



# EpiVac Pink Book Web-on-Demand Series

## Hepatitis B-2020

Immunization Services Division

National Center for Immunization and Respiratory Diseases

Centers for Disease Control and Prevention

Atlanta, GA

# Learning Objectives

- For each vaccine-preventable disease, identify those for whom routine immunization is recommended.
- For each vaccine-preventable disease, describe characteristics of the vaccine used to prevent the disease.
- Describe an emerging immunization issue.
- Locate current immunization resources to increase knowledge of team's role in program implementation for improved team performance.
- Implement disease detection and prevention health care services (e.g., smoking cessation, weight reduction, diabetes screening, blood pressure screening, immunization services) to prevent health problems and maintain health.

# Today's Agenda

**EpiVac Pink Book Web-on-Demand Series: Hepatitis B-2020**

Andrew Kroger, MD, MPH, Medical Officer, CDC/NCIRD

# Continuing Education Information

- CE credit, go to: [www.cdc.gov/GetCE](http://www.cdc.gov/GetCE)
- Search course number: WD4344-091620
- CE credit expires: July 1, 2022
- CE instructions are available on the EpiVac Pink Book Web-on-Demand Series web page
- Questions and additional help with the online CE system, e-mail [CE@cdc.gov](mailto:CE@cdc.gov)

Training and Continuing Education Online (TCEO)



TRAINING AND CONTINUING EDUCATION ONLINE

- TCEO Home
- Search Courses
- Create Account
- 9 Simple Steps to Earn CE
- Frequently Asked Questions
- Contact TCEO

**New to TCEO?**  
Visit [Create Account](#). Once your account has been created, you will be able to search for courses and complete requirements to receive CE.

**Already have a TCEO account from the previous system?**  
To move your account to the new system please sign in above using your existing TCEO username and password. Once signed in, follow the prompts to verify and update your account. After your account is updated forward you will use this email address and password to sign in.

**Not sure how to get started?**  
Follow these [9 Simple Steps](#) to earn continuing education for the courses you have taken or conferences you have attended!



Welcome to TCEO

Training and Continuing Education Online (TCEO) is a system that provides access to CDC educational activities for continuing education (CE). Use TCEO to search for CE opportunities, complete course

# Disclosure Statements

In compliance with continuing education requirements, all presenters must disclose any financial or other associations with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters, as well as any use of unlabeled product(s) or product(s) under investigational use.

CDC, our planners, content experts, and their spouses/partners wish to disclose they have no financial interests in or other relationships with the manufacturers of commercial products, suppliers of commercial services, or commercial supporters.

Planners have reviewed content to ensure there is no bias.

# Disclosure Statements

Content will not include any discussion of the unlabeled use of a product or a product under investigational use.

CDC does not accept any commercial support.

**Centers for Disease Control and Prevention**

National Center for Immunization and Respiratory Diseases



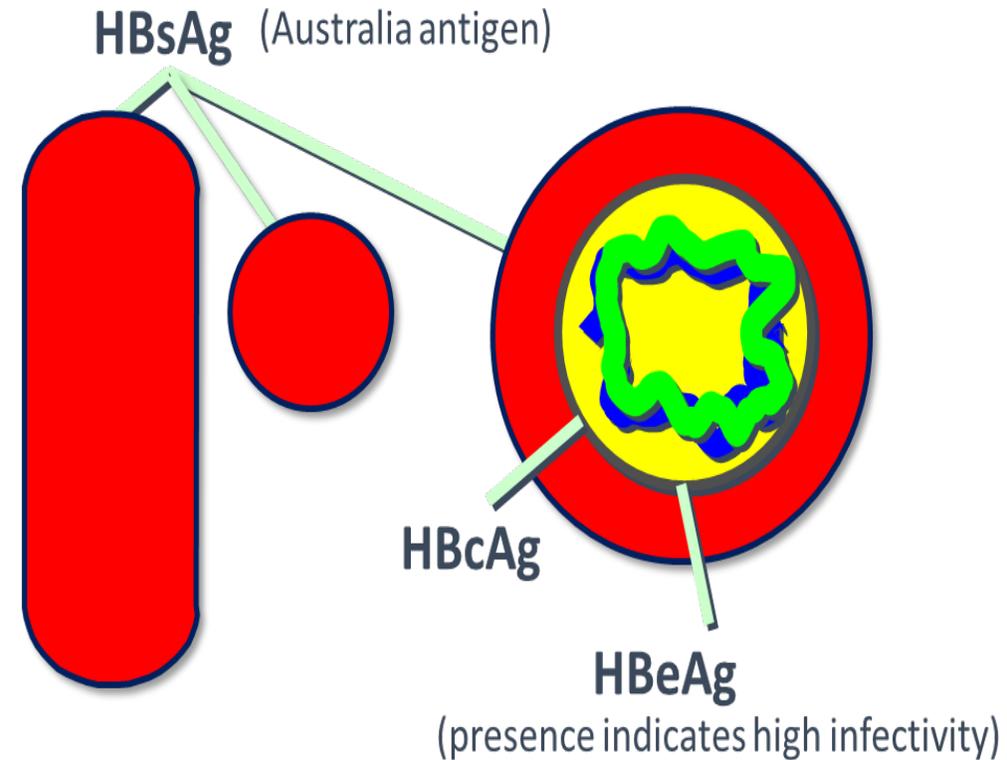
# Hepatitis B and Hepatitis B Vaccine

1

**Disease**

# Hepatitis B Virus

- Hepadnaviridae family (DNA)
- Numerous antigenic components
- May retain infectivity for more than 7 days at room temperature



# Hepatitis B Virus Infection

**257 million**  
chronic infections  
worldwide

**850,000–  
2.2 million**  
US chronic  
infections

Causes  
**50%**  
of hepatocellular  
carcinomas

**786,000**  
deaths  
worldwide

# Hepatitis B Epidemiology

- **Reservoir** Human
- **Transmission** Percutaneous (i.e., puncture through the skin) or mucosal contact with infectious blood or body fluids (e.g., semen, saliva)
- **Communicability** 1 to 2 months before and after onset of symptoms  
Persons with either acute or chronic HBV infection with HBsAg present in blood

# Hepatitis B Clinical Features

- Incubation period 50 to 60 days (average 90 days)
- Nonspecific prodrome of malaise, fever, headache, myalgia
- Children younger than 5 years and newly infected immunosuppressed adults generally asymptomatic
  - 30% to 50% of persons aged 5 years and older have signs and symptoms.

# Hepatitis B Complications

- Fulminant hepatitis (<1%)
- Hospitalization
- Cirrhosis
- Hepatocellular carcinoma
- Death

