Implementation of Hepatitis B and Hepatitis C Prevention and Control in Maryland

2022 Annual Report

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I. Background

Hepatitis B in Maryland

Hepatitis B virus (HBV) infects the liver and can cause both acute and chronic diseases. Most healthy adults with acute HBV infection do not experience symptoms or complications; however, chronic HBV infections occur when an acute infection is not cleared by the immune system. There is currently no cure for chronic HBV infection, but there is an effective vaccine for the prevention of HBV.

Based on national prevalence data, the Centers for Disease Control and Prevention (CDC) estimates that between 730,000 and 2.2 million individuals live with HBV in the United States.[1] In Maryland, the rate of reported acute HBV infection in 2021 was 0.5 cases per 100,000 people. The 2020 rate of reported chronic HBV infection in Maryland increased slightly to 22.6 cases per 100,000 compared to 2020 (20.1 cases per 100,000).

Based on 2021 surveillance data from the Maryland National Electronic Disease Surveillance System (NEDSS), the jurisdictions in Maryland with the highest rates of reported chronic HBV were Montgomery County (34.2 cases per 100,000 people), Prince George's County (34.1 cases per 100,000 people), Howard County (29.3 cases per 100,000 people), and Charles County (26.1 cases per 100,000 people).[2] Figure 1 below shows the trend of chronic HBV in Maryland from 2015-2021.

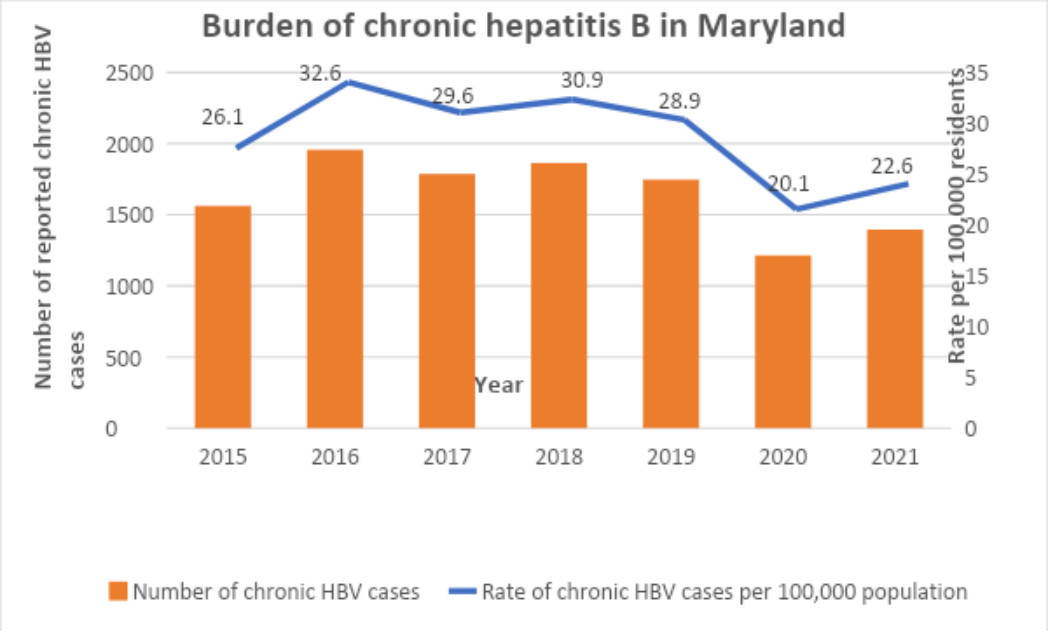


Figure 1: Chart of the number and rate of chronic HBV infections reported in Maryland from 2015-2021. Source: Maryland National Electronic Disease Surveillance System (NEDSS)

Hepatitis C in Maryland

Hepatitis C virus (HCV) is a major cause of chronic liver disease. The CDC estimates that 2.4 million individuals are living with HCV infection in the United States.[1] Many acute cases of HCV also go unreported each year, as newly infected individuals may be asymptomatic or experience symptoms that do not present consistently. Chronic HCV places a significant burden on public health in Maryland, with 3,949 cases of chronic HCV infection reported through NEDSS in 2021. The rate of chronic HCV decreased in 2021 by half (64.5 cases per 1000,000) compared to the six years prior (127.7 cases per 100,000 people). The jurisdictions with the highest reported rates in 2021 were Allegany, Baltimore City, Cecil, Somerset, and Washington Counties. Figure 2 depicts a summary of the trend of the burden of HCV in Maryland from 2015 to 2021. The rate of chronic HCV increased slightly in 2021 compared to 2020. Considering the likelihood of gross underdiagnosis and reporting observed in 2020, this rate is probably consistent with the downward trend of new cases of chronic HCV in Maryland attributable to improved coverage of linkage-to-care and treatment of HCV.

