



**NATIONAL
NURSE-LED CARE
CONSORTIUM**
a PHMC affiliate



October 30, 2020

Philadelphia Hepatitis B
Surveillance Project

Hepatitis B in Philadelphia, 2020

Catherine Freeland, MPH and Meredith Henne, MPH
Public Health Management Corporation Webinar
October 30, 2020

Agenda

1. Clinical Overview
2. Philadelphia Epidemiology
3. Philadelphia Dept. of Public Health Programming
4. Hepatitis B Foundation Programming

Hepatitis B Overview for Providers

Catherine Freeland, MPH

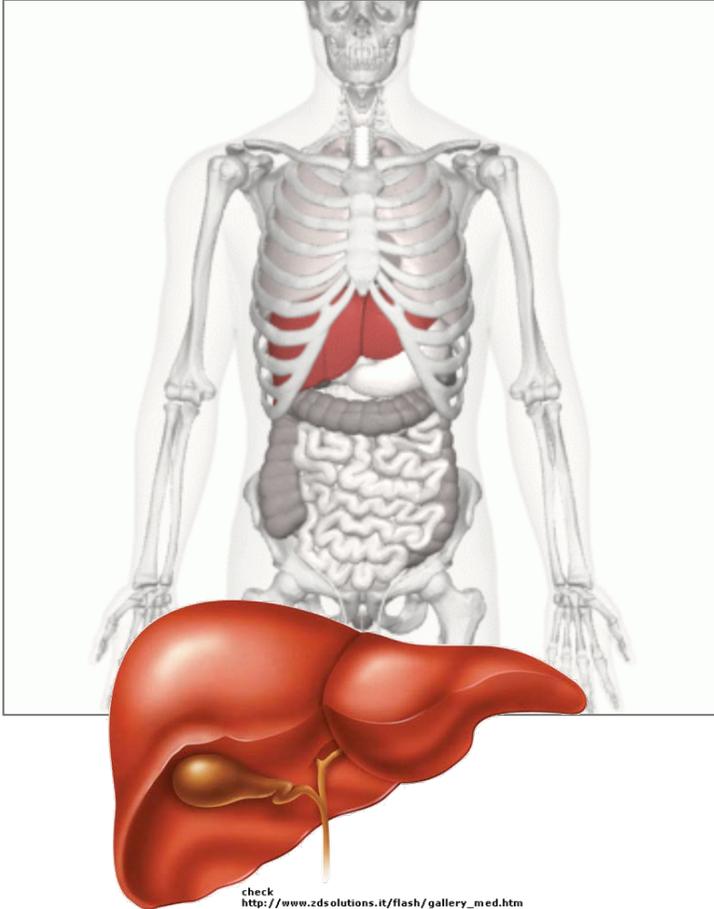
Public Health Program Director

Hepatitis B Foundation

Overview:

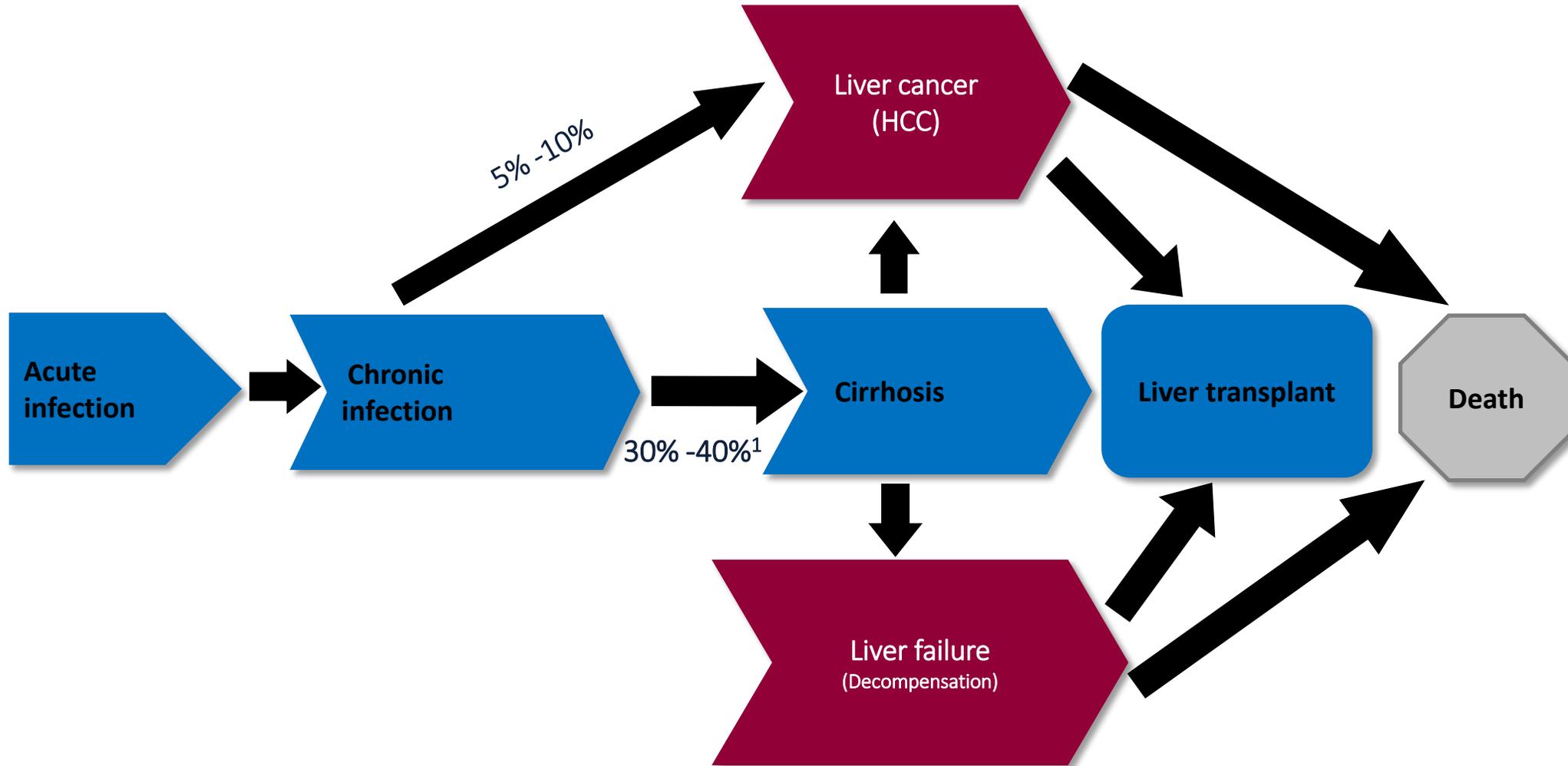
- Discuss risk factors, diagnostics, prevention through vaccination and clinical implications of hepatitis B
- Discuss hepatitis B epidemiology
- Discuss community outreach and the hepatitis B demonstration project in Philadelphia

Hepatitis B Basics



- Hepatitis B (Hep B) is caused by a virus
 - Blood-born and sexually transmitted
 - Majority of people with chronic infection were exposed at birth in areas of the world where hepatitis B is common
- Infection can be **acute and temporary**, or become **chronic life-long** infection
- Currently no cure, but treatment can help prevent serious health problems
- Vaccine preventable!

Hepatitis B Disease Progression



Source: 1. Moyer LA, Mast EE. Am J Prev Med. 1994;10(suppl):45-55. 2. Perrillo RP, et al. Hepatology. 2001;33:424-432.

Hepatitis B Prevention



- Safe and effective 3-dose hepatitis B vaccine
- Hep B vaccination is recommended for:
 - ALL infants and children ≤ 18 yrs,
 - health care professionals,
 - sexually active individuals with more than 1 partner,
 - MSM,
 - individuals using illegal drugs,
 - sexual partners or close household contacts with a person living with HBV, individuals born, or have parents born in countries where HBV is prevalent,
 - people living with HCV, HIV, diabetes, or undergoing kidney dialysis,
 - residents and staff of long-term care facilities
 - families adopting from countries where HBV is common.
- The hepatitis B vaccine is the first “anti-cancer” vaccine
- Start with a birth dose for a lifetime free of hepatitis B!

