

**Centers for Disease Control and Prevention's (CDC)
Pathway to Eliminating Hepatitis B and Hepatitis C and
Professional Judgment Budget, Fiscal Year 2018 – Fiscal Year 2027**

Our nation is losing ground in the battle against viral hepatitis—infections of which kill more Americans than all other reportable diseases combined. Millions of Americans from all walks of life are infected with hepatitis C virus (HCV) and hepatitis B virus (HBV), and the numbers are increasing each year. An estimated 3.5 million Americans are living with HCV and 800,000 with HBV, yet only about half of people with these infections know they are infected. Viral hepatitis is a leading cause of liver cancer and liver transplants in the United States, and deaths associated with HCV reached an all-time high in 2014. Although HCV is common and deadly, it is curable with 8-12 weeks of antiviral medication. Testing linked to treatment can avert 321,000 deaths at \$35,700 per quality-adjusted life year (QALY) gained. HBV screening and treatment is cost effective at \$29,230 per QALY gained.

Immunization prevents HBV infection. In the United States, HBV disproportionately affects Asian Americans and Pacific Islanders (AAPIs). One in 12 AAPIs has HBV, and the majority do not know they are infected. HBV can infect infants during pregnancy and birth, and 90 percent of infected infants develop chronic HBV. An effective vaccine for HBV is available and recommended by national guidelines, but those who need it do not always get it. Although a vaccine is not yet available for HCV, a combination of interventions, including HCV testing and treatment, can prevent the majority of transmissions. Because HCV and HBV are blood-borne infections, increases in injection drug use are fueling multiple epidemics of HCV and HBV in tribal nations and among young white persons in non-urban communities, particularly in Appalachia. Communities with increases in HCV transmission are vulnerable to outbreaks of HIV as well. Following a 2015 outbreak of HIV and HCV in Indiana, CDC identified 220 counties that are vulnerable to an HIV outbreak and HCV transmission. In addition to these highest-risk counties, many more counties are also experiencing increasing injection drug use, viral hepatitis infections, and drug overdoses.

The National Academies of Sciences, Engineering, and Medicine has determined that hepatitis elimination goals for the United States can be achieved with the right resources, commitment, and strategy. To place America on a path toward the elimination of HBV and HCV, CDC has established four priorities using high-impact prevention as a guiding principle:

- Decrease mortality by improving testing and treatment for persons living with HBV and HCV;
- Reduce spread of HBV and HCV associated with drug use and other common routes;
- Prevent perinatal (from mother to child) transmission of HBV and HCV;
- Accelerate progress toward HBV and HCV elimination through prevention research, technical assistance, and partner engagement in the United States and globally.

CDC estimates that a comprehensive national viral hepatitis program focused on these priorities will cost approximately \$3.9 billion over 10 years, with an investment of \$1.7 billion during the first five years. Approximately 70 state, territorial, and tribal jurisdictions would, on average, receive \$365 million annually. Investing in these strategies will increase the likelihood that within ten years, the nation can:

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- Increase the proportion of persons aware of their HBV or HCV infection by 50 percent.
- Increase to 50 percent persons successfully treated for HBV and cured of HCV.
- Decrease the incidence of HBV and HCV by 50 percent.

Decreasing Mortality by Improving Testing, Treatment, and Education of Persons Living with HBV and HCV and Advancing Cures [*Investment Needed: \$2.2B over 10 years, \$956M Fiscal Year 2018 (FY18) to FY22*]

CDC will increase the proportion of Americans aware of their HBV or HCV infection and receiving recommended care and treatment services (including a cure for HCV). Priority activities include:

- Building state, territorial, tribal, and local jurisdictional capacity to improve testing and linkages to care and treatment;
- Working with health insurance and health care providers to enhance access to testing and treatment and improve provider accountability;
- Training physicians, nurses, and allied health professionals to co-locate testing and treatment services;
- Supporting case management services for high-risk patients.

Progress will be assessed by monitoring rates of disease prevalence, mortality, and related health care costs.

Reduce Spread of HBV and HCV Transmission Associated with Drug Use and Other Common Routes of Transmission [*Investment Needed: \$1.1B over 10 years; \$478M FY18-FY22*]

In states with a substantial burden of viral hepatitis, CDC aims to reduce viral hepatitis infection associated with current injection drug use through a number of complementary and evidence-based approaches including:

- Supporting surveillance systems for detecting new infections, deploying epidemiologic and laboratory assets to conduct case investigations, mapping networks of disease transmission, and guiding interventions to interrupt transmission and provide care to persons with HCV and HBV for their hepatitis infection and treatment for their substance use;
- Providing education on the benefits and effectiveness of public health strategies;
- Strengthening laboratory capacity for outbreak investigations;
- Implementing comprehensive syringe services programs that include access to clean syringes, medication-assisted therapy, HBV vaccination, and HBV and HCV testing with linkage to care and treatment;
- Conducting outreach to people affected by the opioid and heroin epidemic.

