South Carolina Viral Hepatitis Prevention Plan

2009

This first edition of the plan was released on July 31, 2009.
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Executive Summary

The word “hepatitis” means inflammation of the liver. Toxins, certain drugs, some diseases, heavy alcohol use, bacterial infections, and viral infections can cause hepatitis. Viral hepatitis is most often caused by one of the following viruses: hepatitis A virus (HAV), hepatitis B virus (HBV), or hepatitis C virus (HCV). All three of these unrelated viruses can produce an acute illness characterized by nausea, malaise, abdominal pain, and jaundice. HBV and HCV also can produce chronic infection that is associated with an increased risk for chronic liver disease and hepatocellular carcinoma. Chronic infection with HBV and HCV represent a substantial public health problem in the United States and in South Carolina.

Hepatitis B and hepatitis C viruses are the most prevalent reportable communicable diseases (except for certain STDs) in South Carolina. Viral hepatitis surveillance and prevention activities, however, are not supported by state funds.

South Carolina Department of Health and Environmental Control (DHEC) is the official state public health agency and is committed to improving the delivery of viral hepatitis prevention services in public health clinics that serve adults at risk for viral hepatitis. The DHEC Bureau of Disease Control, which includes the Divisions of Acute Disease Epidemiology (DADE), Immunization, and STD/HIV, works in collaboration with the DHEC Bureau of Laboratories, private labs, HIV prevention contractors, Department of Corrections, SC Primary Health Care Association, Ryan White providers and other providers in the prevention and surveillance of viral hepatitis.

In 2004, DHEC began using NEDSS (National Electronic Disease Surveillance System) for disease surveillance and reporting. This surveillance system has resulted in increased viral hepatitis case finding. Despite these efforts, public health experts acknowledge that many South Carolinians remain undiagnosed and are at risk for serious consequences of chronic hepatitis B and C infection. These undiagnosed persons have not received counseling, treatment, or prevention messages. Also many persons at risk for infection have not received vaccinations to prevent HAV and HBV.

Reported Cases of Viral Hepatitis in S.C. (2000-2008)

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<td>97</td>
<td>86</td>
<td>64</td>
<td>54</td>
<td>50</td>
<td>50</td>
<td>27</td>
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<td>Hepatitis B, Acute</td>
<td>23</td>
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<td>139</td>
<td>196</td>
<td>169</td>
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<td>5</td>
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<td>17</td>
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<td>Hepatitis C, Chronic</td>
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<td>Hepatitis D</td>
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<td>0</td>
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<td>0</td>
<td>1</td>
<td>0</td>
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<td>Hepatitis E</td>
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</table>
DHEC has had policies and standing orders in place for many years supporting viral hepatitis prevention efforts. In 1998, the hepatitis B vaccination requirement for 7th grade children was added. This requirement included all grades (kindergarten through grade 12) by school year 2003-2004. In addition DHEC clinics provide HCV testing and hepatitis vaccination for high-risk adults.

The South Carolina viral hepatitis strategic planning process began in April 2009 with stakeholders from the following agencies:

- S.C. Department of Health and Environmental Control (DHEC)
- S.C Department of Alcohol and Other Drug Abuse Services (DAODAS)
- S.C. Primary Health Care Association (SCPHCA)
- S.C. Hepatitis C Coalition
- DHEC’s HIV prevention contractors
- Faces and Voices of Recovery S.C (FAVOR)

These stakeholders met a total of three times during 2009 to draft the first viral hepatitis strategic plan for South Carolina. This plan was developed based on guidance from the National Viral Hepatitis Technical Assistance Center at New York State Department of Health.

After conducting a brief survey of health departments and community partners, the committee determined that viral hepatitis services should be considered essential public health services and that prevention services should be integrated into existing programs serving at-risk populations. The committee also identified a need for increased coordination, planning and evaluation of viral hepatitis program activities statewide.

This plan is designed to serve as a resource tool for service providers needing guidance and information on viral hepatitis. The plan can be used to enhance collaboration between strategic partners that provide services to populations at risk for or infected with viral hepatitis. The committee intends to further expand and refine the plan in 2010.
Mission, Vision, Guiding Principles

MISSION

Our mission is to promote and protect the health of South Carolina residents by decreasing transmission of hepatitis A, B, and C and by limiting the complications of hepatitis-related liver disease.

VISION

We envision a coordinated public and private effort to prevent the transmission of viral hepatitis and limit the complications for those who are chronically infected by promoting access to medical care.

GUIDING PRINCIPLES

• Prevention is the most effective public health strategy.
• Hepatitis prevention and treatment is a shared responsibility among the public and private sectors and the general public.
• Cultural competence is valued by recognizing, respecting, understanding, and valuing different cultures while providing services to the general public.
• Hepatitis infections have social and economic impact on families, communities, and the health care system.
• Services that prevent hepatitis and the complications of hepatitis are integrated into the existing prevention and care infrastructure for STD/HIV, Family Planning, school health, correctional health, alcohol and drug abuse services, occupational health, and private sector pediatric and adult health care services.
• Collaboration is valued in making decisions and reaching common goals.
Overview of Viral Hepatitis

Hepatitis A
Hepatitis A is an acute infection caused by the hepatitis A virus (HAV). HAV infection occurs through person-to-person contact with an infected person or by eating or drinking food or water contaminated with fecal matter. It can range in severity from a mild illness lasting a few weeks to a severe illness lasting several months. During the last 20 years, the number of cases of hepatitis A has steadily declined throughout the United States. New cases in the United States are now estimated to be around 25,000 each year. Experts believe this decline is a result of the vaccination of children and people at risk for hepatitis A. Effective vaccines to prevent HAV infection have been available in the United States since 1995.

Reported cases of acute HAV in South Carolina have declined during recent years. 50 cases per year were reported in SC during 2004 and 2005. Reported cases declined to an average of 20 cases per year during 2006, 2007, & 2008. Childhood rates of acute HAV remain low, while adult males aged 20-39 have the highest rates of acute HAV with 35 reported cases in this age group between 2003 and 2008.

Hepatitis B
Hepatitis B is a contagious liver disease caused by the hepatitis B virus (HBV). HBV infection is spread by direct or indirect contact with infected blood or body fluids. It can range in severity from a mild illness lasting a few weeks to a severe, lifelong illness.

Acute HBV infection is a short-term illness that occurs within the first 6 months after someone is exposed to the hepatitis B virus. Acute infection can, but does not always, lead to chronic infection. New infections have decreased dramatically in the US since the mid-1980s when effective hepatitis B vaccination became widely available. The number of people who have chronic HBV infection remains high, however, because of the long duration of infection and the influx of immigrants who have chronic infection.

Chronic hepatitis B virus infection is a lifelong illness that occurs when the hepatitis B virus remains in a person’s body. Chronic HBV can lead to cirrhosis (scarring) of the liver, liver cancer, liver failure, and death. It is estimated that more than 1 million U.S. residents have chronic HBV infection, resulting in an estimated 2,000 to 4,000 deaths each year.

Reported cases of acute HBV have also declined in South Carolina. 169 and 191 cases were reported respectively during 2004 and 2005, but reported cases declined to an average of 80 per year during 2006, 2007, & 2008.

During the past 5 years (2004-2008), DHEC received an average of 661 reports of chronic HBV per year. Counties with the highest reported rates of chronic HBV were Richland and Charleston.
Infants born to mothers who are infected with hepatitis B virus are at high risk of HBV transmission and chronic HBV infection. Transmission of HBV from mother to baby can be prevented by identifying HBV-infected pregnant women and providing hepatitis B immune globulin and hepatitis B vaccine to their infants within 12 hours of birth. National guidelines call for universal screening of all pregnant women and case management of infants at risk of perinatal transmission of HBV. DHEC provides case management to all infants identified to be at risk of perinatal transmission.