Types of Vaccinations

Single-antigen hepatitis B vaccines:

- ENGERIX-B®, RECOMBIVAX HB®, HEPLISAV-B™
(Hepelisav-B approved for adults only)

Combination vaccines

- PEDIARIX®: Combined hepatitis B, diphtheria, tetanus, acellular pertussis (DTaP), and inactivated poliovirus (IPV) vaccine. Cannot be administered before age 6 weeks or after age 7 years.
- TWINRIX®: Combined Hepatitis A and hepatitis B vaccine. Recommended for persons aged ≥18 years who are at increased risk for both Hepatitis A virus and HBV infections.

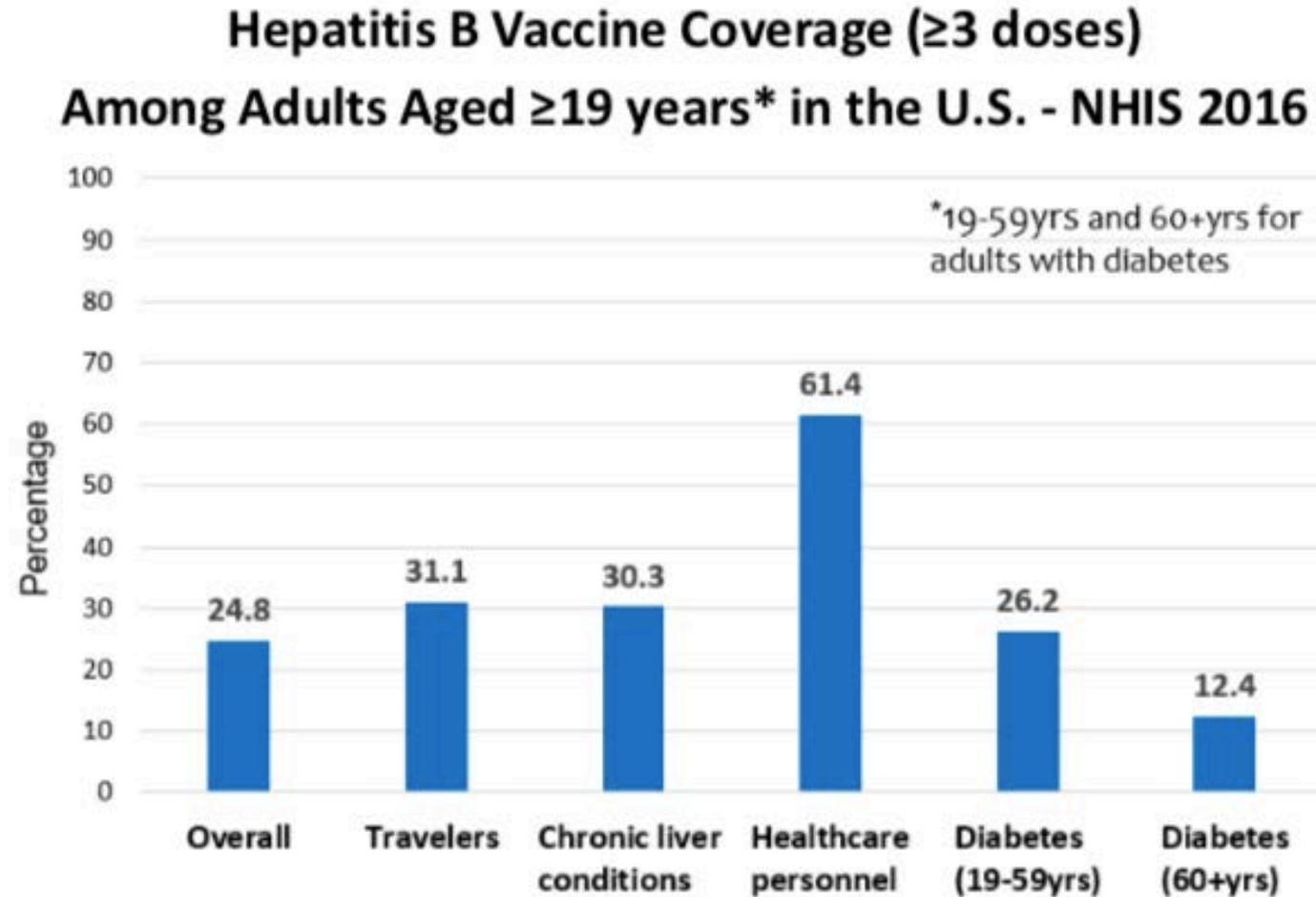
2 POKES.

A lifetime of protection.



HEPLISAV-B
CAN BE COMPLETED WITH
2 SHOTS IN 1 MONTH

Adult Vaccination Coverage



National Foundation for Infectious Diseases

Who should be tested for hepatitis B?

Region†	Countries‡		
Africa	All		
Asia§	Population	Recommendation	Grade (What's This?)
Australia and South Pacific	Persons at High Risk for Infection	The USPSTF recommends screening for hepatitis B virus (HBV) infection in persons at high risk for infection.	B
Middle East			
Eastern Europe	All except Hungary		
Western Europe	Malta, Spain, and indigenous populations in Greenland		
North America	Alaska natives and indigenous populations in northern Canada		
Mexico and Central America	Guatemala and Honduras		
South America	Ecuador; Guyana; Suriname; Venezuela; and Amazonian areas of Bolivia, Brazil, Colombia, and Peru		
Caribbean	Antigua and Barbuda, Dominica, Grenada, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, and Turks and Caicos Islands		
Risk Group	Persons with HBV Infection, %	Reference	
HIV-positive persons*	4.0–17.0	2, 6	
Injection drug users	2.7–11.0	2, 7	
Household contacts or sex partners of persons with HBV infection	3.0 to 20.0	2	
Men who have sex with men	1.1 to 2.3	2	

What should high-risk be tested for?

- 1) HBsAg (Hepatitis B surface antigen) - A "positive" or "reactive" HBsAg test result means that the person is infected with hepatitis B.**
- 2) anti-HBs or HBsAb (Hepatitis B surface antibody) - A "positive" or "reactive" anti-HBs (or HBsAb) test result indicates that a person is protected against the hepatitis B virus.**
- 3) anti-HBc or HBcAb (Hepatitis B core antibody) - A "positive" or "reactive" anti-HBc (or HBcAb) test result indicates a past or current hepatitis B infection.**

Diagnosing Hepatitis B: Acute vs. Chronic

- Anti-HBc IgM and IgG testing can usually indicate what type of infection
- **IgM = Recent (Acute) infection**
- **IgG = Chronic infection**
- There is no treatment for acute hepatitis B (no treatment to prevent it from becoming chronic)

Greater than 90% of healthy adults will clear an acute HBV infection without the need for medication.