# Risk Factors for Hepatitis B

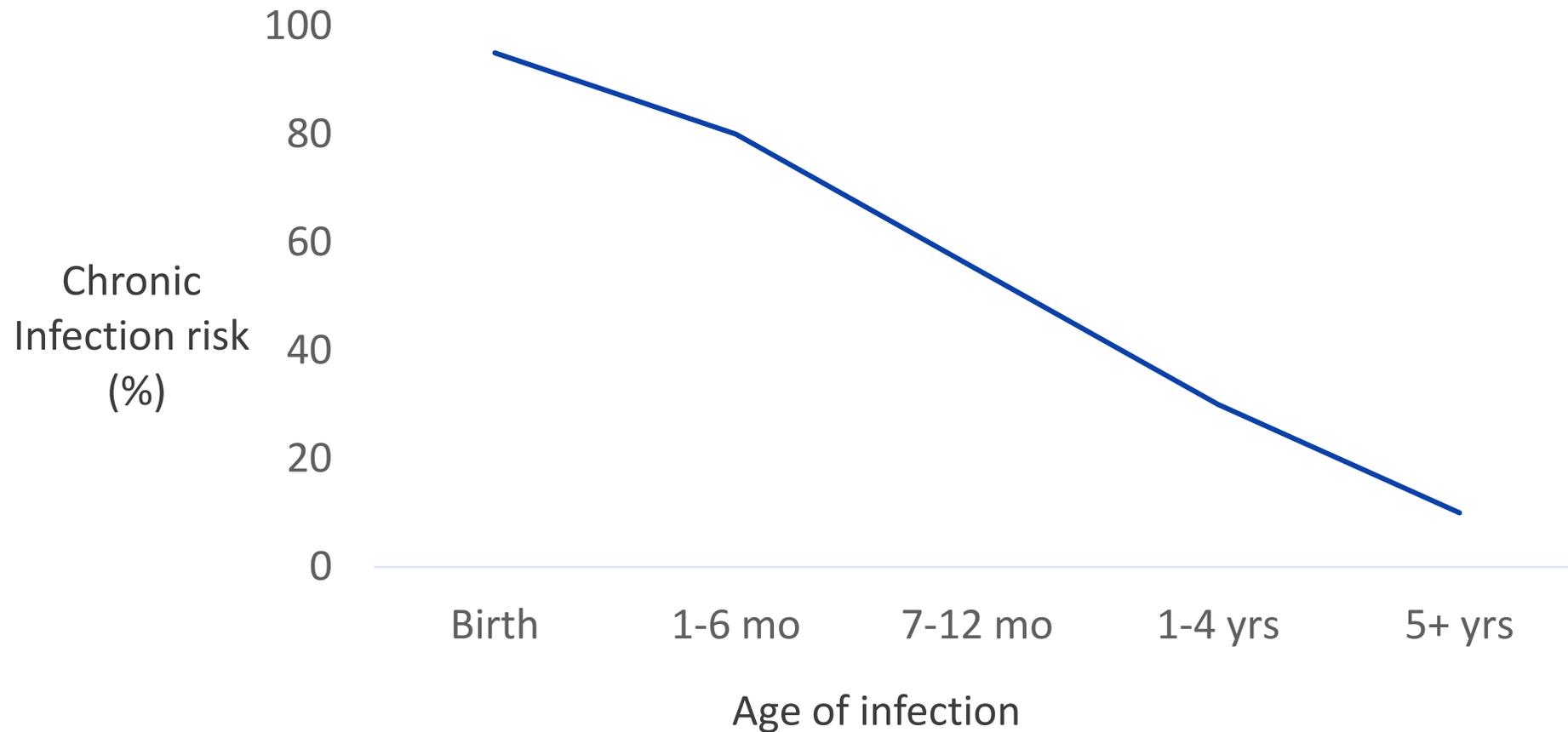
- Injection drug use
- 2 or more sexual partners
- Men who have sex with men
- Household contacts of persons with HBV
- Developmentally disabled persons in long-term care facilities
- Correctional facilities
- Persons at risk for occupational exposure to HBV
- Hemodialysis patients
- Persons with HCV infection
- Persons with chronic liver disease
- Travelers to countries where HBV is endemic
- Persons with HIV
- Persons with diabetes



# Chronic Hepatitis B Virus Infection

- **80-90% of persons infected during infancy**
- **30% of persons infected before age 6 years**
- **1 to 12% of persons infected as an older child or adult**
- **Approximately 25% of persons chronically infected during childhood and 15% chronically infected after childhood will die prematurely from cirrhosis or liver cancer.**

# Risk of Chronic HBV Infection



# Chronic Hepatitis B Virus Infection – 4 Phases

## ■ Immune tolerant

- Minimal or no hepatic inflammation or fibrosis

## ■ Immune active

- Hepatic inflammation with or without fibrosis

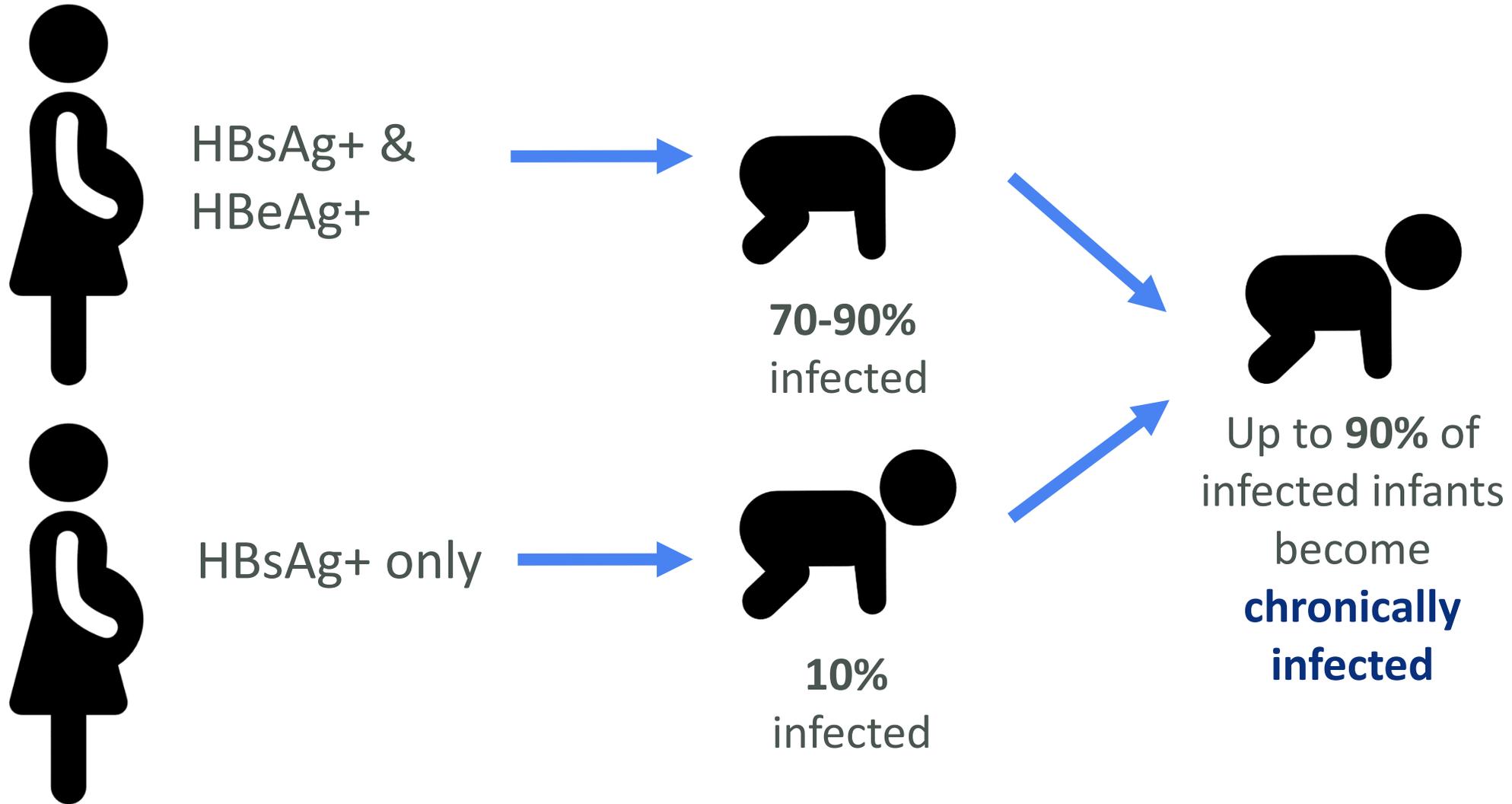
## ■ Immune inactive

- Improvement of hepatic inflammation and fibrosis

## ■ Reactivation

- Active hepatic inflammation with or without fibrosis

# Hepatitis B Perinatal Transmission\*



\*In the absence of postexposure prophylaxis

# Strategy to Eliminate Hepatitis B Virus Transmission— United States

## ■ Prevent perinatal HBV transmission.

- Routine testing of all pregnant women for HBsAg
  - Prophylaxis (HepB vaccine and HBIG) for infants born to HepB surface antigen (HBsAg)-positive women
  - HBV DNA testing for HBsAg-positive women and antiviral therapy if HBV DNA is greater than 200,000 IU/mL



New!

