

# **California Adult Viral Hepatitis Prevention Strategic Plan, 2010-2014**

A Report of the

**California Adult Viral Hepatitis Prevention  
Coordinating Committee**

and

**State of California  
California Department of Public Health  
Center for Infectious Diseases**

December 2009

## **Acknowledgments**

The authors wish to thank Gail Bolan, M.D., Chief, Sexually Transmitted Diseases (STD) Control Branch for her review; Rachel McLean, Adult Viral Hepatitis Prevention Coordinator, STD Control Branch, for coordinating the strategic planning process and writing the plan; and Emily Quinn, STD Control Branch Program Assistant for compiling the appendices and references. The authors thank Daniel Madrigal, University of California, Berkeley, Masters of Public Health intern, for analyzing the chronic hepatitis C case reports from 2008; Ying-Ying Yu, 2007-2009 Epidemiologic Intelligence Service officer, for her application of national HCV surveillance estimates to California; Kathleen Winter, Immunization Branch, for her analysis of HBV and HCV-related hospitalization costs during 2007 in California, along with her work documenting acute HAV and HBV trends; and Jennifer Felderman, Los Angeles Adult Viral Hepatitis Prevention Coordinator, for her thoughtful comments. The authors also thank Myrna Cozen, Associate Director for Operations, Hepatitis C Resource Center, Veterans Affairs Medical Center for her review of the veteran-related content, as well as Chris Lloyd, former Centerforce HIV peer health educator at San Quentin, for his review of prison-related content.

The authors thank the members of its three working groups for their patience, guidance, and insight. The authors also thank Selma Abinader and Jane Stallman for their facilitation of the September 22-23, 2008 meeting held in Sacramento, during which the framework for this plan was developed, and Gilberto Chavez, M.D., Acting Deputy Director, California Department of Public Health, Gail Bolan, M.D., and Michelle Roland, M.D., Chief, Office of AIDS for supporting that meeting and providing opening remarks. Appendix A lists the members of the various strategic planning groups that made this plan possible.

The authors also thank the Council of State Governments Justice Center for permission to borrow formatting and language from "Repaying Debts", a 2007 publication about the financial obligations of people released from prisons and jails. Thanks are also due to the New York State Department of Health, Technical Assistance Center for permission to borrow formatting and language from the New York Viral Hepatitis Plan as well as their assistance in identifying the components of a successful viral hepatitis strategic plan.

This strategic plan was supported by Cooperative Agreement Number 5U51PS000900-02 from the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.

<b>I. EXECUTIVE SUMMARY</b>	<b>6</b>
<b>II. INTRODUCTION</b>	<b>10</b>
Viral Hepatitis Strategic Planning Process	11
Mission, Goals, and Guiding Principles	13
How to Use This Plan	14
<b>III. VIRAL HEPATITIS OVERVIEW</b>	<b>17</b>
Hepatitis A	17
Hepatitis B	19
Hepatitis C	22
<b>IV. STRATEGIC DIRECTIONS AND RECOMMENDATIONS</b>	<b>25</b>
SD1. Improving Surveillance Capacity and Data Use	25
SD2. Educating the Public, Providers, and Policymakers	28
SD3. Targeting and Integrating Services and Building Infrastructure	34
<b>V. EVALUATION</b>	<b>41</b>
<b>VI. CONCLUSION</b>	<b>45</b>
<b>APPENDIX A: VIRAL HEPATITIS STRATEGIC PLANNING GROUPS</b>	<b>46</b>
<b>APPENDIX B: ACRONYMS AND ABBREVIATIONS</b>	<b>51</b>
<b>APPENDIX C: GLOSSARY OF TERMS</b>	<b>52</b>
<b>APPENDIX D: STATE VIRAL HEPATITIS PREVENTION EFFORTS</b>	<b>54</b>
<b>APPENDIX E: RESOURCES</b>	<b>56</b>
<b>APPENDIX F: REFERENCES</b>	<b>57</b>



## **TABLES**

<b>Number</b>	<b>Title</b>	<b>Page</b>
Table 1	Potential Collaborative Partners	16
Table 2	Potential Viral Hepatitis Surveillance Guidance Documents	25
Table 3	Potential Viral Hepatitis Research Projects	27
Table 4	Considerations for Developing Viral Hepatitis Awareness Messages for the General Public	29
Table 5	Considerations for Developing and Delivering Targeted Viral Hepatitis Awareness Messages for At-Risk Adults	29
Table 6	Considerations for Cross-Training Health Professionals	30
Table 7	Possible Topics for Clinician Guidance Summaries	31
Table 8	Professional and Medical Associations	32
Table 9	Integrating Viral Hepatitis into Settings Serving At-Risk Adults	40
Table 10	Evaluation Measures for the Viral Hepatitis Strategic Plan	42-44

## **I. EXECUTIVE SUMMARY**

Viral hepatitis is an important public health problem in California and nationwide. In the United States, there are more than 5 million people living with chronic hepatitis B virus (HBV) or chronic hepatitis C virus (HCV).<sup>1</sup> Viral hepatitis is a major cause of liver cancer and the leading cause of liver transplants nationwide. From 2010 to 2030, the number of liver cancer cases in the U.S. is expected to rise 59 percent, with the highest increases expected among Hispanics and Asian American and Pacific Islanders.<sup>2</sup> Over the next twenty years, annual medical costs for people with HCV nationwide are expected to increase more than 2.5 times, from \$30 billion to more than \$85 billion.<sup>3</sup> While it is unknown exactly how many people in California are living with viral hepatitis, in 2007 alone, HBV- and HCV-related hospitalization costs in California totaled \$2 billion.<sup>4</sup>

In the spring of 2008, the California Department of Public Health (CDPH), Center for Infectious Diseases (CID), Division of Communicable Disease Control (DCDC), Sexually Transmitted Diseases (STD) Control Branch embarked upon a statewide strategic planning process for reducing the impact of viral hepatitis among adults in California. More than 80 representatives from a broad range of State agencies, local health departments, community-based organizations, and membership organizations came together to develop a framework for a coordinated, comprehensive approach to preventing the transmission of viral hepatitis and limiting the progression and complications of chronic hepatitis B and C in California.

That framework outlined a practical vision and three strategic directions: 1) Improving Surveillance Capacity and Data Use; 2) Educating the Public, Providers, and Policymakers; and 3) Targeting and Integrating Services and Building Infrastructure, which were further refined and developed into this strategic plan. Within each strategic direction in this plan is a practical vision describing an optimal state of viral hepatitis prevention efforts in five years and a set of recommendations and action steps to guide a comprehensive effort to reduce the impact of viral hepatitis among adults in California. Those strategic directions, recommendations, and action steps are summarized below.

### **Strategic Directions and Recommendations**

#### **SD1. Improving Surveillance Capacity and Data Use**

##### **A. Practical Vision**

- An accurate epidemiological profile of adult viral hepatitis morbidity and mortality in California
- Advancement of adult viral hepatitis research and development

##### **B. Recommendations**

- SD1.1 - Compile and Share Existing Local Viral Hepatitis Surveillance Data and Generate Local and Statewide Surveillance Reports
- SD1.2 - Engage Medical Providers, Healthcare Organizations, Laboratory Directors, and Local Health Department Personnel to Evaluate, Modify as Needed, and Implement Viral Hepatitis Reporting Requirements to Improve Quality and Use of Viral Hepatitis Surveillance Data
- SD1.3 - Increase Local Viral Hepatitis Surveillance Capacity
- SD1.4 - Increase State Viral Hepatitis Surveillance Capacity
- SD1.5 - Incorporate Viral Hepatitis Surveillance into the California Reportable Disease Information Exchange (Cal-REDIE) system
- SD1.6 - Increase Viral Hepatitis Research and Development

## **SD 2. Educating the Public, Providers, and Policymakers**

### **A. Practical Vision**

- Increased public understanding of adult viral hepatitis and its complications
- Increased provider knowledge and skills in viral hepatitis standards of prevention and care
- Increased awareness among local, state, and federal policymakers of adult viral hepatitis costs, complications, and prevention strategies

### **B. Recommendations**

- SD2.1 - Develop a Statewide Adult Viral Hepatitis Referral Guide
- SD2.2 - Develop Health Promotion and Awareness Strategies for Educating the Public about Viral Hepatitis
- SD2.3 - Train Non-Clinical Public Health and Community Providers and Health Educators Serving At-Risk Adults on Viral Hepatitis Prevention Interventions and How to Integrate Adult Viral Hepatitis Prevention into Their Services
- SD2.4 - Improve Primary Care Providers and Other Clinicians' Understanding and Adherence to National Adult Viral Hepatitis Testing, Prevention, Vaccination, and Clinical Management Guidelines through Trainings, Guidelines, and Newsletters
- SD2.5 - Integrate Viral Hepatitis Prevention Content into Medically Accurate, School-Based HIV/STD Education Curricula
- SD2.6 - Ensure National Prevention and Healthcare Standards Used to Guide Policy and Practice Reflect Updated and Evidence-Based Viral Hepatitis Prevention, Screening, Vaccination, and Care Recommendations
- SD2.7 - Increase Adult Viral Hepatitis Awareness among Local, State, and Federal Policymakers

### **SD3. Targeting and Integrating Services and Building Infrastructure**

#### **A. Practical Vision**

- Universal access to testing for at-risk adults
- Increased statewide hepatitis A and B vaccination capacity for adult populations
- Statewide access to sterile syringes
- Reduced racial disparities in viral hepatitis morbidity and mortality
- Universal access to integrated, quality adult viral hepatitis prevention and healthcare services
- Health care coverage for viral hepatitis screening, vaccination, care, and treatment
- Policies and guidelines that support adult viral hepatitis prevention, control, and treatment

#### **B. Recommendations**

- SD3.1- Increase Adult Viral Hepatitis Counseling, Testing, and Health Education Capacity and Services
- SD3.2 - Increase Viral Hepatitis Laboratory Testing Capacity
- SD3.3 - Increase Adult Viral Hepatitis Vaccination Capacity and Delivery
- SD3.4 - Increase Access to Syringe Exchange and other Harm Reduction Services
- SD3.5 - Increase Viral Hepatitis Prevention, Education, Testing, and Vaccination Services for People who are Incarcerated or Returning from Prisons and Jails to the Community
- SD3.6 - Promote - and Remove Barriers to - Adult Viral Hepatitis Prevention Service Integration in Local Public Health, Mental Health, Alcohol and Drug, and Criminal Justice Agencies and Locally-Funded Programs
- SD3.7 - Promote - and Remove Barriers to - Adult Viral Hepatitis Prevention Service Integration in State Agencies, including the Department of Public Health, Department of Healthcare Services, Department of Mental Health, Department of Alcohol and Drug Programs, Department of Corrections and Rehabilitation and State-Funded Programs
- SD3.8 - Promote Adult Viral Hepatitis Prevention Service Integration and Increased Access to Adult Viral Hepatitis Prevention, Testing, Education, and Care in Federal Agencies, including the CDC, Health Resources Service Administration, Substance Abuse and Mental Health Services Administration, Department of Veterans Affairs, and Federally-Funded Programs

Successful implementation of the recommendations in this plan requires collaboration among multiple partners, including state health officials, local health officials, and community-based service providers. Many cities and counties have

already established HBV, HCV, and viral hepatitis task forces and can build upon those structures to build a coalition that can begin implementing this plan.

Much remains to be done to address viral hepatitis in California. Many people at risk for viral hepatitis lack access to education, testing, and vaccination, and many people living with chronic HBV and HCV lack access to medical care. Providers who would like to integrate viral hepatitis into their services struggle with competing priorities due to time and resource constraints. The energy and experience of those leading the response to diseases that threaten our communities will be crucial to developing an effective public health response to viral hepatitis in California.

## **II. INTRODUCTION**

Viral hepatitis is an important public health problem in California and nationwide.<sup>5</sup> In the United States, there are more than 5 million people living with chronic hepatitis B virus (HBV) or chronic hepatitis C virus (HCV).<sup>1</sup> Viral hepatitis is a major cause of liver cancer and the leading cause of liver transplants. From 2010 to 2030, the number of liver cancer cases in the U.S. is expected to rise 59 percent, with the highest increases expected among Hispanics and Asian Americans and Pacific Islanders (AAPI).<sup>2</sup> Over the next twenty years, annual medical costs for people with HCV are expected to increase from \$30 billion to more than \$85 billion.<sup>3</sup> While it is unknown exactly how many people in California are living with viral hepatitis, in 2007 alone, HBV and HCV-related hospitalization costs totaled \$2 billion.<sup>4</sup>

Multiple challenges face any attempt to develop a public health response to viral hepatitis. Most people with viral hepatitis do not know they are infected. For those who do, access to care remains a challenge, particularly for individuals who are low-income or uninsured. Many health professionals lack experience screening their patients for viral hepatitis, interpreting blood tests for HBV and HCV or treating these complex chronic diseases. Local health departments and community-based organizations face diminishing resources and must juggle among many priorities to protect the most vulnerable members of our communities with a basic safety net of public services.

At the same time, multiple windows of opportunities are opening. A national dialogue is taking place that may pave the way for increased coverage for uninsured adults in the United States. CDC is moving toward a model of program collaboration and service integration, which aims to enable people to access services for multiple health conditions (e.g., viral hepatitis, STDs, HIV, and tuberculosis) in one place and to make more efficient use of public health resources. Fields such as substance abuse, mental health, criminal justice, and family services are also moving towards service integration, presenting unique opportunities for better meeting the needs of diverse communities.

Against this backdrop, CDPH convened a diverse group of state and local health officials, service providers, community leaders, and individuals living with or affected by viral hepatitis to outline a coordinated approach to prevent the transmission of viral hepatitis and limit the progression and complications of chronic hepatitis B and C among adults in California over the next five years.\* This plan builds upon the great work that many dedicated organizations and individuals have been doing to increase viral hepatitis awareness, deliver HAV/HBV vaccination and HBV/HCV testing to at-risk adults, prevent viral hepatitis among injection drug users (IDUs), train health professionals in viral hepatitis prevention and treatment, and increase access to treatment for all.