Although Maryland has increased efforts to address the HCV burden across the state, there are still high-risk populations affected by the disease who are not connected to care. These populations include justice-involved individuals, persons who use drugs, and Marylanders experiencing homelessness. New cases of chronic HCV are highest among young persons who use drugs.

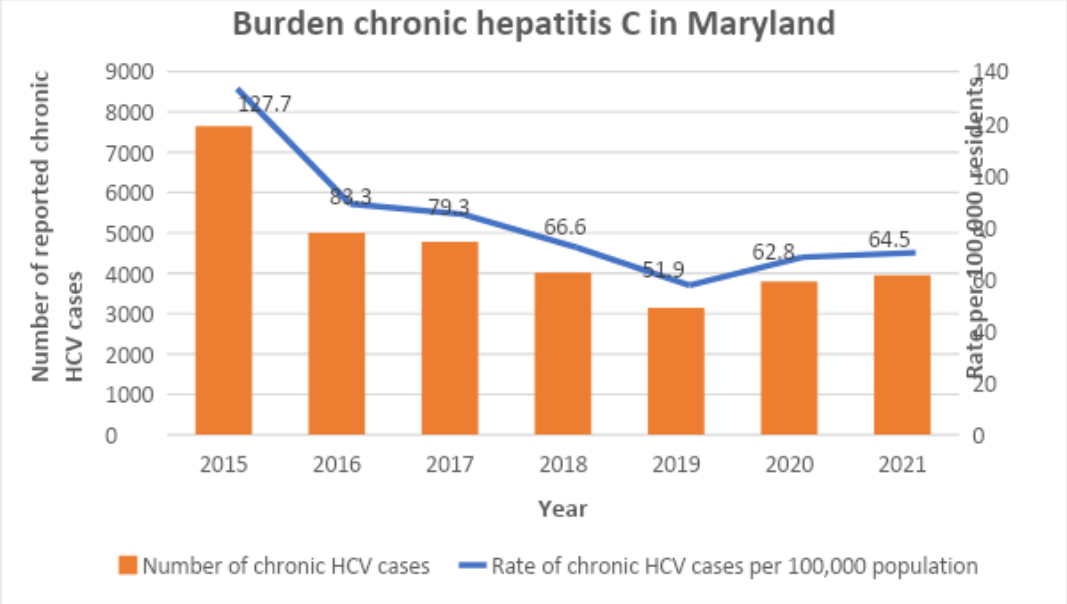


Figure 2: Chart of the number and rate of chronic HCV infections reported in Maryland from 2015-2021. Source: Maryland National Electronic Disease Surveillance System (NEDSS)

II. Maryland Department of Health HBV and HCV Infection Control Activities, 2021

The Maryland Department of Health (MDH) works with public, private, and community partners to maximize resources to address both HBV and HCV in Maryland. Activities conducted in State fiscal year 2022 are described below.

Expansion of Maryland Community-Based Programs to Test and Cure HCV

The Maryland Community-based Program to Test and Cure Hepatitis C (the HCV Test and Cure Program) began in 2014 as a four-year CDC-funded initiative. The Test and Cure Program takes a multi-pronged approach to the clinical integration of HCV intervention, including testing, care, and treatment, in primary care settings in Baltimore County and Baltimore City, two Maryland jurisdictions with a high burden of HCV infection.[2] The HCV Test and Cure Program has since grown into a coalition of medical and public health experts, including leading experts in the treatment of substance use disorders and HIV/HCV co-infected individuals, with the shared goal of eliminating HCV in Maryland.

Following the expiration of CDC funding, MDH continued to fund the HCV Test and Cure program in Baltimore County and Baltimore City, in addition to expanding the participation of clinical providers in jurisdictions outside of these areas. Telemedicine services in collaboration with the John Hopkins University Division of Viral Hepatitis were included in the HCV Test and Cure Programs to treat individuals who have been diagnosed with chronic HCV infection. This collaboration, which proved critical during the COVID-19 pandemic response period when a strict stay-at-home mandate was imposed in Maryland, continued to expand to more locations, especially in suburban Maryland jurisdictions.

