



Advisory Committee on Immunization Practices (ACIP) Hepatitis B Updates

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2018 Texas Perinatal Hepatitis B Summit

May 29, 2018

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

Strategies to Eliminate Hepatitis B, United States

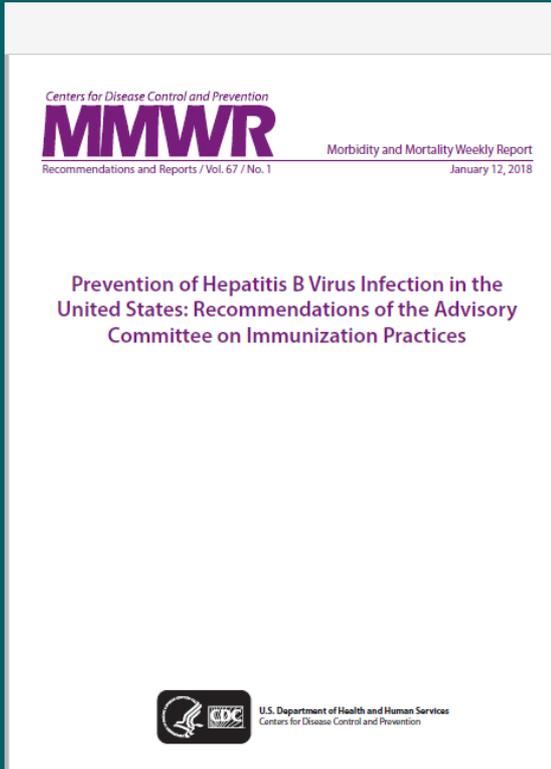
■ Perinatal and childhood

- Screen all pregnant women for HBsAg
- Prophylaxis (HepB vaccine and HBIG) within 12 hours of birth for all infants born to HBsAg-positive women
- Universal vaccination of all infants weighing $\geq 2,000$ grams beginning at birth (within 24 hours) (**new recommendation**) as a safety net
- Routine vaccination of previously unvaccinated children and adolescents aged <19 years

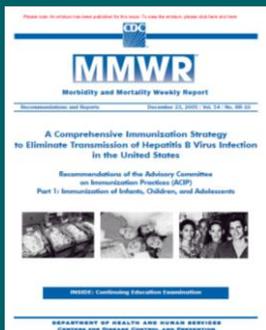
■ Adults

- Vaccination of adults at risk for HBV (IDU, MSM, occupational, travel, multiple sex partners, family with HBV, others)
- Any adult requesting protection from HBV without acknowledgment of a specific risk factor

Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (2018)



CDC/ACIP Guidance Documents for HepB Vaccination

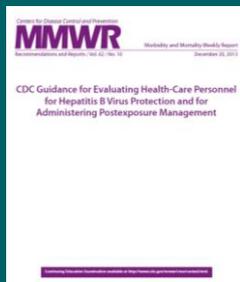


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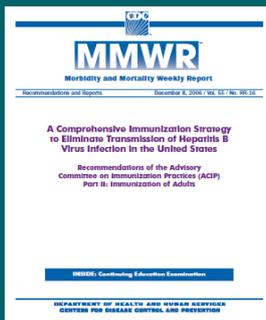
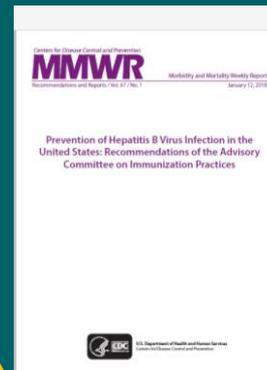
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New ACIP Recommendations

- **Single document with guidance for:**
 - HepB vaccination of infants, children, adolescents, and adults
 - Testing pregnant women for HBsAg, and, if positive, HBV DNA
 - HepB pre-vaccination and postvaccination serologic testing
 - HBV post-exposure prophylaxis (occupational and non-occupational exposures)
- **Published (MMWR) January 12, 2018**

New ACIP Recommendations, cont.

- Incorporates previously-published recommendations from:
 - ACIP
 - CDC
- Augmented with American Association for the Study of Liver Diseases (AASLD) recommendation 8A: *The AASLD suggests antiviral therapy to reduce the risk of perinatal transmission of hepatitis B in HBsAg-positive pregnant women with an HBV DNA level >200,000 IU/mL*

Recommendations of the Advisory Committee on Immunization Practices for Use of a Hepatitis B Vaccine with a Novel Adjuvant (2018)

Morbidity and Mortality Weekly Report

Recommendations of the Advisory Committee on Immunization Practices for Use of a Hepatitis B Vaccine with a Novel Adjuvant

Heath Shillie, MD¹, Aaron Frank, MD², Paul Cook-Greuter, PhD³, Joel Shew, MD⁴, John Ward, MD⁵, Nicole Nelson, MD⁶

Hepatitis B (HepB) vaccination is the primary means of preventing infection and complications caused by hepatitis B virus (HBV). On February 21, 2018, the Advisory Committee on Immunization Practices (ACIP) recommended Hepflam-B (HepB-CpC), a yeast-derived vaccine prepared with a novel adjuvant, administered as a 2-dose series (0, 1 month) for use in persons aged >18 years. The ACIP Hepatitis B Vaccine Work Group conducted a systematic review of the evidence, including data from four randomized controlled trials assessing prevention of HBV infection and six randomized controlled trials assessing adverse events in adults. Seroprotective antibody to hepatitis B surface antigen (anti-HBs) levels were achieved in 90.0%–100.0% of subjects receiving HepB-CpC (Dynavax Technologies Corporation), compared with 70.5%–90.2% of subjects receiving HepB-0 (GlaxoSmithKline Biologicals). The benefit of protection with 2 doses administered over 1 month make HepB-CpC an important option for prevention of HBV.

