SUBJECT: HEPATITIS B VACCINATION

PURPOSE:
- To safeguard the health of coworkers who have contact with infective material from patients that may create a risk for possible transmission of vaccine preventable diseases.
- Maintenance of immunity is an essential part of prevention and infection control programs for health-care workers.

POLICY:
- Hepatitis B vaccine (recombinant) will be offered to all Category I (tasks likely to present inherent potential for exposure to blood or other body fluid or tissues) and Category II employees (tasks which involve “unplanned” exposures to blood and body fluids or tissues) free of charge. Employees will have the opportunity to waiver the series if desired.
- The vaccine services will be offered to coworkers upon employment.
- Prophylaxis with an immune globulin (passive immunization) and vaccine (active immunization) shall be used when indicated, such as following a needle stick or percutaneous exposure to blood that is at high risk for being HBsAg-positive.

PROCEDURE

A. Each of the following job classifications have been evaluated and have been determined that such position requires the performance of duties that involves the exposure, and/or potential exposure to blood, body fluids, or tissues.

B. All of the following job classifications are eligible to receive the Hepatitis B vaccine at hospital expense. The series of three (3) vaccines are to be given at zero, one (1), and six (6) months. A waiver must be signed if the coworker does not wish to receive the vaccine.

Table 1: Category I and II (Exposure to Body Fluids Likely)

| Community School Nurse | Occupational Therapists |
| CSS Technicians         | Occupational Therapy Assistants |
| Diet Clerk              | OR Technicians |
| Dieticians              | OR Transport Aides |
| Emergency Department Assistants | Paramedics/EMT’s |
| Environmental Services Coordinators | Patient Safety & Occupational Health Director |
| Environmental Services Workers | Pharmacists |
| FANS Director/Supervisor | Physical Therapists |
| FANS Host/Hostess       | Physical Therapy Assistants |
| FANS Worker – Trayline  | Radiology Technicians/Assistants |
| Laboratory Personnel    | Registered Nurses |
Laundry Department  Respiratory Therapists
Licensed Practical Nurses  Social Workers
Lifeline Assistant  Supply Technicians
Maintenance Workers  Tissue Technicians
Monitor Technician  Ultrasound Department Assistants
Nursing Assistants or Orderlies  Ultrasound Sonographers

HEPATITIS B VACCINE INFORMATION

A. Formulation
1. The FDA has licensed two engineered recombinant Hepatitis B vaccines: Recombivax (Merck) and Engerix B (Smith-Kline). It is a non-infectious subunit viral vaccine derived from the Hepatitis B surface antigen produced in yeast cells.
2. Both vaccines are comparably effective when given with Hepatitis B Immune Globulin (HBIG) to prevent perinatal Hepatitis B Virus (HBV) transmission.
3. Alternative to the plasma-derived HB vaccine.
4. The purified HBsAg protein undergoes sterile filtration and treatment with formalin prior to packaging.

B. Immunogenicity and Efficacy
1. The immunogenicity of the recombinant HB vaccine is comparable to that of the plasma-derived product:
   a. After completion of a three-dose series of Recombivax (Merck) or Engerix B (Smith Kline) vaccine, protective antibodies were induced in over 95% of healthy adults 20-39 years of age.
   b. The antibody titer produced by responders of the recombinant vaccine varies from 30-100% of that seen in the plasma-derived vaccine groups.
   c. Both vaccines produce somewhat lower antibody response in older adults than in younger adults.
   d. Three 5-mcg Recombivax and 10-mcg Engerix B doses of recombinant vaccine in children less than 12 years of age produce a 99% response rate.
2. In infants born to HBs-Ag positive and HBe-Ag positive mothers, the combination of HBIG at birth and recombinant HB vaccine, 5 mcg in each of three doses (Recombivax) protected 94% and 10 mcg at 0, 1, and 2 months of age (Engerix B) protected 93% of infants from developing the chronic carrier state, an efficiency equalizing that of HBIG plus plasma-derived HB vaccine.

C. Safety
1. No potentially infectious viral DNA or complete viral particles can be produced.
2. No human or animal plasma or other blood derivative is used in the preparation.
3. Reported side-effects were similar in extent and variety to those following administration of the plasma derived vaccine:
   a. Soreness at injection site.
   b. Mild systemic symptoms: Fever, headache, fatigue, and nausea.
   c. Rare severe side effects have been observed.
   d. No significant allergic reactions have been reported. Do not give to people with hypersensitivity to yeast.
4. No known risk of HIV contamination.
D. Dosage and Schedule
   1. Series of three doses over a six (6) month period (0, 1, and 6 months).
   2. All doses are given intramuscular (IM) at either deltoid (upper arm) site.
   3. Adults and children > 10 years: Recombivax (10 mcg IM for each dose) and Engerix B (20 mcg IM each dose).
   4. Children less than 11 years of age, children born to HBsAg positive mothers, hemodialysis individuals, and immunosuppressed individuals require other dosages.
   5. Vaccines shall be stored at 36-46.6 degrees F (2-8 degrees C).
   6. Recombivax and Engerix B are interchangeable, dosing schedules are the same.

E. Indications for Use
   1. Hepatitis B vaccine (recombinant form) is indicated for immunization for all known subtypes of Hepatitis B virus. It will not protect against Hepatitis non-A, non-B, or Hepatitis A or other pathogens know to infect the liver.
   2. Immunization is recommended for all healthcare workers who are or will be exposed to blood and body fluids with visible blood.

F. Precautions
   1. As with any percutaneous vaccine, epinephrine should be available for use in case of anaphylaxis or anaphylactic reaction.
   2. Administration should be delayed if possible, in persons with any febrile illness or active infection.

G. Long-Term Protection by Plasma-Derived HB Vaccine
   1. The duration of protection is unknown but thought to be about 5 years.
   2. Responsiveness to the vaccine was age dependent ranging from 91-99%.

H. Post-vaccination Testing of Response to Vaccine
   1. One to two months after the completion of the three-dose vaccination series, co-workers will be tested for antibodies to Hepatitis B.
   2. Co-workers who do respond with a positive titer at that time are considered to be “known responders” and do not need to be tested for a Hepatitis B antibody titer again.
   3. Co-workers who do not respond to the primary series will be offered a second three-dose series and another post-vaccination titer.
   4. Co-workers who do not respond to the second series are considered to be “known non-responders” and will be instructed to report to the Emergency Department immediately post-exposure for treatment and to notify them of their non-responder status.

I. Recommendations for Booster Doses
   1. For adults and children with normal immune status the protection is for at least 5 years.
   2. Booster doses of vaccine are not routinely recommended.
   4. Post-exposure prophylaxis of persons exposed to HBsAg positive needle sticks: test for antibody to determine immune status unless previously found to be protected (known responder).
J. Dosage for Booster Doses- when indicated, HB vaccine recipients can be given booster doses of recombinant HB vaccine. Dose remains the same: Recombivax 10 mcg and Engerix B 20 mcg.