

California Viral Hepatitis Prevention Strategic Plan, 2016-2020

A Report of the California Viral Hepatitis Coordinating
Committee and the California Department of Public Health

MAY 2018



PREFACE

Acknowledgments

The authors wish to thank Heidi Bauer, M.D., Chief, Sexually Transmitted Diseases (STD) Control Branch for her review and Rachel McLean, M.P.H., Chief, Office of Viral Hepatitis Prevention, STD Control Branch for coordinating the strategic planning process and compiling the plan.

The authors thank the participants of a daylong community stakeholder meeting on September 11, 2014, held in Pomona, California during which the framework for this plan was developed, as well as Connie Chan-Robison for facilitating the meeting. The authors also thank James Watt, M.D., Chief, Division of Communicable Disease Control and Heidi Bauer, M.D., Chief, STD Control Branch, California Department of Public Health, for supporting the meeting, along with Robert Kim-Farley, M.D., and Elaine Waldman, Los Angeles County Department of Public Health, who graciously hosted the meeting and provided opening remarks. **Appendix A** lists the meeting participants.

The authors also thank those who contributed to the development of the *California Adult Viral Hepatitis Prevention Strategic Plan, 2010-2014*, which served as a foundation for this renewed plan. A summary of key accomplishments from implementation of the 2010-2014 strategic plan is available upon request from the California Department of Public Health, STD Control Branch, Office of Viral Hepatitis Prevention.

This strategic plan was supported by Cooperative Agreement Number 5U51PS004058-02 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.

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Suggested Citation

California Viral Hepatitis Coordinating Committee and California Department of Public Health. California Viral Hepatitis Prevention Strategic Plan, 2016-2020. Sacramento, California: May 2018.

ACRONYMS and ABBREVIATIONS

AAPI	Asian American and Pacific Islander
ACA	Patient Protection and Affordable Care Act
AIDS	Acquired Immunodeficiency Syndrome
ACIP	Advisory Committee on Immunization Practices
AGA	American Gastroenterological Association
AMA-PCPI	American Medical Association – Physician Consortium for Performance Improvement
CBO	Community-Based Organization
CDC	Centers for Disease Control and Prevention
CDCR	California Department of Corrections and Rehabilitation
CDPH	California Department of Public Health
CMS	Centers for Medicare & Medicaid Services
DCDC	Division of Communicable Disease Control
DHCS	Department of Health Care Services
GIS	Geographic Information System
HAV	Hepatitis A Virus
HBsAg	Hepatitis B Surface Antigen
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HHS	U.S. Department of Health and Human Services
HIV	Human Immunodeficiency Virus
IDU	Injection Drug Use(r)
IOM	Institute of Medicine
LHD	Local Health Department
NCQA	National Center for Quality Assurance
NQF	National Quality Forum
OVHP	Office of Viral Hepatitis Prevention
PCORI	Patient-Centered Outcomes Research Institute
PQRS	Physician Quality Reporting System
PrEP	Pre-Exposure Prophylaxis
RNA	Ribonucleic Acid
SD	Strategic Direction
SEP	Syringe Exchange Program
STD	Sexually Transmitted Disease
SVR	Sustained Virological Response
TB	Tuberculosis
UDS	Uniform Data System
USPSTF	United States Preventive Services Task Force

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS	2
I. EXECUTIVE SUMMARY	5
II. BACKGROUND: VIRAL HEPATITIS OVERVIEW	7
Hepatitis B	7
Hepatitis C	8
III. INTRODUCTION	11
Mission, Goals, and How to Use This Plan	14
IV. STRATEGIC DIRECTIONS AND RECOMMENDATIONS	16
SD1. Strengthen Surveillance Quality and Data Use.....	16
SD2. Enhance Primary Prevention and Education	18
SD3. Improve Quality and Outcomes along the Hepatitis B and Hepatitis C Care Cascades	22
APPENDIX A: VIRAL HEPATITIS PREVENTION STRATEGIC PLANNING MEETING PARTICIPANTS, SEPTEMBER 11, 2014, POMONA, CA	25
APPENDIX B: CDPH VIRAL HEPATITIS PREVENTION EFFORTS	27
APPENDIX C: GLOSSARY OF TERMS	30
APPENDIX D: AFFORDABLE CARE ACT (ACA) AND VIRAL HEPATITIS	32
APPENDIX E: COLLABORATIVE PARTNERS BY STRATEGIC DIRECTION	34
APPENDIX F: WHAT YOU CAN DO TO SUPPORT THIS PLAN	36
APPENDIX G: SELECTED NATIONAL VIRAL HEPATITIS QUALITY MEASURES, 2016	38
APPENDIX H: UNDERSTANDING THE HEPATITIS B AND HEPATITIS C CARE CASCADES	40

TABLES

Table 1: Potential Collaborative Partners 15

Table 2: Considerations for Developing Targeted Prevention Messages for Persons At-Risk for Viral Hepatitis..... 18

Table 3: Considerations for Cross-Training Health Professionals.....20

Table 4: Professional and Medical Associations*21

FIGURES

Figure 1: Estimated number of people with chronic hepatitis B virus (HBV) infection who are aware of their infection and percentages who are potentially eligible for treatment, entering into care, and receiving treatment—United States, 2010. 40

Figure 2: Estimated number of people with chronic hepatitis C infection and percentages who are aware of their infection, have access to outpatient healthcare, received hepatitis C virus (HCV) ribonucleic acid (RNA) testing, underwent a liver biopsy or achieved a sustained virological response (SVR), including 95 percent confidence intervals—United States, 2000-2010..... 41

I. EXECUTIVE SUMMARY

As the leading cause of liver disease, liver cancer, and liver transplants, chronic viral hepatitis is a growing public health problem in California and nationwide. Between 3.5 and 5.3 million Americans have chronic hepatitis B virus (HBV) or chronic hepatitis C virus (HCV) infection.¹ National estimates suggest there are 360,000 persons living with chronic hepatitis B infection and 400,700 persons with chronic hepatitis C infection in California.² The long-term health implications and healthcare costs of hepatitis B and hepatitis C infections are substantial. Most people living with chronic viral hepatitis are unaware of their infection.³ Without early diagnosis and treatment, one in four people with chronic HBV infection will die from liver disease. Since 2007, the annual number of deaths due to hepatitis C nationwide has surpassed those due to human immunodeficiency virus (HIV).⁴

In 2014, with support from CDC, the California Department of Public Health (CDPH), Center for Infectious Diseases, Division of Communicable Disease Control (DCDC), STD Control Branch embarked upon a statewide strategic planning process for reducing the impact of viral hepatitis in California. At a daylong meeting hosted by the Los Angeles County Department of Public Health in Pomona, California on September 11, 2014, more than 50 representatives from State agencies, local health departments (LHDs), community-based organizations (CBOs), 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 hepatitis C in California. That framework was further refined and developed into three strategic directions (SD) highlighted in this plan: 1) Strengthen Surveillance Quality and Data Use; 2) Enhance Primary Prevention and Education; and 3) Improve Quality and Outcomes along the Hepatitis B and Hepatitis C Care Cascades. Each strategic direction includes recommendations and action steps to guide a comprehensive effort to reduce the impact of viral hepatitis in California. Those strategic directions, recommendations, and action steps are summarized on pages 5-6.

This plan reflects the contributions of multiple community partners, including State agencies, LHDs, CBOs, medical and professional membership organizations, health plans, clinicians, pharmacies, laboratories, drug treatment programs, researchers, people living with and at risk for viral hepatitis, and others invested in reducing the impact of viral hepatitis in California. This plan promotes existing best practices in the field of viral hepatitis prevention. **Appendix E** summarizes the shared roles of key partners in implementing the plan. The participation of a broad range of community partners in implementing the plan will be instrumental to its success.

Strategic Directions and Recommendations

SD1. Strengthen Surveillance Quality and Data Use

Recommendations

- SD1.1 - Conduct core viral hepatitis surveillance to assess the burden of viral hepatitis disease and its comorbidities and disseminate findings to the public, providers, and policymakers
- SD1.2 - Enhance local surveillance capacity, quality, and data use
- SD1.3 - Enhance state surveillance capacity, quality, and data use
- SD1.4 - Support viral hepatitis research and development

SD2. Enhance Primary Prevention and Education

Recommendations

- SD2.1 - Develop health promotion and awareness strategies for educating the public and persons at risk about viral hepatitis and its risk factors
- SD2.2 - Promote vaccination against hepatitis A and hepatitis B for susceptible persons at high risk for viral hepatitis
- SD2.3 - Increase access to safe injection equipment, medication assisted treatment, and other services for preventing hepatitis C among drug users
- SD2.4 - Integrate viral hepatitis prevention services into non-healthcare settings through training of public health and community providers
- SD2.5 - Improve primary care providers and other clinicians' understanding and adherence to national viral hepatitis prevention, screening, testing, and clinical management guidelines
- SD2.6 - Prevent viral hepatitis transmission in health care and commercial settings
- SD2.7 - Promote viral hepatitis awareness among local, state, and federal policymakers and inform viral hepatitis-related policies

SD3. Improve Quality and Outcomes along the Hepatitis B and Hepatitis C Care Cascades

Recommendations

- SD3.1 - Use standardized viral hepatitis-related prevention and care quality metrics to assess quality and outcomes along the hepatitis B and hepatitis C prevention and care cascades in California
- SD3.2 - Develop and implement pilot initiatives to improve viral hepatitis screening, testing, and linkages to care in primary care settings
- SD3.3 - Support viral hepatitis screening, testing, and linkages to care in public health and community-based settings
- SD3.4 - Support viral hepatitis prevention, screening, testing, and linkages to care services for people engaged in drug treatment
- SD3.5 - Support viral hepatitis prevention, screening, testing, and linkages to care services for people who are incarcerated or returning from prisons and jails to the community
- SD3.6 - Identify and address structural barriers to improving outcomes along the hepatitis B and hepatitis C care cascades

II. BACKGROUND: VIRAL HEPATITIS OVERVIEW

There are many causes of hepatitis, or inflammation of the liver, such as alcohol, dietary fat, environmental toxins, and viruses. Hepatitis A virus (HAV), hepatitis B virus (HBV), and hepatitis C virus (HCV) are the most common forms of viral hepatitis in the United States. HBV and HCV are distinct from HAV in that they are blood-borne and can cause long-term liver disease and liver cancer. In contrast, hepatitis A infections are only acute (short-term). Recent infection with any of these viruses can cause similar acute symptoms: yellowing of the skin or eyes (jaundice), fatigue, dark urine, abdominal pain, loss of appetite, and nausea. Blood tests are required to determine with which type of viral hepatitis a person is infected. Hepatitis A and hepatitis B infections are both preventable by vaccination; there is no vaccine against hepatitis C.*

Hepatitis B

In 2015 (the most recent year for which national acute viral hepatitis data are available), 3,370 acute hepatitis B cases were reported in the United States, and an estimated 21,900 new infections occurred nationwide when accounting for under-reporting and asymptomatic infections.⁵ In California, 160 cases of acute hepatitis B cases were reported in 2015; however, the true number of infections was likely higher due to the asymptomatic nature of infection. (CDC estimates the number of actual acute hepatitis B cases is 6.48 times the number of reported cases in a given year.) The national rate of incident cases of acute hepatitis B infection has fluctuated in recent years, initially decreasing due to routine vaccination of infants and at-risk adults before increasing due to rising rates of injection drug use. However, 9,833 cases of chronic hepatitis B infection were newly reported in California in 2013 (the most recent year for which state-level chronic hepatitis B data are available), contributing to the more than 255,000 cases of chronic hepatitis B infection reported since reporting began in 1989.² In 2013, females ages 25-34 had the highest rate of newly reported chronic hepatitis B among all females, while males ages 35-64 had the highest rates among all males.

