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

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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

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Hepatitis B and Hepatitis B Vaccine
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

https://www.cdc.gov/hepatitis/hbv/bfaq.htm#bFAQb04
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 Infection risk (%)

Age of infection

Birth 1-6 mo 7-12 mo 1-4 yrs 5+ yrs

J Hepatol. 2008;48(2):335-52
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*

- HBsAg+ & HBeAg+
  - 70-90% infected
- HBsAg+ only
  - 10% infected
- Up to 90% of infected infants become chronically infected

*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

- 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

https://www.cdc.gov/mmwr/volumes/67/rr/rr6701a1.htm#B2_down
Vaccine
<table>
<thead>
<tr>
<th>Vaccine product</th>
<th>Age indications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Single-component vaccines</strong></td>
<td></td>
</tr>
<tr>
<td>Engerix-B</td>
<td>Birth through 19 years</td>
</tr>
<tr>
<td><strong>Pediatric formulation</strong></td>
<td>Birth through 19 years</td>
</tr>
<tr>
<td><strong>Adult formulation</strong></td>
<td>20 years and older</td>
</tr>
<tr>
<td>Recombivax HB</td>
<td></td>
</tr>
<tr>
<td><strong>Pediatric formulation</strong></td>
<td>Birth through 19 years</td>
</tr>
<tr>
<td><strong>Adult formulation</strong></td>
<td>20 years and older</td>
</tr>
<tr>
<td>Heplisav-B</td>
<td>18 years and older</td>
</tr>
<tr>
<td><strong>Combination vaccines</strong></td>
<td></td>
</tr>
<tr>
<td>Pediarix–DTaP, IPV, and HepB vaccines</td>
<td>6 weeks through 6 years</td>
</tr>
<tr>
<td>Twinrix–HepA and HepB vaccines</td>
<td>18 years and older</td>
</tr>
<tr>
<td>Vaxelis–DTaP, IPV, HepB, and Hib vaccines</td>
<td>6 weeks through 4 years</td>
</tr>
</tbody>
</table>

*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

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Recombivax HB Dose (mcg)</th>
<th>Engerix-B* Dose (mcg)</th>
<th>Heplisav-B+ Dose (mcg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children: Birth through 19 years</td>
<td>0.5 mL (5)</td>
<td>0.5 mL (10)</td>
<td>N/A: ≤17 yrs, 0.5 mL (20): ≥18 yrs</td>
</tr>
<tr>
<td>Adults: 20 years and older</td>
<td>1.0 mL (10)</td>
<td>1.0 mL (20)</td>
<td>0.5 mL (20)</td>
</tr>
</tbody>
</table>

*Pediarix contains the pediatric formulation of Engerix-B.
*Twinrix contains the adult formulation of Engerix-B.
† Heplisav-B approved for use in persons 18 years of age or older
## HepB Vaccine

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

*Pediarix 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.
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.

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Birth</th>
<th>1 mo</th>
<th>2 mos</th>
<th>4 mos</th>
<th>6 mos</th>
<th>9 mos</th>
<th>12 mos</th>
<th>15 mos</th>
<th>18 mos</th>
<th>19-23 mos</th>
<th>2-3 yrs</th>
<th>4-6 yrs</th>
<th>7-10 yrs</th>
<th>11-12 yrs</th>
<th>13-15 yrs</th>
<th>16 yrs</th>
<th>17-18 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatitis B (HepB)</td>
<td>1st dose</td>
<td>2nd dose</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## HepB Schedule: Routine Infant

<table>
<thead>
<tr>
<th>Dose(^+)</th>
<th>Routine Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose 1</td>
<td>Birth(^$)</td>
</tr>
<tr>
<td>Dose 2</td>
<td>1 through 2 months</td>
</tr>
<tr>
<td>Dose 3(^+)</td>
<td>6 through 18 months(^*)</td>
</tr>
</tbody>
</table>

\(^\$\)The birth dose of single-component hepatitis B vaccine should be administered within 24 hours of birth for medically stable infants weighing ≥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

1. DOSE 1
   - 4 weeks

2. DOSE 2
   - 8 weeks

3. DOSE 3
   - 6 months = minimum age

16 weeks

4-day grace can be applied to 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.

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

6 months is the minimum age for the last dose.
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
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
# HepB Schedule: Adult
Recombivax HB or Engerix-B

<table>
<thead>
<tr>
<th>Dose</th>
<th>Routine Interval</th>
<th>Minimum Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose 1</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Dose 2</td>
<td>1 month</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Dose 3</td>
<td>6 months</td>
<td>8 weeks <em>and</em> at least 16 weeks from Dose 1</td>
</tr>
</tbody>
</table>
# Heplisav-B (HepB-CpG)

<table>
<thead>
<tr>
<th><strong>Storage</strong></th>
<th>Store in the refrigerator between 2°C and 8°C (36°F and 46°F).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ages</strong></td>
<td>18 years of age and older</td>
</tr>
<tr>
<td><strong>Schedule</strong></td>
<td>Administer 2 doses separated by 4 weeks.</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td>Intramuscular (IM) injection in the deltoid</td>
</tr>
<tr>
<td></td>
<td>Can be administered at the same clinical visit as other vaccines</td>
</tr>
<tr>
<td></td>
<td>Administer in separate injection sites, 1 inch apart (if possible).</td>
</tr>
<tr>
<td><strong>Contraindication</strong></td>
<td>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</td>
</tr>
</tbody>
</table>

