WISCONSIN AIDS/HIV PROGRAM NOTES

May 2014

The Intersecting Epidemics of Heroin Use and Hepatitis C: Public Health and Public Policy Priorities

> "A broad cross-section of public and private sector partners is increasingly alarmed by the emergence of an epidemic of hepatitis C infection among young people who inject drugs, both male and female, primarily in rural and suburban settings, who started prescription opioid use before transitioning to heroin injection."
>
> *Action Plan for the Prevention, Care and Treatment of Viral Hepatitis 2014-2016*
> *Updated February 2014*
> *U.S. Department of Health and Human Services*

Reports from national and local media focus on the growing and pervasive epidemic of heroin use. Heroin use is a public health crisis. It is associated with increasing numbers of accidental overdose deaths; exposure to and transmission of HIV, viral hepatitis, and other infectious agents; and a range of other health and social problems resulting in crime and violence and disruptions in families, workplaces, and community settings.[1] Recent hepatitis C virus (HCV) infection surveillance and epidemiologic investigations in Wisconsin have focused on the growing public concern about heroin use and the risk of HCV transmission, especially among young people who inject drugs (PWID).[2,3]

Heroin

Heroin is an illegal opioid drug synthesized from morphine and derived from the seed pod of the Asian opium poppy. It can be injected, inhaled by snorting or sniffing, or smoked. Heroin is highly addictive, initially producing an intense euphoric state. Over time, the brain can develop drug tolerance, resulting in the need for greater amounts of heroin to obtain the effects that were reached previously at lower levels. The quality of heroin varies greatly and ranges from pure heroin to processed heroin containing any of a variety of impurities. Some substances sold as heroin include a potentially lethal combination of heroin and the opioid fentanyl.

Opioid prescription drugs are prescribed primarily to treat pain. They include morphine, codeine, methadone, oxycodone (Oxycontin, Percodan, Percocet), hydrocodone (Vicodin, Lortab, Norco), fentanyl (Duragesic, Fentora), hydromorphone (Dilaudid, Exalgo), and buprenorphine (Subutex, Suboxone).

Opioids work by binding to specific receptors in the brain, spinal cord and gastrointestinal tract. They minimize the body's perception of pain but can also affect mood and critical functions like breathing and blood pressure, which may result in unintentional overdose deaths.

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[1] National Institute on Drug Abuse, U.S. Department of Health and Human Services. NIDA Research Report Series: Heroin. February 2014. Available from http://www.drugabuse.gov/sites/default/files/rrheroin_4_14.pdf.

[2] Stanley MM, Guilfoyle S, Vergeront JM, Davis JP, Suryaprasad A, Hu DJ, Khudyakov Y. Notes from the field: hepatitis C virus infections among young adults – rural Wisconsin, 2010. Morbidity and Mortality Weekly Report 2012;61(19):358. Available from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6119a7.htm.

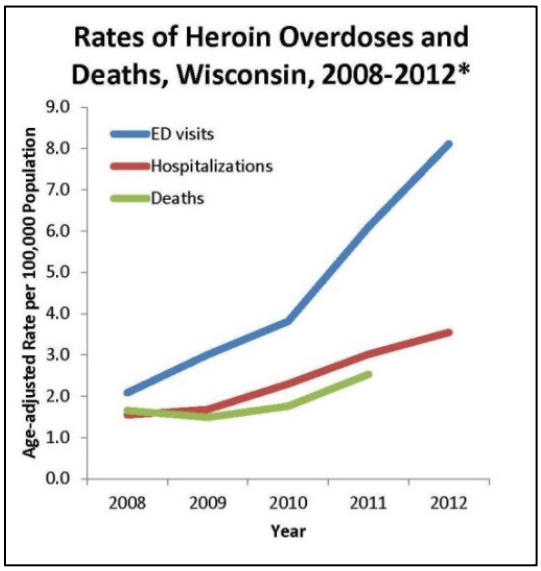
[3] Gasiorowicz M, Guilfoyle S, Stanley M, Bering C, Grande K. Hepatitis C surveillance and cluster investigations in Wisconsin. Wisconsin AIDS/HIV Program Notes; November 2011. Available from http://www.dhs.wisconsin.gov/aids-hiv/ProgramNotes/Nov2011ProgramNotes.pdf.