Introduction

Vaccination is the primary means for preventing hepatitis B virus (HBV) infection and its complications. Rating hepatitis B (HepB) vaccine as an adjuvanted vaccine. On November 9, 2017, Hepflam-B (HepB-CpC), a single-antigen HepB vaccine with a novel immunostimulatory adjuvant, was approved by the Food and Drug Administration for the prevention of HBV in persons aged >18 years. The vaccine is administered as 2 doses, 1 month apart (1). On February 21, 2018, the Advisory Committee on Immunization Practices (ACIP)¹ recommended HepB-CpC for use in persons aged >18 years.

HepB-CpC contains yeast-derived recombinant HepB surface antigen (HBsAg) and is prepared by combining purified HBsAg with small synthetic immunostimulatory cytidine-phosphate-guanosine oligonucleotide (CpG-CODN) motif (1018 adjuvant). The 1018 adjuvant binds to Toll-like receptor 9 to stimulate a directed immune response to HBsAg (1).

HepB-CpC is available in single-dose 0.5 mL vials. Each dose contains 25 µg of HBsAg and 5,000 µg of 1018 adjuvant. HepB-CpC is formulated without preservatives and is administered as an intramuscular injection in the deltoid region of the upper arm (1).

HepB-CpC is the fifth inactivated HepB vaccine currently recommended for use in the United States. This report contains ACIP guidance specific to HepB-CpC and summarizes the 2018 ACIP recommendations for the prevention of HBV infection (2). This report does not include new guidance for populations recommended to receive HepB vaccination or immunization management issues other than those that pertain specifically to HepB-CpC. The intended audience for this report includes clinical and public health personnel who provide HepB vaccination services to adults. These recommendations are meant to serve as a source of guidance for health care providers; health care providers should always consider the individual clinical circumstances of each patient.

Methods

From February 2016 to January 2018, the ACIP Hepatitis B Vaccine Work Group² participated in three teleconference meetings to review the quality of evidence for immunogenicity and safety of HepB-CpC and implementation issues. The Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach for evaluating evidence was adopted by ACIP in 2010 (<https://www.cdc.gov/vaccines/acip/docs/guide/>). The Work Group identified critical and important outcomes for inclusion in the GRADE tables, conducted a systematic review of the evidence, and independently reviewed and discussed findings and evidence quality (3). Key outcomes were designated as critical (hepatitis B infection, severe adverse events, and cardiovascular safety) or important (mild adverse events). Factors considered in determining the recommendation included benefits and harms and evidence type. Values and preference and economic factors were not systematically considered.

¹The ACIP Hepatitis B Vaccine Work Group comprises professionals from academic, public health, and private practice settings, including clinicians, public health, and preventive medicine specialists, and other public health, research, and clinical experts.

²ACIP is advised by the advisory committee that provides expert medical advice and guidance to the Director of CDC on use of vaccines and related agents for the control of vaccine-preventable diseases in the U.S. civilian population. ACIP recommendations adopted by the CDC Director become official guidelines on the date published in *MMWR*.

HepB Vaccines

- **Safe, immunogenic, effective**
- **Administered starting at birth**
- **2-, 3-, or 4-dose series**
 - 2-dose series for adolescents/adults
- **Protection lasts ≥ 30 years¹**
 - Booster doses not routinely recommended
- **Since 1986, recombinant (e.g., yeast-derived) vaccine used in U.S.**
- **U.S.-licensed formulations thimerosal-free**

¹Bruce et al., JID 2016; Middleman et al, Pediatrics 2014.

HepB Vaccines, cont.

- **Monovalent formulations**
 - Engerix-B[®]
 - Recombivax-HB[®]
 - Heplisav-B[®]: ≥18 yrs
- **Combination formulations (not used for birth dose)**
 - Pediarix[®] (DTaP, IPV, HepB): 6 wks through 6 yrs
 - Twinrix[®] (HepA, HepB): ≥18 yrs

