# HEPATITIS A AND HEPATITIS B VACCINATION EFFORTS IN PEOPLE WHO INJECT DRUGS



**NASTAD** 



SEPTEMBER 10, 2020

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# SPEAKERS

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National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention



# Hepatitis A and Hepatitis B Vaccination Efforts in People Who Inject Drugs

September 10, 2020

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# Hepatitis A and Hepatitis B Among People who Inject Drugs (PWID)

Alice K. Asher, RN, PhD

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# **Roadmap for today's discussion**

- Epidemiology of viral hepatitis among people who inject drugs (PWID)
- Risk factors for hepatitis A and B
- Preventing hepatitis A and B among PWID





# Background

- People who inject drugs are at high risk of transmission of certain viruses, including hepatitis A and hepatitis B
- The opioid epidemic and increasing rates of injection drug use are propelling infections
- The viruses are vaccine-preventable; novel methods to engage this population are critical to success

# More than half of the United States is affected by hepatitis A outbreaks

- Hepatitis A incidence increased 850% from 2014 to 2018
- Since 2016, 33 states have reported hepatitis A outbreaks among people who inject drugs and people experiencing homelessness
   State-reported Hepatitis A Outbreak Cases as of August 28, 2020
- Total cases: 33,882 (as of 8/28/20)
  - Hospitalizations: 20,764 (61%)
  - Deaths: 333
- Vaccination of at-risk populations is the best intervention





# Hepatitis A and people who inject drugs

Among PWID, hepatitis A can be spread:

- Through direct fecal-oral routes
- Through percutaneous routes
- Via fecally-contaminated drug product

No evidence that hepatitis A is associated with:

- Frequency of injection
- Duration of injecting career



• Mixed evidence HAV can be transmitted via needle sharing

# Acute hepatitis B in the United States, 2018

Rates of reported acute hepatitis B, by state or jurisdiction — United States, 2018



# Over half of reported acute hepatitis B cases were among persons aged 30–49 years in 2018

Rates of reported acute hepatitis B, by age group — United States, 2003–2018



Source: CDC, National Notifiable Diseases Surveillance System.

## Increases in HBV infection among PWID: Kentucky, West Virginia, Tennessee

Incidence of acute hepatitis B virus infection by urban/non-urban<sup>+</sup> county of residence — Kentucky, Tennessee, and West Virginia, 2006–201



# Hepatitis B and injection drug use

- In 2018, an estimated 21,600 acute hepatitis B infections in the U.S.
- Primarily among adults 30-59 years old
- Injection drug use is the most commonly reported risk factor
  - More than 1/3 of cases with risk factor information
- Highly efficient. Can be spread through drug paraphernalia, not just needles and syringes
- Highly virulent. A minute amount of blood can transmit the virus
- Long survival period on inanimate objects

# **Transmission of hepatitis A and B is preventable**

- Educate clients on risks
- Use safe injection practices
- Medication for people with opioid use disorder (MOUD)
- Good hygiene
  - Wash hands before preparing drugs
  - SSPs may provide hand sanitizer gel or wipes
- Vaccination



## Syringe services programs prevent transmission of bloodborne infections

- Access to sterile injection equipment can help prevent blood-borne infections, skin infections and endocarditis
- Health care provided at SSPs can provide easy-to-access treatment and vaccination
- People who use SSPs are 3 times more likely to stop injecting than people who don't use the programs

SSPs + MOUD\* together **174%** HIV & Hepatitis C Transmission

\*Medications for opioid use disorder

Source: https://www.cdc.gov/ssp/syringe-services-programs-summary.html; Ruiz, et al, JAIDS, 2019



