I. PURPOSE

This procedure provides guidance for offering the hepatitis B vaccine to laboratory employees.

II. PERSONNEL AFFECTED

University of Rochester employees who work in laboratories

III. DEFINITIONS

None

IV. RESPONSIBILITIES

It is the responsibility of the Principal Investigator or laboratory supervisor to ensure their staff have been offered the hepatitis B vaccination series.

V. PROCEDURES

A. What is hepatitis B?

The hepatitis B virus (HBV) infects the liver. Approximately 10% of those infected will become chronic carriers of the HBV. Anyone who carries the virus, acutely or chronically can transmit the disease to others. Of those infected, many will require hospitalization and may suffer debilitating liver disease, liver scarring (cirrhosis), and liver cancer.

The CDC estimates that 1.2 million people in the United States have chronic HBV infection, and 4,000 to 5,000 people die each year from hepatitis B related chronic liver disease or liver cancer. According to the Center for Disease Control and Prevention (CDC), approximately 73,000 people are newly infected with hepatitis B virus each year. About one-third of those patients were infected in childhood from transmission from the mother to her fetus in utero. The overall rate of infection has dramatically decreased in recent years primarily due to vaccination.
B. How is hepatitis transmitted?

HBV infected blood or certain body fluids can be transmitted by several mechanisms: percutaneous injury (e.g. a cut or poke with a contaminated object), mucous membranes exposure (e.g. eyes, nose, mouth), contact with broken skin, sexual or maternal-fetal transmission. Human cell lines, cell explants, cell tissue cultures, and animal material exposed to human cells are potentially infected with HBV and can cause occupational transmission to laboratory personnel.

C. How can hepatitis B infection be prevented?

The primary preventative measure against getting HBV infection is vaccination. It is highly effective and strongly recommended. Secondary, but equally important, preventative measures are avoiding contact with the infectious materials through a combination of environmental control measures including the use of shielding, sharps safety devices, and personnel protective equipment (gloves, masks, eye protection, gowns).

D. What is the hepatitis B vaccine?

The hepatitis B vaccine is a series of three injections of a recombinant vaccine given over 6 months. This vaccine is provided free of cost to employees who have a risk of exposure to bloodborne pathogens while doing their job. To demonstrate that the individual has acquired immunity a blood test will be done 1-2 months after the last injection.

In a laboratory, individuals experimenting with the following materials or working with equipment that may be contaminated with such materials are eligible for the vaccine.

- Hepatitis B virus
- Human blood or body fluids, blood products, or blood cells
- Unfixed human tissue
- Human cell lines (If the cells are capable of propagating bloodborne pathogens and NOT certified by commercial source as free from viral contamination. Screening methods may include PCR, antigenic screening, or co-cultivation with various indicator cells that allow contaminants to grow)
- Animals, their tissues, and cell lines derived from those tissues if the animal has been exposed to human cells as defined above.

Eligible employees are offered the vaccine within 10 working days of initial assignment.

For labs embarking on new projects involving human blood, etc. (see above list) for the first time or are adding employees to such existing projects, the Principal
Investigator or lab manager MUST contact University Health Services (UHS) Occupational Health Program at x5-4955 to ensure the following:

- Eligible employees are offered the vaccine; and
- Previously vaccinated individuals have immunity. Titers are NOT routinely performed for the general population; therefore, it is incorrect to assume that everyone who has been vaccinated is immune.

Those employees declining the hepatitis B vaccination at the time it is offered will be required to sign a statement explaining that they understand the risks associated with acquiring hepatitis B virus infection, that they were offered the vaccination at no charge, and that if they change their mind in the future they can then receive the vaccination free of charge given similar job risk factors.

A nominal fee is assessed of the laboratory/department for the vaccine and services provided by UHS.

E. **Vaccine Information:**

Per the CDC, hepatitis B vaccines have been shown to be very safe for persons of all ages. Pain at the injection site (3%-29%) and elevated temperature $>$37.7°C ($>$99.9°F) (1%-6%) are the most frequently reported side effects among vaccine recipients. In placebo-controlled studies, these side effects were reported no more frequently among persons receiving hepatitis B vaccine than among those receiving placebo.

F. **Additional Information:**

Vaccine Concerns: Contact UHS Occupational Health Nurses at x5-1164

Laboratory Safety Concerns: Contact the Biosafety Officer at x5-3014

[CDC Hepatitis B Virus Fact Sheet](#)

[CDC Hepatitis B Vaccine Fact Sheet](#)

VI. **REFERENCES**

[University’s Exposure Control Plan for Bloodborne Pathogens](#)
Bloodborne Pathogens Standard

OSHA Letter of Interpretation regarding Human Cell Lines

VII. APPENDICES/FORMS

Hepatitis B Vaccine Declination Form

VIII. REVISION HISTORY

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12/10</td>
<td>New</td>
<td>Existing information put into formal document</td>
</tr>
</tbody>
</table>