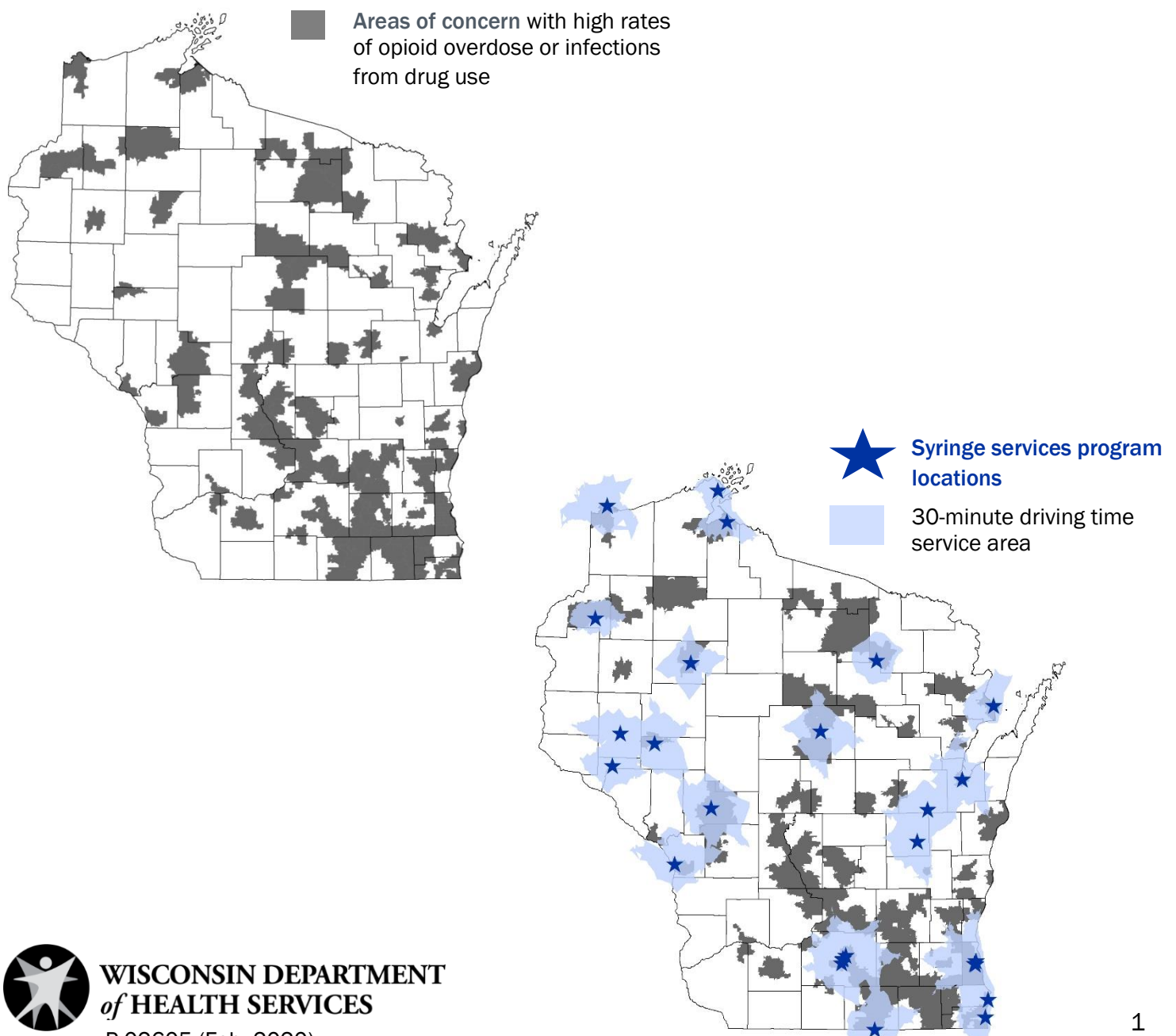


Preventing and treating harms of the opioid crisis

An assessment to identify geographic gaps in services, and a plan to address these gaps



**WISCONSIN DEPARTMENT
of HEALTH SERVICES**

P-02605 (Feb, 2020)

Contents

Executive Summary	3
Background	4
Assessment	6
Identification of areas of concern	6
Identification of prevention and treatment resources	8
Identification of gaps in resources	8
Overall accessibility of resources.....	13
Plan for addressing geographic gaps in resources.....	14
Addressing specific gaps identified	14
Gaps in syringe services programs	14
Gaps in access to naloxone	14
Gaps in MAT and other mental health and substance use treatment	14
Gaps in hepatitis C treatment	14
Gaps in HIV prevention services	14
Other ongoing activities to prevent and treat harms related to drug use	15
Prevention navigation services at syringe services programs	15
Prevention of hepatitis A and hepatitis B among people who use drugs	15
Technical Notes.....	16
Methods.....	16
Identification of areas of concern	16
Identification of resources.....	17
Identification of resource gaps	18
Limitations.....	18
Outcome data	18
Resources data	18
Other limitations.....	18
References	18
Contributors.....	19
Funding.....	19
Contact information	19

Executive Summary

Background

The opioid crisis is ongoing in Wisconsin. Opioid overdose deaths and hospitalizations have increased dramatically over the past decade. Infections related to injection drug use, such as hepatitis C, have also increased substantially in Wisconsin. These harms from drug use can be prevented and treated. However, some prevention and treatment resources may not be available in all areas of Wisconsin. The Wisconsin Department of Health Services (DHS) conducted a mapping assessment to identify areas of Wisconsin most in need of resources to prevent, intervene, and treat the harms of the opioid crisis.

Mapping Assessment

- The assessment identified areas of concern in Wisconsin that have the highest rates of opioid overdoses and blood-borne infections related to injection drug use.
- The maps in this report show locations of treatment and prevention resources throughout Wisconsin, and show which areas of Wisconsin are and are not within a reasonable driving time from each type of resource.
- By comparing areas of concern to the locations of treatment and prevention resources, we identified geographical gaps in services to prevent, intervene, and treat the harms of the opioid crisis.
- This information will be used to inform the allocation of funding and resources from DHS to community partners, including local health departments. Additionally, this information will help guide efforts by DHS and local communities to improve access to resources and reduce the harms associated with the opioid crisis.

Areas of concern

ZIP codes with the highest rates of opioid overdoses and infectious harms from drug use were identified. These areas were located in rural and urban areas of Wisconsin, overlapped with several tribal boundaries, and often were located near interstate highways.

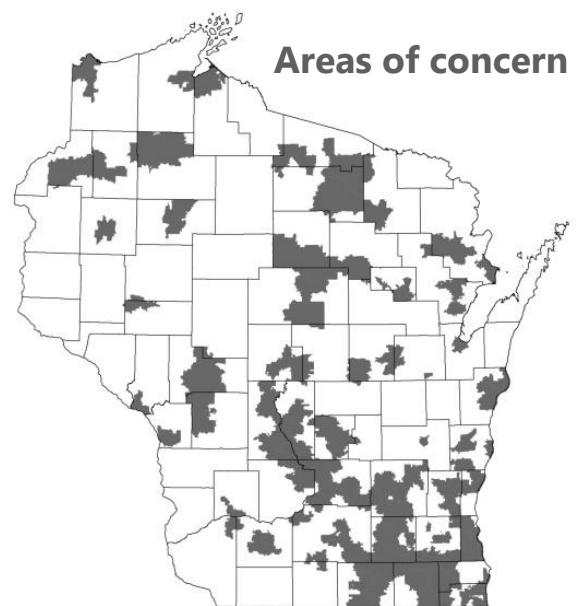
Gaps in Services

There are areas of concern, particularly in more rural areas of Wisconsin, that are not within a reasonable driving distance of pharmacies with a standing order for naloxone, syringe services programs, medication-assisted treatment providers, substance use treatment providers, hepatitis C treatment providers, and HIV prevention services.

Plan to Address Gaps in Services

Together with local partners, DHS is working to expand access to services to prevent and treat the harms of the opioid crisis. DHS will use the information in this assessment to inform the allocation of funding and resources to treat, intervene, and prevent the harms of the opioid crisis.

- The identification of geographic gaps will help DHS when writing grants and awarding funding to counties in need of additional support.
- The ability to identify ZIP code-level information will be helpful for local health departments, behavioral health departments, and coalitions in order to address local gaps in services.