# Advisory Committee on Immunization Practices (ACIP) Hepatitis A and Hepatitis B Vaccination Recommendations for PWID

Mona Doshani, MD, MPH Medical Epidemiologist Division of Viral Hepatitis

# Hepatitis A Vaccine

# **Hepatitis A Vaccine Options in the United States**

- Introduced in 1995
  - Safe, immunogenic, effective
- All inactivated (killed virus)
  - Monovalent, Merck CR326F strain, VAQTA<sup>™</sup> (1995)
  - Monovalent, GSK HM175 strain, HAVRIX<sup>™</sup> (1996)
  - Combination, GSK HM175 strain and recombinant hepatitis B surface antigen, TWINRIX™ (1997)
- Administered on a two-dose schedule:
  - HAVRIX<sup>™</sup>: 0, 6-12 months
  - VAQTA<sup>™</sup>: 0, 6-18 months
  - \* TWINRIX<sup>™</sup>: 0, 1, 6 months (\*3 dose)
    - Accelerated Dosing: 0, 7, and 21 to 30 days, 12 mo





# **Hepatitis A Vaccine Safety**

- In pre-licensure trials, adverse reactions to HAVRIX, VAQTA and TWINRIX were mostly injection site reactions and mild systemic reactions
  - Most frequent side effects are soreness or erythema at injection site, fever, headache, and malaise
  - Multiple studies demonstrate no serious adverse event definitively attributed to inactivated vaccine
- Post-marketing surveillance for adverse events following receipt of HepA vaccines has been performed primarily by two systems in the United States: the Vaccine Adverse Event Reporting System (VAERS) and the Vaccine Safety Datalink (VSD)
  - No unusual or unexpected safety patterns were observed for any of the HepA vaccines licensed in the United States

Nelson NP, Weng MK, Hofmeister MG, et al. Prevention of Hepatitis A Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices, 2020. MMWR Recomm Rep. 2020;69(5):1-38. Published 2020 Jul 3. doi:10.15585/mmwr.rr6905a1

# **Hepatitis A Vaccines Immunogenicity**

- Hepatitis A vaccines are highly immunogenic, and >95% of immunocompetent adults develop protective antibody within 4 weeks of receipt of 1 dose<sup>1</sup>
- Detectable antibodies persist for at least 25 years after hepatitis A vaccination in childhood, and antibodies persist for an estimated 40 years or longer based on mathematical modeling and anti-HAV kinetic studies<sup>2,3</sup>
- Although recommended as a 2-dose series, evidence of protection for up to 11 years exists for 1 dose of single-antigen vaccine; clinical and outbreak response experience suggests that lifelong protection is possible after 1 dose<sup>4</sup>

 <sup>&</sup>lt;sup>2</sup>Ramaswami M, et al. Hepatitis A vaccine immunogenicity 25 years after vaccination in Alaska. J Med Virol; 2020:1-4.
 <sup>3</sup>Theeten H, et al. Long-term antibody persistence after vaccination with a 2-dose Havrix (inactivated hepatitis A vaccine)...Vaccine 2015;33:5723–7.
 <sup>4</sup>Ott JJ, Wiersma ST. Single-dose administration of inactivated hepatitis A vaccination in the context of hepatitis A vaccine recommendations. Int J Infect Dis 2013;17:e939–44.



<sup>&</sup>lt;sup>1</sup>MMWR. 2019 Feb 15;68(6):153-156.

# **ACIP Hepatitis A Vaccine Recommendations**

- Targeted vaccination, 1996-1999
  - 1996
    - Children at age <u>2 years in communities with high rates of disease</u>
    - Children through teen years in outbreaks
  - 1999
    - Recommended in 11 states with rates 2x the national average
    - Considered in 6 states with rates above the national average

## Universal childhood vaccination, 2006

- Recommended for use at age 12-23 months in all states
- No routine catch-up recommendation for children ages >23 months
- Universal and catch-up childhood vaccination, 2020
  - Vaccination of all children and adolescents aged 2–18 years who have not previously received HepA vaccine (i.e., children and adolescents are recommended for catch-up vaccination)

