



# Hepatitis B

## Guidance for Public Health

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April 2022

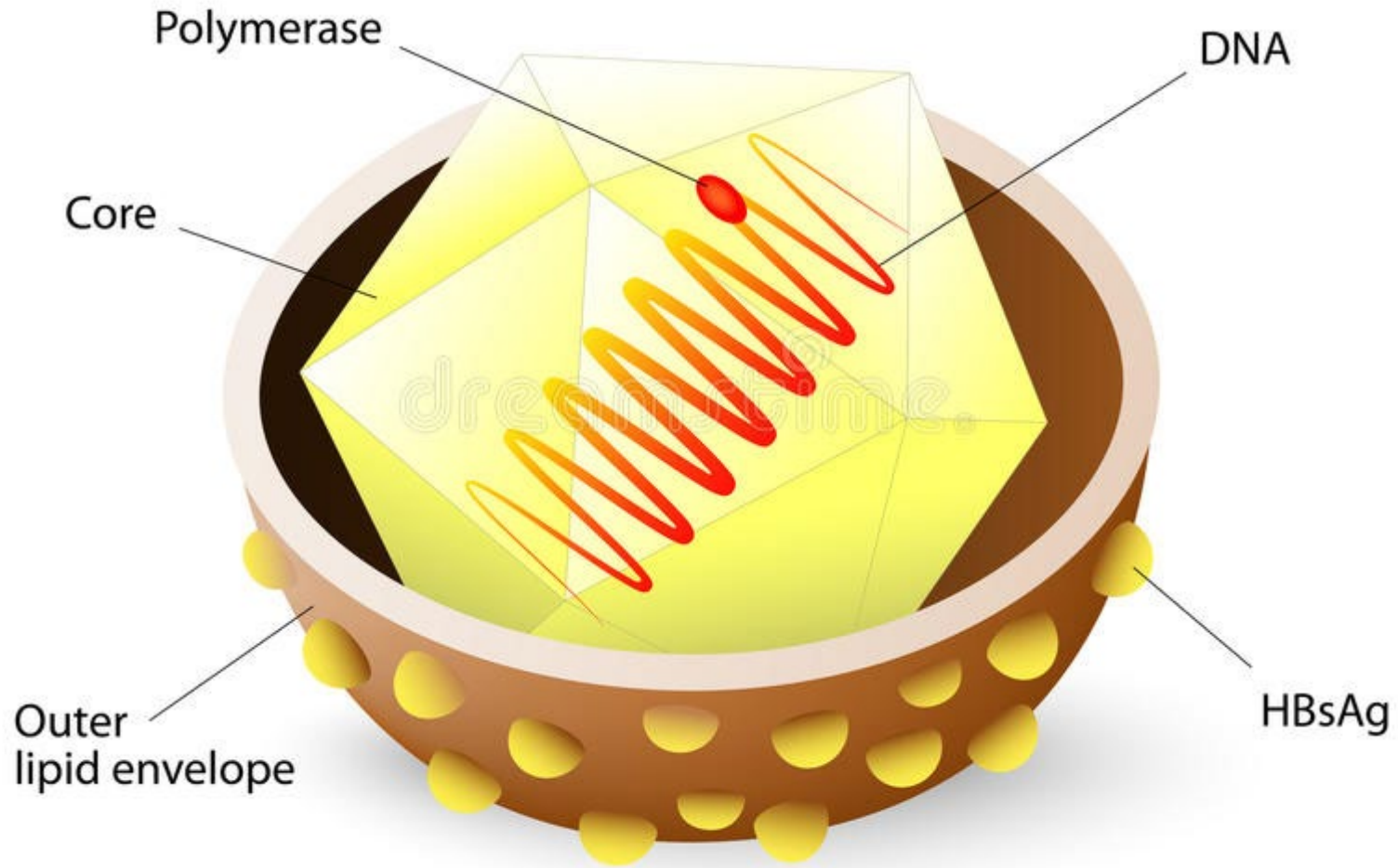
# Overview

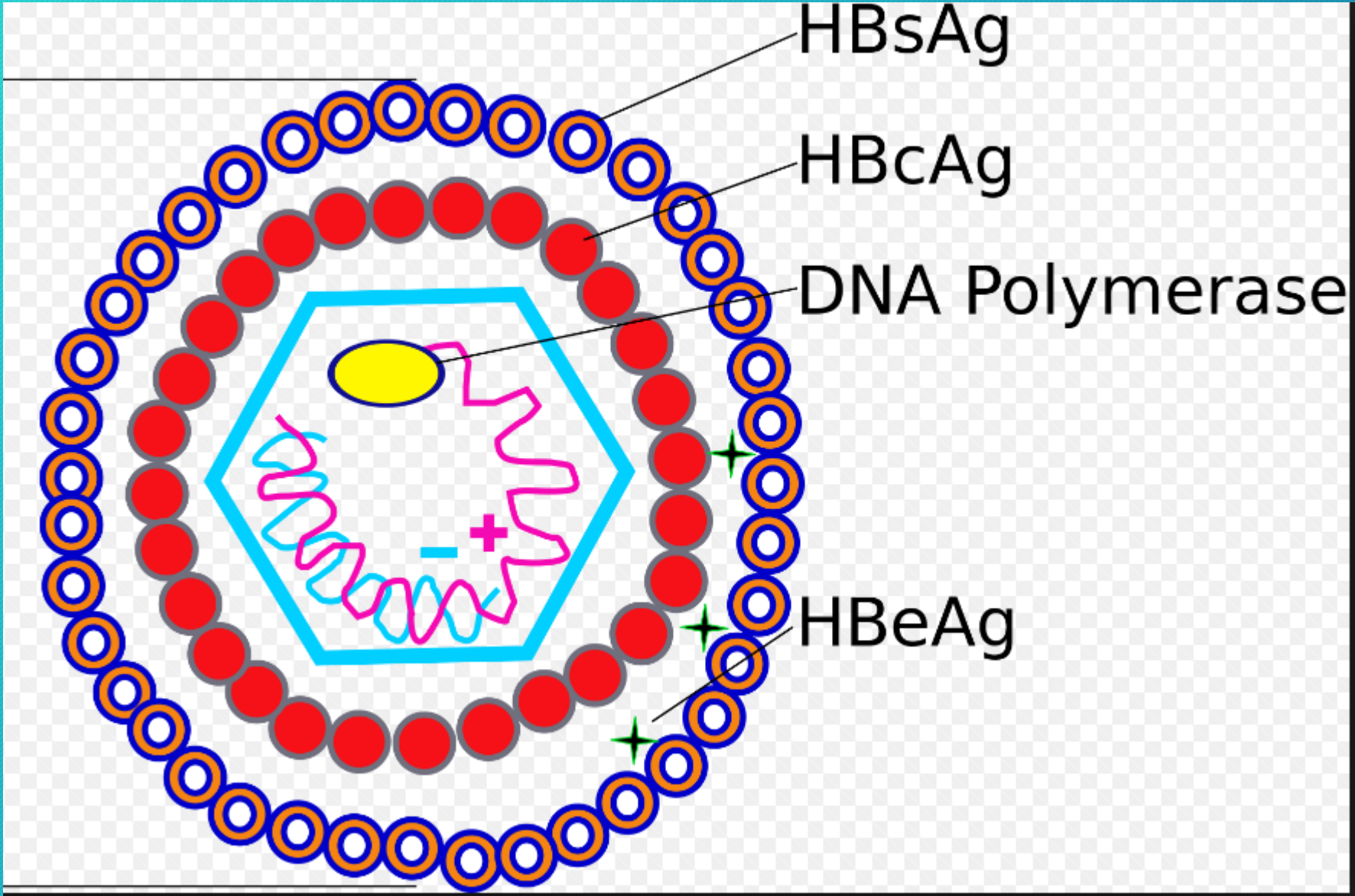
- Hepatitis B
  - Serology
  - Acute, Chronic and Perinatal
  - CSTE Definition vs. Physician Diagnosis
  - Who is at Risk, Who Needs Screened
  - Vaccine Recommendations
- MIDIS Case Studies
- Resources
- Summary
- Q & A

# Hepatitis B Virus (HBV)

- Hepadnavirus
  - Different from Hepatitis A and Hepatitis C
- Double-stranded **DNA** virus surrounded by an outer lipoprotein coat
  - Numerous antigenic components
  - 8 main genotypes (A-H)
- Humans are only known host

