



**NATIONAL  
VIRAL HEPATITIS**

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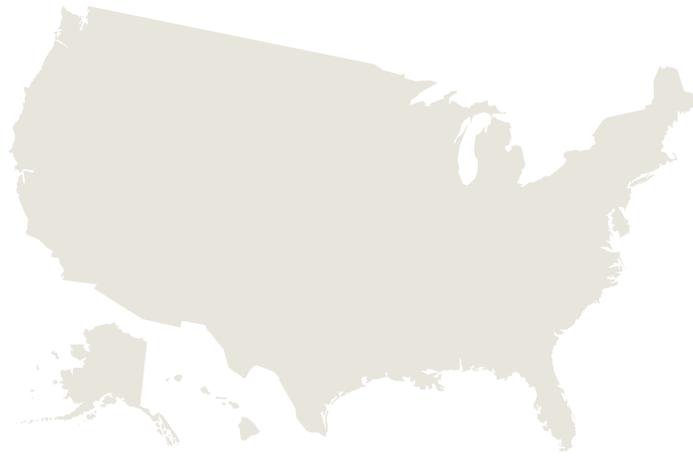
**ACTION PLAN**  
2017-2020



**The U.S. National Viral Hepatitis Action Plan for 2017-2020**

was prepared under the direction of the Office of HIV/AIDS and Infectious Disease Policy (OHAIDP), Office of the Assistant Secretary for Health, U.S. Department of Health and Human Services (HHS) under contract #HHSP233201400468G. The plan was developed collaboratively with input from representatives of all the participating federal agencies and offices from across HHS as well as from the Department of Housing and Urban Development, the Department of Justice, the Department of Veterans Affairs, and The White House.

**JANUARY 2017**



- VISION -

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## THE UNITED STATES

will be a place where new viral hepatitis infections have been eliminated, where all people with chronic hepatitis B and C know their status, and everyone with chronic hepatitis B and C has access to high quality health care and curative treatments, free from stigma and discrimination.

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# TABLE OF - CONTENTS -

<b>EXECUTIVE SUMMARY</b> .....	<b>7</b>
Overview .....	7
Goals, Strategies, and Indicators of Progress .....	7
Roles for Everyone .....	8
Major Advances and Opportunities .....	8
Challenges in Addressing Viral Hepatitis .....	9
Priority Populations .....	9
Strategies At-a-Glance .....	10
2020 Indicators At-a-Glance .....	11
<b>INTRODUCTION</b> .....	<b>12</b>
Goals .....	12
National Plan for All Stakeholders .....	12
Focus on Hepatitis B and C .....	13
Challenges .....	13
Opportunities .....	14
<b>THE EPIDEMIOLOGY OF VIRAL HEPATITIS IN THE UNITED STATES</b> .....	<b>15</b>
Hepatitis B .....	15
Hepatitis C .....	17
Viral Hepatitis and Liver Cancer .....	19
<b>MONITORING HEPATITIS CARE OUTCOMES</b> .....	<b>20</b>
<b>MAJOR ADVANCES AND OPPORTUNITIES</b> .....	<b>23</b>
Screening Recommendations .....	23
Expanded Access to Health Coverage for Viral Hepatitis Screening and Care .....	23
Hepatitis B Vaccination .....	24
Developments in HCV Cure .....	24
Integration of Public Health and Clinical Care Services .....	25
Developments in Syringe Services Programs .....	25
<b>CHALLENGES IN ADDRESSING VIRAL HEPATITIS</b> .....	<b>26</b>
Limited Data .....	26
Low Provider Awareness .....	26

## TABLE OF CONTENTS

Low Public Awareness and Low Perceived Risk .....	27
Limited Public Health and Health System Response .....	27
The High Cost of Treatment .....	27
Stigma and Discrimination .....	29
<b>PRIORITY POPULATIONS .....</b>	<b>30</b>
Baby Boomers .....	30
People Who Inject Drugs .....	30
American Indians / Alaska Natives .....	32
Asian Americans & Pacific Islanders .....	33
African Americans .....	33
People in Correctional Facilities .....	34
Veterans .....	34
Homeless Individuals .....	35
Men Who Have Sex with Men .....	35
Pregnant Women .....	36
People Living with HIV and Viral Hepatitis Coinfection .....	37
<b>DEVELOPING THE NATIONAL VIRAL HEPATITIS</b>	
<b>ACTION PLAN 2017–2020 .....</b>	<b>38</b>
Federal Viral Hepatitis Planning .....	38
Community Stakeholder Contributions .....	38
Crosscutting Elements .....	39
 <b>GOAL 1: PREVENT NEW VIRAL HEPATITIS INFECTIONS .....</b>	<b>40</b>
Opportunities .....	41
Strategies .....	43
 <b>GOAL 2: REDUCE DEATHS AND IMPROVE THE HEALTH</b>	
<b>OF PEOPLE LIVING WITH VIRAL HEPATITIS .....</b>	<b>46</b>
Opportunities .....	47
Strategies .....	48
 <b>GOAL 3: REDUCE VIRAL HEPATITIS HEALTH DISPARITIES .....</b>	<b>51</b>
Opportunities .....	52
Strategies .....	52
 <b>GOAL 4: COORDINATE, MONITOR AND REPORT ON</b>	
<b>IMPLEMENTATION OF VIRAL HEPATITIS ACTIVITIES .....</b>	<b>55</b>
Opportunities .....	56
Strategies .....	56

## TABLE OF CONTENTS

<b>APPENDIX A:</b>	
<b>VIRAL HEPATITIS INDICATORS</b> .....	<b>58</b>
Viral Hepatitis Indicator Background and Specifications .....	58
Annual Progress Reporting .....	58
Baseline .....	58
Viral Hepatitis Indicators .....	58
Viral Hepatitis Indicators by Goal .....	63
Annual Targets .....	66
<b>APPENDIX B:</b>	
<b>VIRAL HEPATITIS EPIDEMIOLOGY</b> .....	<b>67</b>
Reported Number of Acute Hepatitis B Cases .....	67
Reported Number of Acute Hepatitis C Cases .....	68
Number of Hepatitis B-related Deaths .....	69
Number of Hepatitis C-related Deaths .....	70
<b>APPENDIX C:</b>	
<b>FEDERAL VIRAL HEPATITIS IMPLEMENTATION GROUP MEMBERS</b> .....	<b>71</b>
Communications Workgroup Members .....	73
Indicators Workgroup Members .....	73
<b>APPENDIX D:</b>	
<b>VIRAL HEPATITIS RECOMMENDATIONS AND RESOURCE LINKS</b> .....	<b>75</b>
<b>APPENDIX E:</b>	
<b>PRIOR VIRAL HEPATITIS ACTION PLANS</b> .....	<b>76</b>
The First U.S. Viral Hepatitis Action Plan (2011–2013) .....	76
Action Plan Updated for 2014–2016 .....	76
<b>APPENDIX F:</b>	
<b>ACRONYMS</b> .....	<b>77</b>
<b>APPENDIX G:</b>	
<b>REFERENCES</b> .....	<b>79</b>

## - EXECUTIVE SUMMARY -

### OVERVIEW

**VIRAL HEPATITIS** poses a serious threat to the health of millions of Americans from all walks of life. The release of the first Action Plan for the Prevention, Care, & Treatment of Viral Hepatitis in 2011 marked the beginning of a coordinated national response to viral hepatitis in the United States. In the five years since that time, federal and nonfederal stakeholder efforts have evolved and advanced in response to the growing threat of viral hepatitis to the health of Americans.

Despite this progress, viral hepatitis remains a serious threat to the health of Americans. The number of new hepatitis C virus (HCV) infections has increased rapidly, prior progress in reducing new hepatitis B virus (HBV) infections has stalled, and hepatitis-related deaths have increased. We are missing key opportunities to prevent transmission, diagnose and treat infections, prevent serious disease, and—in many cases—cure people. Today, an estimated 4.4 million Americans from all walks of life are living with chronic viral hepatitis infection and are at increased risk for liver disease, liver cancer, and death. In 2012, hepatitis C-related deaths surpassed deaths from all other reportable infectious diseases combined and continued to rise in 2013 and 2014, killing more Americans each year.

We have the knowledge and tools to save lives and win the fight against viral hepatitis. This National Viral Hepatitis Action Plan for 2017-2020 (Action Plan) uses this knowledge and these tools to prevent new infections, improve the lives of people living with viral hepatitis, and chart a course toward elimination of these public health threats. We can do so by aligning goals and sharing strategies among key partners, engaging stakeholders across all sectors, leveraging important advances, confronting challenges, and prioritizing our efforts to reach the populations most impacted.

### GOALS, STRATEGIES, AND INDICATORS OF PROGRESS

The Action Plan was developed by federal partners with input from community stakeholders. It identifies four national goals to be achieved by 2020:

- 
**GOAL 1**  **PREVENT NEW VIRAL HEPATITIS INFECTIONS**
- 
**GOAL 2**  **REDUCE DEATHS AND IMPROVE THE HEALTH OF PEOPLE LIVING WITH VIRAL HEPATITIS**
- 
**GOAL 3**  **REDUCE VIRAL HEPATITIS HEALTH DISPARITIES**
- 
**GOAL 4**  **COORDINATE, MONITOR, AND REPORT ON IMPLEMENTATION OF VIRAL HEPATITIS ACTIVITIES**

For each goal, the Action Plan outlines strategies to guide our nation's response to viral hepatitis through 2020. The Action Plan also identifies 17 indicators that will be used to monitor progress toward those national goals. In a separate document, the Federal Work Plan 2017-2020, federal partners will detail their plans to implement those strategies.

## ROLES FOR EVERYONE

The Action Plan is a national plan, not just a federal plan. It recognizes that success cannot be achieved by federal action alone—it requires the support and commitment of a broad mix of stakeholders from various sectors, both public and private. The Action Plan’s goals and strategies are intended to guide individuals and organizations from all sectors of society to strengthen our collective national response to HBV and HCV infection. Everyone has a role to play in the battle against viral hepatitis in the United States.

## MAJOR ADVANCES AND OPPORTUNITIES

The Action Plan seeks to leverage important advances and opportunities as we work to achieve its goals.

### SCREENING RECOMMENDATIONS

Accurate HBV and HCV screening tests exist and are covered by most health insurance plans without extra charge to the consumer.

### EXPANDED ACCESS TO HEALTH COVERAGE

The Affordable Care Act (ACA) has enabled millions more Americans to obtain affordable, quality health insurance and prohibited denial of health coverage based on preexisting conditions. In addition, hepatitis A virus (HAV) and HBV vaccination and HBV and HCV screening services are covered preventive services, creating more opportunities for Americans to receive these critical services without cost sharing.

### DEVELOPMENTS IN HCV CURE

The approval of highly effective, all-oral therapies has the potential to cure more than 90 percent of chronic HCV infections, or 3.15 million of the 3.5 million people in the United States with chronic infection. However, only 54 percent of people are currently aware of their infection and a study published in 2014 estimated that only 9 percent of infected people had been treated for HCV. It will take sustained and coordinated efforts to realize the full potential of the new HCV treatments.

### INTEGRATION OF PUBLIC HEALTH AND CLINICAL CARE SERVICES

Studies have shown that integrating or including viral hepatitis prevention and care services with other physical health, mental health, and social services can effectively prevent infection or identify and link individuals with viral hepatitis into care. Partnerships between organizations providing public health services, clinical care, substance use disorder services, mental health care, case management, and syringe and other risk-reduction services to populations at risk can help reach more individuals at risk for or living with chronic viral hepatitis.

### DEVELOPMENTS IN SYRINGE SERVICES PROGRAMS

In 2015, in response to the growing opioid epidemic and the related increase in transmission of viral hepatitis and HIV, Congress allowed use of federal funds to support syringe services programs (SSPs) under certain circumstances. These programs have been shown to reduce viral hepatitis risk and are an effective component of a comprehensive, integrated infectious disease prevention strategy.

## CHALLENGES IN ADDRESSING VIRAL HEPATITIS

The Action Plan also seeks to address a number of challenges that must be confronted as we work to improve our national response to viral hepatitis.

### LIMITED DATA

Limited data is one of the most critical gaps in our response to viral hepatitis. Because of limited data, the incidence, prevalence, and geographic distribution of viral hepatitis can only be estimated; consequently, outbreaks may remain undetected, and health officials may not realize the scope of the problem or have the information they need to appropriately prioritize resources to address it.

### LOW PROVIDER AWARENESS

Low levels of viral hepatitis awareness among health care providers leads to low rates of vaccination and missed opportunities for testing and diagnosis, linkage to care, and treatment.

### LOW PUBLIC AWARENESS AND LOW PERCEIVED RISK

Low public awareness of HBV and HCV and corresponding low levels of perceived risk lead to continued stigma and discrimination, missed opportunities for prevention, testing, diagnosis, linkage to care, and treatment, as well as to ongoing transmission.

### LIMITED PUBLIC HEALTH AND HEALTH SYSTEM RESPONSE

Insufficient investment in health systems to address viral hepatitis has led to fragmented and uncoordinated viral hepatitis services in public health and clinical settings.

### THE HIGH COST OF TREATMENT

The cost of viral hepatitis treatments can have the effect of limiting access, leaving many people chronically infected and at risk for severe liver disease, liver cancer, and death.

### STIGMA AND DISCRIMINATION

Stigma and discrimination may cause people to avoid testing and treatment and fear disclosure of their status to friends, family members, and colleagues. This can lead to worsening health outcomes. People with viral hepatitis are protected from discrimination under several federal laws, including the Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act, and the ACA.

## PRIORITY POPULATIONS

Certain populations have higher rates of viral hepatitis, including baby boomers, people who inject drugs, American Indians and Alaska Natives (AI/AN), Asian Americans and Pacific Islanders (AAPI), African Americans, people in correctional facilities, Veterans, homeless individuals, men who have sex with men (MSM), pregnant women, and people living with HIV/AIDS. The plan, therefore, prioritizes efforts focused on improving testing and diagnoses, access to care, and treatment among these populations. 🏠

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## THE ACTION PLAN IS A NATIONAL PLAN.

**Everyone** has a role to play in the battle against viral hepatitis in the United States.

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# STRATEGIES AT A GLANCE

## GOAL 1: PREVENT NEW VIRAL HEPATITIS INFECTIONS

1. Increase community awareness of viral hepatitis and decrease stigma and discrimination
2. Build capacity and support innovation by the health care workforce to prevent viral hepatitis
3. Address critical data gaps and improve viral hepatitis surveillance
4. Achieve universal hepatitis A and hepatitis B vaccination for children and vulnerable adults
5. Eliminate mother-to-child transmission of hepatitis B and hepatitis C
6. Ensure that people who inject drugs have access to viral hepatitis prevention services
7. Reduce the transmission of viral hepatitis in health care settings among patients and health care workers
8. Conduct research leading to new or improved viral hepatitis vaccines, diagnostic tests, and treatments, and the optimal use of existing tools to prevent, detect, and treat viral hepatitis

## GOAL 2: REDUCE DEATHS AND IMPROVE THE HEALTH OF PEOPLE LIVING WITH VIRAL HEPATITIS

1. Build the capacity of the health care workforce to diagnose viral hepatitis and provide care and treatment to persons living with chronic viral hepatitis
2. Identify persons infected with viral hepatitis early in the course of their disease
3. Improve access to and quality of care and treatment for persons infected with viral hepatitis
4. Improve viral hepatitis treatment among persons living with HIV/AIDS
5. Ensure that people who inject drugs have access to viral hepatitis care and evidence-based treatment services
6. Expand access to and delivery of hepatitis prevention, care, and treatment services in correctional settings
7. Monitor provision and impact of viral hepatitis care and treatment services
8. Advance research to enhance identification, care, treatment, and cure for persons infected with viral hepatitis

## GOAL 3: REDUCE VIRAL HEPATITIS HEALTH DISPARITIES

1. Decrease health disparities by partnering with and educating priority populations and their communities about viral hepatitis and the benefits of available prevention, care, and treatment
2. Improve access to care and the delivery of culturally competent and linguistically appropriate viral hepatitis prevention and care services
3. Monitor viral hepatitis-associated health disparities in transmission, disease, and deaths
4. Advance basic, clinical, translational, and implementation research to improve understanding of and response to viral hepatitis health disparities

## GOAL 4: COORDINATE, MONITOR, AND REPORT ON IMPLEMENTATION OF VIRAL HEPATITIS ACTIVITIES

1. Increase coordination of viral hepatitis programs across the federal government and among federal agencies, state, territorial, Tribal, and local governments as well as non-governmental stakeholders from all sectors of society
2. Strengthen timely availability and use of data
3. Encourage development of improved mechanisms to monitor and report on progress toward achieving national viral hepatitis goals
4. Regularly report on progress toward achieving the goals of the National Viral Hepatitis Action Plan

# 2020 INDICATORS

## AT A GLANCE

The National Viral Hepatitis Action Plan includes **17 INDICATORS OF PROGRESS** selected to aid in monitoring and measuring the results of Action Plan implementation, and to support accountability and transparency. Goal 4 does not lend itself to quantitative indicators, so other methods to assess progress for this goal will be employed. All are described in further detail in **Appendix A on page 58** of this plan.

### GOAL 1

- 1 Decrease the number of new HBV infections **by at least 60%**
- 2 Increase the rate of hepatitis B vaccine “birth dose” coverage **to 85%**
- 3 Increase the rate of hepatitis B vaccination among health care personnel **to 90%**
- 4 Decrease the number of new HCV infections **by at least 60%**

### GOAL 2

- 5 Increase the percent of persons aware of their HBV infection **to 66%**
- 6 Reduce the number of HBV-related deaths **by 20%**
- 7 Increase the percent of persons aware of their HCV infection **to 66%**
- 8 Reduce the number of HCV-related deaths **by 25%**

### GOAL 3

- 9 Decrease the number of new HBV infections among individuals 30-49 years of age **by at least 60%**
- 10 Reduce the number of HBV-related deaths among Asian Americans/Pacific Islanders **by at least 20%**
- 11 Reduce the number of HBV-related deaths among African Americans **by at least 20%**
- 12 Reduce the number of HBV-related deaths among individuals 45 years of age and older **by at least 20%**
- 13 Decrease the number of new HCV infections among individuals 20-39 years of age **by at least 60%**
- 14 Decrease the number of new HCV infections among American Indians/Alaska Natives **by at least 60%**
- 15 Reduce the number of HCV-related deaths among individuals 55-74 years of age **by at least 25%**
- 16 Reduce the number of HCV-related deaths among American Indians/Alaska Natives **by at least 25%**
- 17 Reduce the number of HCV-related deaths among African Americans **by at least 25%**

## - INTRODUCTION -

**V**iral hepatitis is a serious and growing threat to the health of Americans. An estimated 850,000 and 3.5 million Americans from all walks of life are already living with chronic hepatitis B virus (HBV) and hepatitis C virus (HCV) infection, respectively.<sup>1</sup> All of these persons are at increased risk for liver disease, cancer, and death. They are from every state in the nation and from all social, economic, and racial and ethnic groups. Of great concern is the fact that the numbers of new HCV infections and deaths are growing each year and progress in preventing new HBV infections has stalled (see Appendix B on page 67). Increases in new viral hepatitis infections are being fueled by the opioid epidemic that is gripping parts of the United States.<sup>2,3</sup>

Unfortunately, many people are unaware of their viral hepatitis status and too few have accessed viral hepatitis care and treatments. Too many people are falling through the cracks and too many are continuing to die from causes related to viral hepatitis. Public health and health care systems are missing key opportunities to prevent infections, diagnose and treat people, prevent serious disease, and save lives.

Fortunately, we now have the knowledge and tools to save lives and win the fight against viral hepatitis. The U.S. National Viral Hepatitis Action Plan for 2017–2020 (Action Plan) is our battle plan to use this knowledge and deploy these tools to ultimately eliminate viral hepatitis in the United States.

### The Action Plan sets four ambitious goals to be achieved by 2020.

It also prioritizes strategies to be used to achieve each goal and identifies 17 indicators that will be used to monitor progress toward those goals.



**GOAL 1: PREVENT NEW VIRAL HEPATITIS INFECTIONS**



**GOAL 2: REDUCE DEATHS AND IMPROVE THE HEALTH OF PEOPLE LIVING WITH VIRAL HEPATITIS**



**GOAL 3: REDUCE VIRAL HEPATITIS HEALTH DISPARITIES**



**GOAL 4: COORDINATE, MONITOR, AND REPORT ON IMPLEMENTATION OF VIRAL HEPATITIS ACTIVITIES**

## NATIONAL PLAN FOR ALL STAKEHOLDERS

The Action Plan was developed by representatives of 23 federal agencies and offices that work together to combat viral hepatitis in partnership with states, counties, Tribes, cities, and organizations around the country. Partners convened for a series of listening sessions and made recommendations which informed the Action Plan. The Action Plan is a national plan, not just a federal plan. It recognizes that success cannot be achieved by federal action alone but requires the support and commitment of a broad mix of nonfederal stakeholders from various sectors, both public and private. Everyone has a role to play in the battle against viral hepatitis in the United States.

The Action Plan's goals and strategies are intended to guide individuals and organizations from all sectors of society to strengthen our collective national response to HBV and HCV infections. In providing this comprehensive framework, we seek to align the efforts of all stakeholders—federal and nonfederal alike—as well as facilitate new or expanded collaborative activities among stakeholders. Enhanced and sustained efforts toward our shared goals are needed if we, as a nation, are to win the fight against viral hepatitis.

