HEP C Threatens Silently

There's a bloodborne pathogen at work in municipalities that potentially could lay your operation low. Please do something right now ... make yourself aware of the unfolding Hepatitis C epidemic.

HEPATITIS C IS A POTENTIALLY deadly, infectious disease caused by a bloodborne virus that invades the liver. It knows no racial, gender or socioeconomic boundaries. No vaccine for it currently exists. The clinical symptoms of the disease are often diagnosed several decades after an exposure. In fact, those who develop chronic HCV are often not aware they have the virus. Although HCV-caused liver disease may not always progress to more severe forms, damage to the liver is irreversible. HCV is the leading reason for liver transplantation in the United States.

National Concern

The HCV epidemic is a national concern. Rep. Thomas Bliley (R-Va.), chairman of the House Commerce Committee, and U.S. Surgeon General David Satcher, M.D., Ph.D., have joined forces to increase public awareness of HCV. They have requested that all members of Congress mail a copy of the surgeon general's recent letter on HCV to their constituents. Satcher hopes to have the same type of outreach that former Surgeon General Everett Koop had with his "AIDS letter" in 1986 when brochures about the Human Immunodeficiency Virus epidemic were sent to U.S. households to raise awareness of HIV.

Impact on Risk Managers

HCV should also be of serious concern for you. Without proper education and loss pre-

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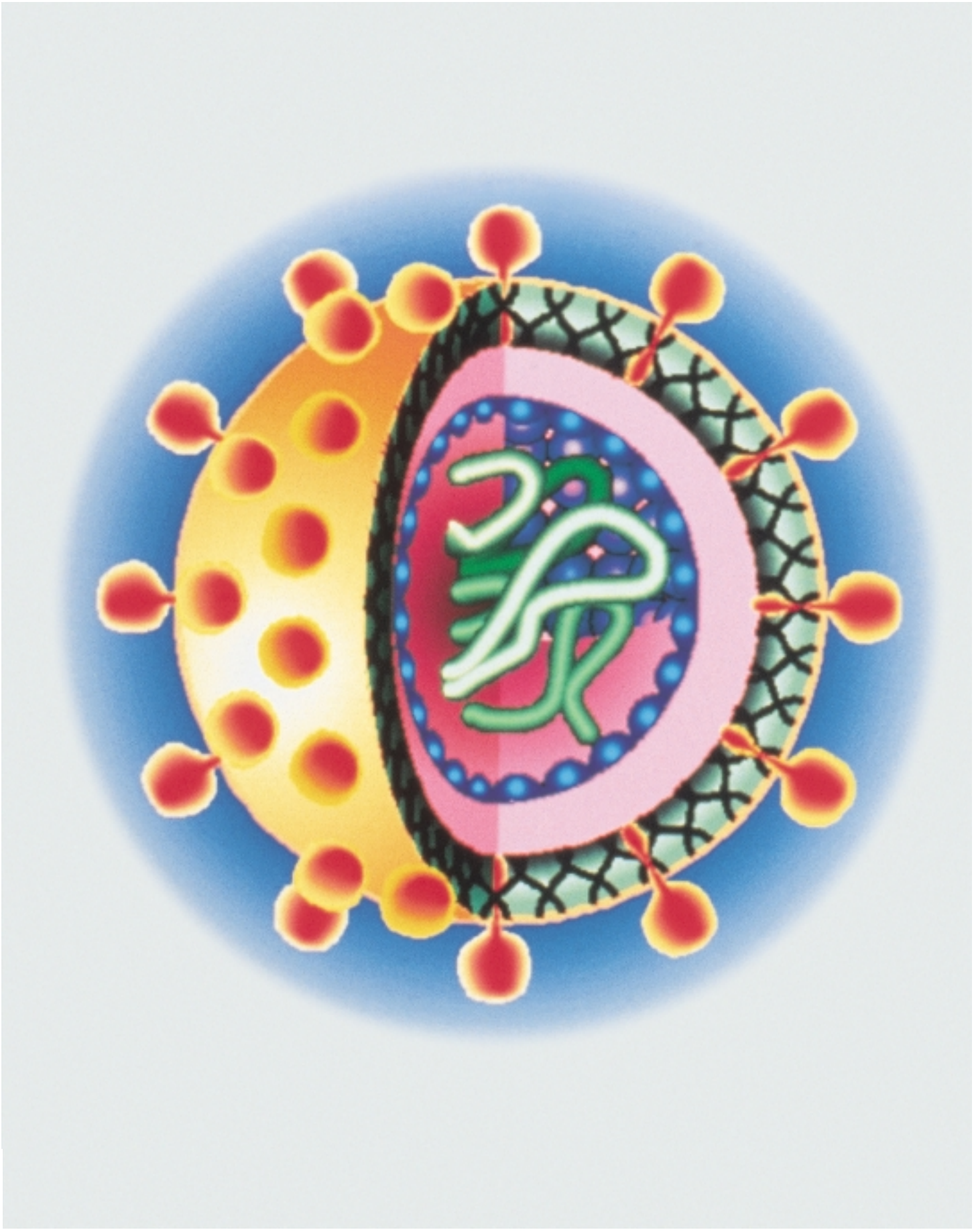