# Hepatitis B virus





# Antigen vs. Antibody

## Antigen

- A foreign particle
- Can create an immune response within the body
- Can include pollen, viruses, bacteria, chemicals, or vaccines

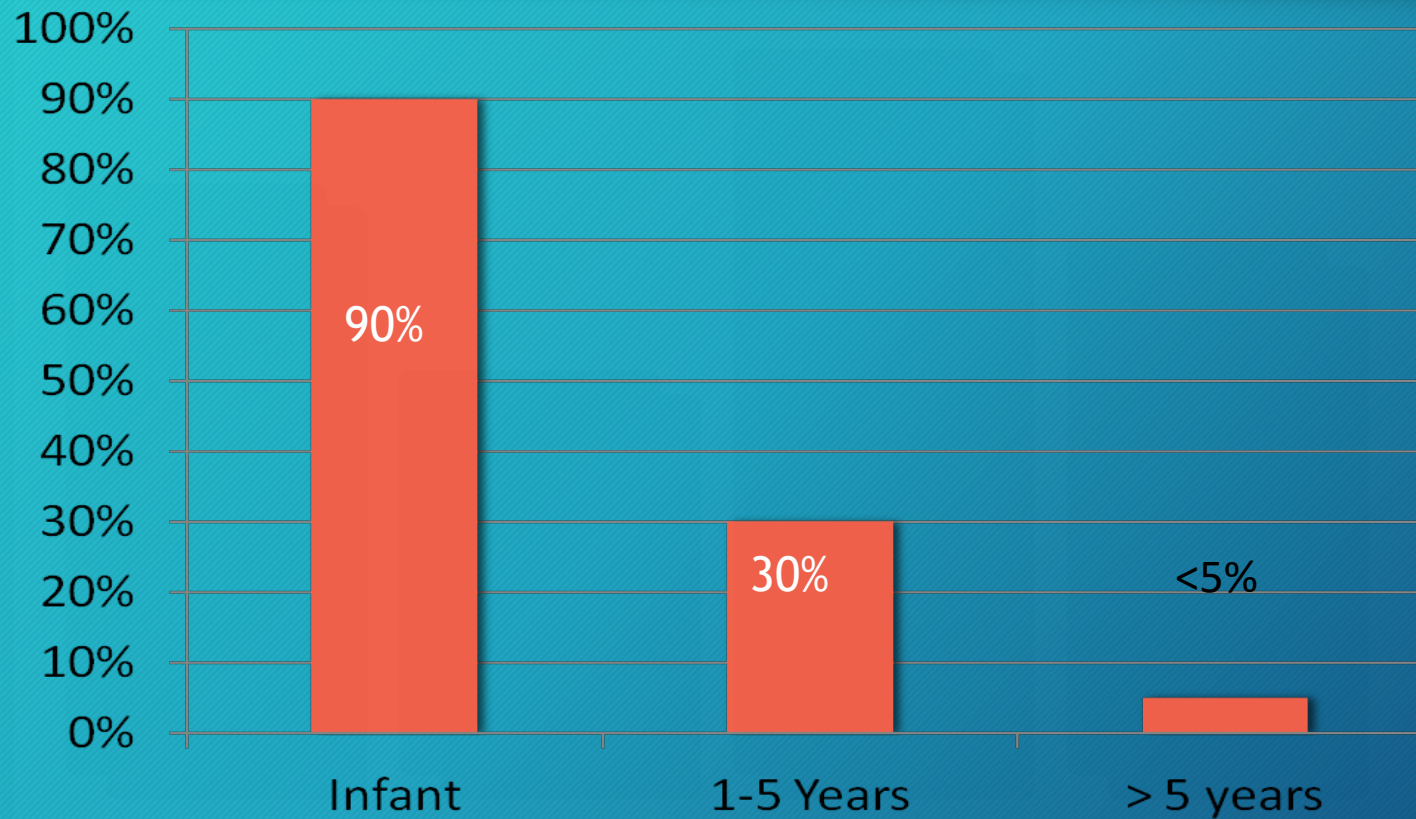
## Antibody

- Also known as immunoglobulins
- Proteins created by the body to fight against the antigens

# HBV Clinical Features

- Incubation period 45-160 days (average 120 days)
- Nonspecific prodrome of malaise, fever, headache, myalgia
  - Illness not specific to hepatitis B
- At least 50% of infections are asymptomatic
  - Clinical signs and symptoms occur more often in adults
  - Infants and children usually have an asymptomatic acute course

# Risk of developing chronic hepatitis B by age at infection





# Diagnosis

- Serum specific antigens and/or antibodies confirms diagnosis
- Patient history: reason for testing (symptoms, risk factors, etc.)
  - serologic testing: panels (acute, chronic) vary by laboratory
    - alanine aminotransferase (ALT or SGPT)
- Initial screening: **HBsAg, anti-HBc, anti-HBs**
  - need to know all three test results in order to fully understand if infected, protected, or still at risk.

# Hepatitis B serology

## Laboratory Diagnosis

## Interpretation of Hepatitis B Serologic Test Results

<b>HBsAg</b> <b>anti-HBc</b> <b>anti-HBs</b>	negative negative negative	Susceptible
<b>HBsAg</b> <b>anti-HBc</b> <b>anti-HBs</b>	negative positive positive	Immune due to natural infection
<b>HBsAg</b> <b>anti-HBc</b> <b>anti-HBs</b>	negative negative positive	Immune due to hepatitis B vaccination
<b>HBsAg</b> <b>anti-HBc</b> <b>IgM anti-HBc</b> <b>anti-HBs</b>	positive positive positive negative	Acutely infected
<b>HBsAg</b> <b>anti-HBc</b> <b>IgM anti-HBc</b> <b>anti-HBs</b>	positive positive negative negative	Chronically infected
<b>HBsAg</b> <b>anti-HBc</b> <b>anti-HBs</b>	negative positive negative	Interpretation unclear; four possibilities: 1. Resolved infection (most common) 2. False-positive anti-HBc, thus susceptible 3. "Low level" chronic infection 4. Resolving acute infection

# Interpretation of Hepatitis B Serologic Test Results

## **Hepatitis B surface antigen (HBsAg) S/C or with confirmation/neutralization:**

- Presence of HBsAg indicates that the person is infectious.

## **Total hepatitis B core antibody (anti-HBc):**

- Appears at the onset of symptoms in acute hepatitis B and persists for life.
- Indicates previous or ongoing infection with hepatitis B virus in an undefined time frame.

## **Hepatitis B surface antibody (anti-HBs):**

- Indicates recovery and immunity from hepatitis B virus infection.
- Develops in a person who has been successfully vaccinated against hepatitis B.

## **IgM antibody to hepatitis B core antigen (IgM anti-HBc):**

- Indicates recent infection with hepatitis B virus (<6 mos). Its presence indicates acute infection.\* Often can be a false positive.

# Additional Hepatitis B Labs

## **Hepatitis B e antigen (HBeAg):**

- Indicates that the virus is replicating and high levels of HBV.
- Can be found in serum during acute and chronic hepatitis B.

## **Hepatitis B e antibody (anti-HBe):**

- Spontaneous conversion from e antigen to e antibody (seroconversion) is a predictor of long-term clearance of HBV in patients undergoing antiviral therapy and indicates lower levels of HBV.