From 2009 to 2013, Asian Americans and Pacific Islanders (AAPIs) were disproportionately affected by chronic hepatitis B, representing between 66 and 71 percent of newly reported chronic hepatitis B cases with known race/ethnicity.—a significant racial disparity given that AAPIs constitute only 13.8 percent of the state population. This is consistent with national estimates, where AAPIs account for more than half of all chronic hepatitis B infections nationwide, and with historical disease trends. AAPIs are over-represented among chronic hepatitis B infections because in many Asian countries and most of the Pacific Islands up to 15 percent of the population has chronic hepatitis B infection.⁶ African Americans/Blacks were slightly overrepresented among chronic hepatitis B cases in 2013, composing 6.0 percent of the

* This plan addresses hepatitis A prevention among persons living with or at risk for hepatitis B and hepatitis C infection, which cause significant morbidity in California. Foodborne illness prevention and water safety are important public health concerns that are beyond the scope of this plan.

state population but 6.5 percent of hepatitis B cases with known race/ethnicity. All other racial/ethnic groups were underrepresented or proportionally represented among chronic hepatitis B infections in California.

Populous local health jurisdictions (Los Angeles, Santa Clara, San Diego, San Francisco, and Sacramento, in descending order) had the highest numbers of newly reported chronic hepatitis B infections in 2013, which is to be expected due to their overall population size and/or the size of their AAPI population. These five jurisdictions accounted for 72.8 percent (n=7,154) of chronic hepatitis B infections reported in 2013. Case rates, which account for population size, were highest in many of the same jurisdictions in 2013, including San Francisco, Santa Clara, Sacramento, San Mateo, and Pasadena, in descending order.

HBV may be transmitted when either blood or body fluids (e.g., semen, vaginal fluids) from an infected person enter the skin or mucous membranes of a person who is not immune to HBV,⁷ such as through sexual contact, sharing injection drug use equipment, or from mother to child during childbirth. HBV can also be transmitted through occupational needle sticks or sharps exposures and through sharing household items contaminated with blood (e.g., razors or toothbrushes).

HBV transmission during childbirth can be prevented by administering hepatitis B immunoglobulin and HBV vaccine to the infant at birth, followed by completion of a full HBV vaccine series and post-vaccination serologic testing, as recommended by CDC and the Advisory Committee on Immunization Practices (ACIP).⁸ To improve health outcomes of persons living with or at risk for chronic hepatitis B infection, CDC also issued recommendations in 2008 to guide HBV testing and public health management.⁹ These guidelines stress: (1) routine testing and vaccination of persons at high risk for HBV infection (e.g., all persons born in countries with an HBV prevalence of two percent or higher; U.S-born persons not vaccinated as infants whose parents were born in countries with HBV prevalence of eight percent or higher; injection drug users (IDUs); men who have sex with men (MSM); persons with unexplained elevated liver enzymes, and sexual, needle-sharing, and household contacts of infected persons), (2) educating patients on liver self-care (e.g., reducing intake of alcohol and other liver toxins), (3) vaccinating contacts who are susceptible to HBV, (4) linking persons with chronic hepatitis B infection to health care, and (5) lifelong monitoring of persons with chronic hepatitis B infection to assess progression of liver disease or liver cancer and response to treatment, if indicated. Although there is no cure for chronic hepatitis B infection, antiviral medications are available to slow the progression of liver disease.

Hepatitis C

In 2015, 2,436 acute hepatitis C infections were reported in the United States, and an estimated 33,900 new infections occurred nationwide (after accounting for underreporting and asymptomatic infections because most acute hepatitis C infections are asymptomatic and go undetected).¹⁰ In California, 59 cases of acute hepatitis C infection were reported in 2015; however, the true number of infections was likely much

higher due to the asymptomatic nature of infection. (CDC estimates the number of actual acute hepatitis C cases is 13.9 times the number of reported cases in a given year.) In addition, 33,748 cases of chronic hepatitis C infections were newly reported in California in 2015 (the most recent year for which chronic viral hepatitis data are available), contributing to the nearly 600,000 cases of chronic hepatitis C infection reported since reporting began in 1994.² In 2015, the majority (52 percent) of newly reported chronic hepatitis C infections in California were among persons born during 1945-1965, the “baby boomer” birth cohort. From 2007 to 2015, rates of newly reported chronic hepatitis C infection increased 40 percent among males ages 15-19; 55 percent among males ages 20-29; and 37 percent among females ages 20-29 years.

White, African American/Black, and American Indian/Alaska Native persons in California continued to be disproportionately affected by chronic hepatitis C in 2015: Whites represented 40 percent of the general population in California, but 60 percent of newly reported chronic hepatitis C cases; African Americans/Blacks represented 6 percent of the general population in California, but 12 percent of newly reported chronic hepatitis C cases; and American Indian/Alaska Natives were 0.5 percent of the general population but 1.2 percent of newly reported chronic hepatitis C cases. Males had approximately twice the rate of newly reported chronic hepatitis C infections as females.

Populous local health jurisdictions (Los Angeles, San Diego, Orange, Sacramento, and San Bernardino in descending order) had the highest numbers of newly reported chronic hepatitis C infections in 2015, which is to be expected due to their population size. These five jurisdictions composed 47.9 percent (n= 16,178) of chronic hepatitis C infections reported in 2015. However, the jurisdictions with the highest case rates, which account for population size, were mostly rural. In 2015, Humboldt County had the highest rate of newly reported chronic hepatitis C infections, followed by Lassen, Del Norte, San Mateo, and Siskiyou counties. These jurisdictions accounted for 5.3 percent (n= 1,790) of all newly reported chronic hepatitis C infections in 2015.

HCV is primarily transmitted when blood from an infected person enters through the skin of an uninfected individual, primarily through sharing of syringes and injection drug use equipment.¹¹ Prior to 1992, when routine screening of the national blood supply was implemented, HCV was most commonly transmitted through blood transfusions and organ transplants; however, these exposures are now extremely rare. Less frequently, HCV exposures occur through needle stick injuries and failures to adhere to infection control practices in healthcare settings, birth to an HCV-infected mother, and sharing items contaminated with blood (e.g., razors). Having a STD or HIV, rough sex or sex with multiple partners appears to increase a person’s risk of hepatitis C.¹² HCV transmission has been reported through tattooing in prisons, where persons giving or receiving tattoos lack access to sterile tattooing equipment.¹³

The complications of chronic hepatitis C infection can be prevented or mitigated by early detection and treatment. In the absence of an HCV vaccine, CDC recommends primary prevention activities, including screening and testing blood donors, testing persons at risk, and providing them with risk-reduction counseling (including regarding safer

injection practices), and consistently practicing infection control in healthcare settings.¹⁴ Syringe exchange and medication assisted drug treatment (such as buprenorphine) have also been shown to reduce HCV transmission risk among IDUs when offered in combination, and recent modeling studies suggest that offering HCV treatment could help reduce the population-level HCV prevalence among IDUs.^{15,16}

Persons at risk of hepatitis C infection (and recommended for HCV screening) include: (1) those who have ever injected drugs, even if it was only once many years ago, (2) patients who have ever received long-term hemodialysis, (3) recipients of blood transfusions or solid organ transplants before 1992, (4) recipients of clotting factor concentrates made before 1987, (5) healthcare workers after needle stick injuries involving HCV-positive blood, (6) all persons with HIV infection, and (7) children born to HCV-infected mothers.¹⁷ Due to the risk of sexual HCV transmission among persons with HIV, CDC recommends at least annual HCV screening HIV-positive MSM.¹⁸ CDC also recommends one-time testing for all persons born from 1945 through 1965, without prior ascertainment of risk.¹⁹ All persons identified with chronic hepatitis C infection should be vaccinated against hepatitis A and hepatitis B (if susceptible), counseled to reduce consumption of alcohol and other liver toxins, and linked to appropriate hepatitis C care.²⁰ Hepatitis C can be cured through direct-acting antiviral medications, but HCV clearance does not result in immunity against future hepatitis C infection.

III. INTRODUCTION

Chronic viral hepatitis is a growing public health problem in California and nationwide, and is the leading cause of liver disease, liver cancer, and liver transplants. Between 3.5 and 5.3 million Americans have chronic hepatitis B or hepatitis C infection.¹ The long-term health implications and healthcare costs of HBV and HCV infections are substantial. In California, there were more than 30,000 hospitalizations in 2010 for liver disease, liver cancer, or liver transplant-related treatments among patients with hepatitis B or hepatitis C infection. Hospitalization charges for these patient stays totaled more than \$2.3 billion.²¹ About one-third of those charges to California's Medicaid program (Medi-Cal). Approximately two-thirds of people with chronic hepatitis B and more than half (55 percent) of people with chronic hepatitis C are unaware of their infection.³ Without early diagnosis and treatment, one in four people with chronic hepatitis B infection will die from liver disease. Since 2007, the annual number of deaths due to hepatitis C infection nationwide has surpassed those due to HIV.⁴ It is unknown exactly how many people in California are living with chronic viral hepatitis; however, national estimates adjusted to include high risk populations suggest there are approximately 360,000 persons living with chronic hepatitis B infection in California and approximately 400,700 persons with chronic hepatitis C infection.²

In 2010, CDPH and its community partners released the *California Adult Viral Hepatitis Prevention Strategic Plan, 2010-2014*. The plan outlined a coordinated approach to preventing viral hepatitis transmission and reducing the costs and consequences of hepatitis B and hepatitis C-related liver disease and complications in California. The plan called for three strategic directions: 1) Improving Surveillance and Data Use; 2) Educating the Public, Providers, and Policymakers; and 3) Targeting and Integrating Services and Building Infrastructure.

CDPH and its community partners have made tremendous progress in implementing many of the plan's recommendations.²² Highlights include developing:

- The first-ever chronic viral hepatitis surveillance report for California;
- The first statewide guide to referrals for viral hepatitis prevention services in California (accessible at <https://www.calhep.org/referral-guide>);
- A hepatitis B and hepatitis C screening toolkit for primary care providers;
- Guidelines for implementing rapid HCV testing in non-healthcare settings; and
- Community-based models for HBV and HCV testing and linkages to care.

See **Appendix B** for more information on current CDPH viral hepatitis prevention efforts and **Appendix C** for a glossary of terms used throughout the strategic plan.

Despite these advances, many challenges remain. Most people with chronic viral hepatitis still do not know they are infected, in part because recommendations for routine screening have not been fully implemented and because chronic viral hepatitis may not cause symptoms until advance liver damage occurs. For those who are aware of their infection, access to care remains difficult, particularly for individuals who are low-income or uninsured. Many health professionals lack experience screening their patients for chronic viral hepatitis, interpreting HBV and HCV-related blood tests or

treating these infections. Organizations seeking to prevent viral hepatitis often have limited resources and must balance competing priorities in a rapidly changing healthcare landscape.

At the same time, changes in the healthcare landscape have created multiple windows of opportunity for preventing viral hepatitis and reducing its costs and consequences in California and nationally. The passage of the Patient Protection and Affordable Care Act (ACA) in 2010 paved the way for increased preventive services and health care by expanding coverage to people with low incomes, prohibiting insurance discrimination based on pre-existing conditions, and requiring that select preventive services be offered with no patient cost-sharing, including those rated “A” or “B” by the U.S. Preventive Services Task Force (USPSTF). This requirement gained added significance when USPSTF granted “A” or “B” ratings to HCV screening for persons born during 1945-1965, persons who have ever injected drugs, and other persons at risk (in 2013), and to HBV screening for persons born in countries where HBV is endemic and other at high risk (in 2014).²³ (See **Appendix D** for more information the implications of ACA for people living with and at risk for viral hepatitis.)