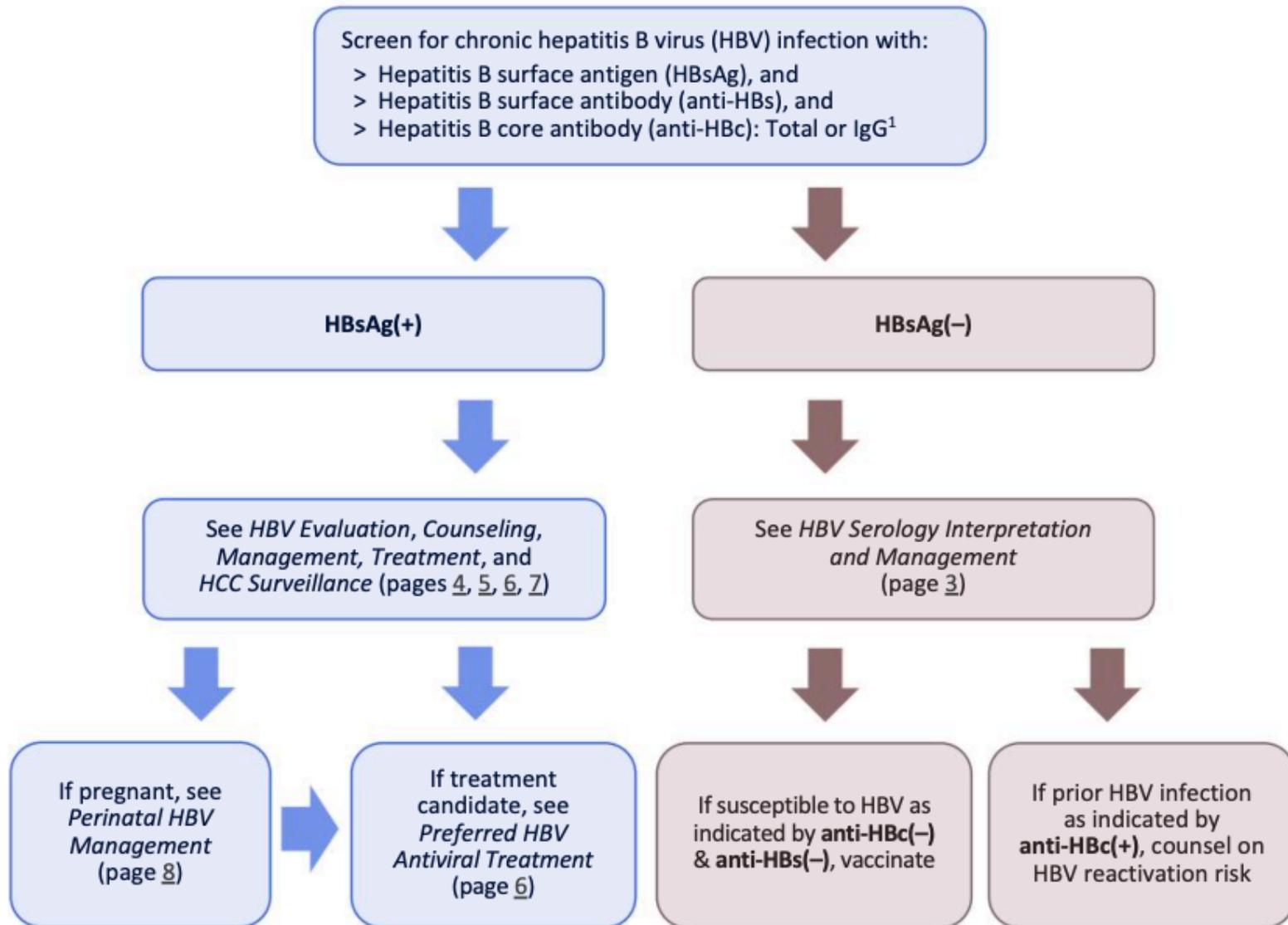


Greater than 90% of babies infected with HBV will live with chronic infection.

Chronic HBV Infection

- All chronically infected individuals need ongoing medical management as per AASLD guidelines
 - Includes routine screening for HCC
- Some chronically infected individuals need treatment
 - FDA approved antivirals can slow down viral replication and many reverse liver damage/prevent HCC with long-term treatment

Chronic Hepatitis B Testing and Management Algorithm



PCP
Algorithm
hepatitisb.uw.edu/page/primary-care-workgroup/guidance

¹ Do not include anti-HBc IgM in HBV screening panel unless suspect acute HBV.

HBsAg	Anti-HBc (Total or IgG)	Anti-HBs	Interpretation	Management
+	+	-/+	Current infection	<ul style="list-style-type: none"> > See <i>Evaluation, Counseling, Management, Treatment, and HCC Surveillance</i> (pages 4, 5, 6, 7) > Refer household and sexual contacts for HBV screening; if susceptible, vaccinate
-	+	+	Prior infection with immune control	<ul style="list-style-type: none"> > No transmission risk; HBV dormant in liver > Reactivation risk if on immunosuppressive medications
-	+	-	Prior infection or occult infection ¹	<ul style="list-style-type: none"> > If immunocompetent², counsel as prior infection above > Reactivation risk if on immunosuppressive medications > If immunocompromised, check HBV DNA for occult infection¹
-	-	+	Immune from prior vaccination	Protected for life. No need for booster vaccine
-	-	-	Susceptible	VACCINATE ³

Initial Evaluation of the HBsAg(+) Patient

History/Examination	Routine Laboratory Tests	Serology/Virology	Imaging/Staging Studies
<ul style="list-style-type: none"><input type="checkbox"/> Symptoms/signs of cirrhosis<input type="checkbox"/> Alcohol and metabolic risk factors<input type="checkbox"/> Family history of hepatocellular carcinoma (HCC)<input type="checkbox"/> Hepatitis A vaccination status	<ul style="list-style-type: none"><input type="checkbox"/> CBC comprehensive<input type="checkbox"/> Comprehensive metabolic panel including:<ul style="list-style-type: none">– AST/ALT– Total bilirubin– Alkaline phosphatase– Albumin– Creatinine<input type="checkbox"/> INR	<ul style="list-style-type: none"><input type="checkbox"/> HBeAg/anti-HBe<input type="checkbox"/> HBV DNA<input type="checkbox"/> Anti-HAV (total or IgG) to determine need for vaccination if none documented<input type="checkbox"/> Anti-HCV<input type="checkbox"/> Anti-HDV<input type="checkbox"/> Anti-HIV	<ul style="list-style-type: none"><input type="checkbox"/> Abdominal ultrasound<input type="checkbox"/> Elastography (e.g. FibroScan) <i>or</i> Serum fibrosis assessment¹ (e.g. APRI, FibroSure, FIB-4)

¹ APRI and FIB-4 scores can be calculated using platelet count and AST and ALT from routine labs. Calculators with score interpretation are available. See *Hepatitis B Online* [APRI calculator](#) and [FIB-4 calculator](#). FibroSure and FibroTest are commercially available blood tests that can be ordered as well.

Counseling of the HBsAg(+) Patient

1. Give a plan for follow-up care. Patients will need regular (minimum every 6 months) follow-up and monitoring for disease progression.
2. Educate and counsel on the long-term implications of chronic HBV infection (e.g., cirrhosis and hepatocellular carcinoma).
3. Advise patient to inform all current and future medical providers of their HBsAg-positive status, especially if they ever need treatment for cancer or any immunologic condition such as rheumatoid arthritis or other immune disorders.
4. Counsel to avoid or limit alcohol use.
5. Advise to optimize body weight and address metabolic complications, including control of diabetes and dyslipidemia (to prevent concurrent development of metabolic syndrome and fatty liver).
6. Provide education on how to prevent transmission of HBV to others.

Management of the HBsAg(+) Patient¹

Cirrhosis	HBV DNA (IU/mL)	ALT (U/L)	Management
YES	Any	Any	<ul style="list-style-type: none"> > TREAT with antiviral medication (page 6) > Monitor HBV DNA and ALT every 6 months > Refer to specialist for screening endoscopy and, if needed, for other cirrhosis-related complications > HCC surveillance, including in persons who become HBsAg(-) (page 7) > All patients with decompensated cirrhosis² should be promptly referred to a hepatologist
		Elevated ³	<ul style="list-style-type: none"> > TREAT with antiviral medication (page 6) > Monitor HBV DNA and ALT every 6 months > Monitor HBeAg and anti-HBe every 6 months in patients who are HBeAg+ at time of treatment initiation to evaluate for seroconversion from HBeAg(+)/anti-HBe(-) to HBeAg(-)/anti-HBe(+) > Check HBsAg annually if/when HBeAg negative
NO		Normal	<ul style="list-style-type: none"> > Monitor HBV DNA and ALT every 6 months > Liver fibrosis assessment every 2 to 3 years
		Elevated ³	<ul style="list-style-type: none"> > Evaluate other etiologies for elevated ALT > Monitor HBV DNA and ALT every 6 months
		Normal	<ul style="list-style-type: none"> > Monitor HBV DNA and ALT every 6 months and HBsAg every 1 year for seroclearance

Treatment for hepatitis B

- **Antiviral Drugs (most common)** –These are drugs that stop or slow down the hepatitis B virus from reproducing, which reduces the inflammation and damage of your liver.
- Frontline oral medications, Taken daily, long term
 - Tenofovir disoproxil (Viread)
 - Tenofovir alafenamide (Vemlidy)
 - Entecavir (Baraclude)

Considerations for Referral to Liver Specialist

- Depends on the comfort level of the provider
- Consultation is important when there are other conditions such as:
 - HIV
 - NAFLD/NASH
 - Metabolic Syndrome
 - Persons only HBcAb
 - Indications of cirrhosis, fibrosis,