Connection between Prescription Opioids and Heroin

Nonmedical use of prescription drugs frequently leads to heroin use and addiction, especially among young adults. Between 2008 and 2009, 13 percent of Wisconsin adults ages 18 to 25 reported using pain relievers for nonmedical purposes.[4] Among high school students in 2011, 18 percent reported illicit use of prescription drugs at some point in their lives. Heroin and other opiate treatment admissions in Wisconsin rose sharply between 2000 and 2008, from 287 to 984 for heroin and from 172 to 1,283 for other opioids.[5]

Prescription opioid pain medications like Oxycontin and Vicodin are among the most frequently misused, abused, and diverted drugs in the United States, due in part to their highly addictive nature and abundant supply. Use of opioid pain medications is a major contributing factor in the rise in heroin addiction as increasing numbers of people misuse prescription opioids and switch to heroin because it is less costly and easier to access.

An increase in heroin use in the U.S. has contributed to increased emergency department (ED) visits, hospitalizations, and deaths. Heroin-related ED visits tripled between the years 2008 and 2012. Heroin-related deaths nearly doubled between 2008 and 2011 and were highest among young persons aged 15-24 years. Overdose deaths are the leading cause of accidental deaths in the U.S., exceeding all other causes of injury deaths, including automobile accidents.[6] U.S. overdose deaths involving prescription opioid analgesics increased to about 17,000 deaths a year in 2010, almost double the number in 2001. This increase coincided with a nearly four-fold increase in the use of prescribed opioids for the treatment of pain.[7] In Wisconsin, drug-related deaths involving heroin or other opioids increased nearly four-fold during 2000-2011.[8]



[4] Wisconsin Department of Health Services. Wisconsin epidemiological profile on alcohol and other drug use, 2012. September 2012. Available from http://www.dhs.wisconsin.gov/publications/P4/P45718-12.pdf

[5] Wisconsin Department of Health Services. Healthiest Wisconsin 2020 alcohol and other drug use (focus area profile). July 2010. Available from http://www.dhs.wisconsin.gov/hw2020/pdf/alcohol.pdf

[6] Centers for Disease Control and Prevention. Drug overdose in the United States: fact sheet. February 2014. Available from http://www.cdc.gov/homeandrecreationalsafety/overdose/facts.html

[7] Harvard Medical School. Painkillers fuel growth in drug addiction: Opioid overdoses now kill more people than cocaine or heroin. Harvard Mental Health Letter. 2011;27(7):4–5.

[8] Wisconsin Department of Health Services. Healthiest Wisconsin 2020 baseline and health disparities report: alcohol and drug use. January 2014. Available from http://www.dhs.wisconsin.gov/publications/P0/p00522d.pptx

