

Give birth to the end of Hep B

Hepatitis B: What Hospitals Need to Do to Protect Newborns

How to prevent perinatal HBV transmission

Immunization Action Coalition (IAC)

May 2020 • Item #S8045

Acknowledgment

Trudy V. Murphy, MD, (retired), formerly Team Lead, Vaccine Research and Policy, Division of Viral Hepatitis, National Center for HIV, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention

Hepatitis B
What Hospitals Need to Do to Protect Newborns

2

Background on hepatitis B

- Hepatitis B is a liver disease caused by the hepatitis B virus (HBV).
- HBV is found in the blood and other body fluids of infected people (e.g., serum, semen, saliva, and vaginal secretions).
- An infant can acquire HBV from:
 - An infected mother (transmitted at birth)
 - A chronically infected member of the household

Hepatitis B
What Hospitals Need to Do to Protect Newborns

3

Natural history of hepatitis B virus (HBV) infection

HBV can cause acute or chronic infection.

Chronic HBV infection can lead to liver failure and liver cancer.

```

    graph TD
      A[Acute HBV infection  
(may be symptomatic or asymptomatic)] --> B[Chronic HBV infection]
      A --> C[Resolved and immune]
      B --> D[Resolved and immune  
(over years)]
      B --> E[Liver cirrhosis and cancer]
  
```

Hepatitis B
What Hospitals Need to Do to Protect Newborns

4

Risk of developing chronic hepatitis B by age at infection

Age at Infection	Risk of Developing Chronic Hepatitis B
Infant	80-90%
1-5 Years	30%
> 5 years	<1-12%

Reference: MMWR 2018;67(RR-1) www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.PDF

Hepatitis B
What Hospitals Need to Do to Protect Newborns

5

Rates of symptomatic acute hepatitis B virus infection

- <1% of infants less than 1 year of age are symptomatic
- 5 - 15% of children 1-5 years of age are symptomatic
- 30 - 50% of people older than 5 years of age are symptomatic

Reference: Vaccines. 6th ed. Elsevier Ltd; 2012, pg. 369


Hepatitis B
What Hospitals Need to Do to Protect Newborns

6

Give birth to the end of Hep B

Why a birth dose?

- The primary goal of administering hepatitis B vaccine at birth is to protect babies from chronic HBV infection, which can lead to liver failure and liver cancer.
 - Most morbidity and mortality from HBV-related liver failure and liver cancer occurs in people with chronic HBV infection.
 - Approximately 25% of persons who become chronically infected during childhood will die prematurely from cirrhosis or liver cancer
 - Treatment can decrease liver damage and the chance of liver cancer, but there is no cure.
 - Many people with chronic HBV are not aware of their infection and can unknowingly spread the infection.



Reference: MMWR 2018;67(RR-1) www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.PDF


Hepatitis B
What Hospitals Need to Do to Protect Newborns

7

Give birth to the end of Hep B

Effectiveness of hepatitis B vaccine starting at birth?

- Post-exposure prophylaxis of infants born to HBV-infected mothers is 94% effective when started within 12 hours of birth.
 - Post-exposure prophylaxis: hepatitis B vaccine + hepatitis B immune globulin (HBIG) at birth, completion of hepatitis B vaccine series, post-vaccination testing for outcomes.
 - Timing of the birth dose is critical to achieve the highest rates of protection.
- Hepatitis B vaccination starting at birth even without HBIG will prevent transmission of the infection in 75% of infants born to HBV-infected mothers.



Reference: MMWR 2018;67(RR-1) www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.PDF


Hepatitis B
What Hospitals Need to Do to Protect Newborns

8

Give birth to the end of Hep B

The Opportunity

- Hospitals have an opportunity to protect the future health of infants born in their facilities.
 - Each year in the U.S., more than 24,000 infants are born to mothers who are infected with HBV, and not all of their infants receive post-exposure prophylaxis.
 - Some infants are first exposed shortly after birth to HBV by household members or caretakers who have chronic HBV infection.
- Most infants can be protected if hospitals routinely provide a birth dose of hepatitis B vaccine to all newborn infants.



Reference: Smith EA. Pediatrics 2012;129:609-616; MMWR 2005;57(RR-8):1-20


Hepatitis B
What Hospitals Need to Do to Protect Newborns

9

Give birth to the end of Hep B

The Problem

- Many infants in the United States are not receiving the birth dose of hepatitis B vaccine.
 - In 2016 only 76.7% of U.S. infants received hepatitis B vaccine within 3 days of birth.*
 - States' coverage rates varied between 60.4% and 89.7%.*
- The Healthy People 2020 goal is 85% hepB birth dose coverage
- There is room for improvement in protecting newborn infants in every state.



