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Importance of Birth Dose of Hepatitis B Vaccine Reaffirmed

The American Academy of Pediatrics (AAP), the American Academy of Family Practitioners (AAFP), and the federal Advisory Committee on Immunization Practices (ACIP) have joined forces in recommending that all children in the United States be vaccinated at birth against hepatitis B. The ACIP's 2002 Recommended Childhood Immunization Schedule (*Notice to Readers: Recommended Childhood Immunization Schedule - United States, 2002, Morbidity and Mortality Weekly Report (MMWR) Vol. 51, January 18, 2002*) indicates a **preference for administering the first dose of hepatitis B vaccine to all newborns soon after birth and before hospital discharge.**

As noted by Harold Margolis, MD, Hepatitis Branch Chief at the Centers for Disease Control and Prevention (CDC), "For the first time, ACIP is stating a preference for the birth dose. This is an important step."

Background

In 1999, controversy over thimerosal as a vaccine component led to the AAP recommending that hepatitis B vaccination be delayed until six months of age in infants of HBsAg seronegative mothers. This controversial recommendation dramatically reduced hepatitis B vaccine use in newborn nurseries throughout the United States. When thimerosal-free vaccines became available, the AAP repeatedly urged reinstatement of the birth dose. Unfortunately, many hospitals and pediatricians did not do so. CDC received numerous reports of infants who did not receive hepatitis B vaccine following birth even though the mother was HBsAg positive, resulting in illness to the infant and liability to the providers.

At the time of the original controversy, Alaska medical providers were asked to continue vaccinating newborns soon after birth, because hepatitis B is endemic in certain populations in the state. (*Epidemiology Bulletin* No. 11, July 28, 1999) Almost immediately, the Section of Epidemiology obtained a limited quantity of thimerosal-free hepatitis B vaccine. Since early 2000, all hepatitis B vaccine supplied by the Alaska Immunization Program has been free of thimerosal preservative.

The Section of Epidemiology continues to recommend that all children receive hepatitis B vaccine at birth prior to hospital discharge.

Vaccine

The Section of Epidemiology recommends use of single-antigen, thimerosal-free hepatitis B vaccine at birth. *Comvax* (combination hepatitis B-Hib vaccine) should NOT be used with infants younger than 6 weeks of age. A birth dose of hepatitis B followed by *Comvax* given on the recommended schedule of 2, 4, and 12-15 months results in a total of four doses of hepatitis B vaccine. This schedule has been endorsed by the ACIP.

Why infant vaccination is important**Prevention of perinatal HBV infection**

- Approximately 90% of infants who acquire HBV infection at birth go on to become chronic carriers. An estimated 15-25% of these carriers ultimately will die of liver failure secondary to chronic active hepatitis, cirrhosis, or primary hepatocellular carcinoma.
- A dose of hepatitis B vaccine has been shown to prevent 90% of perinatal infections if given within 12 hours of birth.

A birth dose of hepatitis B provides a much-needed safety net against maternal hepatitis B testing errors and test reporting failures.

- In some instances, a pregnant woman may be tested and found HBsAg positive, but the newborn nursery doesn't learn of her status or the need to vaccinate the infant. This situation can be prevented when vaccination at birth is part of routine standing orders.
- Tests for hepatitis B status can be confusing, resulting in transcription or interpretation errors. Mothers testing negative for HBsAg early in pregnancy may develop HBV later in the pregnancy. Routine vaccination at birth prevents these all too common mistakes from becoming tragedies.

Infants and children are exposed to HBV even though their mothers are HBsAg negative.

- Two-thirds of HBV-infected children do not have HBV-infected mothers. These infections result from close contact with HBsAg-positive persons living in the child's household or other households.
- Between 30% to 50% of children who become infected with HBV between 1-5 years of age become chronic carriers.

Greater Likelihood of Complete Vaccination

Multiple studies indicate children who received the first dose of hepatitis B vaccine during their first month of life (usually the birth dose) were more likely to complete the hepatitis B vaccine series and other important immunizations.

References:

"ACIP Approves New Hepatitis B Guidance: To Include First U.S. Recommendation for Birth Dose." *Hepatitis Control Report*, Fall 2001, Vol. 6, No. 3: 1-3.

"Association Between Administration of Hepatitis B Vaccine at Birth and Completion of the Hepatitis B and 4:3:1:3 Vaccine

Series." *JAMA*, August 23/30 2000: 978-983.

Atkinson, William MD, MPH and Charles Wolfe, *Epidemiology and Prevention of Vaccine-Preventable Diseases*. 7th ed. Atlanta, GA: Centers for Disease Control and Prevention. 173.

"Be as Sure as You Can Be! Give Babies Hepatitis B Vaccine at Birth." *Needle Tips*, Spring/Summer 2000: 3.