Testing Pregnant Women

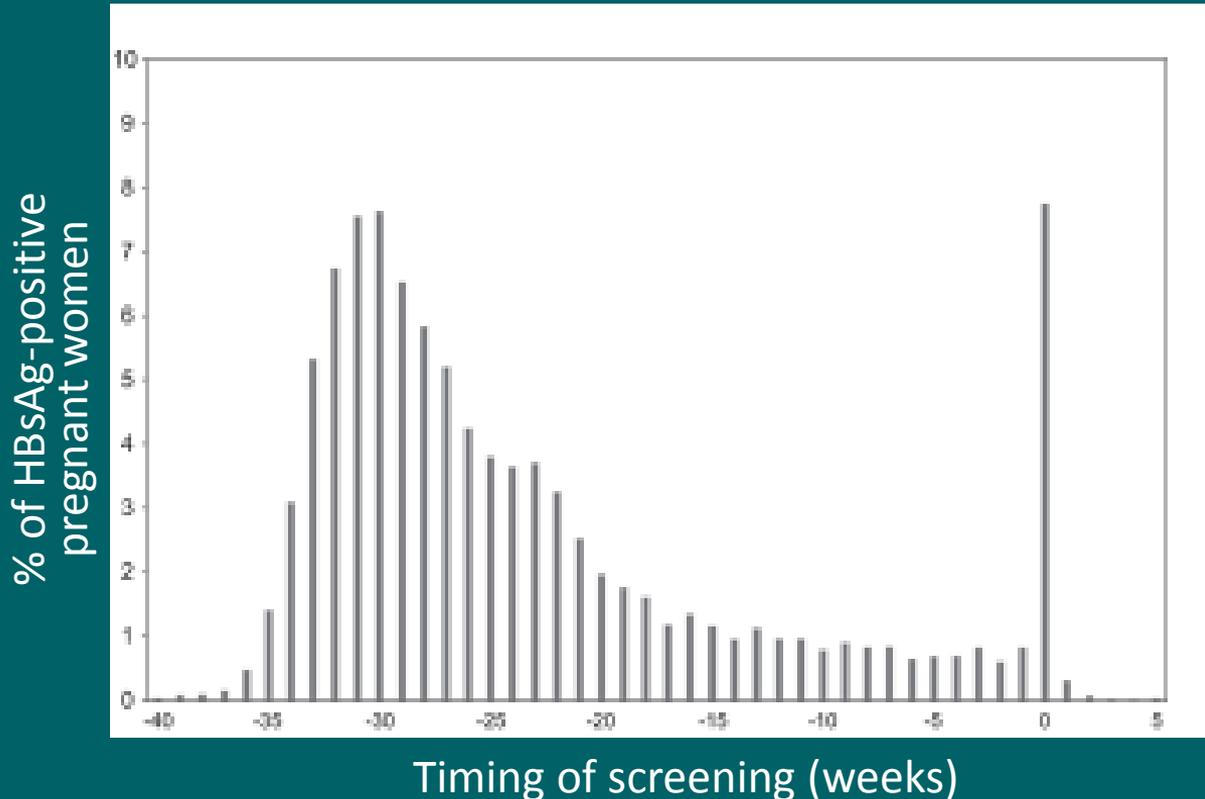
Testing Pregnant Women

- Identify HBV-infected mothers through routine HBsAg testing of all pregnant women during an early prenatal visit
 - Testing should occur during each pregnancy, even if woman has been previously vaccinated or tested
- Testing women known to be chronically infected provides documentation of the positive HBsAg test result during pregnancy
 - Helps to ensure infant identified for timely prophylaxis

Analysis of Claims Data (Marketscan, 2011-2014)

- 82-88% of pregnant women tested for HBsAg
- Testing occurred more often among:
 - Commercially-insured women (87.7%) vs. Medicaid-insured women (83.6%)
 - High-risk pregnancies (87.3%-87.8% vs. 82.9%-84.8%)
 - First pregnancy vs. subsequent pregnancies (82.3% vs. 60.7-79.7%)
 - Aged 20-39 (82.9%-84.4%) vs. younger (73.2%) or older (59.7%)

Timing of HBsAg Screening Among Pregnant Women Relative to Infant Birth – United States, 2008-2012 (N=14,981)



- 13,316 (88.9%) screened during current pregnancy
- 1,160 (7.7%) screened during week of or at delivery
 - 304 (26.2%) not previously screened
 - 856 (73.8%) screened during previous pregnancy

Testing Pregnant Women for HBV DNA

- HBsAg-positive pregnant women should be tested for HBV DNA to guide the use of maternal antiviral therapy for preventing perinatal transmission (**new recommendation**)
 - AASLD suggests maternal antiviral therapy when maternal HBV DNA is $>200,000$ IU/mL (**new recommendation**)

Testing Pregnant Women, cont.

- All HBsAg-positive pregnant women should be referred to their jurisdiction's Perinatal Hepatitis B Prevention Program for case management
- A copy of the original laboratory report indicating the pregnant women's HBsAg status should be provided to the hospital or birthing facility where the delivery is planned and to the health provider who will care for the infant
- HBsAg-positive pregnant women should receive information concerning HBV

Testing Pregnant Women, cont.

- Commercial laboratories should be encouraged to capture pregnancy status for women tested for HBsAg to aid in identification of HBV-infected pregnant women (new recommendation)

Re-Testing HBsAg-Negative Pregnant Women

- At time of admission to hospital for delivery if high risk, e.g. :
 - Injection drug use
 - More than 1 sex partner in previous 6 months
 - HBsAg-positive sex partner
 - Evaluation or treatment for a sexually transmitted
 - With clinical hepatitis

Infant HepB Vaccination

HepB Vaccine and HBIG Schedule for Newborns

Maternal HBsAg status	Infant birth weight:	
	≥2,000 grams	<2,000 grams
Positive	HepB vaccine and HBIG within 12 hours of birth	HepB vaccine and HBIG within 12 hours of birth; do not count birth dose as part of vaccine series
Unknown	HepB vaccine within 12 hours of birth*	HepB vaccine and HBIG within 12 hours of birth; do not count birth dose as part of vaccine series
Negative	HepB vaccine within 24 hours of birth (new recommendation)	Delay first dose of HepB vaccine until age 1 month or hospital discharge

*Maternal status should be determined as soon as possible and if HBsAg-positive, the infant should receive HBIG as soon as possible but no later than age 7 days