HCV Provider Education Program - Sharing the Cure

A core component of the HCV Test and Cure Program is the HCV provider education program, *Sharing the Cure*, which is administered by the Johns Hopkins University Division of Infectious Diseases (JHUDID). In 2022, MDH and JHUDID completed training of two cohorts of primary care providers selected from clinical partner sites. Each cohort consisted of 25 clinicians representing MDH-funded HIV providers and programs across Maryland including providers working in correctional settings. The providers participated in a 16-week long training that included didactic lectures, a clinical rotation, and a mini-preceptorship. Provider education expanded to include the general health workforce to improve all health workers' awareness of viral hepatitis. These teams of health workers play critical roles in promoting HCV screening and linkage to treatment for affected Marylanders.

HCV Care Markers at Participating Sites

The table below provides data on individuals seen for HCV care at primary care sites that participate in the *Sharing the Cure* program. The baseline period consists of the 12 months before the start of their participation. At the end of June 2022, a total of 6,283 unique individuals

received a diagnosis of chronic HCV, and 599 with HCV infection were documented as being cured of the infection.

Table 1. Selected HCV Care Markers at Clinical Sites in Baltimore City and Baltimore County Partnering in the Maryland Test and Cure Program*

	Baseline (10/1/2013-9/30/2014)	**Project period (10/1/2014-6/30/2022)**
	N (percent)	**N (percent)**
HCV confirmatory (RNA) positive	956 (100%)	6,283 (100%)
Genotype or staging test run	562 (58.8%)	5,278 (84. %)
Fibrosis staging test run	20 (2.1%)	3,734 (59.4%)
Prescribed treatment for HCV	0 (0.0%)	1,309 (20.8%)
Started treatment for HCV	0 (0.0%)	1,084 (17.2%)
Completed treatment for HCV	0 (0.0%)	865 (13.7%)
Achieved sustained virologic response	0 (0.0%)	599 (10.1%)

* Includes all clinical agency sites in Baltimore City and Baltimore County with at least 1 year of participation in the Test and Cure Program.

Enhanced HCV Surveillance Activities and Linkage-to-Care

Currently, both Baltimore City and Baltimore County are up to date entering viral hepatitis case report forms. Additionally, major laboratories including LabCorp and Quest have transitioned to electronic laboratory reporting, making it easier to identify new cases for surveillance, investigation, and linkage-to-care. Surveillance and linkage-to-care activities resumed gradually following the impact of the COVID-19 pandemic response.

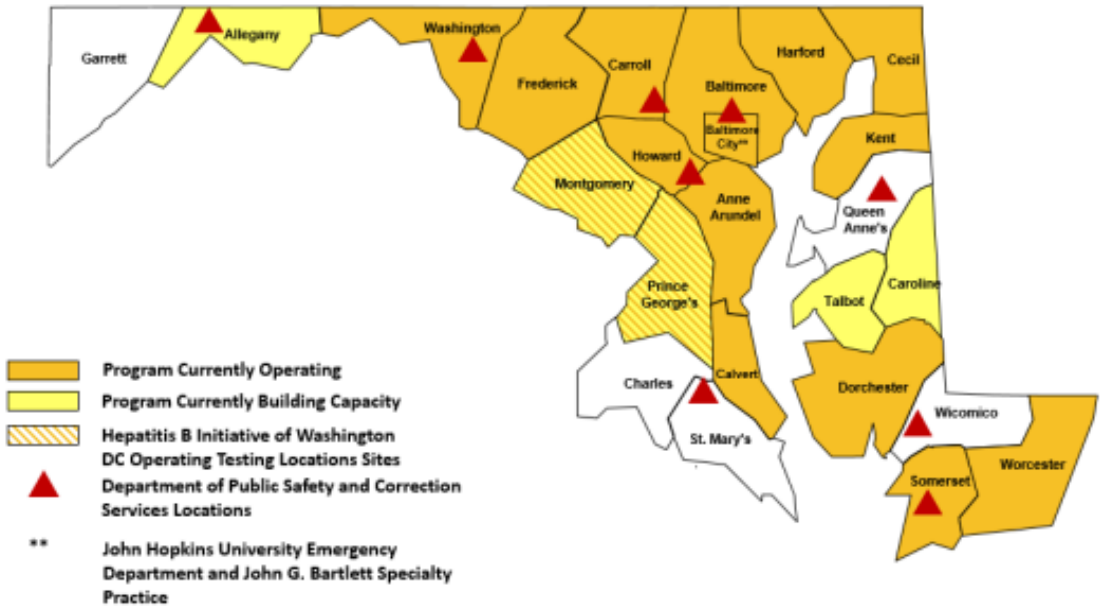
State-Led Rapid HCV Testing Program

MDH continued implementation of the Rapid HCV Testing Program (the Program) to identify individuals with HCV who were unaware of their status. The Program, modeled after MDH's HIV prevention, testing, and linkage-to-care program, integrates HCV rapid testing at existing HIV testing partner sites. MDH introduced HCV rapid testing into behavioral health programs conducted by local health departments. MDH also increased partnerships with local providers