In 2010, the Institute of Medicine (IOM) issued a comprehensive report, *Hepatitis and Liver Cancer: A National Strategy for Prevention and Control of Hepatitis B and C*, which described low levels of viral hepatitis awareness among the public and healthcare providers, and provided recommendations to help strengthen disease surveillance, improve knowledge and awareness of viral hepatitis among the public and providers, and increase access to and delivery of hepatitis A and hepatitis B vaccination, and hepatitis B and hepatitis C prevention and care services.²⁴ In response to the IOM report, the U.S. Department of Health and Human Services (HHS) issued the 2011-2013 *Action Plan for the Prevention, Care, and Treatment of Viral Hepatitis*, which has since been updated for 2014-2016 and for 2017-2020.²⁵ These plans have enhanced federal efforts to address viral hepatitis, such as through new funding announcements that include a viral hepatitis component.³ In addition, CDC has launched national hepatitis C (Know More Hepatitis) and hepatitis B (Know More Hepatitis B)-specific public awareness campaigns and funded community-based hepatitis B and hepatitis C testing and linkages to care programs, including several programs in California, increasing their reach among members of the general public and among persons at risk.

Finally, recent years have seen a revolution in treatments for hepatitis C infection, with the U.S. Food and Drug Administration approval of treatment regimens for hepatitis C infection that do not require interferon, have significantly higher rates of virologic cure (>90 percent vs. ~50 percent), and are shorter in duration and easier to tolerate than previous regimens. The high cost of these medications has created unexpected barriers to treatment for some individuals, but the marketplace is rapidly changing and some of these barriers may subside as additional drugs become available, producing competition and lowering costs.

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 make recommendations for a coordinated approach to prevent the transmission of viral hepatitis and limit the progression and complications of chronic hepatitis B and hepatitis C in California over the next five years. This plan builds upon the great work that many dedicated organizations and individuals have been doing for many years to increase viral hepatitis awareness, deliver hepatitis A and hepatitis B vaccination and hepatitis B and hepatitis C testing to at-risk adults, prevent viral hepatitis transmission, train healthcare professionals, and increase access to care for all who need it.

During a daylong meeting held September 11, 2014 in Pomona, California, more than 50 representatives from a range of State agencies, local health departments (LHDs), community-based organizations (CBOs), medical and professional membership organizations, health plans, health systems, pharmacies, laboratories, drug treatment programs, researchers, and others came together to answer the following question: *What are the critical outcomes and elements you want to see in place for viral hepatitis prevention in five years?*

Meeting participants discussed the success of the 2010 viral hepatitis prevention strategic plan; identified lessons learned, strengths, challenges, and opportunities; developed a renewed practical vision; shared ideas for achieving that vision; and identified new strategic directions and action steps. The Center for Collaborative Planning facilitated the meeting, which also included remarks by the Chief of the CDPH DCDC, Dr. James Watt and the Director of Communicable Disease Control and Prevention for Los Angeles County, Dr. Robert Kim-Farley.

Following the viral hepatitis prevention strategic planning meeting, Ms. Rachel McLean, MPH, Chief, STD Control Branch, Office of Viral Hepatitis Prevention (OVHP) summarized its proceedings and outcomes in a draft "Viral Hepatitis Strategic Framework," which was distributed to meeting participants, other community partners, and their constituents for comments and feedback. (The California Viral Hepatitis Coordinating Committee, which coauthored this plan, comprises the strategic planning meeting participants and other community partners, including members of the California Viral Hepatitis Clinical Task Force, which advises CDPH on clinical matters.)

The strategic planning meeting, along with literature reviews, feedback from California Viral Hepatitis Coordinating Committee members and other subject matter experts, and consultation with California Department of Health Care Services and the California Department of Corrections and Rehabilitation (CDCR) informed the development of the updated California Viral Hepatitis Prevention Strategic plan for 2016-2020.

Mission, Goals, and How to Use This Plan

Mission

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

A. Primary Prevention:

- Reduce the number of new hepatitis B and hepatitis C infections

B. Secondary Prevention:

- Identify acute and chronic cases of hepatitis B and hepatitis C among individuals who do not know they are infected
- Increase referrals and linkages to care for persons who are chronically infected with hepatitis B and hepatitis C

C. Tertiary Prevention:

- Reduce hepatitis B and hepatitis C infection-related complications and mortality of persons living with chronic viral hepatitis infection

How to Use This Plan

This plan outlines three key strategic directions, along with recommendations, action steps, potential partners, and evaluation measures for achieving the goals of this plan, and reflects the contributions of a diverse group of partners from across California. CDPH may lead efforts to implement some of the plan's recommendations, and will use the plan to inform its national, state, and local partnerships. However, some of the plan's recommendations may be better suited for implementation at the state or local level by health plans, medical and professional associations, LHDs, CBOs or other groups. This plan should help these groups to assess what work needs to be done and how they can contribute their particular skills and resources to this effort.

Some users of this plan may choose to convene an inter-organizational, multi-disciplinary group to review the plan as a whole, decide which of its members can best tackle a particular set of recommendations and action steps, and identify resources to implement those action steps. (See **Table 1** for a list of potential community partners; **Appendix E** for matrix of potential collaborative partners for specific recommendations in the plan; and **Appendix F** for suggestions on what you and other partners can do to support this plan.) Other users of this plan may limit their focus to only those recommendations they can implement with existing resources within their individual organization. Either way, everyone has a role to play in making this plan a success.

Table 1: Potential Collaborative Partners

Federal Agencies

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

State Agencies

- California Department of Public Health
- California Department of Health Care Services
- California Department of Corrections and Rehabilitation
- California Department of Education

Local Agencies

- City and county government
- Local health departments
- County behavioral health departments
- County medical services programs
- Sheriff's departments
- Community colleges

Service Agencies and Professional Associations

- Medical schools, medical associations, and other professional associations
- Community health centers and rural health clinics, including those serving AAPI communities
- Alcohol and drug treatment programs
- Hospitals
- Academic medical centers
- Managed care organizations
- Pharmaceutical companies
- Pharmacies
- Private and public health laboratories
- Syringe exchange programs
- Faith-based organizations

Individuals and Community Groups

- Individuals living with and at risk for hepatitis B, hepatitis C, and HIV co-infection
- Members of local, statewide, and national hepatitis B and hepatitis C awareness groups
- Community planning groups

IV. STRATEGIC DIRECTIONS AND RECOMMENDATIONS

SD1. Strengthen Surveillance Quality and Data Use

A. Practical Vision

- An accurate epidemiological profile of viral hepatitis morbidity, mortality, costs, consequences, and care in California

B. Recommendations and Action Steps

SD1.1 – Conduct core viral hepatitis surveillance to assess the burden of viral hepatitis disease and its comorbidities and disseminate findings to the public, providers, and policymakers

- a. Collect information on the number and demographics of newly reported acute and chronic viral hepatitis cases in California and maintain chronic hepatitis B and chronic hepatitis C surveillance registries.
- b. Perform analyses and targeted case follow-up to identify emerging trends in special populations, such as increases in hepatitis C among children, youth under age 25, and women of childbearing age.
- c. Match data from chronic viral hepatitis registries with data from other sources (e.g., birth and death records, HIV and cancer registries, and hospitalization records), to develop population-level estimates of viral hepatitis prevalence, morbidity, mortality, and coinfection in California.
- d. Conduct geographic information systems (GIS) analysis to map the distribution (e.g., by county, zip code, metropolitan service area, and/or census tract) of viral hepatitis morbidity to identify gaps and disparities.
- e. Prepare fact sheets, reports, and interactive open data tools and disseminate them to the public, providers, and policymakers.
- f. Use surveillance findings to inform targeted local viral hepatitis prevention initiatives and updated preventive services guidelines.

SD1.2 – Enhance local surveillance capacity, quality, and data use

- a. Support LHD capacity to conduct core viral hepatitis surveillance functions, including data entry (where paper records are still received), data quality assurance, data analysis, development of local epidemiological profiles, case follow-up and linkages to care for high priority populations, case investigations (such as in healthcare associated infection outbreaks), and special projects.
- b. Explore and implement policy and technical approaches for facilitating inter-jurisdictional data-sharing for chronic viral hepatitis infection and other reportable diseases that have multiple laboratory test results and case reports for individuals across multiple jurisdictions over time.
- c. Develop data security policies, data-sharing agreements, tracking systems, and infrastructure for using viral hepatitis surveillance data to ensure people with chronic viral hepatitis infection are linked to care, and reengaged in care if they are out of care.

SD1.3 – Enhance state surveillance capacity, quality, and data use

- a. Maintain updated guidance for healthcare providers, LHDs, and laboratories on reporting viral hepatitis test results and case reports, including through the California Reportable Disease Information Exchange (CalREDIE) system.*
- b. Continue enrollment of laboratories into electronic laboratory reporting (ELR) in CalREDIE, and move towards all-electronic communicable disease reporting by laboratories and providers.
- c. Collaborate with reporting providers, LHDs, and laboratories to improve data quality, completeness, and timeliness.
- d. Develop a mechanism for LHDs to access historical surveillance data to determine whether a case has been previously reported.
- e. Explore and implement policy and technical solutions for reducing data duplication in CalREDIE.
- f. Develop and implement strategies for streamlining viral hepatitis surveillance data processes, such as by applying the CDC case definition to laboratory reports autoimported through CalREDIE/ELR.
- g. Collaborate with health information exchanges, health systems laboratories, and others to obtain key data elements (e.g., patient, address, pregnancy status and race/ethnicity), which are needed for robust surveillance but often missing from laboratory reports.
- h. Explore the feasibility of collecting negative viral hepatitis-related test results to facilitate acute viral hepatitis case investigations and to track viral hepatitis screening and testing rates in health care settings.

SD1.4 – Support viral hepatitis research and development

- a. Collaborate with public universities and other research institutions to develop an evidence base for the comparative effectiveness and cost effectiveness of structural, social, behavioral, and biomedical interventions to prevent HBV and HCV transmission among persons at high risk for viral hepatitis; increase delivery and acceptability of viral hepatitis preventive services in primary care and community-based settings; and facilitate meaningful linkages to care.
- b. Facilitate information-sharing among viral hepatitis researchers, providers, and CBOs regarding emerging evidence and best practices, such as through a viral hepatitis clinical trials network and periodic webinars, meetings, and conferences.

* The California Reportable Disease Information Exchange (CalREDIE) is a secure, web-based disease reporting and surveillance system implemented by the California Department of Public Health for healthcare providers, local health departments, and public and private laboratories.

SD2. Enhance Primary Prevention and Education

A. Practical Vision

- Increased understanding of viral hepatitis risk factors and prevention strategies among the public and persons at risk
- Statewide hepatitis A and hepatitis B vaccination of at-risk populations
- Statewide access to effective prevention strategies for IDUs and other persons at increased risk for hepatitis C
- Increased provider knowledge of viral hepatitis prevention and care standards and access to adequate prevention and care resources
- Increased awareness among local, state, and federal policymakers of viral hepatitis costs, complications, and effective prevention strategies

B. Recommendations and Action Steps

SD2.1 - Develop health promotion and awareness strategies for educating the public and persons at risk about viral hepatitis and its risk factors

- a. Maintain the dedicated CDPH viral hepatitis program web page to serve as an information clearinghouse for viral hepatitis health information, training materials, prevention guidelines, and educational resources for the public, health departments, and providers.
- b. Promote public viral hepatitis awareness by distributing public service announcements, social media posts, posters, fact sheets, and other materials from CDC's viral hepatitis awareness campaigns.
- c. Develop a statewide, coordinated response for annual Hepatitis Testing Day (May 19) and World Hepatitis Day (July 28) events.
- d. Make available medically accurate, age-appropriate, viral hepatitis-related health education materials to inform sex and drug use prevention education in schools upon request and allow for their use.
- e. Bolster efforts to reduce misuse of prescription drugs among adolescents and young adults and to prevent young people from transitioning from oral drug use to injection drug use.
- f. Maintain an up-to-date, statewide, web-based viral hepatitis services referral guide featuring information on where to find hepatitis A and B vaccination, hepatitis B and hepatitis C testing, syringe access, education and support groups, and linkages to care.
- g. Promote outreach and enrollment into Covered California and Medi-Cal, along with patient navigation and care coordination, for low-income and "hard to reach" populations, including homeless, substance-using and non-English speaking individuals.