*Reference: <https://www.cdc.gov/vaccines/imz-managers/coverage/childvaxview/interactive-reports/trend/index.html>


Hepatitis B
What Hospitals Need to Do to Protect Newborns

10

Give birth to the end of Hep B

Why should we give hepatitis B vaccine to all newborns?

- Prevents mother-to-infant transmission:** Prevents at least 75% of infection among infants born to HBsAg-positive women
- Prevents household transmission:** Protects infants from infected family members and other caregivers
- Protects when medical errors occur:** Provides a safety net to prevent perinatal HBV infection when medical errors occur

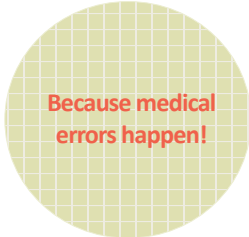


Hepatitis B
What Hospitals Need to Do to Protect Newborns


11

Give birth to the end of Hep B

Why is a safety net needed?



Because medical errors happen!




Hepatitis B
What Hospitals Need to Do to Protect Newborns

12

Give birth to the end of Hep B

Types of medical errors reported

- Ordering the wrong hepatitis B screening test
- Misinterpreting or mis-transcribing the hepatitis B test results
- Failing to communicate the HBsAg test results to or within the hospital
- Not giving hepatitis B vaccine to infants born to mothers of unknown HBsAg status within 12 hours of birth
- Not giving prophylaxis to an infant even when the mother's HBsAg-positive status is documented




Hepatitis B
What Hospitals Need to Do to Protect Newborns

13

Give birth to the end of Hep B

Because of these types of errors, children are chronically infected with hepatitis B (HBV)

A universal hepatitis B vaccine birth dose policy helps to protect newborn infants from human error and resulting chronic HBV infection which can cause serious liver disease and premature death.




Hepatitis B
What Hospitals Need to Do to Protect Newborns

14

Give birth to the end of Hep B

All birthing hospitals should:

1. Implement policies and procedures to administer the recommended dose of HepB vaccine within 24 hours of birth for infants weighing $\geq 2,000$ grams born to hepatitis B surface antigen (HBsAg)-negative mothers
2. Implement standing orders for administration of hepatitis B vaccine as part of routine medical care of all medically stable infants weighing $\geq 2,000$ g at birth
3. Follow national recommendations for prophylaxis of all newborn infants born to women with HBsAg-positive test results, and all infants born to women whose HBsAg status is unknown



Reference: MMWR 2018;67(RR-1) www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.PDF

Hepatitis B
What Hospitals Need to Do to Protect Newborns


15

Give birth to the end of Hep B

All birthing hospitals should also:

4. Ensure that a copy of the original laboratory report from the mother's HBsAg screening test is placed in the infant's medical record
5. Educate staff and parents about the importance of administering the first dose of hepatitis B vaccine within 24 hours, and not delaying it.*

* Such a delay is only recommended in one situation: Infants weighing less than 2 kg (4.4 lb) at birth and whose mothers are documented to be HBsAg-negative should receive the first dose of vaccine 1 month after birth or at hospital discharge, whichever comes first. The mother's HBsAg test result must be part of the infant's medical record.



Reference: MMWR 2018;67(RR-1) www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.PDF

Hepatitis B
What Hospitals Need to Do to Protect Newborns


16

Give birth to the end of Hep B

Hepatitis B birth dose is recommended by ACIP, AAP, AAFP, and ACOG

“Administer monovalent HepB vaccine to all eligible* newborns within 24 hours of birth.”

* All medically stable infants weighing $\geq 2,000$ g at birth and born to HBsAg-negative mothers



References: Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2020 <https://www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html>

MMWR 2018;67(RR-1) www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.PDF


Hepatitis B
What Hospitals Need to Do to Protect Newborns

17

Give birth to the end of Hep B

Maternal Antiviral Therapy for Preventing Perinatal HBV Transmission

- HBsAg-positive pregnant women should have their HBV DNA (hepatitis B virus deoxyribonucleic acid) levels tested
- Women with high HBV DNA levels ($>200,000$ IU/mL) should receive antiviral therapy starting at 28-32 weeks gestation to reduce the likelihood of perinatal HBV transmission to their newborns
- Their newborns should still receive routine post-exposure prophylaxis at birth (hepatitis B vaccine and HBIG within 12 hours)



Reference: MMWR 2018;67(RR-1) www.cdc.gov/mmwr/volumes/67/rr/pdfs/rr6701-H.PDF

Hepatitis B
What Hospitals Need to Do to Protect Newborns

18

Give birth to the end of Hep B

Summary

Birth facilities play a critical role in preventing chronic hepatitis B infections through timely initiation of post-exposure prophylaxis, and by creating a birth dose safety net for eliminating perinatal hepatitis B transmission.

