



INSTITUTE OF MEDICINE  
OF THE NATIONAL ACADEMIES

Hepatitis and Liver Cancer:  
A National Strategy for Prevention and Control of Hepatitis B and C

Written Statement of

Mr. Randall Mayer  
Chief, Bureau of HIV, STD, and Hepatitis  
Iowa Department of Public Health  
Des Moines, Iowa

and

Member, Committee on the Prevention and Control of Viral Hepatitis Infections  
Institute of Medicine of The National Academies

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Mr. Chairman and Members of the Committee, I am Randy Mayer, Chief of the Bureau of HIV, STD, and Hepatitis at the Iowa Department of Public Health. I also served as a member of the Institute of Medicine’s Committee on the Prevention and Control of Viral Hepatitis Infections. The Institute of Medicine, or IOM, is the health arm of the National Academy of Sciences, an independent, nonprofit organization that provides unbiased and authoritative advice to decision makers and the public. Thank you for the opportunity to submit testimony for the record based on the IOM’s report, *Hepatitis and Liver Cancer: A National Strategy for Prevention and Control of Hepatitis B and C*.

Background

Hepatitis B and hepatitis C are contagious liver diseases caused by the hepatitis B virus (HBV) and the hepatitis C virus (HCV), respectively. In the next 10 years, about 150,000 people in the United States will die from liver cancer and end-stage liver disease associated with chronic hepatitis B and hepatitis C. It is estimated that 3.5 to 5.3 million people — 1 to 2% of the US population — are living with chronic HBV or HCV infections. Of those, 800,000 to 1.4 million have chronic HBV infections, and 2.7 to 3.9 million have chronic HCV infections. Chronic viral hepatitis infections are 3 to 5 times more frequent than HIV in the United States. Up to 25% of HIV-positive people in the United States are co-infected with HCV and 10% are co-infected with HBV. The current burden of chronic viral hepatitis compared with HIV/AIDS is presented in Table 1.

**TABLE 1** Burden of Selected Serious Chronic Viral Infections in the United States

<b>Virus</b>	<b>Prevalence</b>	<b>Percentage of Population Unaware of Infection Status</b>	<b>Deaths in 2006 Related to Infection</b>	<b>Vaccine-preventable</b>	<b>Transmission Routes</b>	<b>Percentage of CDC NCHHSTP FY 2008 Budget</b>
HBV	0.8–1.4 million	About 65%	3,000	Yes	Birth, blood, sex	2% combined
HCV	2.7–3.9 million	About 75%	12,000	No	Birth, blood, sex	
HIV/AIDS	1.1 million	About 21%	14,016	No	Birth, blood, sex	69% (domestic activities)

Abbreviations: CDC NCHHSTP, Centers for Disease Control and Prevention National Center for HIV/AIDS, Viral Hepatitis, Sexually Transmitted Disease, and Tuberculosis Prevention; HBV, hepatitis B virus; HCV, hepatitis C virus; HIV/AIDS, human immunodeficiency virus/acquired immunodeficiency syndrome.

Because of the asymptomatic nature of chronic hepatitis B and hepatitis C, most people infected with HBV and HCV are not aware that they have been infected until they have symptoms of cirrhosis or a type of liver cancer, hepatocellular carcinoma (HCC), many years later. About 65% and 75% of the infected population are unaware that they are infected with HBV and HCV, respectively.

Although the incidence of acute HBV infection is declining in the United States due to the availability of hepatitis B vaccines, about 43,000 new acute HBV infections still occur each year. Of those new infections, about 1,000 infants acquire the infection during birth from their HBV-positive mothers. HBV is also transmitted by sexual contact with an infected person, sharing injection drug equipment, and needlestick injuries. African-American adults have the highest rate of acute HBV infection in the United States and the highest rates of acute HBV infection occur in the southern region. People from Asia and the Pacific Islands comprise the largest foreign-born population at risk for chronic HBV infection. The number of people in the United States who are living with chronic

HBV infection may be increasing as a result of immigration from endemic countries. On the basis of immigration patterns in the last decade, it is estimated that every year 40,000–45,000 people from HBV-endemic countries enter the United States legally.

