Hepatitis C Prevention Opportunities Among People Who Inject Drugs: Confronting the Growing Epidemic

Hosted by the HHS Office of HIV/AIDS and Infectious Disease Policy

- **Moderator:** Ronald O. Valdiserri, MD, MPH
- **Presenters:**
  - Jon Zibbell, PhD, US Centers for Disease Control and Prevention
  - Holly Hagan, PhD, MPH, RN, New York University
HCV Prevention Webinar Logistics

- In case of technical difficulties, call:
- 301-587-1600 and press “0” to be connected to Barbara Draley
- The webinar is being recorded and will be archived on AIDS.gov
Tools to address viral hepatitis

Action Plan for the Prevention, Care, & Treatment of Viral Hepatitis

Updated 2014-2016

The Patient Protection & Affordable Care Act
111th Congress of the United States
H.R. 3590

MMWR
Recommendations for the Identification of Chronic Hepatitis C Virus Infection Among Persons Born During 1945-1965

Hepatitis Testing Day
May 19

www.aids.gov/hepatitis • #ViralHepAction
Got Questions?

Please type your questions into the “Questions” box throughout the webinar and we will address them during the Q & A.
Hepatitis C Virus Infection among People who Inject Drugs in the United States

Jon E. Zibbell, PhD
Centers for Disease Control and Prevention
Division of Viral Hepatitis
Prevention Research Branch
Prevalence of Current HCV Infection among U.S. Population

- ~3 million people with current infection

- National Health and Nutrition Examination Survey (NHANES) prevalence estimate
  - 2.7 million persons (2.2-3.2 million)
  - 1.0% of general U.S. population (0.8%-1.2%)
  - Civilian, non-institutionalized populations

- Non-NHANES prevalence estimate
  - 500,000 persons (360,000-840,000)
  - Incarcerated population (15-35% HCV prevalence)
  - Homeless persons

Hepatitis C Virus (HCV) Infection in the United States

- The most common bloodborne infection in the United States
- 45-85% of those infected are unaware of infection
- HCV-related deaths doubled from 1999-2007 to over 17,000/year
  - Expected to increase to 35,000/year without intervention
- Leading cause of liver transplants and liver cancer [hepatocellular carcinoma (HCC)]
  - HCC fastest rising cause of cancer-related death

HCV Infection from Injection Drug Use Behaviors

- Injection drug use (IDU) is the principle risk factor for HCV infection
  - Most reported risk behavior in acute case reporting

- HCV prevalence among persons who inject drugs (PWID) between 30% and 70%

- HCV prevalence among younger (<30 yrs.) between 10% and 36%

- HCV incidence between 16% and 42% per year

Hagan et al. 2010; Garfein et al. 1998; Armstrong et al. 2006; Amon et al. 2008; Klevens et al. 2013; Daniels et al. 2007
How long can HCV survive on inanimate objects?

HCV-contaminated solution needs to be heated for almost 90 seconds and reach temperatures of 144°F for the virus to be at undetectable levels.

Paintsil et al., JID, 2010; Doerrbecker et al., JID, 2011; Thibault et al., JID, 2011; Doerrbecker et al. JID, 2012; Paintsil et al., JID, 2014
Needles and Syringes

Fixed

Detachable
Preparation Equipment

Filters

Cookers

Water

Surfaces
Sterile Equipment for Every Injection
HEPATITIS C & INJECTION DRUG USE

What is Hepatitis C?
Hepatitis C is a serious liver disease caused by the Hepatitis C virus. About 80% of people who get infected develop a chronic, or lifelong, infection. Over time, chronic Hepatitis C can cause serious health problems, including liver damage, liver failure, and even liver cancer. However, some people get only a short-term, or acute, infection and are able to clear the virus without treatment. If someone clears the virus, this usually happens within 6 months after first infected.

What are the symptoms?
Symptoms of Hepatitis C can include fever, feeling tired, not wanting to eat, upset stomach, throwing up, dark urine, gray-colored stool, joint pain, and yellow skin and eyes. However, many people who get Hepatitis C do not have symptoms and do not know they are infected. If symptoms occur with acute infection, they can appear any time from 2 weeks to 6 months after infection. Symptoms of chronic Hepatitis C can take decades to develop, and when symptoms do appear, they often are a sign of advanced liver disease.

Should I get tested?
Yes, if you have ever injected drugs, you should get tested for Hepatitis C. If you are currently injecting, talk to your doctor about how often you should be tested. The Hepatitis C Antibody Test is a blood test that looks for antibodies to the Hepatitis C virus. A reactive or positive Hepatitis C Antibody Test means that a person has been infected at some point in time. Unlike HIV, a negative antibody test does not necessarily mean a person still has Hepatitis C. An additional blood test, called a HCV RNA test, is needed to determine if a person is currently infected with Hepatitis C.