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More Information

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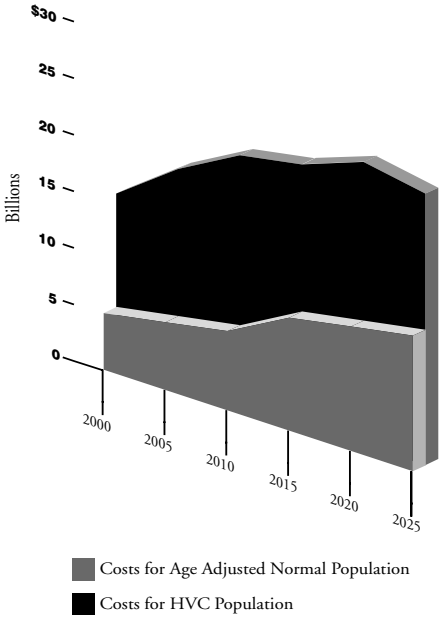
vention, the risk of exposure to county and municipal employees can be high. In addition to identifying employees at greatest risk, you must also identify the causes, recognize the symptoms and understand the consequences of inaction. As Murray Cohen, Ph.D., MPH, CIH, and president of Consultants in Disease & Injury Control Inc., states, "When you look at the data from a perspective of risk assessment epidemiology, the risk for occupational transmission of HCV is 40 times to 50 times greater than the risks for occupational transmission of HIV. This is in terms of the impact on the healthcare sector in the United States. So clearly, this is going to be a much bigger issue than people generally realize or admit at present."

The Centers for Disease Control and Prevention's National Health and Nutrition Examination Survey indicates that about four million Americans (1.8 percent of the population) have HCV antibodies, of which about 2.7 million have active HCV infection. This compares with an estimate of about 750,000 Americans infected with HIV. Which means that about four times as many people have active HCV than those affected with HIV. Furthermore, according to the recent findings of a study undertaken by the actuarial and consulting firm Milliman & Robertson, HCV currently costs the U.S. healthcare system about $15 billion annually. Their report projects that this annual cost could increase to $26 billion (in current dollars) by 2021. It's believed that HCV began infecting Americans in the 1950s. Unfortunately, the virus wasn't fully identified until 1989. The Schering Corp. believes people may be at risk if they have a tattoo, were exposed to blood in the military, had a blood transfusion before 1992, are intravenous drug users (even just once), shared a razor or any personal item, have a hands-on health-care job, received hemodialysis, used cocaine from a shared straw, and have any body piercing (such as ears, nose, navel). People may also be at risk if they have been pricked with a needle that had infected blood on it, received a solid organ transplant before July 1992, have been on long-term kidney dialysis, were born to a mother with HCV, or are sexually active, especially with multiple partners.