## **HBV DNA:**

- HBV DNA concentration correlates with levels of HBV virus particles. HBV DNA is measured as IU/mL or copies/ml by the polymerase chain reaction (PCR) assay. (detected vs not detected)

# Complications

## Acute

- Most acute HBV infection in adults result in complete recovery
- Fulminant hepatitis occurs in 1-2% of acutely infected persons

## Chronic

- Often asymptomatic and unaware they are infected
- Carriers
- Responsible for most HBV-related mortality
- Cirrhosis
- Hepatocellular carcinoma (HCC)

# Mayo lab test examples

## Acute

### PROFILE INFORMATION ⓘ

Test Id	Reporting Name	Available Separately	Always Performed
HAIGM	Hepatitis A IgM Ab, S	Yes	Yes
HBAG	HBs Antigen, S	Yes	Yes
HBIM	HBc IgM Ab, S	Yes	Yes
HCVDX	HCV Ab w/Reflex to HCV PCR, S	Yes	Yes

### REFLEX TESTS ⓘ

Test Id	Reporting Name	Available Separately	Always Performed
HBGNT	HBs Antigen Confirmation, S	No	No
HCVQN	HCV RNA Detect/Quant, S	Yes	No

## Chronic

### PROFILE INFORMATION ⓘ

Test Id	Reporting Name	Available Separately	Always Performed
HBGSN	HBs Antigen Scrn, S	Yes	Yes

### REFLEX TESTS ⓘ

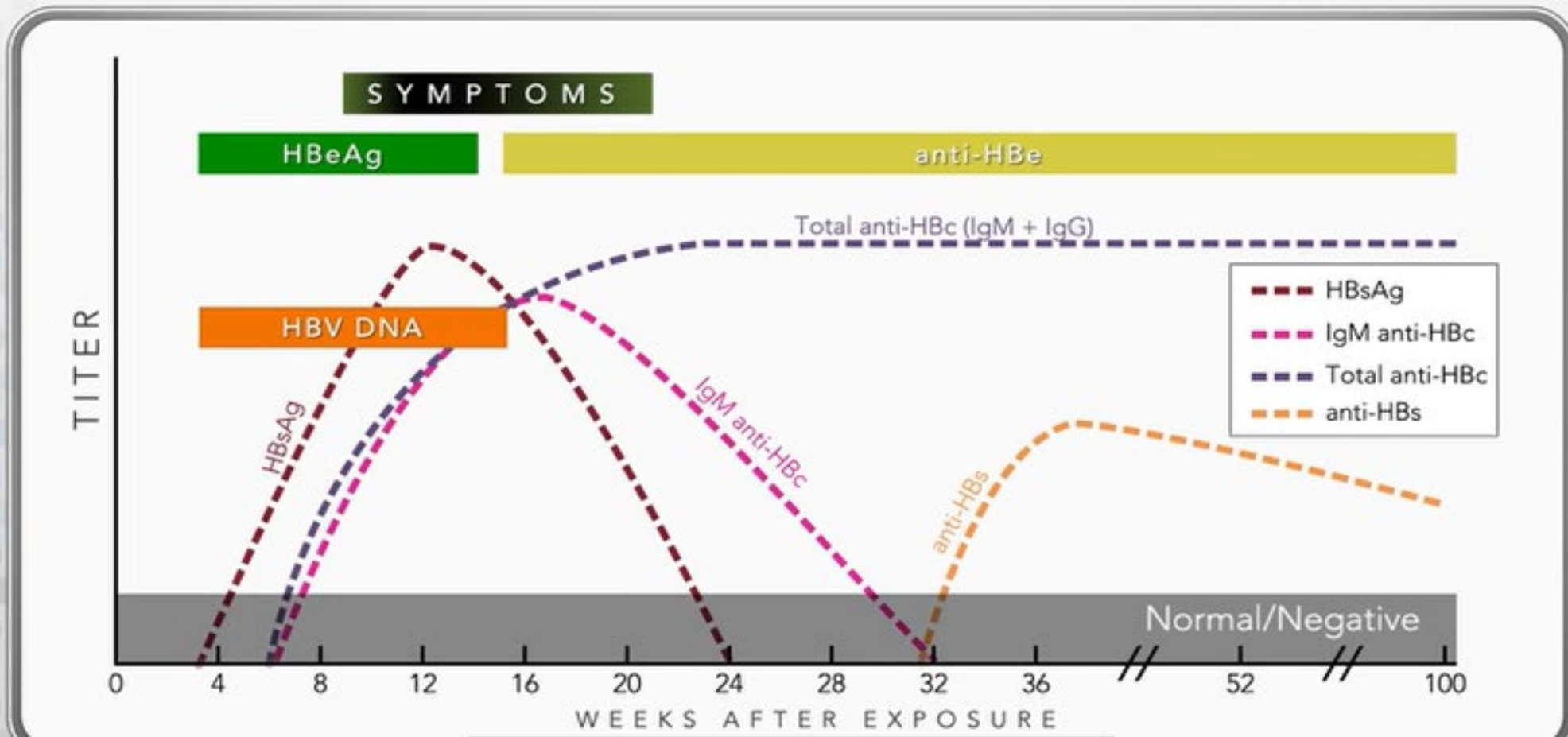
Test Id	Reporting Name	Available Separately	Always Performed
EAG	Hepatitis Be Ag, S	Yes	No
HBGSC	HBs Antigen Screen Confirmation, S	No	No
HEAB	HBe Antibody, S	Yes	No

HBsAg (w reflex)

-Anti-HBs

-Anti-HBc

# ACUTE HEPATITIS B VIRUS INFECTION WITH RECOVERY



Incubation period  
45-160 days



# HEPATITIS B VIRUS INFECTION CHRONIC

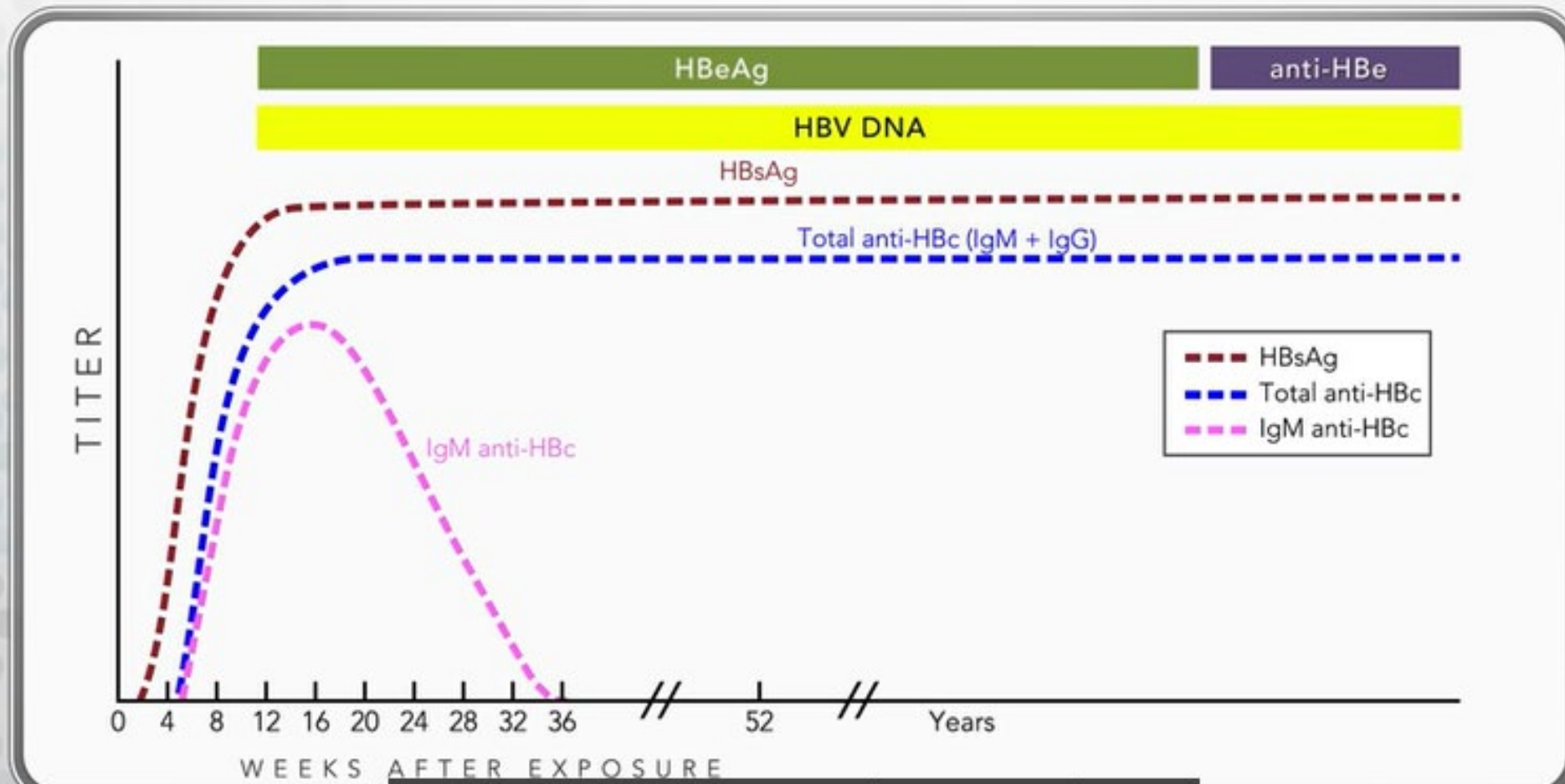


TABLE 1. Typical interpretation of test results for hepatitis B virus infection



HBsAg	Total anti-HBc	IgM anti-HBc	Anti-HBs	HBV DNA	Interpretation
-	-	-	-	-	Never infected
+	-	-	-	+ or -	Early acute infection; transient (up to 18 days) after vaccination
+	+	+	-	+	Acute infection
-	+	+	+ or -	+ or -	Acute resolving infection
-	+	-	+	-	Recovered from past infection and immune
+	+	-	-	+	Chronic infection
-	+	-	-	+ or -	False-positive (i.e., susceptible); past infection; "low-level" chronic infection; or passive transfer of anti-HBc to infant born to HBsAg-positive mother
-	-	-	+	-	Immune if anti-HBs concentration is $\geq 10$ mIU/mL after vaccine series completion; passive transfer after hepatitis B immune globulin administration

