

# The AB of Hepa

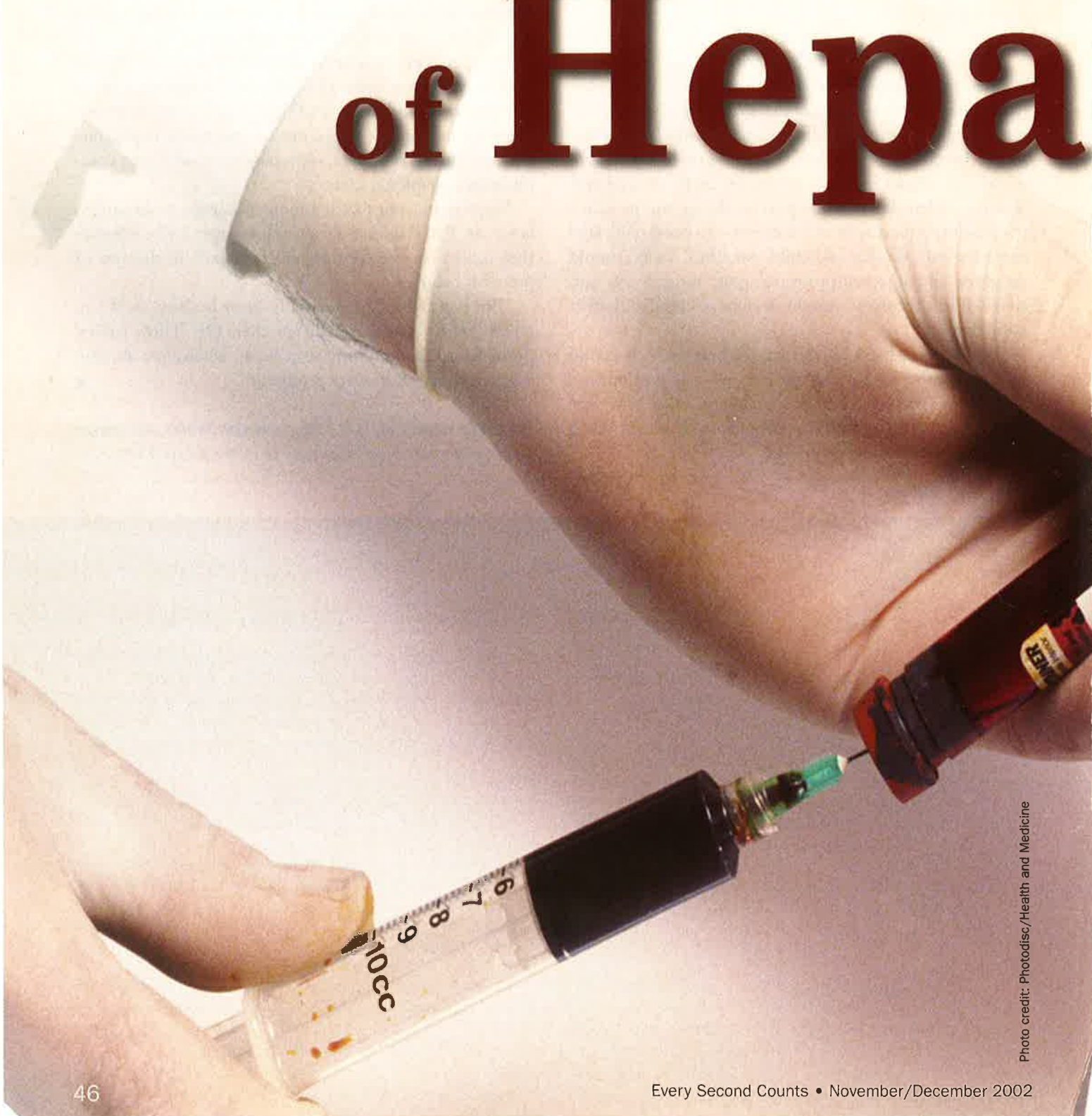
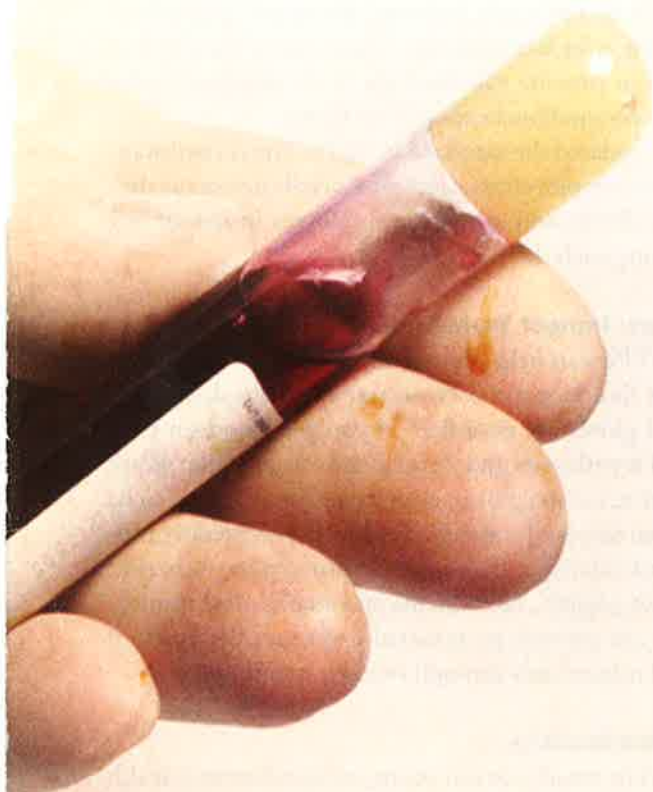


