



# MARYLAND Department of Health

*Larry Hogan, Governor · Boyd K. Rutherford, Lt. Governor · Robert R. Neall, Secretary*

February 15, 2019

The Honorable Larry Hogan  
Governor  
State of Maryland  
Annapolis, MD 21401-1991

The Honorable Paul G. Pinsky  
Senate Education, Health, and  
Environmental Affairs Committee  
2 West Miller Senate Building  
Annapolis, MD 21401-1991

The Honorable Shane E. Pendergrass  
House Health and Government  
Operations Committee  
Room 241 House Office Building  
Annapolis, MD 21401-1991

**RE: Health-General Article, §18-1002, Annotated Code of Maryland – 2018 Annual Report – Implementation of Hepatitis B and Hepatitis C Prevention and Control in Maryland**

Dear Governor Hogan, Chair Pinsky, and Chair Pendergrass:

Pursuant to Health-General Article, §18-1002, the Maryland Department of Health (Department) is required to submit an annual report on its activities relating to the prevention and control of hepatitis B virus (HBV) and hepatitis C virus (HCV) infection in Maryland. The attached is a report of the Department's activities in 2018 related to HBV and HCV prevention and control in Maryland.

I hope this information is helpful. If you have any questions or comments concerning the report, please contact Mr. Webster Ye, Deputy Chief of Staff, Office of the Secretary, at 410-767-6480 or [webster.ye@maryland.gov](mailto:webster.ye@maryland.gov).

Sincerely,

Robert R. Neall  
Secretary

cc: Sarah T. Albert, Department of Legislative Services (MSAR #9310)



**MARYLAND**  
Department of Health  
Prevention and Health Promotion Administration

**2018 Annual Report  
Implementation of Hepatitis B and Hepatitis C  
Prevention and Control in Maryland  
Health-General Article §18-1002**

**Larry Hogan**  
Governor

**Boyd Rutherford**  
Lieutenant Governor

**Robert R. Neall**  
Secretary, Maryland Department of Health

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## **I. Background**

### ***Hepatitis B in Maryland***

Hepatitis B virus (HBV) attacks the liver and can cause both acute and chronic disease. Chronic hepatitis infections occur when an acute infection is not cleared by the immune system. Anyone who comes in contact with blood or other bodily fluids of an HBV-infected individual is at risk for transmission.<sup>1</sup> Additionally, infection is transmissible from mother to child and infants are more likely than adults to become chronically infected after viral exposure.<sup>2</sup> There is no cure for chronic HBV infection, but it is vaccine preventable.

Based on national prevalence data, the Centers for Disease Control and Prevention (CDC) estimates that there are 850,000 - 2.2 million individuals living with HBV in the United States.<sup>3</sup> In Maryland, the rate of reported acute HBV infections decreased in 2017 (0.6 cases per 100,000 population) compared to 2010 (1.1 cases per 100,000 people), mainly due to effective vaccination strategies. In 2017, there were 34 reported cases of acute HBV and 1,815 reported cases of chronic HBV.<sup>4</sup> Data on the rate of reported chronic HBV cases are not yet available for 2017. However, based on 2016 surveillance data from the Maryland National Electronic Disease Surveillance System (NEDSS), the counties in Maryland with the highest rates of reported chronic HBV were Montgomery County, Prince George's County, Baltimore County, and Baltimore City.<sup>5</sup>

### ***Hepatitis C in Maryland***

Hepatitis C virus (HCV) is a major cause of chronic liver disease. CDC estimates 3.5 million individuals are living with HCV infection in the United States.<sup>6</sup> HCV also poses a significant burden on health in Maryland. In 2013, rates of acute HCV infections in Maryland (0.9 cases per 100,000) surpassed the national rate (0.7 cases per 100,000). Since then, the rate of acute HCV has fluctuated: 0.6 cases per 100,000 people in 2015; 0.8 cases per 100,000 people in 2016; and 0.7 cases per 100,000 people in 2017.<sup>7</sup> The data reflect the variability of acute case reporting and that a majority of acute HCV cases may go unreported each year. Acute HCV cases may not be reported because newly infected individuals are asymptomatic or symptoms do not consistently present themselves in individuals who are newly infected with the virus.

According to *HepVu*, a website launched by Emory University's Rollins School of Public Health in April 2017, the estimated number of Marylanders living with HCV antibodies in 2010 was 82,000.<sup>8</sup> In 2017, 7,933 cases of chronic HCV were reported. From 2010 (103.4 cases per 100,000) to 2016 (133.5 cases per 100,000), the rate of chronic HCV reports increased by almost 30 percent. Since there are hard-to-reach populations impacted by HCV that are not connected to care, the burden of the disease in Maryland is estimated to be higher than what is reported.