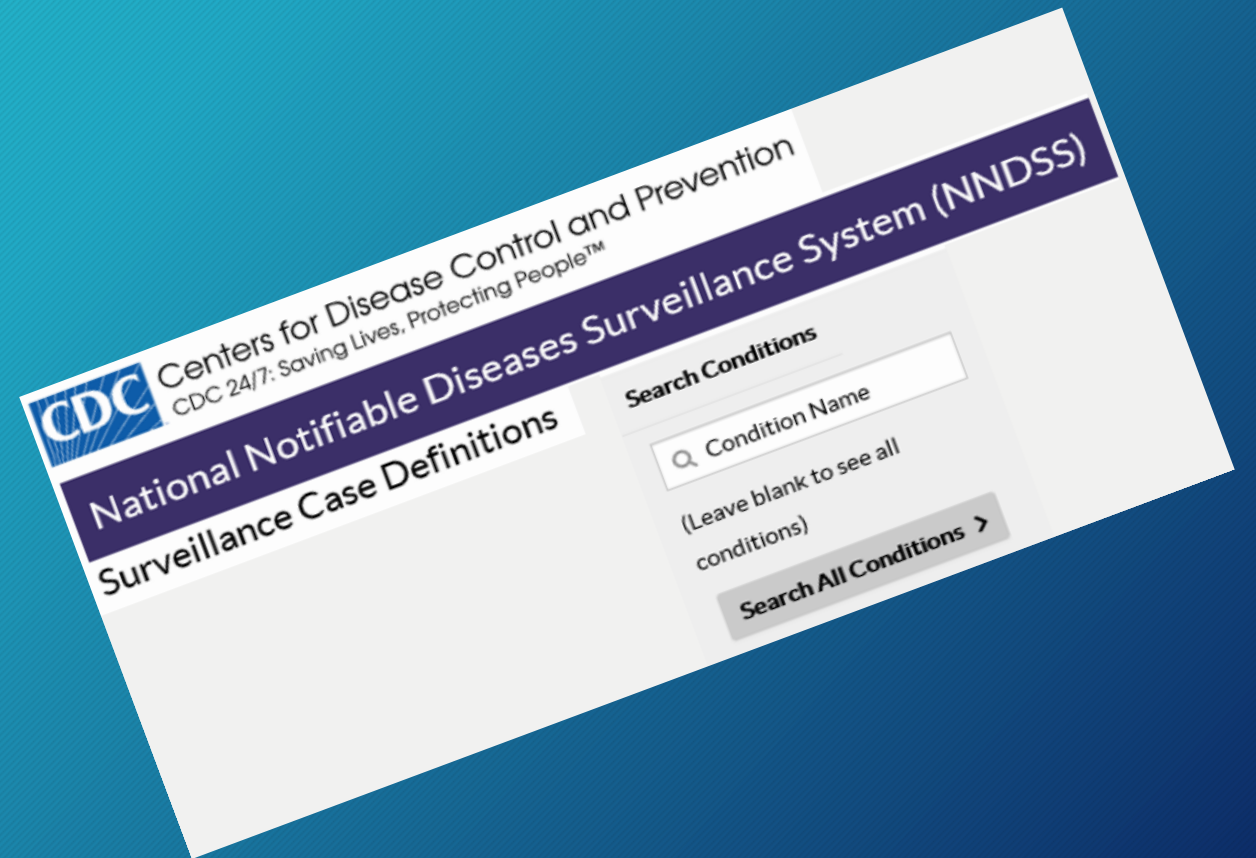
**Abbreviations:** - = negative; + = positive; anti-HBc = antibody to hepatitis B core antigen; anti-HBs = antibody to hepatitis B surface antigen; HBsAg = hepatitis B surface antigen; HBV DNA = hepatitis B virus deoxyribonucleic acid; IgM = immunoglobulin class M.

# Hepatitis B Diagnosis

Individual and public (population) health working together...

## CSTE Case Definitions:

- Acute
- Chronic
- Perinatal



# Council of State and Territorial Epidemiologists (CSTE) Surveillance Case definitions

A set of uniform criteria used to define a disease for public health surveillance

- to classify and count cases consistently across reporting jurisdictions

\*not intended to be used by healthcare providers for making a clinical diagnosis or determining how to meet an individual patient's health needs

# Acute Hepatitis B

## CSTE 2012 Case Definition

### Clinical Description

- An acute illness with a discrete onset and either
  - a) jaundice, or
  - b) elevated serum alanine aminotransferase (ALT) levels  $>100$  IU/L.

### Laboratory Criteria for Diagnosis

- HBsAg positive, and IgM anti-HBc positive (if done)

### Case Classification, Confirmed

- A case that meets the clinical case definition, is laboratory confirmed, and is not known to have chronic hepatitis B.

# Chronic Hepatitis B

## 2012 CSTE Case Definition

### Clinical Description

- No symptoms are required.

### Laboratory Criteria for Diagnosis

- IgM anti-HBc) negative AND a positive result on one of the following tests:
  - HBsAg, HBeAg, or hepatitis B virus DNA\*, or
  - Positive results on these tests, two times, at least 6 months apart (Any combination of these tests performed 6 months apart is acceptable)

### Case Classification

- **Probable**
  - A person with a single positive lab result\* and does not meet the case definition for acute hepatitis B.
- **Confirmed**
  - A person who meets either of the above laboratory criteria for diagnosis.

# Chronic Hepatitis B

## 2012 CSTE Case Definition

### Comments

- Multiple laboratory tests indicative of chronic HBV infection may be performed simultaneously on the same patient specimen as part of a "hepatitis panel." Testing performed in this manner may lead to seemingly discordant results, e.g., HBsAg-negative and HBV DNA-positive.
- For the purposes of this case definition, any positive result among the three laboratory tests mentioned above (HBsAg, HBeAg, or hepatitis B virus DNA) is acceptable, regardless of other testing results.
- Negative HBeAg results and HBV DNA levels below positive cutoff level do not confirm the absence of HBV infection.

