WORLD HEALTH ORGANIZATION

Health care worker safety

AIDE-MEMOIRE

for a strategy to protect health workers from infection with bloodborne viruses

Health workers are exposed to blood and other body fluids in the course of their work. Consequently, they are at risk of infection with bloodborne viruses including human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV). The risk of infection for health workers depends on the prevalence of disease in the patient population and the nature and frequency of exposures. Occupational exposure to blood can result from percutaneous injury (needle-stick or other sharps injury), mucocutaneous injury (splash of blood or other body fluids into the eyes, nose or mouth) or blood contact with non-intact skin. The most common form of occupational exposure to blood and the most likely to result in infection, is needle-stick injury. The most common causes of needle-stick injury are two-handed recapping and the unsafe collection and disposal of sharps waste. Health workers in areas such as operating, delivery and emergency rooms and laboratories have a higher risk of exposure. Cleaners, waste collectors and others whose duties involve handling blood-contaminated items are also at risk.

Among the 35 million health workers worldwide, about 3 million experience percutaneous exposures to bloodborne pathogens each year; two million of those to HBV, 0.9 million to HCV and 170 000 to HIV. These injuries may result in 15 000 HCV, 70 000 HBV and 1 000 HIV infections. More than 90% of these infections occur in developing countries.

Most blood exposures in health settings are preventable. Strategies to protect health workers include implementation of Universal Precautions, immunization against hepatitis B, provision of personal protection and the management of exposures. Elimination of unnecessary sharps and injections also minimizes the potential for exposure. Successful implementation of these strategies requires an effective infection control committee with support from the health setting management team.

Words of advice

- **Set up and empower an Infection Control Committee**
- **Use surveillance to identify risk situations and procedures and modify them wherever possible**
- **Achieve compliance with Universal Precautions though ongoing commitment, training of all staff members and provision of supplies**
- **Immunize health workers against hepatitis B early in their career**
- **Ensure availability of personal protective equipment**
- **Manage cases of exposure to blood and body fluids**
- **Enforce safe practices though monitoring and supervision**

Checklist

Universal Precautions

- ❑ Hand washing after any direct contact with patients
- ❑ No needle recapping
- ❑ Safe collection and disposal of sharps
- ❑ Gloves for contact with body fluids, non-intact skin and mucous membranes
- ❑ Wearing a mask, eye protection and a gown if blood or other body fluids might splash
- ❑ Covering cuts and abrasions
- ❑ Cleaning up spills of blood and other body fluids
- ❑ Safe system for hospital waste management and disposal

Hepatitis B immunization

- ❑ Immunize early in the career
- ❑ Pre-vaccination serological testing is unnecessary
- ❑ Use 0, 1 and 6 months schedule
- ❑ If possible, conduct post-vaccination testing
- ❑ Do not administer boosters routinely

Personal protection

- ❑ Where possible, use needle-stick prevention devices
- ❑ Ensure adequate supplies
- ❑ Involve staff in the selection of personal protective equipment
- ❑ Train staff in correct use
- ❑ Use influential senior staff as role models
- ❑ Monitor compliance and inappropriate use
- ❑ Dispose safely

Post-exposure management

- ❑ Guidelines outlining all procedures
- ❑ Dissemination of guidelines
- ❑ Information, education and communication
- ❑ Support and counselling
- ❑ Where possible, provision of post-exposure prophylactic medication for high-risk exposures
- ❑ Analysis of surveillance data

Key elements

Universal Precautions

Universal Precautions are a simple set of effective practices designed to protect health workers and patients from infection with a range of pathogens including bloodborne viruses. These practices are used when caring for all patients regardless of diagnosis. They are applied universally. It is not feasible, effective or cost-effective to test all patients for all pathogens prior to giving care in order to identify those who are infected and take precautions only with them. Knowing a patient is infected does not prevent occupational exposure to blood. Thus, decisions regarding the level of precautions to use are based on the nature of the procedure and not on the actual or assumed serological status of the patient. It is not safe to take precautions only with those from so-called risk groups for infection with bloodborne pathogens as many people belonging to risk groups are not infected and many infected people do not belong to risk groups. In practice, the implementation of Universal Precautions includes the following interventions:

- Hand washing after any direct contact with patients
- Preventing two-handed recapping of needles
- Safe collection and disposal of needles (hypodermic and suture) and sharps (scalpel blades, lancets, razors, scissors), with required puncture- and liquid- proof safety boxes in each patient care area
- Wearing gloves for contact with body fluids, non-intact skin and mucous membranes
- Wearing a mask, eye protection and a gown (and sometimes a plastic apron) if blood or other body fluids might splash
- Covering all cuts and abrasions with a waterproof dressing
- Promptly and carefully cleaning up spills of blood and other body fluids
- Using a safe system for health care waste management and disposal

Hepatitis B immunization

Routine immunization of health workers against infection with HBV is an effective way to protect them. HBV is the most infectious bloodborne virus and in many parts of the world, the most prevalent. The long-term sequelae of HBV infection include cirrhosis and hepatocellular carcinoma. Hepatitis B vaccine is effective, cost-effective relatively inexpensive (less than US$ 0.5 a dose) and widely available.

- Immunize health workers early in their career
- Pre-vaccination serological testing is unnecessary but may save resources if feasible and if prevalence of immunity is high
- Use a 0, 1 and 6 months schedule of three injections
- If possible, control antibody levels between two to six months after the last dose
- Do not administer boosters routinely as protection is lifelong

Personal protection

Personal protective equipment includes gloves, goggles or glasses, masks, gowns and plastic aprons.

- Where possible, use needle-stick prevention devices (i.e., devices where the sharp is sheathed or retracted after use)
- Ensure adequate supplies of personal protective equipment in all areas
- Involve staff in the selection of personal protective equipment as equipment that is of poor quality or uncomfortable to wear will not be used
- Train staff in the correct use of personal protective equipment
- Use influential senior staff as role models to promote personal protective equipment
- Monitor compliance and inappropriate use. Inappropriate glove use wastes resources. Compliance with eye protection often requires additional efforts
- Dispose of used personal protective equipment safely

Post-exposure management

The risk of infection following a needle-stick injury with needle from an infected source patient is ~ 0.3% for HIV, 3% for hepatitis C and 6-30% for hepatitis B. An effective response to occupational exposure to blood or other body fluids involves the following:

- Development guidelines outlining the first aid required, reporting mechanism and procedure to be followed for post-exposure prophylaxis and follow-up testing
- Dissemination of guidelines
- Information, education and communication
- Provision of support and counselling
- Where possible and indicated, provision of post-exposure prophylactic medication
- Analyze reported cases of exposure to improve practices

Additional information on the safe and appropriate use of injections can be obtained on the World-Wide Web at www.injectionsafety.org and on the Safe Injection Global Network internet forum at sign@who.int.

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