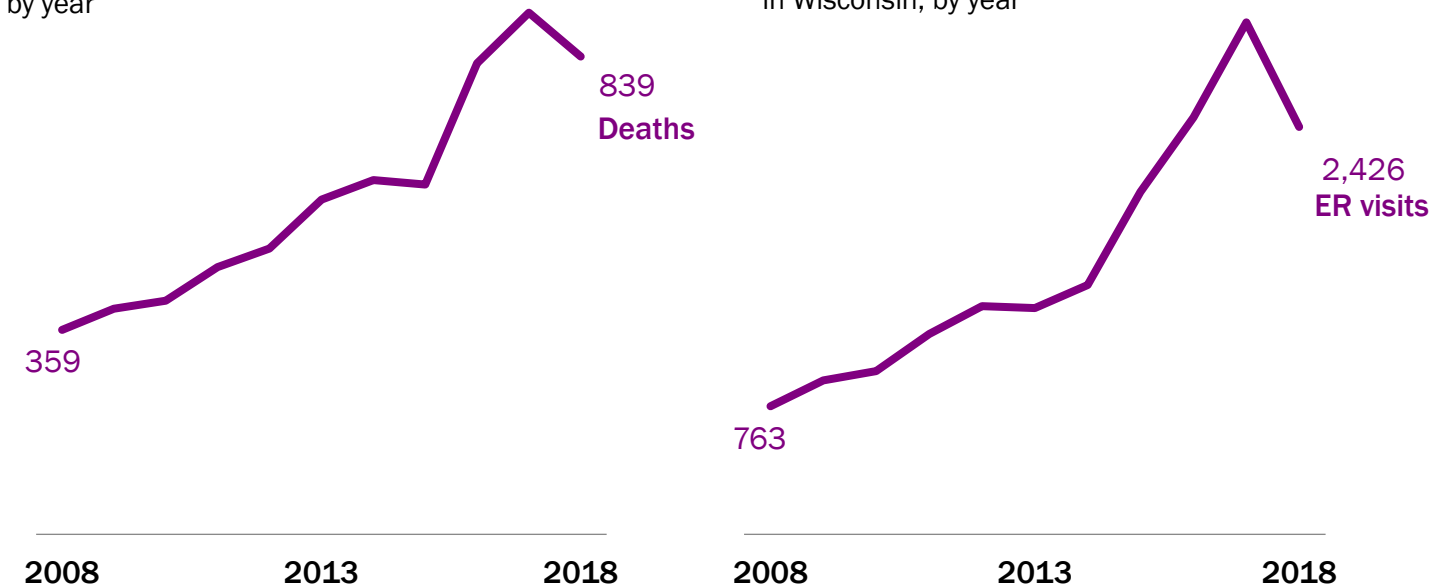
Background

The opioid crisis is ongoing in Wisconsin. In Wisconsin, from 2008 to 2018, the annual number of [opioid overdose deaths](#) increased 133% and the annual number of [opioid overdose emergency room visits](#) increased 218%. Both rural and urban areas of Wisconsin have been affected.

The opioid crisis is ongoing in Wisconsin.

Number of opioid overdose deaths in Wisconsin, by year

Number of opioid overdose emergency room visits in Wisconsin, by year

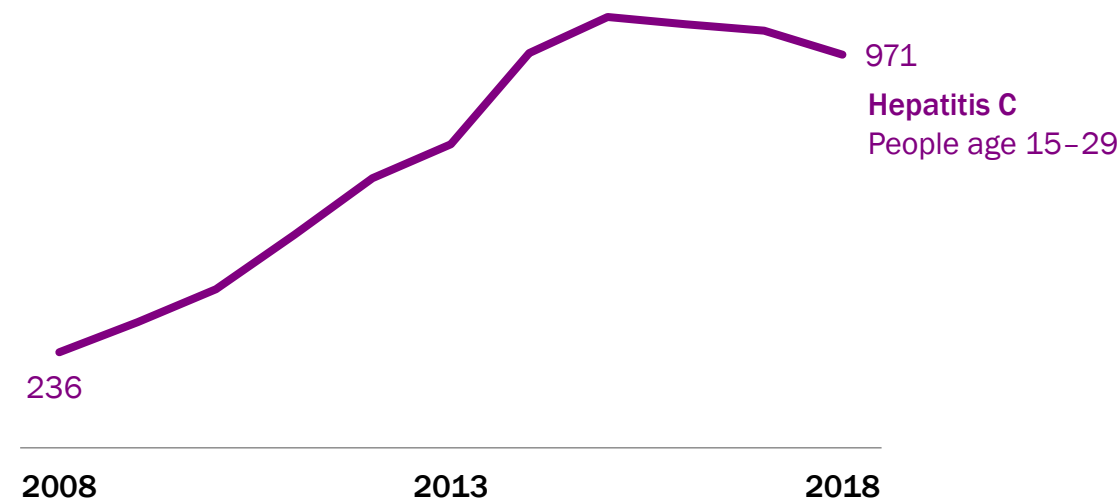


Source: Wisconsin Interactive Statistics on Health; <https://www.dhs.wisconsin.gov/opioids/dashboards.htm>

During this same time, infections related to injection drug use have also increased in Wisconsin. From 2008 to 2018, the annual number of people age 15–29 newly reported with positive [hepatitis C](#) test results increased more than 300%. Although most cases of hepatitis C among young adults are in urban areas of Wisconsin, rates of new infections among this age group are highest in rural areas.

In Wisconsin, hepatitis C among people ages 15–29 increased more than 300% in the past decade.

Number of people ages 15–29 newly reported with hepatitis C positive test results, by year of report



Source: Wisconsin Electronic Disease Surveillance System; <https://www.dhs.wisconsin.gov/publications/p00440-2018.pdf>

Tied to the opioid crisis, other states have reported increases in other infectious diseases related to drug use including [hepatitis A](#), [hepatitis B](#), and [HIV](#). During 2014–2015, a [large and unexpected outbreak of HIV](#) occurred in a rural area of southern Indiana. After this event, [CDC conducted an assessment](#) to identify which counties in the United States were at high risk of having a similar type of outbreak. No Wisconsin counties were identified as being at high risk.

To identify areas within each state that are at high risk, during 2018–2019, CDC funded 40 states to conduct mapping assessments. Wisconsin was one of the states funded to conduct an assessment. The purpose of the assessment was to identify areas of Wisconsin at high risk for opioid overdoses and infections related to injection drug use. The results of the assessment will be used to inform the allocation of resources and to improve access to prevention and treatment resources in the areas of Wisconsin that need them the most.

This project was funded through a supplement to the CDC Cooperative Agreement for Emergency Response: Public Health Crisis Response (TP-18-1802).

Assessment

Identification of areas of concern

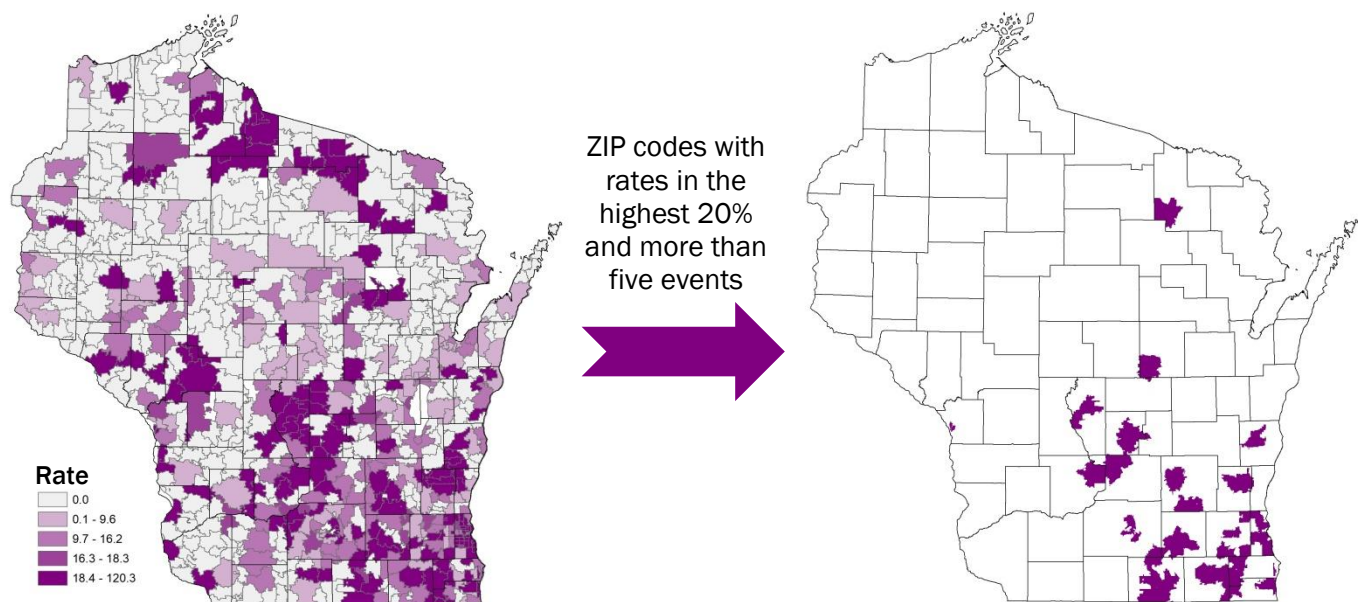
Areas of concern were identified using data routinely reported to DHS for the years 2017 and 2018 combined. Areas of concern were defined as ZIP codes that had rates in the highest 20% of any of four health outcomes (opioid overdose deaths, opioid overdose hospitalizations, suspected opioid overdose ambulance runs, newly reported cases of hepatitis C among people age 15–39) and had more than five events of that outcome during the 2-year period (Figure 1). This method identified 169 ZIP codes (22% of all Wisconsin ZIP codes) as areas of concern (Figure 2). See technical notes for details.

