

The inventory begins in 2013, and therefore does not include policies that were implemented earlier in the opiate crisis, such as the funding of the first Project DAWN site in 2012. (Major policies implemented prior to 2013 are however mentioned in the detailed scorecard when relevant to evidence alignment. Visit the [GCOAT timeline](#) for policies implemented in 2011-2012.)

Although this inventory is the most comprehensive review of overdose reversal and other harm reduction policy changes in Ohio completed to date, it is likely that some policies may have been missed, such as:

- Legislation or rules/regulations that did not include any of the search terms used by HPIO researchers (listed above) when reviewing legislation and the OAC
- Rules/regulations that were revised between Jan. 2013 and May 2018 but have prior effective dates outside of that date range. Due to the way rules are recorded, HPIO researchers were unable to discern which language was newly added and which language existed prior to 2013.

There were several challenges to rating the extent of implementation reach for the scorecard. First, information about the number of Ohioans or number of counties reached by a program or service was not always available. Second, information about the extent to which policies were being implemented as intended was not always available. Finally, service penetration rates and per-capita spending information from other states would provide useful context for assessing the adequacy of Ohio's efforts, but this information would be time consuming and costly to collect.

## Advisory Group

HPIO convenes an Addiction Evidence Project Advisory Group made up of 30 representatives from state and local, public and private organizations with expertise in addiction prevention, behavioral health treatment and recovery, child welfare, first responders and criminal justice (listed below). This group provides guidance to HPIO on Addiction Evidence Project products, including this report.

First Name	Last Name	Organization
Carol	Baden	Ohio Attorney General
Tara	Britton	Center for Community Solutions
Sonya	Carrico	Interact for Health
Lori	Criss	Ohio Council of Behavioral Health and Family Service Providers
Dennis	Cauchon	Harm Reduction Ohio
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Melissa	Green	Columbus Public Health
Orman	Hall	Ohio High Intensity Drug Trafficking Area and Ohio University
Paul	Hicks	Ohio Hospital Association
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Jonathan	Westendorf	Chief of Fire and EMS, City of Franklin (Warren Co).