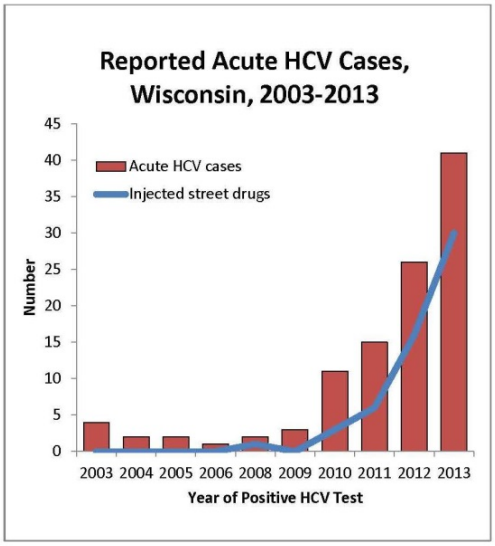
Opioid overdose deaths are preventable through the timely use of the narcotic antagonist naloxone. When naloxone is administered effectively in an emergency situation, it works by rapidly binding to opioid receptors, preventing heroin from activating the receptors and thereby reversing respiratory depression. Naloxone injection has been approved by the U.S. Food and Drug Administration and used for more than 40 years by emergency medical services personnel to resuscitate people by reversing opioid drug overdose and preventing death. In Wisconsin, harm reduction programs such as Lifepoint at the AIDS Resource Center of Wisconsin have distributed naloxone and trained PWID how to use it safely when someone witnesses an apparent opioid overdose. Recently enacted legislation in Wisconsin (noted later in this article) expands access to naloxone and removes barriers for individuals who are reluctant to notify emergency or law enforcement personnel for assistance when an overdose occurs.

Hepatitis C

Hepatitis C virus (HCV) is a bloodborne pathogen that infects approximately 3.2 million people in the United States. Most people become infected with HCV by sharing needles or other equipment to inject drugs, or, less commonly, through unprotected sexual contact with an infected person. Before 1992, when widespread screening of the blood supply began in the U.S., hepatitis C was also commonly spread through blood transfusions and organ transplants.

An estimated 1.3 percent of the population, or approximately 74,000 persons in Wisconsin, are living with HCV infection. Currently, approximately 35,000 people living in Wisconsin have been identified as having HCV infection and the remainder are assumed to be unaware of their infection. The majority of people with HCV live in the southeastern (52%) and southern (16%) regions of the state. On average, 2,500 cases of HCV infection are detected annually in Wisconsin.

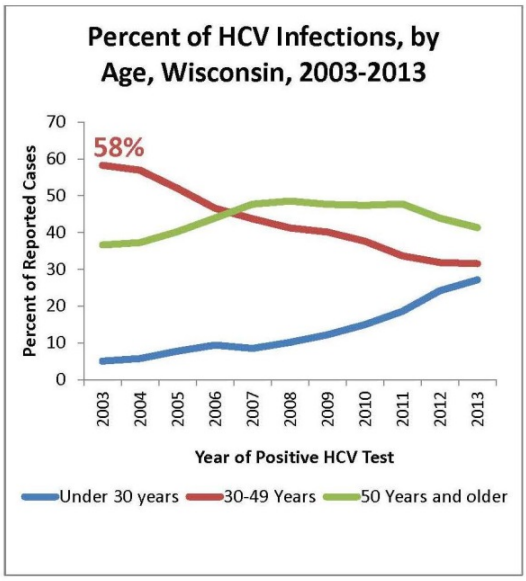
HCV infection is a bloodborne liver disease that ranges in severity from a mild illness lasting a few weeks to a serious, lifelong illness that attacks the liver. HCV infection can be either “acute” or “chronic.” Acute HCV infection is a short-term illness that occurs within the first six months after someone is exposed to HCV. For most people, acute infection leads to chronic infection. Chronic HCV infection is a long-term illness that occurs when HCV remains in a person’s body. HCV infection can last a lifetime and lead to serious liver problems, including cirrhosis or liver cancer. The number of acute HCV cases reported in Wisconsin in 2013, which reflects recent infections, has nearly doubled since 2012.



Because HCV and HIV are both bloodborne pathogens, HCV/HIV coinfection is an additional health and medical management concern. Approximately 900 HCV/HIV coinfections have been identified in Wisconsin since 2000. Of HCV cases in Wisconsin, 2.3 percent have HIV infection; 7.1 percent of HIV cases have HCV infection. Approximately 60 percent of HCV/HIV cases reported injection drug use as a risk factor at the time of the HIV report.