Hepatitis C
Hepatitis C is a liver disease caused by the hepatitis C virus (HCV). HCV is the most common bloodborne infection in the United States. Hepatitis C virus is an acute or chronic infection and can occur when blood from an infected person enters the body of a person who is not infected.

Chronic HCV infection develops in a majority of HCV-infected persons, most of whom are unaware of their infection. Persons who are newly infected frequently have no symptoms. An estimated 3.2 million persons nationwide are chronically infected with HCV. Most Americans who are HCV-infected were born between 1945 and 1964. Experts predict a rise in future HCV-related morbidity and mortality as HCV-infected persons reach an age when complications of liver disease start to develop. The consequences of chronic liver disease from HCV often do not become apparent until 10 to 20 years after infection.

HCV is most prevalent among injection drug users. Other risk factors include patients on long-term hemodialysis, persons who received a blood transfusion or organ donation prior to 1992 and persons who received clotting factors before 1987.

The CDC estimates that approximately 17,000 new cases of HCV infections occurred in the US in 2007. No vaccine against HCV infection exists.

Based on national estimates, approximately 58,000 to 85,000 persons in South Carolina have been infected with HCV. From 2000 to 2005, nearly 20,000 persons were reported to DHEC with chronic hepatitis C. The SC reported HCV case rate in 2008 was 82 per 100,000 population.

HIV/HCV Coinfection
HCV infection progresses more rapidly to liver damage in persons who are also infected with human immunodeficiency virus (HIV). The prevalence of HCV may be as high as 30 percent among people living with HIV/AIDS (PLWHA) and as high as 90 percent among PLWHA who contracted HIV infection through injection drug use (IDU). End-stage liver disease associated with HCV is a major cause of death among PLWHA. All PLWHA should be screened for HCV infection.

See Appendices A and B for additional information.
Resource Inventory

As part of the Viral Hepatitis strategic planning process for South Carolina, the STD/HIV Division disseminated a Resource Inventory Survey via email. Surveys were distributed to and received from the following types of prevention and care organizations:

<table>
<thead>
<tr>
<th>Agency Type</th>
<th>Surveys sent</th>
<th>Surveys received</th>
<th>Rate</th>
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<tr>
<td>Alcohol and Other Drug</td>
<td>33</td>
<td>10</td>
<td>30%</td>
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<td>Community Health Center</td>
<td>20</td>
<td>4</td>
<td>20%</td>
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<tr>
<td>HIV Prevention Provider/ASO*</td>
<td>18</td>
<td>7</td>
<td>39%</td>
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<tr>
<td>DHEC Public Health Regions</td>
<td>8</td>
<td>8</td>
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</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>1</td>
<td>100%</td>
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*ASO: AIDS Service Organization

30 surveys were returned. Of the 30 surveys, the organization breakdown was as follows:
- Alcohol and Other Drug: 10 surveys (33% of all surveys received)
- Community Health Center: 4 surveys (13%)
- HIV Prevention Provider: 7 surveys (23%)
- DHEC Public Health Regions: 8 surveys (27%)
- Other: 1 survey (3%)

The survey was designed to assess seven domains of Viral Hepatitis programs:
- Program Administration
- Vaccination
- Professional Training
- General Education
- Counseling, Testing and Referral
- Medical Management
- Surveillance
Results

Results from all questions can be found in Appendix C. Some highlights are below.

Program Administration
• 63% of agencies surveyed have integrated adult viral hepatitis services.
• 73% of agencies surveyed are not seeking funds to support unmet viral hepatitis prevention care needs.

Vaccination
• 53% of agencies surveyed do not have access to free (Section 317) adult hepatitis B vaccine.

Professional Training
• 93% of agencies surveyed would be interested in receiving training on topics related to viral hepatitis services.
• 80% of agencies surveyed would be interested in receiving training on integration of viral hepatitis services into existing programs.

General Education
• 63% of agencies surveyed distribute brochures related to viral hepatitis prevention.
• 60% of agencies respond to questions from the public related to viral hepatitis.

Counseling, Testing and Referral (CTR)
• 50% of agencies surveyed provide on-site testing.
  o Among the sites that provide on-site testing, eight approximated the number of tests administered in 2008. Five sites reported providing <200 and three sites reported providing 250 or more tests (ranging from 250 to 514).
  o Among the sites that provide on-site testing, 13 (87%) responded that they provide HCV testing regardless of the person’s ability to pay.

Medical Management
• 90% of agencies surveyed do not provide medical care/treatment to persons living with chronic viral hepatitis.

Surveillance
• 67% of agencies surveyed do not monitor the number of HCV tests administered.
• 67% of agencies surveyed do not monitor the number of positive HCV tests identified, i.e., positivity rate.

Challenges/Limitations To Survey
• Identify and distribute to more providers.
• Increase representative responses from private medical providers and correctional settings.
• Increase representative responses from groups within and serving high-risk populations ("priority populations").
Gaps Identified by the Committee

Program Administration
- Programs/services that focus on STD and HIV services are not funded to integrate viral hepatitis activities into those services.
- No formal advocacy organization in South Carolina for viral hepatitis issues.

Vaccination
- Hepatitis vaccination coverage levels for adults in the U.S. are very low. According to the 2007 National Immunization Survey data, only 23.4 percent of adults (28 to 49 years old) have received 3 doses of hepatitis B vaccine.
- Lack of collaboration between alcohol and other drug (AOD) agencies, other partners and health departments for adult vaccination.

Professional Training
- A need for training:
  - 80% of survey respondents indicated an interest in training on hepatitis service integration.
  - 93% of agencies surveyed indicated an interested in education on topics related to viral hepatitis services.

General Public Education
- Lack of comprehensive education and outreach.

Counseling, Testing, Referral (CTR)
- Lack of awareness in staff of opportunities for integration of viral hepatitis prevention services, notably HCV testing.
- No system to track number of HCV tests provided each year.
- Many people who are at risk have not been tested and are not aware they are at risk.

Clinical and Medical Management
- Lack of specialists serving uninsured patients for ongoing medical management.
- Lack of clinical/medical management for persons living with HCV.
- Lack of support services for persons receiving HCV treatment.

Surveillance and Data
- Limited data available to guide or redirect viral hepatitis prevention activities.
- Limited data available to determine how many HCV infected persons are receiving appropriate medical care.
Identified Needs

The needs listed below represent the work of the Viral Hepatitis Strategic Planning Committee as discussed at the June 24, 2009 meeting.

Program Administration
- Funding is needed for viral hepatitis prevention activities. The state of South Carolina receives limited federal funding and no state funding to provide viral hepatitis prevention services to state residents. The limited federal funds (less than $200,000 in 2009) have been used for adult hepatitis vaccination, HCV testing and state level coordination.
- Need for hepatitis C support groups.
- Need for increased coordination of viral hepatitis efforts between agencies/entities serving populations at risk for viral hepatitis.
- Need for collaboration among health service organizations (HSOs) who are serving the same high-risk populations,
- Need for legislative education.
- Need for legislative support for funding.

Vaccination
- Need to increase hepatitis vaccination for high-risk adults in SC.
- Need to integrate adult hepatitis vaccination into other programs serving adults at risk.

Professional Training
- Need to increase staff awareness of opportunities for integration of viral hepatitis prevention services, notably HCV testing.
- Need for an accurate screening tool to identify persons most at risk for HCV.
- Need to increase staff awareness of importance of HCV testing:
  - To prevent further liver damage
  - To prevent transmission to others
  - To refer for medical evaluation
- Need to optimize overall hepatitis training for frontline providers in an effort to increase awareness of hepatitis prevention.

General Public Education
- Need to make viral hepatitis information available on various agency Web sites (i.e. DHEC, Department of Alcohol and Other Drug Abuse Services, Department of Corrections, Department of Mental Health).
- General population of SC has a significant need for increased awareness of different types of hepatitis (A, B, and C) along with prevention and treatment.