Prevent Perinatal Transmission of HBV and HCV [*Investment Needed: \$365M over 10 years; \$159M FY18-FY22*]

Identification and management of HBV-infected pregnant women and their newborns—including administration of HBV vaccine after birth to their newborns—are the cornerstones of

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preventing perinatal HBV transmission. CDC will work with health care and public health systems to:

- Remove barriers for reimbursing providers for administering the first HBV vaccine dose at birth (birth dose);
- Increase provider accountability for administering the birth dose and post-vaccination serologic testing of infants;
- Increase identification, reporting, and case management of HCV-infected women and their HCV-exposed infants and conduct studies to assess interventions to interrupt transmission;
- Continue to investigate treatment options for HBV-infected pregnant women with high viral loads that pose an increased risk of transmission to their infants;
- Implement family-based strategies offering testing and linkage to care services for family members of HBV- and HCV-infected mothers.
- Support integrated perinatal HBV and HCV surveillance and prevention programs by investigating cases of HBV or HCV transmission to infants in all states with high rates of infected pregnant women;
- Strengthen CDC's existing national vaccination programs efforts to prevent HBV.

Indicators of success will be an increase in HBV vaccination coverage levels among newborns to 85 percent and a reduction in HBV and HCV infections among newborns by 50 percent.

Accelerating Progress toward Elimination Goals through Research, Technical Assistance, and Partner Engagement (*Investment Needed: \$300M over 10 years; \$135M FY18-FY22*)

To improve prevention effectiveness, CDC will conduct practical, applied and operational research; provide technical assistance; and engage partners in the United States and, as appropriate, globally, to advance strategies that:

- Improve HBV vaccination of newborns and susceptible adolescents and adults.
- Improve delivery of medication-assisted treatment and adequate access to safe injection equipment together with HCV treatment-based cure and prevention strategies.
- Promote testing and treatment adherence among persons living with HBV and HCV.
- Accelerate use of molecular epidemiology to identify, respond to, control, and prevent additional infections from viral hepatitis outbreaks.
- Improve prevention of perinatal transmission of HBV and HCV.
- Provide evidence to inform clinical service, health insurance, and public health policy development; identify and disseminate best practices; and evaluate program effectiveness.

These resources will enable the United States to protect Americans at greatest risk from becoming infected with HBV and HCV and help Americans who are living with viral hepatitis lead healthier, more productive, and longer lives.

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Viral Hepatitis FY2018 - FY2027 Professional Judgment Budget						
	FY2018 PJ	FY2019 PJ	FY2020 PJ	FY2021 PJ	FY2022 PJ	Total 5 year Investment
Increase Diagnosis and Treatment for People Living with Viral Hepatitis	\$ 169,800,000	\$ 171,824,100	\$ 173,927,140	\$ 219,312,198	\$ 221,582,474	\$ 956,445,912
Reduce Hepatitis B and Hepatitis C Transmission Associated with Drug Use & Other Common Routes	\$ 84,900,000	\$ 85,912,050	\$ 86,963,570	\$ 109,656,099	\$ 110,791,237	\$ 478,222,956
Prevent Perinatal Transmission of Hepatitis B & Hepatitis C	\$ 28,300,000	\$ 28,637,350	\$ 28,987,857	\$ 36,552,033	\$ 36,930,412	\$ 159,407,652
Accelerating Prevention and Control of Viral Hepatitis through Research, Technical Assistance and Partner Engagement	\$ 25,000,000	\$ 26,000,000	\$ 27,040,000	\$ 28,121,600	\$ 29,246,464	\$ 135,408,064
Total	\$ 308,000,000	\$ 312,373,500	\$ 316,918,567	\$ 393,641,931	\$ 398,550,587	\$ 1,729,484,585
	FY2023 PJ	FY2024 PJ	FY2025 PJ	FY2026 PJ	FY2027 PJ	Total 10 Year Investment
Increase Diagnosis and Treatment for People Living with Viral Hepatitis	\$ 255,441,291	\$ 257,892,101	\$ 238,838,493	\$ 241,484,194	\$ 244,233,078	\$ 2,194,335,068
Reduce Hepatitis B and Hepatitis C Transmission Associated with Drug Use & Other Common Routes	\$ 127,720,645	\$ 128,946,050	\$ 119,419,246	\$ 120,742,097	\$ 122,116,539	\$ 1,097,167,534
Prevent Perinatal Transmission of Hepatitis B & Hepatitis C	\$ 42,573,548	\$ 42,982,017	\$ 39,806,415	\$ 40,247,366	\$ 40,705,513	\$ 365,722,511
Accelerating Prevention and Control of Viral Hepatitis through Research, Technical Assistance and Partner Engagement	\$ 30,416,323	\$ 31,632,975	\$ 32,898,294	\$ 34,214,226	\$ 35,582,795	\$ 300,152,678
Total	\$ 456,151,807	\$ 461,453,144	\$ 430,962,449	\$ 436,687,883	\$ 442,637,925	\$ 3,957,377,792