FIGURE 1

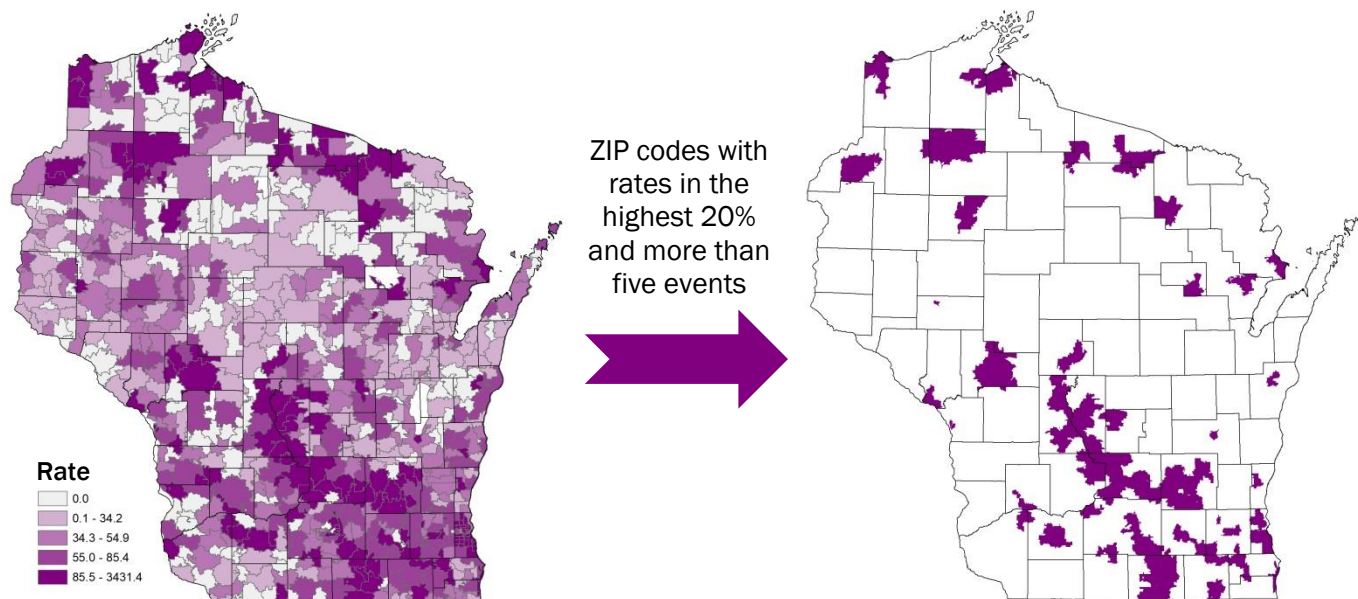
Four different health outcome measures were used to identify areas of concern.