Over half of the estimated 17,000 new HCV infections occurring in the U.S. in 2010 were among PWID.[9] The prevalence of HCV antibodies in PWID is estimated at 60-80 percent.[10] PWID are likely infected within the first few years of injecting drugs. Approximately 50-80 percent of PWID become infected with HCV within five years of first injection. Among new users, the majority are found to be young (<30 years), white, and often live in rural areas.

In Wisconsin, new HCV case reports in young adults have increased five-fold since 2003. The rise in reported HCV cases in young adults (age <30 years) mirrors the rise in heroin use in this group, noted both in Wisconsin and nationally.[11]



PWID are disproportionately affected by viral hepatitis. They are also more likely to have adverse hepatitis-related health outcomes compared to other infected populations, primarily because of comorbidities and inadequate access to and receipt of health services. Lack of awareness of infection status and late diagnosis are additional factors adversely affecting the health of PWID.[12]

[9] Centers for Disease Control and Prevention. Viral hepatitis surveillance - United States, 2010. Available from http://www.cdc.gov/hepatitis/statistics/2010surveillance/index.htm.

[10] Nelson PK, Mather BM, Cowie B, Hagan H, Des Jarlais D, Horyniak D, Degenhardt L. 2011. Global epidemiology of hepatitis B and hepatitis C in people who inject drugs: results of systematic reviews. The Lancet, 378(9791): 571-583.

[11] U.S. Department of Health and Human Services. Hepatitis C virus infection in young persons who inject drugs. February 26-27, 2013. Consultation Report. Available form http://aids.gov/pdf/hcv-and-young-pwid-consultation-report.pdf.

[12] U.S. Department of Health and Human Services. Action plan for the prevention, care, and treatment of viral hepatitis 2014-2016. Updated February 2014. Available from http://aids.gov/pdf/viral-hepatitis-action-plan.pdf.

In February 2013, the U.S. Department of Health and Human Services convened a multidisciplinary technical consultation to identify and define priorities for a public health response to the epidemic of HCV infection among young PWID.[13] Major recommendations resulting from this consultation include the following:

- Creating community-led education and messaging strategies about hepatitis C risks, injection transmission risks (e.g., sharing drug preparation equipment in addition to sharing drug injection equipment), and HCV testing resources.
- Improving and increasing infrastructures for HCV surveillance and data collection.
- Creating age-appropriate (e.g., young adult) substance use and hepatitis C interventions and prevention strategies that are evidence-based and effective.
- Expanding community-based and basic science research activities to better understand how to effectively address the emerging crisis of hepatitis C infection among young PWID.

Addressing the Heroin Epidemic through Partnerships and Public Policy

Heroin prevention and treatment services, when effectively implemented, will address the dual public health epidemics of heroin use and HCV infection. Prevention and control of heroin use will support public health efforts directed at the prevention and control of the HCV epidemic among PWID. The implementation of public policy is a structural intervention directed at changing the social, economic, political, or physical environments that shape and constrain health behaviors.

Collaborative partnerships are needed to prevent and control the heroin/HCV epidemic, including private and public sector partners – from public health, medical and social services, law enforcement, drug treatment agencies, educational institutions, community-based organizations, and others. Community partnerships exist in many areas of Wisconsin in the form of special municipal or county task forces focused specifically on preventing and controlling the heroin epidemic.

The Wisconsin Department of Justice has partnered with local law enforcement agencies to address the heroin epidemic. In response to local law enforcement feedback that heroin was the biggest public safety problem, the Wisconsin Department of Justice initiated a statewide education and public awareness campaign called *The Fly Effect*. Launched in fall 2013, the campaign consists of TV, radio and online ads as well as a youth-oriented interactive website with video interviews of recovering addicts, parents of addicted children, and former heroin users in prison.