1996

1999

# ACIP Hepatitis A Vaccine Recommendations:

## Groups at increased risk of HAV infection or severe HAV disease

- Persons who use injection and non-injection drugs (2006)
- Men who have sex with men (2006)
- Persons with chronic liver disease (2006)
- International Travelers (2006)
- Persons with occupational risk for infection (2006)
- Persons who anticipate close personal contact with an international adoptee (2009)
- Persons experiencing homelessness (2019)
- Persons with clotting-factor disorders (removal 2020)\*
- Persons with HIV (2020)
- Any person wishing to obtain immunity





https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html

MMWR 1996;45(RR-15); MMWR 1999;48(RR-12); MMWR 2006;55(RR-7); MMWR 2020; 69(5); 1-38

# Hepatitis B Vaccine

# **Hepatitis B Vaccine**

### Introduced in 1982

• Safe, immunogenic, effective

### Administered as 3- or 4-dose series, starting at birth

• Exception: Heplisav-B (2 dose series in adults)

## Available Hepatitis B Vaccines

- 1. Recombivax-HB (monovalent, aluminum adjuvant)
  - Approved for use at any age
- 2. Engerix-B (monovalent, aluminum adjuvant)
  - Approved for use at any age
- 3. Pediarix (combination DTaP-IPV-HepB)
  - Approved for doses administered at 6 weeks to 6 years of age
- 4. Twinrix (combination HepA-HepB)
  - Approved for use in adults > 18 years
- 5. Heplisav-B (monovalent, 1018 adjuvant)
  - Approved for use in adults > 18 years, 2-dose series over 1 month
- Primary 3-dose series efficacy, 90-95%



# **Hepatitis B Vaccine Protection**

- Vaccine offers:
  - 90-95% protection against hepatitis B infection among infants born to HBsAg-positive mothers<sup>1,2,3</sup>
  - >90% protection among healthy adults who complete the 3-dose series<sup>1,2,3</sup>
- Immunity lasts at least 3 decades<sup>4</sup>
- Immunocompetent persons remain protected, even if anti-HBs titers decline to < 10 mIU/mL<sup>4</sup>

<sup>1</sup>Assad et al. Vaccine. 1999
<sup>2</sup>Venters et al. Expert Rev Vaccines. 2004
<sup>3</sup>Andre et al. Am J Med. 1989
<sup>4</sup>Bruce et al. J Infect Dis 2016



# Hepatitis B (HepB) Vaccine Safety

- HepB vaccines are safe with rare side effects/adverse reactions<sup>1</sup>
- Most frequent side effects are pain at injection site and fever<sup>1</sup>
- Evidence supports association between HepB vaccine and anaphylaxis in yeast-sensitive persons<sup>2,3</sup>
  - Estimate incidence 1.1 per million doses administered (95% CI 0.1-3.9)
  - Vaccination is contraindicated for these persons
- HEPLISAV-B vaccine trials reported more cardiovascular events compared to Engerix, but not statistically significant<sup>4</sup>

<sup>1</sup>Lewis et al. Pediatr Infect Dis J. 2001;20: 1049--54 <sup>2</sup>IOM. 2011 <sup>3</sup>Bohlke et al. Pediatrics 2003;112:815–20 <sup>4</sup>Schillie et al. MMWR Recomm Rep. 2018 Jan 12;67(1):1-31



# **Contraindications U.S.-Licensed HepB Vaccines**

- History of hypersensitivity to yeast or any vaccine component
  - Persons with history of serious adverse events (e.g., anaphylaxis) after receipt of HepB vaccine should not receive additional doses
- Precaution: Vaccination of persons with moderate or severe acute illness, with or without fever, should be deferred until illness resolves (as with other vaccines)



Vaccine Information Statement (VIS) https://www.cdc.gov/vaccines/hcp/vis/vis-statements/hep-b.html

