Hepatitis C:
Background and Burden in Wisconsin

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Statewide Action Planning Group
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Outline

Overview of hepatitis C virus (HCV) including:

• What is HCV and what happens after infection
• Modes of transmission
• Scope of disease in Wisconsin
• Heroin and HCV infection
HCV Infection

Source: http://depts.washington.edu/hepstudy/hepC/clindx/acute/discussion.html
Timeline of HCV Progression

Source: www.hepatitisc.uw.edu/go/evaluation-staging-monitoring/natural-history/core-concept/all
HCC: Hepatocellular carcinoma; ESLD: End stage liver disease
Acute HCV

- Defined as the first six months of infection
- Only 30% have symptoms
Acute HCV

• Defined as the first six months of infection
• Only 30% have symptoms

• Jaundice (yellowing of eyes and skin)
• Fatigue
• Fever
• Loss of appetite
• Nausea and vomiting
• Changes in urine color
Modes of Transmission

• Sharing needles, syringes, or other equipment to inject drugs
• Needlestick injuries in health care settings
• Being born to an infected mother
• Sexual contact
• Sharing items that touch other person’s blood like razors or toothbrushes
• Poor infection-control practices during tattooing or piercing processes
• Blood transfusions (before 1992)
Scope of Disease in Wisconsin: Where

- There are 35,000 known HCV infections in people living in Wisconsin. An estimated 1.3% of population is living with HCV or approximately 74,000 in Wisconsin.

- The majority of people with HCV live in the southeastern (52%) and southern (16%) regions of the state.
Scope of Disease in Wisconsin: Who

“Baby boomers” born 1945-1965

• In the United States, are five times more likely to have HCV
• Make up over half of all HCV cases reported in Wisconsin
• Have a higher rate of HCV hospitalizations
• Have a higher rate of liver transplants
• More often male than female

Photo source, CDC: http://www.cdc.gov/knowmorehepatitis/Media/PDFs/FactSheet-Boomers.pdf
“Young adults” under age 30 years
• Reports have increased in the U.S.
• Predominantly White, non-urban
• Reports have increased *five-fold* in Wisconsin
• Attributed to recent injection drug use
• Rates similar in male and female
Scope of Disease in Wisconsin: Race

- HCV disproportionately impacts minorities.
- In 2014, the rate of new HCV reports in Blacks was \textit{twice} that of Whites and the rate in American Indians was almost \textit{three times} that of Whites.

\textbf{HCV reported cases per 100,000, by race, Wisconsin, 2014}

Error bars show 95% confidence intervals for the rate. Rates were not calculated for Multiple race (n=19) or Other race (n=12) due to small sample size. Race was unknown 309 reports (10%).
Scope of Disease in Wisconsin: Race

Although Blacks make up only 7% of Wisconsin’s population, they comprise 16% of prevalent HCV cases.
Scope of Disease in Wisconsin: Morbidity

Hospitalizations for HCV or HIV, Wisconsin, 2010-2012

Year of Discharge

<table>
<thead>
<tr>
<th>Year</th>
<th>HCV</th>
<th>HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>3,891</td>
<td>1,223</td>
</tr>
<tr>
<td>2011</td>
<td>3,966</td>
<td>1,213</td>
</tr>
<tr>
<td>2012</td>
<td>3,865</td>
<td>1,249</td>
</tr>
</tbody>
</table>

Source: Wisconsin hospital inpatient database, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services. HCV or HIV hospitalizations listed by ICD-9 as principal or contributing cause of hospitalization.
Scope of Disease in Wisconsin: Mortality

Deaths Associated with Hepatitis C and HIV
Wisconsin, 2000-2011

Source: Wisconsin resident death certificates, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services. Illness listed by ICD-10 as an underlying or contributing cause of death.
80% of HCV deaths occurred in persons aged 45-64 years.

The median age of death related to HCV was 57 years.

On average, those who had a death related to HCV died 22 years younger than those who died of other causes.
Opiate Abuse, Heroin Abuse and HCV
Hepatitis C and Rise in Injection Drug Use

Rates of Heroin Overdoses and Deaths, Wisconsin, 2008-2012

Reported Acute HCV Cases, Wisconsin, 2003-2013

Source: Wisconsin hospital inpatient database, Wisconsin emergency department visit database, and Wisconsin resident death certificates, Office of Health Informatics, Division of Public Health, Wisconsin Department of Health Services. Rates were age-adjusted using the United States Standard 2000 population.
Heroin Deaths in Wisconsin, 2008-2012

Source: Wisconsin resident death certificates; Department of Health Services, Division of Public Health, Office of Health Informatics. Deaths were identified by an underlying cause of death of: X40-44, X60-64, X85, Y10-Y14 (drug poisoning) with T40.1 (heroin overdose) as a contributing cause.
HCV Infections in Young Adults
Wisconsin, 2008-2014

Wisconsin Epidemiologic Profile and Fact Sheets

- Epidemiologic Profile of Hepatitis C Virus (HCV) in Wisconsin 2014
  - [http://www.dhs.wisconsin.gov/publications/P0/p00860.pdf](http://www.dhs.wisconsin.gov/publications/P0/p00860.pdf)

- Hepatitis C in Wisconsin: Focus on Baby Boomers
  - [http://www.dhs.wisconsin.gov/publications/P0/p00857a-baby-boomers.pdf](http://www.dhs.wisconsin.gov/publications/P0/p00857a-baby-boomers.pdf)

- Hepatitis C in Wisconsin: Focus on Young People who Inject Drugs

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Questions?
Surveillance System Match: HCV/HIV Co-infections

• Approximately 900 HCV/HIV co-infections identified since 2000.
• 2.3% of HCV cases have HIV infection.
• 7.1% of HIV cases have HCV infection.
• Demographics of co-infected:
  o 77% Male
  o 45% Non-Hispanic Black
  o 56% Milwaukee Co. residence
• Risk: 60% reported injection drug use at the time of HIV report.