## ■ Universal vaccination of all infants at birth

## ■ Routine vaccination of previously unvaccinated children and adolescents( younger than 19 years of age)

## ■ Vaccination of adults at risk for HBV infection

2

**Vaccine**

# Hepatitis B-Containing Vaccine Products\*

Vaccine product	Age indications
<b>Single-component vaccines</b>	
Engerix-B	
Pediatric formulation	Birth through 19 years
Adult formulation	20 years and older
Recombivax HB	
Pediatric formulation	Birth through 19 years
Adult formulation	20 years and older
Heplisav-B	18 years and older
<b>Combination vaccines</b>	
Pediarix–DTaP, IPV, and HepB vaccines	6 weeks through 6 years
Twinrix–HepA and HepB vaccines	18 years and older
Vaxelis–DTaP, IPV, HepB, and Hib vaccines	6 weeks through 4 years

\*ACIP does not state a preference for vaccine product vs. another if the patient is eligible for more than 1 product

# Recommended Dosage of HepB Vaccine

	<b>Recombivax HB Dose (mcg)</b>	<b>Engerix-B* Dose (mcg)</b>	<b>Heplisav-B<sup>†</sup> Dose (mcg)</b>
<b>Children: Birth through 19 years</b>	<b>0.5 mL (5)</b>	<b>0.5 mL (10)</b>	<b>N/A: <math>\leq 17</math> yrs 0.5 mL (20): <math>\geq 18</math> yrs</b>
<b>Adults: 20 years and older</b>	<b>1.0 mL (10)</b>	<b>1.0 mL (20)</b>	<b>0.5 mL (20)</b>

\*Pediarix contains the pediatric formulation of Engerix-B.

\*Twinrix contains the adult formulation of Engerix-B.

<sup>†</sup> Heplisav-B approved for use in persons 18 years of age or older

# HepB Vaccine

	<b>Recombivax HB Dose (mcg)</b>	<b>Engerix-B* Dose (mcg)</b>	<b>Heplisav-B Dose (mcg)</b>
<b>Composition</b>	Recombinant HBsAg	Recombinant HBsAg	Adjuvanted Recombinant HBsAg
<b>Efficacy</b>	95% (Range, 80% to 100%)	95% (Range, 80% to 100%)	90% to 100%
<b>Schedule</b>	3 doses	3 doses	2 doses
<b>Route</b>	IM	IM	IM

\*Pediatrix contains the pediatric formulation of Engerix-B.

\*Twinrix contains the adult formulation of Engerix-B.

# Combination Vaccines

## ■ **Pediarix DTaP-IPV-HepB**

- Ages: 6 weeks through 6 years
- Routine schedule: 2, 4, 6 months of age
- Approved for dose 1, 2, 3 of HepB (do NOT use for the birth dose)

## ■ **Twinrix HepA-HepB**

- Ages: 18 years of age and older
- Routine schedule: 3 doses at 0, 1, 6 months, or
- 0, 7, 21-30 days and a booster dose at 12 months
- Each dose of Twinrix contains an adult dose of hepatitis B vaccine.
- A HepB series started with Twinrix can be complete with single-antigen HepB vaccine and vice versa.

3

**Clinical  
Considerations**

# ACIP HepB Vaccine Recommendations: Pediatric

- Routinely recommended for all children birth through 18 years of age
- Vaccinate previously unvaccinated children and those missing doses.

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19-23 mos	2-3 yrs	4-6 yrs	7-10 yrs	11-12 yrs	13-15 yrs	16 yrs	17-18 yrs
Hepatitis B (HepB)	1 <sup>st</sup> dose	2 <sup>nd</sup> dose			← 3 <sup>rd</sup> dose →												

# HepB Schedule: Routine Infant

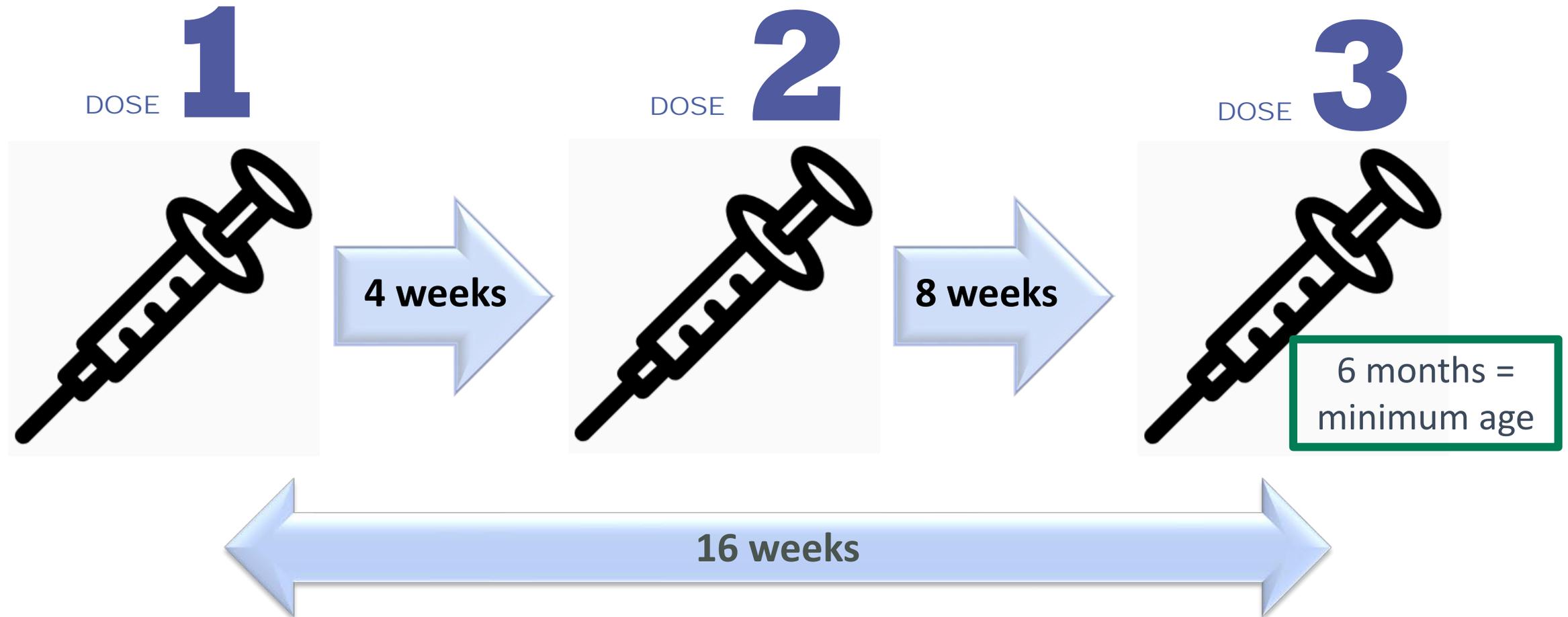
Dose <sup>+</sup>	Routine Age
Dose 1	Birth <sup>§</sup>
Dose 2	1 through 2 months
Dose 3 <sup>+</sup>	6 through 18 months*

§The birth dose of single-component hepatitis B vaccine should be administered within 24 hours of birth for medically stable infants weighing  $\geq 2,000$  grams born to hepatitis B surface antigen (HBsAg)-negative mothers.

\*Infants whose mothers are hepatitis B surface antigen (HBsAg)-positive or whose HBsAg status is unknown should receive the third dose at 6 months of age.

+An additional dose at 4 months is acceptable if the clinician prefers to use a combination vaccine that contains hepatitis B vaccine.

