HEPATITIS B VACCINE SCHEDULES FOR NEWBORN INFANTS ≥ 2000 gm♠

MOTHER'S HBsAg RESULT	SINGLE ANTIGEN VACCINE		SINGLE ANTIGEN + COMBINATION VACCINE	
	DOSE	**AGE**	**DOSE**	**AGE**
POSITIVE	1 Hep B vaccine and HBIG	within 12 hrs of birth	1 Hep B vaccine and HBIG*	within 12 hrs of birth
	2 Hep B vaccine	1-2 months	2 Combination vaccine*	2 months
	3 Hep B vaccine	6 months$^{\Theta}$	3 Combination vaccine	4 months
	Serology testing for HBsAg and anti-HBs	9 months	9 months	6 months (Pediarix) or 12-15 months (Comvax)
			Serology testing for HBsAg and anti-HBs	9 months (Pediarix) or 1-2 months after Comvax
UNKNOWN	1 Hep B vaccine	within 12 hrs of birth	1 Hep B vaccine*	within 12 hrs of birth
	HBIG, if test result is positive	within 7 days	HBIG, if test result is positive	within 7 days
	Test mother for HBsAg immediately. If positive, continue series as above↑. If negative, continue series as below↓		**Test mother for HBsAg immediately.** If positive, continue series as above↑. If negative, continue series as below↓.	
NEGATIVE	1 Hep B vaccine$^{\surd}$	Before discharge	1 Hep B vaccine*$^{\surd}$	Before discharge
	2 Hep B vaccine	1-2 months	2 Combination vaccine*	2 months
	3 Hep B vaccine$^{\Theta}$	6-18 months	3 Combination vaccine	4 months
			4 Combination vaccine$^{\Theta}$	6 months (Pediarix) or 12-15 months (Comvax)$^{\Theta}$

♠ From Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part I, Immunization of Infants, Children and Adolescents, 12/05.

* Combination vaccines should not be given before 6 weeks of age.

$^{\Theta}$ The final dose in the series should not be given before age 24 weeks.

$^{\surd}$ On a case-by-case basis, the first dose of hepatitis vaccine may delayed until after hospital discharge for an infant who weighs ≥ 2000 g and whose mother is HBsAg negative, but only if the physician's order and the mother's original HBsAg lab report are documented in the infant's medical record.

Give the birth dose . . .

Hepatitis B vaccine at birth saves lives!

By ***Deborah L. Wexler, MD,*** *Executive Director, Immunization Action Coalition*

On Dec. 23, 2005, CDC issued new recommendations on hepatitis B vaccination that were published in the MMWR. The recommendations strongly support the birth dose of hepatitis B vaccine for every newborn prior to hospital discharge and also recommend the use of standing orders for giving the birth dose. Copies of original maternal hepatitis B lab reports are also recommended (instead of transcribed test results). According to the new recommendations, the birth dose should only be withheld in "rare circumstances," and if doing so, physicians should write an order ***not*** *to give the dose, and a copy of the mother's original HBsAg-negative lab report must be on the infant's chart. The American Academy of Pediatrics, American Academy of Family Physicians, and American College of Obstetricians and Gynecologists endorse these new recommendations.*

To obtain the CDC recommendations (12/23/05) for hepatitis B immunization of infants, children, and adolescents, go to: www.cdc.gov/mmwr/pdf/rr/rr5416.pdf.

For more information on the importance of giving the birth dose, and results from IAC's survey of state hepatitis B coordinators, go to: www.immunize.org/birthdose.

The Immunization Action Coalition (IAC) urges all health professionals and hospitals to protect all infants from hepatitis B virus (HBV) infection by administering the first dose of hepatitis B vaccine to every infant at birth and no later than hospital discharge.

Approximately 19,000 women with chronic hepatitis B virus infection give birth in the U.S. each year. Up to 95% of perinatal infections can be prevented by postexposure prophylaxis given within 12 hours of birth. Tragically, many babies are exposed to HBV at birth but do not receive appropriate postexposure prophylaxis.

The primary advantage of giving the first dose at birth is that IT SAVES LIVES.

Why is such a policy necessary? Following are some of the ways infants who are not vaccinated at birth can become infected:

- The pregnant woman is tested and found to be hepatitis B surface antigen (HBsAg) positive, but her status is not communicated to the newborn nursery. The infant receives neither hepatitis B vaccine nor HBIG protection at birth.
- A chronically infected pregnant woman is tested with the wrong test. For example, antibody to hepatitis B surface antigen is sometimes ordered in error instead of HBsAg. This can happen because some laboratories use the improper and confusing abbreviation HBsAb instead of anti-HBs. This misordering of a test is relatively common since the two abbreviations (HBsAg and HBsAb) differ by only one letter. However, when her incorrectly ordered test comes back "negative," the woman may have actually been HBsAg positive and her infant would not receive appropriate postexposure prophylaxis.
- The pregnant woman is HBsAg positive, but her test results are misinterpreted or mistranscribed into her prenatal record or her infant's chart. Her infant does not receive HBIG or hepatitis B vaccine.
- The pregnant woman is not tested for HBsAg either prenatally or in the hospital at the time of delivery. Women in this group have a higher likelihood of being HBsAg-positive (in one study, women who didn't receive prenatal care were 8 times more likely to be HBsAg positive than women who received such care). Her infant does not receive hepatitis B vaccine in the hospital, even though it is recommended within 12 hours of birth for infants whose mothers' test results are unknown.
- The woman is tested in early pregnancy for HBsAg and is found to be negative. She develops HBV infection later in pregnancy, but it is not detected, even though it is recommended by CDC that high-risk women be retested later in pregnancy. Because the infection is not clinically detected by her health care provider, her infant does not receive hepatitis B vaccine or HBIG at birth.
- The mother is HBsAg negative, but the infant is exposed to HBV postnatally from another family member or caregiver. This occurs in two-thirds of the cases of childhood transmission.

While there are certain advantages to giving the first dose at a later well-baby visit, these are advantages of administrative convenience. The primary advantage of giving the first dose at birth is that it saves lives.

In 2001 and 2002, IAC surveyed hepatitis coordinators at every state health department as well as at city and county CDC projects to express their views about providing hepatitis B vaccine in the hospital. Their responses contained many examples of children who were unprotected or inadequately protected because health professionals failed to order or misordered the hepatitis B blood test or misinterpreted, mistranscribed, or miscommunicated the test results of the children's mothers.

These state coordinators' reports tell us that no matter how well healthcare providers think they are doing with HBsAg screening of all pregnant women, serious mistakes continue to occur; children are unnecessarily being exposed without the benefit of postexposure prophylaxis, and at least one baby has died. In order to overcome these failures, all 50 state hepatitis B coordinators overwhelmingly endorse providing a birth dose.

To maximally protect every newborn, ACIP recommends we vaccinate *all* infants (regardless of the mother's HBsAg status) prior to hospital discharge with Engerix-B® or Recombivax HB®. Providers who wish to complete the series using hepatitis B-containing combination vaccines (Comvax®, Pediarix®), may do so by giving three additional doses. Giving a total of four doses of hepatitis B vaccine to infants is acceptable to CDC, AAP, AAFP, and these vaccine doses are covered under the Vaccines for Children (VFC) program.

All 50 state hepatitis B coordinators overwhelmingly endorse providing a birth dose.

Hepatitis B vaccine is a highly effective vaccine. Studies have shown that infants of the most highly infectious mothers (women who are both HBsAg and HBeAg positive) who receive postexposure prophylaxis with hepatitis B vaccine alone (without HBIG) at birth are protected in up to 95% of cases, essentially the same level of protection afforded by administering hepatitis B vaccine in addition to HBIG. Even higher rates of protection with postexposure prophylaxis have been demonstrated in infants born to less infectious mothers (those who are HBsAg positive and HBeAg negative).

Please read the hepatitis coordinators' survey results (see the web address box above), including descriptions of their experiences with failures of the current system—failures that largely will be prevented by administering hepatitis B vaccine to infants before they go home from the hospital.

Your support for providing a birth dose of hepatitis B vaccine to infants while still in the hospital will protect and save lives that are now being put at risk. ♦

www.immunize.org/catg.d/p2125.pdf • Item #P2125 (5/06)

Hepatitis B Vaccine Schedules **for Preterm Infants Weighing < 2000 gm** by Maternal Hepatitis B Surface Antigen (HBsAg) Status°

MATERNAL HBsAg STATUS	RECOMMENDATION	
	DOSE	**AGE**
POSITIVE	Hep B vaccine & Hepatitis B immune globulin (HBIG)+	≤ 12 hours
	Vac1 Hep B vaccine*	1 month
	Vac2 Hep B vaccine	2-4 months
	Vac3 Hep B vaccineΘ	6-7 months (Pediarix or monovalent vaccine) 12-15 months (Comvax)
	Serology testing	9 months or 1-2 months after Vac 3. Do not test before 9 months of age or ≤ 4 weeks of the most recent vaccine dose.
UNKNOWN	Hep B vaccine & HBIG+	≤ 12 hours of birth
	Test mother for HBsAg immediately: If positive, continue series as above↑ If negative, continue series as below↓	
NEGATIVE	Vac1 Hep B vaccine	At 1 month, or at hospital discharge*
	Vac2 Hep B vaccine	2-4 months
	Vac3 Hep B vaccine	6-18 monthsΘ

° From "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices (ACIP) Part I: Immunization of Infants, Children, and Adolescents," http://www.cdc.gov/ncidod/diseases/hepatitis/b/acip.htm
CDC version of Table 4 is available at http://www.cdc.gov/hepatitis/hbv/pdfs/correctedtable4.pdf

+ Do not count the birth dose as part of the vaccine series.

* Single-antigen vaccine should be used for doses administered before 6 weeks (42 days) of age. Either single or combination vaccine may be used for doses administered at ≥ 6 weeks of age.

Θ The final dose in the vaccine series should not be given before 24 weeks of age (164 days).