According to CDC estimates, in the United States, about 25 percent of people living with HIV are co-infected with HCV.<sup>9</sup> Currently, reported data show that 4,032 people living with HIV in Maryland are co-infected with HCV.<sup>10</sup> Based on these data, over 55 percent of co-infected people in Maryland live in Baltimore City, followed by Baltimore County (10 percent), Prince George's County (9 percent), and correctional facilities located in the State (10 percent).<sup>11</sup> As seen nationally, in Maryland, the baby boomer cohort has the highest prevalence of HCV infection among all age groups. Despite making up only 25.7 percent of Maryland's population, in 2016,

people born from 1945-1965 accounted for 54.6 percent of reported chronic HCV cases.<sup>12, 13</sup>

## II. Maryland Department of Health HBV and HCV Infection Activities, 2018

The Maryland Department of Health (the Department) works with public, private, and community partners to maximize resources to address both HBV and HCV in Maryland. Activities conducted in State fiscal year 2018 are described below.

### *Expansion of Maryland Community-based Programs to Test and Cure HCV*

In 2014, the Department was awarded \$1.2 million in annual funding from CDC to establish *Maryland Community-based Programs to Test and Cure Hepatitis C (Maryland Test and Cure Program)*. This four-year cooperative agreement with CDC supports a multi-pronged approach to clinical integration of HCV testing, care, and treatment at health care settings in Baltimore City and Baltimore County, the Maryland counties with the highest prevalence of HCV. Additionally, Governor Hogan’s Fiscal Year 2020 budget allowance includes state funds to continue the HCV surveillance after the CDC funding ends.

The *Maryland Test and Cure Program* has grown into a coalition of medical and public health experts dedicated to the elimination of HCV in Maryland. The coalition is primarily composed of partners with decades of experience in HIV prevention and care, leading experts in the treatment of HCV mono-infected and HIV/HCV co-infected individuals, and primary care providers who recognize the significant need for local HCV testing and care. The *Maryland Test and Cure Program* includes comprehensive provider training and education, linkage-to-care services by local health departments, and modification of electronic medical records to enhance HCV services and improve surveillance reporting. The work done by the coalition has revealed that substantial infrastructure and coordination are necessary to implement and maintain high quality HCV service delivery. Additionally, the work has demonstrated the need to develop clinical expertise related to HCV screening, care, and treatment. *Maryland Test and Cure Program* sites include federally qualified health centers (FQHCs), sexually transmitted disease clinics, and clinical sites for Maryland Medicaid managed care organizations. Providers at these sites participate in the training component of the program.

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

	<b>Baseline (10/1/13-9/30/14)*</b>	<b>Project Period + Baseline (10/1/13-7/31/2018)</b>
	<b>N (percent)</b>	<b>N (percent)</b>
<b>HCV Confirmatory (RNA) positive</b>	956 (100%)	3846 (100%)
<b>Genotype or Staging test run</b>	562 (58.8%)	3480 (90.5%)
<b>Fibrosis staging test run</b>	20 (2.1%)	2811 (73.1%)
<b>Fibrosis score <math>\geq</math> F2<sup>†</sup></b>	9 (45.0%)	1383 (49.2%)
<b>Prescribed treatment for HCV</b>	0 (0.0%)	777 (20.2%)
<b>Started treatment for HCV</b>	0 (0.0%)	684 (17.8%)
<b>Completed Treatment for HCV</b>	0 (0.0%)	469 (12.2%)
<b>Achieved Sustained Virologic Response</b>	0 (0.0%)	397 (10.3%)

\* Only includes clinical sites with continuous participation

<sup>†</sup> Maryland Medicaid’s current clinical criteria require a fibrosis score of  $\geq$  2 for HCV treatment approval

In the fourth year of the cooperative agreement, the *Maryland Test and Cure Program* expanded clinical provider participation to two new health care centers, including a provider in Prince George's County. These new partners bring diverse experience and expertise in the delivery of critical health services to Maryland residents. Park West Health System (Park West) is an FQHC in Maryland with a long history of providing comprehensive Ryan White HIV/AIDS medical and support services throughout Baltimore. Park West has four sites across Baltimore, including underserved areas in the City's west side. CCI Health and Wellness Services (CCI) is another well-established FQHC. CCI has ten sites in Montgomery and Prince George's Counties, a geographic area that has not yet been served by the *Maryland Test and Cure Program* coalition partners. CCI's services include primary and specialty care, including infectious disease care. A significant number of CCI's patients are uninsured due to undocumented citizenship status, and each site offers multi-lingual health care services. Additionally, in recent years, the Department has partnered with CCI to integrate HIV care into its clinical services through the federally supported *Partnerships for Care* project. CCI has also expanded provider capacity to identify and treat individuals with HCV infection.