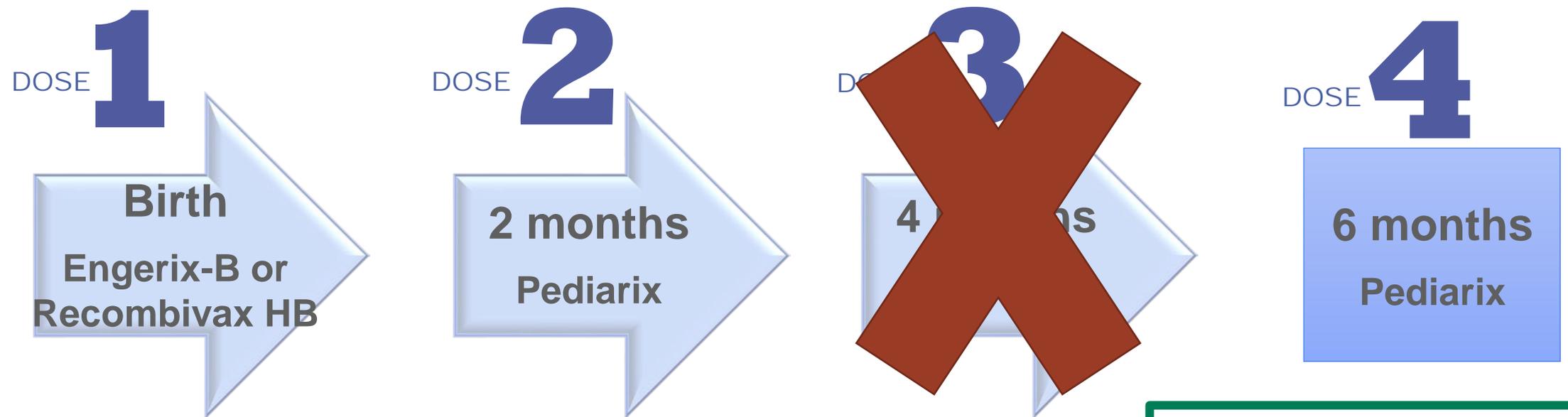
# HepB Schedule: Minimum Age and Intervals



# Pediarix Schedule Considerations

Can be given to infants who received HepB at birth = 4 doses\*

Do NOT use for the birth dose.



6 months is the minimum age for the last dose.

\*An additional dose at 4 months is acceptable if the clinician prefers to use a combination vaccine that contains hepatitis B vaccine .

# Birth Dose Considerations: Babies Weighing 2000 grams or more

HBsAg-**NEGATIVE**  
mother



Administer HepB  
vaccine within  
24 hours of birth.

HBsAg-**POSITIVE**  
mother



Administer HepB  
vaccine and HBIG\*  
within 12 hours of  
birth.

HBsAg **UNKNOWN**  
mother



Administer HepB  
vaccine within 12 hours  
of birth and test to  
determine mother's  
status ASAP.

\*Administer HepB vaccine and HBIG in separate limbs .

# Birth Dose Considerations: Babies Weighing Less Than 2000 grams

HBsAg-**NEGATIVE**

mother



Administer HepB vaccine at hospital discharge or at 1 month of age.

HBsAg-**POSITIVE**

mother



Administer HepB vaccine and HBIG\* within 12 hours of birth.

HBsAg **UNKNOWN**

mother



Administer HepB vaccine within 12 hours of birth. Give HBIG if the mother's HBsAg status cannot be determined within 12 hours of birth.\*

\*Administer HepB vaccine and HBIG in separate limbs .

# Medical Considerations: Treating Infants Whose Mothers are Hepatitis B Surface Antigen-**POSITIVE**

- **Administer HepB vaccine and HBIG within 12 hours of birth.**
  - HepB vaccine and HBIG can be administered at the same time.
  - HepB and HBIG are both IM injections.
  - Administer in different limbs.
- **Complete vaccination series at 6 months of age.**
  - First dose does not count when administered to infants weighing less than 2000 grams
- **Test for response after completing a 3-dose series at 9 through 12 months of age.**

## Medical Considerations: Treating Infants Whose Mothers are Hepatitis B Surface Antigen **UNKNOWN**

- **Infants born to women without HBsAg test results but other evidence suggests maternal HBV infection exists, administer both HepB and HBIG within 12 hours of birth**
- **Test mother for HBsAG status as soon as possible**
  - Infants weighing 2000 grams or more: If mother is determined to be hepatitis B surface antigen-positive, give HBIG as soon as possible, but no later than age 7 days
  - Infants weighing less than 2000 grams: If the mother tests positive or HBsAG status cannot be determined, administer HBIG within 12 hours of birth

# Serologic Testing and Children

## ■ **Prevaccination serologic testing is:**

- Not indicated before routine vaccination of infants or children
- Recommended for all persons born in Africa, Asia, the Pacific Islands, and other regions with HBsAg prevalence of 2% or higher

## ■ **Postvaccination serologic testing is:**

- Not routinely recommended following vaccination of infants, children, and adolescents
- Recommended for infants born to HBsAg+ women

# ACIP HepB Vaccine Recommendations: Adult

- Vaccination recommended for unvaccinated adults at risk for HBV infection and adults requesting protection from HBV infection
  - Acknowledgement of a specific risk factor not required

Vaccine	Pregnancy	Immuno-compromised (excluding HIV infection)	HIV infection CD4 count		Asplenia, complement deficiencies	End-stage renal disease, on hemodialysis	Heart or lung disease, alcoholism <sup>1</sup>	Chronic liver disease	Diabetes	Health care personnel <sup>2</sup>	Men who have sex with men	
			<200	≥200								
HepB												2 or 3 doses depending on vaccine

# HepB Schedule: Adult

## Recombivax HB or Engerix-B

<b>Dose</b>	<b>Routine Interval</b>	<b>Minimum Interval</b>
<b>Dose 1</b>	---	---
<b>Dose 2</b>	1 month	4 weeks
<b>Dose 3</b>	6 months	8 weeks <i>and</i> at least 16 weeks from Dose 1

# Heplisav-B (HepB-CpG)

## Storage

Store in the refrigerator between 2°C and 8°C (36°F and 46°F).

## Ages

18 years of age and older

## Schedule

Administer 2 doses separated by 4 weeks.

## Administration

Intramuscular (IM) injection in the deltoid

Can be administered at the same clinical visit as other vaccines

Administer in separate injection sites, 1 inch apart (if possible).

## Contraindication

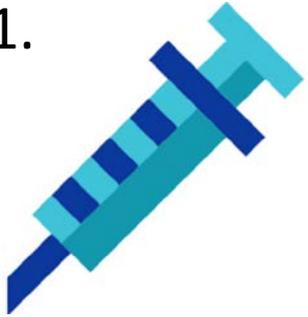
History of severe allergic reaction (e.g., anaphylaxis) after a previous dose of any hepatitis B vaccine or to any component of Heplisav-B, including yeast

# Additional Heplisav-B Considerations

- **2-dose HepB series only applies when BOTH doses are Heplisav-B, administered at least 4 weeks apart**
  - Any 2 doses of Heplisav-B separated by 4 weeks is considered complete, even if the patient has had other HepB vaccine products
- **Until safety data are available for Heplisav-B, providers should vaccinate pregnant women needing HepB vaccination with Engerix-B or Recombivax HB.**

# Scenarios

1.



HepB  
Engerix-B or Recombivax HB  
**01/01/2018**



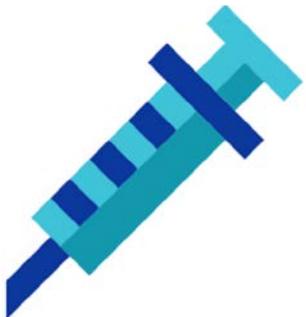
HepB-CpG  
Heplisav-B  
**02/01/2018**



HepB-CpG  
Heplisav-B  
**03/01/2018**

**Completed series**  
**No additional doses**  
**are needed**

2.



HepB  
Engerix-B or Recombivax HB  
**01/01/2018**



HepB-CpG  
Heplisav-B  
**02/01/2018**



HepB  
Engerix-B or Recombivax HB  
**05/01/2018**

**Completed series**  
**No additional doses**  
**are needed**

# ACIP HepB Vaccine Recommendations: Health Care and Public Safety Personnel



- All health care personnel (HCP) whose work-, training-, and volunteer-related activities involve reasonably anticipated risk for exposure to blood or body fluids should be assessed for evidence of immunity to hepatitis B.