Table 2: Considerations for Developing Targeted Prevention Messages for Persons At-Risk for Viral Hepatitis

- | |
|--|
| <ul style="list-style-type: none">• Collaborate with affected communities to identify culturally sensitive, linguistically appropriate, and data-driven messages.• Emphasize the overall health and wellness of the community, 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. |
|--|

SD2.2 – Promote vaccination against hepatitis A and hepatitis B for susceptible persons at high risk for viral hepatitis

- a. Assist LHDs in establishing billing systems, contracts with local health plans, and other policies and infrastructure for obtaining compensation for vaccines delivered to insured (and uninsured) individuals.
- b. Identify and reduce logistical barriers for primary care providers to stock, administer, and obtain adequate reimbursement for childhood and adult immunizations and supplies (including vaccine storage, syringes and other equipment, and personnel).
- c. Promote hepatitis B vaccine delivery in community settings serving persons at risk for viral hepatitis, such as LHDs, STD clinics, jails, syringe exchange programs (SEPs), and drug treatment programs.
- d. Encourage hepatitis A and hepatitis B vaccination during HIV/STD partner services and promotion of HIV pre-exposure prophylaxis (PrEP) and other preventive services for MSM.
- e. Promote use of the California Immunization Registry to track vaccine dose series completion among children and adults.

SD2.3 - Increase access to safe injection equipment, medication assisted treatment, and other services for preventing hepatitis C among drug users

- a. Identify and reduce structural barriers to access to syringes and other safe drug-using equipment for IDUs.
- b. Encourage pharmacists to sell syringes without a prescription to adults 18 years of age and older, as permitted by California law.²⁶
- c. Distribute clean syringes and other safe injection and safe disposal equipment in primary care clinics, LHDs, SEP, drug treatment programs, and other settings so that every IDU has sufficient new equipment for every injection.
- d. Convene SEP to assess the local burden of HIV and viral hepatitis among IDUs and share best practices for preventing HIV and viral hepatitis infections among IDUs.
- e. Encourage the use of medication assisted treatment, including opioid replacement therapies, such as buprenorphine and methadone.
- f. Explore policy options for reducing misuse of prescription opioids.²⁷

SD2.4 - Integrate viral hepatitis prevention services into non-healthcare settings through training of public health and community providers

- a. Promote viral hepatitis service integration at the meetings and conferences of coalitions, professional associations, and other groups serving persons living with or at risk for viral hepatitis.
- b. Make available curricula on viral hepatitis and cultural competency for community health workers and other non-healthcare personnel serving persons living with or at risk for viral hepatitis infection.²⁸
- c. Expand training opportunities for HIV test counselors performing integrated HIV/HCV testing in non-healthcare settings.

- d. Make available in-person and web-based trainings on viral hepatitis prevention and service integration to service providers, including providers in HIV, STD, tuberculosis (TB), alcohol and drug treatment, mental health, corrections, immigrant health, refugee health, and other fields serving at-risk individuals.²⁹
- e. Host forums for service providers and local health officials to share experiences integrating viral hepatitis prevention, education, testing, vaccination, and care into their services.
- f. Facilitate cross-training among HIV, STD, TB, and viral hepatitis programs to learn about each other's work, foster collaboration, and promote integrated prevention messages.
- g. Facilitate cross-training with prevention providers in behavioral health, minority health, and immigrant and refugee health fields.

Table 3: Considerations for Cross-Training Health Professionals

<u>Targeted Providers</u>	<u>Tailored Message</u>
Behavioral Health	Enrollment in drug treatment is an ideal opportunity for viral hepatitis prevention, screening, testing, and care. People with substance use disorders can be successfully treated for HCV infection.
Immigrant/Refugee Health	HBV infection and tuberculosis may overlap among foreign-born individuals from HBV endemic countries, such as Asian Americans and Pacific Islanders. HCV infection and tuberculosis may overlap among injection drug users in the U.S./Mexico border region.
Minority Health	AAPIs are disproportionately affected by hepatitis B and African-Americans and American Indian/Alaska Natives in California are disproportionately impacted by hepatitis C.

SD2.5 - Improve primary care providers and other clinicians' understanding and adherence to national viral hepatitis prevention, screening, testing, and clinical management guidelines

- a. Disseminate updated materials for primary care providers on viral hepatitis prevention, screening, and clinical management guidelines through the CDPH website and other media.³⁰
- b. Work with universities, medical residency programs, medical associations, and professional associations to promote viral hepatitis clinical and preventive services guidelines through medical residency curricula, free continuing medical education programs, and professional associations' publications, websites, and conferences.
- c. Expand mentoring and clinical consultation opportunities for primary care providers (particularly in rural and safety net settings) with clinicians experienced in treating chronic viral hepatitis infection, such as through warm lines, e-consultation, and telehealth services.

Table 4: Professional and Medical Associations*

American Academy of HIV Medicine
Association for the Advanced Study of Liver Diseases
American College of Physicians
Asian Pacific American Medical Students Association
California Academy of Family Physicians
California Association of Communicable Disease Controllers
California Association of Health Plans
California Association of Physician Groups
California Association of Public Health Laboratory Directors
California Conference of Local AIDS Directors
California Conference of Local Health Officers
California Immunization Coalition
California Public Health Association
California Primary Care Association
California STD Controllers Association
California Society for Addiction Medicine
County Behavioral Health Directors Association of California
Indian Health Services
Infectious Disease Society of America
Medical Board of California
Pharmacy Board of California
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 by no means exhaustive.*

SD2.6 – Prevent viral hepatitis transmission in health care and commercial settings

- a. Educate practitioners in healthcare settings, tattoo parlors, nail salons, and other settings with a potential risk of HBV or HCV transmission about infection control guidelines and standards and ensure infection control policies are updated, clearly communicated, and enforced.
- b. Disseminate federal blood-borne pathogen control standards and other infection control guidelines through medical and professional associations and other institutional networks.³¹
- c. Ensure health care workers are vaccinated against hepatitis B (unless already immune or living with chronic hepatitis B infection).
- d. Institute policies to prevent opioid diversion in healthcare settings.
- e. Report, investigate, and effectively respond to healthcare-associated hepatitis B and hepatitis C infection outbreaks.³²

SD2.7 - Promote viral hepatitis awareness among local, state, and federal policymakers and inform viral hepatitis-related policies

- a. Maintain an updated summary of viral hepatitis-related policies and laws in California and share findings with community partners.³³
- b. Provide information and technical assistance to LHDs, CBOs, and individuals living with viral hepatitis to inform their awareness efforts.
- c. Develop and expand local and statewide viral hepatitis coalitions, and connect with national viral hepatitis awareness groups.

SD3. Improve Quality and Outcomes along the Hepatitis B and Hepatitis C Care Cascades

A. Practical Vision

- All persons living with and at risk for viral hepatitis infection are aware of their status and, if infected, linked to timely, quality, affordable, and coordinated evaluation, care, and, if indicated, treatment
- Racial disparities in viral hepatitis morbidity and mortality are reduced
- Viral hepatitis prevention, control, and treatment policies and practices are evidence-based and equitable

B. Recommendations and Action Steps

SD3.1 – Use standardized viral hepatitis-related prevention and care quality metrics to assess quality and outcomes along the hepatitis B and hepatitis C prevention and care cascades in California

- a. Promote use and implementation of viral hepatitis-related quality measures in national and state-level quality improvement initiatives. (See **Appendix G** for information on viral hepatitis quality measures.)
- b. Analyze records from Medicaid and other data sources to develop baseline estimates of adherence to viral hepatitis clinical preventive services guidelines and quality metrics along the hepatitis B and hepatitis C care cascades, and rank results by local health jurisdiction, health plan, provider group, and health care provider. (See **Appendix H** for information on the hepatitis B and hepatitis C care cascades.)
- c. Identify gaps in preventive services and clinical management for vulnerable populations, including rural and medically underserved areas, uninsured individuals, undocumented immigrants, IDU, and people returning from prisons and jails to the community.
- d. Share quality measures and hepatitis B and hepatitis C care cascade assessment findings with health plans, health care providers, LHDs, and other community partners to inform quality improvement efforts.

SD3.2 – Develop and implement pilot initiatives to improve viral hepatitis screening, testing, and linkages to care in primary care settings

- a. Identify high priority geographic “hot spots” in which to pilot local quality improvement initiatives and establish partnerships with local health plans, provider groups, LHDs, and CBOs in high priority geographic areas to pilot quality improvement initiatives.
- b. Assist healthcare providers with improving outcomes along the hepatitis B and hepatitis C care cascades, such as through use of electronic health records, telehealth, team-based care, community health workers, group visits, and other innovative approaches.
- c. Partner with federal and tribal health programs, such as the Veterans Administration, Indian Health Services, and Urban Indian health clinics,

- to promote viral hepatitis screening, testing, and linkages to care for the people they serve, and ensure continuity of care across systems.
- d. Identify best practices from pilot quality improvement initiatives and disseminate tools to health plans and provider groups.
 - e. Leverage resources to replicate successful pilot quality improvement initiatives statewide.

SD3.3 - Support viral hepatitis screening, testing, and linkages to care in public health and community-based settings

- a. Assist LHDs and CBOs with integrating viral hepatitis risk assessment, screening, preventive services, and linkages to care into non-healthcare settings serving persons at risk for viral hepatitis.
- b. Promote routine HBV screening of pregnant women, and ensure vaccination of infants born to hepatitis B surface antigen (HBsAg)-positive women, along with post-vaccination serologic testing and, for infants with hepatitis B infection, linkages to long-term care.
- c. Support local capacity to provide case follow-up (e.g., testing for persons exposed to HBV, vaccination for susceptible individuals, and linkages to care for those who are infected) for HBV-infected persons, and their sexual, needle-sharing, and household contacts.
- d. Support local capacity for providing targeted case follow-up (e.g., obtaining risk and access to care information, partner notification, referrals to syringe access and drug treatment programs, and/or linkages to hepatitis C care) for persons with hepatitis C infection.
- e. Expand rapid HCV antibody testing, HCV nucleic acid testing, and linkages to care for IDUs and others at high risk for HCV in non-healthcare settings, including through implementation of hepatitis C screening and linkages to care demonstration projects.
- f. Strengthen partnerships between LHDs and CBOs performing HBV and HCV screening in non-health care settings; public health and private laboratories; and health care providers offering primary care and/or clinical management for chronic viral hepatitis infection.
- g. Assist LHDs and CBOs with developing and implementing structures for evaluating and improving the quality of their programs.

SD3.4 - Support viral hepatitis prevention, screening, testing, and linkages to care services for people engaged in drug treatment

- a. Integrate comprehensive viral hepatitis, TB, STD, and HIV prevention information into required trainings for drug and alcohol counselors.
- b. Develop policies and programs that encourage and enable alcohol and drug programs to integrate viral hepatitis risk assessment, screening, testing, vaccination, health education, linkages to care, and medication adherence support (where indicated) into their programs.