Building upon the clinics' existing comprehensive case management programs, clinicians develop HCV-specific case management services at each clinical site. These services focus on patient adherence to treatment and include insurance screening and assistance to obtain insurance; assessment of barriers to treatment adherence, including psycho-social factors such as unstable housing and lack of employment; appointment and prescription reminders, including providing patients with pocket calendars and reminder calls or texts; outreach to patients when they miss an appointment, lab draw, or fail to pick up a prescription; and transportation assistance. The Baltimore City Health Department provides case management and outreach in collaboration with partners to initiate follow-up and to re-engage clients who clinical staff are unable to locate or engage.

To date, each participating clinic has successfully developed and implemented clinic-wide policies and procedures; enhanced their electronic medical records systems; implemented support tools to facilitate clinical decision making; integrated case management and other treatment adherence supports; and identified additional ways to facilitate clinic-specific approaches to HCV care and treatment, based on target populations and available resources including the integration of pharmacy staff into their HCV care teams.

A core component of the *Maryland Test and Cure Program* is the clinician training and telemedicine program, *Sharing the Cure*, administered by Johns Hopkins University, Division of Infectious Diseases. In 2018, the Department and Johns Hopkins University completed training of the fourth cohort of primary care providers selected from clinical partner sites. The Department will extend *Sharing the Cure* into an additional year via a no-cost extension granted by CDC. Year five of the *Sharing the Cure* training program will incorporate HIV clinical service providers in addition to primary care providers, including those participating in the Ryan White Program.

### ***Enhanced HCV Surveillance Activities and Linkage-to-Care***

Communicable disease surveillance is informed by the collection and analysis of information received from providers and institutions that perform infectious disease testing. Maryland regulations require health care providers, health care institutions, and medical laboratories to

report both chronic and acute symptomatic HBV and HCV to local health departments.<sup>14</sup> Local health departments and the Department receive both electronic and paper-based reports. Additionally, local health departments follow-up with individual providers and institutions to complete case investigations, as needed.

To strengthen HCV surveillance in Baltimore City and Baltimore County, through the *Maryland Test and Cure Program*, the Department provides funding and technical assistance to both jurisdictions to increase the number of data entry staff. This reduces the backlog of paper HCV lab reports and to continue the timely review of electronic reports. Currently, both Baltimore City and Baltimore County are up-to-date with entry of paper reports and are working in real-time on data entry.

The Department's Division of Infectious Disease Surveillance within the Infectious Disease Epidemiology and Outbreak Response Bureau continues to investigate new reports of acute HCV cases to identify clusters and outbreaks in the community, and to assess risk factors. There is also a continued effort to expand the number of laboratories that electronically report lab results to local health departments. Many major hospital and laboratory systems have transitioned to electronic reporting (including Medstar and LabCorp), which has reduced the number of laboratory reports requiring hand entry by local health department staff.

The Baltimore City Health Department continues data-to-care (using surveillance data for patient follow-up) work. Linkage-to-care coordinators use surveillance data to identify individuals who are diagnosed with HCV with no evidence of care in the last six months and link them with providers who can facilitate appropriate care and follow-up. Data-to-care is a relatively new public health strategy that was developed to link HIV-diagnosed individuals to care.<sup>15</sup> Linkage-to-care coordinators also connect individuals to health insurance or Maryland Medicaid through the Maryland Health Connection. Coordinators help address immediate barriers to care such as transportation and childcare.

In 2017, the Baltimore City Health Department identified a total of 877 individuals with no evidence of care who either had an HCV RNA positive test (665 had an HCV RNA positive test) or an antibody positive test with no confirmed HCV RNA test (212 had an antibody positive test). A majority of the individuals that were out of care were born between 1945-1965, and identified as Black/African American. Baltimore City Health Department linked a total of 308 out of 877 clients to care. Some individuals were not linked to care because they were unable to be located, already in care, refused assistance, were deceased, or were located in another county.