Counseling, Testing, Referral (CTR)
- Need to identify persons at risk for HCV infection.
• More persons infected with HCV who are unaware of their status need to be tested.

Clinical/Medical
• Need to increase access to medical care for HCV infected persons
• Need to identify champions among providers and partner agencies for viral hepatitis services.
• Need for comprehensive physician referral list.
• Need for counseling and support necessary to see the patient through the long duration of treatment.
• Need to integrate prevention activities into existing clinical services and public health programs, such as STD, HIV, Family Planning, and drug abuse.

Surveillance and Data
• Need for current data on burden of disease in SC. The true burden of disease for chronic HBV and HCV in South Carolina is not well known.
• Need for funding for viral hepatitis surveillance programs.
Recommendations to Reach South Carolina’s Priority Populations

Priority Populations

Priority populations are defined as those persons who have a known risk behavior or other exposure that places them at increased risk for viral hepatitis. Priority populations have higher rates of infection and are less likely to have access to healthcare services. Priority populations need coordinated, comprehensive services, including medical care, mental health, and substance abuse treatment.

Men who have sex with men (MSM) are at increased risk for HAV and HBV transmission. They comprise approximately 15% to 25% of all new HBV infections in the U.S. CDC recommends testing MSM for chronic HBV infection because of higher rates of infection among this population. Injection drug users are at increased risk of acquiring hepatitis C infection. Persons who are coinfected with HIV and HCV are particularly vulnerable to serious complications.

Program Administration

- Stakeholders and community partners should apply for funding opportunities.
- Collaborate with other partners to reach specific priority populations in 2010.
- Plan future comprehensive resource inventory survey in 2010.
- Increase staff advocacy/support for integration of viral hepatitis services.
- Maintain and expand the Viral Hepatitis Strategic Planning Committee as an advisory group to meet at least three times each year.

Vaccination

- Promote and expand hepatitis B vaccination for high-risk adults.
- Increase outreach to vaccinate MSM.
- Maximize hepatitis vaccine in all agencies and programs.
- Distribute vaccine vouchers at events frequented by priority populations (i.e., GLBT events including S.C. Pride; AA/NA group meetings and other events frequented by persons in recovery).

Professional Training

- Develop screening tool with training to identify persons most at risk for HCV:
  - To assess HCV risk
  - To educate and refer HCV-positive persons (including referral to SC Hepatitis C Coalition for support)
  - To determine indications for hepatitis B vaccine
- Collaborate with Southeast AIDS Training and Education Center (SEATEC) for regional trainings.
• Increase strategies to train staff in agencies to integrate viral hepatitis prevention activities into existing services (e.g. public health STD/HIV programs, alcohol and other drug abuse (AOD) agencies).

General Public Education
• Increase public awareness of viral hepatitis.
• Make viral hepatitis information available electronically on various agency Web sites (i.e. DHEC, Department of Alcohol and Other Drug Abuse Services, Department of Corrections, Department of Mental Health).
• Develop/disseminate education materials for consumers to help them better understand their risk for contracting HCV.
• Create public service announcements.
• Participate in events that target priority populations (i.e. World AIDS Day, AOD recovery events, S.C. Pride, World Hepatitis Day).

Counseling, Testing, Referral (CTR)
• Increase identification of persons at risk for HCV.
• Increase access to testing for persons at risk for HCV.

Clinical/Medical
• Promote the Viral Hepatitis Prevention Plan among public and private partners.
• Develop comprehensive physician referral list.
• Seek additional medical consultants from the private community to serve on the Strategic Planning Committee.
• Continued support for the Hepatitis C Coalition to provide information, assistance, support services, and referrals to newly diagnosed HCV-positive persons.
• Increase medical and support services for patients with HCV.
• Encourage integration of prevention activities into existing clinical services and public health programs.

Surveillance – Data
• Continue to support and improve current viral hepatitis surveillance efforts
• Promote increased funding for viral hepatitis surveillance.
• Collect additional data to refine our knowledge of the burden of disease for chronic HCV in S.C., such as:
  o Death certificate data
  o Hospitalization data
  o Liver transplant data
  o Patient surveys
References


For information, call the S.C AIDS/STD Hotline at 1-800-322-2437 or visit www.scdhec.gov/stdhiv.
Appendix A

Disease Burden from Viral Hepatitis A, B and C in the United States
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<tr>
<th></th>
<th>Hepatitis A</th>
<th>Hepatitis B</th>
<th>Hepatitis C</th>
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<tr>
<td>No. of Acute Clinical</td>
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<tr>
<td>Cases Reported</td>
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<td>Estimated No. of</td>
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<td>Acute Clinical Cases</td>
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<tr>
<td>Estimated No. of</td>
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<td>New Infections (current)</td>
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<tr>
<td>Percent Ever Infected</td>
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<tr>
<td>Number of Persons</td>
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<tr>
<td>Living with Chronic</td>
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<tr>
<td>Infection</td>
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**Disease Burden from Viral Hepatitis A, B, and C in the United States**

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<td>Cases Reported</td>
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<td>Estimated No. of</td>
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<td>Acute Clinical Cases</td>
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<td>Estimated No. of New</td>
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<td>Infections (current)</td>
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<tr>
<td>Percent Ever Infected</td>
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<td>Number of Persons</td>
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<tr>
<td>Living with Chronic</td>
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Notes on sources and methodology:

a. **Number of Acute Clinical Cases Reported:**
For hepatitis A, hepatitis B, and hepatitis C/non-A, non-B hepatitis, the number of cases reported to the National Notifiable Disease Surveillance System (NNDSS).

b. **Estimated Number of Acute Clinical Cases and New Infections:**
Incidence estimates for hepatitis A and hepatitis B are derived from catalytic modeling of seroprevalence data from the Third National Health and Nutrition Examination Survey (NHANES III) applied to cases reported to the Nationally Notifiable Disease Surveillance System (NNDSS). Incidence estimates for hepatitis C are derived by adjusting rates from the Sentinel Counties Study of Viral Hepatitis (1982–2006) and Emerging Infection Program (2007) for underreporting and asymptomatic infection.

c. **Percent Ever Infected:**
Seroprevalence estimates for HAV, HBV and HCV come from the National Health and Nutrition Examination Survey 

d. **Number of Persons Living with Chronic Infection:**

e. **Annual Number of Chronic Liver Disease Deaths associated with Viral Hepatitis:**
Acute Disease Burden Data, 1980–2007

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### Incidence of hepatitis B, United States

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### Incidence of hepatitis C, United States

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![Graph showing the incidence of acute hepatitis C from 1982 to 2007.](image-url)
Appendix B

Fact Sheets
What is hepatitis?
“Hepatitis” means inflammation of the liver. Hepatitis is most often caused by one of several viruses, such as hepatitis A virus, hepatitis B virus, or hepatitis C virus. Toxins, certain drugs, some diseases, heavy alcohol use, bacterial infections, and viral infections can also cause hepatitis.

What is hepatitis A?
Hepatitis A is a contagious liver disease that results from infection with the hepatitis A virus. It can range in severity from a mild illness lasting a few weeks to a severe illness lasting several months.

How common is hepatitis A in the United States?
Hepatitis A still occurs in the United States, although not as frequently as it once did. During the last 20 years, the number of cases of hepatitis A has steadily declined. The estimated 373,000 new infections in 1990 dropped to 143,000 by the year 2000. New cases are now estimated to be around 30,000 each year. Many experts believe this decline is a result of the vaccination of children and people at risk for hepatitis A.

Hepatitis A can be prevented with a safe and effective vaccine.

How is hepatitis A spread?
Hepatitis A is usually spread when a person ingests fecal matter — even in microscopic amounts — from contact with objects, food, or drinks contaminated by the feces or stool from an infected person.