At the federal level, the U.S. Department of Justice, as an outgrowth of collaborating with states, issued an official statement and video commentary by the U.S. Attorney General in March 2014 regarding the growing concern over heroin overdose deaths.[14] The Attorney General called for expanded enforcement and treatment interventions to combat the epidemic of overdose deaths

[13] U.S. Department of Health and Human Services. Hepatitis C virus infection in young persons who inject drugs. February 26-27, 2013. Consultation Report. Available form http://aids.gov/pdf/hcv-and-young-pwid-consultation-report.pdf.

[14] U.S. Department of Justice. Public Affairs, Justice News -- *Attorney General Holder, Calling Rise in Heroin Overdoses 'Urgent Public Health Crisis,' Vows Mix of Enforcement, Treatment*. Available from http://www.justice.gov/opa/pr/2014/March/14-ag-246.html

from heroin and prescription pain medication, including expanding first responder access to the narcotic antagonist naloxone.

Recently enacted Wisconsin legislation, known as Heroin Opiate Prevention and Education (HOPE), is an example of bipartisan partnership and public policy specifically directed at addressing aspects of the heroin epidemic. Representative John Nygren of Marinette authored the legislative bills and Governor Scott Walker signed the legislation into law on April 7, 2014. HOPE comprises the following legislative acts:

- Act 194 provides limited immunity to people who call for help for a person experiencing an overdose.

- Act 195 creates an option for opioid antagonist drug therapy for individuals facing heroin and opioid addiction and creates regional comprehensive opioid treatment programs in rural and underserved areas of the state.

- Act 196 addresses drug offender recidivism, allowing short-term sanctions for people who violate conditions of extended supervision, parole, probation, or deferred prosecution agreement.

- Act 197 increases funding for treatment and diversion programs, offering alternatives to prosecution or incarceration for substance abuse.

- Act 198 regulates drug disposal programs and makes additional drug repositories more accessible.

- Act 199 requires persons to show identification when picking up Schedule II or III narcotic/opiate prescriptions.

- Act 200 requires all emergency medical technicians to carry the drug naloxone (which counteracts opiate overdose) and to administer it in cases of overdose; it allows law enforcement officers and fire fighters who have received training to carry and administer naloxone as well.

Wisconsin Viral Hepatitis Program Activities

The Wisconsin Viral Hepatitis (VH) Program is integrated with the Wisconsin AIDS/HIV Program in the Wisconsin Division of Public Health and is the lead agency in Wisconsin responsible for coordinating the state's public health activities related to the prevention, detection and treatment of viral hepatitis. A core function of the VH Program is surveillance, which measures and monitors the impact of viral hepatitis disease incidence and mortality through the continuous and systematic collection, analysis, evaluation, and dissemination of data. In addition to surveillance, the VH Program focuses on improving the delivery of viral hepatitis prevention services in health-care settings and public health programs that serve adults at risk for viral hepatitis.

The VH Program has been actively engaged in addressing the dual public health epidemics of HCV infection and heroin use through a broad variety of activities and venues. As examples, the VH Program:

- Provides HCV guidance for local health departments and clinicians to support HCV clinical best practices through consultation, technical assistance and training.

- Collaborates with local community agencies providing harm reduction services for PWID, referral to drug treatment and other support services by expanding and integrating HCV-related testing and prevention education.

- Consults with agencies providing treatment for HCV mono-infected and HIV/HCV co-infected persons and provides technical assistance and training.

- Collaborates with the Wisconsin AIDS/HIV Program in training local agency staff to integrate state-of-the-art HCV testing with HIV testing in agencies providing HIV counseling and testing services to high-risk populations.

- Consults and collaborates with faculty and staff at the University of Wisconsin School of Medicine and Public Health in implementing a social networks HCV testing project.

- Actively participates and collaborates with workgroups and staff of the Wisconsin State Council on Alcohol and Other Drug Abuse regarding reports and recommendations related to Good Samaritan legislation and the heroin epidemic.[15,16]

- Collaborated (in 2010 and 2011) with local public health departments and the CDC to investigate two clusters of HCV in persons under age 30 in rural areas of Wisconsin.[17,18] Findings from the cluster investigations indicated an increased number of HCV cases in persons under age 30 and that injection drug use was the primary route of HCV transmission. Many people in the cluster investigations reported misusing prescription drugs such as oxycodone before they began injecting drugs.