The Baltimore County Department of Health also runs a linkage-to-care program modeled on Baltimore City's work. In addition to referrals through their rapid testing program, the Baltimore County Department of Health follows up on historical case reports from surveillance data. Local health department rapid testing programs also contribute to enhanced surveillance through promotion of morbidity report forms. Positive HCV rapid test results are reported via the morbidity report forms to the local health departments with patient demographic information and subsequent HCV RNA results, which provides additional information to what is reported by laboratories. All of the sites that participate in HCV rapid testing also document linkage-to-care processes and outcomes. Since the initiation of the program through July 2018, the Baltimore County Department of Health was able to identify 68 positive clients through the rapid testing program who either had an HCV RNA positive test (32 had an HCV RNA positive test) or an

antibody positive test with no confirmed HCV RNA test (36 had an antibody positive test). The linkage-to-care program linked eight (12 percent) of those clients to care. The remaining individuals were not linked to care for the same reasons as those identified above by the Baltimore City Health Department.

The Department continues to partner with the Maryland Department of Public Safety and Correctional Services to develop an HCV linkage-to-care system for individuals upon release. In August 2017, staff were hired to serve as linkage-to-care specialists and manage a rapid HCV testing program for inmates who are about to be released. The linkage-to-care specialists work closely with infection control staff and discharge planners to provide testing and linkage-to-care upon release for HCV antibody positive individuals. HCV testing is conducted based on the projected release list sent out to all sites at the beginning of each month. The projected release list provides sites with the name of inmates soon to be released from correctional facilities. Of the 2,137 inmates projected to be released from December 2017 to July 2018, 769 received anti-HCV antibody screening prior to release. Of the 769 individuals tested, 20 screened HCV antibody positive and were referred for HCV RNA testing and care in the community. Linkage to HCV care in the community is also provided as part of discharge planning services for inmates already aware of their chronic HCV status.

Overall, the number of inmates tested for HCV has steadily increased. However, the linkage-to-care process remains challenging due to many individuals declining services or not attending community appointments. Due to this, the linkage-to-care specialists have prioritized educating inmates on the importance of seeking HCV treatment and attending community appointments after release from correctional facilities.

### ***State-Led Rapid HCV Testing Program***

In 2017, the Department launched a rapid HCV testing program to identify individuals with HCV who are unaware of their status. The program provides free HCV rapid test kits and controls to local health departments and agencies that serve populations at risk for HCV. Modeled after the Department's HIV testing and linkage-to-care program, initial efforts focused on integration of HCV rapid testing at existing HIV testing partner sites.

Participation in the HCV rapid testing program requires sites to have proven capacity to screen, test, and treat or link individuals to HCV care. The Department created a comprehensive HCV testing guidance document to inform HCV testing procedures at participating testing sites as well as at other local organizations interested in initiating rapid HCV testing.

All rapid testing program participants were required to undergo training on:

- HCV screening, diagnosis, and referral best practices;
- HCV screening protocols, policies, and procedures;
- How to use the rapid testing device;
- Confirmatory (RNA) testing;
- Data collection and State requirements for infectious disease reporting; and
- Resources for client referral to local HCV care providers.

After completion of the training, participating sites received HCV rapid test kits at no cost to the site based on their readiness to begin testing. The number of tests received was based on the staff capacity of each respective site. The Department continues to monitor and provide technical assistance to each site. In 2017, rapid HCV testing was initiated at the following local health departments: Baltimore County Health Department, Carroll County Health Department, Cecil County Health Department, Harford County Health Department, and Worcester County Health Department. In April 2018, Anne Arundel County Health Department and Washington County Health Department joined the program. As of August 2018, 10,120 test kits have been distributed to program partners and 5,872 tests have been administered. The HCV rapid testing program has yielded a 4.0 positivity rate, meaning 4.0 percent of those tested have chronic HCV infection. The highest positivity rates were among individuals tested by the Anne Arundel County Health Department (13.0 percent) followed by the Baltimore County Health Department (12.5 percent). Both partners have largely focused their HCV testing efforts on individuals who currently or have a history of using drugs.

In 2018, the Department received the *Integrated Human Immunodeficiency Virus (HIV) Surveillance and Prevention Programs for Health Department* funding opportunity from CDC. The purpose of the funding opportunity is to implement a comprehensive HIV surveillance and prevention program to prevent new HIV infections and achieve viral suppression among persons living with HIV. The funding opportunity allows a portion of the funds to go to *Program Collaboration and Service Integration (PCSI)* efforts. The Department will use a portion of its CDC PCSI award to support HCV testing. This additional funding allows for the purchase of HCV test kits and HCV testing within HIV prevention activities at local health departments across the State.