SD3.5 - Support viral hepatitis prevention, screening, testing, and linkages to care services for people who are incarcerated or returning from prisons and jails to the community

- a. Assess viral hepatitis screening, vaccination, and care policies, capacity, and gaps in state prisons and local jails.
- b. Build collaborative partnerships to increase awareness among people who are incarcerated in prisons and jails about viral hepatitis risk factors, transmission, prevention, and care (e.g., through peer education programs).
- c. Identify and leverage resources to support delivery of recommended viral hepatitis clinical preventive services for people who are incarcerated or transitioning from prisons and jails to the community.
- d. Promote continuity of care for persons transferring between institutions or returning from prison or jail to the community.
- e. Explore the feasibility of implementing strategies for preventing HBV and HCV transmission among people who are incarcerated, including among individuals who have been cured of their hepatitis C infection.

SD3.6 – Identify and address structural barriers to improving outcomes along the hepatitis B and hepatitis C care cascades

- a. Monitor local, state, and national regulations, quality measures, funding opportunities, clinical and preventive services guidelines, and other policies to ensure that they reflect emerging viral hepatitis epidemiologic data, evaluation studies, and research findings, including data specific to California.
- b. Explore policy options for ensuring access to care for those who remain uninsured post-ACA, such as undocumented adults, and “hard to reach” populations who have not yet enrolled in health coverage (e.g., IDUs, homeless individuals, and foreign-born persons).
- c. Reduce barriers to same-day delivery of physical and behavioral health services in primary care and behavioral health care settings, including as part of a multi-disciplinary team and/or health home.
- d. Explore and implement policy options for reducing the impact of drug prices and other health care costs (e.g., deductibles, copays, and coinsurance) on patient access to viral hepatitis preventive services and care, including for who remain uninsured or underinsured and who cannot afford to pay the out-of-pocket costs for their care.
- e. Reduce barriers for primary care, specialty care, and safety net providers delivering direct patient care with obtaining approvals and supporting adherence to antiviral hepatitis medications.
- f. Explore policy options for increasing timely access to primary care and specialty care, particularly for low-income individuals and persons living in rural and medically underserved areas.

APPENDIX A: VIRAL HEPATITIS PREVENTION STRATEGIC PLANNING MEETING PARTICIPANTS, SEPTEMBER 11, 2014, POMONA, CA

Last Name	First Name	Organization
Abdullah	Amirah	Santa Clara County Department of Public Health
Allerton	Michael	Kaiser Permanente, Northern California
Barger	James	Los Angeles County DPH, Substance Abuse Prevention and Control
Bauer	Heidi	California Department of Public Health, STD Control Branch
Bedell	Deborah	U.S. Centers for Disease Control and Prevention, Division of Viral Hepatitis Prevention
Brown	Donna	Prototypes Community Assessment Service Center
Brown	Carolyn	San Mateo County Health System
Carmichael	Lesley	California Correctional Health Care Services
Chan-Robison	Connie	Center for Collaborative Planning
Chang	Mimi	Asian Pacific Liver Center
Chavez	Orlando	Berkeley Free Clinic, Hepatitis Testing, Education, and Vaccination Section
Chen	Moon	University of California Davis, Comprehensive Cancer Center
Cheung	Chris	Santa Clara County Department of Public Health
Chong	Sandy	Asian Pacific Health Foundation
Civen	Rachel	Los Angeles County Department of Public Health, Acute Communicable Disease Control
Cole	Barbara	Riverside County Department of Public Health
Courtney	Braunz	HIV Education and Prevention Project of Alameda County
Donovan	John	Los Angeles County Department of Health Services, University of Southern California Medical Center
Dressner	Mark	California Academy of Family Physicians
Dunning	Laura	Los Angeles County Department of Public Health, Communicable Disease Control and Prevention
Frasure-Williams	Jessica	California Department of Public Health, STD Control Branch
Huriaux	Emalie	Project Inform, California Hepatitis Alliance
Japonda	Genevieve	San Francisco Hep B Free Campaign
Kemperman	Melissa	California Department of Public Health, STD Control Branch
Kim-Farley	Robert	Los Angeles County Department of Public Health, Communicable Disease Control and Prevention
Kuguru	Karen	Los Angeles County Department of Public Health
Kulkarni	Sonali	Los Angeles County Department of Public Health, Division of HIV and STD Programs
Lam	Jerika	Chapman University
Lapointe	Blanca	Los Angeles County Department of Public Health
Last Name	First Name	Organization

Madala	Pamela	Adventist Health
Mark	Karen	California Department of Public Health, Office of AIDS
Mattox	Loris	HIV Education and Prevention Project of Alameda County
McLean	Rachel	California Department of Public Health, STD Control Branch, Office of Viral Hepatitis Prevention
Melnick	Douglas	Los Angeles County Department of Public Health
Meschyan	Gayane	Los Angeles County Department of Public Health, Substance Abuse Prevention and Control
Morgan	Lea	San Bernardino County Department of Public Health
Neiman	Romni	California Department of Public Health, STD Control Branch
Nguyen	Lillian	University of California San Diego, Skaggs School of Pharmacy
Nguyen	Cindy	Independent Pharmacist
Nguyen	Christina (Thuy)	University of California San Diego, Skaggs School of Pharmacy
Parada	Koy	Azusa Pacific University School of Nursing
Pozza	Renee	Southern California Liver Centers
Ramers	Christian	Family Health Centers of San Diego
Ready	Joanna	Kaiser Permanente, Northern California
Tran	Binh	University of California San Diego / Asian Pacific Health Foundation
Waldman	Elaine	Los Angeles County Department of Public Health
Watt	James	California Department of Public Health, Division of Communicable Disease Control
Yee	Hal	Los Angeles County Department of Health Services
Yu	Karen	University of California San Diego, Skaggs School of Pharmacy
Zahn	Matthew	Orange County Health Services Agency

APPENDIX B: CDPH VIRAL HEPATITIS PREVENTION EFFORTS*

Numerous programs within CDPH address viral hepatitis. The DCDC STD Control Branch Office of Viral Hepatitis Prevention coordinates these efforts, facilitates the development and implementation of the viral hepatitis strategic plan, and promotes viral hepatitis service integration in primary care and community-based settings.

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

Disease Investigation

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

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

The CDPH, Center for Healthcare Quality, Health Care Associated Infections program supports LHDs in investigating healthcare-associated viral hepatitis infections and promotes infection control in healthcare settings.

Hepatitis A and Hepatitis B Vaccination

The DCDC IZB manages the California Vaccines for Children program, which provides free vaccines to healthcare providers for delivery to eligible children. IZB also manages the 317 program, which provides vaccine to eligible uninsured individuals, including children ineligible for the Vaccines for Children program and eligible adults. For more information, visit the CDPH Immunization Branch website:

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/immunize.aspx>.

Health Education

The DCDC STD Control Branch, OVHP provides viral hepatitis health information and other resources for the public and health professionals at (510) 620-3400 or the CDPH OVHP website: <https://www.cdph.ca.gov/ovhp>. OVHP also collaborates with the University of California San Francisco, STD/HIV Prevention Training Center; Pacific AIDS Education Training Center; and Viral Hepatitis Center on provider education.

Hepatitis C Testing in Non-Healthcare Settings

The Office of AIDS supports some LHDs and HIV prevention programs in providing limited HIV and hepatitis C testing, prevention, and referral services. For more information on hepatitis C testing in non-healthcare settings, including guidelines for use of the hepatitis C rapid test in these settings, visit the CDPH Office of AIDS website:

<https://www.cdph.ca.gov/Programs/CID/DOA/Pages/OAprevention.aspx>.

* CDPH program information is current as of May 2018, and may be subject to change.

Effective July 1, 2015, the California legislature allocated \$2.2 million/year for three years to establish a hepatitis C screening and linkage to care demonstration pilot project for underserved individuals living with, or at high risk for, hepatitis C infection. This pilot project is authorized for fiscal years 2015–16, 2016–17, and 2017–18. The DCDC STD Control Branch OVHP oversees implementation of this program.

Perinatal Hepatitis B Prevention

The DCDC IZB Perinatal Hepatitis B Program provides resources and technical support to LHDs for the surveillance and prevention of hepatitis B among pregnant women and infants born to women living with hepatitis B infection. For more information, visit the CDPH Perinatal Hepatitis B website:

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Perinatal.aspx>.

Service Referrals

In collaboration with CDPH, the California Hepatitis Alliance (CalHEP) provides information on viral hepatitis services referrals through the CalHEP viral hepatitis services referral guide, which can be accessed from the CalHEP website:

<https://calhep.org/referral-guide>.

Syringe Access

The Office of AIDS provides technical assistance to pharmacies regarding nonprescription syringe sales and to syringe exchange programs. For more information on syringe access in California, visit the CDPH Office of AIDS Needle Exchange and Syringe Access website:

https://www.cdph.ca.gov/Programs/CID/DOA/Pages/OA_prev_needle_exchange_syringe.aspx.

Effective July 1, 2015, the California legislature allocated \$3 million/year in state funds to support purchase of sterile hypodermic needles and syringes, and other supplies, for distribution to syringe exchange programs authorized pursuant to law.

Surveillance

The DCDC IZB monitors cases of acute hepatitis 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 disease trends. IZB also currently monitors acute hepatitis C cases to identify possible health-care associated viral hepatitis outbreaks, which are investigated in collaboration with the Healthcare Associated Infections program and OVHP.

The DCDC STD Control Branch OVHP monitors cases of chronic hepatitis B and C, maintains the chronic hepatitis B and hepatitis C disease registries, develops data reports for the public, and develops guidance for labs and providers on reporting chronic viral hepatitis, including through CalREDIE.

Treatment

The Office of AIDS, AIDS Drug Assistance Program covers hepatitis C medication costs for people living with HIV/AIDS who are eligible for the program. For more information, visit the CDPH Office of AIDS ADAP Resources website:

https://www.cdph.ca.gov/Programs/CID/DOA/Pages/OA_adap_resourcespage.aspx.

APPENDIX C: GLOSSARY OF TERMS

Accountable Care Organization: A group of doctors, hospitals, and other healthcare providers, who come together to give coordinated high quality care, avoid unnecessary duplication of services and medical errors, and spend healthcare dollars more wisely.

Action steps: Steps to be taken in order to achieve the recommendations in each of the three focus areas of the plan.

Acute hepatitis: Hepatitis infection acquired in the past six months.

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.

Care cascade: The series of steps a person with HIV, hepatitis B, or hepatitis C infection, takes from initial diagnosis through linkages to care and treatment.

Chronic hepatitis: Long-term liver inflammation, usually lasting longer than 6 months.

Cirrhosis: Extensive scarring of the liver.

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

E-consultation: A process through which a primary care clinician or other healthcare provider can use the internet or other secure electronic means to ask for clinical consultation from a specialist without requiring a face-to-face visit by the patient.

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

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

Hot spots: A geographic area or location with evidence of high prevalence of infection (e.g., HIV, STDs, or viral hepatitis) or behaviors that put people at risk for infection. Hot spots also may include geographic areas with gaps in preventive services and care.

Immunoglobulin: A concentrated solution of antibodies prepared from pooled human plasma of someone immune to a particular disease.

Meaningful use: CMS provides financial incentives to eligible providers for the “meaningful use” of certified electronic health record technology to improve patient care.

Open data: A web site where members of the public can access non-confidential public health data that are freely-available, machine-readable, and formatted according to national technical standards to facilitate visibility and reuse of published data.

Patient-centered medical home: A promising model for transforming the delivery of primary care. As defined by the Agency for Healthcare Research and Quality, the health home encompasses five attributes: comprehensive care, care oriented to the whole person, coordinated care, accessible services, and quality and safety.

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 point in time.

Strategic direction: Focus area for achieving the goals of the strategic plan.

Surveillance: Procedures used in public health to monitor disease trends; evaluate prevention strategies; and inform public health action.

Syringe exchange program: Program providing syringe dispensing and disposal, safe injection supplies, and, typically, a range of other services, including HIV and hepatitis C testing, overdose prevention education, and referrals to housing and drug treatment.

Telehealth: Use of electronic information and telecommunications technologies (such as the internet, webinars, video-conferencing), to support long-distance clinical health care, and the educating of healthcare providers and patients.