Photo credit: Photodisc/Health and Medicine

# Cs titis



by Debbie Feldman

**E**mergency responders are perpetually at-risk for blood-borne pathogen exposure. Hepatitis, a common bloodborne pathogen, is a major concern. The incidence of Hepatitis infection in its various forms has skyrocketed during the past few years — a trend that experts expect will continue, according to the Centers for Disease Control and Prevention. First responders are concerned about the risk and need to know how to protect themselves from exposure.

Hepatitis is an inflammation of the liver that can be either acute or chronic. In acute cases, the onset of symptoms occurs a short period of time after infection. In chronic cases, liver inflammation continues for more than six months. The American Liver Foundation estimates that more than 5 million Americans currently are infected with some form of chronic viral Hepatitis.

## Know the 'Hepatitis Alphabet'

Medical researchers have identified five varieties of Hepatitis, each designated by a letter: Hepatitis A, B, C, D and E. The five forms of the disease are distinguishable by how they are communicated and by their symptoms and long-term effects.

### Hepatitis A

Hepatitis A, formerly called "infectious hepatitis," is spread through fecal contamination of food and water. Most people infected with the Hepatitis A virus recover without serious health problems, and a vaccine is available. Good sanitation and personal hygiene can prevent the spread of Hepatitis A.

### Hepatitis B

Hepatitis B can lead to lifelong infection, cirrhosis of the liver, increased risk of liver cancer in some people and death. The virus is found in the blood and body fluids of infected people, and can live outside the body for several days, even in the form of dried blood. The Hepatitis Foundation International estimates that approximately 181,000 Americans are newly infected with the Hepatitis B virus, or HBV, each year, and more than 5,000 people die from chronic liver disease caused by HBV infection.

According to the Hepatitis Foundation International, many of those infected with Hepatitis B have either no symptoms, or mild flu-like symptoms; 95 percent of adults infected with HBV will recover within six months and develop immunity. If the virus has not been cleared from the body within six months, the infected person becomes chronically infected and a carrier of the virus. If a person becomes a

**Health care workers have a 2 percent risk of Hepatitis C infection after a needlestick contaminated with HCV-positive blood.**

**About 4 million Americans currently have Hepatitis C.**

carrier, the virus remains in his or her blood and body fluids, and can infect others. Fortunately, a Hepatitis B vaccine is available. The vaccine involves a series of three injections, at separate times, into the deltoid muscle, located in the shoulder.

### **Hepatitis C**

The medical community first observed Hepatitis C in the early 1970s. The disease was named in 1989. Hepatitis C is caused by a virus and often has no symptoms. The virus is communicable through contact with blood or other body fluids. It can cause cirrhosis of the liver and is the leading cause of liver transplants in America, causing about 8,000 to 10,000 deaths a year. According to the Hepatitis Foundation International, the disease progresses slowly, and may take 20 to 30 years to cause serious liver damage in some people. About 80 percent of Hepatitis C infections become chronic, and between 3.5 and 4 million Americans currently have Hepatitis C, according to the CDC. Gregory Armstrong, M.D., Medical Epidemiologist in the Hepatitis Division of the CDC, said that about 1.8 percent of the U.S. population is infected with Hepatitis C.

If symptoms do appear, they are flu-like and mild. More visible symptoms may include jaundice, fatigue, weight-loss, loss of appetite, nausea, vomiting, weakness, abdominal pain, muscle aches and low-grade fever. The earlier Hepatitis C is detected and treated, the more likely its treatment will be successful.

### **Hepatitis D & E**

Hepatitis D is found mainly in intravenous drug users who are carriers of the Hepatitis B virus. Hepatitis E is rarely found in the United States.

The Hepatitis B and C viruses are of most concern to responders exposed to bloodborne pathogens.

### **Legislative & Regulatory Action**

The federal government has taken steps to fight the spread of Hepatitis and other bloodborne pathogens. President Bill Clinton signed into law the Needlestick Safety and Protection Act on Nov. 6, 2000. The Needlestick Act requires employers to identify, evaluate and implement safer medical devices that use needles, and requires employers to keep a log of workplace needlestick injuries. The law modified the Occupational Safety and Health Administration's 1992 Bloodborne Pathogens Standard.

The Bloodborne Pathogens Standard was enacted to prevent bloodborne infections among workers who are likely to come in contact with blood or other potentially infectious materials. The standard requires employers to provide employees with exposure control plans, universal precautions, cleaning protocols, personal protective equipment and exposure reduction training. The standard also requires employers to provide vaccinations to all employees who experience occupational exposure to blood.