Rate per 100,000 of each outcome, by ZIP code, 2017-2018

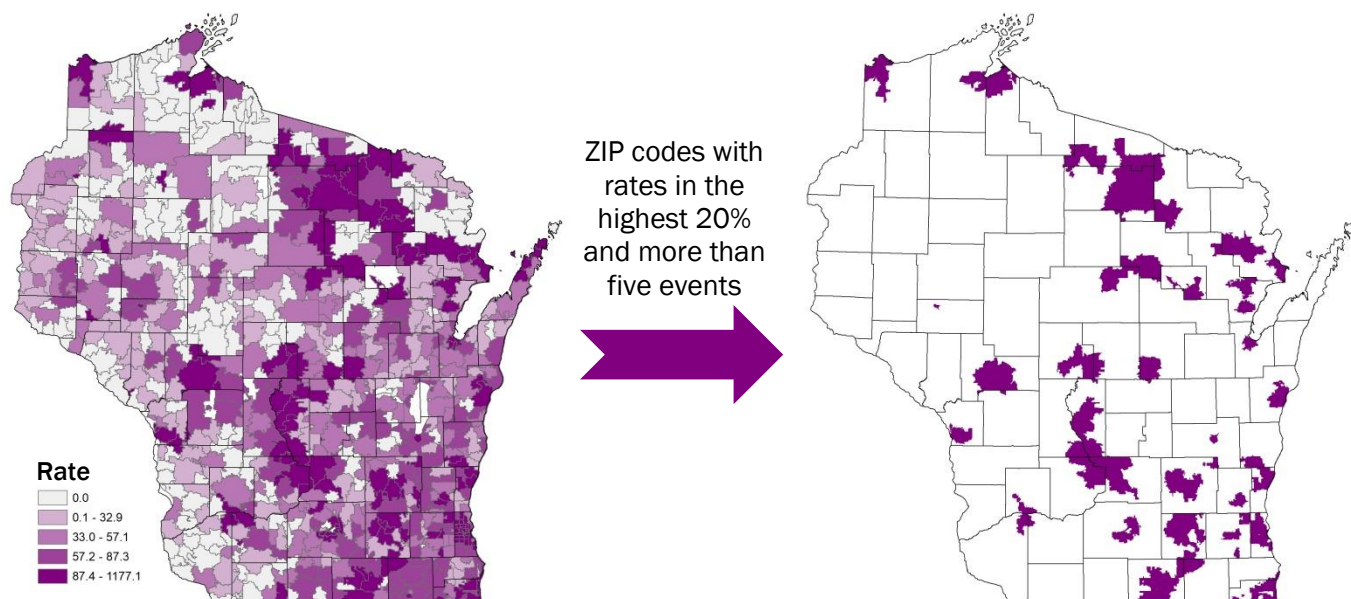
Opioid overdose deaths



Opioid overdose hospitalizations



Opioid overdose ambulance runs



Hepatitis C cases among people age 15–39

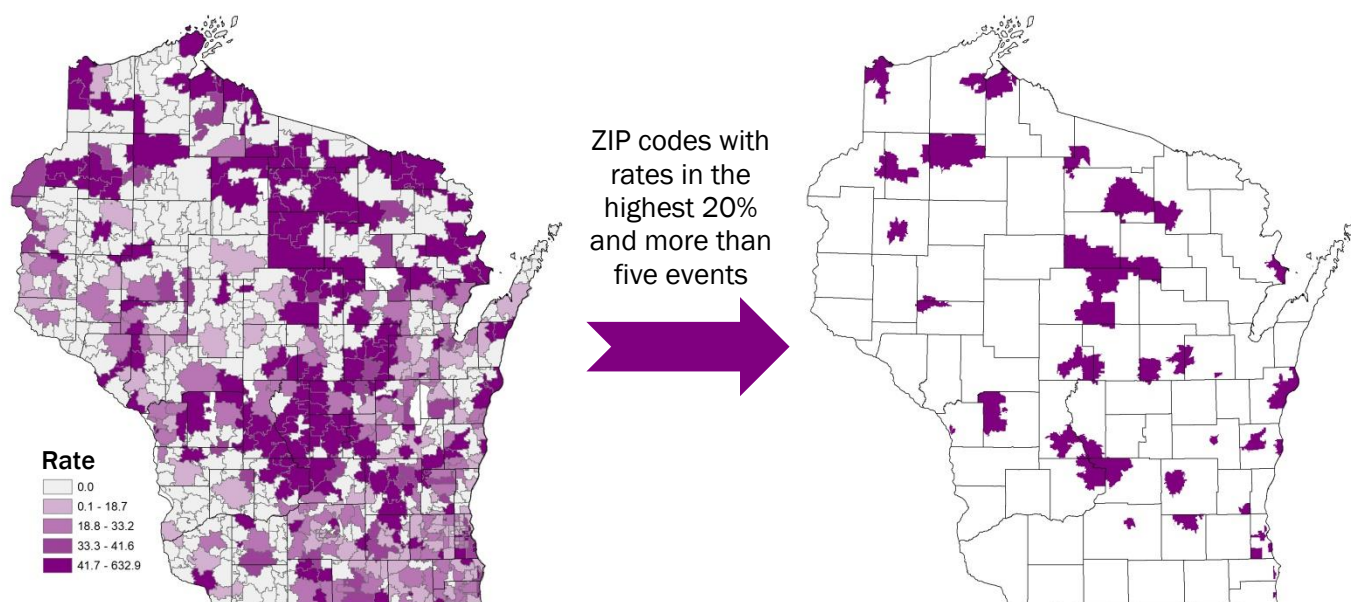
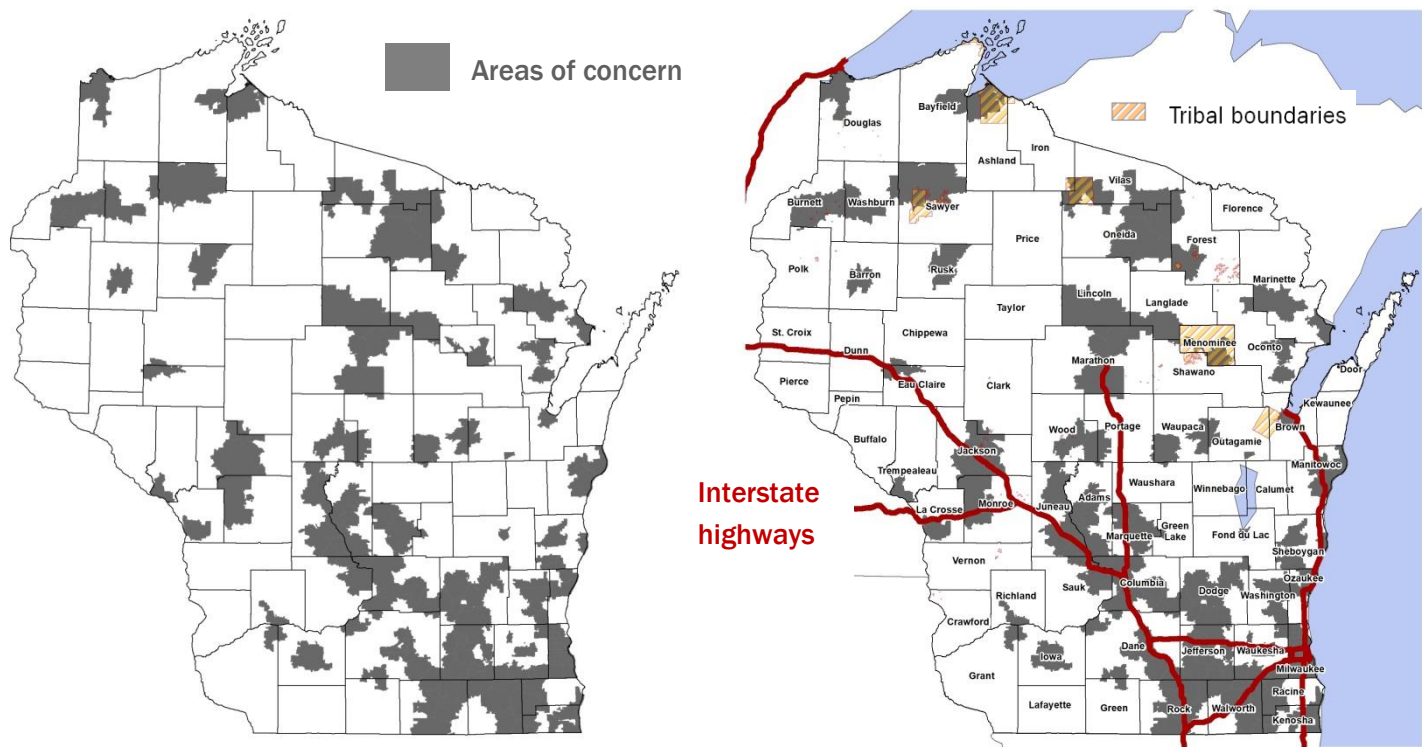


FIGURE 2

Areas of concern are located in rural and urban areas of Wisconsin, overlap with several tribal boundaries, and border several interstate highways.

ZIP codes with rates in the highest 20% for any of the four outcomes* and more than five events of the outcome, 2017-2018



Note: *Opioid overdose death, opioid overdose hospitalization, opioid overdose ambulance run, hepatitis C among persons age 15–39

Identification of prevention and treatment resources

Locations of prevention and treatment resources, such as syringe service programs, buprenorphine providers, and opioid treatment programs were identified through a variety of data sources and partnerships with other organizations. Locations of resources were geocoded and mapped. In addition, driving-time service areas around each provider were generated. See the technical notes for more details.

Identification of gaps in resources

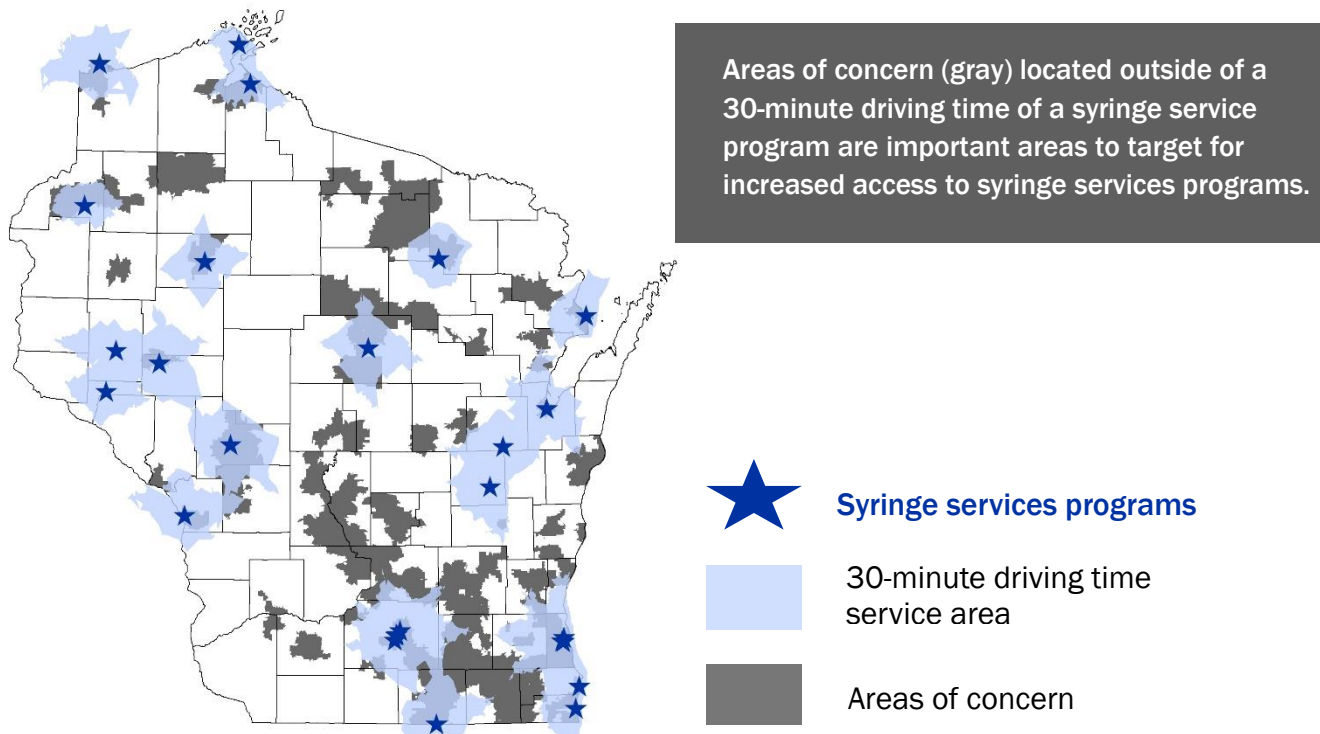
For each treatment and prevention resource, the areas of concern were compared to the locations of treatment and prevention resources and their driving-time service areas. Areas of concern not within a reasonable driving time (for example, within 30 minutes driving time) of a resource provider were identified as gaps that were in need of that resource.