Hepatitis B Epidemiology in Philadelphia and Special PDPH Projects

Meredith Henne, MPH

Hepatitis B Coordinator

Philadelphia Department of Public Health

Hepatitis B in Philadelphia

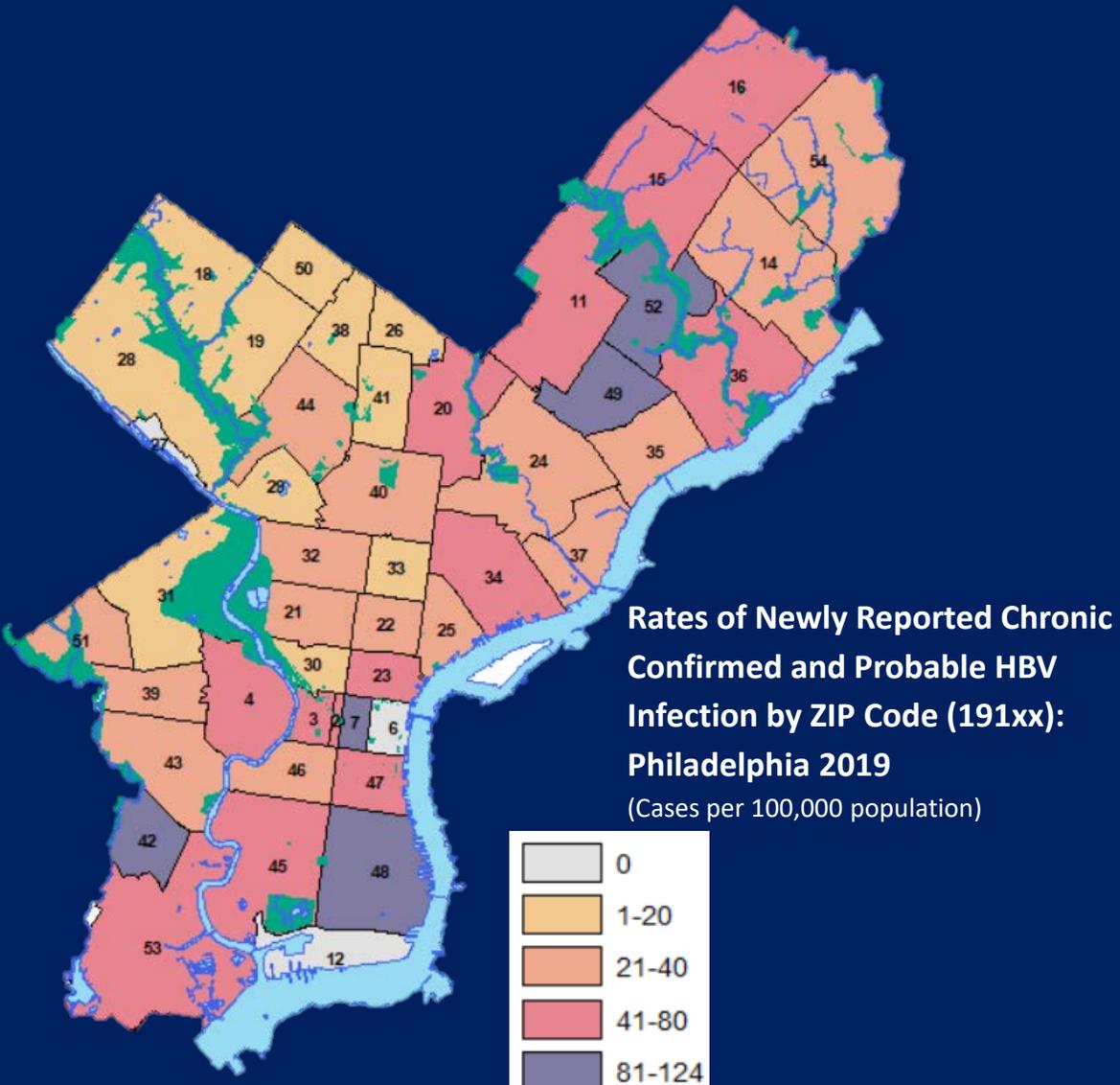
Surveillance-based HBV Data, Philadelphia							
	2014	2015	2016	2017	2018	2019	
Acute Cases	8	8	7	10	12	43	
PHBPP mother-infant pairs	164	155	174	141	144	140**	
New Chronic Cases							
Total	884	789	809	730	782	698	
Sex	Male	480	471	470	432	459	412
	Female	401	317	336	295	316	281

- PA has the 4th highest newly reported chronic HBV cases in the nation*
 - Philadelphia accounts for 74% (n=865) of Pennsylvania 1,164 cases.
- PDPH is aware of 25,132 (1.6%) residents of Philadelphia living with HBV

*2016 CDC Viral Hepatitis report

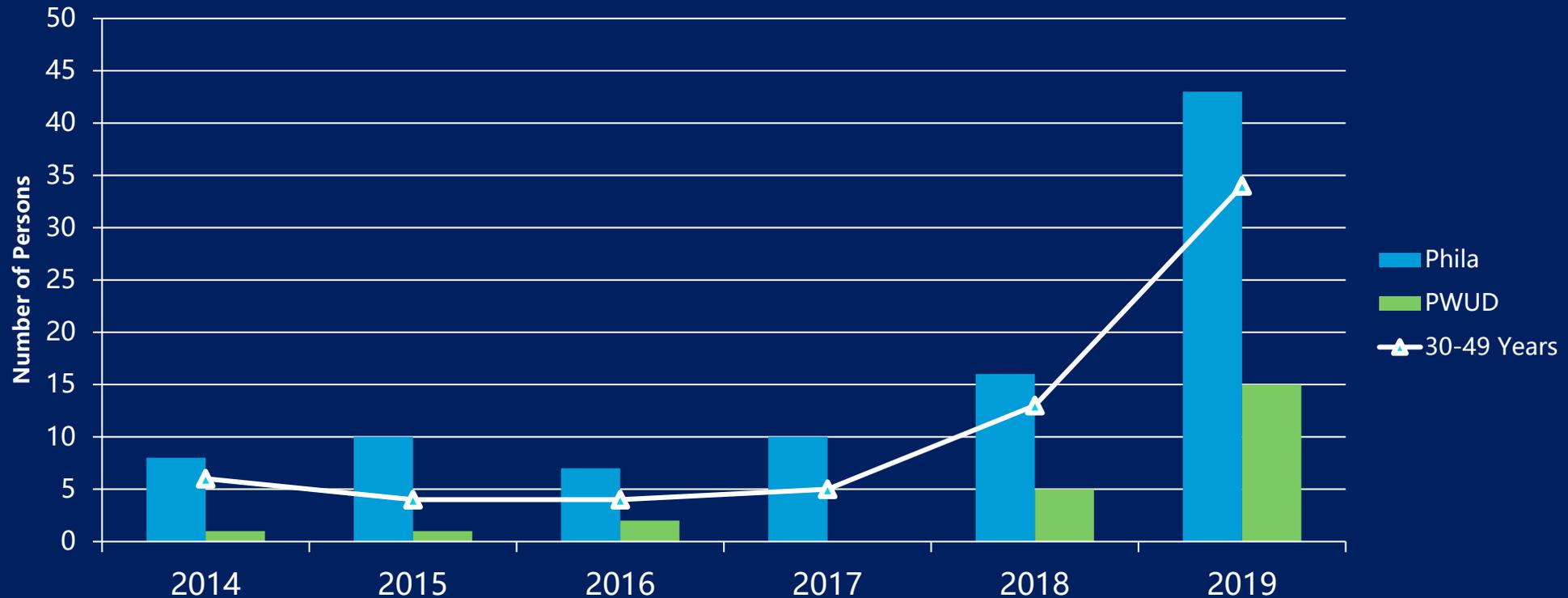
**Preliminary data

Chronic HBV in Philadelphia



- >25,000 individuals living with Hepatitis B infection (HBV)
- **66%** 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.