# Perinatal Hepatitis B

2017 CSTE Case Definition

## Clinical Criteria

- Perinatal HBV infection in a child  $\leq$  24 months of age

## Laboratory Criteria for Diagnosis

- Laboratory evidence of HBV infection in an infant consists of one or more of the following:
  - positive HBsAg test (only if at least 4 weeks after last dose of Hep B vaccine)
  - positive HBeAg test
  - detectable HBV DNA

**Epidemiologic Linkage:** Born to a HBV-infected mother.

**Case Classification:** Probable, Confirmed



# Who is at Risk for HBV Infection

- Infants born to infected mothers
- Sex partners of infected persons
- Men who have sex with men
- Injection drug users (PWID)
- Household contacts or sexual partners of known persons with chronic HBV infection
- Healthcare and public safety workers at risk for occupational exposure to blood or blood-contaminated body fluids, and
- Hemodialysis patients

# Who should be screened for HBV?

- Persons born in countries with 2% or higher HBV prevalence
- Men who have sex with men
- Persons who inject drugs
- HIV-positive persons
- Household and sexual contacts of HBV-infected persons
- Persons requiring immunosuppressive therapy
- Persons with end-stage renal disease (including hemodialysis patients)
- Blood and tissue donors
- Persons infected with hepatitis C
- Persons with elevated alanine aminotransferase (ALT) levels ( $\geq 19$  IU/L for women and  $\geq 30$  IU/L for men)
- Incarcerated persons
- Pregnant women (HBsAg only is recommended)
- Infants born to HBV-infected mothers (HBsAg and anti-HBs are only recommended)

## Screening tests:

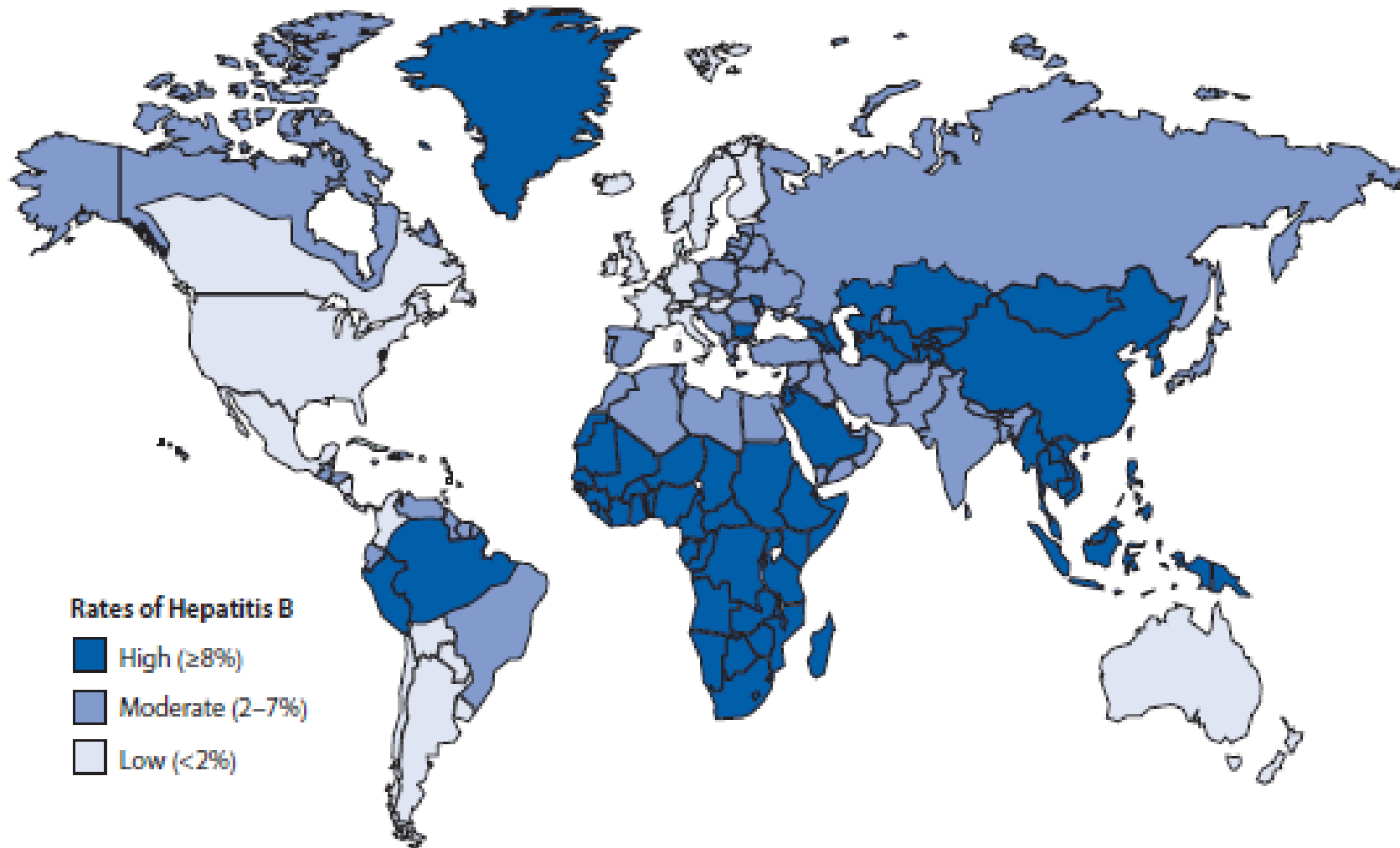
- HBsAg (w reflex)
- Anti-HBs
- Anti-HBc
- \*Hep A, C

# Hepatitis B Vaccine Recommended for persons with chronic liver disease

- including, but not limited to, those with hepatitis C virus [HCV] infection
- cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis
- an alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal

## Geographic Distribution of Chronic Hepatitis B Infection Worldwide

(As measured with HBsAg, 2006)



If You or Your Parents Were

# BORN IN ASIA *or the* PACIFIC ISLANDS

**CDC Recommends That You  
Get Tested for HEPATITIS B**



Did you know that  
**1 in 12 Asian  
Americans have  
Hepatitis B?**



2 out of every 3 Asian  
Americans with Hepatitis B  
**don't know they  
are infected**

People with  
Hepatitis B often have  
**NO SYMPTOMS**



Up to 25% of people  
with Hepatitis B  
**Develop serious  
liver problems**



Hepatitis B is the  
**leading cause  
of liver cancer**  
for Asian Americans

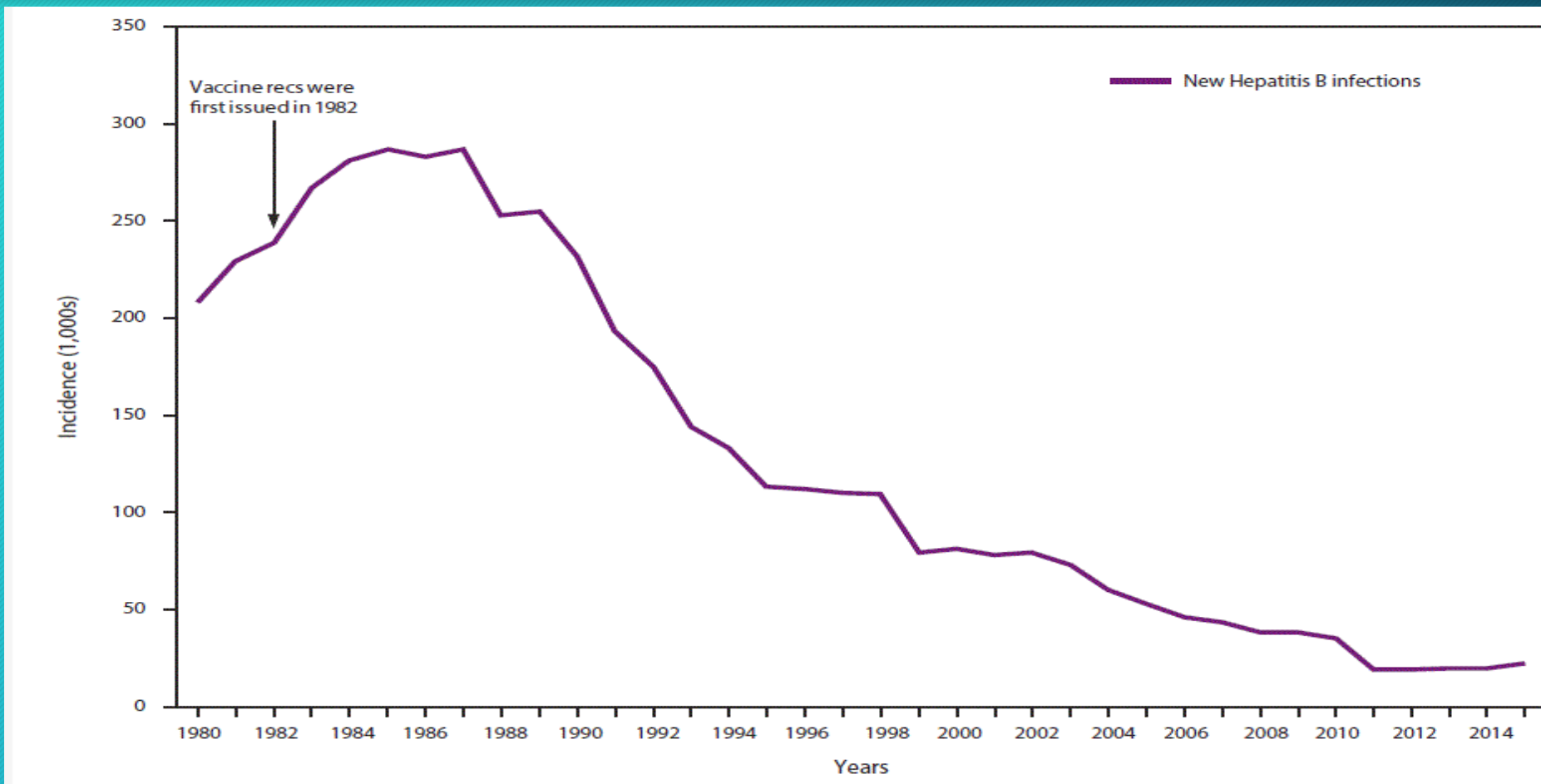


**But,  
treatments  
are available**  
that can save your life

**Loving  
your  
family  
starts with  
caring for  
yourself.**

If you or your parents  
were born in Asia or  
the Pacific Islands,  
talk to your doctor  
about getting tested  
for Hepatitis B.  
**It could save your life.**