## Evidence of Immunity for HCP =

Written documentation of a complete HepB vaccine series

**AND**

Subsequent documented anti-HBs greater than or equal to  
10 mIU/mL

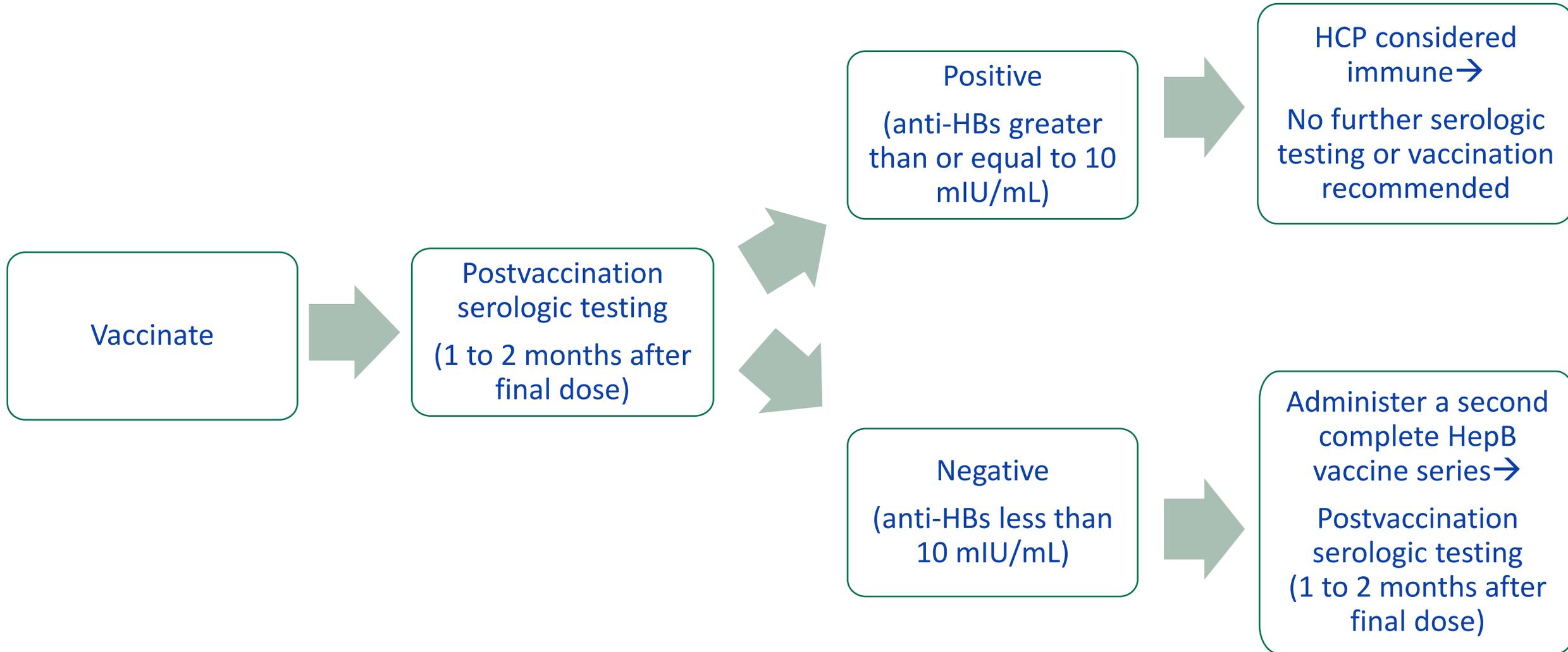
# Common Clinical Scenarios for HCP

- **Documentation of complete series AND documented positive titer**
- **Unvaccinated (or incomplete series)**
- **Documentation of complete series but no documented positive titer**

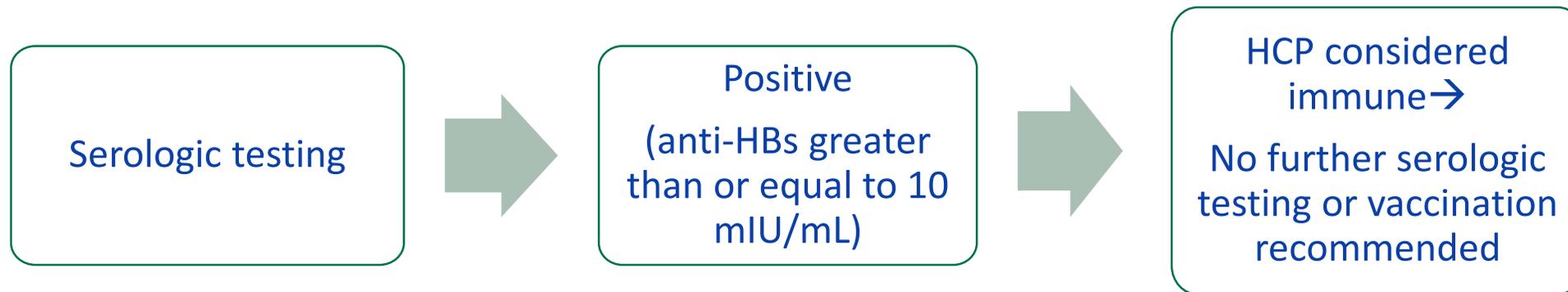
# Documentation of Complete Vaccine Series AND Documented Positive Titer

- HCP considered immune
- **NO** additional serologic testing or vaccine booster doses
- Advise the person to keep a copy of the vaccination record and positive titer FOREVER.

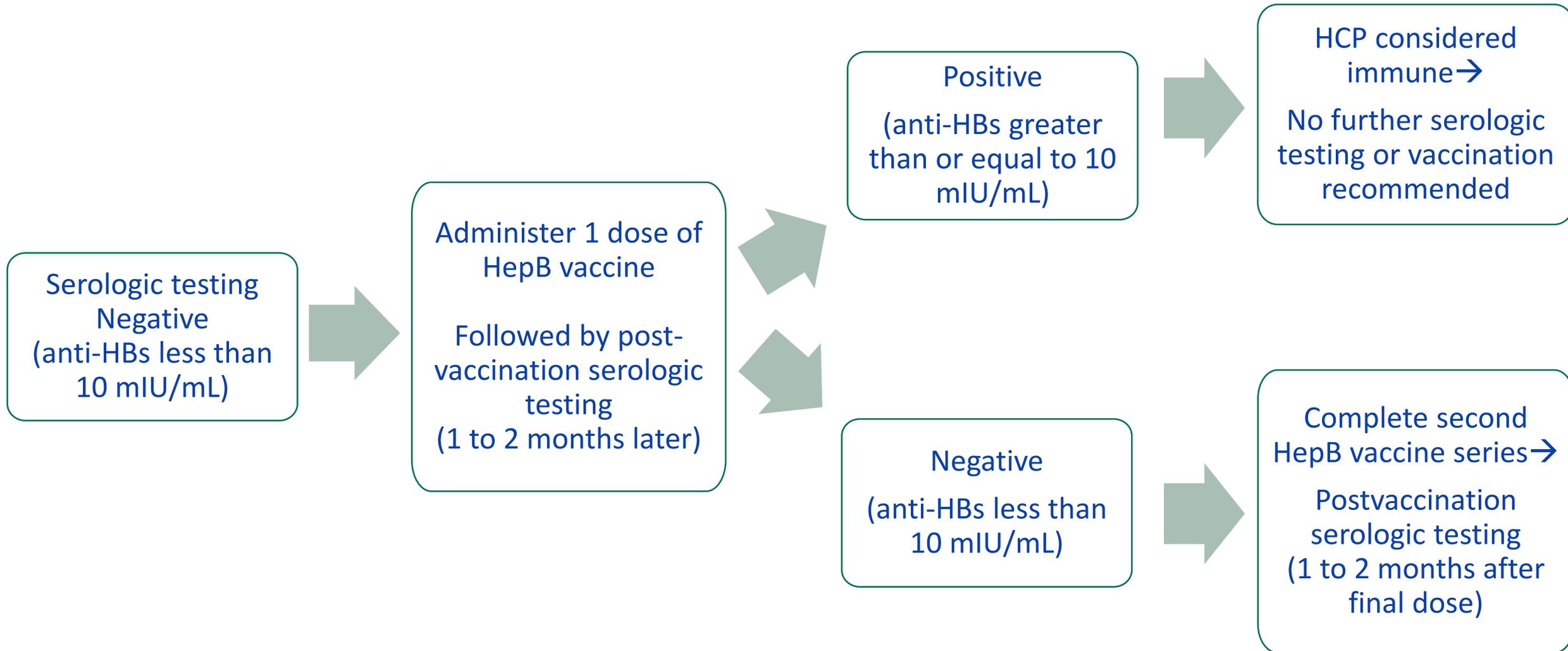
# Unvaccinated HCP (or Incomplete Vaccine Series)



