

Utilizing Geospatial Mapping and Public Health Partnerships to Identify Opportunities for Pharmacist Engagement in the Opioid Crisis

Laura C. Palombi Pharm. D., MPH, MAT, University of Minnesota College of Pharmacy, Duluth Campus
 Stacey Stark, MS, GISP, University of Minnesota Duluth Geospatial Analysis Center
 Nate Wright, MPH, Minnesota Department of Health, Injury and Violence Prevention Section
 Amanda N. Hawthorne, BA, University of Minnesota College of Pharmacy, Duluth Campus
 Heather L. Blue, Pharm.D., BCPS, BCGP, University of Minnesota College of Pharmacy, Duluth Campus

Introduction

Opioid overdose deaths continue to increase in the United States, with an estimated 115 Americans dying from these preventable overdoses each day.¹ Due largely to increased injection drug use, rates of hepatitis C virus (HCV) are climbing as well, with an estimated 41,200 new cases in 2016.² As highly skilled and accessible medical professionals, pharmacists must embrace a greater role in combating the opioid crisis.³

From 1999 to 2014, naloxone saved over 26,000 lives, and thousands of other cases likely went unreported.⁴ Naloxone access laws have been associated with a 9-11% decrease in overdose deaths.⁵ Likewise, in addition to reducing transmittable disease rates, syringe exchanges have been estimated to save hundreds of thousands of dollars in health care costs in the United States.⁶

In the fall of 2017, a survey was sent to all Minnesota-licensed pharmacists assessing their attitudes and beliefs about the opioid epidemic, particularly as pertaining to the opioid overdose antagonist naloxone and syringe exchange.

Objective

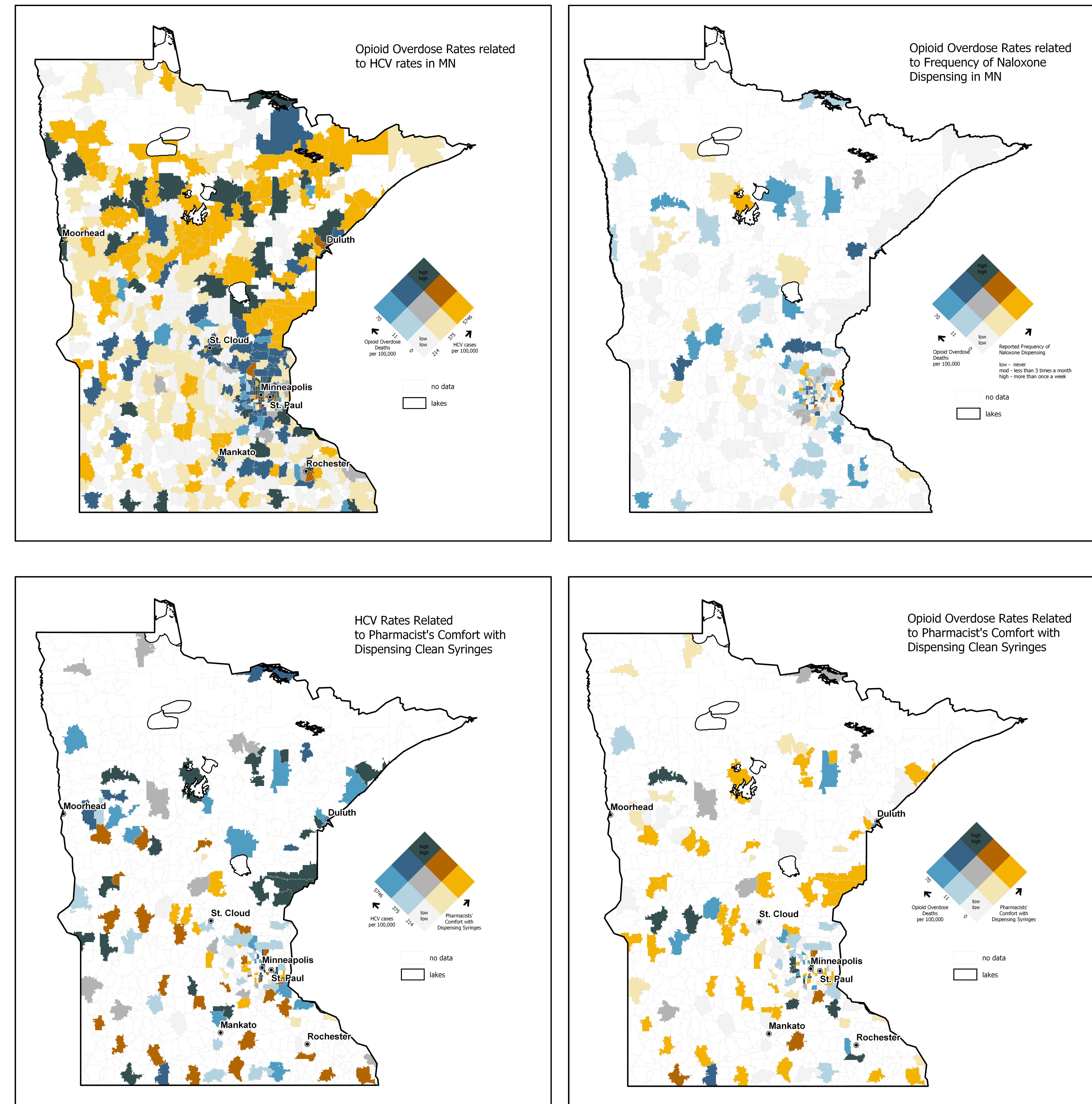
Assess the utilization of naloxone dispensing and syringe exchange protocols in Minnesota and its impact on opioid overdose and HCV