Reported Acute Hepatitis B: Philadelphia 2014-2019



- Current increases in acute HBV rates are being driven by people who use drugs (PWUD) and persons 30 to 39 years of age.
- **Challenges to identifying cases → symptoms often not present**

THOMAS A. FARLEY, MD, MPH
Health Commissioner

CAROLINE JOHNSON, MD
Deputy Health Commissioner

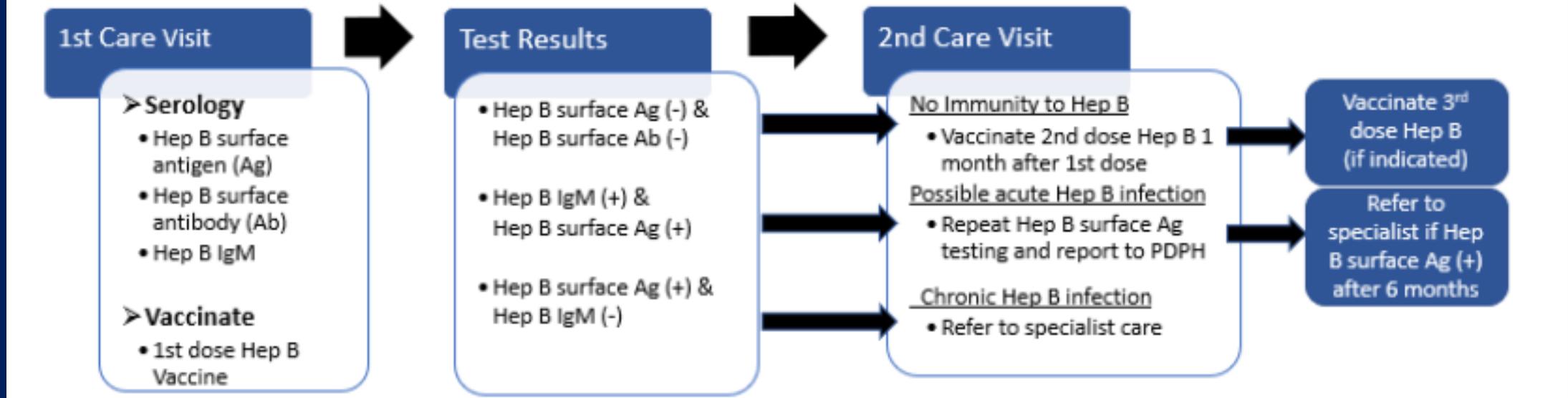
STEVEN ALLES, MD, MS
Director, Division of Disease Control

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



Hepatitis B Clinical Care Algorithm among people with increased risk of newly acquired infection



Prevention and Control

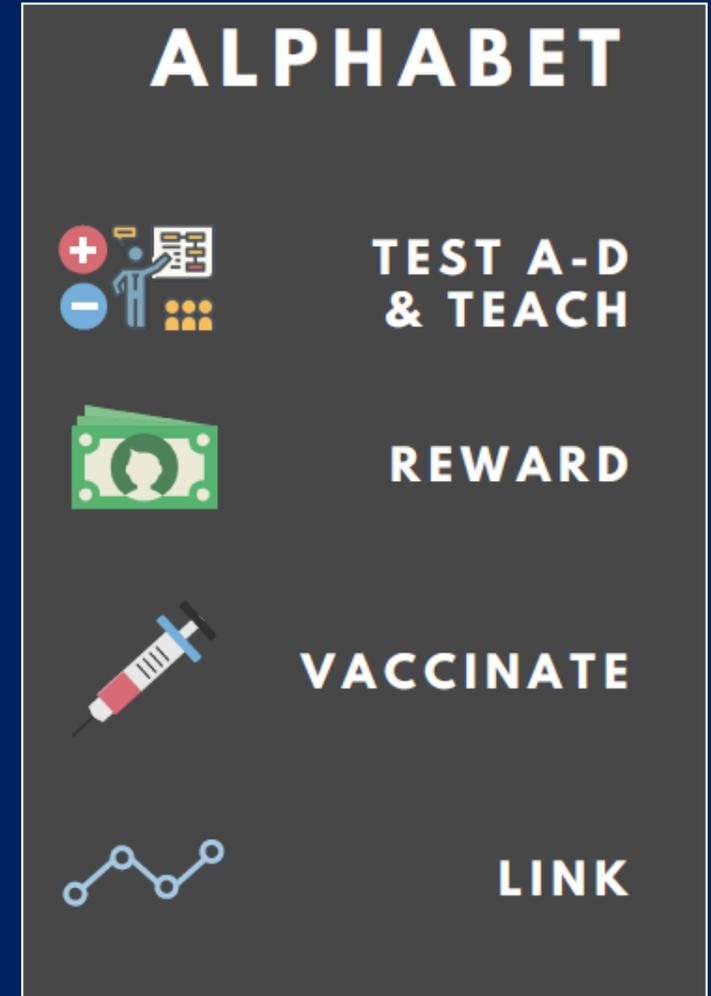
1. Vaccinate high risk persons
2. Consider acute HBV infection among patients with compatible symptoms
3. Counsel patients on safe sexual health practices

**All confirmed and suspected acute hepatitis B cases should be promptly reported to PDPH at 215-685-4509

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

All results presented are preliminary and subject to change

Immunity Status	N=384	%
Hep A		
Susceptible	186	48.4
Immune - vaccine or past exposure	198	51.6
Hep B		
Susceptible	148	40.9
Immune - vaccine	153	42.3
Immune - past exposure	61	16.9
Hep A & B		
Susceptible	93	25.8

Serological Status	N=384	%
Hep A		
Acute Infection	0	0.0
IgM Positive – Not a case*	1	0.3
Hep B		
Current infection	7	1.8
Past/cleared infection	77	20.3
No infection	295	77.8
Hep C		
Current infection	160	42.3
Past/cleared infection	46	12.2
Past or Current infection - status unknown [†]	19	5.0
No infection	153	40.5
Hep D		
Past/present infection	4	1.1
No infection	375	98.9

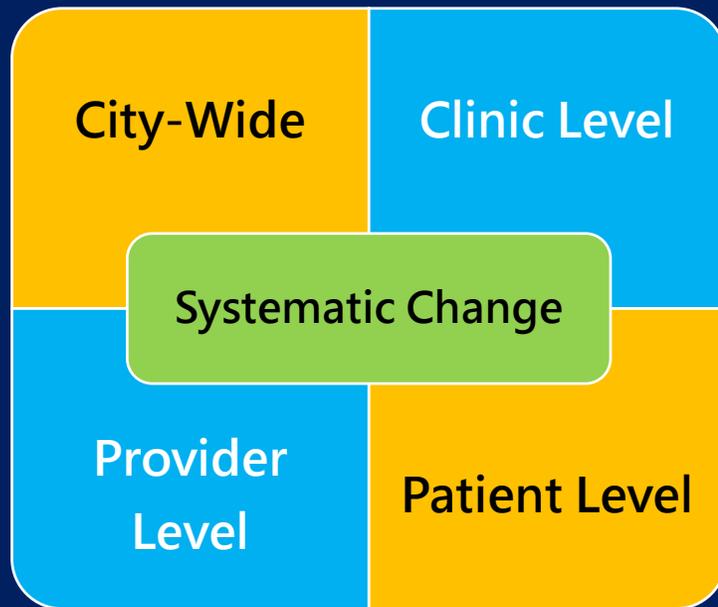
*Upon investigation, participant was asymptomatic and did not meet disease case definition.

[†] HCV Antibody available, no confirmatory RNA

Alphabet Study Key Points

- HBV and HAV vaccination coverage <50% among study participants
- Rate of past or current HBV infection 10X higher the national rate average
- Vaccination recall was low
- People who use drugs and homeless individuals should be vaccinated for HBV and HAV

Hepatitis B Virus Infection Prevention, Vaccination, Navigation, Testing, and Treatment Elimination Program (HBV PreVNTT)



- **Priority Communities:**
 - Asian/Pacific Islander and African Immigrants
 - People who Use Drugs
- **Cultural Competency & Harm Reduction Integration**
 1. Improve patient and provider HBV knowledge
 2. Improve HBV screening and treatment services
 3. Improve HBV vaccination coverage of the city

