



Hepatitis B, Hepatitis C, and Hepatitis D

in Philadelphia

2023 ANNUAL REPORT



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CITY OF PHILADELPHIA

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Introduction

This report by the Philadelphia Department of Public Health (PDPH) Division of Disease Control (DDC) serves as a high-level summary of the epidemiology of hepatitis B, hepatitis C, and hepatitis D in Philadelphia. This information should be used to inform residents and service providers about the importance of these infectious diseases, and the need for enhanced attention and resources to prevent, diagnose, and treat hepatitis B, hepatitis C, and hepatitis D in Philadelphia.

The burden of these diseases among Philadelphia residents is substantial, with steady trends of new infections each year. Diagnostic and clinical tools exist to prevent new infections, and to diagnose, treat, and cure (in the case of hepatitis C) existing infections among Philadelphia residents. Many healthcare providers, clinics, and systems actively support vaccination, screening, and treatment of hepatitis B (including hepatitis D coinfection) and hepatitis C (see www.phillyhepatitis.org and www.hepcap.org for some examples).

PDPH maintains a program focused on public health surveillance of hepatitis B, hepatitis C, and hepatitis D in tandem with work with patients, communities, and providers. This work includes community, patient, and provider education, care navigation support, and facilitating improvements to access to hepatitis B, hepatitis C, and hepatitis D services in Philadelphia.

The existing work of PDPH and other stakeholders in Philadelphia is a meaningful foundation for addressing the impacts of hepatitis B, hepatitis C, and hepatitis D. PDPH hopes this report supports local efforts to work towards elimination of hepatitis B, hepatitis C, and hepatitis D.

Background

Hepatitis B and hepatitis C are infections of the liver and are caused by two different viruses, hepatitis B virus and hepatitis C virus, respectively. Both infections cause inflammation of the liver and have an acute (short-term) and a chronic (long-term) phase. After an exposure, some people will develop hepatitis B or hepatitis C infection, and the first six months are considered an acute phase of the infection. For some, their body will fight off the virus and they will no longer have the infection. For others, their infection will become chronic and they will need treatment. In the case of hepatitis B, vaccination can support the body ability to prevent infection. Many people do not experience any symptoms of these infections or know they were exposed to hepatitis B or hepatitis C, leading some people to live for decades before being diagnosed.

Hepatitis D is a third infection, caused by the hepatitis D virus. This virus needs a person to also have hepatitis B to be able to replicate. Therefore, in order to contract hepatitis D, a person must be living with hepatitis B or become newly infected with both hepatitis B and hepatitis D at the same time. Hepatitis D can be prevented with the hepatitis B vaccine. Treatment is similar to hepatitis B.

These infections are spread through contact with blood or semen of a person living with the infection or vertically (from a birthing person to an infant). Hepatitis B is also spread through vaginal fluid. The epidemiological profiles of hepatitis B and hepatitis C reveal a shift over time in how these viruses are transmitted and in which populations have been affected.

Many people living with hepatitis B acquired the infection perinatally or in young childhood when born in a country where hepatitis B is endemic. Chronic hepatitis C among the baby boomer generation resulted from transmission in medical procedures and a variety of behavioral exposures. More recent transmission in Philadelphia for both hepatitis B and hepatitis C has been largely due to exposure to blood or body fluids among adults, primarily through injection drug use.

Less is known about the epidemiology of hepatitis D. Though data has been collected for some time, infection rates remain small and no clear pattern of transmission has emerged. Regardless, continued vigilance is necessary given the shifting modes of transmission for hepatitis B.

Clinical monitoring for anyone with chronic hepatitis B (with or without hepatitis D) and hepatitis C is critical, as these long-term infections can lead to liver damage, cancer, and death. Hepatitis B and hepatitis D medications can limit liver damage and regular cancer screenings are important. For example, many people living in Philadelphia with hepatitis B acquired the infection perinatally or in young childhood when born in a country where hepatitis B is endemic. Hepatitis C is curable, with medications that can be taken for as few as eight weeks.

For more information about hepatitis B, hepatitis C, and hepatitis D:

www.phillyhepatitis.org/

www.cdc.gov/hepatitis/abc/index.htm

[www.hepb.org/what-is-hepatitis-b/
what-is-hepb/](http://www.hepb.org/what-is-hepatitis-b/what-is-hepb/)

[www.cdc.gov/vaccines/hcp/acip-recs/vacc-
specific/hepb.html](http://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html)

REPORT HIGHLIGHTS

Hepatitis **B**

In 2023

There were 11 new individuals reported with acute hepatitis B, continuing a gradual increase since 2013.

The most common primary risk factors of infection remain consistent with a shift that started in 2019: a history of substance use and being born in the United States (historically, it was more common among foreign-born Philadelphians).