# Documentation of Complete Vaccine Series but No Documented Positive Titer



# Documentation of Complete Vaccine Series but No Documented Positive Titer (2)



# Persistent Nonresponse to HepB Vaccine

- Less than 5% of vaccinees do not develop anti-HBs after 6 valid doses.
- May be nonresponder or “hyporesponder”
- Check HBsAg status.
- If exposed, treat as nonresponder with postexposure prophylaxis

# HCP and Postexposure Management

TABLE 5. Postexposure management of health care personnel after occupational percutaneous or mucosal exposure to blood or body fluids, by health care personnel HepB vaccination and response status

HCP status	Postexposure testing		Postexposure prophylaxis		Postvaccination serologic testing
	Source patient (HBsAg)	HCP testing (anti-HBs)	HBIG	Vaccination	
Documented responder after complete series			No action needed		
Documented nonresponder after two complete series	Positive/unknown	—*	HBIG x2 separated by 1 month	—	N/A
	Negative		No action needed		
Response unknown after complete series	Positive/unknown	<10 mIU/mL	HBIG x1	Initiate revaccination	Yes
	Negative	<10 mIU/mL	None	Initiate revaccination	Yes
	Any result	≥10 mIU/mL	No action needed		
Unvaccinated/incompletely vaccinated or vaccine refusers	Positive/unknown	—	HBIG x1	Complete vaccination	Yes
	Negative	—	None	Complete vaccination	Yes

**Abbreviations:** anti HBs = antibody to hepatitis B surface antigen; HBIG = hepatitis B immune globulin; HBsAg = hepatitis B surface antigen; HCP = health care personnel; N/A = not applicable.

\* Not indicated.

# Prevaccination Serologic Testing

## ■ Recommended for:

- All persons born in Africa, Asia, the Pacific Islands, and other regions with HBsAg prevalence of 2% or higher
- Household, sex, and needle-sharing contacts of HBsAg-positive persons
- Men who have sex with men
- Injection drug users
- Certain persons receiving cytotoxic or immunosuppressive therapy

# Postvaccination Serologic Testing

- **Serologic testing is NOT routinely recommended following vaccination of most persons.**
- **Recommended for:**
  - Chronic hemodialysis patients
  - Other immunocompromised persons
  - Persons with HIV infection
  - Sex partners of HBsAg+ persons
  - Health care personnel

# Knowledge Check

- A student going to medical school has documentation of an age-appropriate HepB vaccine series from infancy but no documentation of a titer. At matriculation, what is the first action to document immunity?
  - A) Another dose of Hepatitis B vaccine
  - B) An anti-HBs test
  - C) An HBsAG test
  - D) An angry phone call to the student's former provider and/or health insurance company



# Answer

- A student going to medical school has documentation of an age-appropriate HepB vaccine series from infancy but no documentation of a titer. At matriculation, what is the first action to document immunity?

B) An anti-HBs test



# Revaccination

- **Revaccination is generally not recommended for persons with a normal immune status.**
- **Recommended for the following:**
  - HBsAg-negative infants with anti-HBs less than 10 mIU/mL (born to HBsAg-positive mothers)
  - Hemodialysis patients
  - HIV-infected persons
  - Other immunocompromised persons

# Vaccine Administration

## ■ Route: IM Injection

- Needle gauge: 22 through 25 gauge
- Needle length\*: 5/8 through 1.5 inch depending on the patient's age and/or weight

## ■ Site\* :

- Birth through 11 months: Vastus lateralis muscle is preferred
- 1 through 2 years: Vastus lateralis muscle is preferred; deltoid muscle may be used if the muscle mass is adequate
- 3 years and older: Deltoid muscle is preferred; vastus lateralis muscle may be used

# Vaccine Administration Considerations

- **Route: IM Injection**

- Administer HepB vaccine and HBIG (if needed) in different limbs.

- **Site: NO BUTTS!**

Administration Errors	Count the Dose or Revaccinate?
Adult formulation administered to a child	Count the dose if it meets minimum age and interval
Pediatric formulation administered to an adult	Dose does not count and should be repeated ASAP
HepA instead of HepB vaccine	Administer HepB vaccine ASAP

# HepB Vaccine Contraindications and Precautions

## ■ Contraindication

- Severe allergic reaction to a vaccine component or following a prior dose

## ■ Precaution

- Moderate or severe acute illness

# HepB Vaccine Adverse Reactions

**Symptom**

**Frequency**

---

**Anaphylaxis**

**1.1 cases per million vaccine doses**

# Hepatitis B Vaccine Storage and Handling

- Store HepB-containing vaccines in a refrigerator between 2°C through 8°C (36°F through 46°F).
- DO NOT FREEZE.
- Store in the original packaging with the lids closed in a clearly labeled bin and/or area of the storage unit.
- Store pediatric and adult formulations separately, away from each other and other look- or sound-alike vaccines (e.g., HepA, Hib, HPV).

## HepB (Engerix-B)-Pediatric Formulation

**Ages:** Birth through 19 years  
**Use for:** Any dose in the series  
**Route:** Intramuscular (IM) injection

Read the package insert that accompanies the product to check for the presence of natural rubber or latex.

## HepB (Recombivax HB)-Pediatric Formulation

**Ages:** Birth through 19 years  
**Use for:** Any dose in the series  
**Route:** Intramuscular (IM) injection

Vial stopper and syringe plunger stopper and tip contain latex

## HepB (Engerix-B)-Adult Formulation

**Ages:** 20 years and older  
**Use for:** Any dose in the series  
**Route:** Intramuscular (IM) injection

Read the package insert that accompanies the product to check for the presence of natural rubber or latex.

## HepB (Recombivax HB)-Adult Formulation

**Ages:** 20 years and older  
**Use for:** Any dose in the series  
**Alternate Adolescent Schedule for 11 through 15 year olds:**  
Two 1 mL doses 4 to 6 months apart  
**Route:** Intramuscular (IM) injection

Vial stopper and syringe plunger stopper and tip cap contain latex

4

**Resources**

# Information for Parents: Hepatitis B and the Vaccine (Shot) to Prevent It

## Hepatitis B and the Vaccine (Shot) to Prevent It

Last updated April 2017

The best way to protect against hepatitis B is by getting the hepatitis B vaccine. Doctors recommend that all children get the vaccine.

### Why should my child get the hepatitis B shot?

The hepatitis B shot:

- Protects your child against hepatitis B, a potentially serious disease.
- Protects other people from the disease because children with hepatitis B usually don't have symptoms, but they may pass the disease to others without anyone knowing they were infected.
- Prevents your child from developing liver disease and cancer from hepatitis B.
- Keeps your child from missing school or childcare (and keeps you from missing work to care for your sick child).

### Is the hepatitis B shot safe?

The hepatitis B vaccine is very safe, and it is effective at preventing hepatitis B. Vaccines, like any medicine, can have side effects. But serious side effects caused by the hepatitis B vaccine are extremely rare.

### What are the side effects?

Most people who get the hepatitis B vaccine will have no side effects at all. When side effects do occur, they are often very mild, such as a low fever (less than 101 degrees) or a sore arm from the shot.

### What is hepatitis B?

Hepatitis B is a contagious liver disease caused by the hepatitis B virus. When a person is first infected with the virus, he or she can develop an "acute" (short-term) infection. Acute hepatitis B refers to the first 6 months after someone is infected with the hepatitis B virus. This infection can range from a very mild illness with few or no symptoms to a serious condition requiring hospitalization. Some people are able to fight the infection and clear the virus.