---

\* This plan addresses hepatitis A virus (HAV) prevention among adults living with or at risk for HBV and HCV. It does not address foodborne illness or water safety.

## **Viral Hepatitis Prevention Strategic Planning Process**

In the spring of 2008, the CDPH, Center for Infectious Diseases (CID), Division of Communicable Disease Control (DCDC), Sexually Transmitted Diseases (STD) Control Branch embarked upon a statewide strategic planning process for reducing the impact of viral hepatitis among adults in California.

To start the strategic planning process, the Adult Viral Hepatitis Prevention Coordinator (AVHPC) interviewed more than fifty state and local health officials, clinicians, service providers, and community health advocates to assess viral hepatitis screening, vaccination, education, and treatment practices and gaps in California and to recruit key representatives for the strategic planning process. The AVHPC also conducted an extensive review of viral hepatitis research, policy briefs, and clinical practice guidelines; visited several clinics and one state prison providing care for people with HCV; and observed the planning of community HBV awareness campaigns targeting AAPI communities.

As part of the information-gathering process, the County Alcohol and Drug Program Administrators' Association of California disseminated a survey to county drug and alcohol administrators regarding the availability of viral hepatitis services in drug treatment programs; 19 out of 61 local health jurisdictions responded. Additionally, the National Association of Hepatitis Task Forces sent a survey to thirty of its California members about unmet needs for viral hepatitis services in California and received eight responses.

During a two-day meeting, held September 22-23, 2008 in Sacramento, more than 80 representatives from a broad range of State agencies, local health departments (LHD), community-based organizations (CBO), and membership organizations came together to answer the following question: *What are integrated, coordinated approaches to reducing the impact of viral hepatitis in California, and how can these approaches be implemented in the next five years?*

Meeting participants shared data, discussed key challenges and opportunities, developed a practical vision, shared ideas for achieving that vision, identified three key strategic directions, and prioritized a number of recommendations to implement in the coming 12-18 months. Abinader Associates and Stallman Communications, Inc. co-facilitated the meeting, which also included presentations by the Deputy Chief of CDPH, Dr. Gilberto Chavez, and hepatologists Dr. Samuel So (Asian Liver Center, Stanford University) and Dr. Lorenzo Rossaro (University of California, Davis).

Following the viral hepatitis strategic planning meeting, the AVHPC summarized its proceedings and outcomes in a draft "Viral Hepatitis Strategic Framework," which was distributed to meeting participants and their constituents for comments and feedback.

To carry forward the strategic framework, the AVHPC solicited and reviewed applications to create a new California Adult Viral Hepatitis Prevention Coordinating Committee (CAVHPCC), which would further refine and coordinate the implementation of several recommendations within each strategic direction. The committee held its first meeting in January 2009, and was divided into three working groups, one for each strategic direction. The working groups began meeting by phone approximately once per month, and continue to advise the AVHPC's work, further refine the recommendations in the strategic plan, and carry out tasks on their own.

The results of the strategic planning meeting, along with the interviews, site visits, literature reviews, research, and the extensive feedback of the working group members and other experts and community members informed the development of the adult viral hepatitis strategic plan for California.

## **Mission, Goals, and Guiding Principles**

### **Mission**

The mission of the California Adult Viral Hepatitis Strategic Plan is to outline a coordinated, comprehensive, culturally appropriate, and systematic approach to prevent the transmission of viral hepatitis and limit the progression and complications of chronic hepatitis B and C in California.

### **Goals**

In this strategic plan, state and local health officials, service providers, community leaders, and individuals living with or affected by viral hepatitis will find specific, practical recommendations to help them realize the following goals:

#### **A. Primary Prevention:**

- Reduce the number of acute and chronic viral hepatitis infections among adults in California

#### **B. Secondary Prevention:**

- Identify acute and chronic cases of viral hepatitis among individuals who do not know they are infected
- Reduce instances of secondary transmission of viral hepatitis to contacts of individuals who are infected with viral hepatitis
- Increase referrals and linkages to treatment, support, and care for adults who are chronically infected with viral hepatitis

#### **C. Tertiary Prevention:**

- Reduce morbidity and mortality and increase the quality of life of adults living with chronic viral hepatitis

### **Guiding Principles**

A steering committee agreed upon the following guiding principles for designing an effective viral hepatitis strategic plan:

- Builds on the work of others
- Recognizes current realities
- Is actionable
  - Endorsed by public health leadership
  - Commitment to action by participants
  - Includes, but is not limited to, actions that are doable with current resources
- Provides follow-up on structure and steps for implementation
- Produces results that are adaptable to local situations and needs
- Recognizes the need for responsive viral hepatitis prevention and treatment strategies for a wide range of populations, behaviors, and settings

## How to Use This Plan

### **Organization**

This strategic plan provides an overview of viral hepatitis epidemiology, clinical features, diagnosis, transmission, at-risk groups, prevention, and treatment to provide a better understanding of viral hepatitis as a public health problem in the lives of individuals and communities. With this foundation, the plan outlines three strategic directions, each of which describes a major area of focus for achieving the goals in this plan. Within each strategic direction is a summary of the practical vision that describes the optimal state of viral hepatitis prevention efforts in five years and a set of specific, numbered recommendations that should guide an initiative to reduce the impact of viral hepatitis among adults in California. Under each recommendation is a set of bulleted potential action steps. These action steps have been listed in order of feasibility with existing resources.

This plan outlines steps for evaluating how successfully its recommendations have been implemented over time. It also provides a list of acronyms and a glossary for better navigation of the technical aspects of the plan, a description of the current state viral hepatitis prevention efforts, and suggestions for accessing further resources that users of this plan may find particularly helpful.

The recommendations in this plan were developed by a collaborative group of state, local, and community-level partners. Some of its recommendations will apply more to one particular audience, such as clinicians, while other recommendations will apply more to another audience, such as the state or local health department. However, each recommendation moves forward a key step toward achieving a larger practical vision. For that reason, this plan should be read as a whole and implemented, wherever possible, by a multi-disciplinary group, which can decide which of its members can best tackle a particular action step. Along the way, the group can provide a space for each partner to share successes and challenges, learn from others, and coordinate efforts.

### **Where to Start**

Successful implementation of the recommendations in this plan requires collaboration among multiple partners. To this end, local policymakers should convene working groups that include local health officials, service providers, community groups, and individuals living with or at risk for viral hepatitis. (For more potential collaborative partners, see Table 1.) A number of communities have already established HBV, HCV, or viral hepatitis task forces as well as HIV prevention planning councils and other community advisory boards. These existing groups can provide a useful structure for building upon existing resources, identifying additional partners, and developing the kind of broad coalition needed to achieve the goals outlined in this plan.

With a structure in place, the working group should start with the recommendations in Strategic Direction 1 by compiling a local epidemiological profile of viral hepatitis with existing data. Next, the working group should identify community viral hepatitis resources and gaps for education, prevention, testing, vaccination, support, and care. Based on this assessment, the working group should identify and prioritize action steps for filling service gaps through public, provider, and policymaker education, service integration, and infrastructure building that are feasible with existing resources. The working group should also clarify at the outset whether its focus will be on community organizing and policy change; social and practical support for people living with viral hepatitis; education for people at risk for viral hepatitis and training for providers, or some combination of these things, and be clear whether the group will be time-limited or ongoing.

Many of the recommendations in this plan can be implemented without additional funding. For example, organizations serving adults at risk for viral hepatitis can access free health education materials through national organizations such as CDC; educate their staff and colleagues about viral hepatitis; and identify strategies for integrating viral hepatitis health education, risk assessment, screening, vaccination, and referrals into their services.\* Members of the working group can also look to other state or local programs and national models for examples of successful surveillance activities; public, provider, and policymaker education efforts; and program collaboration and service integration projects. Finally, the group can develop a strategy for leveraging additional resources for more ambitious projects.

---

\* For a list of potential strategies for integrating viral hepatitis services into community health centers, primary care clinics, tuberculosis clinics, immigrant and refugee health centers, STD clinics, HIV prevention programs, HIV care settings, drug treatment and mental health programs, prisons and jails, syringe exchange programs, and other settings serving adults living with and at risk for viral hepatitis, see Table 9 on page 40.

**Table 1: Potential Collaborative Partners**

**Federal Officials**

- U.S. Department of Health and Human Services representatives
- Centers for Disease Control and Prevention representatives
- Center for Medicare and Medicaid Services representatives
- Substance Abuse and Mental Health Services Administration representatives
- Health Resources and Services Administration representatives
- Office of Minority Health representatives
- U.S. Department of Veterans Affairs representatives
- U.S. Department of Justice representatives

**State Officials**

- California Department of Public Health representatives
- California Department of Healthcare Services representatives
- California Department of Alcohol and Drug Programs representatives
- California Department of Mental Health representatives
- California Department of Corrections and Rehabilitation representatives
- State legislators and their staffers

**Local Officials**

- Mayors
- Members of the local boards of supervisors
- Local health officials (e.g., local health officers, STD controllers, communicable disease controllers, immunization coordinators, tuberculosis controllers, local AIDS directors, immigrant, refugee, and border health directors, public health laboratory directors, healthcare administrators)
- Medically indigent services program administrators
- Drug and alcohol administrators
- Mental health administrators
- Sheriff's department officials and jail health administrators
- Community college representatives

**Service Providers and Professional Associations**

- Medical schools, medical associations, and other professional associations
- Community health centers, including those serving AAPI communities
- Drug treatment providers
- Health educators
- HIV Community health clinics
- Hospitals
- Liver specialists (hepatologists and gastroenterologists)
- Managed care organizations
- Outreach workers
- Pharmaceutical companies
- Pharmacists
- Primary care providers
- Private laboratory directors
- Syringe exchange providers
- Faith-based organizations

**Individuals and Community Groups**

- Individuals living with and at risk for HBV, HCV, and HIV co-infection
- Members of local, statewide, and national hepatitis B and hepatitis C task forces
- Community planning groups and other community groups representing at-risk adults

### **III. VIRAL HEPATITIS OVERVIEW**

There are many causes of hepatitis, or inflammation of the liver, such as alcohol and environmental toxins. Five different viruses also cause hepatitis: hepatitis A virus (HAV), hepatitis B virus (HBV), hepatitis C virus (HCV), hepatitis D virus, and hepatitis E virus; hepatitis A, B, and C are the most common in the U.S. Recent infection with any of these viruses can cause similar symptoms: yellowing of the skin or eyes (“jaundice”), fatigue, dark urine, abdominal pain, loss of appetite, and nausea. Each virus is transmitted differently. It is impossible to tell based on symptoms alone which type of viral hepatitis a person has; blood tests are required to make this determination.

#### **Hepatitis A**

##### **Overview**

Hepatitis A infection is caused by HAV. In 2007, 2,979 HAV cases were reported in the U.S., and an estimated 25,000 new infections occurred nationwide, including asymptomatic infections.<sup>6</sup> In California, the number of new HAV cases reported per year (“incidence”) dropped from 6,755 cases in 1995 to 578 cases in 2007.<sup>7</sup> Since routine childhood vaccination was recommended in 1999, there has been a decline among all age groups due to reduced transmission from children to adults. Hepatitis A rates in California are now highest among adult males.<sup>7</sup>

##### **Clinical Features**

The time from infection with the virus to the development of HAV symptoms (“incubation period”) ranges from 15-50 days with an average of 28 days. Adults have symptoms more often than children and the severity of disease increases with age. Some people with HAV develop severe rapid liver inflammation (“fulminant hepatitis”). Hepatitis A infection is only acute; it does not result in a chronic infection. Once someone has been infected with HAV, they develop immunity and cannot be reinfected.

##### **Diagnosis**

The HAV IgM antibody test is the most commonly used test to diagnose recent (“acute”) HAV infection. HAV IgM is usually present one week to six months after exposure. HAV IgG antibody indicates past infection or vaccination. It is present early in the course of infection, remains detectable for life, and confers lifelong protection against infection.

##### **Transmission**

The most common mode of hepatitis A transmission is by ingestion of something that has been contaminated by feces of a person with hepatitis A infection. Hepatitis A transmission can occur through sexual contact because of oral-anal contact; through food service settings or in household settings because of lack of hand washing by an infected food handler who directly handles foods; through

daycare settings because of contact with feces of children infected with hepatitis A; or through ingestion of water contaminated with feces, such as in countries with poorly maintained sanitation and water supplies.

### **At-Risk Groups**

The following groups are at increased risk for contracting hepatitis A:

- ❖ Persons traveling to countries with high or endemic levels of hepatitis A infection
- ❖ Men who have sex with men (MSM)
- ❖ Users of injection and non-injection illegal drugs
- ❖ Persons with clotting factor disorders
- ❖ Persons working with nonhuman primates susceptible to HAV infection

In 2007, where infection source data were available, HAV infections in the United States were attributed to the following sources: recent international travel (18 percent); sexual, household, or other contact with an HAV infected individual (17 percent); daycare or childcare (8 percent); and a foodborne outbreak (6.5 percent).<sup>6</sup> Among those reporting behavioral risk factors, 6 percent identified as MSM and 1 percent identified as IDUs.

### **Treatment**

There are no medicines to cure HAV infection once the symptoms appear.

Persons infected with HAV should avoid alcohol and other liver toxins until they have recovered.

### **Prevention**

The vaccine for HAV was licensed in 1995 and is the best protection against HAV infection. Approximately 94 to 100 percent of adults develop protective levels of antibody within one month after the first dose of vaccine; 100 percent of healthy individuals develop protective antibody after receiving the second dose at six months.<sup>8</sup> Protective antibody levels following vaccination may persist for at least 25 years in adults. The vaccine is less effective for immunocompromised persons and transplant recipients.<sup>9</sup>

In 2001, the Food and Drug Administration (FDA) approved a combination hepatitis A and B vaccine. This vaccine is administered in a three dose series over six months. FDA has also approved an accelerated dosing schedule for the combination hepatitis A and hepatitis B vaccine, with doses administered at 0, 7, and 21-30 days, followed by a final dose at one year.