## INTRODUCTION

The actions that federal agencies have committed to implementing in pursuit of these goals will be presented in a separate document, the Federal Work Plan 2017–2020. The Action Plan Partner Planning Workbook 2017–2020 will be developed to offer nonfederal partners a tool to use to identify new or enhance existing actions they can take to complement the federal efforts.

### FOCUS ON HEPATITIS B AND HEPATITIS C

The Action Plan focuses on HBV and HCV. They are the most common types of viral hepatitis in the United States and can cause chronic or lifelong infection with serious, potentially fatal complications.

### CHALLENGES

By a number of key measures, our nation is at a standstill or even losing ground in the battle against viral hepatitis.

- Millions of Americans living with viral hepatitis do not know they are infected since people with viral hepatitis often have no symptoms. It is estimated that as few as 33% of people with HBV and 54% of people with HCV are aware of their infection status.<sup>4-6</sup>
- Left undiagnosed and untreated, HBV and HCV can cause liver disease including cirrhosis (scarring of the liver), and liver cancer.<sup>6</sup>
- Liver cancer death rates are growing faster than death rates for all other types of cancer.<sup>7</sup> HBV and HCV are [major contributing factors to liver cancer](#).
- The U.S. Centers for Disease Control and Prevention (CDC) found that in 2012, hepatitis C-related deaths surpassed deaths from all other reportable infectious diseases combined.<sup>8</sup>

(For a list of reportable infectious diseases, refer to the [CDC Nationally Notifiable Conditions](#).)

- Our nation's opioid epidemic is fueling increases in new viral hepatitis infections because of injection drug use and needle sharing.
  - Between 2010 and 2014 the number of new HCV infections reported to CDC increased by 250 percent in the United States.<sup>9</sup>
  - New cases of HBV infection have declined 85 percent since 1980, but this progress has stalled in recent years. About 3,000 new cases were reported in 2014,<sup>1</sup> and some states have experienced dramatic increases in new infections. For example, Kentucky, Tennessee, and West Virginia experienced a 114 percent increase in acute HBV cases from 2006 to 2013.<sup>10</sup>
- Mother-to-child transmission of HBV remains stubbornly constant; approximately 1,000 babies become infected each year.<sup>11</sup>

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## THE ACTION PLAN FOCUSES ON HBV AND HCV:

the two most common  
types of viral hepatitis in  
the United States.

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## OPPORTUNITIES

Despite these trends, there are reasons for optimism as we reaffirm our commitment to enhancing our national response to, and ultimately eliminating, viral hepatitis.

- We have many of the tools needed to fight viral hepatitis:
  - A safe and effective HBV vaccine is available and the United States has been implementing an effective infant vaccination program since 1991.<sup>12</sup>
  - Though chronic HBV infection is not yet curable, treatments for HBV can reduce the chance of an individual developing liver disease and liver cancer.<sup>13</sup>
  - New HCV treatments have become available in recent years that cure 9 out of 10 people who complete them.<sup>14</sup>
- The Affordable Care Act (ACA) has made health insurance more accessible and provides coverage for preventive services including hepatitis A (HAV) and HBV vaccines, and screening for HBV and HCV.<sup>15</sup>
- Integrated models of care that provide viral hepatitis services at the same location as other key services such as substance use disorder treatment, primary care, HIV care, and correctional health, have shown to be effective in identifying and linking individuals with chronic viral hepatitis to care.
- Due to the approval of special funding by Congress and system-wide initiatives, the Department of Veterans Affairs (VA) treated approximately 69,000 Veterans with HCV infection, with an estimated 90 percent cure rate, between January 2014 and October 2016.<sup>16,17</sup>
- The federal ban on using federal funds to support syringe services programs (SSPs) [was lifted in 2015](#) and jurisdictions across the United States are working to expand and implement these programs.
  - Jurisdictions across the United States have enacted enabling legislation to support the implementation of SSPs.
- Progress since the first U.S. Viral Hepatitis Action Plan was released in 2011 includes an increased number of federal partners engaged in our national response—from 16 to 23—along with an expanding number and variety of collaborative efforts among those partners.
- New collaborations and momentum among nonfederal stakeholders has grown across the nation.

Collectively, these factors underscore the importance of having a national Action Plan that most effectively seizes opportunities for prevention, care, and treatment of viral hepatitis in the United States. ➤

# THE EPIDEMIOLOGY OF VIRAL HEPATITIS IN THE UNITED STATES

**V**iral hepatitis is caused by infection with any of at least five distinct viruses: HAV, HBV, HCV, HDV, and HEV. Most viral hepatitis infections in the United States are attributable to HAV, HBV, and HCV. All three of these unrelated viruses can produce symptoms in newly infected individuals, characterized by nausea, malaise, abdominal pain, and jaundice. However, most new infections are asymptomatic. HBV and HCV can progress to chronic infections but without symptoms, many remain unaware of their infection. Consequently, these individuals do not receive necessary care and treatment — and are often diagnosed after the development of cirrhosis, end-stage liver disease, or liver cancer.<sup>18</sup>

Because chronic HBV and HCV infection can persist for decades without symptoms, about half of infected Americans remain unaware of their infection status and are not receiving necessary care and treatment.<sup>19</sup> As a result, viral hepatitis is a leading cause of liver disease in the United States and the most common reason for liver transplantation.<sup>20</sup> In the decades to come, more than 320,000 Americans are expected to die from viral hepatitis-associated liver cancer or end-stage liver disease<sup>19</sup> unless steps are taken to increase awareness, diagnosis, and access to care, and treatment, including curative treatment for HCV.

Hepatitis A virus causes a self-limited disease that does not result in chronic infection. It is transmitted by the fecal-oral route, through direct personal contact or the consumption of contaminated food or water. In 2014, there were 1,239 reported cases of HAV with 76 resulting deaths. New HAV infection rates declined by over 90 percent between 2000-2014, primarily because of the availability and widespread use of a safe and highly effective vaccine. For these reasons, HAV is not a major focus of this

Action Plan. It is noteworthy that many of the viral hepatitis priority populations are at risk for HAV infection and/or at risk for severe disease if infected with HAV. The best way to prevent HAV infection is to get vaccinated.

## HEPATITIS B

Hepatitis B is a liver infection caused by HBV and is a significant public health problem in the United States. Chronic HBV infection can lead to serious health issues, including liver disease, liver cancer, and ultimately death. Most people with chronic HBV infection do not have any symptoms and are unaware of their infection.

### THE RISK FOR DEVELOPING CHRONIC INFECTION IS RELATED TO THE AGE OF THE PERSON INFECTED

In the United States, approximately 850,000 persons are estimated to be chronically infected with HBV. The actual number may be as high as 2.2 million. Accurate counts of new cases are not available because of incomplete disease surveillance for viral hepatitis. In 2014, 2,953 new cases of acute HBV infection were reported to CDC. Due to underreporting, CDC estimates that there are actually 6.5 new infections for every reported case, resulting in an estimated 19,200 new cases of HBV in 2014.<sup>1</sup>

The virus is transmitted when blood, semen, or another body fluid from a person infected with HBV enters the body of someone who is not infected. For some people, HBV infection is an acute (or short-term) illness, but for others, it can become a long-term, chronic infection. The risk for developing chronic infection is related to the age of the person infected: approximately

90 percent of HBV-infected infants become chronically infected, as compared to five percent of infected adults.<sup>21</sup> HBV can also cause liver failure at the time of infection, known as fulminant hepatitis. The best way to prevent HBV infection is to get vaccinated.

HBV is a vaccine-preventable disease and rates of new HBV infections have decreased overall by 85 percent since the HBV vaccine became available in the early 1980s. The HBV vaccine is the first cancer-prevention vaccine ever developed. Beginning in 1991, immunization programs for infants and adolescents have resulted in substantial declines in the incidence of HBV infection among young people.<sup>4</sup>

HBV is spread in several ways: through sexual contact; sharing needles, syringes, or other drug-injection equipment; from mother to child at the time of birth; in health care settings if equipment such as glucose monitors or supplies are shared; or through incidental household exposures to blood.<sup>13,22,23</sup> HBV is extremely infectious; thus, it is easily transmitted, even in microscopic amounts of blood or body fluids. Globally, mother to child transmission and inadequate infection control in health care settings represent significant modes of viral hepatitis transmission. As a result, persons who come to the United States who were born in other countries with moderate to high endemicity have higher rates of infection. [An analysis of adult vaccination rates](#) conducted in 2014 found that HBV vaccination rates remain low, among adults 19 years and older, [only 25 percent were vaccinated](#).<sup>24</sup> Rates of HBV vaccination among people at high risk for infection, including men who have sex with men (MSM) and people who inject drugs (PWID), range from 25 to 44 percent. In 2014, among people newly infected with HBV for whom risk factor information was available, an estimated 20 percent of new HBV infections were among MSM and 26 percent were among PWID.<sup>1</sup>

To improve health outcomes for those living with HBV infection in the United States, CDC developed and issued guidelines that emphasize the need for testing of persons at high risk for the disease, educating patients, and administering U.S. Food and Drug Administration (FDA)-approved treatments for HBV.<sup>13</sup>

The standard of care for pregnant women includes a test for HBV during each pregnancy because effective interventions are available to prevent transmission to an infant in almost all cases. Mother-to-child transmission of HBV is especially concerning, because it is preventable and because 90 percent of HBV-infected newborns will develop chronic infection. These infants remain infected throughout their lives, and up to 25 percent of these children will die of cirrhosis, liver failure, or liver cancer later in life. Of adults newly infected with HBV, only five percent go on to become chronically infected with the disease.<sup>21</sup> An emerging area of opportunity to further reduce mother-to-infant transmission of HBV is the use of antiviral treatments during pregnancy for women at high risk of transmission.<sup>25</sup>

Hepatitis B does not affect all Americans equally. There are health disparities, including disparities in rates of new HBV infection, rates of chronic HBV infection, and HBV-related deaths. Groups with elevated rates of new HBV infection include individuals aged 30-39 years, followed by individuals aged 40-49 years. Asian Americans, foreign-born individuals (including African immigrants) and African Americans experience disparities in chronic HBV infection. HBV-related deaths are likely to occur disproportionately among Asian Americans, followed by individuals aged 55-64, 65-74, and 75 years or older.<sup>1</sup>

## HEPATITIS C

Hepatitis C is a liver infection caused by HCV, which is the most common blood-borne infection in the United States. Chronic HCV infection can lead to serious health issues, including liver disease, liver cancer, and ultimately death. Many people with chronic HCV infection do not have any symptoms and are unaware of their infection.

In the United States, 3.5 million persons are estimated to be chronically infected with HCV.<sup>26</sup> The number may be as low as 2.7 or as high as 3.9 million. Accurate counts of new cases are not available because of incomplete disease surveillance for viral hepatitis. In 2014, 2,194 new cases of acute HCV infection were reported to CDC. Due to underreporting, CDC estimates that there

are actually 13.9 new infections for every reported case, resulting in an estimated 30,500 new cases of HCV infection in 2014.

The virus is usually transmitted when the blood from a person infected with HCV enters the body of someone who is not infected. HCV is highly infectious, so it is easily transmitted, even in microscopic amounts of blood. Transmission of HCV can occur through sharing needles, syringes, or other drug-injection equipment; these reflect the main ways HCV is currently being transmitted. It can also be transmitted through sexual contact or from an infected mother to her baby at birth. Many people, especially people born between 1945 and 1965—commonly referred to as baby boomers—may have been exposed to HCV through nonsterile injections and blood

## STATE EPIDEMIOLOGIC PROFILES

Robust data for viral hepatitis can assist health departments to broker partnerships with other governmental agencies, health care providers, and communities and assure availability of high quality services along the continuum of care. State health departments can augment surveillance data and promote innovative uses of other data sources through the development of viral hepatitis epidemiologic profiles. Viral hepatitis state epidemiological profiles are important for improving detection and reporting of HBV and HCV infections and strengthening state, local and tribal health department capacity.

The profiles have multiple uses, including to:

Identify prevention, care and treatment priorities.

Provide a focus for public education materials.

Develop professional education materials that enhance CME and trainings

Strengthen program planning and development of proposal:

Improving detection and reporting of HBV and HCV infections;  
Strengthening state and local health department capacities.

In 2016-2017, with funding from CDC, Division of Viral Hepatitis, the Association of State and Territorial Health Officials (ASTHO) is supporting eight health departments (Arizona, Connecticut, Iowa, Louisiana, Pennsylvania, Rhode Island, Virginia, and Washington) to develop a comprehensive viral hepatitis epidemiological profile. This effort builds upon ASTHO's successful experience supporting CDC Foundation-supported pilots in three states: [Arkansas](#), [Oregon](#), and [Wisconsin](#).

Once developed, these state epidemiological profiles can be shared widely and used to educate health officials, health care planners, legislators and other policy makers, health professionals, community based organizations, Tribal communities, and local media.

transfusions.<sup>27</sup> Such exposure is now largely prevented through standard infection control practices. Some baby boomers may also have been infected through injection drug use or other risk behaviors. Regardless of how they might have been exposed, all baby boomers should be tested at least once for HCV. PWID are at increased risk for HCV infection due to exposure to infected blood.<sup>28,29</sup> Although

From 2003 through 2010, the CDC estimated a relatively stable HCV incidence. However, from 2011 through 2014, there was a steep increase—of over 250 percent—in reported new HCV infections. This increase was predominantly among young White adults living in nonurban areas who reported a history of injection drug use, often preceded by the use of oral prescription

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## FROM 2011 THROUGH 2014, THERE WAS A 250% INCREASE IN REPORTED NEW HCV INFECTIONS.

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HCV transmission among HIV-positive MSM as a result of sexual contact with an HCV-infected partner occurs less often than among PWID, one analysis showed that this mode of transmission has increased over time.<sup>30</sup>

Approximately one out of five people infected with HCV, have an acute (or short-term) illness and their bodies clear the infection. These people no longer have HCV in their blood and are not at risk for disease progression or transmission to others. However, four out of five people who are infected develop a long-term, chronic HCV infection. Chronic HCV infection can lead to serious health issues, including liver disease, liver cancer, and ultimately death. Among people with chronic HCV infection, approximately 20 percent will develop cirrhosis, 10 percent will develop end-stage liver disease or liver cancer, and three to four percent will require a liver transplant or die of HCV-related causes. The number of deaths due to HCV is rising each year, with an increase of almost 20 percent from 16,627 to 19,659 between 2010 and 2014.<sup>1</sup> This increase is partly because most people with chronic HCV infection do not have any symptoms and many are not aware of their infection so they do not seek care and curative treatment.<sup>3,5</sup>

opioids such as oxycodone.<sup>3</sup> While acute HCV infection cases increased among men, there was a greater increase among young women, resulting in approximately equal new HCV infection rates in men and women.<sup>1</sup> The increase in new HCV infections in women has led to an increase in the number of babies born to women with HCV.<sup>31</sup>

In terms of chronic HCV infection, research shows that of all people living with HCV in the United States, 75 percent were individuals born between 1945 and 1965. To address HCV in the baby boomer population, CDC and the U.S. Preventive Services Task Force (USPSTF) issued guidelines in 2012 and 2013, respectively, recommending that one-time screening for the virus be offered to all persons born between 1945 and 1965, regardless of risk history.<sup>18,32</sup>

HCV-related health disparities exist in new infections, chronic infections, and deaths. In terms of age, individuals aged 20-29 years experience disparate rates of acute HCV infection, followed by individuals aged 30-39 years. In terms of race/ethnicity, chronic HCV infection is most prevalent among African Americans. Disparities in HCV-related deaths are highest among individuals aged 55-64 years, followed by those aged 65-74 years, and American Indians/Alaska Natives of all ages.

## VIRAL HEPATITIS AND LIVER CANCER

Chronic HBV and HCV can cause liver cancer. [The Annual Report to the Nation on the Status of Cancer, 1975-2012](#), released in 2016, highlighted the increasing incidence of liver cancer in the United States. From 1975–2012, deaths due to liver cancer increased at the highest rate of all types of cancer and the rate of new liver cancer cases increased dramatically. Men experienced more than twice the rate of new liver cancer diagnoses compared to women, and rates for both genders increased with age. Among all people who died of liver cancer, HCV- and liver cancer-associated death rates were highest among those born between 1945 and 1965. Among all races/ethnicities, African-American and Hispanic men died at the youngest ages (60 and 62 years, respectively) and had the highest average years of life lost per death (21 and 20 years, respectively) from liver cancer. 🏹

## MONITORING HEPATITIS CARE OUTCOMES

Cascades and continua of care are models (see page 22) that illustrate the sequential steps or stages of medical care that people living with viral hepatitis usually go through from initial testing and diagnosis, linkage to care, access to care, treatment and/or cure, and shows the proportion of individuals who are engaged at each stage. The models can be used to track progress in the proportion of patients who are identified and at various steps in care, and to identify and overcome gaps. In the United States, these care models have been well studied for HIV and HCV, but not for HBV.

The term ‘cascade’ is generally used when the course of a disease or condition has a distinct, measurable end point such as a cure. The ultimate goal of moving people through this model is their exit from the cascade after resolution of the condition or cure in the case of HCV. The term continuum is used for chronic, incurable conditions like HBV in which people remain at one step or another for the rest of their lives, moving forward or backward through the continuum.

The first step in these models is to test individuals so that they can be diagnosed

and referred to care or provided an appropriate assessment for treatment and follow-up care.<sup>5</sup> For HBV and HCV, analyses indicate that 67 percent and 45 percent, respectively, of people with chronic infection have not been diagnosed. This major gap is an important focus of our national efforts because it is only through educating health

Challenges include the historical barrier that

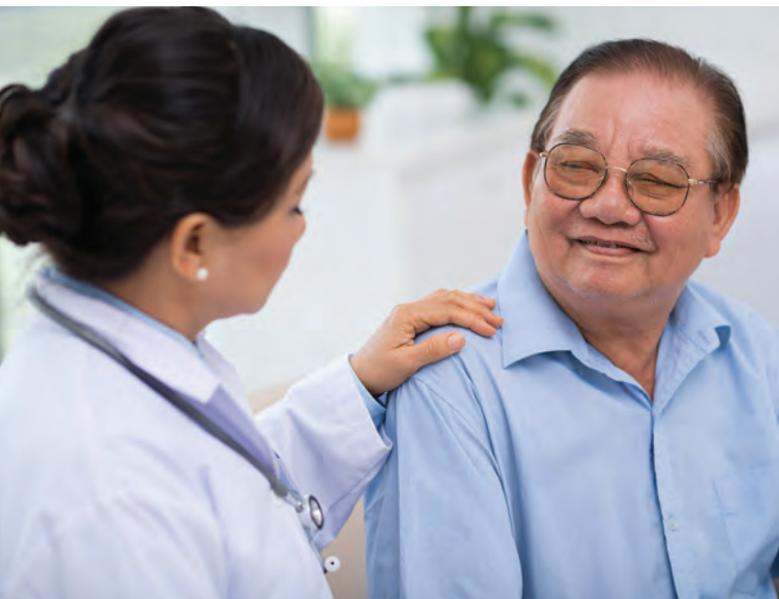
### PEOPLE WITH CHRONIC HBV OR HCV INFECTION WERE OFTEN DENIED HEALTH INSURANCE

or had annual lifetime limits on health care spending.

care providers and individuals about the need to screen and be screened that we can begin to increase the proportion of people who are aware of their infection and move them through the steps toward recommended care and treatment. Undiagnosed individuals remain at risk for severe disease or liver cancer, as well as for transmitting the infection to others. At present, there is no cure for HBV so people with HBV infection will remain at one step or another in the continuum for the rest of their lives.

Challenges for improving the HBV care continuum include the historical barrier that people with chronic HBV infection were often denied health insurance or had annual or lifetime limits on health care spending. The ACA has ended these practices. A more recent challenge has been the high cost of HBV treatments which are recommended to be taken throughout the course of the patient’s life.

Because HCV infection is curable in almost all cases, these steps of care have a



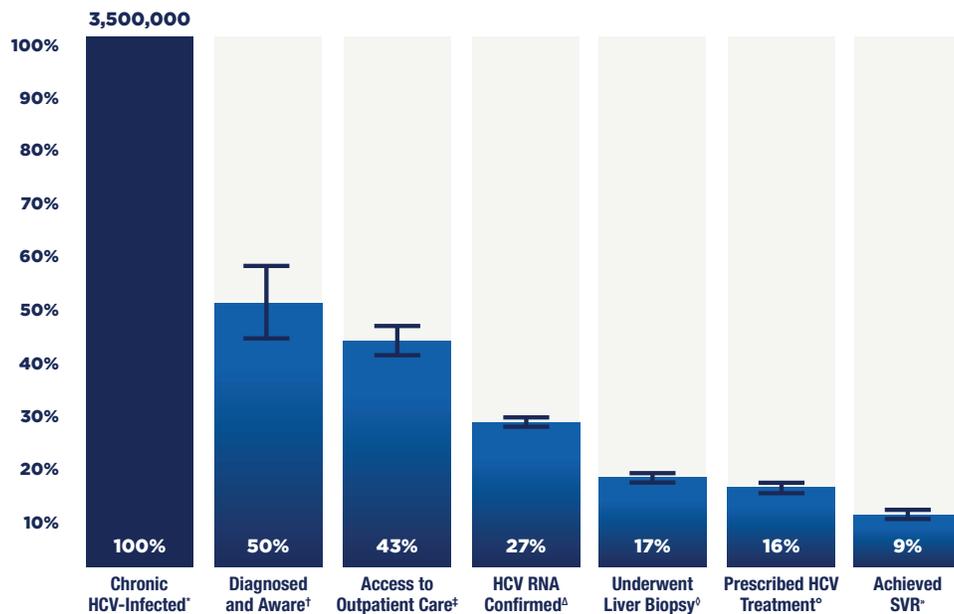
## MONITORING HEPATITIS CARE OUTCOMES

measurable end point and may be better represented as a cascade to cure. Some [people may re-enter the cascade](#) if reinfected but that has been shown to be a relatively small number of those cured.