Partners



Department of
Public Health

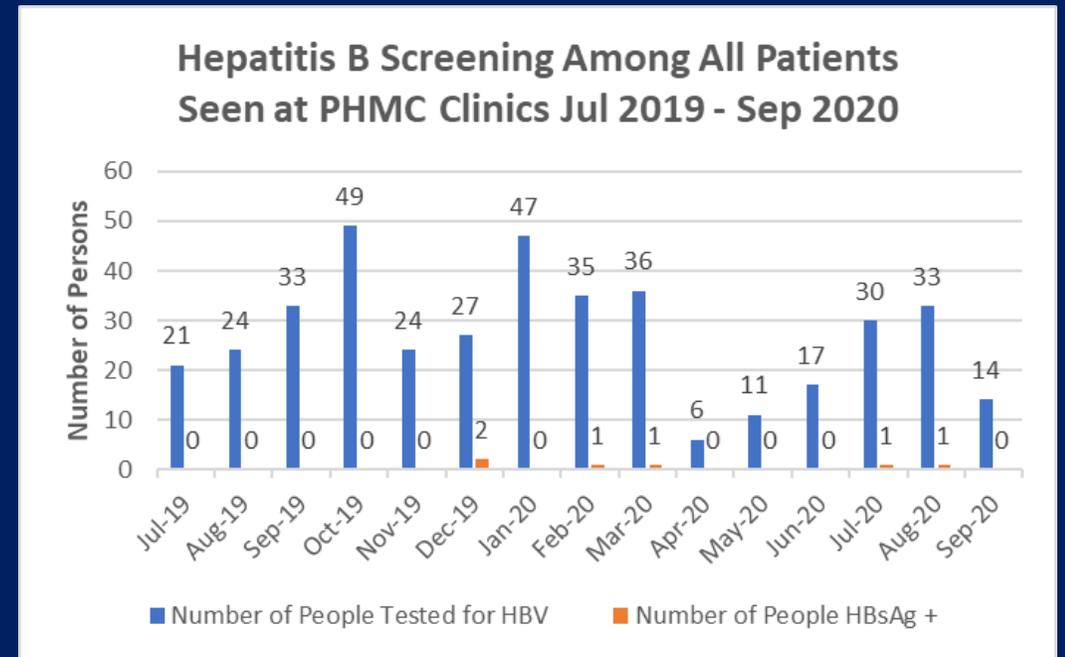
CITY OF PHILADELPHIA



HBV PreVNTT: NNCC/PHMC Partnership

Continuous Quality Improvement

- Identify and address gaps in HBV clinic-specific processes for screening, vaccination, linkage to care
- Collection of HBV-Specific Data
- **Screening:** Are you identifying all persons at risk for HBV, ordering and interpreting the correct serologic testing?
 - EMR Modifications, Assistance with Lab Interpretations
- **Vaccination:** Do you have access to HBV vaccine? Are you vaccinating all persons at risk for HBV?
 - Vaccines for Adults at Risk (VFAAR) Program
- **Linkage to Care:** Are you referring patients out for care (specialists)? Or are you treating and managing HBV care on site? How are you tracking patient's care?
 - City-Wide HBV Treating Provider List



Data from all 5 PHMC Health Centers
**Preliminary data

HBV PreVNTT: NNCC/PHMC Partnership

Hepatitis Awareness

Evaluating Vaccination and Treatment of Hepatitis B for People Who Use Drugs

Monday, July 27, 2020 at 12:00 pm ET



Hepatitis Awareness Month

Identifying and Managing Hepatitis B at the Primary Care Level During COVID-19

Wednesday, May 27, 2020 at 12:00 pm ET

Moderator: Christine Simon, MPH, Public Health Project Manager, NNCC



- **Provider Training on HBV**

- In partnership with Hep B Foundation
- Improve providers' capacity to screen, vaccinate, treat, and manage HBV on site
 - Webinars, Educational Materials, Technical Assistance

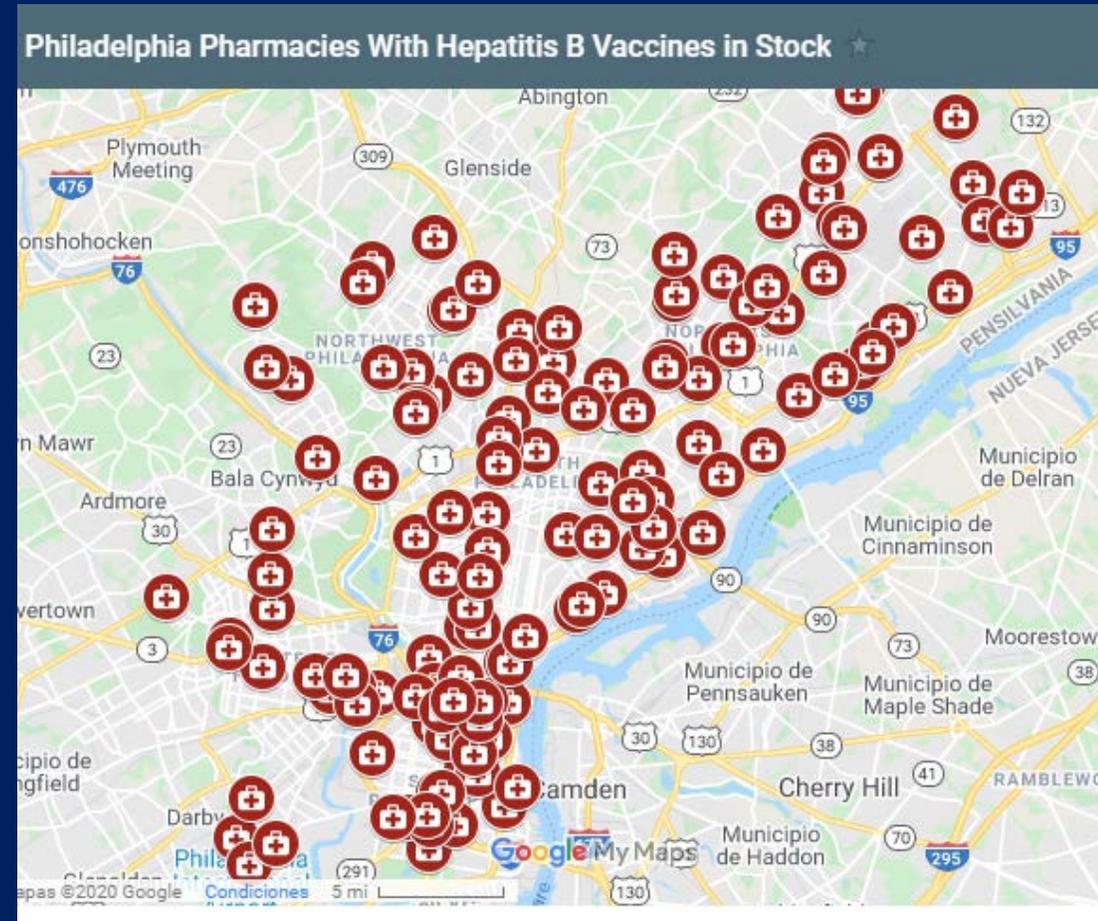
- **Online Webinars (w/ CME)**

- 5/27: Treating and Managing HBV at Primary Care Level During COVID-19
- 7/27: Evaluating HBV Vaccination for People who Use Drugs
- *TBD: Cultural Competency and Harm Reduction Training

HBV PreVNTT Sample Activity

Pharmacy Distribution of HBV Vaccination Assessment

- Pharmacies as alternative for providers
- In September 2019, PDPH surveyed 391 pharmacies in Philadelphia
- 149 pharmacies had hepatitis B vaccines in stock
- Areas with high numbers of Asian and African immigrants have no pharmacies with HBV vaccine in stock
- <http://www.hepcap.org/community-tools/pharmacy-vaccine-maps/>