Gaps in syringe services programs (Figure 3), naloxone availability at pharmacies through a standing order (Figure 4), medication-assisted treatment (Figure 5), HIV prevention, hepatitis C treatment, and substance use treatment provider (Figure 6) were identified.

FIGURE 3

Access to syringe services programs

Comparison of areas of concern to the locations of primary and satellite syringe services programs and the 30-minute driving time around the syringe services programs.

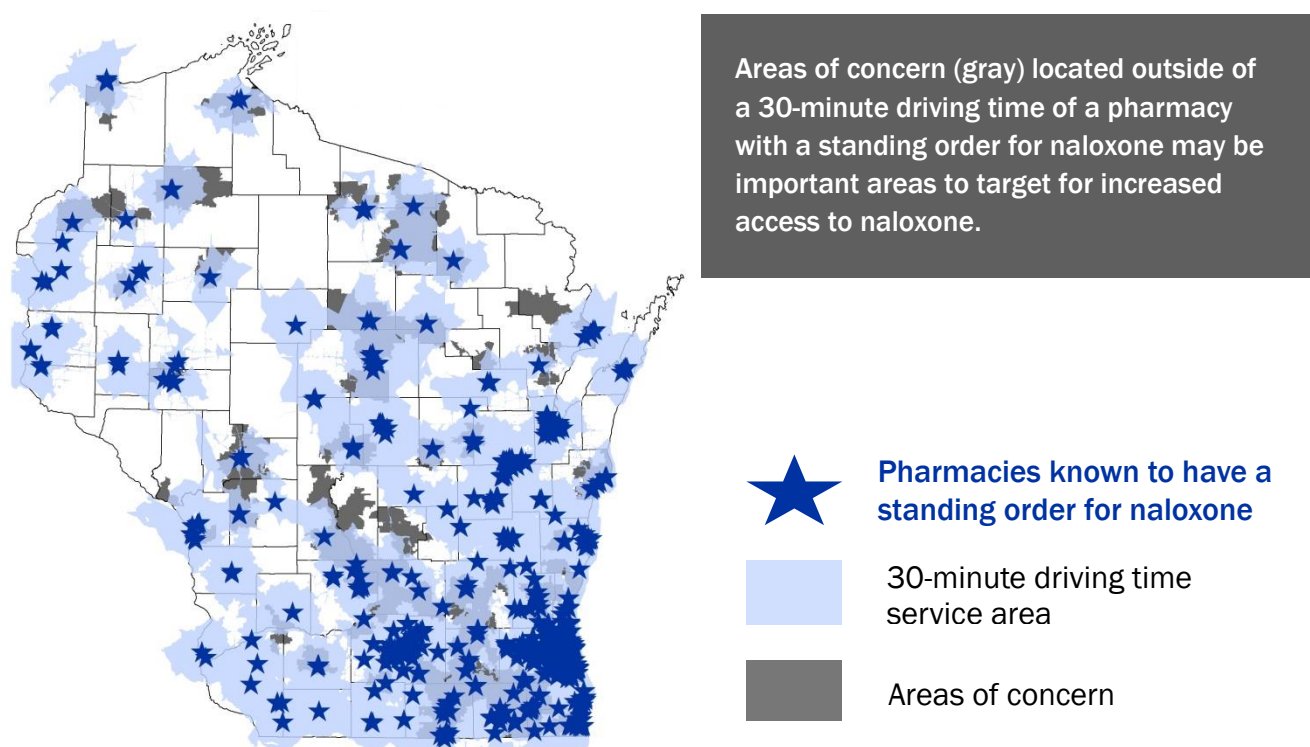


In addition, mobile van syringe services programs are available, at different frequencies, in the following counties: Adams, Columbia, Dane, Grant, Juneau, Milwaukee, Ozaukee, Richland, Sauk, Washington, and Waukesha.

FIGURE 4

Access to naloxone through a standing order at a pharmacy

Comparison of areas of concern to the locations of pharmacies known to have standing orders for naloxone and the 30-minute driving time around these pharmacies.

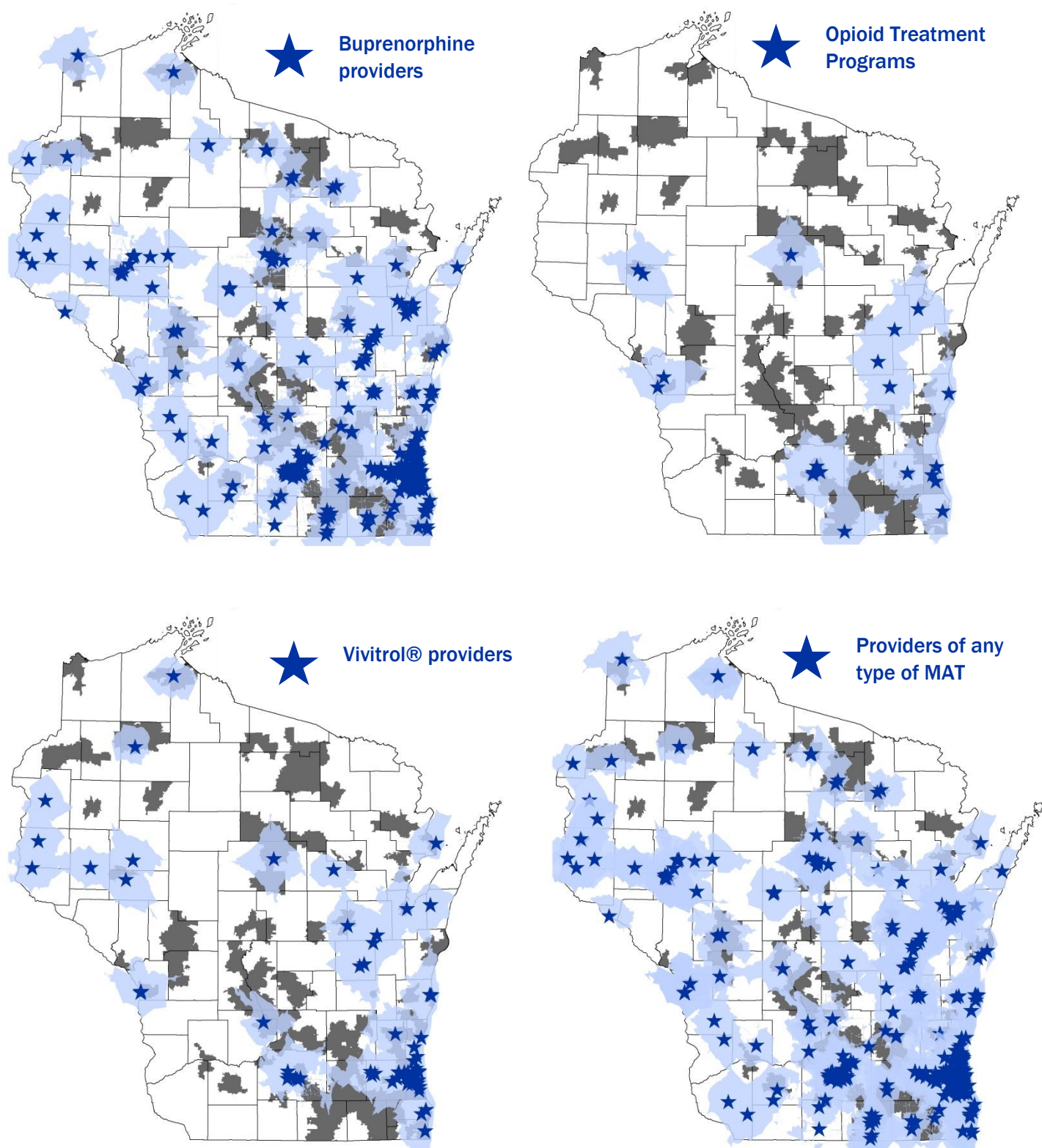


Other non-pharmacy organizations provide access to naloxone, such as syringe services programs and other community organizations. See the technical notes about limitations related to pharmacy distribution of naloxone through the statewide standing order.

FIGURE 5

Access to medication-assisted treatment (MAT) providers

Comparison of areas of concern to the locations of buprenorphine providers, Opioid Treatment Programs, Vivitrol® providers, and the 30-minute driving time around these providers.