Challenges to improving the HCV cure cascade include the historical barriers of previously recommended treatment which had undesirable side effects and required almost a year to complete, and that people with chronic HCV infection were often denied health insurance or had annual or lifetime limits on health care spending. The ACA has ended these practices. A more recent challenge has been the approval of new HCV therapies that are very costly, which has led some health insurance companies to place additional requirements on access to treatment. These requirements are often based on severity of liver disease, length of abstinence from alcohol or substance use, or access to a specialist such as a hepatologist. These kinds of requirements exclude large numbers of chronically infected people from receiving therapy, including people with mild liver disease, people with ongoing alcohol or illicit drug use, and people who live far away from specialists who most often practice in cities and academic centers. All of these factors contribute to the low number of HCV-infected persons who have been cured, estimated to be nine percent in 2014. 📌

# HCV CURE CASCADE

## Improvements Needed at Each Stage from Diagnosis to Cure



\* Chronic HCV-Infected; N=3,500,000.

† Calculated as estimated number chronic HCV-infected (3,500,000) x estimated percentage diagnosed and aware of their infection (49.8%); n=1,743,000.

‡ Calculated as estimated number diagnosed and aware (1,743,000) x estimated percentage with access to outpatient care (86.9%); n=1,514,667.

§ Calculated as estimated number with access to outpatient care (1,514,667) x estimated percentage HCV RNA confirmed (62.9%); n=952,726.

¶ Calculated as estimated number with access to outpatient care (1,514,667) x estimated percentage who underwent liver biopsy (38.4%); n=581,632.

° Calculated as estimated number with access to outpatient care (1,514,667) x estimated percentage prescribed HCV treatment (36.7%); n=555,883.

\* Calculated as estimated number prescribed HCV treatment (555,883) x estimated percentage who achieved SVR (58.8%); n=326,859.

Note: Only non-VA studies are included in the above HCV treatment cascade.

Yehia B, Schranz A, Umscheid, C, et al. [The treatment cascade for chronic hepatitis C virus infection in the United States: a systematic review and meta-analysis.](#) PLoS One. 2014;9(7): e1011554.

Researchers have [studied](#) the proportion of individuals who successfully complete each step of the HCV care cascade — the steps that those who are infected with HCV take:

- Diagnosed and aware of their infection
- Linkage to care (Access to outpatient care)
- Confirmatory testing for HCV RNA
- Liver disease evaluation, including liver biopsy
- Prescribed HCV treatment
- Achieved a sustained virologic response (SVR), also referred to as being cured

Note: Liver biopsy is not required for all patients.

This analysis shows that only 50 percent of those infected with HCV are diagnosed, indicating that increased efforts are needed to improve screening rates among persons at risk. Important steps have been taken in recent years to improve screening rates, including the release of new USPSTF/CDC recommendations that all persons born between 1945 and 1965 receive a one-time HCV antibody test, the availability of point-of-care antibody screening, and numerous federal, private, and community-led efforts to increase HCV awareness.

Overall, only 9 percent of people with chronic HCV have achieved a cure. This points to the ongoing need for creativity and innovation on the part of all stakeholders to increase the proportion of people who successfully navigate the entire cascade and achieve a cure.

# MAJOR ADVANCES AND OPPORTUNITIES

**T**here are a number of recent advances and new opportunities to be leveraged as we work to implement the Action Plan through 2020.

## SCREENING RECOMMENDATIONS

Because most people who are chronically infected with viral hepatitis are unaware of their infection, improved efforts to screen for HBV and HCV are essential to identify those who are infected. Accurate screening tests exist for HBV and HCV. Both CDC and the USPSTF recommend screening for HBV and HCV in persons at high risk for infection as well as screening for HBV in all pregnant women and one-time screening for HCV infection in baby boomers. These aligned recommendations from USPSTF and CDC send a clear signal to health care professionals, policy makers, payers, and the public that screening for HBV and HCV is both effective and necessary. Today, these screening recommendations expand the number of people who should receive screening, provide opportunities to develop clinical decision support tools, and help diagnose, link people into care and treatment, and prevent advanced disease and death.

## EXPANDED ACCESS TO HEALTH COVERAGE FOR VIRAL HEPATITIS SCREENING AND CARE

Prior to the passage of the ACA, people with chronic health conditions like HBV and HCV infection were often unable to obtain health insurance or had annual or lifetime limits on the coverage they could receive. The ACA has provided multiple opportunities to prevent new viral hepatitis infections and to diagnose and care for people with chronic viral hepatitis. These opportunities include:

- Expanded access to quality health insurance coverage for millions of Americans, which facilitates access to viral hepatitis vaccinations, improvements in timely identification of persons living with chronic viral hepatitis, and provision of essential care and treatment (with restrictions in some cases).
- A ban on denial of health coverage based on preexisting conditions so that people who are diagnosed with chronic viral hepatitis can no longer be dropped from insurance or denied health insurance benefits, and insurance companies can no longer place lifetime or annual limits on their health coverage.
- Required coverage in most health plans of recommended preventive services such as the USPSTF services graded “A” or “B”, and Immunizations recommended by the Advisory Committee on Immunization Practices (ACIP) – without extra charge to the consumer. These preventive services include:
  - Immunizations for HAV and HBV;
  - [HBV screening](#) for pregnant women at their first prenatal visit;
  - [HBV screening](#) for people at high risk for infection;
  - [HCV screening](#) for persons at high risk for infection; and
  - [One-time HCV screening](#) for persons born between 1945 and 1965.
- A substantial investment in the U.S. Department of Health and Human Services’ (HHS) Community Health Center Program. Community health centers work to improve access to comprehensive, culturally competent and

linguistically appropriate, high-quality primary health care services for underserved populations, many of whom also have higher rates of chronic viral hepatitis. The investment in the expansion of these centers will better equip them to provide necessary prevention, screening, care, and treatment for those with viral hepatitis.

- Medicare also covers screening for HBV and HCV without cost-sharing for beneficiaries

The ACA and the broader health care coverage landscape will continue to evolve and may change over time. It will be necessary to monitor and respond to these changes.

## HEPATITIS B VACCINATION

Hepatitis B vaccination is a very important prevention strategy. The vaccine is safe and effective in providing protection to 90 – 95 percent of adolescents and adults who receive all three doses of the vaccine series.<sup>33</sup> To increase HBV vaccination of adults at risk, additional actions are needed including: providing routine assessment and offering HBV vaccine if needed; use of standing orders for HBV vaccination; implementation of reminder-recall systems; and assessment and monitoring of vaccination rates within health care practices to use as feedback for staff members.<sup>21,24</sup>

## DEVELOPMENTS IN HCV CURE

Another major advance is the approval and widespread availability of highly effective, all-oral therapies that cure more than 90 percent of people with chronic HCV. The first of the new generation of HCV direct-acting antivirals (DAAs) became available in 2013 and at the time of publication, there are currently at least six different treatment combinations, including one that can cure all types of HCV. In stark contrast to

previously available HCV treatments, these new therapies are all oral, and generally require only 2-3 months of treatment. These new medications have far fewer side effects and can safely be given to people with most other chronic health conditions including, but not limited to: HIV, psychiatric disorders, and kidney disease. The availability of multiple easy-to-take therapies increases patient and provider acceptance and use, and reduces barriers for those with multiple chronic conditions. These factors pave the way for more widespread use that can improve the health of individuals living with chronic HCV infection, reduce deaths related to chronic HCV infection, and reduce the risk of transmission to others for those who are cured.

The newest HCV therapies have shown great promise in helping to win the fight against HCV and can be cost effective.<sup>34</sup> The realization of this promise has been hampered by the high cost of the medications. Some health insurers have taken steps to limit access to curative HCV treatments.

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**THESE NEW HCV THERAPIES  
ARE ORAL, HAVE FEW SIDE EFFECTS  
AND GENERALLY REQUIRE ONLY  
2-3 MONTHS OF TREATMENT.**

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In November 2015, CMS issued a [notice](#) about providing access to therapy for HCV-infected patients, advising state Medicaid programs on the coverage of drugs for Medicaid beneficiaries living with HCV infections. In their [HCV Guidance](#), the American Association for the Study of Liver Disease (AASLD) and Infectious Diseases Society of America (IDSA) recommend treatment for nearly all patients with chronic HCV infection. Federal insurance programs, including Medicare, (which covers HCV drugs through private prescription

drug plans under Medicare Part D), follow the AASLD/IDSA guidance and also set a standard for other insurers. CMS' notice to state Medicaid programs clarified that, consistent with current law, states cannot have in place limitations that result in the denial of access to effective, clinically appropriate, and medically necessary treatments for beneficiaries with chronic HCV infections.

## INTEGRATION OF PUBLIC HEALTH AND CLINICAL CARE SERVICES

Integrated models of care are those that provide viral hepatitis prevention and care services at the same location as other key health services. Integrated viral hepatitis services are recommended in settings and programs where people at risk for viral hepatitis are already receiving other services. These settings include substance use disorder treatment, primary care, HIV prevention and care, mental health, migrant and homeless health, and correctional health. Prioritizing these settings with integrated services has shown to be effective in identifying individuals at risk and linking individuals with chronic viral hepatitis into care.<sup>35</sup> Some of the same behaviors that prevent viral hepatitis infections also will prevent HIV and sexually transmitted infections (STIs). Services that should be integrated into regular assessment and health-related activities include: risk reduction counseling and education, HAV and HBV vaccination, HBV and HCV testing, care, and treatment or linkage to care and treatment. Integration can support sustainable education and testing practices that are not dependent on

short-term funding or initiatives. Integration of services enables providers to take a more holistic approach to health and is an important element of a strategy to better meet the viral hepatitis prevention and care needs of people living in rural or other under-resourced areas.

## DEVELOPMENTS IN SYRINGE SERVICES PROGRAMS (SSP)

In 2015, in response to the growing opioid epidemic and associated increased transmission of viral hepatitis and HIV, members of Congress worked together on a broad, bipartisan basis to revise a longstanding ban on the use of federal funds for SSPs. This budget agreement was signed into law by President Obama in December 2015, making it possible for grantees to use federal funds to support operational components of SSPs under certain circumstances. SSPs are programs that provide access to free sterile needles and syringes and help dispose of used needles and syringes. A large number of scientific studies have found that SSPs reduce HCV- and HIV-associated risks and are an effective component of a comprehensive, integrated approach to viral hepatitis prevention.<sup>36,37</sup> Many SSPs provide other prevention materials and services (e.g., risk-reduction counseling, overdose prevention education) and provide linkages to other health and human services (e.g., drug treatment referrals, housing support services, STI testing). ↘

# CHALLENGES IN ADDRESSING VIRAL HEPATITIS

**D**espite the advancements and opportunities, a number of challenges must be addressed as we work to improve our response to viral hepatitis.

## LIMITED DATA

One of the most critical gaps is limited data to monitor viral hepatitis locally and nationally. The public health surveillance system for viral hepatitis is not as robust or extensive as it is for some other infectious diseases. For example, in 2014, CDC received reports on new HBV infections from 48 states and new HCV infections from 40 states. According to CDC, reported cases represent only a fraction of new infections. Data on chronic HBV and HCV infections were reported by 34 states in 2014. This reflects the ability of and resources available to local and state health departments to monitor for viral hepatitis; that many people do not have symptoms or seek care at the time of infection; and, that reporting requires multiple lab results and patient information and is often incomplete.<sup>38</sup> As a result, it has historically been challenging to provide an estimate of the true burden of viral hepatitis at the national, state, and local levels.

Public health leadership uses such data to monitor, control, and prevent viral hepatitis, detect outbreaks, and intervene when appropriate. Without direct, scientific evidence of need, program leaders are often hard pressed to direct limited program funds to viral hepatitis activities. Better epidemiologic and health systems information at the state and local levels is needed to support decision makers and communities to respond to this epidemic. In contrast to viral hepatitis, public health professionals have been able to rely on more robust surveillance to respond to threats such as tuberculosis and HIV more

completely, including the development of systems to screen and detect infection in high-risk populations and provide care and treatment to reduce the chance of disability, death, and transmission to others. In order to ensure the most effective use of limited resources, we must work to further innovate and develop surveillance and monitoring systems to better understand geographic and population trends if we are to be effective in meeting the viral hepatitis needs of individuals and communities.

## LOW PROVIDER AWARENESS

Low awareness about viral hepatitis among many health care providers remains a challenge.<sup>39,40</sup> It leads to low vaccination rates among populations at risk, as well as missed opportunities to provide recommended screening, linkage to care, and treatment. Health care provider training programs generally include little, if any, content on viral hepatitis, and there has been insufficient effort directed toward activities that would increase provider awareness. Other strategies that could increase awareness among providers have also not been broadly implemented such as the establishment and monitoring of quality measures related to viral hepatitis testing and vaccination or the integration of adult HAV and HBV vaccination into routine clinical care.

Health care providers working with disproportionately affected populations, such as those who provide medication-assisted treatment (MAT), may not have sufficient training to treat viral hepatitis. Efforts should be made to ensure that providers who treat substance use disorders are aware of the increased risk of viral hepatitis infections related to drug use and what prevention measures are recommended.

## LOW PUBLIC AWARENESS AND LOW PERCEIVED RISK

Low public awareness about viral hepatitis is a persistent challenge, leading to late diagnoses, more severe disease outcomes, and premature death among those who are chronically infected. Low public awareness also leads to missed opportunities for vaccination and ongoing transmission among undiagnosed individuals. There are a number of reasons for low public awareness. These include multiple types of viral hepatitis with different routes of transmission, which can be confusing; there is often stigma and discrimination associated with viral hepatitis, so people often do not feel comfortable talking about it; and until recently, there has been little information about how many people or which populations are most affected.

A related challenge is that most people do not perceive themselves to be at risk for viral hepatitis. A primary factor in this is that most people do not have obvious signs or symptoms of infection. Several studies have shown that levels of knowledge and awareness are low among those populations most affected by HBV and HCV infection, including various Asian American and Pacific Islander (AAPI) subpopulations and PWID.<sup>41</sup> An education strategy that includes both providers and targeted outreach to populations at highest risk is needed to raise awareness of viral hepatitis as an important health concern affecting their communities, increase knowledge of the benefits of prevention and care, and encourage at-risk groups to seek and accept vaccination, testing, care, and treatment.

## LIMITED PUBLIC HEALTH AND HEALTH SYSTEM RESPONSE

Some health systems have demonstrated success in developing and maintaining viral hepatitis prevention and care programs. However, most health systems have not made this investment. Many of the programs that do exist are supported and sustained by grants with fluctuating levels of funding. This requires staff to constantly change their approach based on limited funding, partnerships, and goodwill or, as sometimes happens, to close down a program due to lack of funding. Trends in funding for many health education and prevention activities are changing along with the health care environment as the ACA continues to be implemented. Community preventive health programs are in a unique position because they can often deliver culturally competent messages more effectively and cover more of the community than can outsiders. Many of these education and prevention functions are now becoming part of regular health care in clinics and provider offices where they can be paid by health insurance. The shift from grant-based programs in the community to insurance-based programs operated through health care systems offers both challenges and opportunities. Health systems and community programs must consider how to sustain effective prevention, testing, and care efforts through strategic partnerships and other innovations in the rapidly evolving health care environment.

## THE HIGH COST OF TREATMENT

The cost of viral hepatitis therapy limits access to lifesaving medications. In the case of HBV, for which there is currently no cure, patients also may be reluctant to begin a course of treatment that they will have to take and pay for throughout the rest of their lives. High costs to patients generally occur when insurance companies put drugs on the

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**MOST PEOPLE DO NOT PERCEIVE THEMSELVES TO BE AT RISK FOR VIRAL HEPATITIS**

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## CHALLENGES

higher formulary tiers that require larger patient co-pays.

In the case of HCV, the course of treatment is a one-time expense with most people requiring 12 weeks of treatment. Due to the extremely high initial price of the new curative HCV therapies, many insurers have imposed additional access restrictions such as having a fibrosis score of F3-F4 (moderate fibrosis or cirrhosis), being abstinent from illicit drugs and alcohol for a certain length of

time, or being treated by a liver specialist.<sup>42</sup>

These restrictions have created barriers to access and/or denial of HCV medication after being prescribed by a health care provider. In some cases, treatment can be approved only after providers submit detailed paperwork to justify treatment. This places an increased burden on providers' offices to complete the paperwork necessary for approval and to respond to requests for additional patient information, a process that

## VIRAL HEPATITIS STIGMA AND DISCRIMINATION

In addition to the serious health issues they face, many people with chronic viral hepatitis experience stigma, including judgmental attitudes and insults, and being shunned by friends, family, and the wider community. Some also face discrimination in the workplace or other settings. For example, in 2016, the Justice Department [settled a case](#) alleging that a moving company discriminated against a customer, in violation of Title III of the ADA, when it refused service because of the customer's HCV infection.

One example that has been demonstrated in research is that the use of stigmatizing words like "addict" can:<sup>1-3</sup>

- Discourage individuals from seeking help.
- Reinforce the idea that someone is exhibiting a willful choice rather than suffering from a recognized medical condition.
- Evoke less sympathy than if the individual is described as having a disease.

Avoiding stigmatizing language, thereby reducing stigma, can play an important role in encouraging individuals to seek the medical care they need.

Stigma negatively affects the mental health of people living with viral hepatitis and can make it difficult for some to be tested for viral hepatitis, seek and adhere to medical care, obtain social services, and get emotional and other support from friends and family.

The Action Plan calls for government and community partners to work to decrease stigma and discrimination in order to help reduce new infections and improve health outcomes for people living with viral hepatitis. Section 504, of the Rehabilitation Act of 1973 (Section 504), Section 1557 of the Affordable Care Act (Section 1557), and the Americans with Disabilities Act (ADA) protect individuals from hepatitis-related discrimination. [The HHS Office for Civil Rights \(HHS OCR\)](#) enforces Section 504, which prohibits disability discrimination in programs receiving federal financial assistance, Section 1557, which prohibits discrimination by health programs and activities receiving federal financial assistance, and Title II of the ADA, which prohibits discrimination in State and local government programs. [The U.S. Department of Justice, Civil Rights Division, Disability Rights Section](#) enforces the ADA.

Stigma training [resources](#) are available from the Target Center.

1 In 2013, an estimated 10 percent of Americans 12 and older who needed and perceived a need for treatment but did not receive it at a specialty facility responded that they did not seek such treatment because they were concerned "that receiving treatment might cause neighbors/community to have a negative opinion." Substance Abuse and Mental Health Services Administration. (2014). Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings (NSDUH Series H-48, HHS Publication No. (SMA) 14-4863). SAMHSA, Rockville, MD.

2 Kelly JF, Westerhoff CM. Does it matter how we refer to individuals with substance-related conditions? A randomized study of two commonly used terms. *International Journal of Drug Policy*, 2010;21(3):202-207.

3 Kelly JF. Toward an addiction-ary: A proposal for more precise terminology. *Alcoholism Treatment Quarterly*. 2004;22:79-87.

often takes more than eight weeks.<sup>43</sup> It also adds to the stress and distress experienced by patients who are waiting to receive treatment. These restrictive policies, however, are contrary to the recommendations of professional medical societies. In their [HCV Guidance: Recommendations for Testing, Managing, and Treating Hepatitis C](#), the AASLD and the Infectious Diseases Society of America (IDSA) state that, “...data continue to accumulate that demonstrate the many benefits, within the liver and extrahepatic, that accompany HCV eradication” and “...the panel continues to recommend treatment for all patients with chronic HCV infection, except those with short life expectancies that cannot be remediated by treating HCV.”<sup>44</sup>

## STIGMA AND DISCRIMINATION

Stigma and discrimination also continue to take a terrible toll on those who have or are at risk for viral hepatitis. Fueled in part by low levels of public and provider awareness of viral hepatitis, stigma can lead to many negative consequences for people living with viral hepatitis, including:<sup>39</sup>

- Depression and worsening mental health status;
- Fear of discovery by employers, friends, or family;
- Failure to follow medical recommendations leading to disease progression;
- Discrimination.

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## DATA CONTINUE TO ACCUMULATE THAT DEMONSTRATE THE MANY BENEFITS THAT ACCOMPANY HCV ERADICATION.