# ACIP Recommendations for HepB Vaccination: Infants, Children, and Adults

- Persons at risk for infection by sexual exposure
  - Sex partners of HBV-infected persons
  - Sexually active persons with multiple partners, men who have sex with men
  - Persons seeking evaluation or treatment for STI
- Persons at risk for infection by percutaneous/mucosal exposure to blood
  - Current or recent injection-drug users
  - Household contacts of HBV-infected persons
  - Residents and staff of facilities for developmentally disabled persons
  - Healthcare and public safety workers
  - Persons with end-stage renal disease
  - Persons with diabetes
- Others
  - International travelers to regions with high/intermediate HBV infection
  - Persons with chronic liver disease (updated and clarified in 2018 recommendations)
  - Persons with HIV infection



All other persons seeking protection from HBV infection



Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices



# **Summary**

 CDC and the Advisory Committee on Immunization Practices (ACIP) recommend that people who use drugs (PWUD) and people who inject drugs (PWID) get <u>vaccinated against hepatitis A</u> and that PWID get <u>vaccinated against hepatitis B</u>



# Communication Materials Encouraging Hepatitis A and Hepatitis B Vaccination in PWID

Amanda Carnes, MPH Education, Training & Communication Team Division of Viral Hepatitis

# **Communication Materials for Widespread Hepatitis A Outbreaks**

# Materials for the public

- Fact sheets
- Posters
- Pocket cards

# Materials for professionals

- Website
- Poster
- Flyer
- Vaccine hesitancy guidance



#### www.cdc.gov/hepatitis/HepAOutbreak

# Hepatitis A Outbreak Communication Materials for Targeted Outreach to PWID

Fact sheet

Posters





#### HEPATITIS A CAN BE PREVENTED WITH A SAFE AND EFFECTIVE VACCINE.



# HEPATITIS A Outbreak

#### PROTECT YOURSELF AND YOUR COMMUNITY. GET VACCINATED.

Hepatitis A can make you sick for weeks to months. Some people have even died in this outbreak. The virus is spreading person to person among people who use or inject drugs. But hepatitis A can be prevented with a safe and effective vaccine.



www.cdc.gov/hepatitis/HepAOutbreak

# CDC Website Highlighting Scientific Guidance and Recommendations for PWID

#### People Who Use or Inject Drugs and Viral Hepatitis

People who use or inject drugs should be vaccinated against hepatitis A, and people who inject drugs should be vaccinated against hepatitis B. People who inject drugs should be tested for hepatitis B and hepatitis C.

CDC and the Advisory Committee on Immunization Practices (ACIP) recommend that people who use drugs (PWUD) and people who inject drugs (PWID) get <u>vaccinated against hepatitis A</u> and that PWID get <u>vaccinated against hepatitis B</u>. Because of higher rates of infection among this population, CDC also recommends testing anyone who has injected drugs for hepatitis B. CDC now recommends one-time <u>hepatitis C testing of all adults</u> (people 18 years and older). CDC continues to recommend that people with risk factors, including people who inject drugs, be tested regularly.



#### People Who Use or Inject Drugs and Hepatitis A

Current <u>widespread outbreaks</u> of hepatitis A are occurring across the country. Such outbreaks are believed to occur through both percutaneous and fecal-oral routes. Severe complications, high rates of hospitalization, and even deaths have occurred nationwide as a result of these outbreaks. While hepatitis A can affect anyone, in these outbreaks certain groups are at greater risk of being infected, including people who use or inject drugs. To help stop the outbreaks, CDC recommends the hepatitis A vaccine for PWUD and PWID.

#### People Who Inject Drugs and Hepatitis B and Hepatitis C

Both hepatitis B and hepatitis C are bloodborne diseases. PWID are at risk for hepatitis B virus (HBV) and hepatitis C virus (HCV) infection through the sharing of needles and any equipment used to prepare and inject drugs. In recent years, an emerging HCV epidemic has been occurring among young PWID, particularly in rural and suburban settings, underscoring the need for routine hepatitis C testing for people who continue to engage in high-risk behaviors.