Hepatitis A vaccination is recommended for the following adult groups:

- ❖ Persons traveling to or working in countries that have high or intermediate rates of hepatitis A
- ❖ Men who have sex with men
- ❖ Users of illegal injection and noninjection drugs
- ❖ Persons who have occupational risk for infection

- ❖ Persons who have chronic liver disease (such as HBV or HCV)
- ❖ Persons with clotting-factor disorders (such as hemophilia)

Immune globulin (IG) provides protection against HAV to those recently exposed (“postexposure prophylaxis”). Postexposure use of IG along with hepatitis A vaccination is routinely used for household or intimate contacts of persons with hepatitis A. It may also be used in outbreak situations or for travelers to areas with high rates of hepatitis A. Washing hands with soap and water after using the bathroom, changing diapers, and before preparing and eating food helps prevent the spread of hepatitis A.

## **Hepatitis B**

### **Overview**

Hepatitis B infection is caused by HBV. An estimated 800,000 to 1.4 million persons in the United States have chronic HBV infection.<sup>1</sup> In 2007, there were an estimated 43,000 new HBV infections nationwide, including asymptomatic infections.<sup>1</sup> From 2002 to 2007, the rate of new HBV cases decreased 48 percent among adults in California.<sup>7</sup> In 2007, 406 acute HBV cases and 17,018 chronic HBV cases were reported in California.<sup>7</sup> The highest rate of adult acute HBV infection in 2007 was among blacks, followed by American Indian/Alaska Natives, whites, AAPIs, and Hispanics.

An estimated 3,000 persons die each year in the U.S. from chronic HBV-related liver disease.<sup>1</sup> In 2007, HBV-related hospitalizations for liver disease, liver cancer, and liver transplants in California cost \$316 million.<sup>4</sup> By 2030, liver cancer cases in the U.S. are expected to rise 59 percent, with the highest increases among Hispanics and AAPIs.<sup>2</sup> Approximately one in ten AAPI individuals in California has chronic HBV.<sup>10</sup> Cancer is the leading cause of death for AAPIs in California.<sup>11</sup> In 2008, liver cancer was the leading cause of cancer deaths for Laotian men and the second leading cause of cancer deaths for Vietnamese men in California.<sup>11</sup>

### **Clinical Features**

The incubation period for HBV ranges from 60 to 150 days with an average of 90 days. Approximately 30 to 50 percent of individuals over the age of five infected with HBV will have symptoms of acute infection. Among adults with acute HBV infection, 95 percent will clear the virus on their own; 5 percent will develop chronic HBV infection. Approximately 25 percent of those who become chronically infected during childhood and 15 percent of those who become chronically infected after childhood die prematurely from cirrhosis or liver cancer, and the majority remain asymptomatic until onset of cirrhosis or end-stage liver disease.

## **Diagnosis**

A combination of tests is required to diagnose HBV infection or immunity. Hepatitis B surface antigen (HBsAg) indicates that the person is infectious and has either acute or chronic HBV infection. Antibody to HBsAg (anti-HBs) indicates a resolved infection or vaccination.<sup>12</sup> Total hepatitis B core antibody (anti-HBc) indicates previous or ongoing infection with HBV in an undefined time frame. IgM antibody to hepatitis B core antigen (IgM anti-HBc) indicates acute (within six months or less) infection.

## **Transmission**

HBV is found in blood and certain body fluids such as semen, vaginal secretions, and saliva of persons infected with HBV; it is not found in sweat, tears or urine. HBV is spread by sexual contact with an infected person; sharing needles during injection drug use; occupational needle sticks or sharps exposures; or from an infected mother to her baby during birth. Person-to-person spread of HBV can occur among those living with someone chronically infected with HBV through sharing of household items contaminated with blood, such as razors.

## **At-Risk Groups**

- ❖ Infants born to mothers with chronic HBV infection
- ❖ Sex partners of infected persons
- ❖ Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., >1 sex partner during the previous 6 months)
- ❖ MSM
- ❖ IDUs
- ❖ Household contacts of persons with chronic HBV infection
- ❖ Healthcare and public safety workers at risk for occupational exposure to blood or blood-contaminated body fluids
- ❖ Hemodialysis patients
- ❖ Residents and staff of facilities for developmentally disabled persons
- ❖ Travelers to countries with intermediate or high prevalence of HBV infection

Among U.S. adults with acute HBV infection in 2006 for whom risk factor data were available, 38 percent reported having multiple sexual partners; 15 percent reported IDU; 12 percent reported having surgery; 11 percent were MSM; and 6 percent reported sexual contact with a person known to have hepatitis B.<sup>5</sup>

## **Treatment**

Treatment of chronic HBV infection aims to slow down or stop the replication of the virus and decrease inflammation of the liver with the goal of preventing liver disease, liver cancer, and death. As of 2009, there are seven FDA-approved drugs for the treatment of chronic hepatitis B in adults: interferon alpha, pegylated interferon, lamivudine, adefovir dipivoxil, entecavir, telbivudine, and

tenofovir.<sup>13</sup> Not everyone infected with HBV will need treatment. Currently, there is no cure for chronic HBV.

## **Prevention**

Immunization with the HBV vaccine, which was licensed in 1982, is the most effective means of HBV prevention. Vaccination is recommended for the following adult groups:

- ❖ Susceptible sex partners of HBsAg-positive persons
- ❖ Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., >1 sex partner during the previous 6 months)
- ❖ Persons seeking evaluation or treatment for a sexually transmitted disease
- ❖ MSM
- ❖ IDUs
- ❖ Susceptible household contacts of HBsAg-positive persons
- ❖ Healthcare and public safety workers at risk for exposure to blood or blood-contaminated body fluids
- ❖ 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 endemic HBV infection
- ❖ Persons with chronic liver disease (such as HCV)
- ❖ Persons with HIV infection
- ❖ All other persons seeking protection from HBV infection — acknowledgment of a specific risk factor is not a requirement for vaccination

Since high rates of protection are achieved following each dose of vaccine, HBV vaccination should be initiated even if completion of the series cannot be assured. The HBV vaccine is less effective for immunocompromised persons; modified dosing regimens, including doubling the standard dose or administering additional doses, might increase immune response for these individuals.

Hepatitis B vaccination is recommended in settings serving adults at-risk for HBV,<sup>14</sup> as well as in healthcare settings serving adults born in countries where at least 2 percent of the population is chronically infected with HBV.

Hepatitis B immune globulin (HBIG), along with hepatitis B vaccination, is available for postexposure prophylaxis. It is recommended for accidental occupational exposures (such as a needle stick), sexual exposure to an HBsAg-positive person, and perinatal HBV exposure of infants.

## **Hepatitis C**

### **Overview**

Hepatitis C infection is caused by HCV and is the most common bloodborne infection in the U.S. Approximately 3.9 million (1.9 percent) persons in the U.S. have been infected with HCV; 2.7 million of them are chronically infected.<sup>1</sup> Infection is most prevalent among those born during 1945-1965.<sup>15</sup> Based on national estimates, there are 475,000 people living with chronic HCV in California.<sup>16</sup> However, these estimates exclude people who are homeless or incarcerated and veterans. Research suggests that approximately 55,000 of the more than 150,000 people incarcerated in California prisons have HCV.<sup>17</sup> HCV prevalence estimates among veterans range from 6.6 percent to 35 percent.<sup>18</sup> In 2008, 36 acute HCV infections and 69,519 unique chronic HCV cases were reported in California; 17 percent of reported chronic HCV cases were from state prisons.<sup>19\*</sup> Among the 23,227 reported chronic HCV cases in 2008 for which race/ethnicity data were available: 44 percent were white, 32 percent Hispanic; 10 percent black; 3.3 percent AAPI; 1 percent American Indian; and 10 percent “Other.” Two-thirds of reported chronic HCV cases were male; 76 percent were 41 years of age or older.

Hepatitis C is the leading reason for liver transplant in the U.S. HCV-related deaths in California more than doubled from 503 in 1995 to 1,195 in 2004.<sup>20</sup> Hospitalizations for HCV-related liver disease, liver cancer, and liver transplants in California in 2007 totaled \$1.6 billion.<sup>4</sup> Approximately 25 percent of those infected with HIV are co-infected with HCV.<sup>21</sup> Liver disease is an important contributor to deaths among people with HIV.<sup>22</sup> Most people infected with HCV are unaware of their infection.

### **Clinical Features**

The incubation period for hepatitis C infection ranges from 14-168 days, with an average of 28-84 days. Only 20 to 30 percent of individuals with recent HCV infection experience symptoms. Of every 100 persons infected with HCV, approximately 75-85 will go on to develop chronic infection; 60-70 will go on to develop chronic liver disease; 5-20 will go on to develop cirrhosis over a period of 20-30 years; and 1-5 will die from the consequences of chronic infection (liver cancer or cirrhosis). HIV infection can lead to more rapid liver disease progression and higher risk of cirrhosis, end-stage liver disease, hepatocellular carcinoma, and liver-related death in people with HCV.<sup>23</sup> It is not clear whether HCV speeds HIV progression.<sup>24, 25</sup>

---

\* A total of 85,413 chronic HCV cases were reported to CDPH in 2008. Of these case reports, 15,894 (19 percent) were exact name and date of birth duplicates and were removed from analysis. These numbers do not include San Francisco or Marin Counties or Veterans Affairs hospitals. San Francisco serves as a sentinel surveillance site for CDC and does not report its viral hepatitis figures to CDPH. Marin County was unable to data enter the thousands of HCV laboratory reports it received from labs performing tests for people incarcerated in San Quentin State Prison. Veterans Affairs hospitals do not currently submit HCV lab reports to local health departments.

## **Diagnosis**

A combination of tests is required to diagnose HCV. Hepatitis C antibody (anti-HCV) indicates either past or present infection, although some HCV infected immunocompromised persons may not develop antibodies. A polymerase chain reaction (PCR) test detects the presence of the hepatitis C virus in the blood, and is used to diagnose a chronic HCV infection. It is impossible to distinguish acute from chronic cases based on blood tests alone; an acute HCV diagnosis requires that an individual also have clinical symptoms and elevated liver enzymes.

## **Transmission**

Hepatitis C is a bloodborne pathogen and is transmitted primarily by exposure to blood through the skin (“percutaneous exposure”), such as through IDU. Prior to 1992, many individuals were infected with HCV by blood transfusions or organ transplants. HCV is not efficiently transmitted between long-term monogamous heterosexual partners. However, 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 and have multiple sex partners.<sup>1</sup> HCV can be transmitted from mother-to-child during childbirth and is more likely if the mother is coinfected with HCV and HIV.

Transmission of HCV has also occurred in healthcare and emergency response settings through accidental needle sticks or through failure to follow standard precautions and other infection control guidelines. There are very limited epidemiologic data to suggest additional risks from non-injection (snorted or smoked) cocaine use, but these risks are difficult to differentiate from risks associated with IDU and sex with HCV-infected partners. A number of studies have tried to assess the risk of infection through tattooing in a setting where nonsterile tattoo equipment may be used, such as a prison. While there have been reported cases of HCV transmission through tattooing in prisons, there is no strong epidemiological evidence that tattooing in a nonsterile setting is a significant risk factor for hepatitis C infection. However, it is prudent to get tattoos only in settings that use proper infection control practices. An estimated 10 to 15 percent of people with HCV have no known risk factors.

## **At-Risk Groups**

Persons at risk for hepatitis C include:

- ❖ Current or former injection drug users, including those who injected only once many years ago
- ❖ Recipients of clotting factor concentrates made before 1987, when more advanced methods for manufacturing those products were developed
- ❖ Recipients of blood transfusions or solid organ transplants before July 1992, when better testing of blood donors became available
- ❖ Chronic hemodialysis patients
- ❖ Persons with known exposures to HCV, such as
  - healthcare workers after needle sticks involving HCV-positive blood

- recipients of blood or organs from a donor who tested HCV-positive
- ❖ Persons with HIV infection
- ❖ Children born to HCV-positive mothers

### **Treatment**

The primary goal of treatment is to achieve a sustained viral response, which is defined as undetectable HCV in the blood 24 weeks after the end of treatment.

The standard treatment for chronic HCV infection is pegylated interferon plus ribavirin for 6 to 12 months. Treatment success is dependent on a number of factors, including age, gender, HIV status, virus genotype, and genetic factors, and will likely improve with new polymerase and protease inhibitors and other drugs in coming years. Side effects of HCV treatment may include flu-like symptoms, anemia, and depression. Treatment is contraindicated in pregnancy because ribavirin can cause serious birth defects.

### **Prevention**

Currently there is no vaccine for hepatitis C. Key HCV prevention messages include practicing safer injection; following infection control guidelines in healthcare and in settings such as tattoo parlors or body piercing establishments; practicing safer sex when engaging with multiple sexual partners or infected with HIV; and not sharing personal items that might have blood on them, such as razors. People with HCV should be advised to reduce or eliminate intake of alcohol and other substances toxic to the liver.

## **IV. STRATEGIC DIRECTIONS AND RECOMMENDATIONS**

### **SD1. Improving Surveillance Capacity and Data Use**

#### **A. Practical Vision**

- An accurate epidemiological profile of adult viral hepatitis morbidity and mortality in California
- Advancement of adult viral hepatitis research and development

#### **B. Recommendations and Action Steps**

##### SD1.1 - Compile and Share Existing Local Viral Hepatitis Surveillance Data and Generate Local and Statewide Surveillance Reports

- a. Use national data and other research to develop county-by-county HBV and HCV prevalence estimates and maps for California.
- b. Use geographic information systems to map reported viral hepatitis cases, to identify disproportionately impacted communities
- c. Map the availability of testing and vaccination services and laboratory capacity for performing confirmatory testing.
- d. Develop integrated surveillance reports to assess rates of HIV, STD, HBV, HCV, and TB co-morbidities in California.
- e. Develop fact sheets summarizing incidence, prevalence, and co-infection estimates, and other adult viral hepatitis outcome data for California.
- f. Post surveillance reports on the local health departments' and CDPH Web sites and share them with community-based organizations and other partners.