It can be spread when:
- An infected person does not wash his/her hands properly after going to the bathroom and then touches objects or food
- A caregiver does not properly wash his or her hands after changing diapers or cleaning up the stool of an infected person
- Someone engages in certain sexual activities, such as oral-anal contact with an infected person

Hepatitis A can also be spread through contaminated food or water. This most often occurs in countries where hepatitis A is common, especially if sanitary conditions or personal hygiene are poor. Contamination of food can happen at any point: growing, harvesting, processing, handling, and even after cooking.
What are the symptoms of hepatitis A?

Not everyone gets symptoms. If symptoms develop, they usually appear 2 to 6 weeks after exposure and can include:

- Fever
- Fatigue
- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Dark urine
- Clay-colored bowel movements
- Joint pain
- Jaundice

Symptoms are more likely to occur in adults than children. They usually last less than 2 months, although some people can be ill for as long as 6 months.

How is hepatitis A diagnosed and treated?

A doctor can determine if a person has hepatitis A by discussing his or her symptoms and taking a blood sample. There are no special treatments for hepatitis A. Doctors usually recommend rest, adequate nutrition, and fluids, although a few people will need to be hospitalized. It can take a few months before people begin to feel better.

People can spread hepatitis A even if they don’t look or feel sick. Some adults and many children have no symptoms.

How serious is hepatitis A?

Most people who get hepatitis A feel sick for several months, but they usually recover completely and do not have lasting liver damage. Sometimes hepatitis A can cause liver failure and death, although this is rare and occurs more commonly in people older than 50 and people with other liver diseases.

Can hepatitis A be prevented?

Yes. The best way to prevent hepatitis A is by getting vaccinated. Experts recommend the vaccine for all children, some international travelers, and people with certain risk factors and medical conditions. The hepatitis A vaccine is safe and effective and given as 2 shots, 6 months apart. Both shots are needed for long-term protection. Frequent handwashing with soap and water — particularly after using the bathroom, changing a diaper, or before preparing or eating food — also helps prevent the spread of hepatitis A.

Once a person recovers from hepatitis A, he or she cannot get it again or spread it to others. For these individuals, the vaccine offers no benefit since they have already been infected.
Hepatitis B

General Information

Who is at risk?
Although anyone can get hepatitis B, some people are at greater risk, such as those who:
- Have sexual contact with an infected person
- Have multiple sex partners
- Have a sexually transmitted disease
- Are men who have sexual contact with other men
- Inject drugs or share needles, syringes, or other drug equipment
- Live with a person who has chronic hepatitis B
- Are infants born to infected mothers
- Are exposed to blood on the job
- Are hemodialysis patients

What is hepatitis?
“Hepatitis” means inflammation of the liver. Hepatitis is most often caused by one of several viruses, such as hepatitis A virus, hepatitis B virus, or hepatitis C virus. Toxins, bacterial infections, certain drugs, other diseases, and heavy alcohol use can also cause hepatitis.

What is hepatitis B?
Hepatitis B is a contagious liver disease that results from infection with the hepatitis B virus. It can range in severity from a mild illness lasting a few weeks to a serious, lifelong illness. Hepatitis B can be either “acute” or “chronic”.

Acute hepatitis B virus infection is a short-term illness that occurs within the first 6 months after someone is exposed to the hepatitis B virus. Acute infection can—but does not always—lead to chronic infection.

Chronic hepatitis B virus infection is a long-term illness that occurs when the hepatitis B virus remains in a person’s body.

The best way to prevent hepatitis B is by getting vaccinated.

How common is hepatitis B in the United States?
The number of acute hepatitis B virus infections has been declining each year, with an estimated 46,000 new infections in 2006. Many experts believe this decline is a result of widespread vaccination of children. However, up to 1.4 million people may have chronic hepatitis B, many of whom are unaware of their infection.

How is hepatitis B spread?
Hepatitis B is usually spread when blood, semen, or another body fluid from a person infected with the hepatitis B virus enters the body of someone who is not infected. This can happen through sexual contact with an infected person or sharing needles, syringes, or other drug-injection equipment. Hepatitis B can also be passed from an infected mother to her baby at birth.

Hepatitis B is not spread through breastfeeding, sharing eating utensils, hugging, kissing, holding hands, coughing, or sneezing. Unlike some forms of hepatitis, hepatitis B is not spread by contaminated food or water.

Can hepatitis B be spread through sex?
Yes. In the United States, hepatitis B is most commonly spread through sexual contact. The hepatitis B virus is 50–100 times more infectious than HIV and can be passed through the exchange of body fluids, such as semen, vaginal fluids, and blood.
What are the symptoms of acute hepatitis B?
Not everyone has symptoms with acute hepatitis B, especially young children. Most adults have symptoms that appear within 3 months of exposure. Symptoms can last from a few weeks to several months and include:

- Fever
- Fatigue
- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Dark urine
- Clay-colored bowel movements
- Joint pain
- Jaundice

What are the symptoms of chronic hepatitis B?
Many people with chronic hepatitis B remain symptom free for up to 30 years, but others experience ongoing symptoms similar to those of acute hepatitis B. Chronic hepatitis B is a serious disease that can result in long-term health problems.

How is hepatitis B diagnosed and treated?
Doctors diagnose the infection using one or more blood tests. There is no medication available to treat acute hepatitis B, so doctors usually recommend rest, adequate nutrition, and fluids. People with chronic hepatitis B virus infection should be monitored regularly for signs of liver disease, and some people benefit from treatment with specific medications.

How serious is chronic hepatitis B?
Over time, approximately 15%–25% of people with chronic hepatitis B develop serious liver problems, including liver damage, cirrhosis, liver failure, and liver cancer. Every year, up to 4,000 people in the United States and more than 600,000 people worldwide die from hepatitis B-related liver disease.

Can hepatitis B be prevented?
Yes. The best way to prevent hepatitis B is by getting vaccinated. For adults, the hepatitis B vaccine series is usually given as 3 shots during a 6-month period. The entire series is needed for long-term protection. However, once a person has been infected with the hepatitis B virus, the vaccine does not provide protection against the disease.

For more information
Talk to your health professional, call your health department, or visit www.cdc.gov/hepatitis
Up to 1.4 million people in the United States and 350 million people worldwide may have chronic hepatitis B. Most are unaware of their infection.

What is hepatitis B?
Hepatitis B is a contagious liver disease that results from infection with the hepatitis B virus. Some people get infected with hepatitis B and develop an acute, or short-term, illness, while others develop a chronic, or long-term, illness.

How is hepatitis B spread?
Hepatitis B is usually spread when blood, semen, or another body fluid from a person infected with the hepatitis B virus enters the body of someone who is not infected. This can happen through direct contact with the blood or open sores of an infected person; having sex with an infected partner; an infected mother passing it to her baby at birth; or sharing needles, syringes, or other drug-injection equipment.

Why is chronic hepatitis B so common?
As shown in the map below, chronic hepatitis B is very common. Worldwide, most people with chronic hepatitis B were infected with the virus at birth or during early childhood. Many of those infected are unaware that they have chronic hepatitis B, especially since they have no symptoms. As a result, they can spread the disease to others, including people they live with, sexual partners, and — for women — their newborns.

Worldwide Rates of Chronic Hepatitis B Virus Infection
How is chronic hepatitis B diagnosed?

Doctors use one or more blood tests to diagnose hepatitis B virus infection. If this test is negative, a person does not have chronic hepatitis B. If the test is positive, additional blood tests are needed to determine whether or not a person has chronic infection.

How is chronic hepatitis B treated?

People with chronic infection should see a doctor experienced in treating hepatitis B. He or she can determine the most appropriate medical care. People need to be monitored on a regular basis, and some will benefit from medication. Several new drugs are available which can delay or reverse the effects of liver disease.