serving high-risk immigrant populations in Montgomery and Prince George's Counties to provide HBV and HCV screening and diagnosis. In collaboration with the Department of Safety and Correctional Services, HCV rapid screening is now offered to inmates at intake and pre-release. As of September 2022, there are 26 HCV rapid testing locations in 19 jurisdictions across the state.

In 2022, MDH continued to disseminate the CDC recommendations for HCV screening, which include testing for all adults aged 18 years and older, and pregnant women. The recommendations also guided high-risk screenings, which include persons: who use drugs; with a history of incarceration; live with HIV, and were born between 1946 and 1965. MDH's protocol for the Maryland Rapid HCV Testing and Linkage-to-Care program was updated and disseminated to all participating testing sites across the state.

HCV Rapid Testing Program Locations in Maryland as of September 2022



Innovative Approaches to Manage HBV and HCV Co-infections

With the advent of the federal *Ending the HIV Epidemic* initiative, MDH launched initiatives to synchronize the delivery of services to populations who are at risk for co-morbid conditions. These initiatives target populations affected by one or more of the prevailing public health conditions and risk factors responsible for HBV, HCV, HIV, sexually transmitted infections (STIs), and substance use disorder, including injection drug use.

HCV screening, diagnosis, and linkage-to-care interventions are now integrated into HIV/STI control activities, syphilis screening programs, and substance use treatment facility programs. Provider training focuses more on the comprehensive management of co-infections and addresses behavioral factors responsible for the increased risk of HBV and HCV transmission.

In 2022, MDH launched the Maryland Hepatitis B Provider Survey in selected high-prevalence jurisdictions to understand the HBV screening, testing, linkage-to-care, and treatment landscape, the current resources, and additional resources needed for HBV services statewide. The survey findings are being collated for analysis and the report is expected to be disseminated in early 2023.

Expansion of Maryland Medical Assistance for HCV Treatment

In 2019, the Maryland General Assembly passed Senate Bill 598, Maryland Medical Assistance Program - Coverage - Hepatitis C Drugs. The legislation directs the Maryland Medical Assistance Program (Medicaid) to expand HCV treatment to all Medicaid recipients, regardless of liver fibrosis score.[3,4] This treatment expansion plan went into effect on January 1, 2020, making a large pool of individuals previously diagnosed with chronic HCV eligible for pre-treatment and prior authorization processing to obtain approval for HCV treatment. MDH continued to partner with clinical providers across Maryland to improve access to HCV treatment for all Medicaid-eligible clients.

Maryland Hepatitis C Strategic Plan and Epidemiological Profile

In January 2019, MDH disseminated the Maryland Hepatitis C Strategic Plan (the Plan).[5] The Plan articulates comprehensive, broad-based strategies that include a four-pronged approach encompassing prevention of new HCV infection, expanding HCV testing and linkage-to-care, improving access to treatment, and enhancing HCV surveillance. Additionally, the Plan seeks to guide the implementation of evidence-based interventions to eliminate HCV infection in Maryland. To determine the disease burden and better understand the factors responsible for the spread of HCV, MDH collated morbidity and mortality data from relevant agencies across Maryland to develop a viral hepatitis epidemiological profile. The epidemiological profile provides a baseline and measurable indicators to ascertain progress toward the elimination of HCV. It also contains trend data for acute and chronic HBV infection from 2015-2019. The full profile was published on July 28, 2021, to commemorate World Hepatitis Day.[6] In 2022, data were collected to update the surveillance component of the profile.

Some of the key findings of the viral hepatitis epidemiological profile are highlighted below:

- An average of 27 cases/100,000 of chronic HBV is reported yearly from 2015-2021. This rate is considered high for vaccine-preventable diseases.
- The rate of reported chronic HCV remained stable at 64.9 cases/100,000 population.
- Although acute HCV cases remained steady over the five years under review, chronic HCV cases have declined by about 50% compared to the 2015 baseline.
- Mortality among people living with HIV/HCV co-infection increased from 2.4% to 5.8% while mortality among people living with HIV only decreased from 2.9% to 2.0% over the same period.
- A modeling survey conducted in 2016 estimated that about 6,200 Marylanders who were chronically infected with HCV are persons who inject drugs.