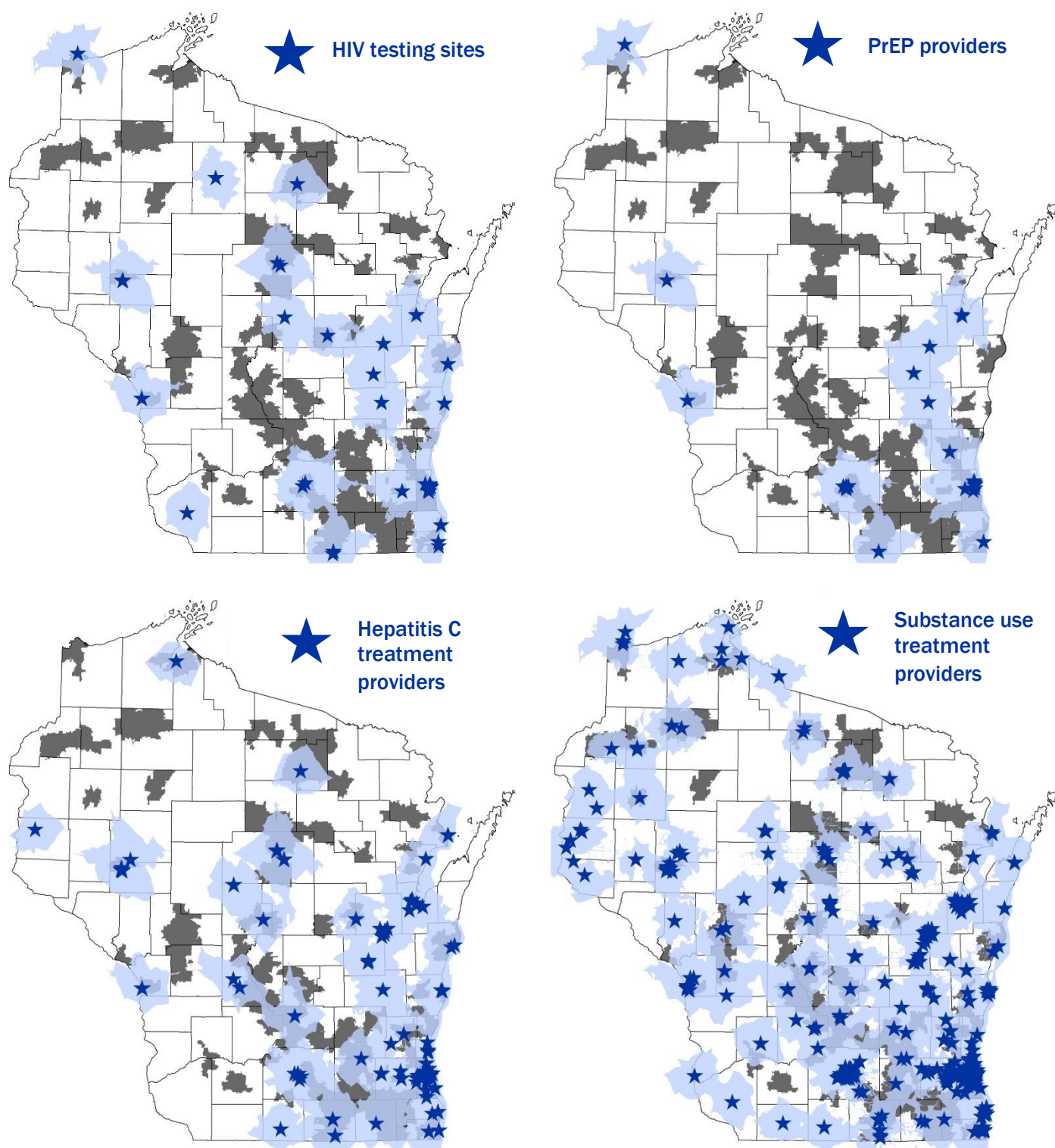


Areas of concern (gray) located outside of a 30-minute driving time of an MAT provider are important areas to target for increased access to MAT.

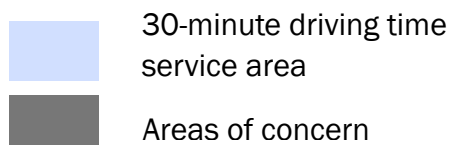
FIGURE 6

Access to HIV prevention services, hepatitis C treatment providers, and substance use treatment providers

Comparison of areas of concern to the locations HIV prevention services, hepatitis C treatment providers, and substance use treatment providers.



Areas of concern (gray) located outside of a 30-minute driving time of these services may be important areas to target to increase services.



Overall accessibility of resources

In addition to comparing areas of concern to available resources, the maps can also evaluate the overall accessibility of resources for Wisconsin residents (Figure 7). Residents in northern and western Wisconsin have less access to several key resources.

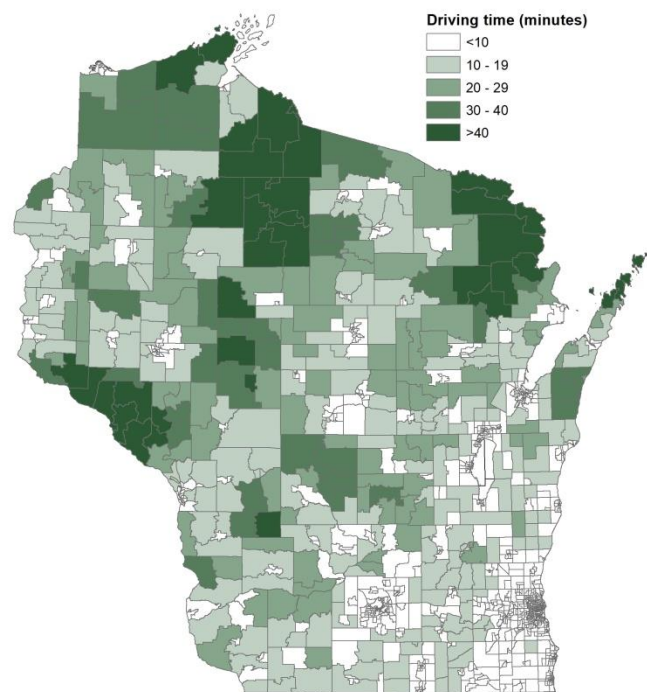
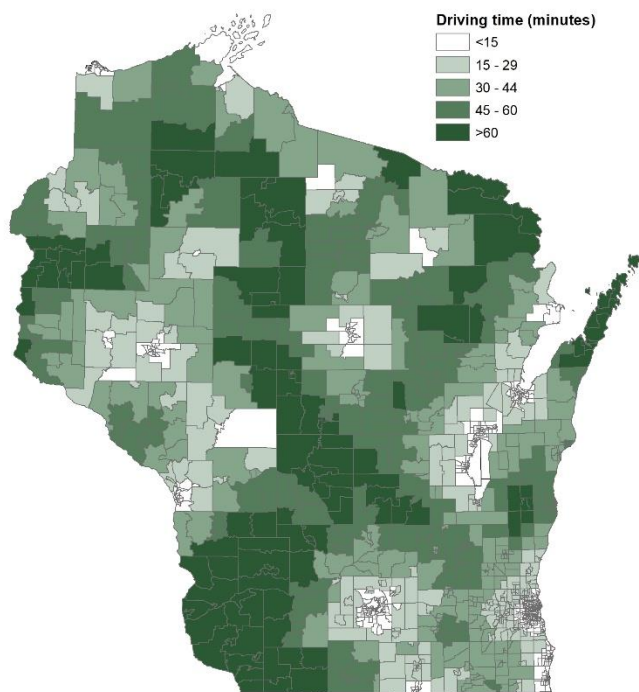
FIGURE 7

Accessibility to Resources

Driving times (minutes) to each resource type, average by census tract.