For others, the infection remains and is "chronic," or lifelong. Chronic hepatitis B refers to the infection when it remains active instead of getting better after 6 months. Over time, the infection can cause serious health problems, and even liver cancer.



Doctors recommend that your child get 3 doses of the hepatitis B shot for best protection. Ask your doctor when your child should get the next shot. Typically, children get one dose at each of the following ages:

- Shortly after birth
- 1 through 2 months
- 6 through 18 months

Your child may get a 4th dose depending on the brand of vaccines the doctor uses.



# Hepatitis B Standing Order Templates

## Children and Adults

### STANDING ORDERS FOR Administering Hepatitis B Vaccine to Children and Teens

Standing orders for other vaccines are available at [www.immunize.org/standing-orders](http://www.immunize.org/standing-orders).  
NOTE: This standing orders template may be adapted per a practice's discretion without obtaining permission from IAC. As a courtesy, please acknowledge IAC as its source.

#### Purpose

To reduce morbidity and mortality from hepatitis B virus (HBV) by vaccinating all children and teens who meet the criteria established by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices (ACIP).

#### Policy

Where allowed by state law, standing orders enable eligible nurses and other healthcare professionals (e.g., pharmacists) to assess the need for and vaccinate children and teens who meet any of the criteria below.

#### Procedure

- 1 Assess Children and Teens in Need of Vaccination against HBV infection based on the following criteria:
  - Lack of documentation of at least 3 doses of hepatitis B vaccine (HepB) with the third dose given at least 16 weeks after the first dose, at least 8 weeks after the second dose, and when no younger than age 24 weeks

#### 2 Screen for contraindications and precautions

##### Contraindications

- Do not give HepB to a child or teen who has experienced a serious reaction (e.g., anaphylaxis) to a prior dose of the vaccine or to any of its components. For information on vaccine components, refer to the manufacturer's package insert ([www.immunize.org/packageinserts](http://www.immunize.org/packageinserts)) or go to [www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf](http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf).
- Do not give any HepB to a child or teen who has experienced hypersensitivity to yeast.

##### Precautions

- Moderate or severe acute illness with or without fever

#### 3 Provide Vaccine Information Statements

Provide all patients (or, in the case of minors, their parent, or legal representative) with a copy of the most current federal Vaccine Information Statement (VIS). Provide non-English speaking patients with a copy of the VIS in their native language, if one is available and desired; these can be found at [www.immunize.org/vis](http://www.immunize.org/vis). (For information about how to document that the VIS was given, see section 6 titled "Document Vaccination.")

#### 4 Prepare to Administer Vaccine

Choose the needle gauge, needle length, and injection site according to the following chart

AGE OF INFANT/CHILD/TEEN	NEEDLE LENGTH	INJECTION SITE
Newborns (1st 28 days)	5/8"	Anterolateral thigh muscle
Infants (1-12 months)	1"	Anterolateral thigh muscle
Toddlers (1-2 years)	1-1 1/4"	Anterolateral thigh muscle**
	5/8"-1"	Deltoid muscle of arm
Children (3-10 years)	5/8"-1"	Deltoid muscle of arm**
	1-1 1/4"	Anterolateral thigh muscle
Adolescents and Teens (11-18 years)	5/8"-1"	Deltoid muscle of arm**
	1-1 1/2"	Anterolateral thigh muscle

\* A 30° needle may be used for children for IM injection in the deltoid muscle only if the skin is stretched tight, the subcutaneous tissue is not bunched, and the injection is made at a 90-degree angle.

\*\* Preferred site.

CONTINUED ON THE NEXT PAGE ►

### STANDING ORDERS FOR Administering Hepatitis B Vaccine to Adults

Standing orders for other vaccines are available at [www.immunize.org/standing-orders](http://www.immunize.org/standing-orders).  
NOTE: This standing orders template may be adapted per a practice's discretion without obtaining permission from IAC. As a courtesy, please acknowledge IAC as its source.

#### Purpose

To reduce morbidity and mortality from hepatitis B virus (HBV) by vaccinating all adults who meet the criteria established by the Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices.

#### Policy

Where allowed by state law, standing orders enable eligible nurses and other health care professionals (e.g., pharmacists) to assess the need for vaccination and to vaccinate adults who meet any of the criteria below.

#### Procedure

- 1 Assess Adults for Need of Vaccination against HBV infection according to the following criteria:

- Any person who wants to be protected from HBV infection
- Patient with diabetes mellitus (Note: for those age 60 years or older with diabetes mellitus, at the discretion of the treating clinician)
- Patient with end-stage renal disease, including patients receiving hemodialysis; HIV infection; or chronic liver disease
- Sexually active and not in a long-term, mutually monogamous relationship (e.g., more than 1 sex partner during the previous 6 months)
- Seeking evaluation or receiving treatment for a sexually transmitted infection (STI)
- A male who has sex with males
- A current or recent injection-drug user
- At occupational risk of infection through exposure to blood or blood-contaminated body fluids (e.g., health care worker, public safety worker, trainee in a health professional or allied health school)
- Residents or staff of an institution for persons with developmental disabilities
- Sex partner or household member of a person who is chronically infected with HBV (HBsAg-positive). (This includes an HBsAg-positive adopted child.)
- Planned travel to a country with high or intermediate prevalence of endemic HBV infection (for hepatitis B travel information from CDC, go to [wwwnc.cdc.gov/travel/diseases/hepatitis-b](http://wwwnc.cdc.gov/travel/diseases/hepatitis-b))
- People living in correctional facilities
- All teenagers ages 18 and younger who are not fully vaccinated (see standing orders for children and teens at [www.immunize.org/catg.d/p3076a.pdf](http://www.immunize.org/catg.d/p3076a.pdf))

#### 2 Screen for Contraindications and Precautions

##### Contraindications

Do not give hepatitis B vaccine to a person who has experienced a serious systemic or anaphylactic reaction to a prior dose of the vaccine or to any of its components. For a list of vaccine components, refer to the manufacturer's package insert ([www.immunize.org/packageinserts](http://www.immunize.org/packageinserts)) or go to [www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf](http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf).

##### Precautions

Moderate or severe acute illness with or without fever

CONTINUED ON THE NEXT PAGE ►

- Ask the Experts–Hepatitis B FAQs:  
[www.immunize.org/askexperts/experts\\_hepb.asp](http://www.immunize.org/askexperts/experts_hepb.asp)
- CDC Viral Hepatitis–Hepatitis B Information:  
[www.cdc.gov/hepatitis/hbv/index.htm](http://www.cdc.gov/hepatitis/hbv/index.htm)
- CDC Hepatitis B Vaccination:  
[www.cdc.gov/vaccines/vpd/hepb/index.html](http://www.cdc.gov/vaccines/vpd/hepb/index.html)
- Hepatitis B and the Vaccine (Shot) to Prevent It–Information for Parents: [www.cdc.gov/vaccines/parents/diseases/child/hepB-basics-color.pdf](http://www.cdc.gov/vaccines/parents/diseases/child/hepB-basics-color.pdf)

- Hepatitis B Facts—Testing and Vaccination:  
[www.immunize.org/catg.d/p2110.pdf](http://www.immunize.org/catg.d/p2110.pdf)
- Hepatitis B and Health Care Personnel—FAQs:  
[www.immunize.org/catg.d/p2109.pdf](http://www.immunize.org/catg.d/p2109.pdf)
- Infection Prevention during Blood Glucose Monitoring and Insulin Administration: [www.cdc.gov/injectionsafety/blood-glucose-monitoring.html](http://www.cdc.gov/injectionsafety/blood-glucose-monitoring.html)
- Preexposure Evaluation for Health Care Personnel Previously Vaccinated with Complete  $\geq 3$ -Dose HepB Vaccine Series Who Have Not Had Postvaccination Serologic Testing (Figure 3):  
[www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.pdf](http://www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.pdf)

# Frequently Asked Questions

# Continuing Education Information

- CE credit, go to:  
[www.cdc.gov/GetCE](http://www.cdc.gov/GetCE)
- Search course number: WD4344-091620
- CE credit expires: July 1, 2022
- CE instructions are available on the EpiVac Pink Book Web-on-Demand Series web page

The screenshot shows the TCEO website interface. At the top, there is a blue header with the text "Training and Continuing Education Online (TCEO)". Below this is the TCEO logo, which consists of the letters "TCEO" in a bold, blue font, with a green circular arrow icon to the right. Underneath the logo, the text "TRAINING AND CONTINUING EDUCATION ONLINE" is displayed in a smaller, blue font. On the left side, there is a vertical navigation menu with several blue buttons: "TCEO Home", "Search Courses", "Create Account", "9 Simple Steps to Earn CE", "Frequently Asked Questions", and "Contact TCEO". The main content area on the right has a white background and contains the following text:

**New to TCEO?**  
Visit [Create Account](#). Once your account has been created, you will be able to search for courses and complete requirements to receive CE.