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Many people with chronic viral hepatitis face discrimination in the workplace, or by public or private institutions or businesses, and are unaware of available federal legal protections against hepatitis-based discrimination under the [Americans with Disabilities Act](#). Viral hepatitis-related stigma can also be compounded by stigma related to substance use, HIV/AIDS, mental health, race/ethnicity, sexual orientation, or sex work. It is imperative that all stakeholders, both federal and nonfederal, recognize that these various biases exist and work to combat stigma and discrimination in order to help reduce new infections, improve health outcomes, and address discrimination for people living with viral hepatitis. Federal partners should work to increase awareness of federal rights and protections from such discrimination and ensure complaints are referred to HHS OCR and DOJ’s Disability Rights Section as appropriate. 🏹

# PRIORITY POPULATIONS

**V**iral hepatitis affects millions of Americans from every state and from all social, economic, and racial and ethnic groups. However, we know that HBV and HCV disproportionately impact certain populations. These populations include baby boomers, people who inject drugs (PWID), American Indians/Alaska Natives (AI/AN), Asian Americans and Pacific Islanders (AAPIs), African Americans, people in correctional facilities, Veterans, homeless individuals, men who have sex with men (MSM) and individuals living with HIV and viral hepatitis coinfection. Based on the epidemiology, opportunities, and challenges, this Action Plan prioritizes efforts focused on improving testing and diagnoses, access to care and treatment among these populations. Because the Action Plan seeks to eliminate mother-to-child transmission of HBV, pregnant women are also a priority population.

## BABY BOOMERS

According to CDC, baby boomers, or people born between 1945 and 1965, have a low rate of new HCV infections but comprise approximately 75 percent of all people who are chronically infected with HCV in the United States.<sup>45</sup> This age group also experiences one of the highest death rates from HCV. As these individuals grow older and live longer with undiagnosed HCV infection, they are increasingly likely to develop severe liver disease and liver cancer. These outcomes can be prevented through early diagnosis and curative treatment. Many individuals in this age group have private insurance, and many become Medicare-eligible every year. Medicare covers one-time HCV screening as well as annual screening for certain people at high risk for HCV. Most infections in this group occurred many years ago and there are few

ongoing risks for exposure or transmission to others. By testing and diagnosing all baby boomers with chronic HCV, we can get many people into care and cured, averting at least 120,000 deaths.<sup>46</sup> CDC has developed information and materials in the [Know More Hepatitis campaign](#), an education and communications campaign that encourages people born between 1945 and 1965 to get tested and be referred to care and treatment as appropriate.

## PEOPLE WHO INJECT DRUGS

Approximately 70 percent of new HCV infections are believed to occur among people who inject drugs (PWID). Among people who reported risk factors, there was a 350 percent increase in identified HCV infections among PWID from 2010 to 2014. This increase has been driven by the opioid epidemic that affects many communities across the country. The opioid epidemic has also put many communities at risk for HBV and HIV infections, overdose deaths, and other health problems. One example of this was seen during an outbreak of HIV and HCV in Scott County, Indiana in 2014 and 2015. In a rural county that usually reported fewer than five cases of HIV per year, a total of

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**THERE ARE COST-EFFECTIVE,  
EVIDENCE-BASED PREVENTION  
STRATEGIES THAT REDUCE  
THE RISK OF HCV INFECTION  
AMONG PEOPLE WHO  
INJECT DRUGS.**

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188 cases of HIV were identified by the end of 2015.<sup>47</sup> Over 90 percent of people identified with HIV infection were coinfecting with

# The Opioid Epidemic and Viral Hepatitis

Our nation is in the midst of an unprecedented opioid epidemic involving both prescription opioid pain relievers and heroin. Both have contributed to a rise in injection drug use in communities across the country, many of which were not previously considered at risk for injection-related infections like HBV, HCV, and HIV. Unsafe injection drug use has contributed to a 250 percent increase in HCV infections between 2010 and 2014. In some states, HBV infections related to unsafe injection drug use are also on the rise.

Our response to the opioid epidemic must include the prevention of the medical consequences of viral hepatitis. Preventing overdose deaths and viral hepatitis and HIV infections is part of our comprehensive response. Strategies include expanding access to [substance use disorder treatment](#), (e.g., medication-assisted therapy such as methadone or buprenorphine), [syringe services programs](#), and the implementation of prevention strategies such as [provider education](#), use of state-run [prescription drug monitoring programs](#), [risk reduction counseling](#) and tools such as [naloxone](#) to reverse opioid overdoses and [HBV vaccine](#). The Action Plan calls for state, local and tribal health departments and community partners to ensure that people who inject drugs have access to comprehensive, integrated viral hepatitis prevention services, as well as testing, care and treatment for HBV and HCV.

Programs serving people at risk for substance use disorders should provide or refer their clients to [effective treatment approaches and services](#) for substance use. People who are currently injecting can learn more about [injection drug use and viral hepatitis](#).

HCV. Almost all individuals who tested positive for HIV reported injection drug use including frequent sharing of syringes and drug preparation equipment and injecting 4 to 15 times daily with up to 6 other people at a time. In many cases, multiple generations within a family were injecting. Many new

## PRIORITY POPULATIONS

HCV infections are occurring among adolescents and young adults, (aged <30 years), placing a new generation at risk.<sup>48</sup> [CDC has determined there is evidence that other states and jurisdictions are at risk](#) for rapid spread of these infectious diseases.

A range of evidence-based strategies have proven effective at reducing viral hepatitis and other blood borne infections among PWID. These include efforts to prevent, reduce and treat substance use disorders, including MAT such as methadone and buprenorphine; prevention education and risk reduction counseling; and comprehensive SSPs.<sup>49,50</sup> SSPs provide access to sterile needles and syringes free of cost and often provide other prevention services, as well as linkage to critical medical, social, and mental health services. In addition to these HCV prevention strategies, all people who have ever injected drugs should be offered HCV testing and should be tested regularly if they continue to inject.<sup>29</sup>

Research has shown that HCV treatment is safe and effective for PWID. According to AASLD and IDSA recommendations, “recent and active injection drug use should not be seen as an absolute contraindication to HCV therapy.”<sup>44</sup> These expert organizations also recognize the benefit of increasing HCV screening and treatment for PWID as a necessary element in a comprehensive response to the HCV epidemic. Diagnosing and treating HCV-infected persons who inject drugs will improve their health outcomes and prevent transmission to others. The use of HCV treatment as prevention should be further explored. An integrated approach to serving PWID that begins with preventing new infections and referral to drug treatment and continues through HCV screening, linkage to care, and treatment is essential. For persons who continue to inject drugs, ongoing effort is needed to provide prevention services, access to drug treatment, and regular screening to detect infection.

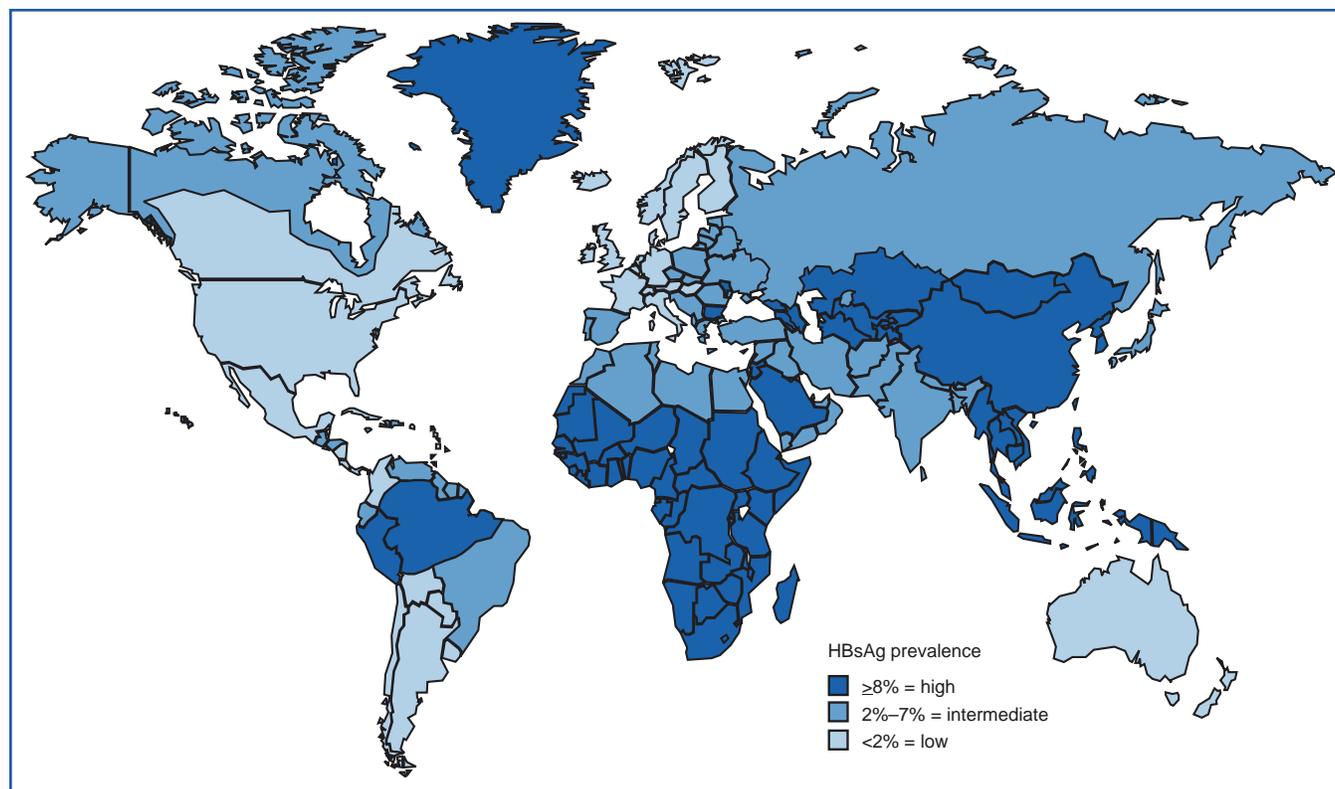
## AMERICAN INDIANS/ ALASKA NATIVES

American Indian and Alaska Native (AI/AN) communities are disproportionately affected by HCV. The most recent national data show AI/AN people as the racial/ethnic group with both the highest rates of acute HCV infection as well as HCV-related deaths. The AI/AN HCV-related death rate is more than double the national rate.<sup>51</sup> HCV-related hospitalizations among AI/AN more than tripled from 1995 to 2007.<sup>52</sup> Although prevalence data are limited, one national study estimates 120,000 persons on Indian reservations are HCV antibody positive.<sup>26</sup>

In the 1970s, AI/AN communities were identified as being disproportionately affected by HBV. The highest rates of chronic

infection were found in rural Alaskan Native villages ranging from about five percent up to 70 percent in some villages. A successful demonstration project using the newly available HBV vaccine in the early 1980s prompted the development of a comprehensive HBV control program in this population. The program included universal screening and vaccination of at least 90 percent of susceptible persons, screening for all pregnant women and routine newborn vaccination with full HBV vaccine series completion, and for individuals with chronic HBV infection, twice yearly screening for liver cancer and to determine if they were candidates for antiviral therapy. These services resulted in long term benefits: the last case of acute HBV infection among Alaskan Natives occurred in 1992 and the last case of pediatric liver cancer occurred in 1999.<sup>53</sup>

Geographic distribution of chronic hepatitis B virus (HBV) infection – worldwide, 2006\*



\*For multiple countries, estimates of prevalence of hepatitis B surface antigen (HBsAg), a marker of chronic HBV infection, are based on limited data and might not reflect current prevalence in countries that have implemented childhood hepatitis B vaccination. In addition, HBsAg prevalence might vary within countries by subpopulation and locality. Source: CDC. Travelers' health; yellow book. Atlanta, GA: US Department of Health and Human Services, CDC; 2008.

## Asian Americans, Pacific Islanders and Hepatitis B

## PRIORITY POPULATIONS

### ASIAN AMERICANS & PACIFIC ISLANDERS



In the United States, more than 50 percent of chronic HBV infections occur among Asian Americans and Pacific Islanders (AAPIs). AAPIs make up about 5 percent of the U.S. population and this high burden of HBV leads to high rates of liver cancer. AAPIs are up to 13 times more likely to develop liver cancer than other groups, primarily due to HBV infection. Compared to Whites, AAPI liver cancer death rates are 60 percent higher. Many of these deaths could be prevented.

Despite the high burden, an estimated 67 percent of AAPIs with HBV are untested and unaware of their status. Getting tested for HBV can help people access medical care and lifesaving treatments that can help prevent serious liver damage.

The Action Plan calls for a reduction in viral hepatitis health disparities like those among AAPI for HBV. In partnership with community partners, CDC has developed information and materials in the [Know Hepatitis B campaign](#), a multilingual communications campaign that encourages AAPIs to get tested so they can take care of themselves and protect their families.

In the United States, HBV disproportionately affects Asian Americans and Pacific Islanders (AAPIs). While AAPIs make up about 5 percent of the U.S. population, they account for more than 50 percent of all Americans living with chronic HBV infection. Sadly, HBV-related liver cancer is a leading cause of cancer deaths among Asian Americans. People born outside the United States may have been exposed to viral hepatitis at birth or during the time before they emigrated from their country of origin.

An estimated one in 12 AAPIs is living with HBV infection, however, as many as two of three HBV-infected AAPIs do not know they are infected because they have not been tested.<sup>54</sup> AAPIs born in Asia or the Pacific Islands as well as those born in the United States who were not vaccinated at birth and have at least one parent born in a country with high HBV infection rates are recommended to be tested for HBV. Testing is important because knowledge of status can help people access medical care and lifesaving treatments that can help prevent serious liver damage. Most Asian countries have high rates of HBV, and CDC recommends HBV testing for all individuals born in countries with prevalence of two percent or greater (see map on page 30). Read the full [CDC HBV testing recommendations](#).

### AFRICAN AMERICANS

African Americans experience a higher burden of chronic HCV infection and HCV-related deaths compared with the general population. In an analysis of data spanning 2003–2010, African Americans were shown to have significantly higher rates of chronic infection, accounting for 11 percent of the population but representing 25

## PRIORITY POPULATIONS

percent of people living with HCV infection.<sup>5</sup> This disparity becomes more pronounced in older age groups. African Americans aged 20-59 years are 1.6 times more likely to be chronically infected and African Americans aged 60 years or older are 10 times more likely to be chronically infected with HCV compared to all other races.<sup>4</sup> In 2014, chronic liver disease and cirrhosis, which often relate to HCV infection, were among the [top 10 leading causes of death](#) among African Americans 45 to 64 years of age.

Although African Americans are not at significantly higher risk of becoming newly infected with HBV, they experience higher death rates due to chronic HBV infection compared with the overall population. These findings indicate a need for expanded screening and treatment of African Americans for HBV and HCV.

### PEOPLE IN CORRECTIONAL FACILITIES

Approximately 10 to 41 percent of persons in state prisons are living with HCV infection.<sup>55</sup> About 30 percent of Americans living with HCV infection will pass through correctional systems in any given year,<sup>47</sup> revealing a key opportunity to diagnose people living with viral hepatitis. Justice-involved individuals are at increased risk for infectious disease, including HBV, HCV, and HIV/AIDS, because of high-risk behaviors that may have led to their incarceration as well as potential exposure to blood and body fluids while incarcerated. While incarcerated, people may be at risk of exposure through behaviors such as sharing equipment for injection drug use, receiving tattoos<sup>57</sup> or body piercings, and engaging in unprotected sex. Broadly implemented screening programs in correctional settings could result in population-level benefits, linkage to care and cure, and reductions in the spread of disease when incarcerated people are released and return to their communities.<sup>58</sup>

## Viral Hepatitis in Correctional Settings

The prevalence of viral hepatitis and other infectious diseases is high among people who are incarcerated. An estimated 30 percent of all people with HCV enter jails and prisons every year.<sup>1</sup> One modeling study showed that treating incarcerated people for HCV could save \$750 million and would prevent infections among non-institutionalized individuals.<sup>2</sup> Risk factors for viral hepatitis transmission among this population include injection drug use, unprotected sex, and percutaneous exposures through unsafe tattooing, fighting, abrasions, or other exposure to blood—even tiny amounts transmitted by sharing personal items such as razors or toothbrushes. The vast majority of people who enter correctional institutions are released and reenter our communities.

The Action Plan calls for the expansion of access to and delivery of hepatitis prevention, care, and treatment services to people in correctional settings. This includes increasing the availability of testing to support early identification of viral hepatitis infection, immunization (HAV or HBV), health education, risk-reduction counseling, and referral to treatment. It also includes community reentry planning to provide continuous care for those who started treatment while incarcerated and reduce the chances of discontinuation of treatment and transmission to others when the individual returns to the community.

People who have ever been incarcerated should ask their health care providers whether hepatitis testing and vaccination are recommended. Providers and other support staff (e.g., social workers, case managers) working with people in correctional facilities are in a critical position to provide [viral hepatitis prevention, care, and treatment to support this population](#).

<sup>1</sup> University of Washington. Hepatitis C Online. Treatment of Hepatitis C in a Correctional Setting. <http://www.hepatitisc.uw.edu/pdf/special-populations-situations/treatment-corrections/core-concept/all> Accessed December 12, 2016.

<sup>2</sup> He T, Li K, Roberts MS, Spaulding AC, Ayer T, Grefenstette JJ, Chhatwal J. [Prevention of Hepatitis C by Screening and Treatment in U.S. Prisons](#). *Annals of Internal Medicine*. 2016;164(2):84-92.

### VETERANS

Among Veterans in care, the estimated chronic HCV infection rate is four percent, about three times that of the general U.S. population. Veterans who served during the Vietnam War era (1961-1975), those with alcohol or substance use disorders, and those with psychiatric conditions or homelessness

**HIGH RATES OF HCV ARE CONSISTENT WITH THE WELL-ESTABLISHED LINK BETWEEN HOMELESSNESS AND ADVERSE OUTCOMES IN OVERALL HEALTH AND LIFE EXPECTANCY.**

are particularly likely to be affected. In January 2014, VA transitioned to baby boomer testing which includes Vietnam-era service. VA has developed systems of care and received special funding from Congress to treat HCV infection among Veterans. A record number of Veterans have been treated for HCV between January 2014 and September 2016; as of October 2016, approximately 71,000 Veterans in VA care known to be infected with HCV have yet to be treated. An estimated 30 to 60 percent of these patients are more difficult to link to and retain in care, and therefore are more difficult to start on treatment.<sup>16</sup>

VA has committed to treating all Veterans enrolled in VA care for HCV and has undertaken systems redesign efforts to reach out to Veterans with HCV infection who are more difficult to engage in care and connect them to treatment services. VA is also partnering with community providers through the Choice Program to offer care in the community where available and is partnering with Veterans Service Organizations to promote testing and treatment among Veterans not currently enrolled in or seeking care in the VA system.

**HOMELESS INDIVIDUALS**

Homeless individuals experience high rates of chronic HCV infection. Studies show that the prevalence of HCV infection among homeless individuals ranges from 22.2 to 52.5 percent.<sup>59</sup> Rates of 41 to 44 percent were observed among homeless Veterans. Given the total homeless population in the United States, which was estimated at 564,708 for a given night in January 2015, this suggests that the estimated number of HCV-infected persons in the

homeless population ranges from 125,365 to 296,472.<sup>60</sup> High rates of HCV infection are consistent with the well-established link between experiencing homelessness and adverse outcomes in overall health and life expectancy.

Homeless individuals often have a number of risk factors for HCV infection including a history of injection drug use, incarceration, as well as being born between 1945 and 1965. Homeless services providers and Healthcare for the Homeless programs can educate and provide risk reduction counseling, assess, screen, and link to care or treat homeless individuals to cure their HCV infection and to prevent the development of severe disease and death.

**MEN WHO HAVE SEX WITH MEN (MSM)**

Men who have sex with men are at risk for HBV as well as HCV through sexual exposure.<sup>33,61</sup> Approximately 20 percent of new HBV infections occur among MSM. Elevated incidence and prevalence of HBV among MSM has been well documented and this group was among the first populations to be recommended for HBV vaccination when it became available in the 1980s. However, the rate of vaccination of this population remains suboptimal, at approximately 35 percent coverage. Expanded efforts to integrate risk reduction education and vaccination in settings where MSM receive health care and other services are recommended strategies to increase vaccination rates.

More recently, sexual transmission of HCV among HIV-positive MSM has been documented in the United States.<sup>30</sup> Although the rate of transmission appears to be relatively low, the trend has been increasing

## PRIORITY POPULATIONS

over time.<sup>30</sup> Increased training of health care providers regarding HCV testing and treatment recommendations as well as patient education and risk reduction counseling for MSM at risk should be undertaken.

### PREGNANT WOMEN

Pregnant women are a priority population because of the risk of women with infections transmitting the virus to their infants unless proper steps are taken.<sup>11</sup> One in four infants infected with HBV at birth will die of HBV-related causes including liver cancer, which often occurs in late childhood or adulthood when infected at birth. This is why it is critically important to identify all pregnant women who are infected with HBV and provide HBV vaccine and prophylaxis at birth for their infants. In spite of the availability of an intervention that prevents approximately 85 percent of infections, the number of infants in the United States who are infected with HBV at birth has remained constant over the past decade at around 1,000 per year. One area for improvement is identifying women with chronic HBV infection. One strategy that may



support identification is the assessment of maternal country of origin because of higher rates of chronic HBV in many countries, especially in Asia and Africa. Only about one-half of the expected number of chronically infected women are identified and referred to the CDC's National Perinatal HBV Prevention Program. Increased identification, improved use of electronic health records to

## Global Developments in Viral Hepatitis



**“THE WORLD HAS IGNORED HEPATITIS, AT ITS PERIL.”**

- Dr. Margaret Chan, WHO Director-General

In recent years, viral hepatitis has gained attention as the seventh leading cause of death globally and a major cause of disability for millions of people. The enormous impact of viral hepatitis and the availability of effective vaccines and treatments together represent a major opportunity to improve public health.<sup>1</sup>

As the world looks to 2030, and prepares to meet the challenges of an ambitious set of the United Nation's [Sustainable Development Goals](#), the WHO developed a [global health sector strategy for viral hepatitis](#), setting the first global targets for improvement. Covering the period 2016-2021, the strategy was endorsed by the World Health Assembly (WHA) in May 2016. On World Hepatitis Day 2016, Dr. Margaret Chan, WHO Director-General said, “The world has ignored hepatitis at its peril. It is time to mobilize a global response to hepatitis on the scale similar to that generated to fight other communicable diseases like HIV/AIDS and tuberculosis.”