There is no vaccine for hepatitis C. HCV is efficiently transmitted by direct percutaneous exposure to infectious blood. Persons likely to have chronic HCV infection include those who received a blood transfusion before 1992 and past or current injection-drug users (IDUs). Most IDUs in the United States have serologic evidence of HCV infection (that is, they have been exposed to HCV at some time). While HCV incidence appears to have declined over the last decade, a large portion of IDUs, who often do not have access to health-care services, are not identified by current surveillance systems, complicating interpretation of that trend. African-Americans and Hispanics have a higher rate of HCV infection than whites.

### The Charge to the IOM Committee

Despite federal, state, and local public health efforts to prevent and control hepatitis B and hepatitis C, these diseases remain serious health problems in the United States. Therefore, the Centers for Disease Control and Prevention (CDC), in conjunction with the Department of Health and Human Services Office of Minority Health, the Department of Veterans Affairs, and the National Viral Hepatitis Roundtable, sought guidance from the Institute of Medicine (IOM) in identifying missed opportunities related to the prevention and control of HBV and HCV infections. IOM was asked to focus on hepatitis B and hepatitis C because they are common in the United States and often lead to serious, chronic disease. The charge to the committee follows.

The IOM will form a committee to determine ways to reduce new HBV and HCV infections and the morbidity and mortality related to chronic viral hepatitis. The committee will assess current prevention and control activities and identify priorities for research, policy, and action. The committee will highlight issues that warrant further investigations and opportunities for collaboration between private and public sectors.

### The IOM Committee's Findings

Upon reviewing evidence on the prevention and control of hepatitis B and hepatitis C, the committee identified the underlying factors that impede current efforts to prevent and control these diseases.

Three major factors were found:

- There is a lack of knowledge and awareness about chronic viral hepatitis on the part of health-care and social-service providers.
- There is a lack of knowledge and awareness about chronic viral hepatitis among at-risk populations, members of the public, and policy-makers.
- There is insufficient understanding about the extent and seriousness of this public health problem, so inadequate public resources are being allocated to prevention, control, and surveillance programs.

That situation has created several consequences:

- Inadequate disease surveillance systems underreport acute and chronic infections, so the full extent of the problem may not be known.
- At-risk people do not know that they are at risk or how to prevent becoming infected.
- At-risk people may not have access to preventive services.
- Chronically infected people often do not know that they are infected.

- Many health-care providers do not screen people for risk factors or do not know how to manage infected people.
- Infected people often have inadequate access to testing, social support, and medical services.

### The IOM Committee's Recommendations

To address the above-mentioned consequences and improve prevention and control efforts for viral hepatitis, the committee made recommendations in four categories: surveillance, knowledge and awareness, immunization, and services for viral hepatitis. The recommendations are summarized in Box 1. Seventeen of the 22 recommendations in the report are aimed at federal agencies, including the Centers for Disease Control and Prevention and the Health Resources and Services Administration, and state health departments. The recommendations make clear that additional federal resources and guidance are necessary to improve viral hepatitis prevention and control programs.

In conclusion, the committee believes that implementation of its recommendations would lead to reductions in new HBV and HCV infections, in medical complications and deaths that result from these viral infections of the liver, and in total health costs in our nation.

Thank you for the opportunity to testify. I would be happy to address any questions the Committee might have.

#### **BOX 1 Recommendations**

##### **Chapter 2: Surveillance**

- 2-1. The Centers for Disease Control and Prevention should conduct a comprehensive evaluation of the national hepatitis B and hepatitis C public-health surveillance system.
- 2-2. The Centers for Disease Control and Prevention should develop specific cooperative viral-hepatitis agreements with all state and territorial health departments to support core surveillance for acute and chronic hepatitis B and hepatitis C.
- 2-3. The Centers for Disease Control and Prevention should support and conduct targeted active surveillance, including serologic testing, to monitor incidence and prevalence of hepatitis B virus and hepatitis C virus infections in populations not fully captured by core surveillance.