### ***Implementation of HBV and HCV Prevention and Control Activities***

In November 2016, the Department received a four-year grant from CDC, titled *Improving Hepatitis B and C Care Cascade: Focus on Increased Testing and Diagnosis*. The funding allows the Department to focus on comprehensive strategies and activities to: (1) increase the number of individuals in Maryland living with HBV and HCV infection who are tested for HBV and HCV and made aware of their status, and (2) link individuals with HBV or HCV infection to appropriate care and treatment services. In the first year of the grant (fiscal year 2017), the Department received \$124,629 to initiate partnerships and to conduct a statewide situational analysis to: (a) describe disease burden, epidemiological trends, and laws and policies impacting testing, care, and treatment of HBV and HCV infection; (b) identify high prevalence areas of HBV and HCV infection; and (c) identify settings where testing should be conducted.

Upon completion of the situational analysis, the Department initiated partnerships with the Johns Hopkins University Department of Emergency Medicine and the Hepatitis B Initiative of Washington, DC (HBI-DC) to address HBV and HCV in three of the highest prevalence counties in Maryland: Baltimore City, and Prince George's and Montgomery Counties. In addition to providing HCV test kits and controls, the Department provided limited funding to support staffing needed at the Department of Emergency Medicine to complete HCV screening and confirmatory testing, as well as linkage-to-care for HCV-infected individuals. To date, the Department of Emergency Medicine has administered 2,846 tests and identified 99 HCV antibody positive individuals. The Department also works with HBI-DC to provide HBV and HCV outreach, education, screening, and referral services to Southeast Asian and West African populations in

Montgomery County and Prince George's County. In 2017, the Department of Emergency Medicine and HBI-DC were able to test 3,173 clients. Out of the clients tested, 88 were antibody positive; of those that received their RNA test, 51 were RNA positive, and 26 were linked to care.

In the second year of the grant (fiscal year 2018), the Department received its second award totaling \$174,399. The Department was able to use the additional funding to continue existing partnerships and expand to two additional partners, Anne Arundel County Department of Health and Washington County Health Department. The new activities focus on addressing barriers to implementation of comprehensive testing and linkage-to-care programs. One of the biggest challenges faced by Anne Arundel and Washington County Health Departments is the lack of staff to provide testing and linkage-to-care services. The additional funds from the grant were used to provide support for staffing, training, HCV outreach activities, and support for testing and linkage-to-care interventions.

### ***Educational Activities to Inform the Public, Providers, and Stakeholders***

In 2018, the Department collaborated with the Institution of Human Virology (IHV), University of Maryland School of Medicine, AIDS Education and Training Center (AETC) to develop a *Capacity Building Assistance, Training and Technical Assistance Opportunity*. The goal of the training is to improve services to clients and people living with HIV/AIDS by strengthening the capacity of community partners. To increase knowledge and awareness on the importance of HBV and HCV screening and linkage-to-care at local health departments, community based organizations, FQHCs, and hospital staff who work closely with at-risk populations, the Department collaborated with IHV to incorporate a one day, bi-annual training on viral hepatitis (Hepatitis Capacity Training) into the AETC's training schedule.

The purpose of the Hepatitis Capacity Training is to increase knowledge and awareness of viral hepatitis and provide the skills necessary to screen populations at high risk for HBV and HCV. Participants in the training receive a viral hepatitis overview, updates on current viral hepatitis screening and treatment guidelines, identification of special and priority populations, introduction to issues relating to treatment access, and resources available to screen and treat HCV as well as address the needs of people living with HCV in Maryland.

### **III. Conclusion**

In 2018, the Department continued to provide leadership, guidance, and technical assistance across the State to support growing efforts to address HBV and HCV. Over the last year, the Department has significantly expanded work to increase the availability of screening, testing, and treatment for HBV and HCV in Maryland. In 2019, the Department will continue to work to ensure that all Marylanders know their HBV and HCV status and have access to lifesaving health care and treatment.

## Appendix: Glossary of Key Terms

This glossary provides definitions of key terms used in this report.