How is Hepatitis C spread among people who inject drugs?
The Hepatitis C virus is very infectious and can easily spread when an infected person comes into contact with surfaces, equipment, or objects that are contaminated with infected blood, even in amounts too small to see. The virus can survive on equipment and surfaces for up to 6 weeks. People who inject drugs can get Hepatitis C from:

- Needles & Syringes. Sharing or reusing needles and syringes increases the chance of spreading the Hepatitis C virus. Syringes with detachable needles increase this risk even more because they can remain in use even after they are used than syringes with fixed needles.
- Preparation, Equipment. Any equipment, such as cookers, cottons, water bottles, and alcohol swabs can easily become contaminated during the drug preparation process.
- Needles. Needles, syringes, and equipment—such as cookers, cottons, water bottles, and alcohol swabs—can contaminate the injection site, cookers, cookers, needles, and syringes.
- Surfaces. Hepatitis C can spread when blood from an infected person contaminates a surface and then that surface is reused by another person.

Are there other ways Hepatitis C can spread?
Hepatitis C can also spread when tattooing, piercing, or other equipment is contaminated with the Hepatitis C virus and used on another person. Even if Hepatitis C is not the spread through sex, Hepatitis C is the spread through sex.

Can Hepatitis C be treated?
Yes. New and improved treatments are available that can cure Hepatitis C for most people. Most of the new treatments are taken as pills and do not require injection injections. However, treatment for Hepatitis C depends on many different factors, so it is important to talk to a doctor about options.

Can someone get re-infected with Hepatitis C?
Yes. Someone who clears the virus, either on their own or from successful treatment, can become infected again.

Cleaning equipment does not kill the Hepatitis C virus.
Washing, boiling, burning, or using common cleaning fluids, alcohol, or peroxide will not kill the Hepatitis C virus. The Hepatitis C virus is difficult to kill. So although cleaning equipment may reduce the amount of virus, it does not eliminate it.

Does injecting put you at risk for other types of hepatitis?
Yes. People who inject drugs are more likely to get Hepatitis A and Hepatitis B. Getting vaccinated for Hepatitis A and B will prevent these types of hepatitis. There is currently no vaccine for Hepatitis C.

For More Information
Talk to your health professional, call your health department, or visit www.cdc.gov/hepatitis

http://www.cdc.gov/hepatitis/HCV/PDFs/FactSheet-PWID.pdf
Increases in New HCV Infections

- 50% increase in national reporting  
- 200% increase in 17 states

- Recent studies show
  - ~70% report IDU
  - Ages 18 to 29 years
  - Predominantly white
  - Equally female and male
  - Non-urban and urban
  - Antecedent presc opioid misuse

Source: CDC/hepatitis.gov; MMWR 2011; MMWR 2014; CDC unpublished data.
Injection Behavior and Drugs Used by Persons 18-29 Years of Age with Acute HCV Infection

- 1202 cases of acute HCV investigated
  - 52% female
  - 85% white
  - 77% persons injected drugs
    - 57% shared needles/syringes
    - 82% shared equipment

- Percent use and mean age of drug use initiation
  - Powder cocaine: 71%, 17.4 yrs.
  - Prescription opioids 76% : 17.9 yrs.
  - Heroin: 61%, 19.7 yrs.

Suryaprasad et al., CID, 2014
Prescription Opioid Sales, Opioid-Related Deaths, and Opioid Treatment Admissions Have Increased in Lock Step

Opioid Sales (kg per 10k)

Opioid Deaths (per 100k)

Opioid Treatment Admissions (per 10k)

National Injection Trends Among Persons in Substance Abuse Treatment Programs: All ages vs. <30

Proportion of All Admissions

- Any Opioid Injection
- Any Opioid Injection <30
- Other Drug Injection
- Other Drug Injection <30

SAMHSA, TEDS, unpublished data
Prescription Opioid Misuse and Heroin Dependency is also increasing

![Graph showing the increase in opioid and heroin dependency from 2002 to 2012](image_url)

- Opioids: 214K, 467K, >2 million
- Heroin: 0 to >2 million

SAMHSA NSDUH 2012
Increased heroin use correlated with prescription opioid epidemic

7 out of 10 people who used heroin in the past year also misused opioids in the last year.

3 out of 4 people who used both heroin and opioids in the last year misused opioids first.