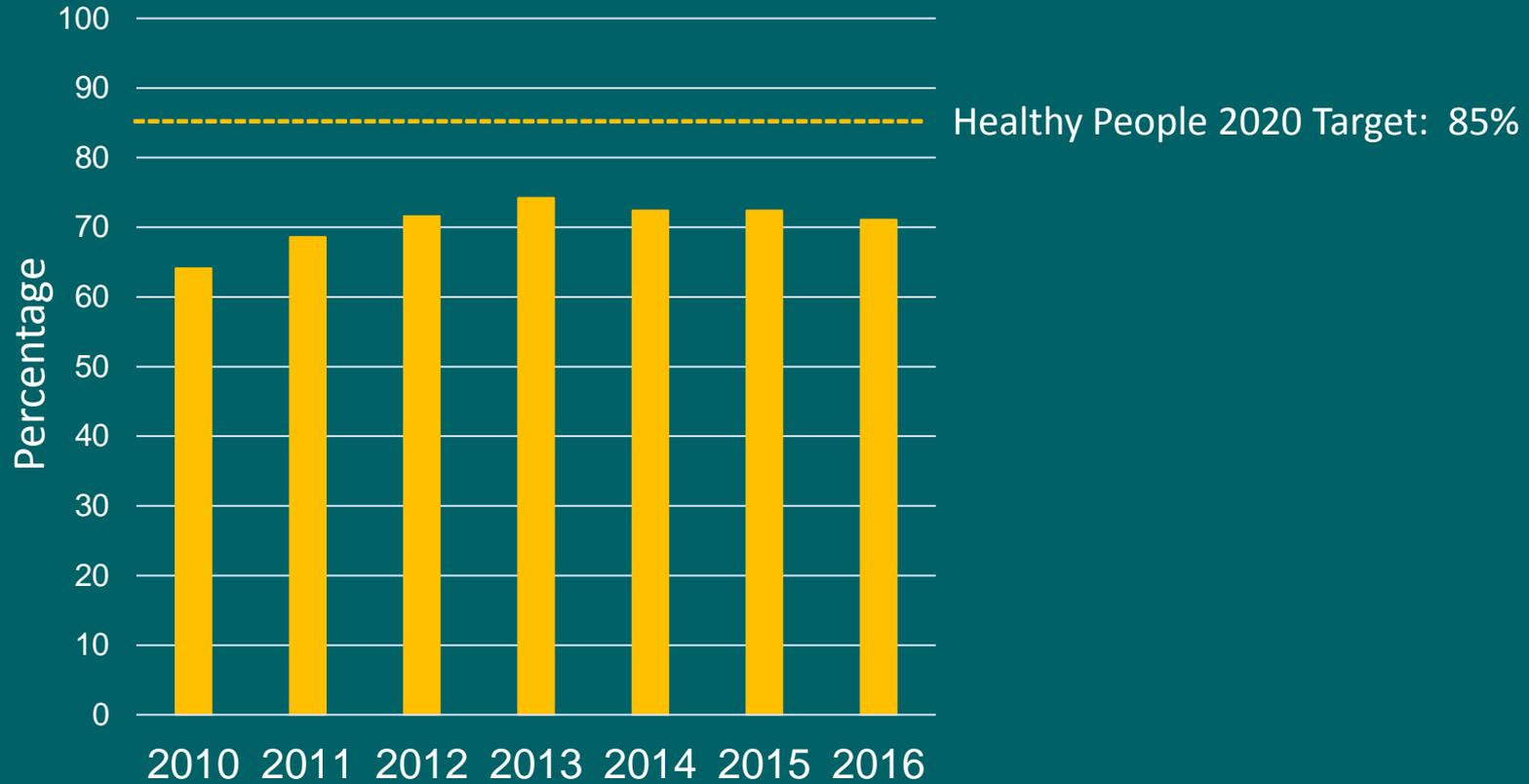
Timing of Birth Dose and Infection Rate

- Infants born to HBsAg-positive mothers in British Columbia, 1984-1989 (n=770)

Age at first dose (days)	Proportion of participants (%)	Infection rate per 1,000	P-value
1-3	96	47	<0.001
4-7	2	0	
8-61	1	222	
≥62	1	333	

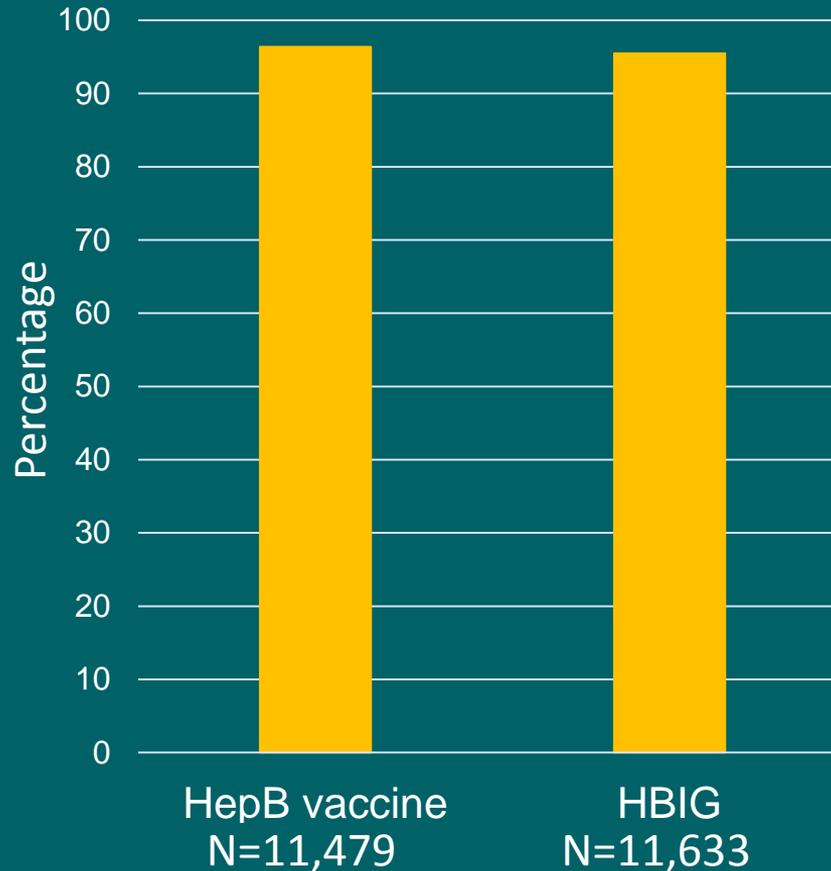
- aOR for increase in infection with increasing age at 1st dose: 4.3 (95% CI, 2.2-8.4)

HepB Vaccine Birth Dose* Coverage, National Immunization Survey (NIS) – U.S., 2010-2016



*One dose by 3 days

Receipt of HepB Vaccine and HBIG within 12 Hours of Birth for Infants Born to HBsAg-Positive Mothers – Enhanced PHBPP*, 2007-2013



*Florida, Michigan, Minnesota, New York City, and Texas (excluding cities of Houston and San Antonio)

Administration of HepB Vaccine and HBIG

- **Should be administered at different anatomic injection sites**
 - E.g., different limbs

Transferred Infants

- For infants transferred to a different facility after birth (e.g., hospital with higher level of neonatal care), staff at the transferring and receiving facilities should communicate regarding the infant's HepB vaccination and HBIG receipt status to ensure prophylaxis is administered in a timely manner **(new recommendation)**