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

Warm hand-off: An approach in which a community or healthcare provider does a face-to-face introduction of a patient to the provider (e.g., behavioral health specialist, liver specialist, primary care provider) to which the individual is being referred.

APPENDIX D: AFFORDABLE CARE ACT (ACA) AND VIRAL HEPATITIS

ACA Feature	Significance for People Seeking Viral Hepatitis Preventive Services and Care
<p>Increased insurance coverage through Medicaid expansion and Covered California</p> <ul style="list-style-type: none"> • Effective January 1, 2014, expands Medi-Cal coverage to low-income Californians who earn up to 138 percent of the federal poverty level • Effective January 1, 2014, allows Californians to buy insurance via through Covered California (the state-run health benefit exchange established under ACA) • Provides subsidies for people with incomes between 138 and 400 percent of the federal poverty level to buy insurance through Covered California • Allows youth up to age 26 to stay on their parents' insurance • Offers small business incentives to provide insurance for their employees 	<p>Viral hepatitis disproportionately affects people with low incomes. Prior to ACA, low-income, childless adults were typically not eligible for Medi-Cal, and often could not afford to buy insurance on the private marketplace. As a result, 6.6 million people in California were uninsured in 2013. Post-ACA, nearly 3 million Californians enrolled in coverage through Medi-Cal or Covered California in 2014, reducing the uninsured rate by 40 percent.³⁴ Expansion also helped reduce health disparities; for example, between 2013 and 2014, the uninsured rate among working-age Latino adults dropped from 35 percent to 17 percent in California.³⁵ However, disparities in coverage remain, particularly for undocumented adults. (In July 2015, California extended Medi-Cal coverage to low-income children who are undocumented immigrants; however, except for pregnant women, undocumented adults remain ineligible for Medi-Cal coverage as of May 2016).</p>
<p>Increased access to care through consumer protections</p> <ul style="list-style-type: none"> • Prohibits denying insurance coverage to people with pre-existing conditions • Prohibits canceling insurance coverage once people get sick (“rescission”) • Prohibits annual dollar limits and lifetime dollar limits on coverage 	<p>Prior to ACA implementation, people with chronic viral hepatitis infection were at risk of being denied insurance, charged higher premiums, or kicked off of their insurance. These practices are no longer allowed. As a result, people can be screened for or diagnosed with viral hepatitis without fear of losing their health insurance coverage.</p>
<p>Improved health through investments in prevention and standardization of benefits</p> <ul style="list-style-type: none"> • Requires most health plans to provide a minimum package of ten “Essential Health Benefits,” including, among others: preventive and wellness services and chronic disease management; mental health and substance use services; prescription drugs; laboratory services; ambulatory services; and maternity, pediatric, and newborn care. • Requires health plans to provide selected preventive services with no patient cost-sharing (such as copays or coinsurance), including if the preventive service is recommended by ACIP or has received an “A” or “B” rating from the USPSTF. 	<p>Prior to ACA, coverage of various services varied by health plan. Post-ACA, many of the ten Essential Health Benefits that health plans are required to provide may be helpful to people living with or at risk for viral hepatitis. For example, maternity and newborn care are critical for preventing mother-to-child HBV transmission; and medication-assisted treatment for substance use disorders has been shown to reduce hepatitis C transmission risk among IDUs.</p> <p>Also of particular importance to viral hepatitis prevention, USPSTF has issued “A” or “B” ratings to hepatitis B and hepatitis C screening for selected groups and ACIP recommends hepatitis A and hepatitis B vaccination for selected groups. Post- ACA, those viral hepatitis preventive services recommended by USPSTF or ACIP now must be offered with no patient cost-sharing.³⁶</p>

ACA Feature	Significance for People Seeking Viral Hepatitis Preventive Services and Care
<p>Improved healthcare quality and community health through investments in infrastructure</p> <ul style="list-style-type: none"> • Encourages healthcare providers to adopt electronic health records, including through “Meaningful Use” standards and incentives • Invests in public health infrastructure, including electronic laboratory reporting, through the Prevention and Public Health Fund • Supports Federally Qualified Health Centers (FQHCs) as deliverers of comprehensive primary care to diverse communities 	<p>Currently, many patients receive fragmented care from clinicians and healthcare systems that do not coordinate care for their shared patients. This is particularly true for people receiving care from both primary care and behavioral health treatment providers. Use of electronic health records has the potential to improve care coordination for people with viral hepatitis, and to increase the quality and completeness of data collected for public health surveillance and program evaluation. In 2011, California received ACA funds to improve its viral hepatitis surveillance infrastructure, resulting in the development of chronic viral hepatitis surveillance registries and publication of the first-ever chronic viral hepatitis surveillance report for California.</p>
<p>Lowered costs through investments in best practices and other innovations</p> <ul style="list-style-type: none"> • Promotes “Patient-Centered Medical Homes” and other models for providing coordinated, streamlined care • Allows states to test innovative models to promote better care, better health, and lower costs, such as through Medicaid “waivers” (or pilot projects) and Accountable Care Organizations • Invests in comparative effectiveness research, including through the Centers for Medicare (CMS) and Medicaid Innovation and the Patient-Centered Outcomes Research Institute (PCORI) 	<p>In March 2015, California submitted a proposal (known as a Medicaid 1115 waiver) to CMS to pilot a number of initiatives with potential to benefit people with viral hepatitis. The waiver supports the inclusion of community health workers and other lay persons as part of a multi-disciplinary health team in a patient-centered health home, which can be critical for ensuring access to and engagement in care for hard-to-reach populations, including foreign-born adults, non-English-speakers, chronically homeless people, and IDUs. The waiver covers health homes and other supportive services for people who are chronically homeless, a population highly affected by viral hepatitis.</p> <p>In 2015, PCORI invested \$50 million in hepatitis C cost-effectiveness research.³⁷</p>

* ACA has many complex features and its implementation continues to evolve; this table provides a brief overview of some of those features. For more information on ACA and its features, visit the federal healthcare website: <https://www.healthcare.gov/>. For information on ACA as it relates to HIV, STDs, TB, and viral hepatitis, visit the CDC Prevention through Healthcare Index website: www.cdc.gov/nchhstp/PreventionThroughHealthCare/Index.htm. For more information enrolling for coverage in California, visit the Covered California website: www.coveredca.com.

APPENDIX E: COLLABORATIVE PARTNERS BY STRATEGIC DIRECTION

Strategic Direction (SD) / Recommendation	Potential Collaborative Partners										
	CDPH	Other State Agencies (e.g., DHCS, CDCR)	Local Health Departments	County Jails, County Behavioral Health	CBOs, Hepatitis Awareness Groups	Drug Treatment Programs, SEPs	Primary Care Providers, Provider Groups	Medical/Professional Associations, Educators	Health plans	Laboratories, Pharmacies	Academic Specialists, Researchers
SD1. Strengthen Surveillance Quality and Data Use											
SD1.1 - Conduct core viral hepatitis (VH) surveillance to assess the burden of VH disease and its comorbidities and disseminate findings to the public, providers, and policymakers	X	X	X				X			X	X
SD1.2 – Enhance local surveillance capacity, quality, and data use	X		X		X		X		X	X	
SD1.3 – Enhance state surveillance capacity, quality, and data use	X		X				X			X	X
SD1.4 – Support VH research and development	X		X		X		X		X		X
SD2. Enhance Primary Prevention and Education											
SD2.1 – Develop health promotion and awareness strategies for educating the public and persons at risk about VH and its risk factors	X	X			X				X		
SD2.2 – Promote vaccination against hepatitis A and hepatitis B for susceptible persons at high risk for VH	X	X	X	X	X	X	X	X	X	X	
SD2.3 – Increase access to safe injection equipment, medication assisted treatment, and other services for preventing hepatitis C among drug users	X		X	X	X	X	X	X	X	X	X
SD2.4 – Integrate VH prevention services into non-healthcare settings through training of public health and community providers	X	X	X	X	X	X		X			
SD2.5 – Improve primary care providers and other clinicians’ understanding and adherence to national VH prevention, screening, testing, and clinical management guidelines	X	X					X	X	X	X	X
Key: CDCR=California Department of Corrections and Rehabilitation; CDPH=California Department of Public Health; CBO=Community-Based Organization; DHCS=Department of Health Care Services; SD=Strategic Direction; SEP=Syringe Exchange Program; VH=Viral Hepatitis											

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SD2. Enhance Primary Prevention and Education											
SD2.6 – Prevent VH transmission in health care and commercial settings	X		X				X	X	X		
SD2.7 – Promote VH awareness among local, state, and federal policymakers and inform VH-related policies	X		X		X			X			
SD3. Improve Quality and Outcomes along the Hepatitis B and Hepatitis C Care Cascades											
SD3.1 - Use standardized VH-related prevention and care quality metrics to assess quality and outcomes along the hepatitis B and hepatitis C prevention and care cascades in California	X	X	X				X	X	X		
SD3.2 - Develop and implement pilot initiatives to improve VH screening, testing, and linkages to care in primary care settings	X	X	X				X	X	X	X	X
SD3.3 - Support VH screening, testing, and linkages to care in public health and community-based settings	X	X	X	X	X	X	X			X	
SD3.4 - Support VH prevention, screening, testing, and linkages to care services for people engaged in drug treatment	X	X		X		X		X			
SD3.5 - Support viral hepatitis prevention, screening, testing, and linkages to care services for people who are incarcerated or returning from prisons and jails to the community	X	X	X	X	X	X	X				
SD3.6 - Identify and address structural barriers to improving outcomes along the hepatitis B and hepatitis C care cascades	X	X			X		X	X	X	X	X
Key: CDCR=California Department of Corrections and Rehabilitation; CDPH=California Department of Public Health; CBO=Community-Based Organization; DHCS=Department of Health Care Services; SD=Strategic Direction; SEP=Syringe Exchange Program; VH=Viral Hepatitis											

APPENDIX F: WHAT YOU CAN DO TO SUPPORT THIS PLAN

Implementation of the California Viral Hepatitis Prevention Strategic Plan, 2016-2020, will not be possible without the support of state, local, and community-based partners. Below is a sampling of the many ways that you can support this plan. Feel free to add your own ideas or make suggestions!

If you are a member of the public or living with or at risk for viral hepatitis

- Talk to your doctor about getting tested for viral hepatitis and, if you are infected, about how to care for your liver and be evaluated for treatment
- Participate in local and statewide viral hepatitis awareness efforts
- Share your story with local, state, and federal policymakers
- _____

If you are a local health department

- Establish mechanisms for receiving compensation from third-party payers for vaccinating individuals who are insured against hepatitis A and hepatitis B and for providing vaccination to those who remain uninsured
- Integrate hepatitis B vaccination into pre-exposure prophylaxis services for men who have sex with men and others at high risk for HIV and hepatitis B infection
- Identify strategies to link hepatitis B-infected persons and their sexual and household contacts to HBV screening, vaccination, and care
- Integrate hepatitis C testing into HIV testing programs in non-healthcare settings serving injection drug user and others at high risk for hepatitis C
- _____

If you are a community-based organization

- Educate all staff with client contact about viral hepatitis transmission and the importance of integrating prevention messages into their work
- Provide viral hepatitis vaccination, screening and linkages to care, either through direct services or through “warm hand-off” referrals
- Promote viral hepatitis awareness among providers and policy makers
- _____

If you are medical or professional organization

- Promote awareness among your members about up-to-date viral hepatitis preventive services and clinical management guidelines
- _____

If you are a primary care provider or community health center

- Display viral hepatitis educational materials in the clinic waiting room
- Integrate viral hepatitis screening and vaccination into routine clinic work flows, such as through electronic health records and standing orders
- Become certified to prescribe office-based opioid replacement therapy, and prescribe where appropriate

- Participate in hepatitis telehealth initiatives and become a hepatitis champion!
- _____

If you are a pharmacist

- Develop a standard protocol for offering hepatitis A and hepatitis B vaccination to all persons who remain unvaccinated and at risk for viral hepatitis
- Sell syringes without a prescription as allowed by California law
- Provide support to healthcare providers and patients with obtaining approvals for antiviral medications and ensuring treatment adherence
- _____

If you are a health system or health plan

- Assess the hepatitis B and hepatitis C care cascades among your members and use findings to inform quality improvement efforts
- _____

If you are a drug and alcohol treatment provider

- Educate clients about viral hepatitis transmission, prevention, and care
- Provide hepatitis A and hepatitis B vaccination and hepatitis B and hepatitis C testing, linkages to care, and treatment for your program participants, either through referrals or through on-site service delivery
- Support clients in residential treatment programs to complete hepatitis C treatment during their program as part of improving their overall wellness

If you are a local correctional healthcare provider

- Vaccinate high-risk individuals against hepatitis A and B where feasible
- Develop protocols for hepatitis B and hepatitis C screening and clinical management, including for ensuring continuity of care across systems
- _____

If you are a specialist experienced treating chronic HBV/HCV or a researcher

- Provide training and mentorship to primary care clinicians seeking to learn more about viral hepatitis screening and clinical management
- Conduct research to establish evidence-based prevention and care strategies
- _____

Thank you for your support for reducing the impact of viral hepatitis in California.