The most important steps for birthing facilities to take are:

- Implement a universal birth dose policy
- Ensure universal review of the original maternal HBsAg test results
- Implement standard admission orders for timely administration of hepatitis B vaccine to all newborn infants
- Follow national recommendations for prophylaxis of newborn infants
 - Infants born to women with HBsAg-positive test results and
 - Infants born to women whose HBsAg status is unknown

2018 ACIP Recommendations are available at www.cdc.gov/mmwr/volumes/67/11/pdfs/rr6701-H.PDF

Hepatitis B
What Hospitals Need to Do to Protect Newborns

19

Give birth to the end of Hep B

Give birth to the end of Hep B

An IAC initiative to eliminate hepatitis B virus infection in the U.S. through the prevention of perinatal transmission

Hepatitis B
What Hospitals Need to Do to Protect Newborns

Give birth to the end of Hep B

Three Tools for Promoting the Hepatitis B Birth Dose

- “Hepatitis B: What Hospitals Need to Do to Protect Newborns” – a comprehensive guide (last updated 7/16)
- Individual print resources from IAC
- Hepatitis B Birth Dose Honor Roll

Hepatitis B
What Hospitals Need to Do to Protect Newborns

Give birth to the end of Hep B

Hepatitis B: What Hospitals Need to Do to Protect Newborns

Reviewed and endorsed by

- American Academy of Family Physicians
- American Academy of Pediatrics
- American College of Obstetricians and Gynecologists
- Centers for Disease Control and Prevention

www.immunize.org/protect-newborns/guide/endorsements.pdf

Hepatitis B
What Hospitals Need to Do to Protect Newborns

22

Give birth to the end of Hep B

IAC Print Resources for Hospitals

- Guidance for Developing Admission Orders in Labor & Delivery and Newborn Units to Prevent Hepatitis B Virus Transmission
- Sample Text for Developing Admission Orders in Newborn Units for the Hepatitis B Vaccine Birth Dose
- Labor & Delivery HBsAg Admission Checklist for Birthing Mother

www.immunize.org/handouts/hepatitis-b-vaccines.asp#u

Hepatitis B
What Hospitals Need to Do to Protect Newborns

23

Give birth to the end of Hep B

IAC Print Resources for Parents

- Hepatitis B VIS in English and 27 translations
www.immunize.org/vis/vis_hepatitis_b.asp
- Hepatitis B Shots Are Recommended for All New Babies
<http://www.immunize.org/catg.d/p4110.pdf>
www.immunize.org/catg.d/p4110-01.pdf (Spanish)
- All Kids Need Hepatitis B Shots!
www.immunize.org/catg.d/p4055.pdf
- Childhood Immunization Records Cards
www.immunize.org/shop/record-cards.asp


Hepatitis B
What Hospitals Need to Do to Protect Newborns

24

Give birth to the end of Hep B

IAC's Hepatitis B Birth Dose Honor Roll

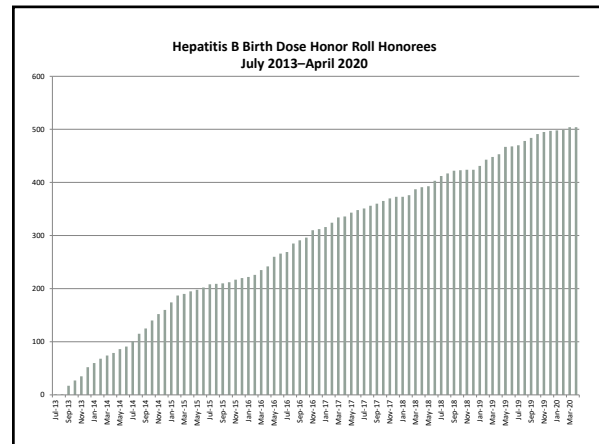
Recognizes hospitals and birthing centers that have attained 90% or greater coverage rates for administering hepatitis B vaccine at birth.



www.immunize.org/honor-roll/birthdose

Hepatitis B
What Hospitals Need to Do to Protect Newborns

25




Give birth to the end of Hep B

Criteria for Birth Dose Honor Roll

- At least 90% of babies (regardless of weight) born during a 12-month period receive hepatitis B vaccine prior to discharge (including those infants whose parents refuse).
- Written policies, procedures, and protocols for implementing the universal hepatitis B vaccine birth dose are in place and include the following:
 - Parents are informed about the importance of the hepatitis B vaccine birth dose and that it is recommended for all newborns.
 - All eligible* infants routinely receive hepatitis B vaccine within 24 hours of birth.