# Incidence of hepatitis B virus infection – National Notifiable Diseases Surveillance System, United States, 1980-2015



# Hepatitis B Vaccines and Recommendations

- Universal Hepatitis B Vaccination in Adults Aged 19-59 Years: Updated Recommendations of the Advisory Committee on Immunization Practices – United States, 2022
  - *Weekly* / April 1, 2022 / 71(13);477-483

## Summary

### What is already known about this topic?

Vaccination with hepatitis B (HepB) vaccines shows well-established safety and efficacy. However, because of risk factor–based approaches of previous vaccination recommendations, coverage among adults has been suboptimal.

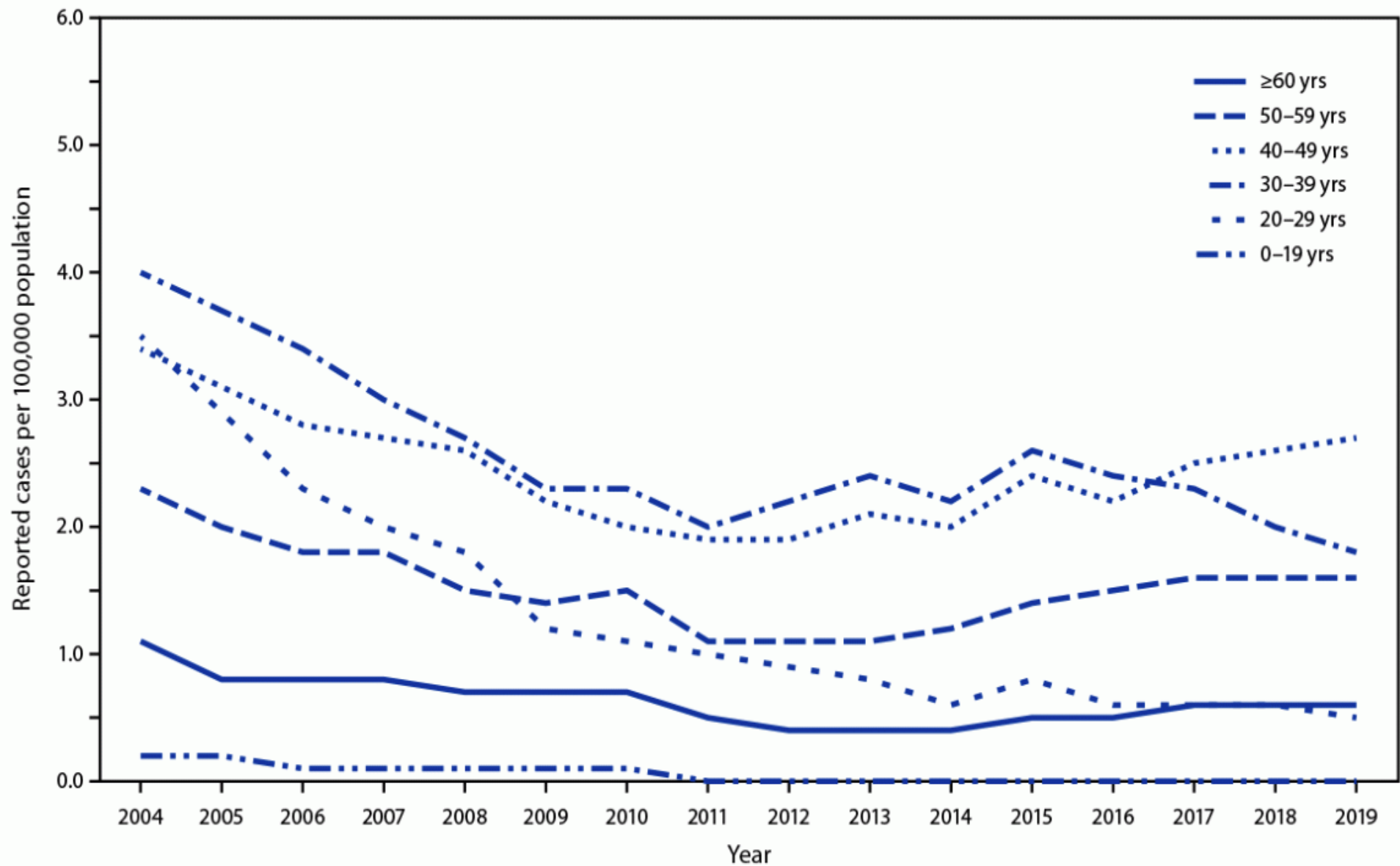
### What is added by this report?

In addition to groups for whom HepB vaccination is already recommended, the Advisory Committee on Immunization Practices recommends that all adults aged 19–59 years should receive HepB vaccines.

### What are the implications for public health practice?

Universal adult HepB vaccination through age 59 years removes the need for risk factor screening and disclosure and could increase vaccination coverage and decrease hepatitis B cases.

FIGURE. Rates of reported acute hepatitis B virus infection, by age group — United States, 2004–2019



Source: <https://www.cdc.gov/hepatitis/statistics/2019surveillance/Figure2.4.htm>



# Case Studies

# Case 1

**Ordered Test:** HBCAB  
**Ordered Test Codes:** 20091 (LN LOINC)/  
**Status:** Final  
**Accession Number:** 22108109988  
**Specimen Source:** Unknown  
**Specimen Site:**  
**Specimen Collection Date/Time:** 2022-04-18 08:51:00.0  
**Patient Status at Specimen Collection:**  
**Specimen Details:**

Resulted Test	Coded Result / Organism Name	Numeric Result	Units	Text Result	Ref Range From	Ref Range To	Status	Result Comments
Hepatitis B Core Antibodies, Total				Positive	Negative		Final	The anti-HBc is reactive, which is consistent with recent or remote HBV infection. False positive anti-HBc results are not uncommon. INTERPRETIVE INFORMATION: Hepatitis B Core Ab (Total)

**Ordered Test:** HBV surface Ab Ser QI (HEPATITIS B SURFACE ANTIBODY, QUALITATIVE)  
**Ordered Test Codes:** 22322-2 (LN LOINC)/HBSABB (L LOCAL)  
**Status:** Final  
**Accession Number:** 22U-108R0178  
**Specimen Source:** BLOOD SPECIMEN  
**Specimen Site:**  
**Specimen Collection Date/Time:** 2022-04-18 08:51:00.0  
**Patient Status at Specimen Collection:**  
**Specimen Details:**

Resulted Test	Coded Result / Organism Name	Numeric Result	Units	Text Result	Ref Range From	Ref Range To	Status	Result Comments
HBV surface Ab Ser QI	REACTIVE						Final	This assay result may be used as an aid in the determination of susceptibility to hepatitis B virus (HBV) infection in individuals prior to or following HBV vaccination or where vaccination status is ...