APPENDIX G: SELECTED NATIONAL VIRAL HEPATITIS QUALITY MEASURES, 2016

Measure Title	Measure Number			Measure Description	Measure Developers/ Stewards
	CMS	NQF	PQRS		
Childhood Immunization Status*	117v 3	0038**	240	Percentage of children 2 years of age who had four diphtheria, tetanus, and acellular pertussis (DTaP); three polio (IPV); one measles, mumps, and rubella (MMR); three haemophilus influenza type B (HiB); three hepatitis B (HepB); one chicken pox (VZV); four pneumococcal conjugate (PCV); one hepatitis A (HepA); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday.	NCQA
Pregnant Women that had HBsAg Testing*	158v 3	N/A	369	This measure identifies pregnant women who had an HBsAg (hepatitis B) test during their pregnancy.	OptumInsight
Hepatitis B Vaccine Coverage Among All Live Newborn Infants Prior to Hospital or Birthing Facility Discharge		0475**		Percent of live newborn infants that receive hepatitis B vaccination before discharge at each single hospital/birthing facility during given time period (one year).	CDC
Hepatitis C: Confirmation of Viremia	N/A	0393**	N/A	Percentage of patients aged 18 years and older with a diagnosis of hepatitis C seen for an initial evaluation who had HCV RNA testing ordered or previously performed.	AGA; AMA-PCPI
Hepatitis C: Ribonucleic Acid (RNA) Testing Before Initiating Treatment	N/A	0395**	084	Percentage of patients aged 18 years and older with a diagnosis of chronic hepatitis C who started antiviral treatment within the 12 month reporting period for whom quantitative hepatitis C virus (HCV) ribonucleic acid (RNA) testing was performed within 12 months prior to initiation of antiviral treatment	AGA
Hepatitis C: HCV Genotype Testing Prior to Treatment	N/A	0396**	085	Percentage of patients aged 18 years and older with a diagnosis of chronic hepatitis C who started antiviral treatment within the 12 month reporting period for whom hepatitis C virus (HCV) genotype testing was performed within 12 months prior to initiation of antiviral treatment	AGA
Hepatitis C: HCV RNA Testing Between 4-12 Weeks After Initiation of Treatment	N/A	0398**	087	Percentage of patients aged 18 years and older with a diagnosis of chronic hepatitis C who are receiving antiviral treatment for whom quantitative hepatitis C virus (HCV) ribonucleic acid (RNA) testing was performed at 4-12	AGA

Measure Title	Measure Number			Measure Description	Measure Developers/ Stewards
	CMS	NQF	PQRS		
				weeks after the initiation of antiviral treatment	
Hepatitis C: Hepatitis A Vaccination in Patients with Hepatitis C Virus (HCV)	N/A	0399**	183	Percentage of patients aged 18 years and older with a diagnosis of hepatitis C who have received at least one injection of hepatitis A vaccine, or who have documented immunity to hepatitis A.	AGA
Annual Hepatitis C Virus (HCV) Screening for Patients who are Active Injection Drug Users	N/A	N/A	387	Percentage of patients regardless of age who are active injection drug users who received screening for HCV infection within the 12 month reporting period	AGA; AASLD; AMA-PCPI
Discussion and Shared Decision Making Surrounding Treatment Options	N/A	N/A	390	Percentage of patients aged 18 years and older with a diagnosis of hepatitis C with whom a physician or other qualified healthcare professional reviewed the range of treatment options appropriate to their genotype and demonstrated a shared decision making approach with the patient.	AGA; AASLD; AMA-PCPI
Hepatitis C: One-Time Screening for HCV for Patients at Risk	N/A	N/A	400	Percentage of patients aged 18 years and older with one or more of the following: a history of injection drug use, receipt of a blood transfusion prior to 1992, receiving maintenance hemodialysis OR birthdate in the years 1945-1965 who received a one-time screening for HCV infection	AGA; AASLD; AMA-PCPI
Screening for Hepatocellular Carcinoma (HCC) in patients with Hepatitis C Cirrhosis	N/A	N/A	401	Percentage of patients aged 18 years and older with a diagnosis of chronic hepatitis C cirrhosis who underwent imaging with either ultrasound, contrast enhanced CT or MRI for hepatocellular carcinoma (HCC) at least once within the 12 month reporting period	AGA; AASLD; AMA-PCPI

* Meets Meaningful Use stage II requirements.

** NQF-Endorsed

Key: AASLD: American Association for the Study of Liver Diseases
AGA: American Gastroenterological Association
AMA-PCPI: American Medical Association – Physician Consortium for Performance

Improvement

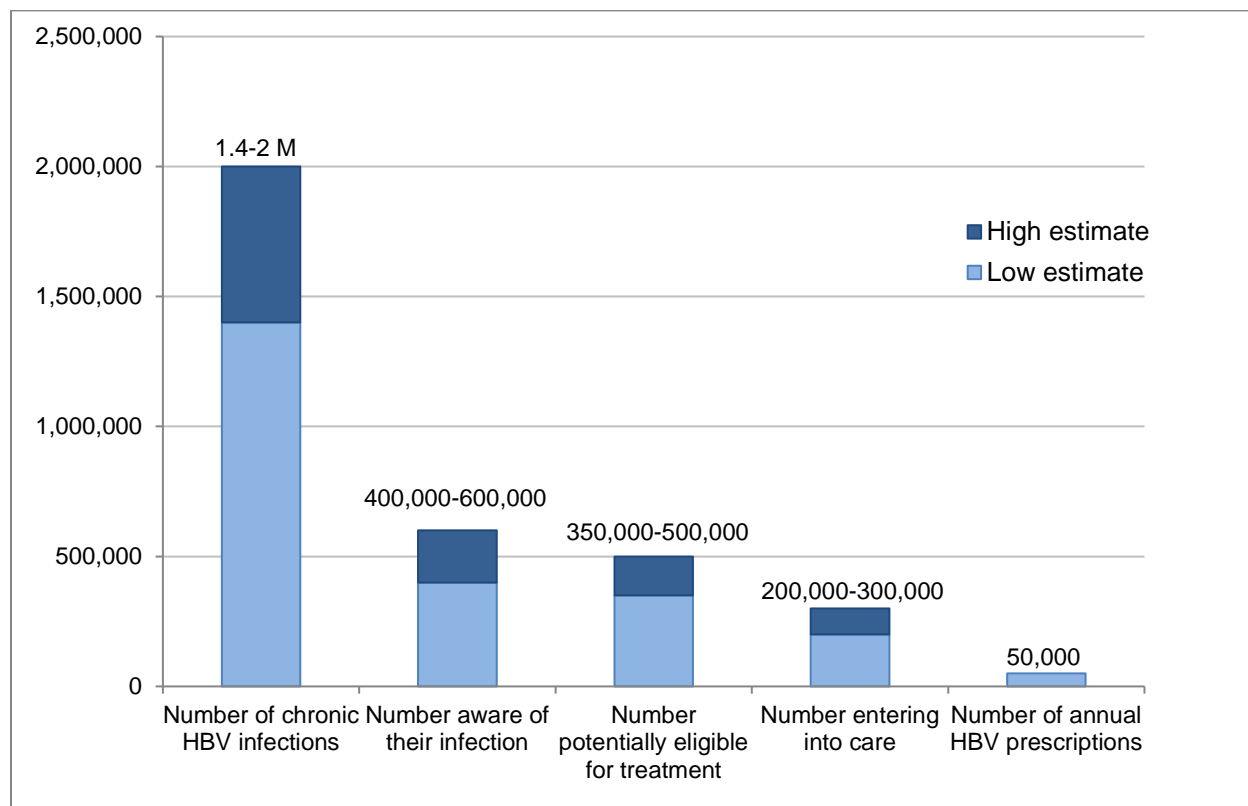
CMS: Centers for Medicare and Medicaid Services
NQF: National Quality Forum
NCQA: National Center for Quality Assurance
PQRS: Physician Quality Reporting System

APPENDIX H: UNDERSTANDING THE HEPATITIS B AND HEPATITIS C CARE CASCADES

The “care cascade,” (or continuum of care) refers to a set of steps, from diagnosis to care and treatment (and for hepatitis C, cure) used to estimate the number and percentage of people with chronic viral hepatitis whose infections are under control. The care cascade concept was developed in reference to HIV, and has since been adapted for use with viral hepatitis.³⁸ While the steps along the HIV care cascade are well defined, there is not yet national consensus on exactly how to measure the chronic hepatitis B and hepatitis C cascades. These efforts are complicated by the different standards of care for chronic hepatitis B and hepatitis C infection. For example, national guidelines only recommend hepatitis B treatment for a subset of individuals with hepatitis B infection. National estimates of the hepatitis B and hepatitis C care cascades are shown below, and may need to be modified to reflect evolving standards of care.

Hepatitis B Care Cascade

Figure 1: Estimated number of people with chronic hepatitis B virus (HBV) infection who are aware of their infection and percentages who are potentially eligible for treatment, entering into care, and receiving treatment—United States, 2010.