##### **Chapter 3: Knowledge and Awareness about Chronic Hepatitis B and Hepatitis C**

- 3-1. The Centers for Disease Control and Prevention should work with key stakeholders (other federal agencies, state and local governments, professional organizations, health-care organizations, and educational institutions) to develop hepatitis B and hepatitis C educational programs for health-care and social-service providers.
- 3-2. The Centers for Disease Control and Prevention should work with key stakeholders to develop, coordinate, and evaluate innovative and effective outreach and education programs to target at-risk populations and to increase awareness in the general population about hepatitis B and hepatitis C.

##### **Chapter 4: Immunization**

- 4-1. All infants weighing at least 2,000 grams and born to hepatitis B surface antigen-positive women should receive single-antigen hepatitis B vaccine and hepatitis B immune globulin in the delivery room as soon as they are stable and washed. The recommendations of the Advisory Committee on Immunization Practices should remain in effect for all other infants.
- 4-2. All states should mandate that the hepatitis B vaccine series be completed or in progress as a requirement for school attendance.
- 4-3. Additional federal and state resources should be devoted to increasing hepatitis B vaccination of at-risk adults.

- 4-4. States should be encouraged to expand immunization-information systems to include adolescents and adults.
- 4-5. Private and public insurance coverage for hepatitis B vaccination should be expanded.
- 4-6. The federal government should work to ensure an adequate, accessible, and sustainable hepatitis B vaccine supply.
- 4-7. Studies to develop a vaccine to prevent chronic hepatitis C virus infection should continue.

#### **Chapter 5: Viral Hepatitis Services**

- 5-1. Federally funded health-insurance programs—such as Medicare, Medicaid, and the Federal Employees Health Benefits Program—should incorporate guidelines for risk-factor screening for hepatitis B and hepatitis C as a required core component of preventive care so that at-risk people receive serologic testing for hepatitis B virus and hepatitis C virus and chronically-infected patients receive appropriate medical management.
- 5-2. The Centers for Disease Control and Prevention, in conjunction with other federal agencies and state agencies, should provide resources for the expansion of community-based programs that provide hepatitis B screening, testing, and vaccination services that target foreign-born populations.
- 5-3. Federal, state, and local agencies should expand programs to reduce the risk of hepatitis C virus infection through injection-drug use by providing comprehensive hepatitis C virus prevention programs. At a minimum, the programs should include access to sterile needle syringes and drug-preparation equipment because the shared use of these materials has been shown to lead to transmission of hepatitis C virus.
- 5-4. Federal and state governments should expand services to reduce the harm caused by chronic hepatitis B and hepatitis C. The services should include testing to detect infection, counseling to reduce alcohol use and secondary transmission, hepatitis B vaccination, and referral for or provision of medical management.
- 5-5. Innovative, effective, multicomponent hepatitis C virus prevention strategies for injection drug users and non-injection drug users should be developed and evaluated to achieve greater control of hepatitis C virus transmission.
- 5-6. The Centers for Disease Control and Prevention should provide additional resources and guidance to perinatal hepatitis B prevention program coordinators to expand and enhance the capacity to identify chronically infected pregnant women and provide case-management services, including referral for appropriate medical management.
- 5-7. The National Institutes of Health should support a study of the effectiveness and safety of peripartum antiviral therapy to reduce and possibly eliminate perinatal hepatitis B virus transmission from women at high risk for perinatal transmission.
- 5-8. The Centers for Disease Control and Prevention and the Department of Justice should create an initiative to foster partnerships between health departments and corrections systems to ensure the availability of comprehensive viral hepatitis services for incarcerated people.
- 5-9. The Health Resources and Services Administration should provide adequate resources to federally funded community health facilities for provision of comprehensive viral-hepatitis services.
- 5-10. The Health Resources and Services Administration and the Centers for Disease Control and Prevention should provide resources and guidance to integrate comprehensive viral hepatitis services into settings that serve high-risk populations such as STD clinics, sites for HIV services and care, homeless shelters, and mobile health units.