##### SD1.2 - Engage Medical Providers, Healthcare Organizations, Laboratory Directors, and Local Health Department Personnel to Evaluate, Modify as Needed, and Implement Viral Hepatitis Reporting Requirements to Improve Quality and Use of Viral Hepatitis Surveillance Data

- a. Develop and distribute guidance on viral hepatitis reporting mechanisms and requirements:

<b>Table 2: Possible Viral Hepatitis Surveillance Guidance Documents</b>	
<b>Topic</b>	<b>Audience</b>
Ordering and Interpreting HBV Serology	Physicians, Labs, LHDs
Reporting and Investigating Acute HBV and HCV Cases	Physicians, LHDs
Confirming and Reporting Chronic HCV Cases Using CDC Criteria	Labs, LHDs, California Department of Corrections and Rehabilitation

- b. Collaborate with public health laboratory directors and private laboratory directors to ensure that labs are following CDC guidelines to report acute HBV and HCV cases and confirm and report cases of chronic HBV and HCV.
- c. Collaborate with CDPH, public health laboratory directors, and private laboratory directors to standardize data elements for electronic lab reporting of viral hepatitis cases.
- d. Engage public health laboratory directors and private laboratory directors to improve collection of race/ethnicity; patient address; and pregnancy status on laboratory requisition forms and to transmit this information in lab reports to LHDs.
- e. Collaborate with public health laboratory directors, private laboratory directors, and managed care organizations to develop “workarounds” to find data missing from lab reports, such as through an electronic interface between the electronic lab reporting system and a managed care organization’s patient data systems.
- f. Engage public and private laboratories to add comments on lab reports to assist clinicians in interpreting HBV test results.
- g. Explore strategies for receiving viral hepatitis case reports for veterans receiving care from Veterans Affairs centers in California.
- h. Modify viral hepatitis disease reporting requirements, as needed.

**SD1.3 - Increase Local Viral Hepatitis Surveillance Capacity**

- a. Identify mechanisms for LHDs to investigate and report all acute HBV and HCV cases, including the receipt and entry of complete case reports and submission of reports to CDPH.
- b. Work with medical providers, LHDs, and labs to identify and implement practical strategies for noting the pregnancy status of women of childbearing age when ordering lab tests for HBV, HIV, and other STDs as part of a prenatal visit.

**SD1.4 - Increase State Viral Hepatitis Surveillance Capacity**

- a. Identify mechanisms to monitor viral hepatitis disease trends in California.
- b. Assist California Department of Corrections and Rehabilitation (CDCR) with developing a viral hepatitis disease registry.
- c. Enter and deduplicate the backlog of chronic HBV and HCV case reports from counties without electronic lab reporting capabilities or with large state prison reception centers.

**SD1.5 - Incorporate Viral Hepatitis Surveillance into the California Reportable Disease Information Exchange (Cal-REDIE) system.\***

- a. Design a chronic HBV/HCV registry in the statewide electronic confidential morbidity reporting and electronic laboratory reporting system (“Cal-REDIE”).
- b. Collaborate with CDCR to develop data workflows for Cal-REDIE to receive and interpret data from State prisons and labs that serve them.

**SD1.6 - Support Viral Hepatitis Research and Development**

- a. Support increased representation of individuals coinfected with HIV; African-Americans, Latinos, and other minority groups; active drug users; and people with mental illness in HBV/HCV clinical trials.
- b. Collaborate with public universities and other research institutions to develop an evidence base for viral hepatitis prevention programs.

**Table 3: Potential Viral Hepatitis Research Projects**

- Acceptability of HBV testing, vaccination, and care among household and sexual partners of HBsAg-positive individuals and strategies for increasing partner services uptake.
- Barriers to viral hepatitis screening, vaccination, and care in medical settings, and for people who are uninsured and not seeking care, and strategies for removing these barriers.
- Barriers among public and private laboratories to complying with viral hepatitis reporting requirements and strategies for removing these barriers.
- Cost-effectiveness of universal HCV testing policies and practices.
- Seroprevalence studies of HBV and HCV among foreign-born individuals from HBV and HCV endemic countries, among people incarcerated in California state prisons, among IDUs, among Vietnam-era veterans, and among other risk groups.
- Tattooing and injection-related risk behaviors in California state prisons. (Study must ensure anonymity of study participants and immunity from prosecution for engaging in illicit behaviors).
- Adherence to infection control guidelines in healthcare facilities, tattoo parlors, nail salons, piercing studios, and other settings.
- Primary HBV and HCV prevention strategies for young IDUs.
- Effects of pilot safe injection facilities on viral hepatitis risk behaviors, unsafe syringe disposal, and linkages to treatment.
- Factors associated with sexual transmission of HCV among MSM and among people with HIV infection.
- Effects of hormones on the liver in transgender people with viral hepatitis.
- Strategies for increasing effectiveness of HCV treatment among people with comorbidities, such as HIV, diabetes, substance use, and mental illness.

---

\* CDPH is developing Cal-REDIE (or “Web-CMR/ELR”), which will provide the State of California with a secure, web-based confidential morbidity reporting and electronic laboratory reporting system for use by health care providers, laboratories, local health departments, and CDPH for the reporting, surveillance, and case investigation and management of communicable diseases.

## **SD2. Educating the Public, Providers, and Policymakers**

### **A. Practical Vision**

- Increased public understanding of adult viral hepatitis and its complications
- Increased provider knowledge and skills in viral hepatitis standards of prevention and care
- Increased awareness among local, state, and federal policymakers of adult viral hepatitis costs, complications, and prevention strategies

### **B. Recommendations and Action Steps**

#### **SD2.1 - Develop a Statewide Adult Viral Hepatitis Referral Guide**

- a. Create a dedicated CDPH viral hepatitis program web page to serve as an information clearinghouse for members of the public, health professionals, and service providers.
- b. Conduct a statewide assessment of community resources for viral hepatitis health education, vaccination, testing, and social support.
- c. Conduct a statewide assessment of gaps and points of access for monitoring and treatment of chronic HBV and HCV, including options for people who are uninsured, undocumented immigrants, and people returning from prisons and jails to the community.
- d. Compile information from local viral hepatitis resource guides, state and local resources and needs assessments, and other sources to create and maintain an up-to-date, statewide, web- and paper-based viral hepatitis services referral guide.\* The referral guide should include information about where to go for viral hepatitis testing, vaccination, education, support, and evaluation for care.
- e. Distribute and post online the viral hepatitis services referral guide for use by clinicians, service providers, and individuals.

#### **SD2.2 - Develop Health Promotion and Awareness Strategies for Educating the Public about Viral Hepatitis**

- a. Post up-to-date, viral hepatitis health education materials in a range of languages on the CDPH Web site.
- b. Develop and implement a statewide coordinated response for World Hepatitis Day (May 19) 2010 and for subsequent years.
- c. Adapt and distribute public service announcements to local radio, print, television, web, and other media outlets to promote awareness about viral hepatitis among the general public.

---

\* Many state prisons lack internet access, as do many individuals in the community; for this reason, a referral guide should include a paper-based component.

- d. Develop and maintain a clearinghouse for viral hepatitis health education materials, which have been vetted for accuracy, literacy level, and cultural appropriateness, and which can be ordered or downloaded by local health departments and community-based organizations.
- e. In collaboration with communities impacted by viral hepatitis, develop, launch, and evaluate local, targeted, strengths-based social marketing campaigns that include an ability to meet increased demand for services that the campaigns generate.

**Table 4: Considerations for Developing Viral Hepatitis Awareness Messages for the General Public**

- Produce materials for general audiences that are at an eighth-grade reading level.
- Emphasize that everyone is affected; most people don't know they're infected; and most don't have any visible symptoms.
- Include patient stories and tie to local outreach.
- Aim to create a safe environment for accessing information, testing, and care, particularly in rural and underserved communities.
- For HBV awareness, include messages about mother-to-child transmission and demographic groups with highest rates.
- For HCV awareness, include messages about blood transfusions prior to 1992 and past drug use ("back in the day").
- Highlight the similarities and differences between HAV, HBV, and HCV transmission routes and disease progression.
- Emphasize the areas of difference and similarity in transmission of viral hepatitis with HIV, STDs, and TB.

**Table 5: Considerations for Developing and Delivering Targeted Viral Hepatitis Prevention Messages for At-Risk Adults**

- Collaborate with individuals, families, and groups from impacted communities to identify culturally sensitive, linguistically appropriate, and data-driven messages.
- Emphasize the overall health and wellness of the priority population, rather than focusing solely on disease prevention and risk behaviors, and ensure that prevention messages do not further stigmatize at-risk groups.
- Acknowledge structural barriers to reducing individual-level risk when developing health education and prevention materials.

**SD2.3 - Train Non-Clinical Public Health and Community Providers Serving At-Risk Adults on Viral Hepatitis Prevention Interventions and How to Integrate Adult Viral Hepatitis Prevention into Their Services**

- a. Compile existing in-person and web-based viral hepatitis training resources and post links on the CDPH Web site.
- b. Use conferences and meetings of coalitions, professional associations, and other groups serving adults living with or at risk for viral hepatitis as opportunities to promote tailored viral hepatitis awareness and service integration messages.

- c. Adapt and deliver in-person and web-based trainings on viral hepatitis prevention and service integration to service providers in California, including providers in HIV, STD, tuberculosis, alcohol and drug treatment, mental health, corrections, immigrant health, refugee health, and other fields serving at-risk adults.
- d. Host workshops and webinars for service providers and local health officials to share experiences integrating viral hepatitis prevention, education, testing, vaccination, and care into their services.
- e. Facilitate cross-training among HIV, STD, TB, and viral hepatitis staff within LHDs and among CBOs to learn more about each other's work and to learn how to refer to each other's programs and to provide integrated prevention messages.
- f. Facilitate cross-training among communicable disease prevention providers with prevention providers in mental health, substance use, minority health, and immigrant and refugee health fields.

**Table 6: Considerations for Cross-Training Health Professionals**

<u>Targeted Providers</u>	<u>Tailored Message</u>
Substance Use	Enrollment in drug treatment is an ideal opportunity for viral testing, vaccination, care, and treatment.
Mental Health	People with depression, bipolar disorder, and schizophrenia, and active drug users, can be successfully treated for HCV with proper monitoring and support.
Immigrant/Refugee Health	HBV and TB may overlap among foreign-born individuals from HBV endemic countries, such as APIs.
Border Health	HCV and TB may overlap among IDUs in U.S./Mexico border region.
Minority Health	African-Americans are disproportionately impacted by HCV and have lower treatment response rates.

**SD2.4 - Improve Primary Care Providers and Other Clinicians' Understanding and Adherence to National Adult Viral Hepatitis Testing, Prevention, Vaccination, and Clinical Management Guidelines through Trainings, Guidelines, and Newsletters**

- a. Post CDC, National Institutes of Health (NIH), Institute of Medicine (IOM), and other national guidelines on viral hepatitis prevention and management on CDPH Web site.
- b. Develop provider toolkits summarizing key information (e.g., ordering and interpreting HBV serology), post on CDPH Web site, and disseminate through professional associations.

- c. Work with universities, medical associations, and other professional associations to promote viral hepatitis awareness and to highlight new and existing clinical guidelines through peer-to-peer education at associations' conferences, meetings, and brown bag lunches, and through associations' newsletters and guidance documents.
- d. Identify and foster clinician and healthcare worker champions to train their peers on implementing viral hepatitis standards of care.
- e. Expand mentoring of primary care providers by clinicians experienced in treating chronic viral hepatitis, and expand consultation network supports such as warm lines and one-on-one technical assistance.
- f. Educate practitioners in healthcare settings, tattoo parlors, nail salons, piercing studios and in other settings where there may be a risk of HBV or HCV transmission about state and federal infection control guidelines and bloodborne pathogen standards.\*

**Table 7: Possible Topics for Clinician Guidance Summaries**

- Cultural and Linguistic Competency with AAPI Communities
- Harm Reduction
- Viral Hepatitis Prevention Interventions for the Clinical Setting
- Viral Hepatitis Screening Recommendations
- Viral Hepatitis Vaccination Recommendations
- Managing Chronic HBV
- Managing Chronic HCV
- Managing HBV/HIV Coinfection
- Managing HCV/HIV Coinfection
- Managing Patients through Liver Transplantation
- Monitoring for and Managing Fibrosis and Liver Cancer
- Monitoring Treatment Adherence
- New HBV and HCV Treatment Drugs in the Pipeline
- Ordering and Interpreting HBV Serology
- Ordering and Interpreting HCV Serology
- Research Developments in Treating African-Americans for HCV
- Sexual HCV Transmission among HIV+ MSM
- Teaching Patients Liver Self-Care
- Treating Active Drug Users for HCV
- Treating Patients with Mental Illness for HCV
- Treating Transgender Patients with Liver Disease
- Viral Hepatitis Standards of Care for People with HIV
- When to Consult with or Refer to a Specialist
- Federal and State Infection Control Regulations and Standards

---

\* For more information about healthcare associated infections and state infection control guidelines, visit [www.cdph.ca.gov/pubsforms/Guidelines/Pages/HAlandIC.aspx](http://www.cdph.ca.gov/pubsforms/Guidelines/Pages/HAlandIC.aspx).

SD2.5 - Integrate Viral Hepatitis Prevention Content into Medically Accurate, School-Based HIV/STD Education Curricula

- a. Review current curricula used in schools, revise curricula to include medically accurate and age-appropriate viral hepatitis prevention information if necessary, and work with Boards of Education to distribute them.