What are the benefits of getting tested for chronic hepatitis B?

Testing is the best way to determine whether or not a person has chronic infection. Many people with chronic hepatitis B don’t know they are infected since they don’t look or feel sick.

Learning if one is infected is key to diagnosing hepatitis B early and getting appropriate medical care. In addition, testing can identify at-risk household members and sexual partners so they can be tested, and if uninfected, vaccinated to protect them from getting hepatitis B.

What are the symptoms of chronic hepatitis B?

Many people with chronic hepatitis B remain symptom free for up to 30 years. Some people experience symptoms similar to those of acute hepatitis B infection, including fever, fatigue, abdominal pain, and jaundice (yellowing of the skin and eyes).

How serious is chronic hepatitis B?

Over time, approximately 15%–25% of people with chronic hepatitis B develop serious liver problems, including liver damage, cirrhosis, liver failure, or liver cancer. Every year, up to 4,000 people in the United States and more than 600,000 people worldwide die from hepatitis B-related liver disease.

What can people infected with hepatitis B do to take care of their liver?

People with chronic hepatitis B virus infection should see a doctor regularly. They also should ask their health professional before taking any prescription pills or over-the-counter medications — including herbal supplements or vitamins — as they can potentially damage the liver. Alcohol should also be avoided, since it can accelerate liver damage.

Can hepatitis B be prevented?

Yes. The best way to prevent hepatitis B is by getting vaccinated. For adults, the hepatitis B vaccine is usually given as a 3-shot series during a 6-month period. It is recommended for uninfected sexual partners and household members of anyone infected with hepatitis B, as well as for people with certain risk factors and medical conditions. Once a person has been infected with the hepatitis B virus, however, the vaccine does not provide protection against the disease.

For more information

Talk to your health professional, call your health department, or visit www.cdc.gov/hepatitis
Hepatitis C

General Information

Can hepatitis C be prevented?
Yes. To reduce the risk of becoming infected with the hepatitis C virus:
- Do not share needles or other equipment to inject drugs, steroids, or cosmetic substances
- Do not use personal items that may have come into contact with an infected person’s blood, such as razors, nail clippers, toothbrushes, or glucose monitors
- Do not get tattoos or body piercings from an unlicensed facility or in an informal setting

Is there a vaccine for hepatitis C?
Although there is currently no vaccine to prevent hepatitis C, research is being conducted to develop one. Vaccines are available for hepatitis A and hepatitis B.

What is hepatitis?
“Hepatitis” means inflammation of the liver. Heavy alcohol use, toxins, certain medications, some diseases, and viral infections can cause hepatitis. Hepatitis is most often caused by one of several viruses, such as hepatitis A virus, hepatitis B virus, or hepatitis C virus.

What is hepatitis C?
Hepatitis C is a contagious liver disease that results from infection with the hepatitis C virus. It can range in severity from a mild illness lasting a few weeks to a serious, lifelong illness that damages the liver. Hepatitis C can be either “acute” or “chronic”.
- **Acute** hepatitis C virus infection is a short-term illness that occurs within the first 6 months after someone is exposed to the hepatitis C virus. Approximately 75%-85% of people who become infected with the hepatitis C virus develop chronic infection. For reasons that are not known, 15-25% of people “clear” the virus without treatment and do not develop chronic infection.
- **Chronic** hepatitis C virus infection is a long-term illness that occurs when the hepatitis C virus remains in a person’s body. Chronic infection can last a lifetime. Over time, it can lead to serious liver problems, including liver damage, cirrhosis, liver failure, or liver cancer (see chart).

How is hepatitis C spread?
Hepatitis C is usually spread when blood from a person infected with the hepatitis C virus enters the body of someone who is not infected. Today, most people become infected with the hepatitis C virus by sharing needles or other equipment to inject drugs. Before widespread screening of the blood supply began in 1992, hepatitis was also commonly spread through blood transfusions and organ transplants. Although rare, outbreaks of hepatitis C have occurred from blood contamination in medical settings.

Can hepatitis C be spread through sex?
Yes, although scientists do not know how frequently this occurs. Rough sex, sex with multiple partners, or having a sexually transmitted disease or HIV appears to increase a person’s risk of hepatitis C. There also appears to be an increased risk for sexual transmission of hepatitis C among gay men who are HIV positive.

Can a person get hepatitis C from a tattoo or piercing?
There is little evidence that hepatitis C is spread by getting tattoos in licensed, commercial facilities. Whenever tattoos or body piercings are performed in informal settings or with non-sterile instruments, transmission of hepatitis C and other infectious diseases is possible.
How common is hepatitis C?
An estimated 3.2 million people in the United States have chronic hepatitis C, and many are unaware of their infection. Each year, about 17,000 Americans become infected with hepatitis C.

How serious is chronic hepatitis C?
Chronic hepatitis C is a serious disease that can result in long-term health problems, including liver damage, liver failure, and liver cancer. Approximately 8,000–10,000 people die every year from hepatitis C-related liver disease.

How is hepatitis C diagnosed?
Doctors diagnose both acute and chronic infection using one or more blood tests. Typically, a person first gets a screening test that looks for “antibodies” to the hepatitis C virus. Antibodies are chemicals released into the bloodstream when a person becomes infected. They remain in the bloodstream, even if the person clears the virus. If the screening test is positive for hepatitis C antibodies, different blood tests are needed to determine whether the infection has been cleared or has become a chronic infection.

How is hepatitis C treated?
Acute hepatitis C rarely causes symptoms and often goes undiagnosed. When it is diagnosed, doctors recommend rest, adequate nutrition, fluids, and antiviral medications. People with chronic hepatitis C should be monitored regularly for signs of liver disease. Even though a person may not have symptoms or feel sick, damage to the liver can still occur. Antiviral medication can be used to treat some people with chronic hepatitis C, although not everyone needs or can benefit from treatment. For many, treatment can be successful and results in the virus no longer being detected.

What can people infected with hepatitis C do to take care of their liver?
People with chronic hepatitis C virus infection should see a doctor regularly. They also should ask their health professional before taking any prescription pills or over-the-counter medications—including herbal supplements or vitamins—as they can potentially damage the liver. People with chronic infection should also avoid alcohol since it can accelerate liver damage.

For more information
Talk to your health professional, call your health department, or visit www.cdc.gov/hepatitis
# The ABCs of Hepatitis