The United States is a leader in the fight against viral hepatitis. The U.S. Viral Hepatitis Action Plan was one of the first national plans to be released. Now updated for 2017-2020, this plan sets 2020 targets for reductions in new infections and deaths that match or exceed the targets set forth by the WHO. Additionally, in 2016 and 2017 the [National Academies of Science are undertaking a two-phase study to consider eliminating the public health problem of HBV and HCV in the United States](#). The initial report found that HBV and HCV “could be rare diseases in the United States, but there are substantial obstacles to meeting this goal.”<sup>2</sup> The Centers for Disease Control and Prevention and the HHS Office of Minority Health are sponsoring a second report, expected to be released in 2017, which will identify specific recommendations needed to eliminate the major public health problem of viral hepatitis in the United States.

<sup>1</sup> Stanaway JD, Flaxman AD, Naghavi M, Fitzmaurice C, Vos T, Abubakar I, Abu-Raddad LJ, Assadi R, Bhalal N, Cowie B, Forouzanfar MH, Groeger J, Hanafiah KM, Jacobsen KH, James SL, MacLachlan J, Malekzadeh R, Martin NK, Mokdad AA, Mokdad AH, Murray CJ, Plass D, Rana S, Rein DB, Richardus JH, Sanabria J, Saylan M, Shahraz S, So S, Vlassov VV, Weiderpass E, Wiersma ST, Younis M, Yu C, El Sayed Zaki M, Cooke GS. [The global burden of viral hepatitis from 1990 to 2013: findings from the Global Burden of Disease Study 2013](#). *Lancet*. 2016;S0140-6736(16):30579-30577.

<sup>2</sup> The National Academies of Sciences, Engineering, and Medicine. [Eliminating the public health problem of hepatitis B and C in the United States: Phase one report](#). Washington, DC: The National Academies Press. 2016.

flag missing and positive results and expanding the recent recommendation to use antivirals to decrease the risk for women at highest risk of transmitting are all steps toward eliminating perinatal HBV transmission in the United States.

HCV is transmitted perinatally to about six percent of infants born to women with chronic infection. The rate of transmission is up to 12 percent among HIV/HCV coinfecting women and women with high HCV viral loads. There is currently no recommended intervention that can prevent perinatal HCV transmission. The increase in new HCV infections among young women of child-bearing age is resulting in larger numbers of infants being born to young women with HCV infection acquired through injection drug use.

Newly infected individuals may have high viral loads so young women who inject drugs and have recently become infected with HCV are at higher risk for transmission. Kentucky, the state with the highest rates of new infections, saw the rate of HCV infection among young pregnant women increase by more than 200 percent from 2011-2014.<sup>31</sup> Infants born to women with HCV infection are recommended to be tested and linked to care.

Identification, treatment, and cure of young women who are infected prior to pregnancy would prevent HCV transmission to their infants. Young pregnant women should be assessed as well for risk factors for HCV infection. In 2015, 18 states had laws that allowed women to be charged with child endangerment or abuse if they use substances while pregnant. This may deter women from seeking the care and treatment they need including prenatal screening for viral hepatitis.<sup>62</sup> Perinatal HCV transmission and prevention are emerging issues and further study is needed to identify effective interventions.

## PEOPLE LIVING WITH HIV AND VIRAL HEPATITIS COINFECTION

Among the 1.2 million people in the United States living with HIV, approximately one in 10 is coinfecting with HBV and one in five is coinfecting with HCV.<sup>63</sup> People with HIV and HBV coinfection are [recommended](#) to receive specific antiviral therapies that are active against both infections. People who are coinfecting with HIV and HCV are a priority population for HCV prevention, diagnosis, and cure because liver-related death is a common cause of death among this population. In comparison with HCV-monoinfected patients, persons coinfecting with HIV have higher liver-related mortality as well as overall mortality.

Curing HCV among people with coinfection results in reductions in liver failure, liver cancer, and liver-related mortality.<sup>44</sup> Previously available HCV treatments were effective in a much smaller percentage of people with HIV/HCV coinfection and more people experienced adverse events associated with treatment. The new direct-acting antivirals that are now available are much more effective in this group of patients and generally safer. However, drug interactions continue to be a concern among these patients who must be on lifelong therapy for HIV. The Ryan White HIV/AIDS Program and its AIDS Drug Assistance Program provide both supportive services such as case management for people living with HIV and AIDS, as well as access to lower cost medications and specialty care treatment. Together, these services can support the effective treatment of people living with HIV and viral hepatitis coinfection to improve their overall health. 🏹

# DEVELOPING THE NATIONAL VIRAL HEPATITIS ACTION PLAN 2017–2020

This Action Plan is the third consecutive national plan outlining robust and dynamic steps to increase viral hepatitis awareness and knowledge among policymakers, health care providers, individuals, and communities, and improve access to quality prevention, care, and treatment services for viral hepatitis.

## FEDERAL VIRAL HEPATITIS PLANNING

This updated Action Plan is based on current scientific and epidemiological data, lessons learned from previous strategic planning efforts, community input, and advances in the health system. Building on the accomplishments and lessons of the prior plans, the federal agencies represented on the Viral Hepatitis Implementation Group (VHIG) collaborated during 2016 to update the vision, structure, goals, and strategies to chart a path for our nation’s response to viral hepatitis through 2020. The VHIG agreed that a simplified structure based on the four main goals would be more easily understood than the previous structure involving both goals and six priority areas, and that this could encourage broader participation and engagement. VHIG members further agreed that the four goals should convey the priorities of our national efforts and that indicators should be identified based on each of the goals to better enable assessment of progress and areas of need.

Federal partners worked within their respective agencies and offices to identify strategic actions to be undertaken beginning in 2017 and continue through 2020 to maximize the efficiency and impact of our national response. Each agency also identified specific actions they would commit to completing, individually or in collaboration with other federal partners. While members

of the VHIG led these efforts, many other federal staff also contributed to the development of this plan and the actions detailed in the Viral Hepatitis Federal Implementation Plan. Proposed actions were reviewed, consolidated, and refined by OHAIDP in its role as coordinator of the Action Plan’s implementation. The updated plan was reviewed and endorsed by the VHIG prior to its release in January 2017.

## COMMUNITY STAKEHOLDER CONTRIBUTIONS

As with earlier editions of the Action Plan (see Appendix E on page 76), input from community and other nonfederal stakeholders played an important role in the development of the 2017-2020 Action Plan. OHAIDP and the VHIG sought input via a series of more than a dozen meetings and teleconferences. Recommendations, ideas, and even commitments were offered by numerous organizations and individuals representing state and local health departments, professional medical societies, advocates, and many others. This rich input reflects the growing engagement in our national response to viral hepatitis and the wide array of partners necessary to achieve our national goals. Many of their recommendations and ideas are reflected, directly and indirectly, in this renewed plan.



## DEVELOPMENT

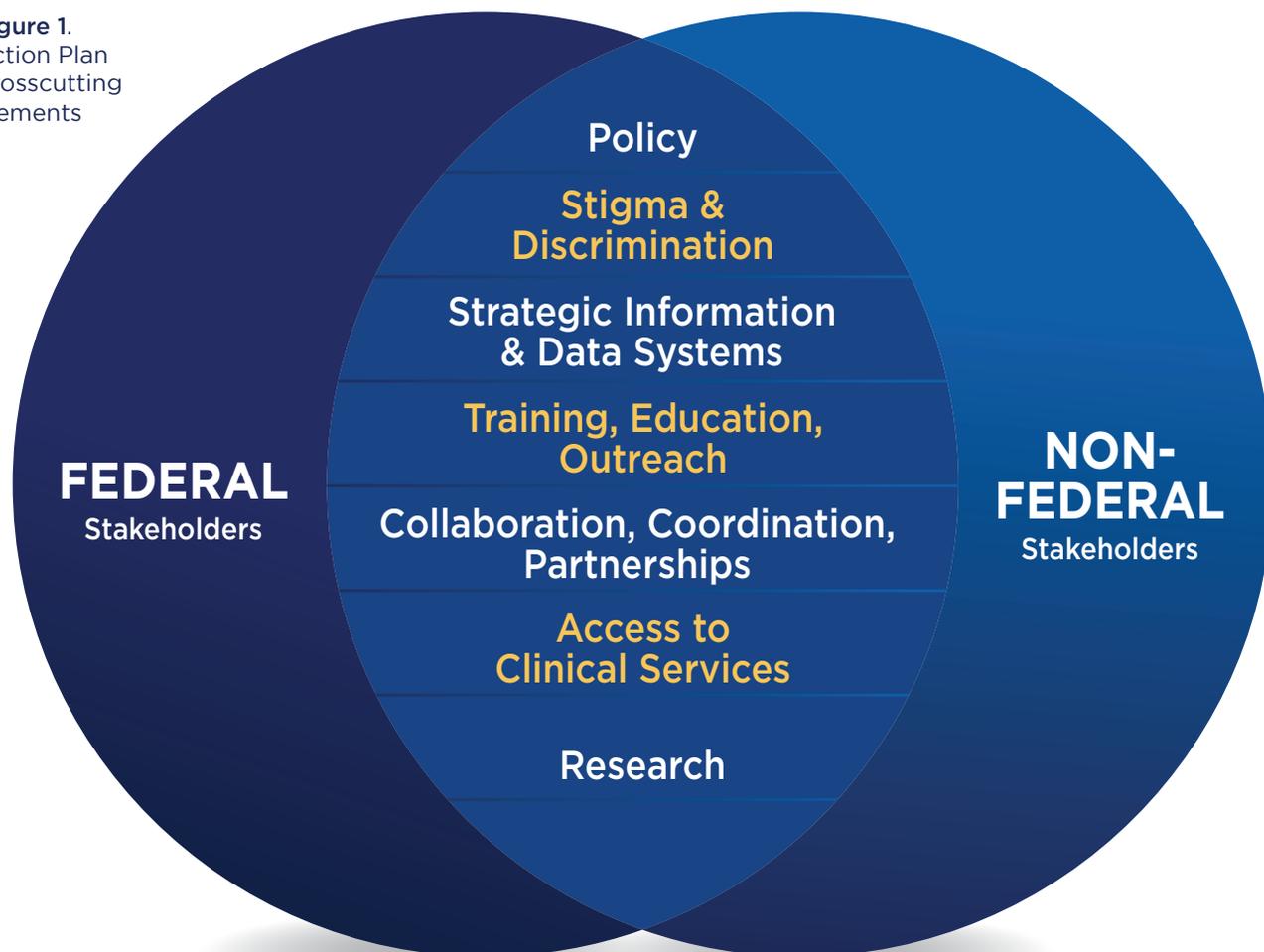
The roles and importance of nonfederal stakeholders cannot be overstated. Stakeholder participation in the Action Plan will be vital throughout the four years of implementation. HHS and federal partners agree that community stakeholders' efforts toward achieving the goals of the Action Plan should be highlighted and shared consistently and broadly so that success can be celebrated, lessons shared swiftly and widely, and new opportunities leveraged. To that end, OHAIDP will engage VHIG members and the viral hepatitis stakeholder community to identify more opportunities to engage with and highlight the successful strategies, model programs, and accomplishments of federal, state, Tribal, and local governments; nongovernmental organizations such as health care providers, health systems,

payers, community-based organizations, and academic institutions; and individual advocates, patients, and their families.

### CROSSCUTTING ELEMENTS

During the development of this Action Plan, federal and nonfederal partners identified the crosscutting elements listed in **Figure 1**. Each of these elements was considered with regard to each of the Action Plan's goals and strategies and many proposed federal actions include one or more of them. All partners are encouraged to consider these elements as they undertake their own strategic planning. Identifying and including multiple elements within programs may enhance viral hepatitis program development. ↘

**Figure 1.**  
Action Plan  
Crosscutting  
Elements





**GOAL**



## **Prevent New Viral Hepatitis Infections**



## GOAL 1 Prevent New Viral Hepatitis Infections

### OPPORTUNITIES

The best way to prevent HBV infections is by effective use of the HBV vaccine. While the implementation of the universal HBV vaccine birth dose has been effective in reducing new HBV infections in the United States by over 80 percent, efforts to vaccinate adults at risk have not been as widespread.

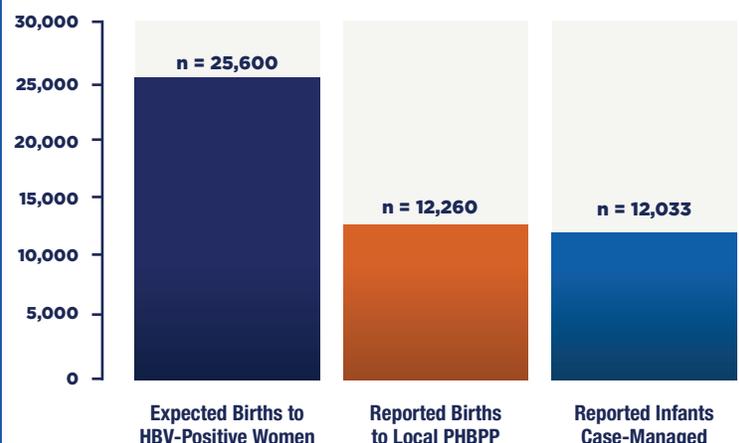
Current [recommendations](#) from the CDC state that all adults at risk, as well as those seeking protection, should be vaccinated with three doses of the HBV vaccine. HBV testing and linkage to care and treatment also play a role in prevention of new infections as people who are aware of their infection are more likely to receive treatment if needed. People aware of their infection can also take steps to protect others from exposure, such as covering cuts and sores, not sharing drug injection equipment, and discussing their status with health care providers prior to undergoing any procedures. All household, sexual, and needle-sharing contacts should be vaccinated to prevent HBV transmission.

Perinatal HBV prevention efforts have stalled with approximately 1,000 infants infected each year in the United States. Prevention of infection among infants is hampered by two main factors: lack of identification of women who are chronically infected, leading to missed opportunities for standard post-exposure prevention measures, and failure to administer the “universal” birth dose of HBV vaccine due to health care facility/provider policy or parental refusal. To move toward the elimination of perinatal HBV transmission, additional efforts are needed on the part

of prenatal health care providers and community programs serving at-risk groups to identify and refer all women with chronic HBV infection to the national [Perinatal Hepatitis B Prevention Program \(PHBPP\)](#). All birthing facilities should have policies and procedures in place to routinely confirm patients’ HBV infection status and, if positive, to provide complete HBV prophylaxis within 12 hours of birth. Further, regardless of maternal status, all infants should receive the first dose of the safe and effective HBV vaccine prior to hospital discharge. Birthing facilities and pediatric care providers should be aware of any parental concerns and provide additional education to mothers who express concerns about newborn HBV vaccine administration.

While there is currently no vaccine that prevents HCV infection, prevention is

### Infants born to Hepatitis B (HBV)-Positive Women in the United States, 2008<sup>1</sup>



<sup>1</sup> Smith, EA, Jacques-Carroll L, Walker TY, Sirotkin B, Murphy TV. The national Perinatal Hepatitis B Prevention Program, 1994-2008. *Pediatrics*. 2012;129(4):609-616.

# PERINATAL HEPATITIS B PREVENTATION PATHWAYS

HBV can be transmitted perinatally—from a pregnant woman to her baby. Yet, while most expectant mothers are screened for HBV, only about half of the estimated 25,600 HBV-positive women are referred to [CDC’s Perinatal Hepatitis B Prevention Program \(PHBPP\)](#) for case management. Once referred, the PHBPP has shown great success in providing case management to 98 percent of infants born to women identified, 95 percent of these infants received the recommended services.

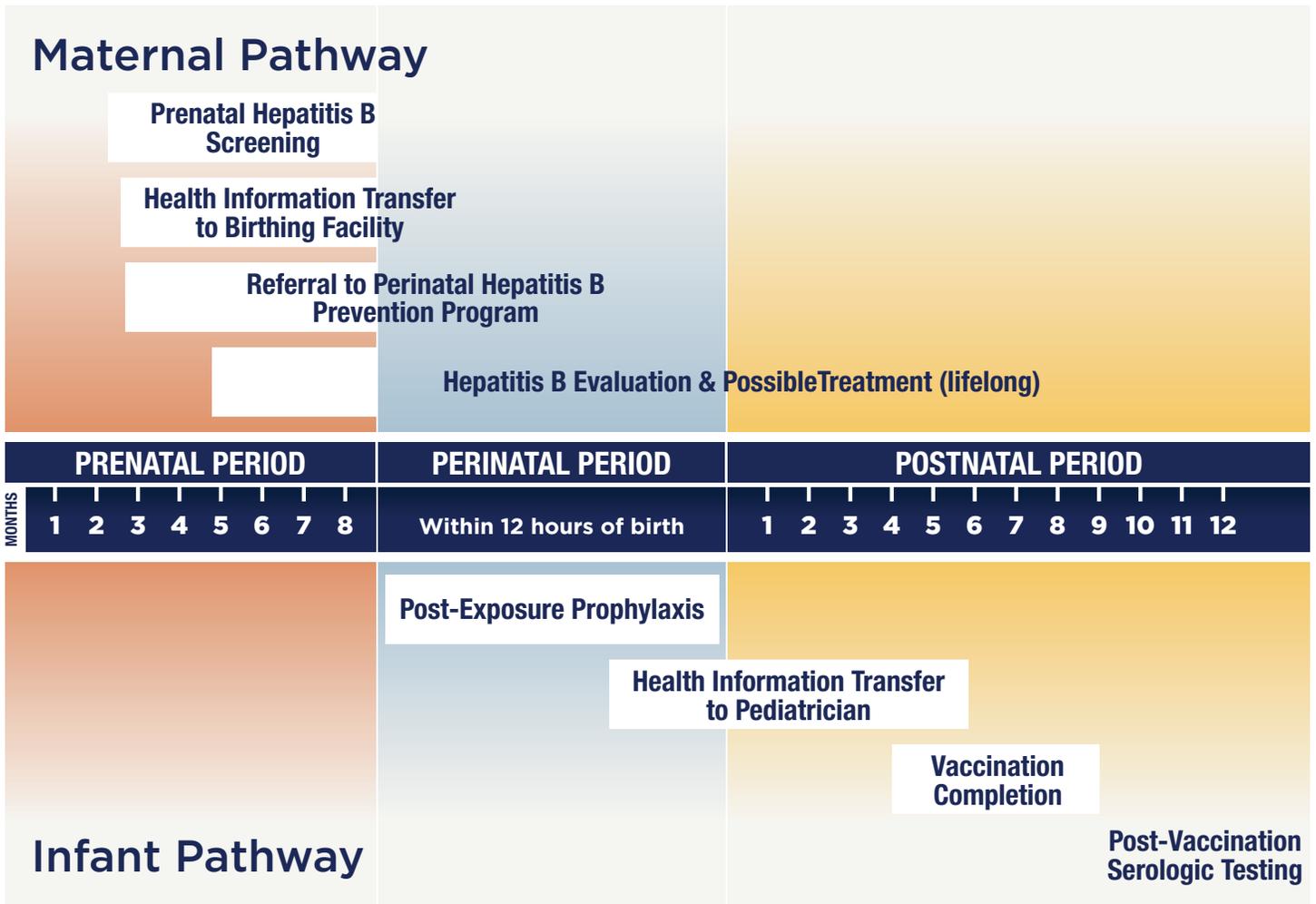
Without proper intervention, 45 percent of all babies born to mothers who have HBV will themselves be infected with HBV.<sup>1</sup> The consequences can be devastating: one in four infants infected with HBV at birth will die prematurely of HBV-related causes, including liver cancer.

Fortunately, several tools are available to prevent perinatal HBV infection. These include timely administration of infant post-exposure prophylaxis (PEP), and completion of the recommended three-dose HBV vaccination series for babies. Mothers who are identified should also receive education and linkage to HBV medical care.

The Action Plan calls for the elimination of mother-to-child transmission of viral hepatitis. Pregnant women should talk with their health care providers and [learn more](#) about the importance of getting screened for HBV and protecting infants through HBV vaccination.

<sup>1</sup> Schillie, S., Division of Viral Hepatitis, U.S. Centers for Disease Control and Prevention (Personal communication, November 25, 2015).

## Perinatal Hepatitis B Prevention Pathways



possible using a multi-pronged approach that includes HCV education, referral for testing, and HCV treatment for those infected. Substance use disorder treatment, such as MAT, and SSPs for people who inject drugs have also shown to be effective prevention strategies. Using a combination of these activities targeted to individuals at risk for or newly identified with substance use disorders is an area where implementation research is needed to evaluate the most effective strategy and develop best practices for dissemination.