**Table 8: Professional and Medical Associations\***

Alliance of Professional Tattooists  
American Academy of HIV Medicine  
American Academy of Internal Medicine  
American Association for the Study of Liver Diseases  
American College of Physicians  
American Correctional Health Services Association  
American Gastroenterological Association  
American Nurses Association, California Chapter  
Asian Pacific Medical Students Association  
Association of Asian and Pacific Community Health Organizations  
Association of Professional Piercers  
California Academy of Family Physicians  
California Academy of Preventive Medicine  
California Association of Alcohol and Drug Abuse Counselors  
California Association of Communicable Disease Controllers  
California Association of Drug and Alcohol Program Executives  
California Clinical Laboratory Association  
California Conference of Local AIDS Directors  
California Conference of Local Directors of Health Education  
California Conference of Local Health Officers  
California County Health Executives Association  
California Immunization Coalition  
California Latino Medical Association  
California Medical Association  
California Nurses Association  
California Pharmacists Association  
California Primary Care Association  
California Public Health Laboratory Directors Association  
California STD Controllers Association  
California Society for Addiction Medicine  
California Tuberculosis Controllers Association  
Charles Drew Medical Society  
Clinical Laboratory Technology Advisory Committee  
County Alcohol and Drug Program Administrators Association of California  
Gay and Lesbian Medical Association  
Hemophilia Foundation  
HIV Medical Association  
Indian Health Services  
Infectious Disease Association of California  
Infectious Disease Society of America  
Society of Gastrointestinal Nurses Association  
Vietnam Veterans of America  
Veterans Administration – Hepatitis C Resource Center

\* This list describes some potential medical and professional associations with whom state and local groups may wish to collaborate; it is not exhaustive.

SD2.6 - Ensure National Prevention and Healthcare Standards Used to Guide Policy and Practice Reflect Updated and Evidence-Based Viral Hepatitis Prevention, Screening, Vaccination, and Care Recommendations

- a. Review Healthy People 2020 objectives and ensure that viral hepatitis issues are adequately addressed in these and future objectives.
- b. Review national Healthcare Effectiveness Data and Information Set (HEDIS) measures and support the inclusion of performance measures related to viral hepatitis screening, vaccination, and care.
- c. Review United States Preventive Services Task Force recommendations on viral hepatitis screening and vaccination and ensure that updates include new evidence and are consistent with CDC and APIC guidelines, as is possible.
- d. Identify and review other national health standards (e.g., CDC testing guidelines, NIH consensus statements, IOM reports, Center for Medicare and Medicaid Services' Quality Indicators Survey, and guidelines from professional and medical associations) to ensure that they reflect emerging viral hepatitis epidemiologic data, evaluation studies, and research findings.

SD2.7 - Increase Adult Viral Hepatitis Awareness among Local, State, and Federal Policymakers

- a. Develop and expand local viral hepatitis task forces and coalitions comprising people living with HBV and HCV, service providers, and medical professionals, and other community members.
- b. Develop a speaker's bureau of people impacted by viral hepatitis.
- c. Hold trainings for community members on educating policymakers about viral hepatitis and its impact in their communities.
- d. Conduct routine educational visits with federal legislators, state legislators, local boards of supervisors, mayors, and other officials.
- e. Build a statewide viral hepatitis awareness network to share information about awareness strategies and to promote collaboration among community awareness groups.
- f. Connect with national viral hepatitis and health policy groups.
- g. Identify and cultivate adult viral hepatitis prevention champions in Congress.
- h. Support increased federal viral hepatitis appropriations.
- i. Ensure that local, state, and federal healthcare reforms include access to coverage for viral hepatitis prevention, education, testing, vaccination, and treatment. Strategies for ensuring such coverage include the expansion of Medicaid eligibility for people with chronic HBV/HCV, the removal of the disability eligibility requirement, and expansion of coverage for childless, low-income, uninsured adults.

## **SD3. Targeting and Integrating Services and Building Infrastructure**

### **A. Practical Vision**

- Universal access to testing for at-risk adults
- Increased statewide hepatitis A and B vaccination capacity for adult populations
- Statewide access to sterile syringes
- Reduced racial disparities in viral hepatitis morbidity and mortality
- Universal access to integrated, quality adult viral hepatitis prevention and healthcare services
- Health care coverage for viral hepatitis screening, vaccination, care, and treatment
- Policies and guidelines that support adult viral hepatitis prevention, control, and treatment

### **B. Recommendations and Action Steps**

#### **SD3.1 - Increase Adult Viral Hepatitis Counseling, Testing, and Health Education Capacity and Services**

- a. Assist LHDs and CBOs with the integration of viral hepatitis prevention, education, testing, vaccination, and referral services into settings serving adults living with and at risk for HBV and HCV.
- b. Support Disease Investigation Specialists (DIS) to refer healthcare workers, pregnant women, and other adults identified as HBsAg positive during routine testing, along with their household contacts and sexual and drug-using partners, to follow-up testing and care.
- c. Supplement and establish HCV antibody and RNA testing in settings serving at-risk adults, prioritizing testing resources for people with known risk factors, while allowing flexibility to adapt to emerging research and to identify HCV infections among people with no known risk factors.
- d. Increase language access capacity for community health clinics and other programs serving non-English speaking clients.

#### **SD3.2 - Increase Viral Hepatitis Laboratory Testing Capacity**

- a. Expand laboratory viral hepatitis testing capacity with consideration of regional reference public health laboratories to process HBV tests and HCV RNA tests for surrounding counties.
- b. Explore the role of expanding viral hepatitis testing capacity at the State Viral and Rickettsial Disease Laboratory.

SD3.3 - Increase Adult Viral Hepatitis Vaccination Capacity and Delivery

- a. Post information about programs participating in the State Adult Hepatitis Vaccine Program on the CDPH Web site and in the statewide viral hepatitis referral guide.
- b. Support DIS and HIV Prevention Specialists to refer unvaccinated at-risk adults to HAV/HBV immunization programs.
- c. Ensure that LHDs receiving state HAV/HBV vaccine partner with service providers in key settings to deliver vaccine to at-risk adults.
- d. Ensure that CBOs serving at-risk adults have access to HAV/HBV vaccine, or know where to refer their at-risk clients for HAV/HBV vaccination.
- e. Increase pharmacists' ability to initiate and administer HAV/HBV immunizations to adults, along with vaccine information statements, health information, and referrals to testing and care.
- f. Support vaccine delivery infrastructure, including syringes and other equipment, personnel, and refrigerators for vaccine storage..
- g. Support LHDs and CBOs to administer HAV/HBV vaccine in settings serving at-risk adults, monitor vaccine supply, and fulfill program reporting requirements.
- h. Assist LHDs and CBOs with the integration of HAV/HBV vaccine delivery or referrals into settings serving at-risk adults.

SD3.4 - Increase Access to Syringe Exchange and other Harm Reduction Services

- a. Leverage existing resources, including federal dollars, when the federal syringe exchange funding ban is lifted, to increase access to syringes and other safe injection equipment (e.g., cookers, cottons, and water) in primary care clinics, HIV prevention programs, drug treatment programs, mental health clinics, drop-in centers, mobile health vans, and other settings serving IDUs.
- b. Encourage pharmacists (e.g., especially those delivering HAV/HBV vaccine to adults) to participate in pharmacy syringe sales programs.
- c. Create and expand syringe exchange and satellite syringe exchange programs and other harm reduction services with the goal of every IDU having one sterile syringe per injection event.
- d. Remove structural barriers to access to syringes and other safe drug-using equipment for IDUs. Potential strategies could include exploring the expansion of syringe exchange programs and pharmacy syringe sales, simplifying the participation requirements for over-the-counter pharmacy sale of syringes, and implementing programs to provide sufficient safe syringe disposal options.

SD3.5 - Increase Viral Hepatitis Prevention, Education, Testing, and Vaccination Services for People who are Incarcerated or Returning from Prisons and Jails to the Community

- a. Collaborate with CDCR to develop the following viral hepatitis protocols and pilot programs:
  - o Standard HAV/HBV vaccination protocol for state correctional institutions and reception centers
  - o Standard HBV/HCV prevention, education, and testing protocol for state correctional institutions and reception centers
  - o Standard transitional case management protocol for people with chronic HBV/HCV who are returning to the community, including a two- to three-page summary of the person's test results, vaccinations, and treatment history; a one-month supply of medications; and referrals to follow-up services
  - o Pilot vocational sterile tattooing program
  - o Pilot sterile syringe access program
  - o Comprehensive, integrated viral hepatitis, HIV, STD, and tuberculosis peer health education program
- b. Assist sheriffs' departments and local health officers seeking to provide viral hepatitis testing and vaccination services in local jails.

SD3.6 - Promote - and Remove Barriers to - Adult Viral Hepatitis Prevention Service Integration in Local Public Health, Mental Health, Alcohol and Drug, and Criminal Justice Agencies and Locally-Funded Programs

- a. Insert language into local HIV, STD, mental health, drug treatment, correctional health, and other healthcare services contracts for programs serving at-risk adults, encouraging programs to integrate viral hepatitis prevention, as well as STD, HIV, and TB prevention, into their services.
- b. Encourage drug and alcohol programs to use client-centered approaches to reduce IDU-related viral hepatitis.

SD3.7 - Promote - and Remove Barriers to - Adult Viral Hepatitis Prevention Service Integration in State Agencies, including the Department of Public Health, Department of Healthcare Services, Department of Mental Health, Department of Alcohol and Drug Programs, Department of Corrections and Rehabilitation and State-Funded Programs

- a. Insert language into state contracts for HIV prevention programs, STD clinics, drug and alcohol programs, mental health clinics, correctional health programs, and other organizations serving at-risk adults encouraging programs to integrate viral hepatitis prevention into their services.
- b. Assist state agencies serving adults at risk for viral hepatitis to identify agency policies and practices that may present barriers to

people living with or at risk for viral hepatitis accessing prevention services, and to develop a plan for removing these barriers:

**California Department of Public Health:**

- Continue state and federal immunization funding for the purchase of HAV/HBV vaccine for settings serving at-risk adults.
- Conduct a legal analysis of relevant state and federal statutes, case law, and health department guidelines on employment and healthcare discrimination against people with viral hepatitis.
- Distribute a guide to state viral hepatitis-related laws.
- Provide training to HIV, STD, and tuberculosis prevention staff in viral hepatitis so that prevention messages and referrals can be integrated into HIV, STD, and tuberculosis programs.
- Incorporate messages about screening for viral hepatitis in state guidance to doctors on increasing screening for HIV in medical settings and other appropriate clinical guidance documents for physicians and nurses.
- Review viral hepatitis standards of care for Department of Healthcare Services and Office of AIDS-funded HIV care providers to ensure providers are meeting up-to-date national standards.

**California Department of Healthcare Services:**

- Allow pharmacies, as an expanded medical home, to be reimbursed by Medi-Cal and other state insurance programs for HAV/HBV vaccination services.
- Allow primary care providers and other clinicians to be reimbursed by Medi-Cal and other state insurance programs for viral hepatitis screening, vaccination, evaluation for treatment, and care.
- Identify opportunities for increasing delivery of chronic viral hepatitis prevention, testing, and care in primary care settings, such as federally qualified health clinics and county medically indigent services programs, with the availability of consultation with liver specialists, as needed.
- Create or expand a state-level drug assistance program for low-income individuals, including those with HBV, HCV, and other chronic diseases, who do not yet qualify for disability insurance.

**California Department of Mental Health:**

- Encourage state-funded mental health programs to assess clients' viral hepatitis risk factors and testing, vaccination, and treatment history at intake, and to integrate viral hepatitis prevention, education, testing, vaccination, and referrals into state and local inpatient and outpatient mental health facilities.

**California Department of Alcohol and Drug Programs:**

- Provide training in viral hepatitis, tuberculosis, STDs, and HIV for certified drug and alcohol counselors.
- Remove the requirement that methadone maintenance treatment programs be at least 51 percent physician-owned to receive Drug Medi-Cal reimbursements for early intervention services, such as viral hepatitis testing, vaccination, and treatment.
- b. Encourage state-funded alcohol and drug programs to assess clients' viral hepatitis risk factors and testing, vaccination, and treatment history at intake, and to integrate viral hepatitis prevention, education, testing, vaccination, and referrals into their programs.

**California Department of Corrections and Rehabilitation**

- Develop standard viral hepatitis prevention, screening, vaccination, and education protocols.
- Develop a standard transitional case management protocol for people with HBV/HCV returning from prisons to the community.
- Develop and evaluate a pilot vocational tattooing training program and safe sterile syringe access programs in State prisons.
- Develop and evaluate a comprehensive, integrated viral hepatitis, HIV, STD, and tuberculosis peer education program.

SD3.8 - Promote Adult Viral Hepatitis Prevention Service

Integration and Increased Access to Adult Viral Hepatitis Prevention, Testing, Education, and Care in Federal Agencies, including the Centers for Disease Control and Prevention, Health Resources Service Administration, Substance Abuse and Mental Health Services Administration, Department of Veterans Affairs, and Federally-Funded Programs

- a. Explore the expansion of Substance Abuse and Mental Health Services Administration (SAMHSA) Substance Abuse Prevention and Treatment Block Grant to allow HCV testing in drug treatment programs for people not infected with HIV.
- b. Increase access to treatment medications for people with chronic HBV or HCV through the expansion of prescription drug assistance programs, such as the AIDS Drug Assistance Program (ADAP).
- c. Encourage Health Resources and Services Administration (HRSA) to expand viral hepatitis testing, vaccination, and care capacity in federally qualified health clinics and other community clinics.
- d. Encourage HRSA to expand reimbursement mechanisms in Medicare and other federal healthcare programs to reimburse primary care providers and other clinicians for viral hepatitis

prevention, education, screening, vaccination, evaluation for treatment, and care.