OSHA updated the standard in 2001. The revised standard requires employers to select safer needle devices as they become available, and to involve employees in identifying and choosing such devices.

### **Responders: Protect Yourself**

The right PPE can help prevent the spread of bloodborne pathogens like Hepatitis. Protective eyewear, disposable masks and gloves are essential. If you get blood on your skin, wash it with soap and water as soon as possible. Wash hands after removing gloves, even if the gloves appear to be intact. If no soap and water is available, use a waterless anti-septic hand cleanser. Face and eye protection — barrier devices like goggles, face shields and masks, and mouthpieces — can prevent permucosal exposure, the entry of blood and other fluids through mucous membranes.

### **Prevent Needlesticks**

Gloves and facemasks do not protect responders and health care workers from unintentional needlesticks and other medical sharps. Sharps represent 80 percent of healthcare exposure, said Janice Huy, senior program management officer consultant for the National Institute for Occupational Safety and Health. The best prevention for needlestick injuries are engineering controls, such as sharps disposal containers, and safer needle devices, Huy said.

Huy gave some examples of safer needle devices: "Safer needle devices include syringes with a sliding sheath that shields the attached needle after use, shielded or retraced catheters used to access the bloodstream for intravenous administration of medication or fluids, and intravenous

medication delivery systems that administer medication or fluids through a catheter port or connector site using a needle that is housed in a protective covering.”

Safer devices also include plastic or Mylar-wrapped glass capillary tubes. Needleless systems also reduce risk of infection, according to OSHA. For example, a jet injection system delivers liquid medication beneath the skin or through a muscle. These devices are engineered to minimize the hazard of being stuck.

Connie Meyer, a Mobile Intensive Care Technician with the Johnson County Med-Act, which provides EMS services to Johnson County, Kan., is a member of the executive council of the National Association of Emergency Medical Technicians. Meyer recommends that first responders limit as much as possible the splashing or spraying of body fluids while operating at the scene.

Johnson County Med-Act also recommended the following precautions:

- Follow procedures for safe disposal of regulated and contaminated waste.
- Handle and secure blood product containers in a way that minimizes the chances of breakage.
- Use single-use, disposable sharps.
- Do not remove needles from syringes.
- Wear gloves when obtaining blood samples and using glucometer/chemstrips.
- Isolate avulsed/amputated tissue or body parts in plastic bags.

Huy recommended that first responders “take precautions to prevent injuries caused by needles, scalpels and other sharp instruments or devices during procedures; when cleaning used instruments; during disposal of used needles; and when handling sharp instruments after procedures.” Do not re-cap needles, or bend or break them by hand. Place disposable syringes, needles, and other sharp items in puncture-resistant containers for disposal, Huy said.

“Disposable resuscitation equipment and devices should be used once and properly disposed of or, if reusable, thoroughly cleaned and disinfected after each use according to the manufacturer’s recommendations,” Huy said. “Mechanical respiratory-assist devices and pocket mouth-to-mouth resuscitation masks should be used, as well.”

Under the OSHA Bloodborne Pathogens Standard, employers must provide:

- Red biohazard bags for proper waste disposal
- Puncture- and leak-proof containers for needle disposal
- An exposure control plan detailing procedures to be followed if an employee becomes exposed
- A written protocol for cleaning

### What If I’m Exposed?

The CDC recommended that health care workers consider all blood and body fluids from all patients as potentially infectious. If you are exposed to blood or body fluids, immediately report the incident to your employer and seek medical evaluation. You may need to receive the Hepatitis B Immunoglobulin as soon as possible, ideally within 24 hours of exposure. The Hepatitis B vaccine should be administered as soon as possible, as well.

Med-Act recommended that if a responder is exposed to potentially infectious material, someone else should assume the responder’s patient care responsibilities. In the event of an exposure, wash the exposed area with soap and water, and if the eyes are exposed, rinse them with large amounts of water. ■

## For More Info:

The following organizations and Web sites offer further information on Hepatitis and other bloodborne pathogens:

Occupational Safety and Health Administration  
[www.osha.gov](http://www.osha.gov)

International Association of Fire Fighters  
[www.iaff.org/hepc/frames/HCV.html](http://www.iaff.org/hepc/frames/HCV.html)

National Fire Protection Association  
[www.nfpa.org](http://www.nfpa.org)

National Foundation for Infectious Diseases  
[www.nfid.org](http://www.nfid.org)

National Association of Emergency Medical Technicians  
[www.naemt.org](http://www.naemt.org)

Hep C Alert  
[www.hep-c-alert.org](http://www.hep-c-alert.org)

National Hepatitis C Coalition  
<http://nationalhepatitis-c.org>

Hepatitis C Research Foundation  
[www.hcf.org](http://www.hcf.org)

Centers for Disease Control and Prevention  
[www.cdc.gov](http://www.cdc.gov)

The National Safety Council’s Emergency Care Programs offer a two-hour training course in Bloodborne Pathogens, which can be taken at any Council training center. For more information, see [www.nsc.org](http://www.nsc.org) (click on First Aid Institute and see the Directory of Training Centers), or call (800) 621-7619. The cost is \$20.