# Notes

1. Based on the definition from Harm Reduction International, accessed Sept. 7, 2018. <https://www.hri.global/what-is-harm-reduction>
2. Based on the definition from the Harm Reduction Coalition, accessed Sept. 7, 2018. <https://harmreduction.org/about-us/principles-of-harm-reduction/>
3. "Opioid Basics." Centers for Disease Control and Prevention, accessed Nov. 5, 2018. <https://www.cdc.gov/drugoverdose/opioids/index.html>
4. A Global Review of the Harm Reduction Response to Amphetamines: A 2015 Update, Harm Reduction International, 2015. [https://www.hri.global/files/2015/10/18/AmphetaminesReport\\_Oct2015\\_web.pdf](https://www.hri.global/files/2015/10/18/AmphetaminesReport_Oct2015_web.pdf)
5. "Fact Sheets - Alcohol Use and Your Health," Centers for Disease Control and Prevention, 2018. <https://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>
6. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General, 2014. <https://www.surgeongeneral.gov/library/reports/50-years-of-progress/index.html>
7. "Persons Who Inject Drugs," Centers for Disease Control and Prevention, accessed Nov. 5, 2018. <https://www.cdc.gov/pwids/index.html>
8. Degenhardt L et al. "Global prevalence of injecting drug use and sociodemographic characteristics and prevalence of HIV, HBV, and HCV in people who inject drugs: a multistage systematic review." *Lancet Global Health* 5, no. 12 (2017): 1192-1207.
9. "Trauma and Violence," Substance Abuse and Mental Health Services in Ohio, accessed Oct. 17, 2018. <https://www.samhsa.gov/trauma-violence>
10. The Dialogue: The Effects of Trauma on First Responders, Volume 14, Issue 1. Substance Abuse and Mental Health Services Administration, 2018. [https://www.samhsa.gov/sites/default/files/diac/dialogue-vol14-is1\\_final\\_051718.pdf](https://www.samhsa.gov/sites/default/files/diac/dialogue-vol14-is1_final_051718.pdf)
11. "Trauma-informed health care." What Works for Health, County Health Rankings & Roadmaps, March 2017. <http://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/policies/trauma-informed-health-care>
12. "The Hi-5 Interventions," Centers for Disease Control and Prevention, 2016. <https://www.cdc.gov/policy/hst/hi5/interventions/index.html>
13. Nguyen, T.Q., et al., Syringe exchange in the United States: a national level economic evaluation of hypothetical increases in investment. *AIDS and Behavior* 18, no. 11 (2014): 2144-2155. doi: 10.1007/s10461-014-0789-9
14. Ly, Angela and Eric Latimer, "Housing First Impact on Costs and Associated Cost Offsets: A Review of the Literature." *Canadian Journal of Psychiatry* 60, no. 11 (2015): 475-487. doi: 10.1177/070674371506001103
15. Ohio Department of Health, 2017 Ohio Drug Overdose Data: General Findings, 2018.
16. Ohio Department of Health, Hepatitis Surveillance Program Data
17. Data provided by the Ohio Hospital Association, Sept. 24, 2018.
18. Naloxone Administration by Ohio EMS Providers By County, Ohio, 2017, EMS data received Sept. 24, 2018. <https://www.ems.ohio.gov/links/EMSNaloxoneAdminByCounty2017.pdf>
19. 2007-2016 Housing Inventory Count by State, Annual Homeless Assessment Report to Congress, 2016. <https://www.hudexchange.info/resource/5178/2016-ahar-part-1-pit-estimates-of-homelessness/>
20. "Housing First," What Works for Health, County Health Rankings & Roadmaps, Aug. 2016. <http://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/policies/housing-first>
21. Ohio Department of Health, Hepatitis Surveillance Program data. <https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/bid/survhep/Data-and-Statistics/2017-HCV-Yearly-Report.pdf?la=en>
22. "Hepatitis C Questions and Answers for the Public," Centers for Disease Control and Prevention, accessed Oct. 1, 2018. <https://www.cdc.gov/hepatitis/hcv/cfaq.htm>
23. HPIO analysis of Medicaid Eligibles and Expenditures Report and CDC WONDER, Sept. 11, 2018.