**Already have a TCEO account from the previous system?**  
To move your account to the new system please sign in above using your existing TCEO username and password. Once signed in, follow the prompts to verify and update your account. After your account is updated forward you will use this email address and password to sign in.

**Not sure how to get started?**  
Follow these [9 Simple Steps](#) to earn continuing education for the courses you have taken or conferences you have attended!

Below the text is a row of four small images: a woman smiling at a child, a man in a suit looking at a screen, a doctor in a white coat holding a dog, and a woman sitting at a desk with a laptop.

Below the images, the text "Welcome to TCEO" is displayed, followed by a small line of text: "Training and Continuing Education Online (TCEO) is a system that provides access to CDC educational activities for continuing education (CE). Use TCEO to search for CE opportunities, complete course..."

# E-mail Your Immunization Questions to Us

[NIPINFO@cdc.gov](mailto:NIPINFO@cdc.gov)

Write “Web-on-Demand–HepB”  
in the subject line



# EpiVac Pink Book Web-on-Demand Resources

- Comprehensive list of resources for ALL sessions
- Located on the web page for this web-on-demand session at [www.cdc.gov/vaccines/ed/webinar-epv/index.html](http://www.cdc.gov/vaccines/ed/webinar-epv/index.html)
- Additional materials located on this webpage include:
  - Hepatitis B slide set

## COURSE RESOURCES

### Epidemiology and Prevention of Vaccine-Preventable Diseases

- ▶ Epidemiology and Prevention of Vaccine-Preventable Diseases (Pink Book) Supplement: [www.cdc.gov/vaccines/pubs/pinkbook/supplement.html](http://www.cdc.gov/vaccines/pubs/pinkbook/supplement.html)

#### Overall Resources

- ▶ Current childhood and adult immunization schedules: [www.cdc.gov/vaccines/schedules/index.html](http://www.cdc.gov/vaccines/schedules/index.html)
- ▶ CDC Vaccine Schedules App for Health Care Providers: [www.cdc.gov/vaccines/schedules/hcp/schedule-app.html](http://www.cdc.gov/vaccines/schedules/hcp/schedule-app.html)
- ▶ Advisory Committee on Immunization Practices (ACIP) recommendations: [www.cdc.gov/vaccines/hcp/acip-recs/index.html](http://www.cdc.gov/vaccines/hcp/acip-recs/index.html)
- ▶ CDC General Best Practice Guidelines for Immunization: [www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html)
- ▶ CDC Continuing Education Information: [www.cdc.gov/vaccines/ed/ce-credit-how-to.html](http://www.cdc.gov/vaccines/ed/ce-credit-how-to.html)
- ▶ Health Care Personnel Vaccination Recommendations: [www.immunize.org/catg.d/p2017.pdf](http://www.immunize.org/catg.d/p2017.pdf)
- ▶ Pink Book Webinar Series: [www.cdc.gov/vaccines/ed/webinar-epv/index.html](http://www.cdc.gov/vaccines/ed/webinar-epv/index.html)
- ▶ Vaccines Licensed for Use in the United States Package Inserts: [www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm093833.htm](http://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm093833.htm)
- ▶ You Call the Shots: [www.cdc.gov/vaccines/ed/youcalltheshots.html](http://www.cdc.gov/vaccines/ed/youcalltheshots.html)

#### Course Intro and Objectives

- ▶ What is the Advisory Committee on Immunization Practices (ACIP)?: [www.cdc.gov/vaccines/hcp/conversations/downloads/vacsafe-acip-color-office.pdf](http://www.cdc.gov/vaccines/hcp/conversations/downloads/vacsafe-acip-color-office.pdf)
- ▶ CDC Immunization Resources for You and Your Patients: [www.cdc.gov/vaccines/hcp/admin/downloads/Resource-Booklet.pdf](http://www.cdc.gov/vaccines/hcp/admin/downloads/Resource-Booklet.pdf)
- ▶ Parents' Guide to Childhood Immunizations: [www.cdc.gov/vaccines/parents/tools/parents-guide/index.html](http://www.cdc.gov/vaccines/parents/tools/parents-guide/index.html)
- ▶ Order Information for Free CDC Immunization Materials for Providers and Patients: [www.cdc.gov/pubs/CDCInfoOnDemand.aspx](http://www.cdc.gov/pubs/CDCInfoOnDemand.aspx)

#### Principles of Vaccination

- ▶ Immune System Research: [www.niaid.nih.gov/research/immune-system-research](http://www.niaid.nih.gov/research/immune-system-research)
- ▶ What is the Immune System?: [www.vaccines.gov/basics/work/prevention](http://www.vaccines.gov/basics/work/prevention)
- ▶ Understanding How Vaccines Work: [www.cdc.gov/vaccines/hcp/conversations/downloads/vacsafe-understand-color-office.pdf](http://www.cdc.gov/vaccines/hcp/conversations/downloads/vacsafe-understand-color-office.pdf)
- ▶ Vaccines Work: [www.vaccines.gov/basics/work/index.html](http://www.vaccines.gov/basics/work/index.html)
- ▶ Vaccine Basics: How Vaccines Work: [www.vaccineinformation.org/how-vaccines-work/](http://www.vaccineinformation.org/how-vaccines-work/)
- ▶ The History of Vaccines: How Vaccines Work: [www.historyofvaccines.org/content/how-vaccines-work](http://www.historyofvaccines.org/content/how-vaccines-work)

#### General Best Practice Guidelines

- ▶ Ask the Experts-Scheduling Vaccines FAQs: [www.immunize.org/askexperts/scheduling-vaccines.asp](http://www.immunize.org/askexperts/scheduling-vaccines.asp)
- ▶ Ask the Experts-Combination Vaccines FAQs: [www.immunize.org/askexperts/experts\\_combo.asp](http://www.immunize.org/askexperts/experts_combo.asp)
- ▶ Ask the Experts-Precautions and Contraindications FAQs: [www.immunize.org/askexperts/precautions-contraindications.asp](http://www.immunize.org/askexperts/precautions-contraindications.asp)
- ▶ Foreign Language Vaccine-Preventable Disease Terms: [www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/foreign-products-tables.pdf](http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/foreign-products-tables.pdf)
- ▶ Guide to Contraindications and Precautions to Commonly Used Vaccines: [www.immunize.org/catg.d/p3072a.pdf](http://www.immunize.org/catg.d/p3072a.pdf)
- ▶ Guidelines for Vaccinating Pregnant Women: [www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html](http://www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html)
- ▶ IDSA 2013 Clinical Practice Guideline for Vaccination of the Immunocompromised Host: [www.idsociety.org/Guidelines/Patient\\_Care/IDSA\\_Practice\\_Guidelines/Vaccination\\_of\\_the\\_Immunocompromised\\_Host/](http://www.idsociety.org/Guidelines/Patient_Care/IDSA_Practice_Guidelines/Vaccination_of_the_Immunocompromised_Host/)
- ▶ Interval Between Antibody-Containing Products and Measles- and Varicella-Containing Vaccines: [www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/a/mmr\\_ig.pdf](http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/a/mmr_ig.pdf)



# Thank You From Atlanta!