- The number of incarcerated individuals with chronic HCV receiving treatment has increased. As of December 2019, a total of 1,241 inmates completed treatment, and 836 achieved a cure.
- Inpatient hospitalizations due to complications of chronic HCV have decreased since 2018.
- The average mortality age among individuals with viral HBV and HCV was younger than the average mortality age for all-cause deaths.

Maryland Viral Hepatitis Elimination Plan

As a core deliverable of the CDC's Integrated Viral Hepatitis Surveillance and Prevention Funding for Health Departments which commenced in 2021, MDH collaborated with several partners to develop a framework for the Maryland Viral Hepatitis Elimination Plan (the Framework). The Framework builds on the Maryland Hepatitis C Strategic Plan (the Plan) and the Department of Health and Human Services' National Strategic Plan: A Roadmap to Elimination for the United States 2021-2025.[7] The Framework synthesized the following five strategic objectives, and the scope covers activities to prevent, control, and manage HBV and HCV to:

- Prevent new viral hepatitis infections;
- Improve viral hepatitis-related health outcomes for people with viral hepatitis;
- Reduce viral hepatitis-related disparities and health inequities;
- Improve viral hepatitis surveillance and data usage; and
- Achieve integrated, coordinated efforts that address the viral hepatitis epidemics among all partners and stakeholders.

Educational Activities to Inform the Public, Providers, and Stakeholders

In 2022, MDH, under a collaborative program with HealthHIV and the Center for HIV Capacity and Integration, launched an on-demand, web-based HCV training as part of a supplemental series for infectious diseases Testing and Linkage to Care (TLC) training. The objectives of the training are to understand the overall burden of viral hepatitis infections in Maryland, share basic information about viral hepatitis, and provide an overview of viral hepatitis screening, testing, and prevention recommendations.

MDH continues to collaborate with the University of Maryland School of Medicine's Institute of Human Virology to incorporate a one-day, bi-annual training on viral hepatitis into their AIDS Education and Training Center's schedule. The training increases knowledge and awareness of HBV and HCV screening and linkage-to-care among staff at local health departments, community-based organizations, federally qualified health centers, and hospitals that serve at-risk populations.

The training curriculum includes:

- An overview of viral hepatitis.
- Updates on current HBV and HCV screening and treatment guidelines.

- Training in the identification of special and priority populations.
- An introduction to issues related to treatment access.
- Information about resources available to screen and treat HCV, as well as to address the needs of people living with HCV in Maryland.

The training module was expanded to include strategies on viral hepatitis screening and linkage-to-care among both persons who inject drugs and foreign-born Marylanders. This expansion will help address the service gaps for these high-risk target groups.

In May 2022, MDH collaborated with the Maryland Hepatitis Coalition to host the second Maryland Hepatitis Summit (the Summit). The Maryland Hepatitis Coalition is a group of stakeholders with a shared interest in hepatitis elimination in Maryland. The 2022 Summit focused on HBV and HCV models of care among high-risk and vulnerable populations including persons who use drugs and incarcerated individuals. Key recommendations of the Summit include the removal of structural barriers limiting access to HCV treatment, promoting integrated and co-located treatment, especially in substance use treatment settings, and provision of HCV treatment for incarcerated populations.

III. Conclusion

MDH continues to provide leadership, guidance, and technical assistance across Maryland to support growing efforts to address HBV and HCV. Over the last year, MDH has significantly expanded its efforts to increase the availability of screening, testing, and treatment for HBV and HCV in Maryland despite the impact of the COVID-19 pandemic. MDH continued into the second year of implementation of the CDC's first integrated viral hepatitis surveillance and prevention grant - CDC PS-21-2103 "Integrated Viral Hepatitis Surveillance and Prevention Funding for Health Departments." This grant opportunity supports viral hepatitis outbreak response, comprehensive viral hepatitis surveillance and reporting, expansion of HBV and HCV testing, and linkage-to-care activities.

In the coming year, MDH will update the Viral Hepatitis Epidemiological Profile and use its key findings to inform the development of the Maryland Viral Hepatitis Elimination Plan (Elimination Plan), which will be an operational plan addressing HBV and HCV in addition to Hepatitis A. This Elimination Plan will build on the existing Maryland Hepatitis C Strategic Plan to expand the scope and coverage of interventions to include hepatitis A, B, and C control and elimination interventions. Also, in light of increasing cases of HCV among women of reproductive age, MDH will develop a pilot program on the prevention of perinatal HCV and follow-up of infants exposed to HCV.

References

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