Projected U.S. Medical Expenditures



Symptoms of HCV

Chronic HCV is typically an insidious process, progressing slowly, if at all, without symptoms or physical signs during the first two decades after infection. A small percentage of patients with chronic hepatitis will develop nonspecific symptoms, including mild intermittent fatigue and malaise. Unfortunately, symptoms first appear in many patients with chronic HCV at the time advanced liver disease develops. The Centers for Disease Control and Prevention Viral Hepatitis C Fact Sheet lists the following clinical features:

Healthcare workers, public safety workers, and law enforcement workers deserve and should demand protection from exposure to HCV.

Types of Viral Hepatitis

Hepatitis A	Hepatitis A virus lives in feces in the intestinal tract. It's spread when infected individuals don't wash their hands after using the toilet and then handle food, or when a person changes an infected infant's diapers and then handles food before washing his or her hands. People who eat this contaminated food run a high risk of becoming infected. The virus also spreads when drinking water is contaminated with raw sewage. When people use contaminated water for drinking, as ice, or to wash fruits or vegetables, they run the risk of contracting HAV. Eating raw or partially cooked shellfish harvested from water contaminated with raw sewage can also lead to HAV infection.
Hepatitis B	The hepatitis B virus lives in blood and other body fluids. HBV is transmitted from person to person through unprotected sexual intercourse with an infected person, or through the sharing of infected needles or other sharp instruments that break the skin. Babies born to an infected mother have a 90 percent to 95 percent chance of contracting HBV during childbirth. If a baby is infected, the virus remains in its body for many years, silently attacking liver cells and eventually leading to cirrhosis or, in some cases, cancer of the liver. Even though an infected baby may show few or no signs of infection, the infant continues to be infectious and can pass the virus on to others. In up to 10 percent of HBV infections, patients develop chronic hepatitis B.
Hepatitis C	The hepatitis C virus, identified in the mid-1980s, is a slowly progressing infection that is primarily spread by intravenous drug users. According to the Centers for Disease Control and Prevention, anyone who received a blood transfusion prior to 1992, before an accurate routine blood screening was established, may be infected with this virus. HCV can also be spread through the sharing of toothbrushes, razors, and contaminated needles with an infected person; through unprotected sex with an infected person; and from mother to child during childbirth.
Hepatitis D	Hepatitis D virus, found in blood, is transmitted through the sharing of infected needles or through sexual contact with an infected person. But HDV is a parasite of HBV, using the B virus to reproduce itself and survive in the body. Only those infected with HBV are susceptible to HDV infection.
Hepatitis E & G	Hepatitis E virus lives in feces and is transmitted through contaminated food or water. Hepatitis E is found primarily in countries with poor sanitation. A hepatitis G virus has also been identified and is under scientific investigation, and researchers believe there may be still other hepatitis viruses as yet unknown.

Source: Hepatitis, Types of Viral Hepatitis, Encarta Online Deluxe, http://encarta.msn.com/find/print.asp?&pg=8&ti=01A7B000&sc=15&pt=1

- jaundice
- fatigue
- abdominal pain
- loss of appetite
- intermittent nausea
- vomiting

The most serious consequences of HCV result in liver transplant or death.

While this article's focus is HCV, it's worth mentioning here that HCV is one of six viruses—A, B, C, D, E and G (see chart)—that together account for the majority of cases of viral hepatitis. Of the six viruses, three can cause persistent infection and chronic hepatitis: the hepatitis B virus, the hepatitis C virus and the hepatitis delta or hepatitis D virus. Two other viruses—hepatitis A and hepatitis E—cause acute, self-limited disease only. The remaining virus, hepatitis G, is a recently discovered virus, and its role in the causation of acute and chronic hepatitis is not fully known.