Note: The following criteria are generally required, but exceptions may be made.

* All medically stable infants weighing $\geq 2,000$ g at birth and born to HBsAg-negative mothers




Hepatitis B
What Hospitals Need to Do to Protect Newborns

27

Give birth to the end of Hep B

Criteria for Birth Dose Honor Roll – cont.

- Staff review the mother's chart to make sure the correct test, HBsAg, was ordered during *this* pregnancy. The result is also reviewed. **Note:** It is recommended to review a copy of the original test report, if at all possible.
- If HBsAg test result is not on mother's chart, it is ordered ASAP.
- Infants born to HBsAg-positive mothers receive hepatitis B vaccine and hepatitis B immune globulin (HBIG) within 12 hours of birth.
- Infants born to mothers whose HBsAg status is unknown receive hepatitis B vaccine within 12 hours of birth, and also receive HBIG within 12 hours of birth if they weigh less than 2,000 grams.
- Newborn admission orders include a standing order to administer hepatitis B vaccine to all medically stable infants weighing $\geq 2,000$ grams within 24 hours of birth
- Notification of the state or local health department's perinatal hepatitis B prevention program is done prior to discharge (or as soon as known, if after discharge) for all mothers whose HBsAg test result is positive.




Hepatitis B
What Hospitals Need to Do to Protect Newborns

28

Enrollment into the Honor Roll

- Applications at www.immunize.org/honor-roll/birthdose/apply.aspx
- Review by IAC
- Notification of acceptance (or problem with criteria)
- Placement on Birth Dose Honor Roll web page
- Certificate of enrollment mailed
- Recognition in *IAC Express* www.immunize.org/express

To subscribe to *IAC Express*, go to: www.immunize.org/subscribe



Hepatitis B
What Hospitals Need to Do to Protect Newborns

29

Give birth to the end of Hep B

Birth Dose Honor Roll Certificate

Immunization Action Coalition recognizes the exceptional achievement of **Albany Medical Center** ALBANY, NEW YORK and enrolls the hospital into its **Hepatitis B Birth Dose Honor Roll**


for its noteworthy dedication to patient safety by establishing a policy to administer the first dose of hepatitis B vaccine to newborns prior to hospital discharge, and achieving a coverage rate of 99 percent.

The birth dose of hepatitis B vaccine is critical to safeguarding all infants from hepatitis B virus infection which can lead to chronic liver disease.

We applaud your dedication to protecting patients.

Donald S. Neumann
Director, IAC, Albany, NY, Executive Director

Presented July 16, 2013



Hepatitis B
What Hospitals Need to Do to Protect Newborns

30

Promoting the Hepatitis B Birth Dose Honor Roll to Birthing Facilities

Do you qualify for the Hepatitis B Birth Dose Honor Roll? If so, apply today.

www.immunize.org/catg.d/p2205.pdf
www.immunize.org/protect-newborns

More about the Birth Dose Honor Roll

- Hepatitis B Birth Dose Honor Roll home page, including the criteria for inclusion:
www.immunize.org/honor-roll/birthdose
- Listing of hospitals on the Birth Dose Honor Roll:
www.immunize.org/honor-roll/birthdose/honorees.asp
- Online application for enrollment into the Honor Roll
www.immunize.org/honor-roll/birthdose/apply.aspx
- Print application for enrollment into the Honor Roll
www.immunize.org/catg.d/p2208.pdf
- Do You Qualify for the Birth Dose Honor Roll?
www.immunize.org/catg.d/p2205.pdf

Promoting the Birth Dose

Give birth to the end of Hep B

www.immunize.org/catg.d/p2201.pdf
www.immunize.org/protect-newborns

What You Can Do

- Download the guidebook, *Hepatitis B: What Hospitals Need to Do to Protect Newborns* www.immunize.org/protect-newborns
- Share the guide—and the recommended individual print resources that include the 2018 recommendation to provide the birth dose of HepB vaccine within 24 hrs—with hospitals and birthing centers to help them improve birth dose coverage rates
- Distribute the handout “Give birth to the end of Hep B,” to educate others about the importance of the hepatitis B birth dose
- Distribute the handout “Do you qualify for the Hepatitis B Honor Roll? If so apply today.” to birthing facilities
- If you are a birthing facility and have met the criteria, apply for enrollment into the Birth Dose Honor Roll
www.immunize.org/honor-roll/birthdose/apply.aspx

Safety Net

www.immunize.org/protect-newborns

Thank You!

For more information, please visit:
www.immunize.org/protect-newborns

Questions about *Give birth to the end of Hep B?*
Email birthdose@immunize.org