For both HBV and HCV infection, further development and evaluation of prevention interventions, targeted prevention to areas and populations most impacted, and continued research on the development of vaccines and effective use of treatments as prevention are needed.

Additional opportunities to improve our collective work on viral hepatitis prevention include:

- Fostering greater outreach and engagement efforts to expand the number and variety of stakeholder groups to better reach the wide range of populations affected and decrease viral hepatitis-related stigma;
- Prioritizing prevention, testing, care, and treatment for those at the highest risk of transmission (e.g. PWID);
- Increasing health care provider training on preventing hepatitis B and C;
- Pursuing strategic collaborations among stakeholders;
- Improving the quality and use of viral hepatitis epidemiologic and prevention services data; and
- Researching a range of viral hepatitis prevention strategies and models of program implementation.

## STRATEGIES

### 1.1

Increase community awareness of viral hepatitis and decrease stigma and discrimination

- Implement national campaigns to educate people at risk about viral hepatitis, the need for vaccination and/or the benefits of getting tested.
- Organize and participate in the observance of Hepatitis Awareness Month (May), Hepatitis Testing Day (May 19), and World Hepatitis Day (July 28).
- Partner with community groups to increase opportunities to educate about viral hepatitis and share facts, recommendations, and personal stories at work, school, faith-based organizations, and other settings to reach all people at risk, born between 1945 and 1965, and in disproportionately affected communities.

### 1.2

Build capacity and support innovation by the health care workforce to prevent viral hepatitis

- Develop trainings, technical assistance, and tools for health care providers to support them in implementing viral hepatitis prevention, screening, and treatment recommendations.
- Increase provider education on pain management and safer opioid-prescribing practices using the [CDC Guideline for Prescribing Opioids for Chronic Pain](#), the Surgeon General's Turn the Tide Rx campaign, and other related resources.

## GOAL 1

- Include a viral hepatitis study module as part of all health professional training programs.
- Encourage individuals to ask their health care providers if they should be vaccinated or tested for viral hepatitis during their next visit or exam.

### 1.3

Address critical data gaps and improve viral hepatitis surveillance

- Identify individuals at risk for and with serologic evidence and/or symptoms of viral hepatitis, confirm complete testing and diagnosis, and report new cases to the public health department.
- Implement electronic health record prompts and other tools to increase screening for individuals in risk groups.
- Develop state, jurisdiction, and health system viral hepatitis epidemiologic profiles.
- Share viral hepatitis surveillance data with decision makers, health care providers, and community leaders.

### 1.4

Achieve universal hepatitis A and hepatitis B vaccination for children and vulnerable adults

- Develop collaborations with programs serving women of childbearing age, families, and individuals at risk to promote education about the preventive benefits of vaccination, encourage vaccination, and/or provide hepatitis vaccinations.
- Assess patients for ongoing risk and history of vaccination and offer vaccination to all who are seeking protection against HAV and HBV.

- Encourage individuals to use the national [Vaccine Finder](#) and get vaccinated if they have not been vaccinated.

### 1.5

Eliminate mother-to-child transmission of hepatitis B and hepatitis C

- Test all pregnant women for HBV and refer those who are positive to CDC's [Perinatal Hepatitis B Prevention Program](#).
- Test women of childbearing age and those who are pregnant and at risk for HCV infection, consider referral to HCV treatment for those who are not pregnant, and ensure that infants of women who test positive are referred for HCV testing.
- Collaborate with community organizations serving disproportionately affected populations to educate staff and women of childbearing age about viral hepatitis and the importance of preventing hepatitis transmission to infants.
- Conduct research to improve understanding of safe use of antiviral agents to reduce mother-to-child transmission of viral hepatitis.

### 1.6

Ensure that people who inject drugs have access to viral hepatitis prevention services

- Train health care providers to screen for substance use disorders and, when identified, recommend and make referrals to services including: education and counseling; HAV and HBV vaccination; HBV and HCV testing; assessment for viral hepatitis treatment if infected;

## GOAL 1

and referral to medication-assisted substance use disorder treatment and SSPs as appropriate.

- Improve access to sterile needles and syringes in areas vulnerable to viral hepatitis and HIV outbreaks.
- Collaborate with organizations serving individuals with substance use disorders to provide staff and client training, education, and services, including vaccination and testing.
- Research the use of viral hepatitis treatment as prevention, and other effective strategies to prevent viral hepatitis infection among people who inject drugs.
- Educate communities and individuals about substance use disorders and available treatments, about risk factors for HBV, HCV, and HIV, and about other health dangers associated with substance use disorders, especially injection drug use.

### 1.7

Reduce the transmission of viral hepatitis in health care settings among patients and health care workers

- Provide regular training for health care providers on effective infection control practices in health care settings.
- Monitor the use and distribution of potential drugs of abuse in all health care settings to prevent diversion.

- Identify patients at risk for HBV exposure related to health care, in accordance with the National Action Plan to Prevent Health Care-Associated Infections, including persons with diabetes and end-stage renal disease, and refer them for vaccination as appropriate..
- Encourage individuals with chronic HBV and HCV infection to talk with their health care providers about their status in advance of procedures to help ensure that all necessary precautions are taken.

### 1.8

Conduct research leading to new or improved viral hepatitis vaccines, diagnostic tests, and treatments and the optimal use of existing tools to prevent, detect, and treat viral hepatitis

- Conduct basic science, epidemiologic, and implementation research on viral hepatitis.
- Conduct research on syringe services program implementation in rural and other underserved areas.
- Participate in community and academic research on viral hepatitis using public health and clinical data on the transmission, prevention, and treatment of viral hepatitis. 🏠



GOAL



**Reduce Deaths and Improve  
the Health of People Living  
with Viral Hepatitis**



## GOAL 2

# Reduce Deaths and Improve the Health of People Living with Viral Hepatitis

### OPPORTUNITIES

The best way to reduce deaths associated with viral hepatitis and improve the health of people living with HBV and HCV infection is to expedite the diagnoses, care, treatment, and/or cure of all individuals living with chronic viral hepatitis. Expanded opportunities for coverage of viral hepatitis screening resulting from the ACA are a first step in efforts to improve outcomes along the care continuum for those living with HBV and HCV infection. Once they are screened, diagnosed, and referred to care, people who are treated for HBV are less likely to develop cirrhosis and liver cancer and less likely to die from their HBV infection. People who are cured of HCV infection are less likely to experience HCV-related health complications like fatigue, joint pain, and cognitive dysfunction or “brain fog,” and less likely to die prematurely.

Another strategy to achieve Goal 2 is to address stigma and discrimination of people living with chronic HBV and HCV infection. While progress in reducing stigma and discrimination can be slow, it begins by talking about viral hepatitis in classrooms, community settings, and faith communities, sharing evidence-based facts, and quashing common myths (e.g., HBV or HCV can be spread by casual contact, hugging, or sharing eating utensils). Telling personal stories about viral hepatitis to which others can relate helps to decrease stigma and normalize testing and treatment. Discrimination against people with chronic viral hepatitis is often unrecognized and likely under-reported. People who feel that they are facing discrimination in any setting should learn about their

federal rights and protections against such discrimination and explore whether legal actions are necessary. [HHS OCR](#) and [DOJ's Disability Rights Section](#) provide useful information about legal protections against hepatitis-related discrimination.

A third major area of opportunity is leveraging the nation's evolving health care system. As we develop new effective tools and strategies, we must identify how these can be used to improve the provision of care and treatment and prevent viral hepatitis deaths, then implement them widely. We must learn how to expedite the adoption of new viral hepatitis health care recommendations and collaborate with all types and levels of health care systems, from individual providers to hospitals, health systems, as well as health insurers. Describing these strategies, evaluating their effectiveness, and encouraging adoption are among the key steps in leveraging the changing health care environment to improve care and treatment of viral hepatitis.

A fourth area is increasing the number and accessibility of evidence-based drug treatment programs for PWID that provide integrated care including viral hepatitis. PWID with hepatitis often suffer from other health conditions at the same time, including mental illness and HIV. Drug and alcohol use can also directly damage the liver, increasing risk for chronic liver disease and cancer among those with viral hepatitis. Drug treatment is critical for PWID, as it can reduce risky behaviors that increase the chance of transmitting hepatitis. Research has shown that patients with hepatitis receiving MAT for their opioid addiction can be safely treated with antiviral medications.

**Additional Opportunities include:**

- Working to improve patient adherence through education and counseling before and during treatment and providing supportive services that address potential barriers to adherence.
- Training and other capacity-building strategies such as telehealth (e.g., [Project ECHO](#)) for health care providers, health systems, and states;
- Expanding the use of electronic health records to increase identification, linkage to care and treatment, and evaluation of clinical service provision;
- Developing, assessing, and disseminating effective models of care and cure;
- Targeting efforts to facilitate screening and treatment in special populations, including people who inject drugs and those in correctional facilities;
- Researching improved therapies, management and cure strategies, and cost effectiveness/cost savings/return on investment of viral hepatitis interventions.

- Encourage individuals to take the CDC Viral Hepatitis Risk Assessment and ask their health care providers if they should be vaccinated or tested for viral hepatitis.
- Use technology and digital collaboration tools to expand health care provider training to areas where there are few specialists.
- Implement strategies to enhance collaborative and integrated models of care, particularly those reaching priority populations.

**STRATEGIES**

**2.1**

Build the capacity of the health care workforce to diagnose viral hepatitis and provide care and treatment to persons infected with viral hepatitis

- Include a viral hepatitis study module as part of all health professional training programs.
- Develop trainings, technical assistance, and tools for primary care and other health care providers to support the implementation of viral hepatitis screening, counseling, and treatment recommendations.

**2.2**

Identify persons infected with viral hepatitis early in the course of their disease

- Assess individuals for risk of viral hepatitis and test all those at increased risk in a range of clinical and non-clinical settings.
- Leverage the ACA's covered preventive services to expand HBV and HCV screening and diagnosis.
- Develop electronic health record prompts and quality improvement activities to increase health care provider implementation of viral hepatitis screening recommendations.
- Talk about viral hepatitis in community settings and dispel common misconceptions by sharing facts about prevention and treatment and/or cure.
- Implement broad-based educational campaigns to encourage testing and dispel widely held myths about who is at increased risk.

**2.3**

Improve access to and quality of care and treatment for persons infected with viral hepatitis

- Provide training and support for the full range of health care providers who can support the management and treatment of people with chronic viral hepatitis.
- Review how payer policies affect access to viral hepatitis treatment, the costs and benefits of expanding access, and consider revision to increase access to treatment.
- Develop testing and linkage to care agreements among community organizations and health care providers to decrease barriers to complete diagnosis and enable timely referral to liver disease evaluation and treatment.
- Educate people at risk for hepatitis infection about recommended viral hepatitis testing; educate individuals who are newly diagnosed about recommended assessment, treatments, and the benefits of treatment adherence and completion.
- Train health care providers to test all people diagnosed with HIV for HBV and HCV upon diagnosis with HIV and at regular intervals for those with ongoing risk factors.

**2.4**

Improve viral hepatitis treatment among persons living with HIV

- Develop electronic health record prompts and quality improvement activities to increase health care provider awareness of viral hepatitis testing recommendations among people living with HIV.

- Provide training and support for health care providers to manage and treat people living with HIV and viral hepatitis coinfection in line with current expert recommendations.
- Increase awareness among people at risk for and living with HIV about viral hepatitis and the shared modes of transmission, strategies for prevention, and recommended treatments that can control or cure viral hepatitis in people living with HIV.

**2.5**

Ensure that people who inject drugs have access to viral hepatitis care and [evidence-based treatment](#) services

- Train health care providers to provide culturally competent and linguistically appropriate care to people who use drugs, including offering viral hepatitis prevention, screening, care, and treatment and referrals to syringe services programs.
- Review payer policies limiting access to viral hepatitis treatment for PWID, the costs and benefits of revising policies to expand access to treatment.
- Educate people in substance use disorder prevention and treatment programs about viral hepatitis testing recommendations and the benefits of treatment.
- Develop programs to test and educate people at risk for viral hepatitis and link those who are positive to viral hepatitis care and treatment.

## GOAL 2

### 2.6

Expand access to and delivery of hepatitis prevention, care, and treatment services in correctional settings

- Provide recommendations for screening, management, and treatment of viral hepatitis in jails and prison settings.
- Train health care providers in correctional settings about the prevalence of and the need to assess risk and offer vaccination, screening, care, and treatment for viral hepatitis.
- Educate staff and incarcerated persons in correctional settings about viral hepatitis prevention and offer HAV and HBV vaccination, HBV and HCV screening for those with risk factors, and linkage to care for those infected.
- Develop viral hepatitis linkage to care and community re-entry plans, including referral to syringe services programs, for individuals leaving correctional settings.

### 2.7

Monitor provision and impact of viral hepatitis care and treatment services

- Use electronic health records to monitor viral hepatitis screening and linkage to recommended care and treatment.
- Develop quality improvement processes to identify gaps and practice improvement strategies to increase the proportion of patients who are diagnosed, linked to care, treated with antiviral agents, and virally suppressed or cured.
- Share strategies for collection and analysis of information on HBV and

HCV care, treatment, and impact with partners and others in the field.

### 2.8

Advance research to enhance identification, care, treatment, and cure for persons infected with viral hepatitis

- Conduct community-based and clinical implementation research on viral hepatitis prevention, surveillance, testing, and treatment.
- Support community input into community and academic viral hepatitis research.
- Support the research and development of new and more effective HBV therapies with a goal of identifying a cure for HBV.
- Support the research and development of new HCV therapies that are safer, more effective, and accessible for a larger proportion of persons with HCV.
- Develop viral hepatitis clinical monitoring processes and track the provision of care and treatment.
- Develop best practices and models of care for coordinated and integrated viral hepatitis, HIV, and substance use disorder treatment.
- Publish and disseminate findings and evaluations of strategies to improve viral hepatitis screening, care, and treatment practices.
- Develop viral hepatitis research agendas with involvement from affected communities and populations.
- Develop and test approaches to support viral hepatitis treatment adherence by patients. 🏹



GOAL



## Reduce Viral Hepatitis Health Disparities



## GOAL 3

# Reduce Viral Hepatitis Health Disparities

### OPPORTUNITIES

In order to reduce health disparities in chronic HBV and HCV, the following are needed:

- Culturally and linguistically appropriate education targeting populations that are disproportionately affected by viral hepatitis,
- Community participation and engagement, and
- Expanded access to diagnosis, treatment, and cure.

Communities disproportionately affected by viral hepatitis often grapple with a range of challenges across the social determinants of health. Language, cultural barriers, and inadequate health care access can be compounded by lack of income and employment, education, and community infrastructure. While [Section 1557](#) of the Affordable Care Act requires certain health programs and activities to provide language assistance services and auxiliary aids to individuals with limited English proficiency (LEP) and disabilities, respectively, barriers still exist that limit access to information among these groups.

The projects targeting specific communities are too numerous to list, but each has identified ways to serve their community most effectively. Some of these projects

have shared the materials they developed on the [CDC National Prevention Information Network's \(NPIN\) Viral Hepatitis](#) page. The NPIN Viral Hepatitis page also features a service finder and links to campaigns, digital media tools, examples of prevention program practices, training, and more. All stakeholders are encouraged to share their resources with others through the CDC's NPIN website, webinars, blogs, social media and other networks, and at national conferences.

The most effective approach to addressing public health issues in communities is to fully engage with community members and organizations. Often, identifying one well-respected community organization or leader opens opportunities to increase engagement. Groups such as churches, temples, and mosques, social clubs, and health professional chapters, and those dedicated to social justice can all play a part in increasing awareness, educating community members and health professionals, and combatting stigma and discrimination. These efforts will lead to increased screening, earlier diagnoses, and better outcomes for people living with chronic viral hepatitis, resulting in fewer deaths.

Expanding access to viral hepatitis care and treatment is ongoing and taking place in the context of the evolving health care environment with implementation of the ACA, rapid changes in health insurance and payment processes, and major innovation in HCV treatment. Innovations in HBV treatment are also in development. Improving access

**THE MOST EFFECTIVE APPROACH TO ADDRESSING PUBLIC HEALTH ISSUES IN COMMUNITIES IS TO FULLY ENGAGE WITH COMMUNITY MEMBERS AND ORGANIZATIONS.**

to viral hepatitis care and treatment is also supported by both community and health care provider education, health care system capacity-building efforts, and enrollment of individuals and families into health insurance plans. Viral hepatitis community planning groups and advocates play a number of roles in expanding access at the state and local levels including educating their decision makers about the needs of people living with viral hepatitis in their communities. These groups and advocates also help develop or identify local resources such as vaccination and testing locations and potential collaborations for linkage to care and treatment.

## STRATEGIES

### 3.1

Decrease health disparities by partnering with and educating disproportionately impacted communities where priority populations live about the benefits of viral hepatitis prevention, screening, care, and treatment

- Identify opportunities to educate community groups serving priority populations and their communities about viral hepatitis and its disproportionate impact.
- Foster partnerships with organizations serving priority populations, including community organizations, academic institutions and offices of minority health to raise awareness of viral hepatitis.

### 3.2

Improve access to care and the delivery of culturally competent, and linguistically appropriate viral hepatitis prevention and care services

- Support community-driven efforts to develop culturally competent and linguistically appropriate viral hepatitis prevention and care messages and materials.
- Train health care providers in the delivery of culturally competent education, counseling, screening, care, and treatment for viral hepatitis.
- Foster collaboration between organizations serving priority populations affected by viral hepatitis and academic researchers to identify effective strategies to improve access to care and treatment for viral hepatitis.
- Provide health care services for priority populations to assure access to viral hepatitis testing, vaccination, care, and treatment.
- Develop culturally competent and linguistically appropriate viral hepatitis educational materials and strategies to increase testing and linkage to care and treatment and disseminate through various channels including the [HHS Viral Hepatitis website](#).

### 3.3

Monitor viral hepatitis-associated health disparities, transmission, and disease

- Evaluate the burden of viral hepatitis in priority populations and their communities, share that information, and focus efforts on disproportionately affected areas and populations.
- Use electronic health records data to monitor and report on viral hepatitis infections, screening, and linkage to recommended care and treatment among priority populations.
- Promote effective strategies to collect information on viral hepatitis incidence, care, and treatment.

### 3.4

Advance basic, clinical, translational, and implementation research to improve understanding of viral hepatitis health disparities

- Encourage participation in community-based and clinical implementation research on viral hepatitis prevention, surveillance, testing, and treatment in populations affected by health disparities.
- Encourage participation of community members in community and academic viral hepatitis research.
- Publish and disseminate findings and evaluations of strategies to improve viral hepatitis screening, care, and treatment practices. 🏹



GOAL

4



## Coordinate, Monitor, and Report on Implementation of Viral Hepatitis Activities



## **GOAL 4**

# **Coordinate, Monitor, and Report on Implementation of Viral Hepatitis Activities**

### **OPPORTUNITIES**

While viral hepatitis resources remain limited and often dispersed across various programs, agencies, and systems, thoughtful coordination of efforts will be important at all levels and among diverse partners to leverage all available tools to reach our national goals. This coordination has begun to take place among federal partners; however, collaborative efforts are needed at the state, local, and health systems levels, as well as federally.

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#### **THOUGHTFUL COORDINATION OF EFFORTS WILL BE IMPORTANT AT ALL LEVELS AND AMONG DIVERSE PARTNERS**

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Monitoring progress toward national goals as well as completion of activities intended to advance those goals is important. Monitoring and reporting on progress helps to encourage further effort and partnerships, enable stakeholders to take stock and revise efforts as needed, and share lessons and tools helpful to others. Much work is needed to develop systems to accurately measure the progress being made in preventing new viral hepatitis infections, and improving the care continuums of HBV and HCV. While some progress can be made by leveraging existing data sources and partnerships, new investments in viral hepatitis surveillance and health information systems are likely to be needed if we want to fully capture and understand the true impacts of viral hepatitis in the United States.

### **STRATEGIES**

#### **4.1**

Increase coordination of viral hepatitis programs across the federal government and between federal agencies, state, territorial, Tribal, and local governments

- Establish viral hepatitis strategic planning groups at the local, state, and national levels to better focus and coordinate activities and leverage all available resources and tools.
- Facilitate the development of standard data collection strategies and measures, share broadly, and encourage adoption across participating organizations.
- Share engagement and partnership models and strategies with strategic planning groups, advocates, and others.

#### **4.2**

Encourage development of improved mechanisms to monitor and report on progress toward achieving national goals

- Develop state and local epidemiologic profiles and periodically review and update.
- Enhance, through funding, health systems' and local surveillance systems' capacity to monitor new viral hepatitis infections and other public health indicators and clinical measures.

### 4.3

#### Strengthen timely availability and use of data

- Collect, monitor, and publish data on viral hepatitis incidence, awareness status of people living with chronic infection, deaths, and health service provision.
- Invest in cross training of epidemiologic investigators and surveillance staff to increase capacity to accurately identify new and chronic infections and capture data related to viral hepatitis health outcomes.
- Explore the use of health information technology including electronic health records, regional and state health information exchanges, and data sharing and interoperability strategies to improve viral hepatitis data.
- Work to enable viral hepatitis case reporting to public health, aligning with efforts to report other infectious diseases to public health using EHRs.