Public Entity Employees Exposed to HCV

Health-care workers, public safety workers and law enforcement workers deserve and should demand protection from exposure to HCV. You should be especially mindful of the exposures to HCV for the following professions:

- physician and surgeon
- firefighter
- emergency medical technician
- law enforcement employee/jailer
- clinic employee
- nursing home employee
- county hospital employee

Firefighters in the city of Philadelphia know first-hand the effects of HCV. According to Julie Knipe Brown's Jan. 9, 2000, article in the *Philadelphia Daily News,* 130 Philadelphia firefighters have tested pos-

Needlestick Injuries

Needlestick injuries include all types of sharp object injury causes such as: broken glassware, hollow bore needles, solid needles/scalpels/wires. The federal government and others estimate there are 600,000 to 800,000 needlestick injuries each year, or approximately 2,000 needlestick injuries every day.

itive for HCV. This means the infection rate of the 2,100 firefighters tested thus far is 6 percent, more than three times the rate of the general population. Sadly, no one knows precisely how and why so many firefighters have been infected, but doctors admit that it probably has been attacking them for years, if not decades. The recognition here, for the most part, is that firefighters aren't injection drug users and aren't engaged in other high-risk behaviors, but they're exposed to blood. In fact, many communities whose emergency workers have become infected are acknowledging that there may be a positive correlation between these workers and their jobs.

Philadelphia isn't the only municipality with a HCV problem. Other city and county governments are also addressing the "silent epidemic." One relatively large southeastern county has at least 10 HCV claims on its loss runs with ground-up case incurred loss reserves of about $3.5 million. The typical case is reserved for $400,000. Interestingly, every one of these 10 claims is coming from the fire and rescue division. The county provides each of these employees with annual physical examinations, which is where the illness is being diagnosed. Initial screening and annual physical examinations are the first line of defense for managing exposures to HCV. In the eyes of Karrie Beeman, health-care worker safety center director for PHT Services Ltd., another, more important purpose, "is the ethical responsibility of safeguarding one's co-workers and employees."

A Doctor's View

Mark S. Davis, M.D., author of the book *Advanced Precautions for Today's OR, The Operating Room Professional's Handbook for the Prevention of Sharps Injuries and Bloodborne Exposures,* believes that firefighters, at times, are basically doctors operating out in the field. Therefore, he insists there may be some crossover between firefighters and operating room doctors when it comes to safety precautions against HCV.

In his book, Davis points out that surgeons and first responders may be exposed to HCV and other bloodborne diseases when their gloves and/or skin are torn or punctured by needles (see box), scalpels and other sharp objects encountered during surgical procedures or rescues. (Statistics demonstrate that wearing one pair of gloves during surgical procedures makes the likelihood of puncture about 30 percent to 40 percent. However, statistics also show that by wearing two pair, the risk is decreased to about 2 percent to 4 percent.).

Davis encourages surgeons and other workers who are at risk to use alternatives to sharp instruments whenever possible in order to avoid injury and exposure to blood. Fortunately, safer devices are now commercially available, so the opportunity exists to prevent most of these tragedies. Today's prevention technology includes:

- needleless IV systems
- shielded and retractable syringes
- blunt tipped suture needles
- injection and phlebotomy needles

Unfortunately, although the Occupational Safety and Health Act mandates all of the above, Davis believes that not all of the approximately 6,000 hospitals in the United States that perform surgeries incorporate the OSHA mandates.

Due to the latent nature of HCV where conditions might not manifest themselves for two decades, another major concern is that infected surgeons and firefighters could unknowingly transmit their silent infection to patients and rescue victims.

There have already been isolated instances where surgeons in the United States and the United Kingdom have transmitted HCV and Hepatitis B to patients, and instances where a dentist in the United States and an orthopedic surgeon in France have transmitted HIV to a patient. The technology exists to ensure these events remain exceedingly rare; education of health-care providers and first responders is crucial.