Mothers with Unknown Status

- Infants born to women for whom HBsAg testing results during pregnancy are not available but other evidence suggestive of maternal HBV infection exists (e.g., presence of HBV DNA, HBeAg-positive, or mother known to be chronically infected with HBV) should be managed as if born to an HBsAg-positive mother **(new recommendation)**

Permissive Language to Delay Birth Dose

- **Existing Language**
 - On a case-by-case basis and only in rare circumstances, the first dose may be delayed until after hospital discharge for an infant who weighs $\geq 2,000$ grams and whose mother is HBsAg-negative.
- **Revised Language (new recommendation)**
 - Permissive language removed

Removal of Permissive Language

- **Universal birth dose prior to hospital discharge serves as a safety net to prevent HBV transmission for infants not identified due to errors in:**
 - Maternal HBsAg testing
 - Transcription of maternal HBsAg test results
 - Reporting maternal HBsAg test results

Completion of Vaccine Series

Completion of Vaccine Series

- Recommended for all infants
- Completed at:
 - 6 months of age for infants born to HBsAg-positive mothers
 - 6-18 months of age for infants born to HBsAg-negative mothers

Completion of Vaccine Series, cont.

- Final dose should not be administered before age 24 weeks (164 days)
- In populations with currently or previously high rates of childhood HBV infection (e.g., Alaska Natives; Pacific Islanders; and immigrant families from Asia, Africa, and countries with intermediate or high endemic rates of infection), the first dose of HepB vaccine should be administered at birth and the final dose at age 6-12 months

Completion of Vaccine Series, cont.

- For infants <2,000 grams born to HBsAg-positive mothers, the birth dose should not be counted as part of the vaccine series
 - Because of potentially reduced immunogenicity
- 3 additional doses (4 total) should be administered beginning when the infant is aged 1 month

Catch-up

- HepB vaccination is recommended for all unvaccinated children and adolescents aged <19 years
- Children and adolescents who have not previously received HepB vaccine should be vaccinated routinely at any age (i.e., catch-up)

Postvaccination Serologic Testing (PVST)

Postvaccination Serologic Testing (PVST)

- To determine infant infection status and need for revaccination
- Consists of testing for:
 - HBsAg
 - Anti-HBs

Postvaccination Serologic Testing (PVST)

- Recommended for infants born to:
 - HBsAg-positive mothers
 - Mothers whose HBsAg status remains unknown indefinitely (e.g., infants safely surrendered shortly after birth) (new recommendation)
- Performed after completion of HepB vaccine series (age 9-12 months) (new recommendation) and at least 1 month after last HepB vaccine dose (to avoid detecting HBsAg from vaccine)

When Mother's Status Remains Unknown

- **Postvaccination serologic testing for infants whose mother's HBsAg status remains unknown indefinitely**
 - For example, when a parent or person with lawful custody surrenders an infant confidentially shortly after birth
- **All 50 states have some form of safe-haven law to reduce risk of infant abandonment**

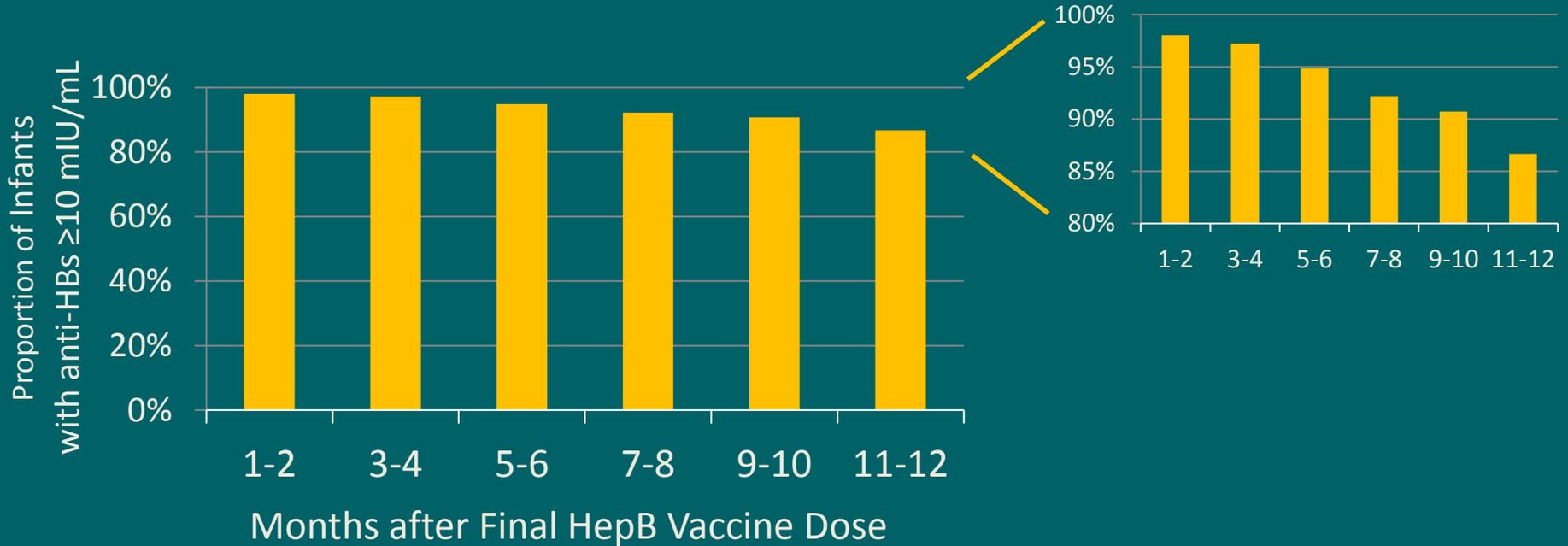
PVST Interpretation

- HBsAg-negative infants
 - anti-HBs ≥ 10 mIU/mL: Protected; no further medical management for HBV
 - Immunocompetent persons remain protected, even if anti-HBs later declines to < 10 mIU/mL
 - anti-HBs < 10 mIU/mL: Revaccinate and re-test 1-2 months after the final dose
- HBsAg-positive infants:
 - Should receive appropriate clinical care follow-up

PVST Considerations

- PVST should not be performed before age 9 months
 - To avoid detection of anti-HBs from HBIG administered at birth
 - To maximize the likelihood of detecting late HBV infection
- Anti-HBc testing of infants is not recommended
 - Passively acquired maternal anti-HBc might be detected in infants born to HBV-infected mothers to age 24 months
- Delayed PVST may result in false negative anti-HBs and unnecessary revaccination

Anti-HBs Decline over Time among Infants Born to HBsAg-positive Mothers



Anti-HBs Decline over Time among Infants born to HBsAg-positive Mothers, cont.