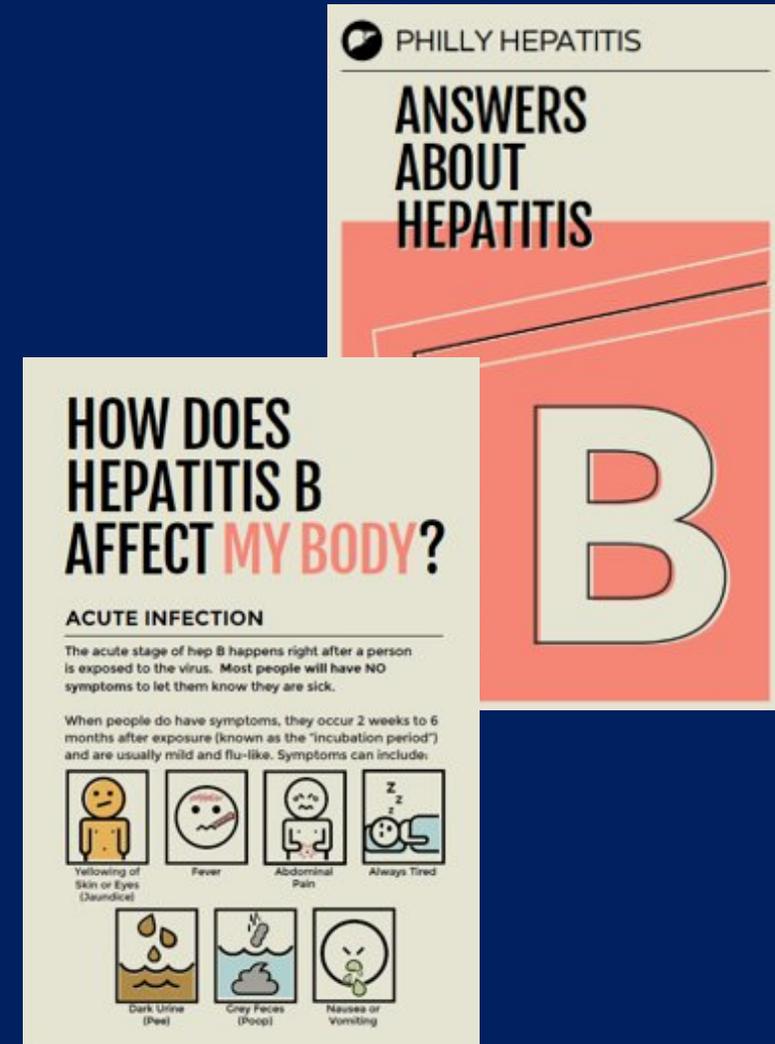
Hepatitis B Activities

Educational Materials

- Booklets, posters, wallet cards
 - Languages: Spanish & English, selected materials Vietnamese & Mandarin
- Perinatal Hepatitis B Specific Materials for patient and provider
- Requests to melissa.hobkirk@phila.gov

Patient Navigation Program

- Two patient navigators dedicated to linking people living with HBV to treating providers
- Need assistance with finding an HBV treating provider?
 - Please contact:
 - Melissa Beaz 215-683-3481
 - Jerrica Li 215-685-6505



Hepatitis B Foundation Special Projects and Activities

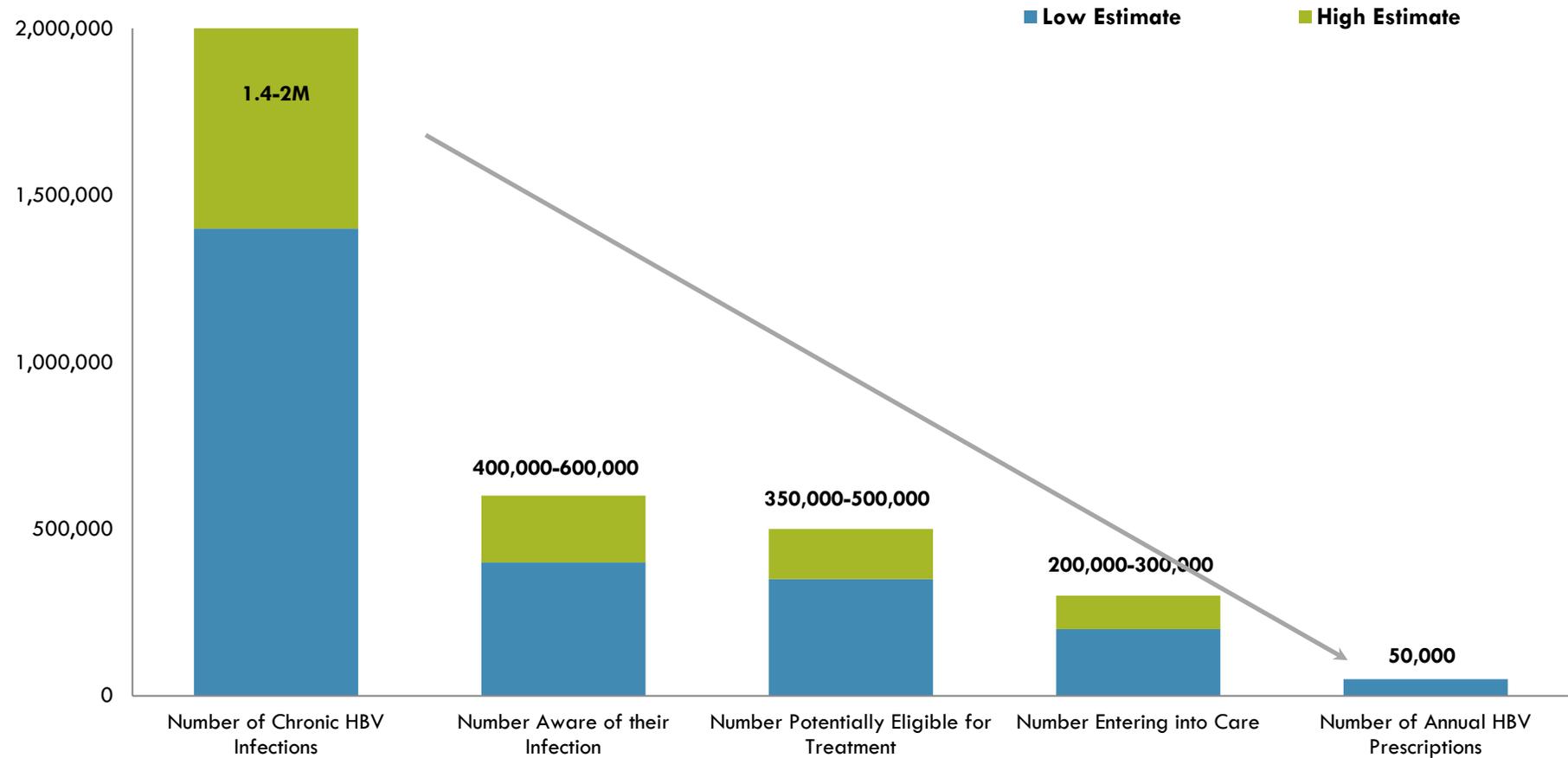
Catherine Freeland, MPH

Public Health Program Director

Hepatitis B Foundation

HBV Care Cascade

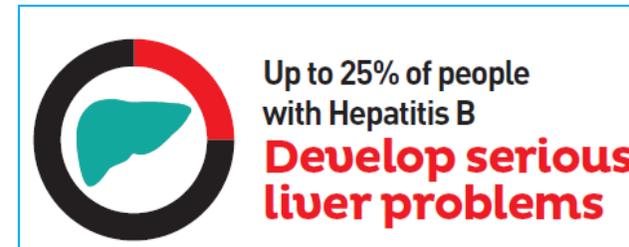
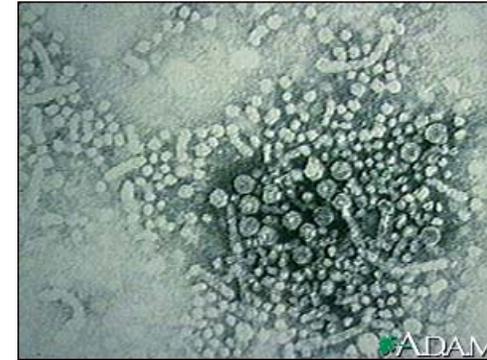
Only 30-35% of infected Americans are diagnosed
Less than 10% of all infected Americans are treated



Outcomes of Chronic HBV Infection

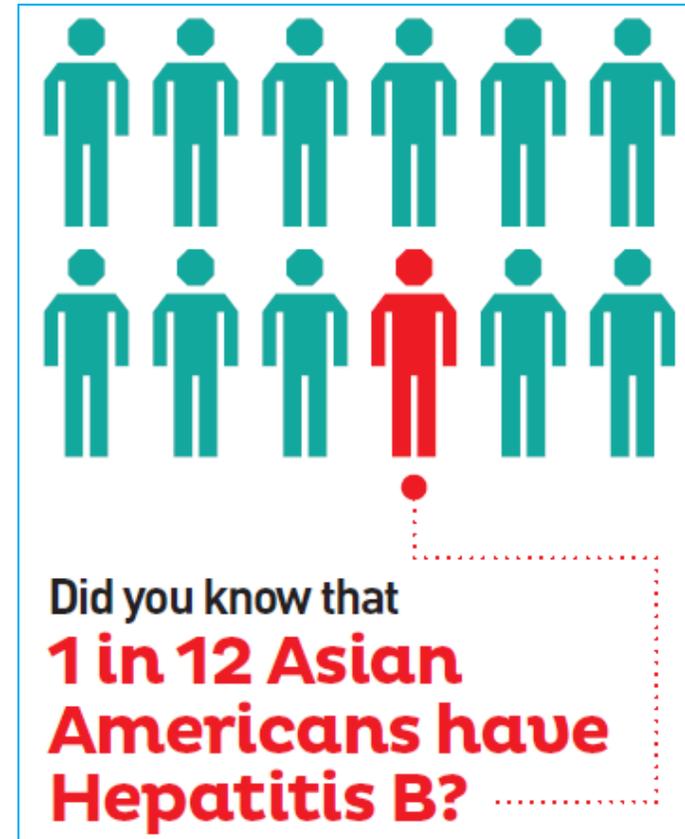
Left untreated, 1 in 4 will develop liver disease or liver cancer