#### Scientific Guidelines and Recommendations

Prevention of Hepatitis A Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices, 2020 MMWR 2020;69(5);1–38

CDC Recommendations for Hepatitis C Screening Among Adults — United States, 2020 MMWR 2020; 69(2);1–17

#### https://www.cdc.gov/hepatitis/populations/idu.htm

## New Communication Materials Encouraging Service Providers to Vaccinate PWID



https://www.cdc.gov/hepatitis/populations/idu.htm#resources-HCP

# New Communication Materials Encouraging Vaccination Among PWID



You have the power to protect yourself from hepatitis A and hepatitis B. Get vaccinated.



Your life is worth it. Protect yourself from hepatitis A and hepatitis B with safe, effective vaccines.



 You're a survivor.

 Ask your healthcare provider to protect your liver against hepatitis A and hepatitis B with safe, effective vaccines.

You are a survivor. Your story doesn't end here. People who inject drugs are at risk for hepatitis A and hepatitis B, but you can get safe, effective vaccines now that can protect your liver. Ask a healthcare provider or local syringe services program for these shots today.



You are a survivor. You deserve to be healthy. Safe, effective vaccines can protect you from hepatitis A and hepatitis B. Your life is worth it.





If you've ever used or injected drugs, make sure your liver is protected from **hepatitis A** and **hepatitis B**. Ask your healthcare provider for safe, effective vaccines today.



# Thank you!

Questions? <u>AAsher@cdc.gov</u> <u>MDoshani@cdc.gov</u> <u>CCarnes@cdc.gov</u>

For more information, contact CDC 1-800-CDC-INFO (232-4636) TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



## Josh Swatek

Hepatitis and Harm Reduction Program Manager, New Mexico Department of Health







Expanding Hep B Vaccination Outreach in Philadelphia

# Hep B United Philadelphia

- A local community-owned coalition with over 70 coalition partners throughout Greater Philadelphia, PA led by the Hepatitis B Foundation
- Works with community partners throughout the city to expand awareness, screening and outreach to those vulnerable to hepatitis B.



# Hepatitis B in Philadelphia

• An estimated 25,132 people live with chronic hepatitis B in Philadelphia

- 30% of persons living with HBV are currently out of care
- Areas of the city with populations of persons who have immigrated from Africa, Asia and Eastern Europe have the highest burden

\* Data from the Philadelphia Department of Public Health



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# **Acute HBV in Philadelphia**





#### Philadelphia Department of Public Health Division of Disease Control

THOMAS A. FARLEY, MD, MPH Health Commissioner CAROLINE JOHNSON, MD Deputy Health Commissioner STEVEN ALLES, MD, MS Director, Division of Disease Control

## Health Advisory

Acute Hepatitis B Increases in Philadelphia

December 13, 2019

175% increase in confirmed acute hepatitis B cases from 2017-2019; especially among PWUD, and those living homeless



# ALPHABET

❶飞翅 ●¶<u></u>

TEST A-D & TEACH

REWARD



VACCINATE

LINK

## Viral Hepatitis Serology Study at Prevention Point

## HEP partnership with PPP & Hep B Foundation

- Started January 9th, 2018
- Enrolled 438 PPP Clients 18-39 years old
  - -Questionnaire
  - –Blood Draw
- Test for Infection and Immunity to Hep A, HepB, HepC, and HepD
- Link clients with infections to care and provide HepA and HepB vaccine to non-immune
- Measure rates of immunity and viral hepatitis infection among PWID in Philadelphia to inform practice

# Prevalence & Immunity of HEP A, B, C, D

Immunity Status	N=352	%
Нер А		
Susceptible	171	48.6
Immune - vaccine or past exposure	181	51.4
Нер В		
Susceptible	110	32.6
Immune - vaccine	145	43.0
Immune - past exposure	82	24.3
Нер А & В		
Susceptible	87	24.7

\*Upon investigation, participant was asymptomatic and did not meet disease case definition. + HCV Antibody available, no confirmatory RNA

# Education and Outreach at Prevention Point Philadelphia (local SSP)

- Late 2019 and Early 2020
- Providing education and resources for hepatitis A and hepatitis B vaccination
- Goal: By May 2020 start implementing hepatitis B testing and linkage to care and/or linkage to vaccination during the exchange.