<table>
<thead>
<tr>
<th><strong>HEPATITIS A</strong> is caused by the hepatitis A virus (HAV)</th>
<th><strong>HEPATITIS B</strong> is caused by the hepatitis B virus (HBV)</th>
<th><strong>HEPATITIS C</strong> is caused by the hepatitis C virus (HCV)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Statistics</strong></td>
<td><strong>Statistics</strong></td>
<td><strong>Statistics</strong></td>
</tr>
<tr>
<td>• Estimated 32,000 new infections in 2006</td>
<td>• Estimated 46,000 new infections in 2006</td>
<td>• Estimated 19,000 new infections in 2006</td>
</tr>
<tr>
<td></td>
<td>• Estimated 800,000–1.4 million people with chronic HBV infection</td>
<td>• Estimated 3.2 million people with chronic HCV infection</td>
</tr>
<tr>
<td><strong>Routes of Transmission</strong></td>
<td><strong>Routes of Transmission</strong></td>
<td><strong>Routes of Transmission</strong></td>
</tr>
<tr>
<td>Ingestion of fecal matter, even in microscopic amounts,</td>
<td>Contact with infectious blood, semen, and other body</td>
<td>Contact with blood of an infected person, primarily</td>
</tr>
<tr>
<td>(injection and non-injection)</td>
<td>fluids, primarily through:</td>
<td>through:</td>
</tr>
<tr>
<td>• Close person-to-person contact with an infected person</td>
<td>• Birth to an infected mother</td>
<td>• Sharing of contaminated needles, syringes, or other</td>
</tr>
<tr>
<td>• Sexual contact with an infected person</td>
<td>• Sexual contact with an infected person</td>
<td>injection drug equipment</td>
</tr>
<tr>
<td>• Ingestion of contaminated food or drinks</td>
<td>• Sharing of contaminated needles, syringes or other</td>
<td>Less commonly through:</td>
</tr>
<tr>
<td></td>
<td>injection drug equipment</td>
<td>• Sexual contact with an infected person</td>
</tr>
<tr>
<td></td>
<td>• Needlesticks or other sharp instrument injuries</td>
<td>• Birth to an infected mother</td>
</tr>
<tr>
<td><strong>Persons at Risk</strong></td>
<td><strong>Persons at Risk</strong></td>
<td><strong>Persons at Risk</strong></td>
</tr>
<tr>
<td>• Travelers to regions with intermediate or high rates</td>
<td>• Infants born to infected mothers</td>
<td>• Current or former injection drug users</td>
</tr>
<tr>
<td>of hepatitis A</td>
<td>• Sex partners of infected persons</td>
<td>• Recipients of clotting factor concentrates before 1987</td>
</tr>
<tr>
<td>• Sex contacts of infected persons</td>
<td>• Persons with multiple sex partners</td>
<td>• Recipients of blood transfusions or donated organs</td>
</tr>
<tr>
<td>• Household members or caregivers of infected persons</td>
<td>• Persons with a sexually transmitted disease (STD)</td>
<td>before July 1992</td>
</tr>
<tr>
<td>• Men who have sex with men</td>
<td>• Men who have sex with men</td>
<td>• Long-term hemodialysis patients</td>
</tr>
<tr>
<td>• Users of certain illegal drugs (injection and non-injection)</td>
<td>• Injection drug users</td>
<td>• Persons with known exposures to HCV (e.g., healthcare workers after needlesticks, recipients of blood or organs from a donor who later tested positive for HCV)</td>
</tr>
<tr>
<td>• Persons with clotting-factor disorders</td>
<td>• Household contacts of infected persons</td>
<td>• HIV-infected persons</td>
</tr>
<tr>
<td></td>
<td>• Healthcare and public safety workers exposed to blood on the job</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hemodialysis patients</td>
<td>• Infants born to infected mothers</td>
</tr>
<tr>
<td></td>
<td>• Residents and staff of facilities for developmentally disabled persons</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Travelers to regions with intermediate or high rates of hepatitis B (HBsAg prevalence of ≥2%)</td>
<td></td>
</tr>
<tr>
<td><strong>Incubation Period</strong></td>
<td><strong>Incubation Period</strong></td>
<td><strong>Incubation Period</strong></td>
</tr>
<tr>
<td>15 to 50 days (average: 28 days)</td>
<td>45 to 160 days (average: 120 days)</td>
<td>14 to 180 days (average: 45 days)</td>
</tr>
<tr>
<td><strong>Symptoms of Acute Infection</strong></td>
<td><strong>Symptoms of all types of viral hepatitis are similar and can include one or more of the following:</strong></td>
<td><strong>Symptoms of all types of viral hepatitis are similar and can include one or more of the following:</strong></td>
</tr>
<tr>
<td>• Loss of appetite • Nausea</td>
<td>• Fever • Fatigue</td>
<td>• Fever • Fatigue</td>
</tr>
<tr>
<td>• Vomiting • Abdominal pain • Clay-colored bowel</td>
<td>• Abdominoma • Diarrhea</td>
<td>• Abdominal pain • Clay-colored bowel movements • Joint pain • Jaundice</td>
</tr>
<tr>
<td>movements</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Likelihood of Symptomatic Acute infection</strong></td>
<td><strong>Likelihood of Symptomatic Acute infection</strong></td>
<td><strong>Likelihood of Symptomatic Acute infection</strong></td>
</tr>
<tr>
<td>• &lt; 10% of children &lt; 6 years have jaundice</td>
<td>• &lt; 1% of infants &lt; 1 year develop symptoms</td>
<td>• 20%–30% of newly infected persons develop symptoms of acute disease</td>
</tr>
<tr>
<td>• 40%–50% of children age 6–14 years have jaundice</td>
<td>• 5%–15% of children age 1–5 years develop symptoms</td>
<td></td>
</tr>
<tr>
<td>• 70%–80% of persons &gt; 14 years have jaundice</td>
<td>• 30%–50% of persons &gt; 5 years develop symptoms</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Symptoms appear in 5%–15% of newly infected adults who are immunosuppressed</td>
<td></td>
</tr>
<tr>
<td><strong>Potential for Chronic Infection</strong></td>
<td><strong>Potential for Chronic Infection</strong></td>
<td><strong>Potential for Chronic Infection</strong></td>
</tr>
<tr>
<td>None</td>
<td>• Among immununized persons, chronic infection occurs in &gt;90% of infants, 25%–50% of children aged 1–5 years, and 6%–10% of older children and adults</td>
<td>• 75%–85% of newly infected persons develop chronic infection</td>
</tr>
<tr>
<td></td>
<td>• 15%–20% of newly infected persons develop chronic liver disease</td>
<td></td>
</tr>
<tr>
<td><strong>Severity</strong></td>
<td>• Acute illness is uncommon. Those who do develop acute illness recover with no lasting liver damage.</td>
<td>• 15%–20% of newly infected persons clear the virus</td>
</tr>
<tr>
<td>Most persons with acute disease recover with no lasting liver damage; rarely fatal</td>
<td>• 60%–70% of chronically infected persons develop chronic liver disease</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 5%–20% develop cirrhosis over a period of 20–30 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 1%–5% will die from cirrhosis or liver cancer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Estimated 8,000–10,000 persons in the United States die from HCV-related illness per year</td>
<td></td>
</tr>
<tr>
<td><strong>Serologic Tests</strong></td>
<td><strong>Serologic Tests</strong></td>
<td><strong>Serologic Tests</strong></td>
</tr>
<tr>
<td>• IgM anti-HAV is recommended for diagnosing acute disease</td>
<td>• HBsAg is recommended for screening most populations</td>
<td>• Screening assay (EIA or CIA) for anti-HCV</td>
</tr>
<tr>
<td>• Screening for past infection is generally not recommended</td>
<td>• See guidelines for appropriate follow-up testing as indicated in screening recommendations</td>
<td>• Verification by an additional more specific assay (e.g., RIBA for anti-HCV) or nucleic acid testing for HCV RNA</td>
</tr>
<tr>
<td></td>
<td>• See guidelines for identifying and testing high-risk populations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HEPATITIS A</strong></td>
<td><strong>HEPATITIS B</strong></td>
<td><strong>HEPATITIS C</strong></td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
</tbody>
</table>
| **Treatment**   | • No medication available  
• Best addressed through supportive treatment | • Acute: No medication available; best addressed through supportive treatment  
• Chronic: Regular monitoring for signs of liver disease progression; some patients are treated with antiviral drugs | • Acute: Antivirals and supportive treatment  
• Chronic: Regular monitoring for signs of liver disease progression; some patients are treated with antiviral drugs |
| **Vaccination Recommendations** | Hepatitis A vaccine is recommended for:  
• All children at age 1 year  
• Travelers to regions with intermediate or high rates of hepatitis A  
• Men who have sex with men  
• Users of certain illegal drugs (injection and non-injection)  
• Persons with clotting-factor disorders  
• Persons who work with HAV-infected primates or with HAV in a research laboratory  
• Persons with chronic liver disease, including HBV- and HCV-infected persons with chronic liver disease  
• Anyone else seeking long-term protection | Hepatitis B vaccine is recommended for:  
• All infants within 12 hours of birth  
• Older children who have not previously been vaccinated  
• Sex partners of infected persons  
• Persons with multiple sex partners  
• Persons seeking evaluation or treatment for an STD  
• Men who have sex with men  
• Injection drug users  
• Household contacts of infected persons  
• Healthcare and public safety workers exposed to blood on the job  
• Persons with chronic liver disease, including HCV-infected persons with chronic liver disease  
• Persons with HIV infection  
• Persons with end-stage renal disease, including predialysis, hemodialysis, peritoneal dialysis, and home dialysis patients  
• Residents and staff of facilities for developmentally disabled persons  
• Travelers to regions with intermediate or high rates of hepatitis B (HBsAg prevalence of ≥2%)  
• Anyone else seeking long-term protection | There is no hepatitis C vaccine. |
| **Vaccination Schedule** | 2 doses given 6 months apart | • Infants and children: 3 to 4 doses given over a 6- to 18-month period depending on vaccine type and schedule  
• Adults: 3 doses given over a 6-month period | No vaccine available |
| **Testing Recommendations** | Pre-vaccination testing (anti-HAV) can be considered for populations that have expected high rates of prior HAV infection, such as:  
• Adults born in, or who lived for extensive periods in, regions with intermediate or high rates of hepatitis A  
• Older adolescents and adults of certain races/ethnicities (American Indians, Alaska Natives, Hispanics)  
• Injection drug users  
Postvaccination testing is not recommended because of the high rate of vaccine response. | Testing for HBsAg (and additional markers as needed) is recommended for:  
• Pregnant women  
• Persons born in regions with intermediate or high rates of hepatitis B (HBsAg prevalence of ≥2%)  
• U.S.-born persons not vaccinated as infants whose parents were born in regions with high rates of hepatitis B (HBsAg prevalence of ≥8%)  
• Infants born to HBsAg-positive mothers  
• Household, needle-sharing, or sex contacts of HBsAg-positive persons  
• Men who have sex with men  
• Injection drug users  
• Patients with elevated liver enzymes (ALT/AST) of unknown etiology  
• Hemodialysis patients  
• Persons needing immunosuppressive or cytotoxic therapy  
• HIV-infected persons  
• Sources of blood or body fluids involved in potential HBV exposures (e.g., needlessticks)  
• Donors of blood, plasma, organs, tissues, or semen | Testing is recommended for:  
• Current or former injection drug users  
• Recipients of clotting factor concentrates before 1987  
• Recipients of blood transfusions or donated organs before July 1992  
• Long-term hemodialysis patients  
• Persons with known exposures to HCV (e.g., healthcare workers after needlesticks, recipients of blood or organs from a donor who later tested positive for HCV)  
• HIV-infected persons  
• Children born to infected mothers (do not test before age 18 mos.)  
• Patients with signs or symptoms of liver disease (e.g., abnormal liver enzyme tests)  
• Donors of blood, plasma, organs, tissues, or semen |
Recommended HIV/AIDS, Sexually Transmitted Disease (STD), and Viral Hepatitis Prevention Services, by Risk Population