24. Center for Health Law and Policy Innovation, Harvard Law School, Hepatitis C: The State of Medicaid Access. 2017 National Summary Report, 2017.
25. National Governor's Association, "Public Health Crises and Pharmaceutical Interventions: Improving Access while Ensuring Fiscal Sustainability." 2018. Note that a representative from the Ohio Department of Medicaid participated in the development of this report.
26. Ibid.
27. Based on analysis of OARRS data provided by Ohio University, the number of Ohioans with amphetamine prescriptions increased from 2010 to 2017.
28. Health Policy Institute of Ohio and the Ohio Children's Hospital Association, Assessment of Child Health and Health Care in Ohio, September 2018.
29. HPIO analysis of data from the Ohio Public Health Data Warehouse, accessed Oct. 9, 2018
30. U.S. Centers for Disease Control and Prevention, National Center for Health Statistics, Provisional Drug Overdose Death Counts. Accessed 11/6/18: <https://www.cdc.gov/nchs/nvss/vsr/drug-overdose-data.htm>
31. Mattson, Christine L. et al., "Opportunities to Prevent Overdose Deaths Involving Prescription and Illicit Opioids, 11 States, July 2016-June 2017." *Morbidity and Mortality Weekly Report* 67, no. 34 (2018). <https://www.cdc.gov/mmwr/volumes/67/wr/mm6734a2.htm>
32. Hepatitis C & Injection Drug Use, Centers for Disease Control and Prevention, 2016. <https://www.cdc.gov/hepatitis/hcv/pdfs/factsheet-pwid.pdf>
33. Johnson, Kate, Sandra Wilkins and Hemi Tewarson. *Public Health Crises and Pharmaceutical Interventions: Improving Access While Ensuring Fiscal Sustainability*. Washington, D.C.: National Governors Association Center for Best Practices, 2018. <https://www.nga.org/wp-content/uploads/2018/08/Public-Health-Crises-and-Pharmaceutical-Interventions.pdf>
34. Degenhardt L et al. "Global prevalence of injecting drug use and sociodemographic characteristics and prevalence of HIV, HBV, and HCV in people who inject drugs: a multistage systematic review." *Lancet Global Health* 5, no. 12 (2017): 1192-1207.
35. Schulerberg, John E. et al., Volume II: College Students & Adults Ages 19-55. Monitoring the Future: National Survey Results on Drug Use 1975-2017, 2017. [http://www.monitoringthefuture.org/pubs/monographs/mif-vol2\\_2017.pdf](http://www.monitoringthefuture.org/pubs/monographs/mif-vol2_2017.pdf)
36. Hepatitis C: Why People Born from 1945-1965 Should Get Tested. Centers for Disease Control and Prevention, 2016. <https://www.cdc.gov/knowmorehepatitis/Media/PDFs/FactSheet-Boomers.pdf>
37. Data from the Ohio Department of Rehabilitation and Correction, received Oct. 15, 2018
38. Ohio 2017-2019 State Health Improvement Plan, Ohio Department of Health, February 2017
39. Final Recommendation Statement: Hepatitis C: Screening. U.S. Prevention Services Task Force, 2013. <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/hepatitis-c-screening>
40. Bruen, Brian et al. High-Cost HCV Drugs in Medicaid: Final Report, Milken Institute School of Public Health, The George Washington University, 2017. <https://www.micpac.gov/wp-content/uploads/2017/03/High-Cost-HCV-Drugs-in-Medicaid-Final-Report.pdf>
41. "Glecaprevir-Pibrentasvir (Mavyret)," Hepatitis C online: University of Washington, accessed Oct. 5, 2018. <https://www.hepatitis.c.uw.edu/page/treatment/drugs/glecaprevir-pibrentasvir>
42. "Elbasvir-Grazoprevir (Zepatier)," Hepatitis C online: University of Washington, accessed Oct. 5, 2018. <https://www.hepatitis.c.uw.edu/page/treatment/drugs/elbasvir-grazoprevir>
43. "Sofosbuvir-Velpatasvir (Epclusa)," Hepatitis C online: University of Washington, accessed Oct. 5, 2018. <https://www.hepatitis.c.uw.edu/page/treatment/drugs/epclusa>
44. "Medicaid Drug Rebate Program," Center for Medicaid and CHIP Services, accessed Oct. 17, 2018. <https://www.medicid.gov/medicaid/prescription-drugs/medicaid-drug-rebate-program/index.html>