### 4.4

#### Regularly report on progress toward achieving the goals of the National Viral Hepatitis Action Plan

- Collect and share information on viral hepatitis activities and measures of progress toward the goals of the Action Plan. 🏹

# APPENDIX A

## Viral Hepatitis Indicator Background and Specification

**I**ndicators are important tools that help us measure progress towards meeting the goals established in this Action Plan.

OHAIDP convened an Indicators Workgroup comprised of federal agency representatives to develop a set of indicators to track progress toward attaining the goals of the updated Action Plan for 2017-2020. Progress toward these goals will require the contributions of all federal and community partners in the fight against viral hepatitis. The Workgroup reviewed existing viral hepatitis data sources, available trend data, and other key indicators from leading sources such as Healthy People 2020 and CDC to identify data sources, indicator definitions, baselines, and targets. CDC publishes annual surveillance reports based on data submitted by state health departments. These data are generally available for January–December two or three years prior to the current calendar year. This time lag is due to the considerable time and effort needed to collect data from all jurisdictions, ensure completeness and accuracy to the extent possible, and conduct analyses.

### ANNUAL PROGRESS REPORTING

Depending upon the availability of data, progress on each of the indicators will be reported in annual Viral Hepatitis Action Plan Progress Reports.

### BASELINE

Due to the changing epidemiology of viral hepatitis in the United States (i.e. to account for recent increases in newly reported HCV infections), a determination was made to shift the baseline to 2014 rather

than continue from the previous baseline established in the 2014-2016 Action Plan. To ensure accountability and transparency, included under each indicator description is a brief description of the trends since 2010.

### VIRAL HEPATITIS INDICATORS

The following is a description of each of the indicators, with the data source, and how it aligns with other plans. Most indicators remained from the 2014-2016 Action Plan. Some new indicators, including those concerning monitoring acute HBV infections and measures of viral hepatitis disparities, have been added.



#### GOAL 1 PREVENT NEW VIRAL HEPATITIS INFECTIONS

##### Indicator 1:

Decrease the number of new hepatitis B virus infections by at least 60%, from 18,090 to 7,236

This is a newly introduced indicator that measures progress towards the goal of reducing new HBV infections. Reaching the target requires efforts to continue and accelerate the decrease in new infections observed from 2013 to 2014. Such efforts include increasing the vaccination of vulnerable adults, fully implementing the recommended HBV “birth dose,” and increasing HBV testing and linkage to care and treatment.

**Data source:** NNDSS

**Recent trends:** The number of estimated new infections increased from 18,800 in 2011 to 19,800 in 2013. From 2013 to 2014, the number of new infections decreased to 19,200.

## APPENDIX A: VIRAL HEPATITIS INDICATORS

**Alignment with other plans:** CDC National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) Strategic Plan through 2020 (1.1.b); CDC Division of Viral Hepatitis (DVH) Strategic Plan 2016-2020. Both list a target of 60% reduction in adults 10 years of age and older. In order to ensure alignment, the target is listed as at least 60% while the total target change of 18,090 to 7,236 represents a 60.0% reduction in people of all ages.

### Indicator 2:

Increase the rate of hepatitis B vaccine “birth dose” coverage to 85%

Approximately 25,600 infants are born to HBV-infected mothers in the United States and an estimated 1,000 infants develop chronic HBV infection each year. This indicator retains the focus on eliminating mother-to-child transmission of HBV through increased uptake of the recommended “birth dose,” indicated by the number of children who receive the first dose of HBV vaccine within three days of birth.

**Data source:** NIS

**Recent trends:** The rate of HBV “birth dose” coverage increased from 64.1% in 2010 to 72.4% in 2014.

**Alignment with other plans:** Healthy People 2020 (IID-7.9); DVH 2016-2020.

### Indicator 3:

Increase the rate of hepatitis B vaccination among health care personnel to 90%

This indicator measures progress in implementing approaches toward achieving a reduction in viral hepatitis transmission among patients and health care personnel related to health care interventions. The

indicator captures the number of health care personnel reporting they have had at least three doses of HBV vaccine.

**Data Source:** NHIS

**Recent trends:** The rate of HBV vaccination among health care workers remained relatively stable from 2008 (64.3%) through 2014 (67.7%). Achieving the 90% target will require ambitious actions and commitments to increase vaccination among the health care workforce.

**Alignment with other plans:** Healthy People 2020 (IID-15.3); DVH 2016-2020.

### Indicator 4:

Decrease the number of new hepatitis C infections by at least 60%, from 30,500 to 10,889

This indicator will measure the progress toward further reducing the incidence of new HCV infections through interventions such as educating individuals at risk, and referring people who inject drugs to MAT, SSPs, and HCV screening, care, treatment and cure.

**Data source:** NNDSS

**Recent trends:** The number of new infections increased 84.8% from 2011 (16,500) to 2014 (30,500).

**Alignment with other plans:** NCHHSTP (1.1.c); Healthy People 2020 (IID-26); DVH 2016-2020. In order to ensure alignment, the goal is listed as at least 60% while the total target change of 30,500 to 10,889 represents a 64.3% reduction.



**GOAL 2**  
**REDUCE DEATHS AND**  
**IMPROVE THE HEALTH**  
**OF PEOPLE LIVING WITH**  
**VIRAL HEPATITIS**

**Indicator 5:**

Increase the percent of persons aware of their hepatitis B infection to 66% from 33%

Knowing one's status is necessary for accessing hepatitis care, treatment, and services. CDC National Health and Nutrition Examination Survey (NHANES) is a nationally representative survey of adults in the United States and is the source for this and the related indicator, "Increase the number of persons aware of their hepatitis C infection to 66%." The data for these indicators is percentage of persons who tested positive for HBV or HCV, and who indicated they were aware they had HBV or HCV infection prior to NHANES laboratory testing.

**Data source:** NHANES

**Recent trends:** Information for this indicator was first established in 2009 using data from CDC's Racial and Ethnic Approaches to Community Health (REACH) Across the U.S. Risk Factor Survey, which is no longer being conducted. At that time, awareness of infection status was found to be 33%. More recent data are not currently available.

**Alignment with other plans:** NCHHSTP (2.4.b); DVH 2016-2020.

**Indicator 6:**

Reduce the number of HBV-related deaths by 20% from 1,843 to 1,474

This indicator tracks the number of reported deaths that list HBV as the underlying or a contributing cause of death. A

reduction in deaths serves as an indicator of overall progress in addressing HBV infection, as deaths will be reduced by preventing new infections, identifying people infected, linking them to quality care and treatment, and treating or curing their infection when possible.

**Data source:** NVSS

**Recent trends:** Deaths due to HBV infection have increased 2.84% from 2010 (1,792) to 2014 (1,843).

**Alignment with other plans:** This target is more ambitious than targets established in NCHHSTP and DVH 2016-2020.

**Indicator 7:**

Increase the percent of persons aware of their hepatitis C infection to 66% from 54%

Similar to increasing awareness among those infected with HBV, raising awareness among individuals living with HCV infection is an essential first step in taking measures to improve their health and cure the disease.

**Data source:** NHANES

**Recent trends:** Awareness of HCV infection increased from 49.0% in a 2002-2011 pooled sample to 54.0% in a recent analysis of 2013-2014 data.

**Indicator 8:**

Reduce the number of HCV-related deaths by 25% from 19,659 to 14,744

**Alignment with other plans:** NCHHSTP (2.4.c), Healthy People 2020 (IID-27) DVH 2016-2020.

Like the indicator above, "Reduce the number of deaths due to hepatitis B," this indicator measures progress in reducing the number of deaths due to HCV infection.

**Data source:** NVSS

**Recent trends:** Deaths due to HCV infection increased 18.2% from 2010 (16,627) to 2014 (19,659).

**Alignment with other plans:** This target is more ambitious than targets established in NCHHSTP and DVH 2016-2020.



**GOAL 3  
REDUCE VIRAL HEPATITIS  
HEALTH DISPARITIES**

The addition of Goal 3 prompted the Indicators Workgroup to identify a set of indicators to measure progress in achieving this overarching goal. The Workgroup agreed that defining a specific health disparity threshold would be useful in assessing and identifying populations bearing a disproportionate burden of hepatitis morbidity and mortality. Using the CDC Viral Hepatitis Surveillance Report, a disparity threshold of 1.5 times the overall rate for each specific measure was established. The following indicators were used to identify disparities:

- Incidence of acute HBV infections
- Incidence of acute HCV infections
- Number of HBV related deaths
- Number of HCV related deaths

For Goals 1 and 2, indicator alignment with targets from leading sources such as Healthy People 2020<sup>64</sup> and CDC was described. However, viral hepatitis health disparity reduction targets for age cohorts and racial and ethnic groups have not been published. The targets in Goal 3 are the same as for the general population targets as we seek to close the gap or at least to ensure that progress keeps pace in groups identified as bearing the heaviest burden of disease.

**Indicator 9:**

Decrease the number of new hepatitis B virus infections among individuals 30-49 years of age by at least 60%

The overall rate of new HBV infections for 2014 was 0.9/100K. Using the disparity threshold of 1.5 times the overall rate (1.35/100K), a disparity in new HBV infections was identified among individuals age 30-49 (2.06/100K). This disparity highlights the need for expanded HBV vaccination among susceptible adults in this age group.

**Data source:** NNDSS/Viral Hepatitis Surveillance Report

**Recent trends:** The number of new infections decreased 5.4% from 2010 (1,804) to 2014 (1,706) among individuals 30-49 years of age.

**Indicators 10-12:**

Reduce the number of HBV-related deaths among the following groups by at least 20%: Asian Americans and Pacific Islanders, African Americans, and individuals 45 years of age and older.

The overall rate of HBV-related deaths for 2014 was 0.5/100K. Using the disparity threshold of 1.5 times the overall rate (0.75/100K), disparities were identified among three groups: Asian American/Pacific Islanders (AAPIs), African Americans and individuals 45 years of age and older. AAPIs represent the largest disparity, with a rate of 2.71/100K; nearly 3.5 times the overall rate and over 2 times the rate among African Americans (0.80/100K). The rate among individuals ages 45 years and older is 1.30/100K. These disparities illustrate the overwhelming burden of HBV infection among AAPIs and demonstrate the need for targeted diagnosis and treatment among this group

## APPENDIX A: VIRAL HEPATITIS INDICATORS

while continuing to expand screening and care for other groups identified, including African Americans and individuals ages 45 years of age and older.

**Data source:** NNDSS/Viral Hepatitis Surveillance Report

**Recent trends:** Among AAPIs, deaths due to HBV increased 13.5% from 2010 (421) to 2014 (478). Among African Americans, deaths due to HBV decreased 7.30% from 2010 (356) to 2014 (330). Among individuals ages 45 years and older, deaths due to HBV increased 4.99% from 2010 (1,602) to 2014 (1,682).

### Indicators 13-14:

Decrease the number of new hepatitis C virus infections among the following groups by at least 60%: individuals 20-39 years of age and American Indians/Alaska Natives.

The overall rate of new HCV infections in 2014 was 0.70/100K. Using the disparity threshold of 1.5 times the overall rate (1.05/100K), disparities were identified among individuals aged 20-39 years (1.81/100K) and among American Indians/Alaska Natives (AI/AN) (1.32/100K). As previously described, the ongoing opioid epidemic has led to a rise in new viral hepatitis infections particularly among younger individuals. Similarly, the higher rates of infection among AI/AN are believed to be driven by injection drug use.

**Data source:** NNDSS/Viral Hepatitis Surveillance Report

**Recent trends:** Among individuals aged 20-39 years, new HCV infections increased 193.97% from 2010 (531) to 2014 (1,561). Among AI/AN, new HCV infections increased 38.10% from 2010 (21) to 2014 (29).

### Indicators 15-17:

Reduce the number HCV-related deaths among the following groups by at least 25%: individuals 55-74 years of age, American Indians/Alaska Natives, and African Americans.

The overall rate of deaths due to HCV in 2014 was 5.01/100K. Using the disparity threshold of 1.5 times the overall rate (7.52/100K), disparities were identified among three groups: individuals aged 55-74 years (20.14/100K), AI/AN, and African Americans. The rate of death among individuals aged 55-74 years is more than four times the overall rate, which highlights the impact of HCV infection among the baby boomer population. Likewise, the rate among AI/AN (11.20/100K) is more than two times the overall rate, and the rate among African Americans (8.12/100K) is more than 1.6 times the overall death rate. These health disparities highlight the need for enhanced screening efforts among individuals born between 1945 and 1965, as well as those at risk, followed by strong linkage to care and curative treatment.

**Data source:** NNDSS/Viral Hepatitis Surveillance Report

**Recent trends:** Among individuals aged 55-74 years, deaths due to HCV increased 43.47% from 2010 (9,332) to 2014 (13,389). Among AI/AN, deaths due to HCV increased 27.82% from 2010 (248) to 2014 (317). Among African Americans deaths due to HCV increased 18.75% from 2010 (2,981) to 2014 (3,540).



### GOAL 4: COORDINATE, MONITOR, AND REPORT ON IMPLEMENTATION OF VIRAL HEPATITIS ACTIVITIES

There are no indicators for Goal 4. Progress will be monitored using qualitative measures of collaboration and coordination across HHS agencies. Key milestones, including annual reporting on indicators and activities, will also be used to monitor progress. ➡

# VIRAL HEPATITIS INDICATORS BY GOAL



## GOAL 1 REDUCE VIRAL HEPATITIS HEALTH DISPARITIES

Indicator	Baseline: 2014	Source	Measure	2020 Goal
<b>1</b> Decrease the number of new HBV infections by at least 60%	18,090 (2,791)	National Notifiable Diseases Surveillance System (NNDSS)	Number of estimated and (reported) acute hepatitis B cases in the United States	7,236 (1,116)
<b>2</b> Increase the rate of hepatitis B vaccine "birth dose" coverage to 85%	72.4%	National Immunization Surveys (NIS)	Number of children who received the first dose of hepatitis B vaccine within three days of birth	85.0%
<b>3</b> Increase the rate of hepatitis B vaccination among health care personnel to 90%	67.7%	National Health Interview Survey (NHIS)	Number of health care personnel 19 years of age and older with direct patient care responsibilities reporting they have had at least three doses of hepatitis B vaccine	90.0%
<b>4</b> Decrease the number of new HCV infections by at least 60%	30,500 (2,194)	National Notifiable Diseases Surveillance System (NNDSS)	Number of estimated and (reported) acute hepatitis C cases in the United States	10,889 (783)



## GOAL 2 REDUCE DEATHS AND IMPROVE THE HEALTH OF PEOPLE LIVING WITH VIRAL HEPATITIS

Indicator	Baseline: 2014	Source	Measure	2020 Goal
<b>5</b> Increase the percent of persons aware of their HBV virus infection to 66%	33.0% (REACH)	National Health and Nutrition Examination Survey (NHANES)	Number of respondents who indicate they were aware they had hepatitis B prior to laboratory testing	66.0%
<b>6</b> Reduce the number of HBV-related deaths by 20%	1,843	National Vital Statistics System (NVSS)	Number of deaths in the United States for which hepatitis B is listed as the underlying or a contributing cause of death	1,474

## APPENDIX A: VIRAL HEPATITIS INDICATORS

Goal 2 Indicators continued...

Indicator	Baseline: 2014	Source	Measure	2020 Goal
<b>7</b> Increase the percent of persons aware of their hepatitis C virus infection to 66%	54.0% (2013-2014)	National Health and Nutrition Examination Survey (NHANES)	Number of respondents who indicate they were aware they had hepatitis C prior to laboratory testing	66.0%
<b>8</b> Reduce the number of HCV-related deaths by 25%	19,659	National Vital Statistics System (NVSS)	Number of deaths in the United States for which hepatitis C is listed as the underlying or a contributing cause of death	14,744



## GOAL 3 REDUCE VIRAL HEPATITIS HEALTH DISPARITIES

Indicator	Baseline: 2014	Source	Measure	2020 Goal
<b>9</b> Decrease the number of new HBV infections among individuals 30-49 years of age by at least 60%	1,706	Viral Hepatitis Surveillance Report	Number of reported acute hepatitis B cases for adults 30-49 years of age living in the United States	682
<b>10</b> Reduce the number of HBV-related deaths among Asian Americans/Pacific Islanders by at least 20%	478	Viral Hepatitis Surveillance Report	Number of deaths among AAPI living in the United States for which hepatitis B is listed as the underlying or a contributing cause of death	382
<b>11</b> Reduce the number of HBV-related deaths among African Americans by at least 20%	330	Viral Hepatitis Surveillance Report	Number of deaths among African Americans living in the United States for which hepatitis B listed as the underlying or a contributing cause of death	264

APPENDIX A: VIRAL HEPATITIS INDICATORS

Goal 3 Indicators continued...

Indicator	Baseline: 2014	Source	Measure	2020 Goal
<b>12</b> Reduce the number of HBV-related deaths among individuals 45 years of age and older by at least 20%	1,682	Viral Hepatitis Surveillance Report	Number of deaths among persons aged 45 and older in the United States for which hepatitis B is listed as the underlying or a contributing cause of death	1,346
<b>13</b> Decrease the number of new HCV infections among individuals 20-39 years of age by at least 60%	1,561	Viral Hepatitis Surveillance Report	Number of acute hepatitis C cases reported for adults 20-39 years of age in the United States	624
<b>14</b> Decrease the number of new HCV infections among American Indians/Alaska Natives by at least 60%	29	Viral Hepatitis Surveillance Report	Number of reported acute hepatitis C cases for American Indians/Alaska Natives living in the United States	12
<b>15</b> Reduce the number of HCV-related deaths among individuals 55-74 years of age by at least 25%	13,389	Viral Hepatitis Surveillance Report	Number of deaths among persons aged 55-74 in the United States for which hepatitis C is listed as the underlying or a contributing cause of death	10,042
<b>16</b> Reduce the number of HCV-related deaths among American Indians/Alaska Natives by at least 25%	317	Viral Hepatitis Surveillance Report	Number of deaths among American Indians/Alaska Natives in the United States for which hepatitis C is listed as the underlying or a contributing cause of death	238
<b>17</b> Reduce the number of HCV-related deaths among African Americans by at least 25%	3,540	Viral Hepatitis Surveillance Report	Number of deaths among African Americans living in the United States for which hepatitis C is listed as the underlying or a contributing cause of death	2,655

## Viral Hepatitis Indicators: ANNUAL TARGETS

## APPENDIX A: VIRAL HEPATITIS INDICATORS

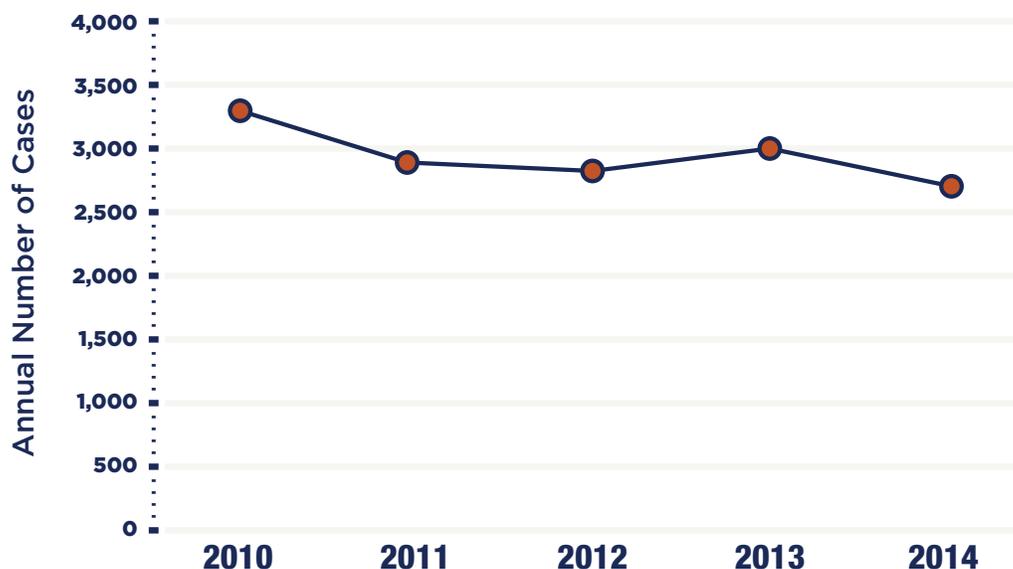
Indicator	2014	2015	2016	2017	2018	2019	2020
1 Decrease the number of new HBV infections by at least 60% estimated (reported)	18,090 (2,791)	17,547 (2,708)	16,462 (2,540)	14,834 (2,289)	12,663 (1,954)	9,950 (1,535)	7,236 (1,116)
2 Increase the rate of hepatitis B vaccine “birth dose” coverage to 85%	72.4%	73.03%	74.29%	76.18%	78.70%	81.85%	85.0%
3 Increase the rate of hepatitis B vaccination among health care personnel to 90%	67.7%	68.82%	71.05%	74.39%	78.85%	84.43%	90.0%
4 Decrease the number of new HCV infections by at least 60% estimated (reported)	30,500 (2,194)	29,519 (2,124)	27,558 (1,983)	24,617 (1,771)	20,694 (1,489)	15,791 (1,136)	10,889 (783)
Indicator	2014	2015	2016	2017	2018	2019	2020
5 Increase the percent of persons aware of their HBV infection to 66%	33.00%	34.65%	37.95%	42.90%	49.50%	57.75%	66.0%
6 Reduce the number of HBV-related deaths by 20%	1,843	1,825	1,788	1,732	1,659	1,567	1,474
7 Increase the percentage of persons aware of their HCV infection to 66%	54.0%	54.6%	55.8%	57.6%	60.0%	63.0%	66.0%
8 Reduce the number of HCV-related deaths by 25%	19,659	19,413	18,922	18,185	17,202	15,973	14,744
Indicator	2014	2015	2016	2017	2018	2019	2020
9 Decrease the number of new HBV infections among individuals 30-49 years by at least 60%	1,706	1,655	1,552	1,399	1,194	938	682
10 Reduce the number of HBV-related deaths among Asian Americans/Pacific Islanders by at least 20%	478	473	464	449	430	406	382
11 Reduce the number of HBV-related deaths among African Americans by at least 20%	330	327	320	310	297	281	264
12 Reduce the number of HBV-related deaths among individuals 45 years and older by at least 20%	1,682	1,665	1,632	1,581	1,514	1,430	1,346
13 Decrease the number of new HCV infections among individuals 20-39 years by at least 60%	1,561	1,514	1,421	1,280	1,093	859	624
14 Decrease the number of new HCV infections among American Indians/Alaska Natives by at least 60%	29	28	26	24	20	16	12
15 Reduce the number of HCV-related deaths among individuals 55-74 years by at least 25%	13,389	13,222	12,887	12,385	11,715	10,879	10,042
16 Reduce the number of HCV-related deaths among American Indians/Alaska Natives by at least 25%	317	313	305	293	277	258	238
17 Reduce the number of HCV-related deaths among African Americans by at least 25%	3,540	3,496	3,407	3,275	3,098	2,876	2,655