Bloody Fingers
fingers on cooker and in solution

Source: Greg Scott
Touching cotton filter (O/I)
“Fishing” for a Vein

Source: Greg Scott
Two people using one water container

Source: Steve Koester
Special Thanks:

Corinna Dan, RN, MPH
Holly Hagan, PhD, MPH, RN
Scott Holmberg, MD
Stephen Koester, PhD
Brian Manns, PHARM-D
Rajiv Patel, MPH
Greg Scott, PhD
Anil Suryprasad, MD, MPH
Ron Valdiserri, MD, MPH
Claudia Vellozzi, MD, MPH
John Ward, MD
Emily Winkelstein, MSW
William Zule, PhD
HCV PREVENTION IN PEOPLE WHO INJECT DRUGS

Holly Hagan, PhD
Professor
New York University College of Nursing
STRATEGIES THAT PREVENT HIV INFECTION IN PWID ARE LESS EFFECTIVE AGAINST HCV
Infection control strategies target the Agent, Host and Environment

**AGENT: HCV**
- Efficiently transmitted via parenteral exposure
- Survives on surfaces outside the body
- 75-80% of infections become chronic

**HOST: PWID**
- Decreased syringe sharing
- Equipment sharing persists
- 40-60% may be HCV-infectious

**ENVIRONMENT: SETTINGS**
- Injection settings
  - A high prevalence of infectious PWID
  - A range of contaminated equipment
- Poor access to harm reduction & health services for PWID in many regions of US
HCV Prevention Research

- Individually, syringe access programs and opiate substitution treatment (OST) have been shown to reduce HIV infections in PWID
  - However, *by themselves*, these programs do not reduce HCV transmission in PWID
- When **combined**, syringe access and OST are **highly effective** at preventing spread of HCV
  - Combined = an individual PWID is in OST and uses sterile injecting equipment
  - Under these conditions, they may reduce new HCV infections by 75-80%
Why would PWID in OST need sterile injecting equipment?

• Some PWID are not ready to become abstinent but would like to have more control of their drug use

• Low-threshold OST:
  • Abstinence not required
  • No penalties for ongoing drug use
  • Reduces injection frequency, injection risk behavior, criminality, mortality
  • Higher retention rates than traditional high-threshold OST

• These active injectors with chronic HCV infection are at risk of transmitting
  • This is the majority of PWID in the US

• Engaging active injectors in combined HCV prevention essential to HCV control
What about HCV Treatment as prevention?

- New treatments may cure more than 85% of patients
  - They are well-tolerated and safe, and treatment is only 8-24 weeks
  - New treatments are expensive, but studies have shown that they are cost-effective
- However, currently only 1-2% of PWID with chronic HCV infection are treated each year
- Curing HCV infection in PWID will help prevent new HCV infections
  - It will reduce the number of infectious carriers
  - With fewer carriers, syringe access and OST programs will be more effective
- However, HCV treatment alone will not control HCV infection in PWID
  - Combined HCV prevention – syringe access and OST – must be continued (and expanded)
Framework of a model HCV control strategy for PWID

Prevent new infections
- Access to syringes & other equipment
- OST
- Safe injection education
- Outreach to those not engaged

Detect and care for existing infections
- Antibody screening
- RNA test to confirm infection
- Clinical evaluation to determine disease stage
- Monitoring disease progression
- Reduce alcohol use

Reduce chronic infections
- Treat to cure infection
- Support adherence to treatment
- Support post-cure to prevent reinfection

Co-locating these services increases their impact on HCV control
Special topics in HCV prevention

- Young injectors (aged 18-29)
  - Highest rate of new HCV infections
  - Great difficulty accessing youth and engaging them in harm reduction
  - Preventing transition to injection among prescription opioid misusers a high priority
- Rural injectors
  - Large swaths of the US with no harm reduction services
  - Can be reached via peers who distribute syringes and injection equipment, and teach them safe injection practices
  - Can’t deliver OST in this manner, though
- Stigma
  - HCV is stigmatized because of its association with drug use
  - A barrier to accessing services – HCV infection suggests they are drug users
Summary of HCV prevention in PWID

- Must continue and expand effective harm reduction services
  - Increase access to sterile syringes and injection equipment (drug cookers, filtration cotton, rinse water)
  - OST (including active injectors) to reduce unsafe injections
- HCV treatment is highly effective and if a large proportion of PWID are cured, the prevalence of infectious carriers will decline
  - But treatment alone will not control HCV
  - It is cost-effective but expensive
- Challenges remain, but there is compelling evidence showing that we can prevent HCV infection in PWID
Resources

• New York University Center for Drug Use and HIV Research HCV brief:

• Harm Reduction Coalition information on HCV prevention

• The HCV Advocate

• National Viral Hepatitis Roundtable
  • [http://nvhr.org/content/navigating-hepatitis-c-what-patients-need-know-0](http://nvhr.org/content/navigating-hepatitis-c-what-patients-need-know-0)
  • [http://nvhr.org/content/new-report-hcv-treatment-access-restrictions](http://nvhr.org/content/new-report-hcv-treatment-access-restrictions)
References


Hepatitis C Prevention Opportunities Among People Who Inject Drugs

Confronting the Growing Epidemic

Q & A

Enter questions into the GotoWebinar chat box
Hepatitis C Prevention Opportunities Among People Who Inject Drugs

Confronting the Growing Epidemic

Thank You!