Interval from final vaccine dose to postvaccination serologic testing

Odds of lower anti-HBs

1 to <4 months

ref

4 to <8 months

1.8 (1.2-2.8)

8 to <12 months

4.4 (1.3-14.5)

Advantages of a Shortened Interval (from final dose to PVST)

- Avoids unnecessary revaccination
- Reduction in the time that non-responder infants are at risk for transmission from household contacts with Hepatitis B
- Earlier PVST enables prompt revaccination for those infants needing a second series
- Conserves public health resources involved in providing case management services

American Academy of Pediatrics: Ages for Recommended Preventive Health Care

Recommended interval
for PVST



Pre-natal	New-born	3-5 day	By 1 mo	2 mo	4 mo	6 mo	9 mo	12 mo	15 mo	18 mo	24 mo	...
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Hepatitis B series completed for infants
born to HBsAg-positive mothers



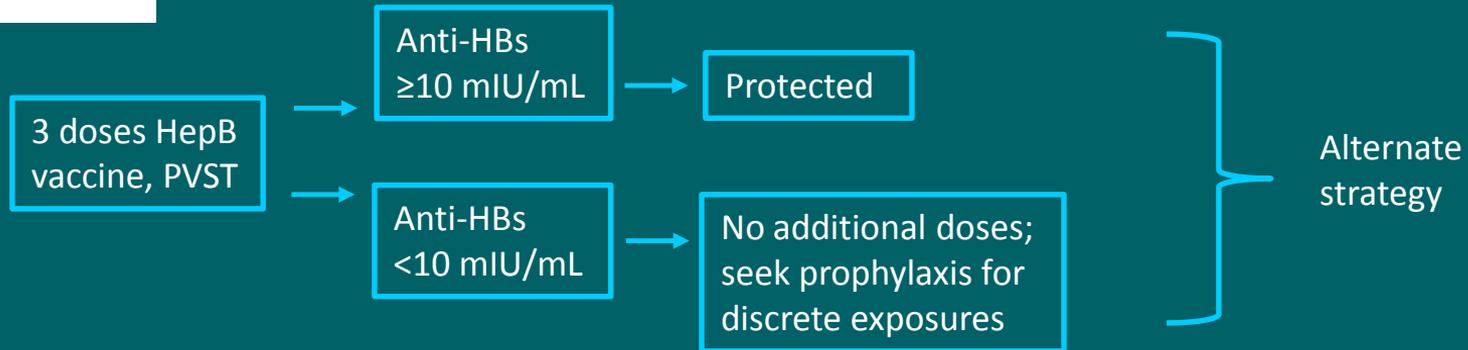
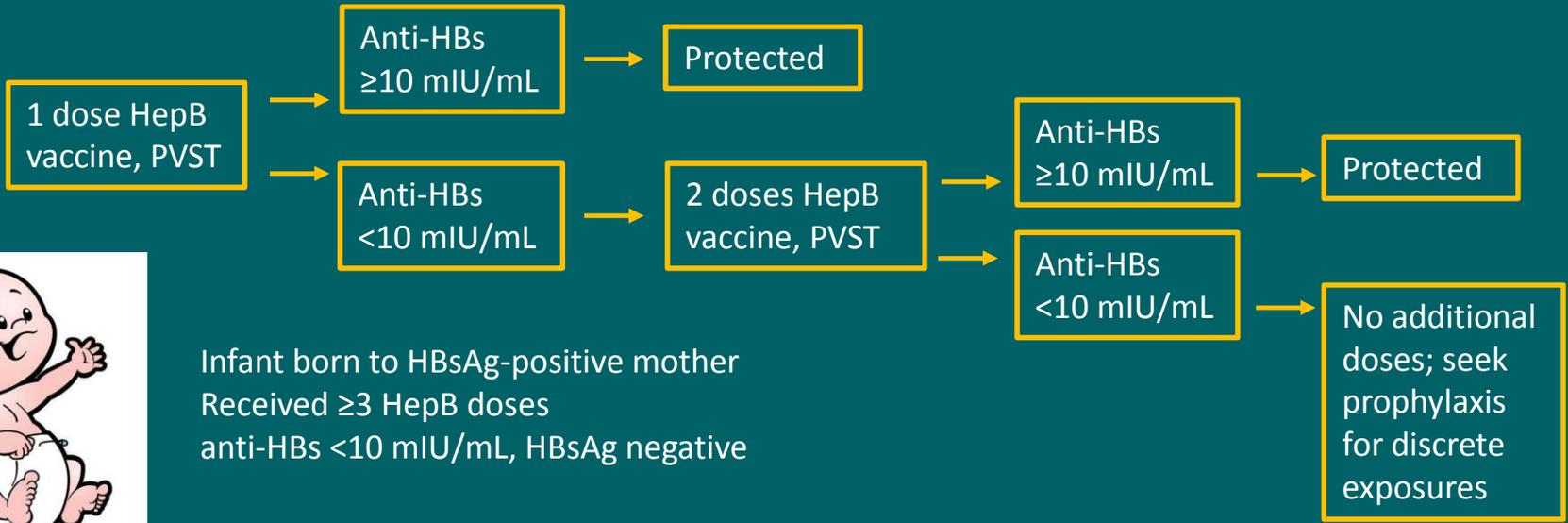
Revaccination