**Source:** A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States. MMWR 2006;55(RR-16)

<table>
<thead>
<tr>
<th>Risk population*</th>
<th>Recommended services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High-risk heterosexuals</strong>&lt;br&gt;Paters seeking STD evaluation or treatment</td>
<td>Hepatitis B vaccination&lt;br&gt;Testing for human immunodeficiency virus (HIV) infection†&lt;br&gt;Testing for syphilis, gonorrhea, and chlamydia, as clinically indicated§</td>
</tr>
<tr>
<td>Sexually active men not in a long-term, mutually monogamous relationship</td>
<td>Hepatitis B vaccination&lt;br&gt;Annual testing for HIV infection†¶</td>
</tr>
<tr>
<td>Sexually active women not in a long-term, mutually monogamous relationship</td>
<td>Hepatitis B vaccination**&lt;br&gt;Annual testing for HIV infection†¶&lt;br&gt;Annual testing for chlamydia (Note: also recommended for all sexually active females aged &lt;25 yrs)§</td>
</tr>
<tr>
<td><strong>Men who have sex with men (MSM)</strong>&lt;br&gt;All MSM</td>
<td>Hepatitis A vaccination&lt;br&gt;Hepatitis B vaccination**</td>
</tr>
<tr>
<td>Sexually active MSM not in a long-term, mutually monogamous relationship</td>
<td>Hepatitis A vaccination&lt;br&gt;Hepatitis B vaccination**&lt;br&gt;Annual testing for HIV infection†&lt;br&gt;Annual testing for syphilis, gonorrhea, and chlamydia§</td>
</tr>
<tr>
<td><strong>Injection-drug users</strong></td>
<td>Hepatitis A vaccination††&lt;br&gt;Hepatitis B vaccination&lt;br&gt;Testing for hepatitis C virus infection§§&lt;br&gt;Annual testing for HIV infection†&lt;br&gt;Substance-abuse treatment¶¶</td>
</tr>
</tbody>
</table>

* Testing for HIV infection, chlamydia, gonorrhea, syphilis, and hepatitis B surface antigen also is recommended for pregnant women (CDC. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR 2006;55(No. RR-14); CDC. Sexually transmitted diseases treatment guidelines. MMWR 2006;55(No. RR-11); CDC. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices [ACIP]. Part 1: immunization of infants, children, and adolescents. MMWR 2005;54(No. RR-16)).
† CDC. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR 2006;55(No. RR-14).
¶ HIV screening is recommended for all persons aged 13–64 years. Repeat screening is recommended at least annually for persons likely to be at high risk for HIV infection, including MSM or heterosexuals who themselves or whose sex partners have had more than one partner since their most recent HIV test.
** Hepatitis B vaccination is recommended for persons with more than one sex partner during the previous 6 months.
†† CDC. Prevention of hepatitis A through active or passive immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(No. RR-7).
§§ CDC. Recommendations for prevention and control of hepatitis C virus (HCV) infection and HCV-related chronic disease. MMWR 1998;47(No. RR-19). Recommended frequency of testing for hepatitis C virus infection has not been determined.
Appendix C

Viral Hepatitis Survey
2009 Viral Hepatitis Resource Inventory Survey

The following survey is in an electronic format. Please make sure you click in the gray space to answer each question. When you complete the survey, save and email to Elona Rhame at rhamele@dhec.sc.gov

Name of Agency/Site: ______

Please check the organization type that best describes your agency (select one):

☐ Alcohol and Other Drugs (AOD) ☐ Local Health Department
☐ Corrections ☐ Private Physician
☐ Community Health Center ☐ Other (please specify): ______
☐ HIV Prevention Provider / ASO

Please list all the counties in which your agency/site provides viral hepatitis services, (i.e., testing/screening, vaccination, education, treatment, etc.) ______

I. PROGRAM ADMINISTRATION

A. Does your agency/site conduct the following activities?:

• Coordination of or participation in hepatitis prevention activities with other internal/external partners.
  ☐ Yes ☐ No
• Integration of adult viral hepatitis services into existing programs.
  ☐ Yes ☐ No
• Seeking funds to support unmet viral hepatitis prevention or care needs.
  ☐ Yes ☐ No

II. VACCINATION —adult hepatitis vaccination in accordance with Advisory Committee on Immunization Practices (ACIP)

B. Does your agency/site have access to free (Section 317) adult hepatitis B vaccine? ☐ Yes ☐ No
C. Does your agency/site administer Hepatitis B vaccinations to high-risk adults?
  ☐ Yes; please approximate the number of hepatitis B vaccinations administered to high-risk adults in 2008: ______
  ☐ No; would your site provide the hepatitis B vaccinations if you had free vaccine?
    ☐ Yes ☐ No ☐ N/A; we do not have the staff/capacity to administer this service.