Methods

A survey was sent to all pharmacists with a license to practice in Minnesota. The frequency of naloxone dispensing and syringe exchange were evaluated using a 5-point Likert scale.

Survey results (n=586) were aggregated at the zip code level (if more than one response) and then assigned a weighted value. Opioid overdose and HCV case rates were grouped into three classifications using natural breaks for the bivariate symbology. Any zip code with fewer than 1000 people was coded as "no data," as were zip codes without a response.

Results



Minnesota Pharmacists' Role in Addressing the Opioid Epidemic, Pharmacist Survey, 2017

Data source: Minnesota Department of Health's Hospital Discharge Database, Minnesota Department of Health, Injury and Violence Prevention Section, and Minnesota Viral Hepatitis Surveillance System

Discussion

Few zip codes had extremely high rates of both overdose and HCV. However, those that did tended to localize around Native American Reservations across the state. Meanwhile, northern Minnesota struggles more than other regions with HCV. High overdose rates cluster around metro areas such as the Twin Cities and St. Cloud.

The overdose/naloxone dispensing map indicates a low rate of overdose in zip codes in which naloxone is high.

There are no discernible trends in the third map, which overlays HCV case rate with pharmacist comfort with syringe exchange, nor the fourth one, which overlays overdose rate with syringe access. These maps are nonetheless helpful for public health efforts to identify zip codes that could benefit from pharmacist education or intervention.

Conclusion

Although recent legislation has enabled pharmacists to address the opioid crisis, not all have embraced this expanded role, and their regions of practice experience the consequences. Mapping pharmacist engagement with overdose and HCV rates facilitates further pharmacist education and the creation of healthier communities.

References

- CDC/NCHS. National Vital Statistics System, Mortality. CDC Wonder, Atlanta, GA: US Department of Health and Human Services, CDC; 2017. Retrieved from <https://wonder.cdc.gov>.
- CDC. Hepatitis C Questions and Answers for Health Professionals. CDC, Atlanta, GA: US Department of Health and Human Services, CDC; 2017. Retrieved from <https://www.cdc.gov/hepatitis/hcv/faqs.htm#2>
- DeArment, A. Pharmacists are the face of health care in community. Rx Impact. Drugstore News, 2012. Retrieved from <http://www.nacds.org/pdfs/pr/2012/rximpact-0312.pdf>
- Wheeler, Jones et al. Opioid Overdose Prevention Programs Providing Naloxone to Laypersons – United States, 2014. CDC Morbidity and Mortality Weekly Report, 19 June 2015. Retrieved from <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm64z3a2.htm>
- Rees, Daniel L, et al. With a little help from my friends: the effects of naloxone access and Good Samaritan laws on opioid-related deaths. National Bureau of Economic Research. February 2017. Retrieved from <https://www.nber.org/papers/w23171>
- World Health Organization. Effectiveness of sterile needle and syringe exchange programming in reducing HIV/AIDS among injecting drug users. Retrieved from http://www.who.int/hiv/pub/prev_care/effectivenesssterileneedle.pdf?ua=1