Revaccination

- Single-dose revaccination (new recommendation)
 - For infants born to HBsAg-positive mothers who have anti-HBs <10 mIU/mL after 3-dose series
 - Follow with PVST one month following vaccination
 - If still anti-HBs <10 mIU/mL then 2 more doses + PVST
 - Alternate strategy: 3-dose revaccination then PVST



Infant born to HBsAg-positive mother
Received ≥ 3 HepB doses
anti-HBs < 10 mIU/mL, HBsAg negative



Cost of Single-Dose vs. Three-Dose Revaccination

Strategy	N	Cost per individual (all visits unscheduled)	Cost per individual (all visits scheduled)
1 dose revaccination	1,190	\$314.02	\$240.49
3 dose revaccination	1,190	\$469.74	\$293.22

Single Dose Revaccination (vs. Three Dose Revaccination)

■ Advantages

- Fewer vaccine doses for most infants
- Shorter duration of case management
- Less costly overall (even when revaccination doses given during previously-scheduled well-child visits)

■ Disadvantages

- Additional blood draw for some infant
- Having two options (single-dose revaccination and three-dose revaccination) requires provider/parent decision making

Summary of Revised ACIP Guidance for Perinatal HBV Transmission

- Testing HBsAg-positive pregnant women for HBV DNA to guide maternal antiviral therapy
- Universal HepB vaccination within 24 hours of birth for infants $\geq 2,000$ grams
- Removal of permissive language for delaying birth dose
- Postvaccination serologic testing for infants whose maternal HBsAg status remains unknown indefinitely
- Single-dose revaccination for infants born to HBsAg-positive mothers not responding to the initial vaccine series

Immunization Management Issues

Dosing Intervals

- There are no maximum intervals
- Minimum intervals:
 - Dose 1-2: 4 weeks
 - Dose 2-3: 8 weeks
 - Dose 1-3: 16 weeks (final dose not before age 24 weeks in infants)
- 4-day grace period (except for accelerated schedule of Twinrix)
- Doses administered at shorter-than-recommended intervals should be repeated

Other Immunization Management Issues

- When feasible, vaccine from the same manufacturer should be used for all doses in the series
 - However, if a different brand is administered, the dose should be considered valid and does not need to be repeated
- Providers should only accept dated records as evidence of HepB vaccination
- Vaccination should be initiated even though completion of the series may not be ensured

Anti-HBs as Correlate of Protection

- **Anti-HBs after HepB vaccine series wanes over time**
 - Even when anti-HBs decreases to <10 mIU/mL, breakthrough HBV infection uncommon in immunocompetent vaccine responders¹
- **Anti-HBs <10 mIU/mL at a time distant from vaccine completion does not distinguish:**
 - Initial responders
 - Non-responders (susceptible to infection after 6 doses of vaccine)
- **Anti-HBs ≥ 10 mIU/mL is a correlate of protection only when following a complete, documented HepB series**

Adults

Adults Recommended for HepB Vaccination

- **Persons at risk for infection through sexual exposure**
 - Sex partners of hepatitis B surface antigen (HBsAg)–positive persons
 - Sexually active persons not in a long-term, mutually monogamous relationship
 - Persons seeking evaluation or treatment for a sexually transmitted infection
 - Men who have sex with men
- **Persons with a history of current or recent injection drug use**

Adults Recommended for HepB Vaccination, cont.

- **Persons at risk for infection by percutaneous or mucosal exposure to blood**
 - Household contacts of HBsAg-positive persons
 - Residents and staff of facilities for developmentally disabled persons
 - Health care and public safety personnel with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids
 - Hemodialysis patients and predialysis, peritoneal dialysis, and home dialysis patients
 - Persons with diabetes mellitus aged <60 years and persons with diabetes mellitus aged ≥60 years at the discretion of the treating clinician

Adults Recommended for HepB Vaccination, cont.

- International travelers to countries with high or intermediate levels of endemic HBV infection (HBsAg prevalence $\geq 2\%$)
- Persons with hepatitis C virus infection (**new recommendation**), persons with chronic liver disease (including, but not limited to, those with cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, and an alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal)
- Persons with HIV
- Incarcerated persons
- Other persons seeking protection from hepatitis B virus infection (even without acknowledgment of a specific risk factor)

Postvaccination Serologic Testing

- **Recommended for the following adults:**
 - Healthcare personnel and public safety workers
 - Hemodialysis patients and others who may require outpatient hemodialysis (e.g., predialysis, peritoneal dialysis, and home dialysis patients)
 - HIV-infected persons
 - Other immunocompromised persons (e.g., hematopoietic stem cell transplant recipients or persons receiving chemotherapy)
 - Sex partners of HBsAg-positive persons

Postvaccination Serologic Testing for Adults

- **Anti-HBs 1-2 months after last dose in series**
- **Persons with anti-HBs <10 mIU/mL should be revaccinated**
 - 1 more dose → anti-HBs → if anti-HBs <10 mIU/mL: 2 more doses → anti-HBs
 - 3 more doses → anti-HBs
- **Administration of more than 2 complete Hepatitis B vaccine series (i.e., 6 doses) is generally not recommended, except for hemodialysis patients and other immunocompromised persons**

Heplisav-B

Heplisav-B

- **FDA licensed November 9, 2017**
- **Indicated for active immunization against infection caused by all known subtypes of HBV in persons aged ≥ 18 years**
- **Series of 2 doses, separated by 1 month**
- **Uses 1018 adjuvant (immunostimulatory cytidine-phosphate-guanosine [CpG] motifs), which binds Toll-like receptor 9 to stimulate directed immune response to hepatitis B surface antigen (HBsAg)**

Heplisav-B, cont.