- Piloted (in 2012-2013) rapid HCV testing to clients of four agencies providing outreach testing for HCV and HIV infection, syringe exchange, counseling, and other harm reduction services to people with drug dependence.[19] The prevalence rate detected among the client population was 20 percent, and the majority of cases were not previously reported to the Division of Public Health. The VH Program continues to increase access to testing in rural areas using both conventional and rapid HCV testing.

Conclusion

There is increasing awareness of the heroin epidemic, due in part to expanded media coverage and the development of public policy and legislation addressing this epidemic. Cluster

[15] Wisconsin State Council on Alcohol and Other Drug Abuse. 911 Good Samaritan recommendations: analysis and recommendations for reducing drug-related overdoses in Wisconsin. May 2013. Available from: http://scaoda.state.wi.us/docs/Presentations/June2013/911GoodSamaritanRecommendations.pdf.

[16] Wisconsin State Council on Alcohol and Other Drug Abuse. Reducing Wisconsin's prescription drug abuse: a call to action. January 2012. Available from: http://scaoda.state.wi.us/docs/prevandspfsig/FINAL01032012CSWReport.pdf.

[17] Gasiorowicz M, Guilfoyle S, Stanley M, Bering C, Grande K. Hepatitis C surveillance and cluster investigations in Wisconsin. Wisconsin AIDS/HIV Program Notes; November 2011. Available from http://www.dhs.wisconsin.gov/aids-hiv/ProgramNotes/Nov2011ProgramNotes.pdf.

[18] Stanley MM, Guilfoyle S, Vergeront JM, Davis JP, Suryaprasad A, Hu DJ, Khudyakov Y. Notes from the field: hepatitis C virus infections among young adults – rural Wisconsin, 2010. Morbidity and Mortality Weekly Report 2012;61(19):358. Available from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6119a7.htm.

[19] Stockman LJ, Guilfoyle SM, Benoit AL, Vergeront JM, Davis JP. Rapid hepatitis C testing among persons at increased risk for infection – Wisconsin, 2012-2013. MMWR 2014;63(14):309-311. Available from: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6314a3.htm.

investigations of HCV infections in Wisconsin and elsewhere point out the close association between heroin use and transmission of HCV, particularly in young adults. Efforts to improve monitoring and control of opioid prescribing and targeted interventions, including HCV education, safe injection practices, and improved access to drug treatment programs, have been shown to reduce the incidence of HCV infection.[20]

The intersecting epidemics of heroin use and hepatitis C are public health priorities in Wisconsin and throughout the nation. This public health crisis requires a coordinated response and commitment by individuals and communities to address:

- Primary prevention;
- Secondary prevention and targeted harm reduction;
- Early identification of persons at risk; and
- Timely access to effective drug treatment, health care, and support services.

To effectively address these epidemics, sustained collaborative efforts are needed across public and private sectors, including the areas of education; state and local government; law enforcement; justice; health care delivery; drug treatment; health insurance; community-based support services; faith communities; and many others.

For additional information regarding the intersecting epidemics of heroin and hepatitis C, contact Sheila Guilfoyle, Viral Hepatitis Prevention Coordinator in the Wisconsin Division of Public Health, at Sheila.Guilfoyle@dhs.wisconsin.gov (email) or 608-266-5819 (phone).

[20] Hagan H, Enrique R, Pouget E, Des Jarlais D. A systematic review and meta-analysis of interventions to prevent hepatitis C virus infection in people who inject drugs. Journal of Infectious Diseases 2011;204:74–83. Available from: http://jid.oxfordjournals.org/content/204/1/74.full.pdf.