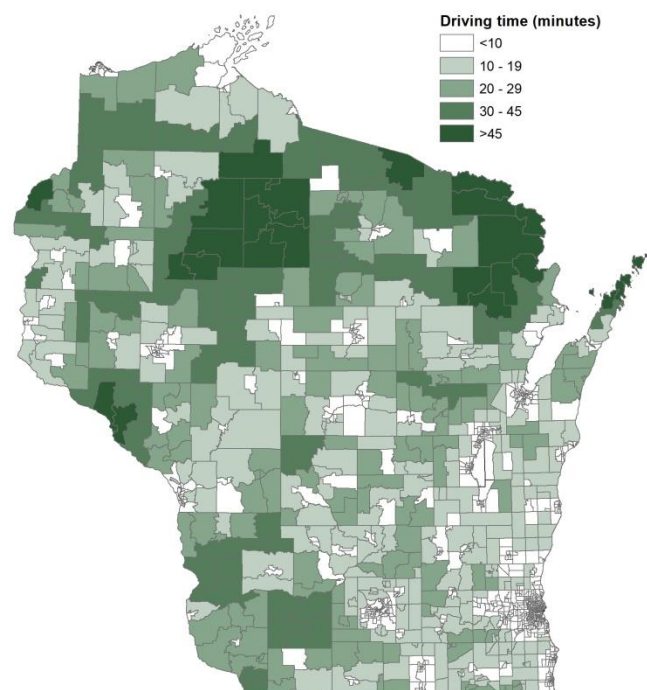
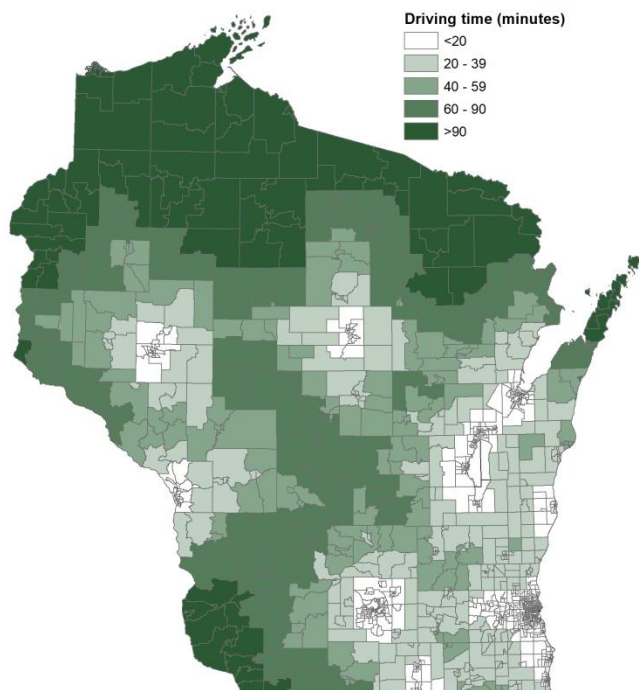
Syringe services programs

Naloxone at pharmacies with standing order



Opioid treatment programs

Substance use treatment providers



Plan for addressing geographic gaps in resources

These maps identify gaps in access to syringe services programs, naloxone, MAT, HIV prevention, hepatitis C treatment, and substance use treatment providers. To address these gaps, DHS will use this information to target resources to areas of concern that do not have services available. Additionally, DHS will work with external partners including local health departments, tribal health organizations, and community-based organizations, to improve access to treatment and prevention services.

Addressing specific gaps identified

Gaps in syringe services programs

- DHS will continue to work to expand capacity to provide harm reduction services in Wisconsin. During 2018 and 2019, DHS sponsored trainings by the Harm Reduction Coalition to teach local health department, tribal health clinic, and syringe service program staff members about the principles of harm reduction.
- DHS will work with existing syringe service programs to determine whether their mobile van services provide resources to the gap areas, and if these services can be expanded or intensified.
- DHS will continue to support HIV and hepatitis C testing at syringe services programs.

Gaps in access to naloxone

- DHS is working to increase the number of pharmacies that provide naloxone through a standing order.
- DHS has established a [NARCAN® Direct program](#) to improve access to naloxone through community agencies, including local health departments. This program will continue to expand.

Gaps in MAT and other mental health and substance use treatment

- DHS, specifically the Division of Care and Treatment Services (DCTS), will incorporate the information identified in this assessment to identify areas most in need of funding and resources.
- DCTS regularly awards funding to health and human services departments, tribal agencies, coalitions, and other agencies for prevention, treatment and recovery. This funding supports programs like outpatient therapy, training of providers regarding how to administer MAT, naloxone purchasing, and drug take-back events.
- This information will also be useful for community partners, including local health departments, to understand where to allocate resources within their communities.

Gaps in hepatitis C treatment

- Since 2017, Wisconsin Medicaid allows non-specialists, including primary care providers, to prescribe hepatitis C treatment. DHS will continue to support trainings for primary care providers, and will explore training primary care providers and using telemedicine to reach rural areas with gaps in services.
- Since 2019, Wisconsin Medicaid no longer considers current or past alcohol or substance use when approving prior authorizations for hepatitis C treatment. Treatment requests will also be considered for patients who have previously received hepatitis C treatment.
- In addition, DHS is exploring barriers to providing hepatitis C treatment, and is working to educate providers and health systems about the importance of reducing barriers to providing hepatitis C treatment.

Gaps in HIV prevention services

- DHS will continue to support HIV testing in outreach settings, including at syringe services programs and at correctional facilities.

- DHS will continue its work to improve accessibility to PrEP for people attending syringe services programs and persons at risk of HIV statewide.
- DHS will continue to ensure that persons living with HIV are in care and reach viral suppression in order to reduce the likelihood of transmission of HIV to others through sexual contact or drug use.
- DHS will continue to implement its well-established process of monitoring persons newly reported with HIV/hepatitis C coinfection and ensuring they are in HIV care, reach viral suppression, and have access to prevention services, like harm reduction services. This process is especially important because injection drug use is not a major driver of new HIV infections in Wisconsin, and the communities at risk of HIV typically do not overlap with persons at risk of hepatitis C through injection drug use. Therefore, identifying and ensuring persons with coinfection are in care is an important method of preventing the spread of HIV through injection drug use in Wisconsin.

Other ongoing activities to prevent and treat harms related to drug use

Prevention navigation services at syringe services programs

- The University of Wisconsin-Madison School of Medicine and Public Health is entering the second phase of the NIH-funded “Wisconsin Rural Opioid Study.” DHS is a collaborator on this project. This project focuses on areas of Wisconsin in northern and western Wisconsin, many of which overlap with the areas of concern and the gap areas.
- The second phase of the study, starting in spring 2020, will implement and study the effectiveness of incorporating prevention navigators into existing syringe services programs to help persons who inject drugs learn about and access prevention and treatment services for substance use and the infectious harms from drug use. This includes access to naloxone as well as linkage to care for hepatitis C, substance use disorder, and to mental health providers.

Prevention of hepatitis A and hepatitis B among people who use drugs

- The DHS Immunization Program recently began a program that allows local health departments to partner with community-based organizations, including county jails and homeless shelters, to provide vaccination services (including hepatitis A and hepatitis B vaccines) at the community location. DHS is currently promoting this new program among local health departments throughout the state, including in the areas of concern identified in this assessment.
- The Immunization Program has been actively working with county jails across the state to determine the barriers to providing hepatitis A vaccine in county jails and to identify methods for overcoming those barriers.
- The Wisconsin Department of Corrections offers hepatitis A and hepatitis B vaccine to all persons entering state correctional facilities. All doses are entered into the statewide Wisconsin Immunization Registry so that the person’s vaccination record is available to future health care providers.

Technical Notes

Methods

Identification of areas of concern

To identify areas of concern, four health outcomes routinely reported to DHS were analyzed. These health outcomes are described in the table below.

Outcome	Data source	Year of Outcome	Details
Hepatitis C case reports among persons age 15–39	Wisconsin Electronic Disease Surveillance System	2017-2018	Included new reports of hepatitis C among persons age 15–39 years with a confirmed case of acute or chronic hepatitis C as defined by the CDC case definitions: https://wwwn.cdc.gov/nndss/conditions/hepatitis-c-acute/case-definition/2016/ https://wwwn.cdc.gov/nndss/conditions/hepatitis-c-chronic/case-definition/2016/ Excluded cases newly reported by the Wisconsin Department of Corrections because these persons do not have home ZIP code information available.
Death from any opioid overdose	Death certificates	2017-2018	Included drug overdose deaths involving any opioid, as described here: https://www.dhs.wisconsin.gov/wish/opioid/technotes.htm
Hospitalization from any opioid overdose	Wisconsin hospital discharge database	2017-2018	Included inpatient hospital stays or emergency department visits with any diagnosis field indicating opioid poisoning, as described here: https://www.dhs.wisconsin.gov/wish/opioid/technotes.htm
Ambulance run for suspected opioid overdose	Wisconsin Ambulance Run Data System	2017-2018	Included all incidents of ambulance runs to suspected opioid overdoses.

For each health outcome, rates were calculated for each ZIP code tabulation area (ZCTA) as defined by the U.S. Census Bureau. ZCTAs are generalized areal representations of United States Postal Service ZIP code service areas. For ease of interpretation for the reader, this report uses the phrase “ZIP code” when referring to a ZCTA.

