

## Hepatitis B Vaccination and Health Care Workers (8/07)

Simard EP, Miller JT, George PA, Wasley A, Alter MJ, Bell BP, Finelli L. Hepatitis B vaccination coverage levels among healthcare workers in the United States, 2002-2003. *Infect Control Hosp Epidemiol* 2007;28:783-790.

Hepatitis B virus (HBV) infection is a well recognized risk for health-care workers (HCWs), and routine vaccination of HCWs has been recommended since 1982. By 1995, the level of vaccination coverage among HCWs was only 67%. The authors wanted to obtain an accurate estimate of hepatitis B vaccination coverage levels among HCWs and to describe the hospital characteristics and hepatitis B vaccination policies associated with various coverage levels. A representative sample of 425 of 6,116 American Hospital Association member hospitals was selected to participate, using probability-proportional-to-size methods during 2002-2003. The data collected included information regarding each hospital's hepatitis B vaccination policies. Vaccination coverage levels were estimated from a systematic sample of 25 HCWs from each hospital whose medical records were reviewed for demographic and vaccination data. The main outcome measure was hepatitis B vaccination coverage levels. Among at-risk HCWs, 75% had received three or more doses of the hepatitis B vaccine, corresponding to an estimated 2.5 million vaccinated hospital-based HCWs. The coverage level was 81% among staff physicians and nurses. Compared with nurses, coverage was significantly lower among phlebotomists (71.1%) and nurses' aides and/or other patient care staff (70.9%;  $P < .05$ ). Hepatitis B vaccination coverage was highest among white HCWs (79.5%) and lowest among black HCWs (67.6%;  $P < .05$ ). Compared with HCWs who worked in hospitals that required vaccination only of HCWs with identified risk for exposure to blood or other potentially infectious material, hepatitis B vaccination coverage was significantly lower among HCWs who worked in hospitals that required vaccination of HCWs without identified risk for exposure to blood or other potentially infectious material (76.6% vs 62.4%;  $P < .05$ ). **In the United States, an estimated 75% of HCWs have been vaccinated against hepatitis B. Important differences in coverage levels exist among various demographic groups. Hospitals need to identify methods to improve hepatitis B vaccination coverage levels and should consider developing targeted vaccination programs directed at unvaccinated, at-risk HCWs who have frequent or potential exposure to blood or other potentially infectious material.**



**DECS Comment:** It has been over twenty years since the Advisory Committee on Immunization Practices (ACIP) published the first official recommendations on the use of hepatitis B vaccine in 1982. Since then, substantial progress has been made toward eliminating HBV transmission in children and reducing the risk for HBV infection in adults. In 1991, the Occupational Safety and Health Administration (OSHA) required employers to offer the hepatitis B vaccine free of charge to all employees with reasonably anticipated occupational exposure to blood or other potentially infectious material. Among U.S. dentists, >90% have been vaccinated, and serologic evidence of past HBV infection decreased from prevaccine levels of 14% in 1972 to approximately 9% in 1992.<sup>1</sup> During 1993-2001, levels remained relatively unchanged.<sup>2</sup> Infection rates are expected to decline further as vaccination rates remain high among young dentists and as older dentists with lower vaccination rates and higher rates of infection retire.

### **USAF Guidelines for Infection Control in Dentistry**

- Offer the HBV vaccination series to all dental health-care personnel (including civilian employees, volunteers, and dental laboratory personnel) with potential occupational exposure to blood or other potentially infectious material (OPIM).
- Follow U.S. Public Health Service (PHS)/CDC recommendations for hepatitis B vaccination, serologic testing, follow-up, and booster dosing.
- Provide employees appropriate education regarding the risks of HBV transmission and the availability of the vaccine. Have employees who decline the hepatitis B vaccination sign a declination form (using the wording found in Appendix A of the OSHA bloodborne pathogens standard [1910.1030]) to be kept on file with the employer.

### **Selected References**

1. Cleveland JL, Siew C, Lockwood SA, Gruninger SE, Gooch BF, Shapiro CN. Hepatitis B vaccination and infection among U.S. dentists, 1983-1992. *J Am Dent Assoc* 1996;127:1385-90.
2. CDC. Guidelines for infection control in dental health-care settings - 2003. *MMWR* 2003; 52(No. RR-17):1-66.