45. 2017 data from Safe Point in Columbus. Per-participant annual cost to operate an SSP will vary depending on the SSP model used.
46. Degenhardt L et al. "Global prevalence of injecting drug use and sociodemographic characteristics and prevalence of HIV, HBV, and HCV in people who inject drugs: a multistage systematic review." *Lancet Global Health* 5, no. 12 (2017): 1192-1207.
47. Schackman, Bruce R. et al. "Cost-effectiveness of hepatitis C screening and treatment linkage intervention in U.S. methadone maintenance treatment programs." *Drug and Alcohol Dependence* 85 (2018): 411-420. doi: 10.1016/j.drugalcdep.2017.11.031
48. Preferred Drug List. Ohio Department of Medicaid, 2018. <https://pharmacy.medicaid.ohio.gov/sites/default/files/20180626%20OH%20PDL%20Effective%202018-07-01.pdf>
49. Liang TJ, Rehmann B, Seeff LB, Hoonagle JH. Pathogenesis, natural history, treatment, and prevention of hepatitis C. *Ann Intern Med*. 2000;132(4):296-305. And, Thomas DL, Seeff LB. Natural history of hepatitis C. *Clin Liver Dis*. 2005;9(3):383-98.
50. Bentley, T. S. and Steven J. Phillips. 2017 U.S. organ and tissue transplant cost estimates and discussion. Milliman, 2017. <http://us.milliman.com/uploadedFiles/insight/2017/2017-transplant-Report.pdf>
51. Ohio Department of Health, Ohio 2017-2019 State Health Improvement Plan, February 2017
52. Injection Drug Use and HIV Risk. Centers for Disease Control and Prevention, 2018. <https://www.cdc.gov/hiv/risk/idu.html>
53. New Diagnoses of HIV Infection Report in Ohio, Ohio Department of Health, 2017. <https://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/health-statistics---disease---hiv-aids/2017/OHio2017.pdf?la=en>
54. "Infective Endocarditis," American Medical Association, accessed Sept. 24, 2017. <http://www.heart.org/en/health-topics/infective-endocarditis>
55. "Endocarditis: What is it?," Harvard Health Publishing, 2013. <https://www.health.harvard.edu/heart-disease/overview/endocarditis>
56. Data obtained from the Ohio Hospital Association. Note that it is not possible to identify cases of endocarditis that were the direct result of injection drug use. However, ICD 9 and 10 codes that were obviously not due to injection drug use were excluded from this analysis.
57. Schulerberg, John E. et al., Volume II: College Students & Adults Ages 19-55. Monitoring the Future: National Survey Results on Drug Use 1975-2017, 2017. [http://www.monitoringthefuture.org/pubs/monographs/mif-vol2\\_2017.pdf](http://www.monitoringthefuture.org/pubs/monographs/mif-vol2_2017.pdf)
58. Ronan, Matthew V. and Shoshana J. Herzig. "Hospitalizations related to opioid abuse/dependence and associated serious infections from 2002 to 2012." *Health Affairs* 35, no. 5 (2016): 832-837. doi: 10.1377/hlthaff.2015.1424
59. Ibid.
60. Ibid.
61. Impaired Driving: Get the Facts. Centers for Disease Control and Prevention, 2017. [https://www.cdc.gov/motorvehiclesafety/impaired\\_driving/impaired-driv\\_factsheet.html](https://www.cdc.gov/motorvehiclesafety/impaired_driving/impaired-driv_factsheet.html)
62. Ohio Traffic Crash Facts. Ohio Department of Public Safety, 2017. <https://www.publicsafety.ohio.gov/links/2017CrashFacts.pdf>
63. Baggett, Travis P. et al. "Mortality among homeless adults in Boston: Shifts in causes of death over a 15-year period." *JAMA Internal Medicine* 173, no. 3 (2013): 189-195. doi: 10.1001/jamainternmed.2013.1604.
64. "Tobacco," National Cancer Institute, accessed Sept. 24, 2018. <https://www.cancer.gov/about-cancer/causes-prevention/risk/tobacco>
65. Ibid.
66. "House Bill 535," The Ohio Legislature, accessed Sept. 21, 2018. <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-HB-535>
67. Department of Corrections and Rehabilitation, Oct. 15, 2018.
68. Data from the 2017 Behavioral Risk Factor Surveillance System. "BRFSS Prevalence & Trends Data." Centers for Disease Control and Prevention. Accessed Nov. 9, 2018. <https://www.cdc.gov/brfss/brfssprevalence/>