ZIP codes were used for this analysis (rather than census tracts) in order to accommodate the hospitalization data that were only available by patient residence ZIP code. For hospitalization data, hospitalizations were aggregated by ZIP code and a separate analysis was conducted to convert the aggregated hospitalization counts to their associated ZCTA. For the other health outcomes, the data were geocoded to determine the ZCTA that contained the address. After all the health outcomes data were aggregated to ZCTAs, rates per 100,000 were calculated using U.S. Census Bureau population estimates as the denominators.

For each health outcome, the rates for all ZIP codes in Wisconsin were separated into quintiles, and the ZIP codes with rates in the highest 20% of the outcome were identified.

ZIP codes were included into the area of concern if they met two specific criteria for any of the health outcomes:

- 1) the rate of the health outcome was in the highest 20%, and
- 2) there were more than five events of that health outcome in the ZIP code during the 2-year period.

ZIP codes meeting these criteria for any of the four health outcomes were consolidated into a single layer and referred to as areas of concern.

This method was chosen because persons who have experienced overdoses are at risk of overdosing again and are at risk of infectious harms from drug use. Young people newly reported with hepatitis C are likely engaging in injection drug use with unsterile equipment and are at risk of other infectious harms from drug use, including HIV, as well as overdose. This method was used because each outcome and data source has limitations. This method considers each outcome equally and is more sensitive in identifying areas of concern than relying on one outcome alone or by averaging the outcomes. Additionally, this method was chosen because it can be frequently and easily updated, and because this method is relatively easy to explain to internal and external partners and stakeholders.

Identification of resources

Resources for the prevention and treatment of opioid-related harms were identified through a variety of data sources.

Resource	Data source	Date updated	Details
Syringe services programs	DHS HIV program, Vivent Health	2019	Includes all syringe services programs funded by the DHS HIV program to provide HIV counseling, testing, and referral services; includes additional syringe services programs, including satellite locations of partner organizations and local health departments that provide syringe services programs. Excludes programs that requested to be excluded from the map.
Hepatitis C treatment providers	DHS Medicaid claims, IQVIA	2018	Includes all providers who submitted claims to Wisconsin Medicaid for hepatitis C treatment; also includes Wisconsin providers identified by the IQVIA retail prescription database as having provided hepatitis C treatment.
HIV testing sites	DHS HIV program	2018	Community-based organizations and local health departments known to provide HIV testing. There may be other locations that test persons for HIV that are not included in the map. https://www.dhs.wisconsin.gov/hiv/ctr-sites.pdf
PrEP providers	DHS HIV program	2019	Providers who have reported to the HIV program that they provide PrEP. https://www.dhs.wisconsin.gov/publications/p01180.pdf
Opioid treatment programs	DHS DCTS	2019	Certified opioid treatment programs provide FDA-approved medications combined with counseling and other support services. https://www.dhs.wisconsin.gov/opioids/find-treatment.htm
Vivitrol® provider	Alkermes Pharmaceuticals	2019	Providers in Wisconsin who have authorized us to identify that they offer treatment with Vivitrol® (a type of naltrexone).
Buprenorphine providers	SAMHSA	2019	Providers in Wisconsin who have waivers to provide buprenorphine and have authorized SAMHSA to identify them publicly.
Substance use treatment providers	DHS Division of Quality Assurance	2019	Provider facilities that are regulated by the state of Wisconsin to provide substance use treatment.
Naloxone, pharmacies with standing order	Pharmacies registered as having a standing order for naloxone	2019	Pharmacies included in the current layer are those that have subscribed to the statewide standing order and those pharmacies that have their own corporate standing order. Participation in the standing order by pharmacies is voluntary. Naloxone is not available free of charge through this method. https://www.dhs.wisconsin.gov/opioids/naloxone-pharmacies.htm

Identification of resource gaps

For each resource, the areas of concern were compared to the known locations of that resource and the 30-minute driving time service area around those resource locations. Driving time service areas were generated using ArcGIS Network Analyst.

Areas of concern not within the 30-minute driving time service areas were considered to be areas that were in need of that service (i.e., “gaps” in services).

Limitations

Outcome data

The outcomes data used to identify areas of concern have limitations. For example:

- In order to be included as a person newly reported with **hepatitis C**, the person had to have attended a syringe services program or attended a health care provider to receive testing. Therefore, areas that already have syringe services programs might have higher rates of younger persons with reported hepatitis C than areas without syringe services programs.
- When Wisconsin residents are **hospitalized** in Illinois or Michigan, these data are not reported to DHS. As a result, some border areas of Wisconsin might have artificially lower rates of hospitalization for opioid overdose.
- Rates of **ambulance runs** for suspected opioid overdoses are dependent on the areas having ambulances that are readily available to provide services in that area, and communities who are willing to call an ambulance when they witness an overdose. Additionally, some of the ambulance runs coded as a suspected opioid overdose might not actually be an opioid overdose.
- **Deaths** from opioid overdose are specific, but are relatively few in number. Deaths might signal where fentanyl use is highest and not where opioid or other drug misuse is highest.

Because each data source has limitations, ZIP codes were included as an ‘area of concern’ if they were in the highest 20% of *any* of the outcomes of interest.

Resources data

The resources data have limitations. For example:

- It can be difficult to measure access to **naloxone** because naloxone is offered by many different types of organizations in the community. Presently, DHS has data available to map the locations of pharmacies that offer naloxone through a standing order and syringe services programs that offer naloxone. In the future, DHS plans to map other sources of naloxone as well.
- **Buprenorphine providers** include only those providers who have agreed to be listed and have completed training to prescribe buprenorphine. It does not specify providers who have documentation of having prescribed buprenorphine or which providers are accepting new patients.
- **Vivitrol®** providers are those who have agreed to be listed and have ordered this medication. It does not specify providers who have documentation of having prescribed this medication.

Other limitations

- This assessment considers geographical gaps only. Other barriers to accessing resources, such as lack of transportation, stigma, poverty, and unstable housing are not included.
- This assessment does not include accessibility by public transportation, however we are working to identify layers of bus stops and routes.
- This assessment does not consider resources in neighboring states. This is something we will work to add in the future.
- This assessment does not include information on provider capacity. Although it is possible to map locations of providers, we do not currently know whether providers are actively accepting new patients.

References

Wisconsin Interactive Statistics on Health Opioid Module. Wisconsin Department of Health Services.
<https://www.dhs.wisconsin.gov/wish/opioid/index.htm>

Opioids Summary Data Dashboards. Wisconsin Department of Health Services.

<https://www.dhs.wisconsin.gov/opioids/dashboards.htm>

Hepatitis C in Wisconsin. Wisconsin Hepatitis C Virus Surveillance Annual Review, 2018. Wisconsin Department of Health Services. <https://www.dhs.wisconsin.gov/publications/p00440-2018.pdf>

Van Handel MM, Rose CE, Hallisey EJ, et al. County-Level Vulnerability Assessment for Rapid Dissemination of HIV or HCV Infections Among Persons Who Inject Drugs, United States. J Acquir Immune Defic Syndr. 2016 Nov;73(3):323-331. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5479631/>

Peters PJ, Pontones P, Hoover KW, et al. Indiana HIV Outbreak Investigation Team. HIV Infection Linked to Injection Use of Oxycodone in Indiana, 2014-2015. N Engl J Med. 2016 Jul 21;375(3):229-39. <https://www.nejm.org/doi/full/10.1056/NEJMoa1515195>

Contributors

Benjamin Anderson, Geospatial Solutions Developer

Joseph App, Geospatial Solutions Developer

Joseph Tavano, Geospatial Solutions Developer

Andrew Swartz, GIS Team Lead

Thomas Bentley, Population Health Researcher

Jennifer Broad, Research Analyst-Advanced

Sheila Guilfoyle, Viral Hepatitis Program Manager

Ruth Koepke, Hepatitis C Epidemiologist

Ronald Prince, Opioid Prevention Epidemiologist

Kate Rifken, Substance Use Data Analyst

Joseph Tatar, Epidemiologist-Advanced

Funding

This project was funded through a supplement to the CDC Cooperative Agreement for Emergency Response: Public Health Crisis Response (TP-18-1802).

Contact information

If you have questions about this assessment, please contact

Ruth Koepke, MPH

Hepatitis C Epidemiologist

Division of Public Health

Wisconsin Department of Health Services

Ruth.Koepke@wisconsin.gov

Kate Rifken, MS

Substance Use Data Analyst

Division of Care and Treatment Services

Wisconsin Department of Health Services

Katharine.Rifken@wisconsin.gov

Wisconsin Department of Health Services

<https://www.dhs.wisconsin.gov/opioids/index.htm>