- **Administered by intramuscular injection**
- **Available in single-dose 0.5 mL vials. Each dose contains:**
 - 20 micrograms HBsAg
 - 3000 micrograms 1018 adjuvant
- **Formulated without preservative**
- **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

Immunogenicity

■ Studies demonstrate high rates of seroprotection:

- 90.0%-100.0% of subjects receiving HEPLISAV-B vs. 70.5%-90.2% of subjects in the comparison group
 - Type 2 diabetes mellitus: 90.0% (HEPLISAV-B) vs. 65.1% (comparator)
 - Chronic kidney disease: 89.9% (HEPLISAV-B, 3 doses) vs. 81.1% (comparator, 4 double doses)

Halperin et al., Vaccine 2006;24:20-26.

Halperin et al., Vaccine 2012;30:2556-2563.

Heyward et al., Vaccine 2013; 31:53005305.

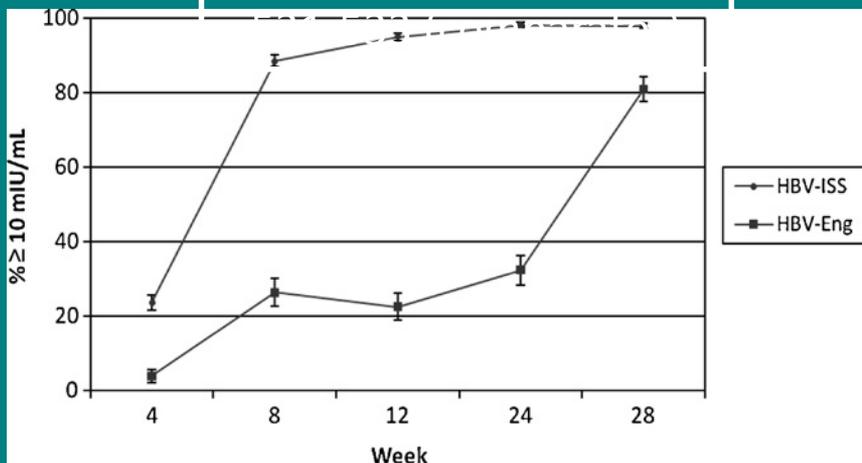
Jackson et al., Vaccine 2018;36:668-674.

Janssen et al. Vaccine 2013;31:5306-5313.

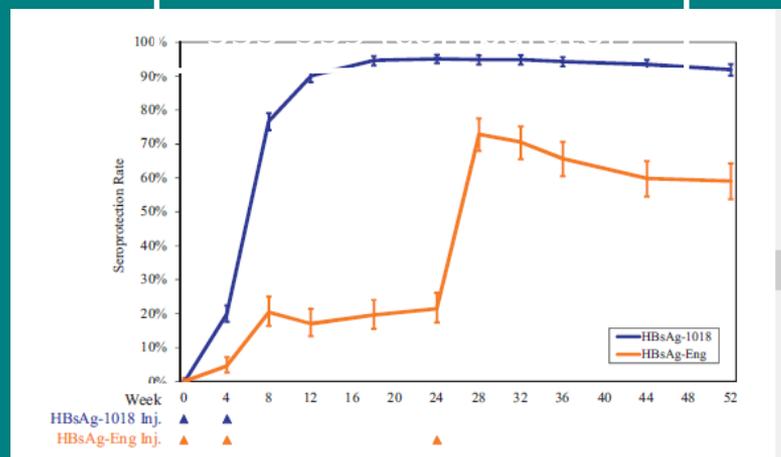
HEPLISAV-B package insert 11/2017

Proportion of subjects with anti-HBs ≥ 10 mIU/mL following Heplisav-B or comparison vaccine

Healthy adults aged 18-55 years; n=1548-1557 (Heplisav-B);



Healthy adults aged 40-70 years; n=1101-1123 (Heplisav-B);



Halperin et al., Vaccine 2012;30:2556-2563.
Heyward et al., Vaccine 2013; 31:53005305.

Safety and Reactogenicity

- **Mild and serious adverse events similar***
 - Mild: 45.6% (HEPLISAV-B) vs. 45.7% (comparator)
 - Serious: 5.4% (HEPLISAV-B) vs. 6.3% (comparator)
- **Cardiovascular events: 0.27% (HEPLISAV-B) vs. 0.14% (comparator)**
- **Potentially immune-mediated adverse events****
 - 0.1%-0.2% (HEPLISAV-B) vs. 0.0%-0.7% (comparator)
- **Safety to be further assessed through post-marketing studies**

*Herpes zoster: 0.68% (HEPLISAV-B) vs. 0.32% (comparator) (RR=2.1, 95% CI=1.0-4.0)

**e.g., granulomatosis with polyangiitis, Tolosa-Hunt Syndrome, autoimmune thyroiditis, vitiligo

Halperin et al., Vaccine 2006;24:20-26.

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HEPLISAV-B package insert 11/2017

U.S. FDA, HEPLISAV-B (<https://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm584752.htm>)

Considerations

- **The 2-dose series only applies when all doses in the series consist of Heplisav-B**
- **When a vaccine series initiated with one dose of a vaccine from a different manufacturer must be completed with Heplisav-B, 3 total HepB vaccine doses should be administered**
- **Minimum intervals should be heeded (Exception: A series containing two doses of Heplisav-B administered at least 4 weeks apart is valid, even if the patient received a single earlier dose from another manufacturer.)**

Heplisav-B Summary

- **HEPLISAV-B likely to improve Hepatitis B vaccine series completion and result in earlier protection (2 doses over 1 month)**
 - Especially beneficial in persons with anticipated low adherence (e.g., injection drug users)
- **Improved immunogenicity in populations with typically poor vaccine response**
 - e.g., elderly, diabetes, dialysis
- **Post-marketing surveillance studies and additional data, including safety, pertaining to the use of HEPLISAV-B will be reviewed by ACIP as they become available, and recommendations will be updated as needed**
 - Prior to preferential consideration
- **Future economic analyses may inform cost-effectiveness considerations of HEPLISAV-B, including its use among persons at an increased risk for vaccine non-response**

Contact: sschillie@cdc.gov

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

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



Thank You

For more information, contact CDC
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