Acronym	Term	Definition
AETC	AIDS Education & Training Center	A local performance site of the MidAtlantic AIDS Education Training Center that is designated as one of the federal AIDS Education and Training Centers for Maryland through a subcontract with the University of Pittsburgh.
AIDS	Acquired Immunodeficiency Syndrome	A disease of the human immune system that is characterized cytologically especially by reduction in the numbers of CD4-bearing helper T cells to 20 percent or less of normal, rendering the subject highly vulnerable to life-threatening conditions.
CCI Health and Wellness Services		A community-based Federally Qualified Health Center.
CDC	Centers for Disease Control and Prevention	The US agency charged with tracking and investigating public health trends.
Confirmatory (RNA) Testing	Confirmatory Ribonucleic Acid Testing	A follow-up blood test that is used to look for the genetic material of the virus that causes hepatitis in order to confirm active infection.
FQHC	Federally Qualified Health Centers	Outpatient clinics that qualify for specific reimbursement systems under Medicare and Medicaid.
HBI-DC	Hepatitis B Initiative of Washington, DC	A community-based organization dedicated to mobilizing communities to prevent liver disease caused by HBV.
HBV	Hepatitis B Virus	A virus that causes HBV and can lead to inflammation and damage to the liver, causing fever, debility, and jaundice.
HCV	Hepatitis C Virus	A virus that causes HCV, which is transmitted in infected blood and can lead to inflammation and damage to the liver.
HIV	Human Immunodeficiency Virus	A virus that attacks the immune system.
IHV	Institute of Human Virology	An institute of the University of Maryland Medical School that combines the discipline of basic science, epidemiology, and clinical research in diagnostics and therapeutics for a variety of chronic and deadly viral and immune disorders.
	Linkage-to-care	The process of engaging newly diagnosed HBV and/or HCV infected persons into HBV and/or HCV care for treatment.

NEDSS	National Electronic Disease Surveillance System	A secure online framework that allows health care professionals and government agencies to communicate about disease patterns and coordinate national responses to outbreaks.
PCSI	Program Collaboration and Service Integration	A mechanism for organizing and blending interrelated health issues, activities, and services in order to maximize public health impact through new and established linkages across programs to facilitate the delivery of services.

- <sup>1</sup> Centers for Disease Control and Prevention, Viral Hepatitis, 2016, August 4, accessed 28 September 2018 <https://www.cdc.gov/hepatitis/hbv/hbvfaq.htm>.
- <sup>2</sup> Centers for Disease Control and Prevention, Viral Hepatitis, 2017, September 19, accessed 28 September 2018 <https://www.cdc.gov/hepatitis/hbv/perinatalxmtn.htm>.
- <sup>3</sup> Centers for Disease Control and Prevention, Viral Hepatitis Surveillance—United States, 2015, accessed 1 August 2018 <https://www.cdc.gov/hepatitis/statistics/2016surveillance/pdfs/2016HepSurveillanceRpt.pdf>.
- <sup>4</sup> Maryland Department of Health, Prevention and Health Promotion Administration, Maryland National Electronic Disease Surveillance System (NEDSS), August 2017.
- <sup>5</sup> *Id* en 4.
- <sup>6</sup> *Id* en 3.
- <sup>7</sup> *Id* en 4.
- <sup>8</sup> HepVu, Emory University, Rollins School of Public Health, in partnership with Gilead Sciences, Inc., accessed 28 September 2018 [www.hepvu.org](http://www.hepvu.org).
- <sup>9</sup> Centers for Disease Control and Prevention, HIV and Viral Hepatitis, June 2017, accessed 28 September 2018 <https://www.cdc.gov/hiv/pdf/library/factsheets/hiv-viral-hepatitis.pdf>.
- <sup>10</sup> Maryland Department of Health Enhanced HIV/AIDS Reporting System, reported through 06/30/2017. Not all data has been geocoded and is therefore preliminary.
- <sup>11</sup> *Id* en 10.
- <sup>12</sup> U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States and Puerto Rico Commonwealth: April 1, 2010 to July 1, 2015, 2016, Accessed 28 October 2018 [https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP\\_2016\\_PEPSYASEX&prodType=table](https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2016_PEPSYASEX&prodType=table).
- <sup>13</sup> Maryland Department of Health, Prevention and Health Promotion Administration. Data Source: Maryland National Electronic Disease Surveillance System (NEDSS). August 2018.
- <sup>14</sup> Code of Maryland Regulations 10.06.01.03C.
- <sup>15</sup> Centers for Disease Control and Prevention, Using HIV Surveillance Data to Support the HIV Care Continuum, accessed 19 October 2016 <https://effectiveinterventions.cdc.gov/docs/default-source/data-to-care-d2c/pdf-of-important-considerations.pdf>.