III. PROFESSIONAL TRAINING —professional training on topics related to viral hepatitis.

D. Has staff at your agency/site received training on topics related to viral hepatitis services?
  ☐ Yes ☐ No
E. Would your agency/site be interested in receiving training on topics related to viral hepatitis services?
  ☐ Yes ☐ No
F. Has staff at your agency/site received training on integration of viral hepatitis services into existing program(s)?
  ☐ Yes ☐ No
G. Would your agency/site be interested in receiving training on integration of viral hepatitis services into existing program(s)?
  ☐ Yes ☐ No
IV. GENERAL EDUCATION – promoting general awareness about viral hepatitis prevention to persons in your service area(s).

H. What type(s) of general education services related to viral hepatitis prevention do you provide to persons in your service area?  (Check all that apply)

- Information on agency website
- Brochure distribution
- World Hepatitis Day activities
- Responding to questions from the public
- None of the above

V. Counseling, Testing and Referral – providing CTR for adult viral hepatitis in accordance with CDC recommendations.

I. If a person presents with risk factors for hepatitis C virus (HCV), do you:

- provide on-site prevention counseling
- provide on-site testing;
  - Approximately how many tests did your agency administer in 2008? ______
  - Is this test provided regardless of a person’s ability to pay? □ Yes □ No
- refer persons elsewhere for HCV testing
- None of the above

J. If your agency/site received funds to provide free HCV testing/screening, would more testing/screening occur within your agency?  □ Yes □ No

VI. Medical Management – providing access to medical care services.

K. Does your agency/site provide medical care/treatment to persons living with chronic viral hepatitis?  □ Yes □ No

L. Does your site offer support services for persons seeking or undergoing treatment for chronic viral hepatitis?  □ Yes □ No

M. If you answered No to either of the questions above, do you know of other providers who accept referrals of HCV-positive clients?  □ Yes □ No

VII. SURVEILLANCE – supporting the efforts of surveillance activities.

N. Does your site monitor the number of Hep C tests administered?  □ Yes □ No

O. Does your site monitor the number of positive Hep C tests identified, i.e., positivity rate?

□ Yes □ No

P. Does your site track/follow-up referrals made to other providers to assure that client is linked to care?

□ Yes □ No

VIII. CHALLENGES/BARRIERS

Q. What are the greatest challenges/barriers in providing hepatitis services to adults in SC?  ______

Thank you for your participation in this survey. Your feedback is important to us. Please return completed survey to Elona Rhame at rhamele@dhec.sc.gov no later than May 22, 2009.
The following report summarizes the responses from the 2009 Viral Hepatitis Resource Inventory Survey. A total of 30 surveys were completed and returned through July 10, 2009.

Of the 30 total respondents, the organization type breakdown was as follows:

- Alcohol and Other Drug (AOD): 10 (33%)
- Local Health Department: 8 (27%) *One response per PH Region
- Corrections: 0
- Private Physician: 0
- Community Health Center: 4 (13%)
- Other: 1 (3%)
- HIV Prevention Provider / ASO: 7 (23%)

**PROGRAM ADMINISTRATION**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
<th>Missing/NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordination/participation in hepatitis prevention activities</td>
<td>57%</td>
<td>43%</td>
<td>---</td>
</tr>
<tr>
<td>Integration of adult viral hepatitis services into existing programs</td>
<td>63%</td>
<td>37%</td>
<td>---</td>
</tr>
<tr>
<td>Seeking funds to support unmet viral hepatitis prevention care needs</td>
<td>20%</td>
<td>73%</td>
<td>7%</td>
</tr>
</tbody>
</table>

**VACCINATION**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
<th>Missing/NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does agency/site have access to free (Section 317) adult hepatitis B vaccine?</td>
<td>37%</td>
<td>53%</td>
<td>10%</td>
</tr>
<tr>
<td>Does agency/site administer Hepatitis B vaccinations to high-risk adults?</td>
<td>40%</td>
<td>30%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Among the sites who administer Hepatitis B vaccines to high-risk adults, 7 approximated the number administered in 2008. 4 (57%) approximated having administered <100 and 3 (43%) approximated administering 100 or more in 2008.

Among the sites who do not administer Hepatitis B vaccines to high-risk adults, 3 (38%) would provide the vaccination if they had access to free vaccine and 5 (63%) said they did not have staff/capacity to administer this service.

**PROFESSIONAL TRAINING**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
<th>Missing/NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has staff at agency/site received training on TOPICS related to viral hepatitis services?</td>
<td>60%</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>Would your agency/site be interested in receiving training on TOPICS related to viral hepatitis services?</td>
<td>93%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Has staff at agency/site received training on integration of viral hepatitis services into existing programs?</td>
<td>43%</td>
<td>57%</td>
<td>---</td>
</tr>
<tr>
<td>Would your agency/site be interested in receiving training on integration of viral hepatitis services into existing programs?</td>
<td>80%</td>
<td>17%</td>
<td>3%</td>
</tr>
</tbody>
</table>

**GENERAL EDUCATION**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>What types of general education services related to viral hepatitis prevention do you provide:</td>
<td></td>
</tr>
<tr>
<td>Information on agency website</td>
<td>7%</td>
</tr>
<tr>
<td>Brochure distribution</td>
<td>63%</td>
</tr>
<tr>
<td>World Hepatitis Day activities</td>
<td>17%</td>
</tr>
<tr>
<td>Responding to questions from public</td>
<td>60%</td>
</tr>
<tr>
<td>None of the above</td>
<td>23%</td>
</tr>
<tr>
<td>COUNSELING, TESTING AND REFERRAL</td>
<td>Yes</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>If a person presents with risk factors for hepatitis C virus (HCV):</td>
<td></td>
</tr>
<tr>
<td>Do you provide on-site prevention counseling?</td>
<td>57%</td>
</tr>
<tr>
<td>Do you provide on-site testing?</td>
<td>50%</td>
</tr>
<tr>
<td>Among the sites that provide on-site testing, 8 approximated the number administered in 2008. Five sites reported providing &lt;200 and three sites reported providing 250 or more tests (ranging from 250 to 514).</td>
<td></td>
</tr>
<tr>
<td>Among the sites that provide on-site testing, 13 (87%) responded that they provide the test regardless of the person’s ability to pay.</td>
<td></td>
</tr>
<tr>
<td>Do you refer persons elsewhere for HCV testing?</td>
<td>53%</td>
</tr>
<tr>
<td>Did not provide on-site prevention, counseling or testing, or referral?</td>
<td>10%</td>
</tr>
<tr>
<td>If your site received funds to provide free HCV testing/screening, would more testing/screening occur?</td>
<td>60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEDICAL MANAGEMENT</th>
<th>Yes</th>
<th>No</th>
<th>Missing/NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your site provide medical care/treatment to persons living with chronic viral hepatitis?</td>
<td>10%</td>
<td>90%</td>
<td>---</td>
</tr>
<tr>
<td>Does your site offer support services for persons seeking or undergoing treatment for chronic viral hepatitis?</td>
<td>27%</td>
<td>73%</td>
<td>---</td>
</tr>
<tr>
<td>Among sites that answered No to both questions above, 19 (63%) responded that they know of other providers in their area who accept referrals of HCV-positive clients.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SURVEILLANCE</th>
<th>Yes</th>
<th>No</th>
<th>Missing/NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your site monitor the number of Hep C tests administered?</td>
<td>23%</td>
<td>67%</td>
<td>10%</td>
</tr>
<tr>
<td>Does your site monitor the number of positive Hep C tests identified, i.e., positivity rate?</td>
<td>27%</td>
<td>67%</td>
<td>7%</td>
</tr>
<tr>
<td>Does your site track/follow-up referrals made to other providers to assure that client is linked to care?</td>
<td>57%</td>
<td>33%</td>
<td>10%</td>
</tr>
</tbody>
</table>