# APPENDIX B

## Viral Hepatitis Epidemiology

### Acute Infections and Mortality Rates

Figure B.1 Reported Number of Acute Hepatitis B Cases United States, 2010–2014



Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
<b>Age Group</b>										
0-19 yrs	48	0.1	37	0.0	21	0.0	25	0.0	14	0.0
20-29 yrs	471	1.1	423	1.0	387	0.9	332	0.8	282	0.6
30-39 yrs	931	2.3	800	2.0	872	2.2	980	2.4	888	2.2
40-49 yrs	873	2.0	805	1.9	806	1.9	880	2.1	818	2.0
50-59 yrs	607	1.5	466	1.1	491	1.1	496	1.1	504	1.2
60+ yrs	396	0.7	307	0.5	240	0.4	272	0.4	272	0.4

Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
<b>Race/Ethnicity</b>										
White (non-Hispanic)	1,601	0.8	1,603	0.8	1,658	0.8	1,830	0.9	1,713	0.9
Black (non-Hispanic)	666	1.7	542	1.4	444	1.1	382	1.0	343	0.8
Hispanic	301	0.6	211	0.4	14	0.4	205	0.4	158	0.3
Asian/Pacific Islander	94	0.6	64	0.4	64	0.4	58	0.3	53	0.3
American Indian/Alaska Native	28	1.1	14	0.5	18	0.7	18	0.7	21	0.8

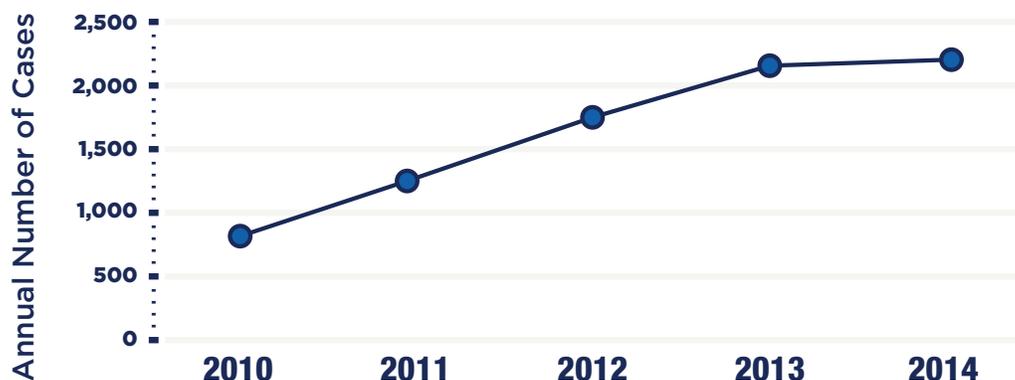
Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
<b>Sex</b>										
Male	2,054	1.4	1,796	1.2	1,873	1.2	1,778	1.2	1,778	1.1
Female	1,287	0.8	1,094	0.7	1,163	0.7	1,001	0.7	1,001	0.6

<b>Overall</b>	<b>3,350</b>	<b>1.1</b>	<b>2,903</b>	<b>0.9</b>	<b>2,895</b>	<b>0.9</b>	<b>3,050</b>	<b>1.0</b>	<b>2,791</b>	<b>0.9</b>
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Figure B.2

## Reported Number of Acute Hepatitis C Cases

United States, 2010-2014



Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
Age Group										
0-19 yrs	43	0.1	77	0.1	90	0.1	102	0.1	88	0.1
20-29 yrs	303	0.8	486	1.2	722	1.7	831	2.0	918	2.2
30-39 yrs	228	0.6	317	0.8	429	1.1	519	1.4	643	1.7
40-49 yrs	135	0.3	180	0.4	264	0.7	294	0.8	282	0.7
50-59 yrs	100	0.3	117	0.3	179	0.4	189	0.5	166	0.4
60+ yrs	29	0.1	38	0.1	60	0.1	59	0.1	70	0.1

Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Race/Ethnicity										
White (non-Hispanic)	592	0.3	892	0.5	1,229	0.6	1,527	0.8	1,569	0.8
Black (non-Hispanic)	41	0.1	54	0.1	57	0.2	75	0.2	74	0.2
Hispanic	65	0.1	82	0.2	104	0.2	114	0.2	124	0.2
Asian/Pacific Islander	11	0.1	8	0.1	16	0.1	13	0.1	11	0.1
American Indian/ Alaska Native	21	1.0	23	1.1	43	2.0	38	1.7	29	1.3

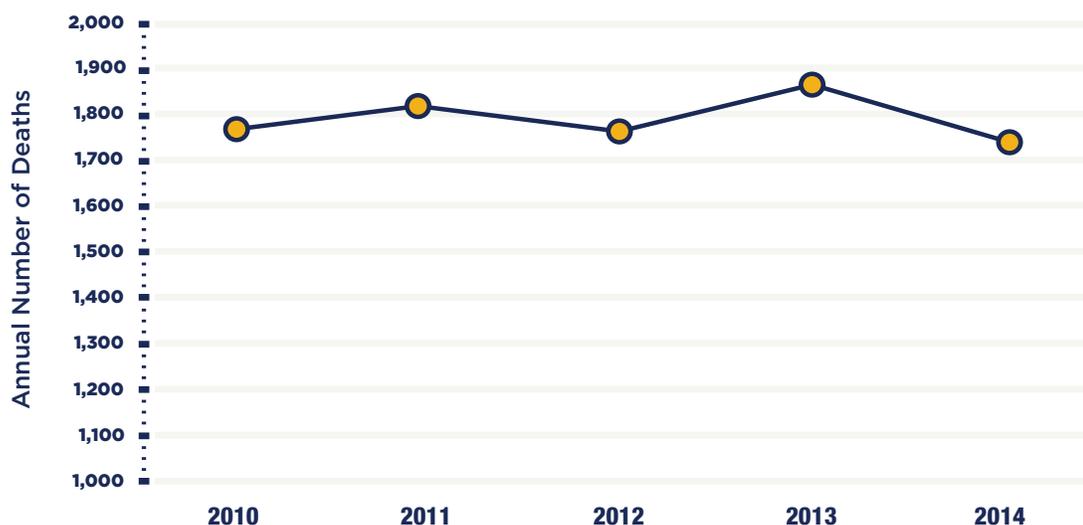
Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Sex										
Male	454	0.3	641	0.4	955	0.7	1,142	0.8	1,167	0.8
Female	392	0.3	585	0.4	821	0.5	993	0.7	1,025	0.7

<b>Overall</b>	<b>850</b>	<b>0.3</b>	<b>1,232</b>	<b>0.4</b>	<b>1,778</b>	<b>0.6</b>	<b>2,138</b>	<b>0.7</b>	<b>2,194</b>	<b>0.7</b>
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\* National Notifiable Diseases Surveillance System (NDSS)

Figure B.3

Number of Hepatitis B-related Deaths † United States, 2010–2014



Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
<b>Age Group **</b>										
0-34 yrs	48	0.0	41	0.0	38	0.0	40	0.0	35	0.0
35-44 yrs	142	0.4	143	0.4	123	0.3	146	0.4	126	0.3
45-54 yrs	448	1.0	421	0.9	428	1.0	389	0.9	384	0.9
55-64 yrs	610	1.7	645	1.7	639	1.7	704	1.8	684	1.7
65-74 yrs	296	1.4	285	1.3	314	1.3	343	1.4	358	1.4
75+ yrs	248	1.3	269	1.4	229	1.2	251	1.3	256	1.3

Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
<b>Race/Ethnicity **</b>										
White (non-Hispanic)	856	0.3	832	0.3	818	0.3	868	0.3	853	0.3
Black (non-Hispanic)	356	0.9	373	1.0	322	0.8	384	1.0	330	0.8
Hispanic	136	0.4	161	0.5	139	0.4	149	0.4	155	0.4
Asian / Pacific Islander	421	3.0	422	2.7	469	2.9	451	2.6	478	2.7
American Indian / Alaska Native	17	0.7	9	0.4	18	0.7	14	0.6	11	0.4

Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
<b>Sex</b>										
Male	1,316	0.8	1,321	0.8	1,272	0.8	1,375	0.8	1,307	0.7
Female	476	0.3	483	0.3	499	0.3	498	0.3	536	0.3

<b>Overall</b>	<b>1,792</b>	<b>0.5</b>	<b>1,804</b>	<b>0.5</b>	<b>1,771</b>	<b>0.5</b>	<b>1,873</b>	<b>0.5</b>	<b>1,843</b>	<b>0.5</b>
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\* Rates for race, sex, and overall total are age-adjusted per 100,000 U.S. standard population in 2000.

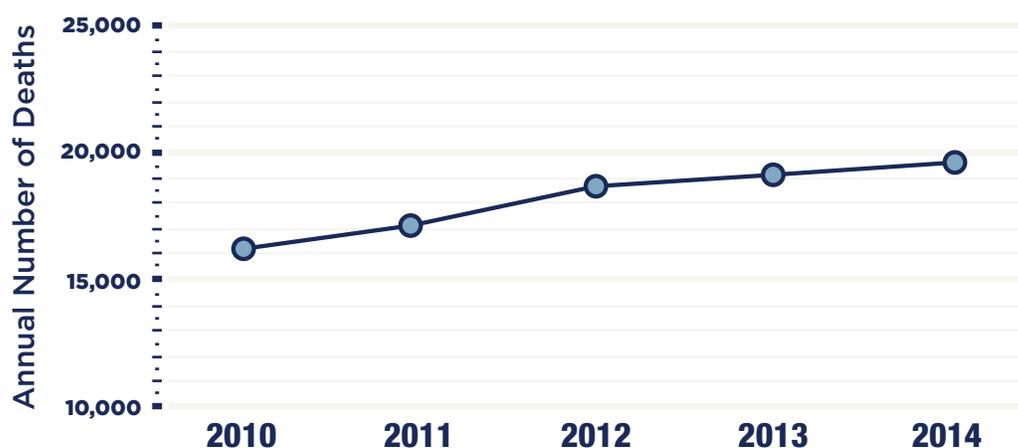
† Cause of death is defined as the underlying cause of death or one of the multiple causes of death and is based on the International Classification of Diseases, 10th Revision (ICD-10) codes B16, B17.0, B18.0, B18.1 (hepatitis B).

Source: CDC, National Vital Statistics System

APPENDIX B: VIRAL HEPATITIS EPIDEMIOLOGY

Figure B.4

Number of Hepatitis C-related Deaths † United States, 2010–2014



Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
<b>Age Group **</b>										
0-34 yrs	117	0.1	128	0.1	158	0.1	121	0.1	162	0.1
35-44 yrs	712	1.7	696	1.7	622	1.5	573	1.4	552	1.4
45-54 yrs	5,171	11.5	5,073	11.3	4,749	10.7	4,344	9.9	4,118	9.5
55-64 yrs	7,431	20.4	8,330	21.9	9,235	23.9	9,899	25.2	9,999	25.0
65-74 yrs	1,901	8.8	2,136	9.5	2,515	10.5	3,004	11.9	1,433	7.2
75+ yrs	1,293	7.0	1,357	7.2	1,369	7.2	1,425	7.3	1,433	7.2

Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
<b>Race/Ethnicity **</b>										
White (non-Hispanic)	10,575	4.0	11,196	4.2	11,839	4.4	12,219	4.4	12,455	4.5
Black (non-Hispanic)	2,981	7.7	3,167	7.9	3,232	7.8	3,520	8.4	3,540	8.1
Hispanic	2,318	6.8	2,555	7.2	2,668	7.2	2,699	6.9	2,767	6.8
Asian / Pacific Islander	440	3.3	455	3.1	472	3.2	495	3.1	438	2.6
American Indian / Alaska Native	248	9.9	275	10.6	313	11.8	324	12.2	317	11.2

Demographic Characteristic	2010		2011		2012		2013		2014	
	No.	Rate								
<b>Sex</b>										
Male	11,718	6.8	12,651	7.1	13,300	7.3	13,745	7.4	13,998	7.4
Female	4,846	2.6	5,080	2.7	5,350	2.8	5,623	2.9	5,661	2.8

<b>Overall</b>	<b>16,627</b>	<b>4.6</b>	<b>17,721</b>	<b>4.8</b>	<b>18,650</b>	<b>5.0</b>	<b>19,368</b>	<b>5.0</b>	<b>19,659</b>	<b>5.0</b>
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\* Rates for race, sex, and overall total are age-adjusted per 100,000 U.S. standard population in 2000.

† Cause of death is defined as the underlying cause of death or one of the multiple causes of death and is based on the International Classification of Diseases, 10th Revision (ICD-10) codes B17.1, and B18.2 (hepatitis C).

§ Two deaths in 2010, one death in 2011, two deaths in 2012, two deaths in 2013, and five deaths in 2014 are not represented under the age category due to missing age data.

Ω The race/ethnicity category was added starting in 2010 to incorporate bridged race categories. 65 deaths in 2010, 73 deaths in 2011, 126 deaths in 2012, 111 deaths in 2013, and 142 deaths in 2014 are not represented under the race/ethnicity category due to missing race and/or ethnicity data.

Source: CDC, National Vital Statistics System

# APPENDIX C

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# APPENDIX D

## Viral Hepatitis Recommendations and Resource Links

### SCREENING

[U.S. Preventive Services Task Force Recommendations: Hepatitis B Virus Infection: Screening, 2014](#)

[CDC Recommendations for Hepatitis B Screening \(and other tools\)](#)

[U.S. Preventive Services Task Force Recommendations: Hepatitis C: Screening, 2013](#)

[CDC Testing Recommendations for Hepatitis C Virus Infection](#)

### VACCINATION

[CDC Hepatitis A Vaccination Recommendations](#)

[CDC Hepatitis B Vaccination Recommendations](#)

### TREATMENT

[2015 Sexually Transmitted Diseases Treatment Guidelines](#)

[AASLD Guidelines for Treatment of Chronic Hepatitis B](#)

[AASLD-IDSA Recommendations for testing, managing, and treating hepatitis C](#)

### INTEGRATION

VA - [Viral Hepatitis Home](#) (information for both health care providers and for Veterans and the public)

### PRIMARY CARE

HRSA - [Hepatitis: Action Steps and Guidelines for Health Centers](#)

### SUBSTANCE USE DISORDERS

SAMHSA - [Hepatitis Tools](#) (including Addressing Viral Hepatitis in People with Substance Use Disorders)

### MENTAL HEALTH DISORDERS

[Integrated Mental Health Care for Patients with Chronic Hepatitis C and Liver Disease](#) (multiple tools)

# APPENDIX E

## Prior Viral Hepatitis Action Plans

The National Viral Hepatitis Action Plan is built upon the foundation of prior Action Plans that have been implemented in the United States since 2011.

### THE FIRST U.S. VIRAL HEPATITIS ACTION PLAN (2011-2013)

Following the release of the Institute of Medicine's (IOM) groundbreaking 2010 report, [Hepatitis and Liver Cancer: A National Strategy for Prevention and Control of Hepatitis B and C](#), HHS convened an interagency working group to review the report's 22 recommendations and develop a comprehensive strategic Action Plan that would set forth actions to improve viral hepatitis prevention, diagnosis, and treatment, and improve the coordination of viral hepatitis-related activities both across HHS and with other government agencies and non-governmental organizations. Stakeholders from other federal agencies; professional societies; and state, Tribal, local, and community partners provided critical input.

In May 2011, HHS issued [Combating the Silent Epidemic of Viral Hepatitis: Action Plan for the Prevention, Care & Treatment of Viral Hepatitis \(PDF - 735 KB\)](#), the nation's first action plan to better focus and coordinate our nation's response to viral hepatitis. To support federal implementation efforts, the Assistant Secretary for Health charged the HHS Office of HIV/AIDS and Infectious Disease Policy (OHAIDP) with coordinating and monitoring implementation of the Plan. OHAIDP convened a Viral Hepatitis Implementation Group (VHIG) that met regularly throughout the Plan's implementation (See Appendix B for a list of VHIG members.). Members of the VHIG serve in at least two ways: they are generally responsible for monitoring and providing leadership on the implementation of the specific actions, and for communicating within their agencies and offices about the needs and priorities related to viral hepatitis. Highlights of key accomplishments within each of the Action Plan's six priority areas can be found in [annual progress reports](#).

### ACTION PLAN UPDATED FOR 2014-2016

Using the 2011 Action Plan as a framework, the federal partners engaged in the nation's response to viral hepatitis developed a three-year update and HHS issued [The Action Plan for the Prevention, Care and Treatment of Viral Hepatitis \(2014-2016\) \(PDF 5 MB\)](#) in April 2014. This updated Action Plan built upon the substantial progress made during the three prior years by agencies and offices across HHS as well as within the Departments of Justice and Veterans Affairs. Substantial input from nonfederal stakeholders informed the update and for the first time the plan featured specific suggestions on ways in which nonfederal stakeholders could engage in complementary activities to help achieve the Action Plan's goals. The VHIG continued to meet to provide guidance, identify opportunities for collaboration, and support successful implementation of the Plan.

# APPENDIX F

## Abbreviations and Acronyms

<b>Action Plan</b>	National Viral Hepatitis Action Plan
<b>ACIP</b>	Advisory Committee on Immunization Practices
<b>ACA</b>	Affordable Care Act
<b>AAPI</b>	Asian American and Pacific Islander
<b>AASLD</b>	American Association for the Study of Liver Diseases
<b>AI/AN</b>	American Indian / Alaska Native
<b>ASTHO</b>	Association of State and Territorial Health Officials
<b>CDC</b>	U.S. Centers for Disease Control and Prevention
<b>CMS</b>	Centers for Medicare & Medicaid Services
<b>DAA</b>	Direct-acting antiviral
<b>DVH</b>	Division of Viral Hepatitis
<b>FDA</b>	U.S. Food and Drug Administration
<b>HAV</b>	Hepatitis A virus
<b>HBV</b>	Hepatitis B virus
<b>HCV</b>	Hepatitis C virus
<b>HDV</b>	Hepatitis D virus
<b>HEV</b>	Hepatitis E virus
<b>HHS</b>	U.S. Department of Health and Human Services
<b>HRSA</b>	Health Resources and Services Administration
<b>IDSA</b>	Infectious Diseases Society of America
<b>MAT</b>	Medication-assisted treatment

## APPENDIX F: ABBREVIATIONS & ACRONYMS

<b>MSM</b>	Men who have sex with men
<b>NHANES</b>	National Health and Nutrition Examination Survey
<b>NHIS</b>	National Health Interview Survey
<b>NIS</b>	National Immunization Surveys
<b>NNDSS</b>	National Notifiable Diseases Surveillance System
<b>NPIN</b>	National Prevention Information Network
<b>NCHHSTP</b>	National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention
<b>NVSS</b>	National Vital Statistics System
<b>OHAIDP</b>	Office of HIV/AIDS and Infectious Disease Policy
<b>PEP</b>	Post-exposure prophylaxis
<b>PHBPP</b>	Perinatal Hepatitis B Prevention Program
<b>PWID</b>	People who inject drugs
<b>REACH</b>	Racial and Ethnic Approaches to Community Health
<b>SAMHSA</b>	Substance Abuse and Mental Health Services Administration
<b>SSP</b>	Syringe services program
<b>STI</b>	Sexually transmitted infection
<b>SVR</b>	Sustained virologic response
<b>USPHS</b>	U.S. Public Health Service
<b>USPSTF</b>	U.S. Preventive Services Task Force
<b>VA</b>	Department of Veterans Affairs
<b>VHIG</b>	Viral Hepatitis Implementation Group
<b>WHA</b>	World Health Assembly
<b>WHO</b>	World Health Organization

# APPENDIX G

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