- e. Collaborate with the Department of Veterans Affairs (VA) to ensure that veterans are screened for viral hepatitis risk factors and infections upon admission to primary and specialty care and to establish mechanisms for ensuring that veterans accessing viral hepatitis services from VA-based and community-based care providers receive continuity of care across systems.

**Table 9: Integrating Viral Hepatitis into Settings Serving At-Risk Adults****1. Staff Training**

- Educate all staff with client contact about viral hepatitis transmission and the importance of integrating prevention messages into their work.

**2. Risk Assessment**

- Integrate specific questions about viral hepatitis risk factors, vaccination history, testing history, and diagnoses into client intakes and assessments, including questions about military service and era of service.

**3. Health Education**

- Create an environment that says “Viral Hepatitis Spoken Here” by displaying culturally and linguistically appropriate educational materials about viral hepatitis in waiting rooms, exam rooms, and counseling rooms.
- Incorporate information about viral hepatitis transmission, prevention, risk reduction, and disease outcomes into health education programs.
- Counsel clients with chronic HBV/HCV on preventing transmission of HBV/HCV to their household, sexual, and drug-using contacts.
- Counsel clients with chronic HBV/HCV regarding liver self-care, including the benefits of stopping or reducing alcohol intake, and provide referrals to drug treatment for those who are interested.
- Discuss drug-sharing and preparation practices with all actively drug-using clients to identify strategies for reducing viral hepatitis risk, emphasizing how easily HCV is transmitted, and provide active drug users with referrals to syringe exchange programs and pharmacies that sell syringes.
- Provide information about viral hepatitis transmission, prevention, testing, and vaccination to clients’ family members and sexual partners.
- Train participants to educate their peers about viral hepatitis prevention.

**4. Vaccination**

- Provide referrals to free and low-cost HAV/ HBV vaccinations.
- Offer HAV/HBV vaccinations and remind clients about follow-up shots.

**5. Counseling, Testing, and Referrals**

- Provide referrals to HBV/HCV testing services.
- Offer HBV/HCV testing alone or in combination with HIV testing and counseling, along with linkages to follow-up testing and care.
- Provide confirmatory HCV RNA testing.
- Provide safer injection information, overdose prevention materials, and viral hepatitis referrals to people leaving drug treatment or incarceration.
- Distribute a viral hepatitis resource list for program participants.

**6. Support and Care**

- Offer viral hepatitis education and support groups on-site.
- Work with clients to integrate viral hepatitis risk reduction and care goals into their treatment and service plans.
- Use residential drug treatment as window of opportunity for initiating and supporting clients through the process of HBV/HCV treatment.
- Modify program requirements to meet the individual needs of people undergoing HBV or HCV treatment and/or with advanced liver disease.
- Advocate for access to care for drug users and for people with mental illness.
- Provide a list of questions for clients to ask their doctors about their care.
- Address the physical and psychological difficulties of injecting interferon or taking treatment medications, e.g., while in alcohol and drug treatment.
- Offer to accompany clients to medical care appointments, as needed.
- Develop formal coordinated care linkages with primary care providers with experience managing chronic viral hepatitis, as well as liver specialists.

## **V. EVALUATION**

The California adult viral hepatitis strategic plan outlines many strategies and action steps for achieving its goals. Assessing, in five years, how much closer California is toward these goals will require collecting information throughout the process of the plan's implementation. Many partners will contribute to the implementation of the strategic plan, including state health officials, local health officials, and community-based service providers. CDPH will take the lead in evaluating those action steps within the plan that fall within the Department's scope of work, and has listed some of the measures it will use to evaluate the plan's implementation in this section. LHDs, CBOs, and other community partners may want to develop additional measures for evaluating the success of their efforts as well.

To build on existing resources, the success of the viral hepatitis strategic plan's implementation will be evaluated using information that is routinely collected within CDPH. The Adult Viral Hepatitis Prevention Coordinator will coordinate the collection of these data from sources such as the Office of AIDS and the DCDC Infectious Diseases Branch, Immunization Branch, STD Control Branch, and Viral and Rickettsial Disease Laboratory. Those activities that can be measured using existing datasets will be prioritized for evaluation.

In 2007, CDPH outlined the following outcome objectives for its five-year CDC grant, which funds the AVHPC position:

### **Outcome Objectives**

1. By October 30, 2012, 80 percent of the action steps outlined in the California adult viral hepatitis strategic plan will be completed.
2. By October 30, 2012, the number of venues that routinely offer viral hepatitis prevention messages and HBV screening for at-risk adults will increase by 200 percent
3. By October 30, 2012, the number of venues that routinely offer viral hepatitis prevention messages and HCV screening for at-risk adults will increase by 200 percent
4. By October 30, 2012, the number of venues that routinely offer viral hepatitis prevention messages and HAV/HBV vaccination for at-risk adults will increase by 200 percent
5. By October 30, 2012, 90 percent of HIV care sites will offer comprehensive viral hepatitis prevention, counseling, screening, and vaccination to HIV infected individuals

It may be difficult to measure some of these outcomes without an accurate baseline assessment of the number of venues in California that routinely offer viral hepatitis prevention messages, HAV/HBV vaccination, HBV screening and/or HCV screening or HIV care sites offering comprehensive viral hepatitis

prevention services as part of their standard of care. For this reason, CDPH may consider a sentinel approach that will also monitor the implementation of the action steps outlined in the strategic plan with the understanding that their implementation will contribute to the realization of these longer-term outcome objectives.

The following table provides, under each strategic direction, action steps from the strategic plan that will be evaluated; objectives for their completion; and the information sources from which evaluation data will be collected. The implementation and evaluation of these objectives and the other action steps in this strategic plan will depend on the availability of sufficient resources.

**Table 10: Evaluation Measures for the Viral Hepatitis Strategic Plan**

Strategic Direction / Recommendation	Objective	Data Source(s)
<b>1. Improving Surveillance Capacity and Data Use</b>		
SD 1.1 <u>Compile and Share Existing Local Viral Hepatitis Surveillance Data and Generate Local and Statewide Surveillance Reports</u>	By 2014, number of hits on viral hepatitis surveillance reports posted on CDPH Web site will average 100 unique visitors per month.	DCDC Web Trends Reports
SD1.2 <u>Engage Medical Providers, Healthcare Organizations, Laboratory Directors, and Local Health Department Personnel to Evaluate, Modify as Needed, and Implement Viral Hepatitis Reporting Requirements to Improve Quality and Use of Viral Hepatitis Surveillance Data</u>	By 2014, 80% of public and private laboratories will correctly use CDC criteria for confirming and reporting chronic HCV cases.	DCDC, Viral and Rickettsial Disease Laboratory, Laboratory Field Services
SD 1.3 <u>Increase Local Viral Hepatitis Surveillance Capacity</u>	By 2014, 80% of chronic HBV case reports will include race/ethnicity data and patient address.	Immunization Branch
SD1.4 <u>Increase State Viral Hepatitis Surveillance Capacity</u>	By 2014, 80% of reported chronic HBV and HCV cases per year will be successfully entered into "Cal-REDIE" and deduplicated.	Immunization Branch, STD Control Branch
<b>2. Educating the Public and Providers</b>		
SD2.1 <u>Develop a Statewide Adult Viral Hepatitis Referral Guide</u>	By 2014, the CDPH Office of Viral Hepatitis Prevention Web site and referral guide will average 200 unique visitors per month.	DCDC Web Trends Reports, AVHPC
SD2.2 <u>Develop Health Promotion and Awareness Strategies for Educating the Public about Viral Hepatitis</u>	By 2014, 25 public service announcements will have aired on CA radio, TV, and Web sites.	National Viral Hepatitis Roundtable

<b>Strategic Direction / Recommendation</b>	<b>Objective</b>	<b>Data Source(s)</b>
SD2.3 <u>Train Non-Clinical Public Health and Community Providers Serving At-Risk Adults on Viral Hepatitis Prevention Interventions and How to Integrate Adult Viral Hepatitis Prevention into Their Services</u>	By 2014, 500 non-clinicians serving at-risk adults will have been trained in viral hepatitis and/or service integration.	STD/HIV Prevention Training Center, AVHPC
SD2.4 <u>Improve Primary Care Providers and Other Clinicians' Understanding and Adherence to National Adult Viral Hepatitis Testing, Prevention, Vaccination, and Clinical Management Guidelines through Trainings, Guidelines, and Newsletters</u>	By 2014, 500 clinicians serving at-risk adults will have been trained in viral hepatitis and/or service integration.	STD/HIV Prevention Training Center, AVHPC
	By 2014, 12 prevention and clinical guidance documents will have been posted on the CDPH Office of Viral Hepatitis Prevention Web site, and each document will have been downloaded 50 times.	DCDC Web Trends Reports, AVHPC
SD2.5 <u>Integrate Viral Hepatitis Control into Medically Accurate, School-Based HIV/STD Education Curricula</u>	By 2014, 5 age appropriate, medically accurate viral hepatitis control curricula will have been posted on the CDPH Office of Viral Hepatitis Prevention Web site, and each document will have been downloaded 50 times.	STD/HIV Prevention Training Center, AVHPC
<b>3. Targeting and Integrating Services</b>		
SD3.1 <u>Increase Adult Viral Hepatitis Counseling, Testing, and Health Education Capacity and Services</u>	By 2014, there will be a 200% increase from 2009 levels of adults tested for HCV antibody at HIV testing sites.	Office of AIDS, Local Evaluation Online (LEO)
	BY 2014, 90% of HIV care doctors will routinely deliver HAV/HBV vaccination and testing for HBV/HCV as part of their standard of care.	Office of AIDS, AIDS Regional Information and Evaluation System (ARIES), STD Control Branch
SD3.2 <u>Increase Viral Hepatitis Laboratory Capacity</u>	By 2014, there will be a 200% increase from 2009 numbers of HCV RNA tests performed by local public health laboratories.	Lab Field Services, California Public Health Laboratory Directors Association
SD3.3 <u>Increase Adult Viral Hepatitis Vaccination Capacity and Delivery</u>	By 2014, 500 venues will routinely offering HAV/HBV vaccination to at-risk adults.	Immunization Branch, Adult Hepatitis Vaccine Program
	By 2014, the number of doses of HBV vaccine or combination HAV/HBV vaccine administered in settings serving at-risk adults will have increased by 200%.	Immunization Branch, Adult Hepatitis Vaccine Program

<b>Strategic Direction / Recommendation</b>	<b>Objective</b>	<b>Data Source(s)</b>
SD3.3 <u>Increase Adult Viral Hepatitis Vaccination Capacity and Delivery</u>	By 2014, 50% of adults identified by DIS as unvaccinated and at risk for HAV/HBV will routinely receive a referral to a local HAV/HBV vaccination program and will be offered vaccination.	STD Control Branch
SD3.4 <u>Increase Access to Syringe Exchange and Other Harm Reduction Services</u>	By 2014, 80% of counties will have one or more legal syringe access options (e.g., syringe exchange programs or pharmacies) for IDUs.	Office of AIDS, IDU Policy and Program Coordinator
SD3.6 <u>Promote - and Remove Barriers to - Adult Viral Hepatitis Prevention Service Integration in Local Public Health, Mental Health, Alcohol and Drug, and Criminal Justice Agencies and Locally-Funded Programs</u>	By 2014, 25% of local public health, mental health, alcohol and drug, and jail health contracts will include language regarding viral hepatitis prevention services integration.	California Conference of Local Health Officers and other local membership organizations
SD3.7 <u>Promote - and Remove Barriers to - Adult Viral Hepatitis Prevention Service Integration in State Agencies, including the Department of Public Health, Department of Healthcare Services, Department of Mental Health, Department of Alcohol and Drug Programs, Department of Corrections and Rehabilitation and State-Funded Programs</u>	By 2014, 25% of state public health, mental health, alcohol and drug, and jail health contracts will include language regarding viral hepatitis prevention services integration.	Department of Public Health, Department of Healthcare Services, Department of Mental Health, Department of Alcohol and Drug Programs, Department of Corrections and Rehabilitation

## **VI. CONCLUSION**

Viral hepatitis has emerged as an important public health issue and will become increasingly urgent in the next five years as HBV- and HCV-related healthcare costs rise. This strategic plan outlined three major areas of focus for addressing viral hepatitis among adults in California, with specific strategies and action steps that state and local health officials and CBOs can use to achieve its goals. Some of the action steps in this plan will take place at the state level. Other action steps will require coordination among local health officials, community-based organizations, private partners, and affected individuals, who will select the recommendations most relevant to their communities. This plan provides direction for those diverse efforts.

Great work is already taking place in communities throughout the state, often with few resources. Many cities and counties have already established HBV, HCV, and viral hepatitis task forces and can build upon those structures to build a coalition that can begin implementing this plan. At the same time, much remains to be done to address viral hepatitis in California. Many people at risk for viral hepatitis lack access to health education, testing, and vaccination, and many people living with chronic HBV and HCV lack access to care. Providers who would like to integrate viral hepatitis into their services struggle with competing priorities. The incredible energy and experience of doctors, researchers, public health workers, community organizers, and others in leading the response to diseases and conditions that threaten our communities will be crucial to developing an effective public health response to viral hepatitis in California.