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

2. **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)

Vaccinate

Postvaccination serologic testing (1 to 2 months after final dose)

Positive (anti-HBs greater than or equal to 10 mIU/mL)

HCP considered immune ➔ No further serologic testing or vaccination recommended

Negative (anti-HBs less than 10 mIU/mL)

Administer a second complete HepB vaccine series ➔ Postvaccination serologic testing (1 to 2 months after final dose)
Documentation of Complete Vaccine Series but No Documented Positive Titer

- Serologic testing
  - Positive (anti-HBs greater than or equal to 10 mIU/mL)
  - HCP considered immune
    - No further serologic testing or vaccination recommended
Documentation of Complete Vaccine Series but No Documented Positive Titer (2)

Serologic testing
Negative (anti-HBs less than 10 mIU/mL)

Administer 1 dose of HepB vaccine
Followed by post-vaccination serologic testing (1 to 2 months later)

Positive
(anti-HBs greater than or equal to 10 mIU/mL)

HCP considered immune
No further serologic testing or vaccination recommended

Negative
(anti-HBs less than 10 mIU/mL)

Complete second HepB vaccine series
Postvaccination serologic testing (1 to 2 months after final dose)
 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>
<thead>
<tr>
<th>HCP status</th>
<th>Postexposure testing</th>
<th>Postexposure prophylaxis</th>
<th>Abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documented responder after complete series</td>
<td></td>
<td>No action needed</td>
<td>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.</td>
</tr>
<tr>
<td>Documented nonresponder after two complete series</td>
<td>Positive/unknown</td>
<td>HBIG x2 separated by 1 month</td>
<td>* Not indicated.</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>No action needed</td>
<td></td>
</tr>
<tr>
<td>Response unknown after complete series</td>
<td>Positive/unknown</td>
<td>HBIG x1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>Initiates revaccination</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any result</td>
<td>No action needed</td>
<td></td>
</tr>
<tr>
<td>Unvaccinated/incompletely vaccinated or vaccine refusers</td>
<td>Positive/unknown</td>
<td>HBIG x1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>Complete vaccination</td>
<td></td>
</tr>
</tbody>
</table>

**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

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
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
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

*Professional judgement should be used to determine the proper needle length and site. Factors influencing site include local reaction, number of vaccines to be administered, age, and muscle mass.
Vaccine Administration Considerations

- **Route: IM Injection**
  - Administer HepB vaccine and HBIG (if needed) in different limbs.

- **Site: NO BUTTS!**

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

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaphylaxis</td>
<td>1.1 cases per million vaccine doses</td>
</tr>
</tbody>
</table>
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).

Vaccine storage label example
Available at [www.cdc.gov/vaccines/hcp/admin/storage/guide/vaccine-storage-labels.pdf](http://www.cdc.gov/vaccines/hcp/admin/storage/guide/vaccine-storage-labels.pdf)
Resources
Information for Parents: Hepatitis B and the Vaccine (Shot) to Prevent It

Hepatitis B and the Vaccine (Shot) to Prevent It

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:
• Prevents 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.
• Keep 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 100 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 usually lasts about 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 vaccine the doctor uses.

Hepatitis B Standing Order Templates
Children and Adults

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

**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 the criteria below.

**Procedure**
1. **Assess Children for Need of Vaccination** against HBV infection based on the following criteria:
   - Lack of documentation of at least 3 doses of hepatitis B vaccine (nearly) with the third dose given at least 14 weeks after the first dose, at least 6 weeks after the second dose, and when younger than age 24 weeks.

**Scoring for Contraindications and Precautions**

**Stabilization and Parental Presence**

**Preparation**
- Needle size, needle length, and injection site according to the following chart

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

**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 healthcare 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, HBV 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)
   - Sexually transmitted infection or receiving treatment for a sexually transmitted infection (STI)
   - 40 male who has sex with men
   - A current or recent injection drug user
   - Any occupational risk from exposure to blood or blood-contaminated body fluids (e.g., health care worker, public safety worker, detainee in a health professional or adult school)
   - Residents or staff or an institution for persons with developmental disabilities
   - The partner or household member of a person who is chronically infected with HBV (HbsAg-positive). (Includes all pre-menarcheal children and adolescents)
   - Planned travel to a country with high or intermediate prevalence of acute HBV infection (for hepatitis B travel information: CDC, go to www.cdc.gov/travel/diseases/hepatitis-b)
   - People living in correctional facilities
   - All newborns age 1 and younger who are not fully vaccinated (see standing orders for children and teens at www.immunize.org/catg.d/p3076a.pdf)

**Scoring for Contraindications and Precautions**

**Medication**

- Ask the Experts–Hepatitis B FAQs: www.immunize.org/askexperts/experts_hepb.asp
- CDC Viral Hepatitis–Hepatitis B Information: www.cdc.gov/hepatitis/hbv/index.htm
- CDC Hepatitis B Vaccination: 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
Preexposure Evaluation for Health Care Personnel Previously Vaccinated with Complete ≥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
Frequently Asked Questions
Continuing Education Information

- CE credit, go to: 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:
E-mail Your Immunization Questions to Us

NIPINFO@cdc.gov

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

Additional materials located on this webpage include:

• Hepatitis B slide set

Other:

• 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
• Additional materials located on this webpage include:
  • Hepatitis B slide set
Thank You From Atlanta!