Financial Implications

As you become more aware of the causes, symptoms and potentially devastating effects of HCV, you should also be aware of the heavy financial burden it can cause. Not only is this a virus that can kill, it's a virus that can be very, very costly to treat. Established loss control measures and early intervention are the best risk management tools currently available. In fact, the Milliman & Robertson study finds that for every dollar spent on combination therapy (Interferon-Alfa and Ribavirin—see box), there can be savings of about $4 in future medical costs. Further, this report goes on to state that the average course of combination therapy treatment costs about $8,500 per person.

While expensive, this cost pales in comparison to those associated with chronic liver failure. The combination therapy of interferon-alfa and ribavirin is effective in reducing the virus below detectable levels in 40 percent of the cases.

While there is a vaccine for both hepatitis A and hepatitis B, unfortunately none exists for HCV. Combination therapy is the best science currently has to offer.

The Milliman & Robertson graph (see page 10) summarizes projected annual U.S. medical claim costs for people with HCV and

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compares those costs to the costs of a normal population with the same age mix as the HCV population. The top line on the chart shows the costs associated with the HCV population. The lower line quantifies the costs that the HCV-infected companion sample would incur if the companion sample had a normal mix of morbidity (i.e., were not all infected with HCV). According to Milliman & Robertson, their data represents the costs for all care and not just care related to HCV. Additionally, the dollars are the present value of trended medical expenditures.

The Milliman & Robertson research finds that the increase in expenditures reflects the increasing severity of HCV and aging balanced by the accelerating mortality of the affected population.

Proactive Efforts Critically Important

Individual entities, pools and trusts are already beginning to take the oncoming HCV epidemic seriously. Palmetto Hospital Trust in Columbia, S.C., is aggressively protecting against the silent epidemic. PHT is a self-insurance pool that covers 95 acute-care hospitals and other health-care facilities. In an effort to address the trust's exposure from needlestick injuries, the PHT board of directors voted unanimously to adopt new underwriting guidelines requiring members to implement an "effective sharps injury prevention program." According to David D. Dodge, president and chief executive officer of PHT Services Ltd., its Health Care Worker Safety Center has been working with PHT members to assist them in their preventive efforts and in making the transition to safer devices. The components of their Sharp Object Injury Prevention Program consist of:

- top management commitment
- champion
- designation of a committee
- medical director
- surveillance
- risk assessment
- accident investigation
- review of alternative devices
- education of staff
- claims reporting and management
- management of care
- program evaluation/continuous quality improvement
- report to management

PHT hospitals began working on needlestick prevention in 1992. At the time, 40 PHT hospitals began using the EPINet software system to track data on bloodborne exposures and to feed this data into the International Health Care Worker Safety Center at the University of Virginia. The results are impressive: from 1993 to 1997, sharp object injuries declined by 37 percent. Presently PHT is emphasizing better reporting of injuries for all its members through the EPINet system, which provides a "Uniform Needlestick and Sharp-Object Injury Report" and "Uniform Blood and Body Fluid Exposure Report." All PHT hospitals will soon have a Windows-based version of the EPINet software, allowing improved in-house tracking and reporting to the University of Virginia. PHT hopes their efforts put them in a favorable position as more complete reporting of sharps injuries is useful in developing risk management strategies and likely to become mandatory for hospitals nationwide.

The data suggests the worst manifestations of the silent epidemic are fast approaching. All of us need to be doing everything we can to safeguard against it. Presently, there is no cure in the majority of cases. Education is the key. Please share this article with someone who could benefit. ◆

Interferon

Interferon is any of a group of antiviral proteins produced by animals, including humans, in response to infection by viruses. The active antiviral substance is not the interferons themselves, but proteins that interferons cause other cells to produce. Interferons may be grouped into three categories—alpha, beta and gamma. Alfa interferons are made by white blood cells. Ribavirin was one of the first antiviral drugs ever discovered. It has shown some effectiveness against hepatitis A, C and B. Ribavirin is available in oral tablet form.