# Infected, protected, or still at risk

- Are any of these labs part of CSTE Case definition for Hep B?
  - Yes
  - No
- Should you start an investigation?
  - Yes
  - no
- From the labs we have available is this person see Serology handout
  - Infected
  - Protected
  - still at risk
- What could we do next?
  - Note additional information available: age, gender, provider type
  - Look deeper into MIDIS i.e. “Events”
  - Look at provider notes if you have access
  - Call the provider office

# Case 2

Date Received	Reporting Facility/Provider	Date Collected	Test Results	Program Area
02/18/2022 10:47 AM E	Reporting Facility: BillingsClinicHosp Ordering Provider: Kellee Glaus	02/16/2022	Hepatitis B virus surface Ag [Presence] in Serum: Presumptive Positive Reference Range: (Nonreactive) - (Final)	Hepatitis

## Ordered Test

Ordered Test: HBV surface Ag Ser QI (Hepatitis B surface antigen)  
Ordered Test Codes: 5195-3 (LN LOINC)/315014 (L LOCAL)  
Status: Final  
Accession Number: 2022047005365001  
Specimen Source:  
Specimen Site:  
Specimen Collection Date/Time: 2022-02-16 23:10:46.0  
Patient Status at Specimen Collection:  
Specimen Details:

## Resulted Test

Resulted Test	Coded Result / Organism Name	Numeric Result	Units	Text Result	Ref Range From	Ref Range To	Status	Result Comments
HBV surface Ag Ser QI (Hepatitis B SAg)	Presumptive Positive (LOCAL)				Nonreactive		Final	The Hepatitis B Surface Antigen test performed at Livingston Healthcare is a preliminary test. Reactive tests will be sent to Mayo Medical Laboratories for confirmatory testing.

# Infected, protected, or still at risk

- What should we do next?
  - specimen should be sent out for confirmation/neutralization
  - Results should be back in approx. 3 days
  - Positive results should load into MIDIS
  - If the results are negative you will have to call the provider office

# Case 3

Ordered Test: Hepatitis B virus surface Ag [Presence] in Serum (HEPATITIS B SURFACE ANTIGEN)

Ordered Test Codes: 5195-3 (LN LOINC)/HBAG (L LOCAL)

Status: Final

Accession Number: 0330.C00428R-1


Specimen Source: Serum specimen

Specimen Site:

Specimen Collection Date/Time: 2022-03-30 10:19:00.007

Patient Status at Specimen Collection:

Specimen Details:

Resulted Test	Coded Result / Organism Name	Numeric Result	Units	Text Result	Ref Range From	Ref Range To	Status	Result Comments
Hepatitis B virus surface Ag [Presence] in Serum (HEPATITIS B SURF ANTIGEN)	Reactive (LOCAL)						Final	Reactive results are unconfirmed. Confirmation to follow. 

# Additional information

- 33 y/0 female
- Additional labs reported by fax to local health dept:
  - IgM anti-HAV: Pos
  - Total anti-HCV: Reactive

## Further investigation indicates:

- several names changes aliases
- has seen 3 different providers in 2-3 different jurisdictions 2017,2019,2020
- Was dx with hep c in 2017, started tx in 2020 but did not follow through
- Was never vaccinated for Hep A or Hep B
- Investigation is open at this time pending additional lab work


# Case 4

Subsections

Test

Ordered Test: Hepatitis B Core Antibodies, Total  
Ordered Test Codes: 13952-7 (LN LOINC)  
Status: Preliminary  
Accession Number: 22089142194  
Specimen Source: Unknown  
Specimen Site:  
Specimen Collection Date/Time: 2022-03-30 15:50:00.0  
Patient Status at Specimen Collection:  
Specimen Details:

Test

Resulted Test	Coded Result / Organism Name	Numeric Result	Units	Text Result	Ref Range From	Ref Range To	Status	Result Comments
 Hepatitis B Core Antibodies, Total				Positive	Negative		Final	The anti-HBc is reactive, which is consistent with recent or remote HBV infection. False positive anti-HBc results are not uncommon. INTERPRETIVE INFORMATION: Hepatitis B Core Ab (Total)



# Lab results in MIDIS

## Case Info tab

- Case Status-Hep B CSTE case definition
- MMWR Week
- MMWR Year
- Lost to Follow-up
- Control measures

## Hepatitis Core tab

Contact provider:

- Reason for testing
- ALT and AST
- Add additional hepatitis labs not in the supplemental tab:
  - Hep A, Hep B and Hep C

## Supplemental Info tab

- Only positive results report electronically-usually






Go to: [Investigations](#) | [Lab Reports](#) | [Morbidity Reports](#) | [Vaccinations](#) | [Treatments](#) | [Documents](#) | [Contact Records](#)

## Patient Events History

### Investigations (1)

	Start Date	Status	Condition	Case Status	Notification
<input type="checkbox"/>	<a href="#">04/07/2022</a>	Open	Hepatitis C, chronic	Confirmed	COMPLETED

### Lab Reports (5)

Date Received	Reporting Facility/Provider	Date Collected	Test Results	Associated With	Program Area
<a href="#">04/06/2022</a> 6:15 PM 	Reporting Facility: ARUP LABORATORIES Ordering Provider: John Harris	03/30/2022	Hepatitis C virus genotype [Identifier] in Serum or Plasma by Probe and target amplification method: 1a or 1b - (Final)	<a href="#">CAS11025031MT01</a> Hepatitis C, chronic	Hepatitis
<a href="#">04/03/2022</a> 6:15 PM 	Reporting Facility: ARUP LABORATORIES Ordering Provider: John Harris	03/30/2022	Hepatitis C virus RNA [Presence] in Serum or Plasma by Probe and target amplification method: Detected - (Final) Reference Range: (Not Detected) - (Final)  Hepatitis C virus RNA [Units/volume] (viral load) in Serum or Plasma by Probe and target amplification method: 1,962,721 IU/mL - (Final) Hepatitis C virus RNA [log units/volume] (viral load) in Serum or Plasma by Probe and target amplification method: 6.29 log IU/mL - (Final)	<a href="#">CAS11025031MT01</a> Hepatitis C, chronic	Hepatitis
<a href="#">04/01/2022</a> 6:45 PM 	Reporting Facility: ARUP LABORATORIES Ordering Provider: John Harris	03/30/2022	Hepatitis B virus core Ab [Presence] in Serum or Plasma by Immunoassay: Positive - (Final) Reference Range: (Negative) - (Final)		
<a href="#">04/01/2022</a> 6:45 PM 	Reporting Facility: ARUP LABORATORIES Ordering Provider: John Harris	03/30/2022	Hepatitis B virus core Ab [Presence] in Serum or Plasma by Immunoassay: Positive - (Final) Reference Range: (Negative) - (Final)		Hepatitis
<a href="#">03/29/2022</a> 6:15 AM 	Reporting Facility: STP Ordering Provider: John Harris	03/28/2022	Hepatitis C virus Ab Signal/Cutoff in Serum or Plasma by Immunoassay: >11.00 Reference Range: (0.00-0.79) - (Final)	<a href="#">CAS11025031MT01</a> Hepatitis C, chronic	Hepatitis

# Case 5: Initial labs and information

Date Received	Reporting Facility/Provider	Date Collected	Test Results	Program Area
04/08/2022 9:30 AM E	Reporting Facility: BOZEMAN HEALTH DEACO Ordering Provider: Jason Jones	04/07/2022	Hepatitis B virus surface Ag [Presence] in Serum or Plasma by Immunoassay: Preliminary Positive - (Final) Reference Range: (Nonreactive) - (Final)	Hepatitis
04/09/2022 5:17 PM E	Reporting Facility: SANFORD MEDICAL CENT Ordering Provider: Jason Jones	04/07/2022	Hepatitis B virus surface Ag [Presence] in Serum or Plasma by Confirmatory method: REACTIVE	Hepatitis

Reason for Testing (check all that apply): Evaluation of elevated liver enzymes

Diagnosis Date: 04/09/2022

Is patient symptomatic?: Yes

Was the patient jaundiced?: No

Illness Onset Date:

Onset date could not be determined: Yes

OSIS

Specimen Collection Date (Peak Elevated Total Bilirubin): 04/04/2022

Are the patient peak elevated total bilirubin levels > or equal to 3.0 mg/dL?: Yes

ALT [SGPT] Result: 543

Specimen Collection Date (ALT): 04/04/2022

Test Result Upper Limit Normal (ALT): 78

AST [SGOT] Result: 451

Specimen Collection Date (AST): 04/04/2022

Test Result Upper Limit Normal (AST): 34

Specimen Collection Date (anti-HAV):

total anti-HAV Result:

Specimen Collection Date (IgM anti-HAV): 04/07/2022

IgM anti-HAV Result: Positive

Specimen Collection Date (HBsAg): 04/07/2022

HBsAg Result: Positive

Specimen Collection Date (total anti-HBc):

total anti-HBc Result:

Specimen Collection Date (IgM anti-HBc): 04/07/2022

IgM anti-HBc Result: Positive

Specimen Collection Date (HEP B DNA/NAT):

HEP B DNA/NAT Result:

Specimen Collection Date (HBeAg):

HBeAg Result:

Specimen Collection Date (total anti-HCV): 04/07/2022

total anti-HCV Result: Negative

# Additional labs and info: 68 y/o Asian male

Date Collected	Test Results	Program Area
04/07/2022	Hepatitis B virus surface Ag [Presence] in Serum or Plasma by Immunoassay: Preliminary Positive - (Final) Reference Range: (Nonreactive) - (Final)	Hepatitis
04/07/2022	Hepatitis B virus surface Ag [Presence] in Serum or Plasma by Confirmatory method: REACTIVE	Hepatitis
04/12/2022	HEPATITIS BE ANTIBODY: Positive - (Final) Reference Range: (Negative) - (Final)	Hepatitis
04/12/2022	Hepatitis B virus DNA [Units/volume] (viral load) in Serum or Plasma by Probe and target amplification method: 5860000 IU/ML Reference Range: (UNDETECTED) - (Final)	Hepatitis
04/12/2022	HBV DNA DETECT/QUANT, S: 5860000 IU/mL - (Final) Reference Range: (Undetected) - (Final)	Hepatitis

# MIDIS and Hepatitis B

- Patient
- Case Info
- Hepatitis Core
- Hepatitis Extended
- Contact Tracing
- Contact Records
- Supplemental Info

## Case Status

Transmission Mode: Bloodborne  
Detection Method: Patient self-referral  
Confirmation Method:  
Confirmation Date: 03/23/2022

[Link to CD Epi Hepatitis Definitions and Resources](#)

[Link to Chronic Hepatitis B Case Definition](#)

[Link to Chronic Hepatitis C Case Definition](#)

Case Status: Probable  
MMWR Week: 12  
MMWR Year: 2022

\*\*Control Measures and Lost to Follow-up are required data elements.

Patient Lost to Follow-up?:  
Control Measures Implemented Date:

## General Comments

[Collapse Subsections](#)

General Comments

General Comments:

**Reason for Testing (check all that apply):**

Diagnosis Date:  
**Is patient symptomatic?:**  
**Was the patient jaundiced?:**  
 Illness Onset Date:  
 Onset date could not be determined:  
 Illness End Date:  
 Illness Duration:  
 Illness Duration Units:  
 Age at Onset:  
 Age at Onset Units:

Was the patient hospitalized for this illness?:  
 Hospital:  
 Admission Date:  
 Discharge Date:  
 Total Duration of Stay in the Hospital (in days):

(Use Ctrl to select more than one)

- Blood / Organ donor screening
- Evaluation of elevated liver enzymes
- Follow-up testing (prior viral hepatitis marker)
- Other (specify)

Selected Values:

Specimen Collection Date (Peak Elevated Total Bilirubin):  
 Are the patient peak elevated total bilirubin levels > or equal to 3.0 mg/dL?:  
 ALT [SGPT] Result:  
 Specimen Collection Date (ALT):  
 Test Result Upper Limit Normal (ALT):

AST [SGOT] Result:  
 Specimen Collection Date (AST):  
 Test Result Upper Limit Normal (AST):

Specimen Collection Date (anti-HAV):    
 total anti-HAV Result:

Specimen Collection Date (IgM anti-HAV):    
 IgM anti-HAV Result:

---

Specimen Collection Date (HBsAg):    
 HBsAg Result:

Specimen Collection Date (total anti-HBc):    
 total anti-HBc Result:

Specimen Collection Date (IgM anti-HBc):    
 IgM anti-HBc Result:

Specimen Collection Date (HEP B DNA/NAT):    
 HEP B DNA/NAT Result:

Specimen Collection Date (HBeAg):    
 HBeAg Result:

---

Specimen Collection Date (total anti-HCV):    
 total anti-HCV Result:

Specimen Collection Date (supplemental anti-HCV assay):    
 Supplemental anti-HCV Assay Result:

Specimen Collection Date (HCV RNA):    
 HCV RNA Result:

---

Specimen Collection Date (total anti-HDV):    
 anti-HDV Result:

Specimen Collection Date (total anti-HEV):

# Resources

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

*Recommendations and Reports* / January 12, 2018 / 67(1);1–31

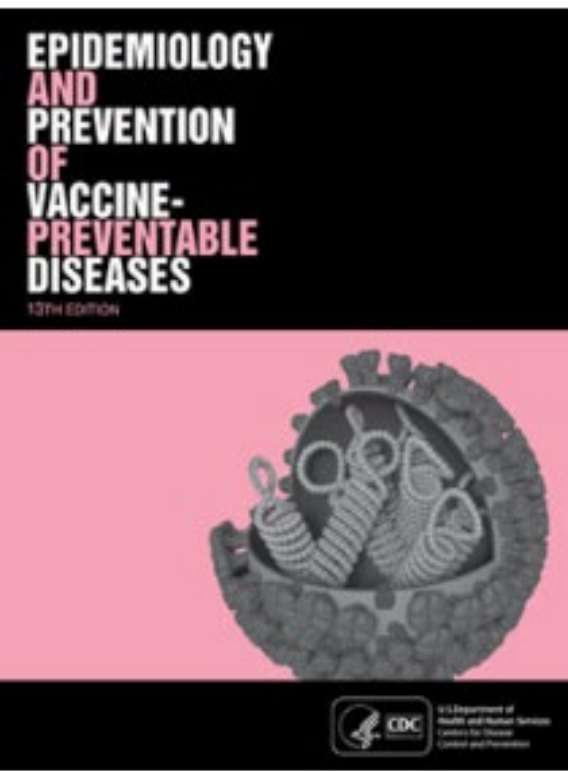
- [https://www.cdc.gov/mmwr/volumes/67/rr/rr6701a1.htm?s\\_cid=rr6701a1\\_w](https://www.cdc.gov/mmwr/volumes/67/rr/rr6701a1.htm?s_cid=rr6701a1_w)

**Interpretation of Hepatitis B Serologic Test Results**

<https://www.cdc.gov/hepatitis/hbv/pdfs/SerologicChartv8.pdf>

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

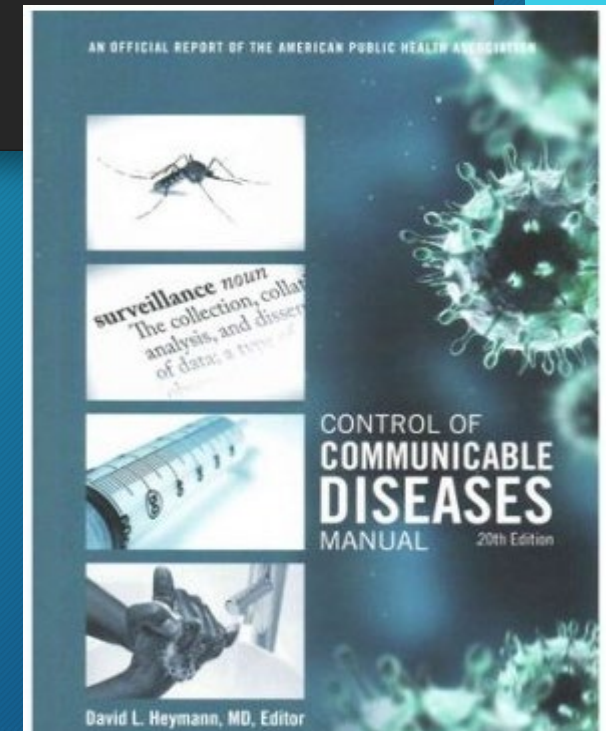
# Resources



**CDC** Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives, Protecting People™

Viral Hepatitis

Hepatitis B Information





# Hepatitis B Summary

- Hepatitis B is different from hepatitis C
- Need to see a combination of positive and negative labs to determine diagnosis
- Know the reason for testing: arthritis, etc.
- Follow CSTE Case definitions
- Vaccine preventable
- Women of child bearing age should be tested with each pregnancy
- Blood donation centers must report
- Acute cases are under-reported

# Questions?

## Thank You!

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