- HBV causes 887,000 deaths each year worldwide due to cirrhosis, primary liver cancer (HCC), and liver failure
- HBV is #1 cause of liver cancer globally – the 2nd deadliest cancer in the world (after tobacco)
- **In the U.S., primary liver cancer is the only cancer rising in incidence and mortality rates**
- **The relative 5-year survival rate is 16.6%**



HBV-Related Health Disparities

- Asian Americans & Pacific Islanders carry 50% of chronic HBV burden
- 5% - 15% infection rates have been found in African-born community-based studies in the U.S.
- Double the rate of liver cancer
- Six times the rate of HBV-related mortality



Barriers to Patients

- Lack of understanding (screening, mother to child transmission)
- Cultural beliefs/shame
- Privacy
- Address culture barriers to screening
- Value of testing/treatment
- Asymptomatic
- Financial
- Language

Models for Overcoming Barriers

- Make HBV risk assessment and appropriate screening routine parts of care – EHR prompts, add risk assessment to standard intake forms, use flow chart
- Understand HBV screening guidelines to identify at-risk persons
- Identify effective ways to engage patients in HBV screening
- Identify opportunities for prevention through HBV vaccination
- Understand when/how to refer patients to specialists for HBV care
- Identify social service resources for patients (insurance, immigration, care access) and refer when appropriate

The Hepatitis B Foundation

Doylestown, PA



- 8 public health team employees
- 4 communications and development team employees
- 50 scientists

We are a national nonprofit organization dedicated to finding a cure and improving the quality of life for those affected by hepatitis B worldwide. Our commitment includes **funding focused research, promoting disease awareness, supporting immunization and treatment initiatives, and serving as the primary source of information for patients and their families, the medical and scientific community, and the general public.**



hepbunited.org

Hep B United: A National Coalition

Dedicated to reducing the health disparities associated with hepatitis B by increasing awareness, screening, vaccination, and linkage to care for high-risk communities across the United States.

- 30+ local coalitions & national organizations that focus on the Asian American & Pacific Islander communities.
- Collectively screen over 20,000 people each year
- Voices for local and national advocacy
- Co-brand the multi-lingual Know Hepatitis B campaign with CDC



Know Hepatitis B Campaign

Loving your family starts with
CARING FOR YOURSELF

.....

Talk to your doctor about getting tested for Hepatitis B.



Hep B United
hepbunited.org

KNOW HEPATITIS B™

HEPATITIS B: JE, UKO HATARINI?

Taarifa kwa Watu kutoka Afrika

Hepatitis B ni nini?
Hepatitis B ni ugonjwa unaosababishwa na kirusi cha Hepatitis B. Kinaweza kusababisha matatizo makubwa ya kiafya kadiri muda unayokwenda. Kiasi hiki kinaweza kuwafanya baadhi ya watu kuwa wagonjwa sana. Ugonjwa huu ni wa kawaida sana katika sehemu nyingi za ulimwengu, ikiwa ni pamoja na Afrika.

Hepatitis B unaenezwaje?
Watu hupata Hepatitis B wakati ambapo watu wanakutana na damu ya mtu ambaye ana kirusi hicho. Hepatitis B unaweza kuenezwa kutoka kwa mama aliyembukizwa kwenda kwa mtoto wake anapozaliwa au kutoka kwa mwanafamilia kwenye watoto waidoga. Kiasi hiki kinaweza pia kuenezwa kwa kufanya ngono na mtu aliyembukizwa. Hepatitis B kinawezwa kwa njia sawa na HIV, lakini huenea kwa urahisi zaidi. Hepatitis B haienezi kwa njia ya kunyonyesha, kukumbatiana, kupigana busu, kushikana mikono, kukohoa au kupiga chafya.

Je, watu wenye Hepatitis B wanajihisi kuumwa?
Watu wengi wanajihisi na Hepatitis B kwa miaka mingi bila kuhisi kuumwa. Baada ya muda, Hepatitis B inaweza kusababisha kuharibika kwa ini, ini kushindwa kufanya kazi, na hata pia saratani ya ini.

Watu wanajuaje kama wana Hepatitis B?
Njia pekee ambayo watu wanajua kuwa wana Hepatitis B ni endapo watapimwa damu ili kuangalia Hepatitis B. Hiki ni kipimo rahisi ambacho hutoa damu kidogo kutoka kwenye mikono wa mtu. Watu wanapaswa kuwa ilizwa madaktari wao endapo wanapaswa kupimwa Hepatitis B.

Kwa Taarifa Zaidi
Ongeza na daktari wako, piga simu kwa idara ya afya ya eneo lako, au tembelea www.cdc.gov/hepatitis kwa taarifa kwa Kiingereza.



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

www.cdc.gov/hepatitis

LOVING YOUR FAMILY STARTS WITH GETTING A HEPATITIS B BLOOD TEST.

ĐINH BẮT ĐẦU VỚI VIỆC KIỂM MÁU MÀNG B.

혈액 검사, 시작입니다.

從接受肝炎檢查開始。

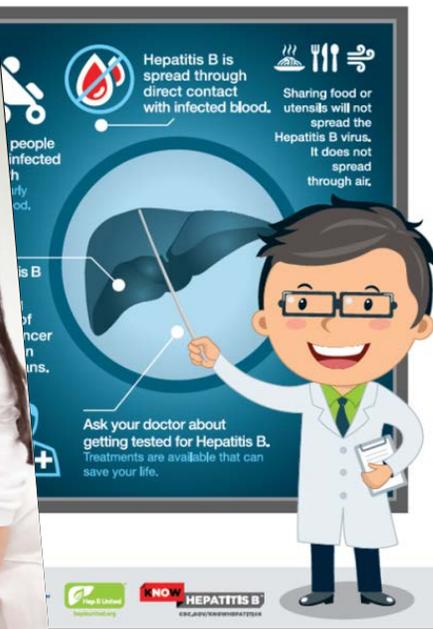


KNOW HEPATITIS B™
HEPBUNITED.ORG

A Lesson on Hepatitis B That Could Save Your Life

CDC recommends Asian Americans get tested for Hepatitis B

Hepatitis B is spread through direct contact with infected blood. Sharing food or utensils will not spread the Hepatitis B virus. It does not spread through air.



Ask your doctor about getting tested for Hepatitis B. Treatments are available that can save your life.

HEPBUNITED.ORG

Hep B United Philadelphia

- Local outreach, education and screening for hepatitis B
- Community based coalition with over 60 partners
- Free community-based testing in high-risk communities
 - Screened over 6,000 individuals in Greater Philadelphia
 - Educated over 10,000
 - Vaccinated over 500

Resources for your practice

- CDC Know Hepatitis B Campaign: <https://www.cdc.gov/knowhepatitisb/materials.htm>.
- Algorithm for PCP: hepatitisb.uw.edu/page/primary-care-workgroup/guidance
- Provides vaccine cards, multi-lingual fact sheets (Korean, Chinese, Vietnamese, Burmese, Hmong, Khmer, Lao, Amharic, Arabic, French, Somali, Swahili)
- **Newly diagnosed patients**, can call the Hepatitis B Foundation's consultation phone line (215)489-4900, or email: info@hepb.org



Hepatitis B Treatment

- Interprofessional case-based training model
- Experts provide recommendations, mentorship, and guidance
- Offers CEUs to learners
- Goal to improve primary care provider capacity

[Project ECHO](#)

Questions?

Catherine Freeland, MPH
Public Health Program Director
Hepatitis B Foundation
Catherine.Freeland@Hepb.org

Meredith Henne, MPH
Hepatitis B Coordinator
Philadelphia Dept. of Public Health
Meredith.henne@phila.gov