## APPENDIX A: VIRAL HEPATITIS STRATEGIC PLANNING GROUPS

### Key

✉ : Attended September 22-23, 2008, viral hepatitis strategic planning meeting

\* : Member of group that helped plan the strategic planning meeting

◆ : Member of California Adult Viral Hepatitis Prevention Coordinating Committee, which carries forward the strategic planning process

*Note: Participant titles are reflective of the positions they held at the time of the September 2008 strategic planning meeting.*

Selma Abinader, ME <sup>✉</sup> <i>Lead Facilitator, Abinader and Associates</i>	Jeff Caballero, MPH* <i>Executive Director, Association of Asian Pacific Community Health Organizations</i>
Richard Alexander, MS, MPH <sup>✉</sup> <i>Lab Director, Contra Costa County Department of Public Health</i>	Jury Candelario <sup>✉*</sup> <i>Division Director, Asian Pacific AIDS Intervention Team, Los Angeles</i>
Glenn Backes, MSW, MPH <sup>✉*</sup> <i>Policy Consultant, California Hepatitis Alliance</i>	Denise Cannistraci <sup>✉*</sup> <i>Program Consultant, Impact House</i>
Elizabeth Bancroft, MD, SM <sup>✉</sup> <i>Acute Communicable Disease Control, Los Angeles County Department of Public Health</i>	Mimi Chang, NP, MSN <sup>✉</sup> <i>Co-Chair, Asian Pacific Liver Center, Los Angeles County Asian Pacific Islander Hepatitis B Task Force</i>
Geoff Barrett, RN, Sr. PHN <sup>✉*</sup> <i>Public Health Nurse, Humboldt County Department of Public Health</i>	Gilberto Chavez, MD, MPH <sup>✉</sup> <i>Deputy Director; State Epidemiologist, Center for Infectious Diseases, California Department of Public Health</i>
Leslie Benson <sup>✉*</sup> <i>Executive Director, Education for Healthy Choices, Sacramento</i>	Eddie Cheung, MD, FACG* <i>Director-Hepatology, VANCHCS, Martinez Clinical Professor, University of California Davis School of Medicine</i>
Wendy Berger, MPH <sup>✉*</sup> <i>Research Analyst, Immunization Program, Los Angeles County Department of Public Health</i>	Ryan Clary* <i>Director of Public Policy, Project Inform</i>
Dallas Blanchard <sup>✉*</sup> <i>Director, Fresno Needle Exchange</i>	Barbara Cole, RN, MSN, PHN <sup>✉*</sup> <i>Communicable Disease Officer, Riverside Department of Public Health</i>
Gail Bolan, MD <sup>✉</sup> <i>Chief, STD Control Branch, California Department of Public Health</i>	Kevin Connor, RN, BSN, CCHP <sup>✉*</sup> <i>President-Elect; Communicable Disease Coordinator, American Correctional Health Services Association California - Nevada Chapter; Sheriff's Department</i>
Olivia Byron-Cooper, MPH <sup>✉</sup> <i>Epidemiologist, El Dorado County Department of Public Health</i>	

Daniel Coronado<sup>co</sup>  
*Intern to the Chief, Office of AIDS, California Department of Public Health*

Myrna Cozen, MPH♦  
*Associate Director, Hepatitis C Resource Center, Veterans Affairs Medical Center*

Muntu Davis, MD, MPH\*  
*Deputy Health Officer, Alameda County Public Health Department*

Nettie de Augustine<sup>co</sup>  
*President-Elect, California Conference of Local AIDS Directors*

Larry Dickey, MD<sup>co</sup>  
*Chief, Office of Clinical Prevention, California Department of Healthcare Services*

Teena Evans, MSN, PHN<sup>co\*\*</sup>  
*Nurse Consultant, HIV Care Branch, Office of AIDS, California Department of Public Health*

Ted Fang\*  
*Director, AsianWeek Foundation*

Kevin Farrell, LCSW<sup>co\*</sup>  
*Chief, HIV Education and Prevention Services Branch, Office of AIDS, California Department of Public Health*

Jennifer Felderman, MA\*  
*Adult Viral Hepatitis Prevention Coordinator, Office of AIDS Programs and Policy, Los Angeles County Department of Public Health*

Jenna Ferrara\*  
*Viral Hepatitis and Liver Disease Coordinator, Medical Consultation Network, University of California San Francisco*

Schenelle Flores<sup>co</sup>  
*Health Program Specialist I, Office of AIDS, California Department of Public Health*

Stuart Fong, MD\*  
*Infection Control Coordinator; Employee Health Coordinator, Chinese Hospital, San Francisco*

Alan Franciscus<sup>co</sup>  
*Executive Director, Hepatitis C Support Project, Editor-in-Chief, HCV Advocate*

Karen Furst, MD, MPH\*  
*Communicable Disease Controller, San Joaquin County Public Health Services; Chair, Communicable Disease Committee, California Conference of Local Health Officers*

Mary Geary<sup>co\*\*</sup>  
*Associate Health Program Advisor, Office of AIDS, California Department of Public Health*

Donna Geiger, RN, MSN, FNP\*  
*Clinical Instructor Medical-Surgical Nursing, Napa Valley College, Petaluma Health Clinic*

Michele Ginsberg, MD\*  
*San Diego County Health and Human Services Agency*

Jeff Goad, Pharm.D, MPH, FCPhA, FCSHP  
*Associate Professor of Clinical Pharmacy, University of Southern California, School of Pharmacy*

C. N. Gordon, BA, RRW<sup>co\*</sup>  
*Founder/Director, Help & Education for Liver Patients (HELP!)*

Ed Gordon<sup>co\*</sup>  
*Co-Founder, Help & Education for Liver Patients (HELP!)*

Laura Hardcastle<sup>co</sup>  
*Chief, Office of Multicultural Health, California Department of Public Health and Department of Health Care Services*

Doug Hatch, MD, MPH<sup>co</sup>  
*Chief, Division of Communicable Disease Control, California Department of Public Health*

Dennis Hendrix<sup>co\*</sup>  
*Health Education Manager, Community Action Partnership*

Gavino Hernandez<sup>co</sup>  
*Program Coordinator, Los Angeles Needle Exchange, Bienestar*

John Holguin, MPH<sup>✉</sup>  
*Chair, California Association of Communicable Disease Controllers*

Sandra Huang, MD<sup>\*</sup>  
*Director, Communicable Disease Control Unit, San Francisco Department of Public Health*

Emalie Huriaux, MPH<sup>\*</sup>  
*Health Program Coordinator, HIV Prevention Section and Community Behavioral Health Services, San Francisco Department of Public Health*

Joseph Iser, MD<sup>✉\*\*</sup>  
*Public Health Officer/Director, Nevada County Department of Public Health*

Danny Jenkins<sup>✉</sup>  
*Grant Developer, Cri-Help*

Edie Kahn<sup>✉</sup>  
*Executive Director, AIDS Support Network*

Marian Kerbleski, RN<sup>\*</sup>  
*Department of Family and Community Medicine, University of California, San Francisco*

Robert Kim-Farley, MD, MPH<sup>✉</sup>  
*Director, Communicable Disease Control and Prevention, Los Angeles County Department of Public Health*

AJ King, MPH<sup>✉</sup>  
*Program Coordinator/Senior Trainer, California STD/HIV Prevention Training Center*

William Kocsis, MD<sup>✉</sup>  
*Physician, Napa State Hospital, California Department of Mental Health*

Robert Kolker, RN, PHN<sup>✉</sup>  
*Nurse, Napa State Hospital, California Department of Mental Health*

Aparna Kollipara<sup>\*</sup>  
*Los Angeles County Department of Public Health*

Ming-Ming Kwan, MSW<sup>\*</sup>  
*Asian and Pacific Islander Wellness Center*

Judy Leahy, MPH<sup>✉\*</sup>  
*Director of Programs, Centerforce*

Moses Lee<sup>\*</sup>  
*University of California San Francisco, SF Hep B Free*

Louise Lecklitner, MS ED<sup>✉\*\*</sup>  
*Program Manager, San Diego Department of Alcohol and Drug Services*

Vivian Levy, MD<sup>✉\*\*</sup>  
*STD Controller, San Mateo County Department of Public Health*

Brian Lew, MA<sup>✉\*</sup>  
*Chief, HIV Prevention Policy and Program Development Section, Office of AIDS, California Department of Public Health*

Daniel Madrigal<sup>\*</sup>  
*Viral Hepatitis Surveillance Intern, California Department of Public Health*

Michele Manos, PhD, MPH, DVM<sup>\*</sup>  
*Director, Kaiser Permanente Viral Hepatitis Registry*

Catherine Flores Martin<sup>✉</sup>  
*Director, California Immunization Coalition*

Rob Maus<sup>✉</sup>  
*Staff Services Manager, California Department of Alcohol and Drug Programs*

Fred Mayer, RPh, MPH<sup>✉</sup>  
*President, Pharmacists Planning Service, Inc.*

Rachel McLean, MPH<sup>✉\*\*</sup>  
*Adult Viral Hepatitis Prevention Coordinator, STD Control Branch, California Department of Public Health*

Hilary McQuie, MA<sup>✉\*</sup>  
*Western Director, Harm Reduction Coalition*

Ann Michaels<sup>✉\*</sup>  
*Analyst, HIV Coordinator, Program and Fiscal Policy Branch, California Department of Alcohol and Drug Programs*

Ellen Michels<sup>✉\*</sup>  
*Senior Public Health Education Specialist, Butte County Department of Public Health*

Jamie Miller, MPH<sup>cs\*</sup>  
Corrections, STD Specialty Clinics, and  
Substance Abuse Unit Manager, STD  
Control Branch, California Department of  
Public Health

Jacqueline Mincks<sup>cs</sup>  
Assistant Branch Chief, STD Control  
Branch, California Department of Public  
Health

Geoff Moyer, MD, PhD<sup>cs</sup>  
Medical Director, Van Nuys Facilities,  
Quest Diagnostics

Amanda Newstetter, MSW<sup>\*</sup>  
Project Coordinator, Center for Health  
Training

Steve Nickell, PhD<sup>cs</sup>  
Adult Hepatitis Vaccine Project Coordinator,  
Immunization Branch, California Department  
of Public Health

Susan Novak-Weekley, PhD<sup>cs\*</sup>  
Director of Microbiology, Southern California  
Permanente Medical Group Regional  
Reference Laboratories

Pierre Nsilu, MPA, RN<sup>cs\*</sup>  
Adult Viral Hepatitis Prevention Coordinator,  
Communicable Disease Control, Los  
Angeles County Department of Public  
Health

Rose Ochoa<sup>cs</sup>  
Community Health Program Specialist  
Division of HIV, STD, and Viral Hepatitis  
San Diego Department of Public Health

Koy Parada, MPH<sup>cs\*</sup>  
Project Director, Los Angeles Asian  
American Network for Cancer Awareness,  
Research, and Training; Co-Chair,  
Los Angeles Asian Pacific Islander Hepatitis  
B Task Force

Mario Perez<sup>cs</sup>  
Director, Office of AIDS Program and Policy,  
Los Angeles County Department of Public  
Health

Laura Peterson, MA  
Senior Project Manager, Appointment and  
Advice Call Center, Regional Operations  
Kaiser Permanente Northern California

Michele Peterson, MPH<sup>\*</sup>  
Project Manager, California Hepatitis  
Alliance (CalHEP)

Emily Quinn<sup>cs\*</sup>  
Program Assistant, STD Control Branch,  
California Department of Public Health

Pamela J. Rasada, RN, PHN<sup>\*</sup>  
Senior Policy Analyst, California Research  
Bureau, California State Library

Bill Remak, BS, BPH, SGNA, AHCJ<sup>cs\*</sup>  
Chair, California Hepatitis C Task Force,  
National Association of Hepatitis Task  
Forces; Member, California Chronic Care  
Coalition

Gabriel Rendon, MA<sup>cs</sup>  
Bilingual Behavioral Interventions Trainer,  
CA STD/HIV Prevention Training Center

Val Robb, RN<sup>\*</sup>  
Positive Health Program, University of  
California, San Francisco

Michelle Roland, MD<sup>cs</sup>  
Chief, Office of AIDS, California Department  
of Public Health

Alessandra Ross, MPH<sup>cs\*</sup>  
Injection Drug Use Policy and Program  
Coordinator, Office of AIDS, California  
Department of Public Health

Lorenzo Rossaro, MD<sup>cs</sup>  
Chief of Gastroenterology and Hepatology,  
UC Davis Medical Center

Martha Saly, MS<sup>cs\*\*</sup>  
Program Director, California Hepatitis  
Alliance

Cecile Lei Sebrio, MPH, CHES<sup>cs\*</sup>  
Project Coordinator, B Healthy/B Hep Free  
Project, Asian Pacific Health Care Venture,  
Inc.