69. The completeness and accuracy of this data reported by local EMS may be limited. It is possible that some EMS agencies do not fully report naloxone administration. Data on the number of naloxone administrations by Project DAWN sites is not currently available.
70. American Association for the Study of Liver Diseases and the Infectious Disease Society of America, HCV Guidance: Recommendations for Testing, Managing and Treating Hepatitis C, "When and in Whom to Initiate HCV Therapy," 2017. Accessed 9/24/18: <https://www.hcvguidelines.org/evaluate/when-whom>
71. Chahal, Harinder S., Elliot A. Marseille, Jeffrey A. Tice, Steve D. Pearson, Daniel A. Ollendorf, Rena K. Fox, and James G. Kahn. "Cost-effectiveness of early treatment of hepatitis C virus genotype 1 by stage of liver fibrosis in a US treatment-naïve population." *JAMA internal medicine* 176, no. 1 (2016): 65-73. And, Chhatwal, Jagpreet, Fasha Kanwal, Mark S. Roberts, and Michael A. Dunn. "Cost-effectiveness and budget impact of hepatitis C virus treatment with sofosbuvir and ledipasvir in the United States." *Annals of internal medicine* 162, no. 6 (2015): 397-406. And, Chidi, Alexis P., Shari Rogal, Cindy L. Bryce, Michael J. Fine, Chester B. Good, Larissa Myaskovsky, Vinod K. Rustgi, Allan Tsung, and Kenneth J. Smith. "Cost-effectiveness of new antiviral regimens for treatment-naïve US veterans with hepatitis C." *Hepatology* 63, no. 2 (2016): 428-436. And, Linas, Benjamin P., Devra M. Barter, Jake R. Morgan, Mai T. Pho, Jared A. Lefk, Bruce R. Schackman, C. Robert Horschburg et al. "The cost-effectiveness of sofosbuvir-based regimens for treatment of hepatitis C virus genotype 2 or 3 infection." *Annals of internal medicine* 162, no. 9 (2015): 619-629.
72. Martin, Natasha K., Matthew Hickman, Sharon J. Hutchinson, David J. Goldberg, and Peter Vickerman. "Combination interventions to prevent HCV transmission among people who inject drugs: modeling the impact of antiviral treatment, needle and syringe programs, and opiate substitution therapy." *Clinical Infectious Diseases* 57, no. suppl\_2 (2013): S39-S45. And, Durier, Nicolas, Chi Nguyen, and Lisa J. White. "Treatment of hepatitis C as prevention: a modeling case study in Vietnam." *PLoS one* 7, no. 4 (2012): e34548.
73. Center for Health Law and Policy Innovation, Harvard Law School, and National Viral Hepatitis Roundtable. "Hepatitis C: The State of Medicaid Access. 2017 National Summary Report." 2017.
74. Data from the Ohio Colleges of Medicine Government Resource Center, National Provider Identifier File Sept. 9, 2018. Provider counts include pediatrics and excluded transplant hepatology. License status (e.g. active vs. inactive) was not included in the analysis.
75. Hepatitis C: The State of Medicaid Access, 2017 National Summary Report. National Viral Hepatitis Roundtable and Center for Health Law and Policy Innovation, Harvard Law School, 2017. [https://stateofhepc.org/wp-content/uploads/2017/10/State-of-HepC\\_2017\\_FINAL.pdf](https://stateofhepc.org/wp-content/uploads/2017/10/State-of-HepC_2017_FINAL.pdf)
76. Johns Hopkins Bloomberg School of Public Health. "Fentanyl Overdose Reduction Checking Analysis Study." 2018; And, McGowan, Catherine R. et al. "Fentanyl self-testing outside supervised injection settings to prevent opioid overdose: Do we know enough to promote it?" *International Journal of Drug Policy* 58, no. 1 (2018): 31-36. doi: 10.1016/j.drugpo.2018.04.017
77. Harm Reduction Ohio (personal communication), September 2017.
78. European Monitoring Centre for Drugs and Drug Addiction. "Drug Consumption Rooms: An Overview of Provision and Evidence." 2018.
79. National Academies of Sciences, Engineering, and Medicine. *Public health consequences of e-cigarettes*. National Academies Press, 2018. See conclusions 18.1-18.5.
80. Ibid. See conclusions 16.1-17.4.

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