Pan American Health Organization
Regional Office of the World Health Organization

Hepatitis B Immunization of Health Workers

AIDE-MEMOIRE

for an effective approach to the immunization of health workers against hepatitis B

Are health workers at risk of exposure to hepatitis B virus (HBV)?

Yes: HBV is an important occupational hazard for health workers. **Approximately 37% of hepatitis B infections among health workers worldwide are the result of occupational exposure**.[1]

The World Health Organization (WHO) recommends that health workers be vaccinated against HBV.[2] The **WHO Global Plan of Action on Workers' Health** calls upon member countries to develop and implement occupational policies and programs for health workers, including hepatitis B immunization.[3]

What is hepatitis B?

HBV is a viral infection that attacks the liver and can cause both acute and chronic disease that can be life-threatening. Persons with chronic HBV infection have a 15 to 25% risk of dying prematurely from HBV-related cirrhosis and liver cancer.[2] Worldwide, an estimated two billion people have been infected with HBV, and more than 350 million have chronic liver infections.[4] **Health workers can become infected with HBV by exposure to even small amounts of blood from needle-stick injuries or punctures with blood-contaminated equipment.**

How can health workers be protected against HBV?

- ❑ Immunize
- ❑ Adhere to standard precautions
- ❑ Train health workers about mode of transmission and preventive measures
- ❑ Ensure access to post-exposure management services
- ❑ Record and report exposure to blood and body fluids

Be prepared: addressing commonly asked questions related to the hepatitis B vaccine

➢ What is the **efficacy and safety** of the hepatitis B vaccine?

The hepatitis B vaccine is 95% effective in preventing HBV infection and its chronic consequences. The hepatitis B vaccine has been used since 1982 and over one billion doses have been administered worldwide.[2]

➢ What are the **benefits** of being vaccinated against hepatitis B?

Hepatitis B vaccination protects and promotes the health of health workers, patients, and families. For employers, a vaccinated workforce contributes to the availability of a healthy workforce.

➢ What are the potential **adverse effects** of the hepatitis B vaccine?

Potential adverse effects include redness, swelling, and pain at the injection site. Serious effects are very rare; difficulty breathing, rash, and shock have been reported.[5]

☑ Checklist

Ensuring a Successful Vaccination Campaign Targeting Health Workers

Action Plan for immunizing health workers

- ❑ Identify responsible authority (e.g., occupational health unit)
- ❑ Implement occupational health and immunization policy and guidelines
- ❑ Integrate immunization activities within existing health and safety plan
- ❑ Allocate human and financial resources

Effective strategies to increase vaccination coverage

- ❑ Demonstrate management commitment towards the health of employees including providing resources needed to prevent exposure
- ❑ Provide and promote accessible and free on-site vaccination
- ❑ Establish participation in vaccination by signed consent or declination
- ❑ Educate health workers about the occupational risks associated with HBV, the efficacy of vaccination and other preventive measures
- ❑ Repeat reminders to ensure completion of all three doses of hepatitis B vaccine
- ❑ Integrate immunization into pre-employment orientation for employees and students
- ❑ Monitor immunization coverage regularly

Who should be immunized?

- ❑ Any health worker who performs tasks involving direct patient contact or handles blood-contaminated items is at risk:
  - □ Physicians, nurses, laboratory workers, dentists, pharmacists, aids, and allied health professionals
  - □ Support staff, such as transporters, cleaners, and waste collectors
- ❑ Students training in the field of health care

Hepatitis B immunization

- ❑ Recommended schedule: 0, 1, and 6 months[6]
- ❑ Dose: 1mL intramuscular injection
- ❑ Serological testing:
  - □ Pre-vaccination: not indicated[6,7]
  - □ Post-vaccination: not required as part of a routine program[2]

Comprehensive Approach to the Prevention of Occupational Transmission of Blood-borne Pathogens Among Health Workers

Key Elements at a Glance

1. Apply Hierarchy of Controls

Methods to control the transmission of blood-borne pathogens (BBPs) in order of effectiveness. The optimal prevention measure is to eliminate the hazard directly at the source.

START HERE	EXAMPLES
1. Elimination Remove hazard from the work area	❑ Eliminate all unnecessary injections ❑ Use jet injectors and needleless IV systems
2. Engineering controls Isolate or remove a hazard from the workplace	❑ Puncture-resistant sharps safety boxes ❑ Blunt or retractable needles
3. Administrative controls Implement policies, procedures, and training programs to reduce exposure to hazard	❑ Needle-stick injury prevention committee ❑ Standard precautions ❑ Training on occupational hazards and preventive measures ❑ Comply with international guidelines on health care waste management[8]
4. Work practice controls Reduce exposure to occupational hazards through changing work practices	❑ No recapping of needles ❑ Sharps safety boxes located at arms reach ❑ Sharps safety boxes emptied at 2/3 capacity
5. Personal Protective Equipment (PPE) Place barriers between the worker and hazard	❑ Appropriate use of PPE based on the risk of exposure to blood and body fluids (mask and eye protection, gloves, gown, and plastic apron, etc.)

2. Provide training to health workers

Health workers need to know their risk and how to protect themselves against blood-borne pathogens. ***Key training components include:***

- ❑ Risk of infection and mode of transmission; and efficacy of preventive measures
- ❑ Legal rights and obligations related to occupational health and safety
- ❑ Reporting procedures for needle-stick injuries and other blood and body fluid exposures
- ❑ Practice on the proper use of personal protective equipment
- ❑ Regular updates, training, and orientation on new products and procedures

3. Implement Standard Precautions

Standard precautions are a simple set of effective practices designed to protect health workers and patients from infectious pathogens from recognized and unrecognized sources. ***These include:***

- ❑ Ensure hand hygiene products availability (e.g., clean water, soap, single-use clean towels, alcohol-based hand rub)
- ❑ Comply with WHO hand hygiene practices[9]
- ❑ No recapping of needles
- ❑ Use and availability of puncture- and liquid-proof sharps safety boxes at site of use
- ❑ Use proper personal protective equipment based on the type of exposure to blood (gloves, gown, mask and eye protection, face shield, etc.)
- ❑ Use gloves for contact with blood, non-intact skin, and mucous membranes
- ❑ Cover all cuts and abrasions on workers with a waterproof dressing
- ❑ Clean spills of blood promptly and carefully

4. Ensure access to post-exposure management

- ❑ Implement guidelines to include first aid, reporting mechanism, and procedure to be followed for post-exposure follow-up (risk assessment, prophylaxis, and management)
- ❑ Provide a conducive, blame free, and confidential environment to workers reporting exposure
- ❑ Where possible and indicated, provide post-exposure prophylaxis (hepatitis B immune globulin for positive source) and hepatitis B vaccine if not previously immunized
- ❑ Record exposure by using a standard surveillance system (e.g., **EPINet**[10])
- ❑ Use exposure record data for prevention by recommendations for changes in policy, practices or products

Tools to prevent exposure to BBPs

PAHO, WHO, and the United States National Institute of Occupational Safety and Health (NIOSH) have developed a free toolkit aimed at preventing BBP transmission:
'Protecting Healthcare Workers: Preventing Needlestick Injuries Toolkit'
http://who.int/occupational_health/activities/pnitoolkit/en/index.html (English)
http://who.int/occupational_health/activities/pnitoolkit/es/index.html (Spanish)

Additional resources: *Workers' Health and Safety in the Health Sector*
http://www.bvsde.ops-oms.org/sde/ops-sde/ingles/bv-saludtrab.shtml

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