Michael Shaw<sup>cs\*\*</sup>  
Director, Urban Male Health Initiative  
Alameda County Department of Public  
Health; Member, California African American  
HIV/AIDS Initiative

Sandy Simms<sup>co</sup>  
*Office of AIDS, California Department of Public Health*

Samuel So, MD<sup>co\*</sup>  
*Director, Asian Liver Center Stanford University*

Carol Sparks, MPH, RN<sup>co</sup>  
*Perinatal Hepatitis B Coordinator, Immunization Branch, California Department of Public Health*

Jane Stallman, MBA<sup>co</sup>  
*Co-Facilitator, Stallman Communications*

Mark Stanley, MPH, PHS, CLS, MT<sup>co</sup>  
*Director Microbiology, TPMG Regional Laboratory, Kaiser Permanente, Berkeley*

Garrett Stenson, MSW<sup>\*</sup>  
*Program Director, BiValley Medical Center*

Brian Toy<sup>\*</sup>  
*SF Hep B Free, University of California San Francisco*

Marlene von Friederichs-Fitzwater, PhD, MPH  
*Assistant Adjunct Professor, University of California, Davis School of Medicine; Director, Outreach Research and Education Program, UC Davis Cancer Center*

Barbara Weiss<sup>co</sup>  
*Staff Services Manager, California Department of Alcohol and Drug Programs*

Moriya Wheeler<sup>co</sup>  
*Program Coordinator, California Hepatitis Alliance*

Stephen Willis  
*Laboratory Director, San Joaquin County Public Health Services*

Ching Wong<sup>\*</sup>  
*SF Hep B Free, University of California San Francisco*

Kathleen Winter, MPH<sup>co\*</sup>  
*Immunization Branch, California Department of Public Health*

Linden Young<sup>co</sup>  
*Executive Director, Northern California Chapter, American Liver Foundation*

Ying-Ying Yu, PhD<sup>co</sup>  
*EIS Officer, STD Control Branch, California Department of Public Health*

Janet Zola, MPH<sup>co\*</sup>  
*Health Promotion Specialist, Communicable Disease Control and Prevention, San Francisco Department of Public Health*

John Zweifler, MD, MPH<sup>co</sup>  
*Regional Medical Director, Central, California Department of Corrections and Rehabilitation*

## APPENDIX B: ACRONYMS and ABBREVIATIONS

ADAP	AIDS Drug Assistance Program
ADP	California Department of Alcohol and Drug Programs
AIDS	Acquired Immunodeficiency Syndrome
AAPI	Asian American and Pacific Islander
APIC	Association for Professionals in Infection Control
AVHPC	Adult Viral Hepatitis Prevention Coordinator
CDC	Centers for Disease Control and Prevention
CDCR	California Department of Corrections and Rehabilitation
CDPH	California Department of Public Health
CID	Center for Infectious Diseases
CAVHPCC	California Adult Viral Hepatitis Prevention Coordinating Committee
DCDC	Division of Communicable Disease Control
DHCS	Department of Health Care Services
FDA	Food and Drug Administration
HAV	Hepatitis A Virus
HBeAg	Hepatitis B e antigen
HBIG	Hepatitis B Immune Globulin
HBsAg	Hepatitis B Surface Antigen
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HEDIS	Healthcare Effectiveness Data and Information Set
HIV	Human Immunodeficiency Virus
HRSA	Health Resources and Services Administration
IDU	Injection Drug User
IG	Immune Globulin
IgG	Immunoglobulin G
IgM	Immunoglobulin M
IOM	Institute of Medicine
LHD	Local Health Department
MSM	Men who have sex men
NIH	National Institutes of Health
PCR	Polymerase Chain Reaction
RNA	Ribonucleic Acid
SAMHSA	Substance Abuse and Mental Health Services Administration
SEP	Syringe Exchange Program
STD	Sexually Transmitted Disease
TB	Tuberculosis
VA	Veterans Affairs

## **APPENDIX C: GLOSSARY OF TERMS**

**Action Steps:** Steps to be taken in order to meet each of the strategies identified for the focus areas of the plan.

**Acute hepatitis:** Newly acquired hepatitis lasting less than six months, sometimes, but not always, with symptoms.

**Antibody:** A protein used by the immune system to help destroy an antigen.

**Antigen:** A substance, usually a foreign substance, such as a bacteria or virus, which causes the body to produce antibodies.

**Asymptomatic:** Showing no evidence or symptoms of disease.

**Chronic hepatitis:** Long-term hepatitis, usually lasting longer than 6 months. May occur in those infected with hepatitis B or C.

**Cirrhosis:** Extensive scarring of the liver. Cirrhosis interferes with the normal functioning of the liver.

**Co-morbidity:** Infection with more than one disease, such as HBV or HCV and HIV.

**Deduplicate:** Review records to ensure that an individual is not counted twice and remove duplicate case reports.

**Drug-using supplies:** Supplies used to prepare a drug for use. Injection drug supplies include cotton, cookers, water, tourniquets, alcohol swabs, etc.

**Endemic:** The usual or expected occurrence of disease within a geographic area.

**Epidemiology:** The study of distribution and determinants of diseases and their complications.

**Fulminant hepatitis:** Severe form of liver inflammation with sudden onset.

**Hepatitis:** A term meaning inflammation of the liver.

**Hepatocellular carcinoma:** Cancer of the liver.

**Immune globulin (IG):** A concentrated solution of antibodies prepared from pooled human plasma of someone immune to a particular disease.

**Immunogenic:** Producing an immune response.

**Incidence:** The number of new cases of infection that occur in a population during a certain time period.

**Incubation period:** The time interval between initial contact with an infectious agent and the first appearance of symptoms associated with the infection.

**Jaundice:** Yellow staining of the skin and whites of the eyes by abnormally high blood levels of the bile pigment bilirubin because of liver dysfunction.

**Percutaneous:** A procedure performed through the skin. A percutaneous exposure occurs when potentially infected blood enters the skin, e.g., through a needle stick.

**Polymerase and Protease Inhibitors:** Enzymes that inhibit the replication of a virus.

**Post exposure prophylaxis:** A treatment administered following exposure to a harmful agent in an attempt to block or reduce injury or infection.

**Prevalence:** The number of infected individuals in a population at a given point in time.

**Serology:** A blood test or series of blood tests often used to detect the presence of antibodies in the blood.

**Signal-to-cutoff ratio (s/co):** The number above which a blood sample is considered to be positive for hepatitis C antibody. Samples with a low signal-to-cutoff ratio require additional testing.

**Strategic direction:** Course of action that leads to the achievement of the goals defined in the strategic plan.

**Surveillance:** Procedures used in public health to monitor disease incidence, prevalence, and trends; measure the effectiveness of prevention strategies; and inform public health action.

**Syringe Exchange Program:** Program providing access to sterile syringes, safe injection supplies, and safe syringe disposal, and, typically, referrals to medical care, drug treatment, and other services.

**Vision:** The collective sense of where California wants to be in five years in the prevention and management of viral hepatitis.

## **APPENDIX D: STATE VIRAL HEPATITIS PREVENTION EFFORTS\***

Numerous programs within the California Department of Public Health (CDPH), Division of Communicable Disease Control (DCDC) and Office of AIDS of the Center for Infectious Diseases address viral hepatitis among adults. The Office of Adult Viral Hepatitis Prevention (a program of the DCDC STD Control Branch) coordinates these efforts, facilitates the development and implementation of the adult viral hepatitis strategic plan, and works to integrate, facilitate, and foster collaboration on comprehensive prevention, diagnosis and treatment services for sexually transmitted diseases, viral hepatitis, tuberculosis, and HIV at the client level, regardless of where the client seeks care or other services.

Below is an overview of CDPH programs that address viral hepatitis among adults.

### **Disease Investigation**

The DCDC Immunization Branch provides technical assistance and resources to support LHDs in conducting acute hepatitis A and B case investigations.

The DCDC Infectious Diseases Branch conducts investigation, surveillance, prevention, and control of communicable diseases, including foodborne and waterborne illnesses.

The CDPH, Center for Healthcare Quality investigates healthcare-associated viral hepatitis infections and is developing a plan for preventing healthcare-associated infections in California, including healthcare-associated viral hepatitis infections, which will be completed in January 2010.

### **Hepatitis A and B Vaccination**

The DCDC Immunization Branch, through its Adult Hepatitis Vaccine Project, provides free hepatitis A and B vaccine to LHDs and CBOs serving at-risk adults in the following clinical settings:

- STD treatment facilities
- HIV testing or care facilities
- Drug abuse prevention and treatment facilities
- Syringe exchange programs
- Prisons and jails
- Health care settings serving MSM
- Health care settings serving IDUs
- Health care settings serving AAPIs (or other individuals born in countries with at least 2 percent prevalence of chronic hepatitis B infection)

---

\* State adult viral hepatitis prevention program information is current as of December 23, 2009, and may be subject to change.

## **Health Education**

The DCDC STD Control Branch, Office of Viral Hepatitis Prevention provides health information and other resources for the public and health professionals at (510) 625-3400 or [www.cdph.ca.gov/programs/pages/ovhp.aspx](http://www.cdph.ca.gov/programs/pages/ovhp.aspx).

The Office of AIDS provides HIV and viral hepatitis education materials, in English and Spanish, through the California HIV/STD Referral Database at (800) 367-AIDS or [www.aidshotline.org](http://www.aidshotline.org).

## **Hepatitis C Counseling and Testing**

The Office of AIDS supports some LHDs and HIV prevention programs in providing limited HIV and hepatitis C testing, prevention, and referral services.

## **Syringe Access**

California law permits local government to increase access to sterile needles and syringes through both syringe exchange programs (SEPs) and through over-the-counter syringe sales in pharmacies.

## **Surveillance**

The DCDC Immunization Branch monitors cases of acute hepatitis A and B to identify missed opportunities for vaccination, provide post-exposure prophylaxis, identify possible healthcare-associated infections, estimate the disease burden in the population, and provide statistical reports on vaccine-preventable disease trends. The Immunization Branch also currently monitors acute hepatitis C cases to identify possible health-care associated viral hepatitis outbreaks, which are investigated by the Infectious Disease Branch. CDPH is exploring options for collecting sentinel chronic hepatitis B and C surveillance data, and developing guidance for labs and providers.

## **Training**

The California STD/HIV Prevention Training Center offers courses on STD/HIV clinical and behavioral interventions, partner services, and program support for prevention professionals. Courses provide basic information on viral hepatitis, with limited additional training available upon request.

## **Treatment**

The Office of AIDS, AIDS Drug Assistance Program covers hepatitis A and B vaccine and hepatitis C medication costs for people living with HIV/AIDS who are eligible for the program.

## **APPENDIX E: RESOURCES**

Information for the public and for health professionals may be obtained by contacting your local health department, calling the California Department of Public Health STD Control Branch at (510) 620-3400, or by visiting the California Department of Public Health, STD Control Branch, Office of Viral Hepatitis Prevention Web site at [www.cdph.ca.gov/programs/pages/ovhp.aspx](http://www.cdph.ca.gov/programs/pages/ovhp.aspx).

## APPENDIX F: REFERENCES

1. Disease burden from viral hepatitis A, B, and C in the United States. Centers for Disease Control and Prevention Web site. Updated June 2, 2009. Accessed December 8, 2009.
2. Smith BD, Smith GL, Hurria A, Hortobagyi GN, Buchholz TA. Future of cancer incidence in the United States: burdens upon an aging, changing nation. *J Clin Oncol*. Jun 10 2009;27(17):2758-2765.
3. Pyenson B, Fitch, K, Iwasaki, K. *Consequences of Hepatitis C Virus (HCV): Costs of a Baby Boomer Epidemic of Liver Disease*. New York: Milliman; May 2009.
4. California Department of Public Health IB. *Hospitalization Costs Associated With Liver Disease, Liver Cancer and Liver Transplants for Patients Infected With Hepatitis B or Hepatitis C, California 2007*.
5. Kuehn BM. Silent epidemic of viral hepatitis may lead to boom in serious liver disease. *Jama*. Nov 11 2009;302(18):1949-1954.
6. Daniels D, Grytdal S, Wasley A for Centers for Disease Control and Prevention. Surveillance for acute viral hepatitis - United States, 2007. *MMWR Surveill Summ*. May 22 2009;58(3):1-27.
7. California Department of Public Health IB. *Annual Report 2008*.
8. Fiore AE, Wasley A, Bell BP for Centers for Disease Control and Prevention. Prevention of hepatitis A through active or passive immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep*. May 19 2006;55(RR-7):1-23.
9. Craig AS, Schaffner W. Prevention of hepatitis A with the hepatitis A vaccine. *N Engl J Med*. Jan 29 2004;350(5):476-481.
10. Lin SY, Chang ET, So SK. Why we should routinely screen Asian American adults for hepatitis B: a cross-sectional study of Asians in California. *Hepatology*. Oct 2007;46(4):1034-1040.
11. California Department of Public Health CCR. *California Cancer Facts and Figures 2008*.
12. Atkinson W, Hamborsky, J., Wolfe, S. *Epidemiology and Prevention of Vaccine Preventable Diseases*, 8th ed. Washington D.C.: Centers for Disease Control and Prevention; 2004.
13. Approved Hepatitis B drugs in the United States. Hepatitis B Foundation Web Site. Accessed June 16, 2009.
14. Mast EE, Weinbaum CM, Fiore AE, et al. 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 II: immunization of adults. *MMWR Recomm Rep*. Dec 8 2006;55(RR-16):1-33.
15. Hepatitis C frequently asked questions for healthcare professionals. Centers for Disease Control and Prevention Web Site. Updated June 9, 2009. Accessed December 8, 2009.
  16. Armstrong GL, Wasley A, Simard EP, McQuillan GM, Kuhnert WL, Alter MJ. The prevalence of hepatitis C virus infection in the United States, 1999 through 2002. *Ann Intern Med*. May 16 2006;144(10):705-714.
  17. Fox RK, Currie SL, Evans J, et al. Hepatitis C virus infection among prisoners in the California state correctional system. *Clin Infect Dis*. Jul 15 2005;41(2):177-186.
  18. Dominitz JA, Boyko EJ, Koepsell TD, et al. Elevated prevalence of hepatitis C infection in users of United States veterans medical centers. *Hepatology*. Jan 2005;41(1):88-96.
  19. California Department of Public Health SCB. *Reported Chronic Hepatitis C virus (HCV) cases in California 2008*.
  20. Los Angeles County Department of Public Health. *An Analysis of Hepatitis C Mortality in California Counties Using Multiple Cause of Death and Census Data 2008*.
  21. Viral hepatitis information for gay and bisexual men. Centers for Disease Control and Prevention Web Site. Accessed December 8, 2009.
  22. National Institutes of Health. *Consensus Development Conference on Management of Hepatitis C: 2002*. Maryland: The Institute; 2002.
  23. Thein HH, Yi Q, Dore GJ, Krahn MD. Natural history of hepatitis C virus infection in HIV-infected individuals and the impact of HIV in the era of highly active antiretroviral therapy: a meta-analysis. *Aids*. Oct 1 2008;22(15):1979-1991.
  24. d'Arminio Monforte A, Cozzi-Lepri A, Castagna A, et al. Risk of developing specific AIDS-defining illnesses in patients coinfected with HIV and hepatitis C virus with or without liver cirrhosis. *Clin Infect Dis*. Aug 15 2009;49(4):612-622.
  25. Rossi SJ, Volberding PA, Wright TL. Does hepatitis C virus infection increase the risk of HIV disease progression? *Jama*. Jul 10 2002;288(2):241-243.