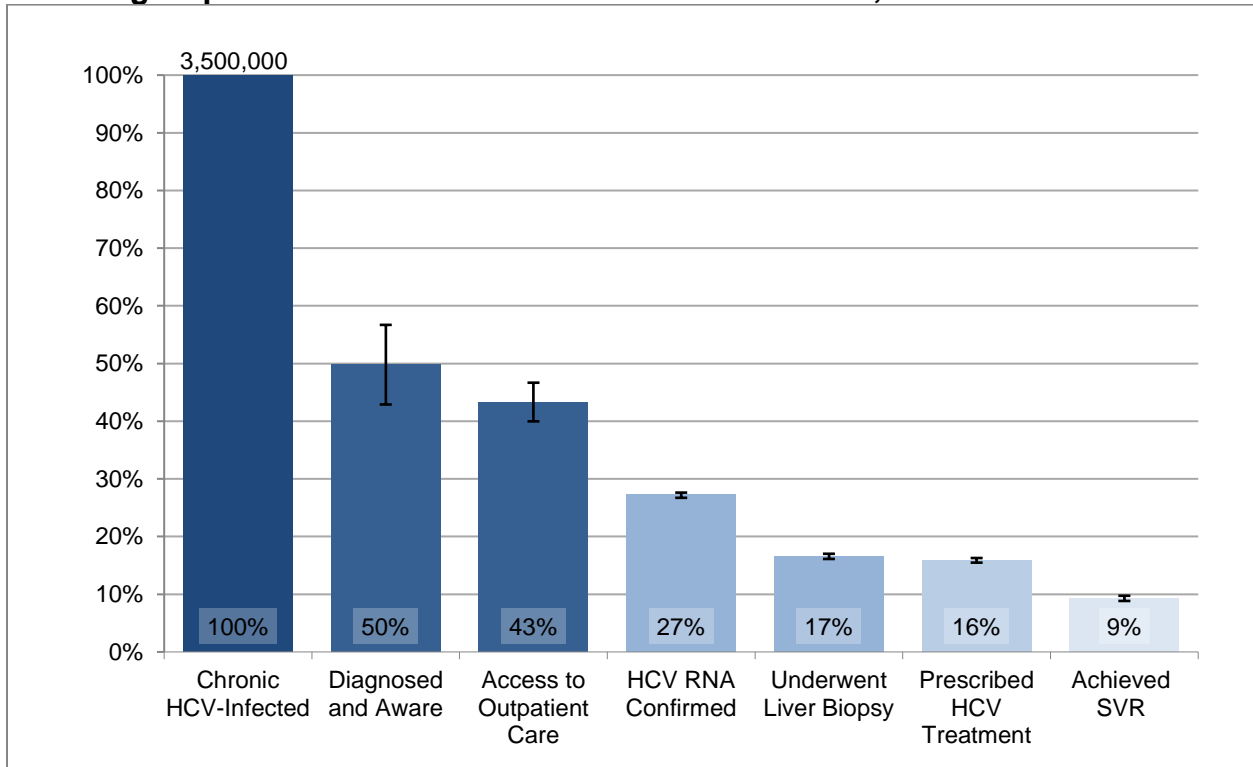


Prepared by California Department of Public Health.

Source: Cohen C, Holmberg S, McMahon J; et al. Is chronic hepatitis B being undertreated in the United States? *Journal of Viral Hepatitis*. 2011 Jun;18(6):377-83.

Hepatitis C Care Cascade

Figure 2: Estimated number of people with chronic hepatitis C infection and percentages who are aware of their infection, have access to outpatient healthcare, received hepatitis C virus (HCV) ribonucleic acid (RNA) testing, underwent a liver biopsy or achieved a sustained virological response (SVR), including 95 percent confidence intervals—United States, 2000-2010



Prepared by California Department of Public Health.

Source: Yehia BR, Schranz AJ, Umscheid CA, Re VL. The Treatment Cascade for Chronic Hepatitis C Virus Infection in the United States: A Systematic Review and Meta-Analysis. *Plos-One*. Jul 2014; 9(7):e101554.

APPENDIX I: REFERENCES

- ¹ Disease burden from viral hepatitis A, B, and C in the United States. <https://www.cdc.gov/hepatitis/statistics/index.htm>. Centers for Disease Control and Prevention Web Site. Accessed August 23, 2017.
- ² California Department of Public Health, Sexually Transmitted Diseases Control Branch. Chronic hepatitis B and hepatitis C infections in California: cases newly reported through 2013. Accessed August 23, 2017 at <https://archive.cdph.ca.gov/programs/pages/viralhepatitisdata.aspx>. Effective October 2017, updated chronic hepatitis B and chronic hepatitis C surveillance reports may be accessed at <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/ViralHepatitisData.aspx>.
- ³ United States Department of Health & Human Services. *National Viral Hepatitis Action Plan (2017-2020)* <https://www.hhs.gov/sites/default/files/National%20Viral%20Hepatitis%20Action%20Plan%202017-2020.pdf>. Accessed August 23, 2017.
- ⁴ Ly KN, Xing J, Kleven RM, Jiles RB, Ward JW, Holmberg SD. The increasing burden of mortality from viral hepatitis in the United States between 1999 and 2007. *Ann Intern Med*. 2012;156:271-278.
- ⁵ Statistics and Surveillance. Centers for Disease Control and Prevention Web site. <http://www.cdc.gov/hepatitis/statistics/index.htm>. Accessed August 23, 2017.
- ⁶ Kowdley KV, Wang CC, Welch S, Roberts H, Brosgart CL. Prevalence of chronic hepatitis B among foreign-born persons living in the United States by country of origin. *Hepatology*. 2012;56:422-433.
- ⁷ Hepatitis B frequently asked questions for the public - transmission. Centers for Disease Control and Prevention Web Site. <https://www.cdc.gov/hepatitis/hbv/bfaq.htm#transmission>. Updated May 23, 2016.
- ⁸ Hepatitis B ACIP Vaccine Recommendations. Centers for Disease Control & Prevention Web Site. <http://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html>. Updated December 22, 2014.
- ⁹ Centers for Disease Control and Prevention. Recommendations for identification and public health management of persons with chronic hepatitis B virus infection. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5708a1.htm>. *MMWR Recommendations and Reports*. 2008;57(RR-8):1-20.
- ¹⁰ Statistics and Surveillance. Centers for Disease Control and Prevention Web site. <http://www.cdc.gov/hepatitis/statistics/index.htm>. Accessed July 5, 2015.
- ¹¹ Hepatitis C frequently asked questions for the public – transmission. Centers for Disease Control and Prevention Web Site. <http://www.cdc.gov/hepatitis/C/cFAQ.htm#transmission>. Updated May 31, 2015.
- ¹² Viral hepatitis information for gay and bisexual men. Centers for Disease Control and Prevention Web Site. <http://www.cdc.gov/hepatitis/Populations/PDFs/HepGay-FactSheet-BW.pdf>. Published October 2013.
- ¹³ Tsang TH, Horowitz E, Vugia DJ. Transmission of hepatitis C through tattooing in a United States prison. *Am J Gastroenterol*. 2001 Apr;96(4):1304-5.
- ¹⁴ Centers for Disease Control and Prevention. Recommendations for prevention and control of hepatitis C virus (HCV) infection and HCV-related chronic disease. <http://www.cdc.gov/mmwr/PDF/rr/rr4719.PDF>. *MMWR Recommendations and Reports*. Oct 16 1998;47(No. RR-19):1-39.
- ¹⁵ Hagan H, Pouget ER, Des Jarlais DC. A systematic review and meta-analysis of interventions to prevent hepatitis C virus infection in people who inject drugs. *J Infect Dis*. 2011;204:74-83.
- ¹⁶ Martin NK, Vickerman P, Grebely J, et al. Hepatitis C virus treatment for prevention among people who inject drugs: modeling treatment scale-up in the age of direct-acting antivirals. *Hepatology*. 2013;58:1598-1609.
- ¹⁷ Hepatitis C frequently asked questions for the health care professionals – testing and diagnosis. Centers for Disease Control and Prevention Web Site. <http://www.cdc.gov/hepatitis/hcv/hcvfaq.htm#c1>. Updated January 27, 2017.
- ¹⁸ Workowski KA, Bolan GA. Sexually transmitted diseases treatment guidelines, 2015. *MMWR Recommendations and Reports*. June 5, 2015 / 64(RR3);1-137.

-
- ¹⁹ Testing recommendations for hepatitis C virus infection. Centers for Disease Control and Prevention Web Site. <http://www.cdc.gov/hepatitis/HCV/GuidelinesC.htm>. Updated October 15, 2015.
- ²⁰ Association for the Advanced Study of Liver Diseases/Infectious Diseases Society of America/International Antiviral Society-USA. Recommendations for testing, managing, and treating hepatitis C. www.hcvguidelines.org. Accessed April 21, 2015.
- ²¹ Kong D, Winter K, Murray E, McLean R, Zipprich J, Harriman K. Patient costs, characteristics, and outcomes associated with hospitalizations related to hepatitis B and hepatitis C – California, 2002-2011. Poster presented at: Council of State and Territorial Epidemiologists Conference; June 2013; Pasadena, CA.
- ²² California Department of Public Health, Sexually Transmitted Diseases Control Branch. California Viral Hepatitis Prevention Strategic Plan, 2010-2014: Progress Report. <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/OVHP.aspx>.
- ²³ U.S. Preventive Services Task Force A and B Recommendations. Accessed July 14, 2015 at <http://www.uspreventiveservicestaskforce.org/Page/Name/uspstf-a-and-b-recommendations>.
- ²⁴ Colvin HM, Mitchell AE, eds. *Hepatitis and Liver Cancer: A National Strategy for Prevention and Control of Hepatitis B and C*. Institute of Medicine. Washington, DC: The National Academies Press; 2010. In 2016 and 2017, the National Academy of Sciences, Engineering, and Medicine issued *A National Strategy for the Elimination of Hepatitis B and C*, which updated the 2010 Institute of Medicine report. Both reports can be accessed at <https://www.cdc.gov/hepatitis/nasemreports.htm>.
- ²⁵ United States Department of Health & Human Services. *Combating the Silent Epidemic of Viral Hepatitis: Action Plan for the Prevention, Care & Treatment of Viral Hepatitis* https://www.aids.gov/pdf/actionplan_viralhepatitis2011.pdf. Published May 12, 2011.
- ²⁶ California Department of Public Health Office of AIDS. <https://www.cdph.ca.gov/Programs/CID/DOA/Pages/OAmain.aspx>.
- ²⁷ Cicero TJ, Ellis MS. Abuse-deterrent formulations and the prescription opioid abuse epidemic in the United States: lessons learned from OxyContin. [Published online ahead of print Mar 11, 2015]. *JAMA Psychiatry*.
- ²⁸ See, for example, training and health education resources from the Harm Reduction Coalition (www.harmreduction.org) and Alliance Health Project (<https://ucsf-ahp.org/provider-resources/>).
- ²⁹ See, for example, training and health education resources available from the National Hepatitis Training Institute (<http://www.knowhepatitis.org/>).
- ³⁰ See, for example, the University of California San Francisco, Project ECHO (Extension for Community Health Outcomes) (<http://echo.ucsfhealth.org/>) and the University of Washington, Hepatitis C Online website (<http://www.hepatitisc.uw.edu/>). Accessed August 23, 2017.
- ³¹ Occupational Health and Safety Administration, Bloodborne Pathogen Quick Reference https://www.osha.gov/SLTC/bloodbornepathogens/bloodborne_quickref.html. Accessed August 23, 2017.
- ³² California Department of Public Health, Healthcare Associated Infection program <https://www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/HAIProgramHome.aspx>. Accessed August 23, 2017.
- ³³ A Brief Summary of Viral Hepatitis Laws in California, 2012. Available upon request from the California Department of Public Health, Office of Viral Hepatitis Prevention. <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/OVHP.aspx>.
- ³⁴ California Healthline. Report: California uninsured rate fell by as much as 40% under ACA. <http://www.californiahealthline.org/articles/2015/2/26/report-california-uninsured-rate-fell-by-as-much-as-40-under-aca>. February 26, 2015.
- ³⁵ California Healthline. Report: ACA helps cut uninsured rate among Latinos in Calif. <http://www.californiahealthline.org/articles/2014/9/25/report-aca-helps-cut-uninsured-rate-among-latinos-in-calif>. September 25, 2014.

-
- ³⁶ U.S. Government Publishing Office. Patient Protection and Affordable Care Act, Pub. L. No. 111-148, §1001, 124 Stat. 119, 131 (2010). <http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf>. Accessed April 9, 2015.
- ³⁷ Patient-Centered Outcomes Research Institute. PCORI board approves providing up to \$50 million for CER on hepatitis C. <http://www.pcori.org/content/pcori-board-approves-providing-50-million-cer-hepatitis-c>. December 8, 2014.
- ³⁸ Centers for Disease Control and Prevention. HIV in the United States: Stages of Care. http://www.cdc.gov/hiv/pdf/research_mmp_StagesofCare.pdf. Released July 2012. Accessed July 2, 2015.