## STOP THE SPREAD

#### **HEPATITIS A**

Is a virus spread through contaminated food or water.

#### **HEPATITIS B**

Is a virus spread through contaminated blood or through sexual contact with someone infected

### HEPATITIS A & HEPATITIS B CAN BE PREVENTED WITH VACCINATION

#### WHO SHOULD BE VACCINATED FOR HEPATITIS A

- Men who have sex with men (MSM)
- People who use recreational drugs
- People who inject drugs
- People with chronic liver disease (including hepatitis C)

#### WHO SHOULD BE VACCINATED FOR HEPATITIS B

- Men who have sex with men
   (MSM)
- People with HIV or Hepatitis C
- People who inject drugs
- People with more than one sex partner
- People who travel to countries where hepatitis B is common (Africa, Asia, Pacific Islands)
- People with diabetes

#### ASK YOUR DOCTOR TO GET VACCINATED FOR HEPATITIS A & B

WWW.HEPB.ORG



## Resources

*I was tested for hepatitis B and needed the vaccine.* I need the hepatitis B vaccine to be protected against hepatitis B infection.

I recieved the \_\_\_\_\_ dose series of the hepatitis B vaccine. There are two types of hepatitis B vaccines one that are two doses and another that are three doses.



HBsAg	+	-	-	-
Anti-HBs	-	+/-	+	-
Anti-HBc	+	+	-	-
Interpretation	Acute or chronic	Exposure to HBV	Immunity from	At risk for HBV
	infection		vaccination	infection
		At risk for		
		reactivation		
Action	Evaluation and	Follow up as	No further	Vaccinate
	further testing	appropriate	action required	

For more information or if you have questions contact (215)489-4900 or visit www.hepb.org



2.2 million HEPATITIS B Americans have **Hepatitis B** That could cause liver cancer. Less than half know they have it.

### Could you be one of them?

Were you or your parents born in Asia, Africa, or the Middle East?

Do you have HIV or hepatitis C?

Have you ever injected drugs?

Have you ever had a tattoo or piercing?



If you answered **YES** to any of these questions ask your health care provider about getting tested for **hepatitis B**. It may save your life!

# What about COVID-19?

All IN PERSON EVENTS CANCELED SINCE

#### MARCH 15TH

- Working with the Philadelphia Department of Public Health and the new 2dose hepatitis B vaccine to prioritize testing and vaccination through a testand vaccinate program in the same visit for PWID.
  - Actively recruiting for this program that should start within the next couple of months.
    - Working with MAT centers
    - Mobile Service Units

# What about COVID-19?

All IN PERSON EVENTS CANCELED SINCE

#### MARCH 15TH

- Pilot testing a "contactless" screening program for hepatitis B testing that sends individuals directly to labs for testing and follow this with linkage to care
  - We are working with community partners now to get the word out about this program



## Questions or Comments?

## For more information, you can contact Catherine Freeland, Email: Catherine.Freeland@hepb.org

# About NASTAD

WHO: A non-profit, non-partisan national association founded in 1992 that represents public health officials who administer HIV and hepatitis programs funded by state and federal governments.

WHERE: All 50 U.S. states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, seven local jurisdictions receiving direct funding from the Centers for Disease Control and Prevention (CDC), and the U.S. Pacific Island jurisdictions.

**MISSION:** NASTAD's mission is to end the intersecting epidemics of HIV, viral hepatitis, and related conditions by strengthening domestic and global governmental public health through advocacy, capacity building, and social justice.

**VISION:** NASTAD's vision is a world free of HIV and viral hepatitis.



If you are seeking Drug User Health Technical Assistance, NASTAD has several different mechanisms to meet your TA needs dependent on your affiliation and organization.



## **Q&A** PLEASE TYPE QUESTIONS IN THE CHAT BOX!

## CONNECT WITH US

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# THANK YOU FOR JOINING!