There were 655 people with new chronic hepatitis B infections reported, a 42% increase from 2020. Non-Hispanic Black and Asian or Pacific Islanders account for over half of those newly reported. The total number of people living with chronic hepatitis B in Philadelphia is now 1.5% of the population, or an estimated 24,828 residents.

These individuals live in every ZIP code and almost half are aged 45-64 years. Asian or Pacific Islander residents accounted for half of the total reported hepatitis B cases, driven by perinatal transmission.

The rate of disease among Asian and Pacific Islander residents was four times that of non-Hispanic Black residents and nearly ten times that of non-Hispanic White residents.

No cases of perinatal hepatitis B transmission have occurred since 2016 due to successful post-exposure prophylaxis provision, including among 83 infants born to people with chronic hepatitis B in 2023. Childhood hepatitis B vaccine series completion remains high at 93%, though birth dose completion, at 85%, still needs improvement. Of the people living with hepatitis B, 14 were diagnosed with liver cancer in 2022, and 18 people died from hepatitis B-related causes that year.

Much work remains to reach 2030 hepatitis B elimination goals.

Hepatitis **D**

In 2023

10 people were reported with hepatitis D infection. While the number of cases is low, there has been a persistent increase since 2014.

From 1987 to 2023, 99 people have been reported with hepatitis D, over half of whom are non-Hispanic Black. This is consistent with the demographic characteristics of chronic hepatitis B infections in 2023.

REPORT HIGHLIGHTS

Hepatitis C

In 2023

There were 144 new individuals reported with acute hepatitis C, increasing back to the pre-COVID-19 pandemic incidence.

The largest proportion of people with acute infections are 30–39 years old and the primary risk is people who use drugs, consistent with trends over the past decade. An additional 1,089 people were reported with new chronic hepatitis C infections, maintaining a persistent three-year rate after a significant decline in new reports since 2016. The race/ethnicity distribution of individuals with new reports of both acute and chronic hepatitis C continues to be primarily non-Hispanic White and non-Hispanic Black individuals.

PDPH estimates that 51,490 people have been diagnosed with hepatitis C since 2013. In 2023, 43% of these people (n=23,396) continue to have chronic hepatitis C infection, representing 1.5% of Philadelphia residents. The large decrease in cases is largely due to successful hepatitis C treatment and harm reduction initiatives. Notably, in 2023, the highest rates of chronic hepatitis C infection were among 45-64 year old residents, at 313 per 10,000 residents, compared to 182 per 10,000 among residents aged 25-44 years old.

There were three instances of perinatal hepatitis C transmission identified in 2023, and 48 infants were born to people with chronic hepatitis C. Of note, there has been a decrease in the number of people of childbearing age (15-44 years) living with hepatitis C in recent years, driven by successful treatment initiatives.

While treatment initiatives have made meaningful impacts on hepatitis C cure in Philadelphia, much work needs to be done to reach 2030 elimination goals. Disparities exist across age and race/ethnicity groups in access to hepatitis C screening and treatment. An estimated 12% of individuals who have ever had hepatitis C still need to be tested to determine if they have a chronic infection. Almost half of those living with hepatitis C are in need of cure.

Acute Hepatitis B

Reports of acute hepatitis B have been gradually increasing since 2013, primarily among younger individuals. Transmission has been associated with a history of substance use and been among men who have sex with men (MSM). The large increase of cases in 2019, and subsequent decrease in 2020, is likely due to a combination of factors including how people accessed hepatitis B testing during a hepatitis A outbreak in 2019 (increase) and the COVID-19 pandemic (decrease).

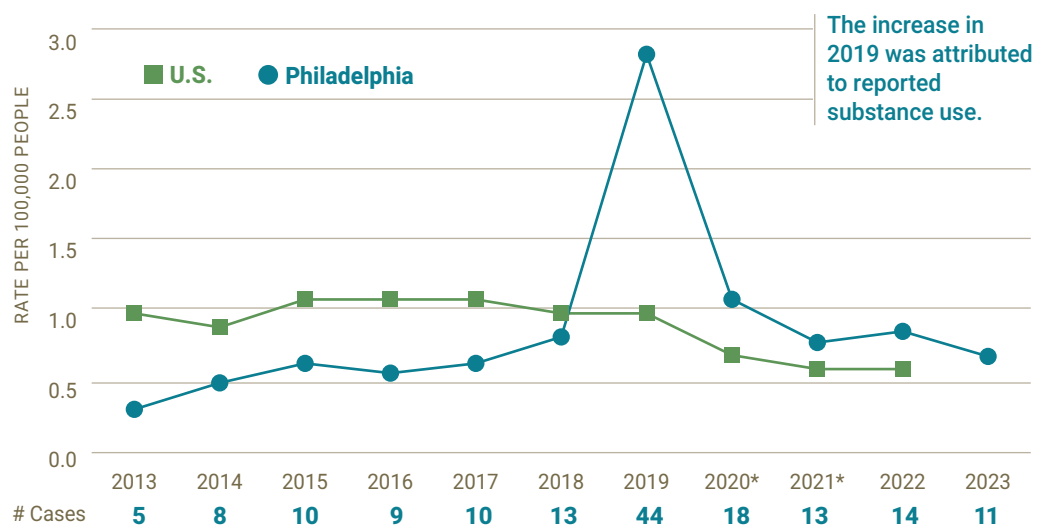
Number of People Reported with Acute Hepatitis B in 2023:

11

Rate of Acute Hepatitis B in 2023:

0.7 per 100,000 people

Figure 1: Number and Rate of Reported Acute Hepatitis B: Philadelphia and U.S., 2013 – 2023



Note: US national rate data is available 2013-2022.

*Totals for 2020 and 2021 may have been impacted by the COVID-19 pandemic

Number and Percentage of People Reported with Acute Hepatitis B in 2023:

By Age (in Years) at Time of Report

91% (n=10)

Were 25–64 Years of Age with a Median Age of 46 Years

By Race/Ethnicity

55% (n=6)

Were Non-Hispanic (NH) White

By Reported Risk Factor

45% (n=5)

Had a History of Substance Use

By Sex

55% (n=6)

Were Female

Chronic Hepatitis B

The number of chronic hepatitis B infections has been decreasing since 2013. In 2023, the proportion of newly reported chronic hepatitis B cases was highest among Asian and non-Hispanic Black compared to non-Hispanic White and Hispanic communities.

Number of People Newly Reported with Chronic Hepatitis B in 2023:

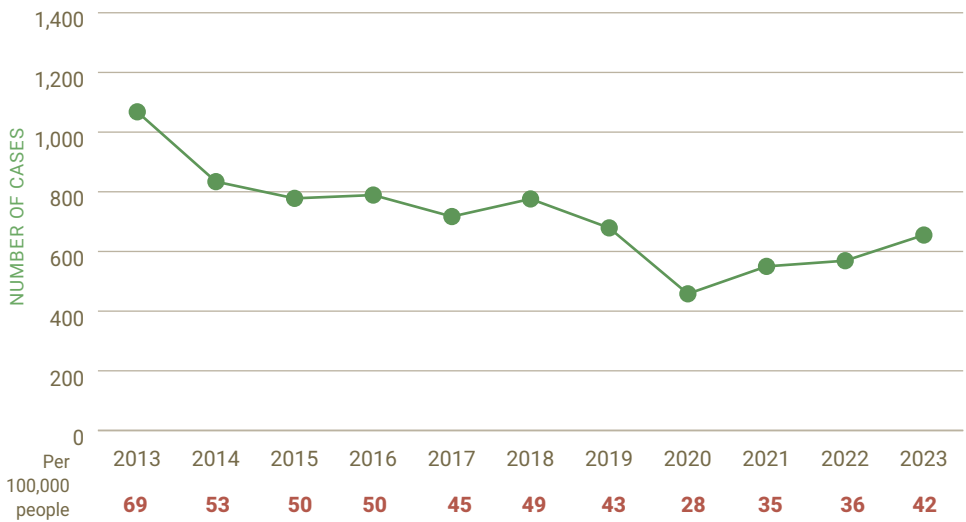
655

Rate of Newly Reported Chronic Hepatitis B in 2023:

42 per 100,000 people

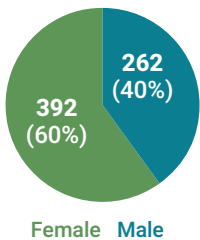
*Totals for 2020 and 2021 may have been impacted by the COVID-19 pandemic.

Figure 2: Number & Rate of People Newly Reported with Chronic Hepatitis B in Philadelphia by Year of First Report, 2013 – 2023



Characteristics of People Newly Reported with Chronic Hepatitis B in 2023:

Figure 3: By Sex



Note: Sex as reported by provider

Figure 4: By Race/Ethnicity

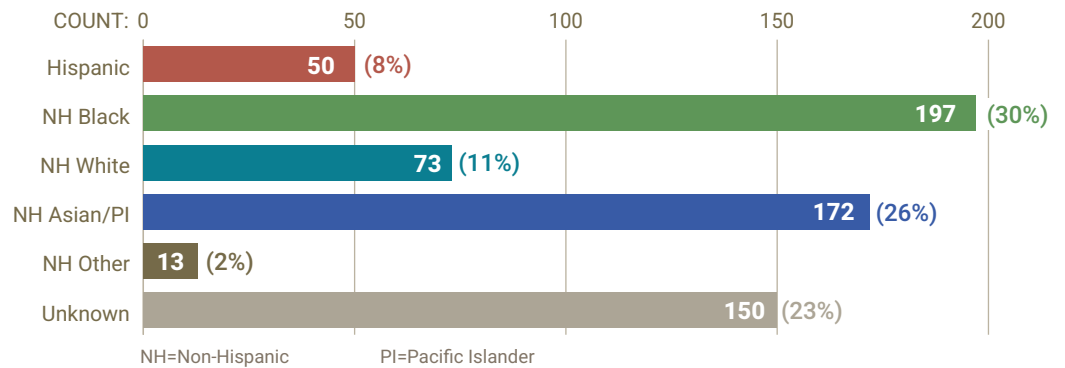
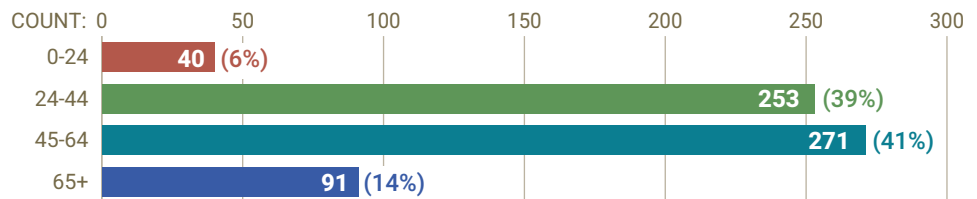


Figure 5: By Age (in Years) at Time of Report



Median Age:

47 years

Vital Statistics: Hepatitis

B

In 2023, there were 83 babies born to people with chronic hepatitis B, but thanks to post-exposure prophylaxis, there was no perinatal transmission of hepatitis B.

Perinatal Hepatitis B

People Living with Chronic Hepatitis B in 2023 Who Could Become Pregnant (Age 15-44 Years):

Number:

2,935

Rate:

804 per 100,000 people

Perinatal HBV Infections Among Infants Born in 2023:

0

73% of Pregnant People were Born in a HBV Endemic Region.

Of whom, 39% (n=24) were Born in Southeast Asia/Pacific Islands, and 36% (n=22) in Africa.

Number of Infants Born to a Pregnant Person Living with Chronic Hepatitis B, Live Births: **83**

Figure 6: By Race/Ethnicity

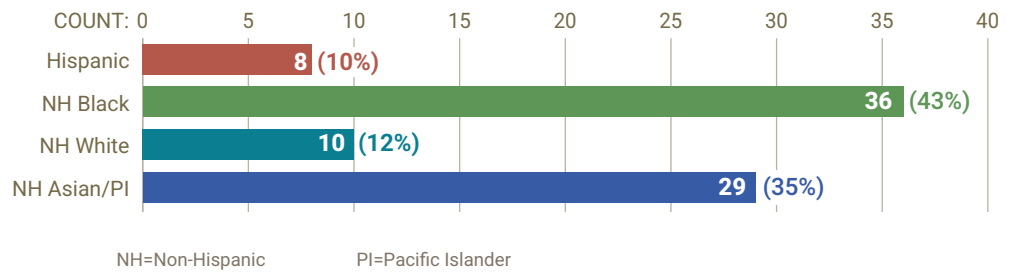
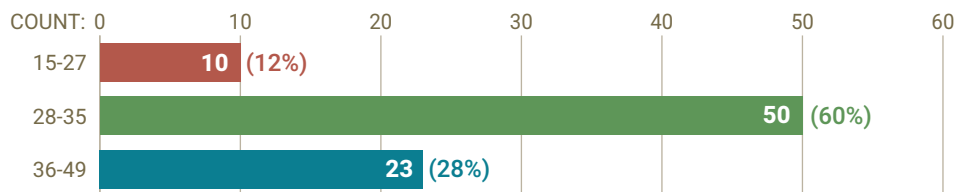


Figure 7: By Age (in Years) at Time of Report



Deaths from Hepatitis B, 2022

18

Deaths

1.2

per 100,000 people

Liver Cancer Diagnoses in Individuals with Hepatitis B, 2022

14

Diagnoses

8%

of People with Liver Cancer Diagnoses have Hepatitis B

Prevalence: Hepatitis B

PDPH estimates that 24,828 residents are living in Philadelphia with chronic hepatitis B. These individuals live across the city, and are most commonly male, Asian or non-Hispanic Black, and 25-44 years of age.

PDPH estimates that **24,828** people (**1.6%** of Philadelphia residents) are living with chronic hepatitis B.

Map 1: 2023 Prevalence of People with Chronic Hepatitis B, Reported in 1987–2023; Rate by ZIP Code (N=22,810)

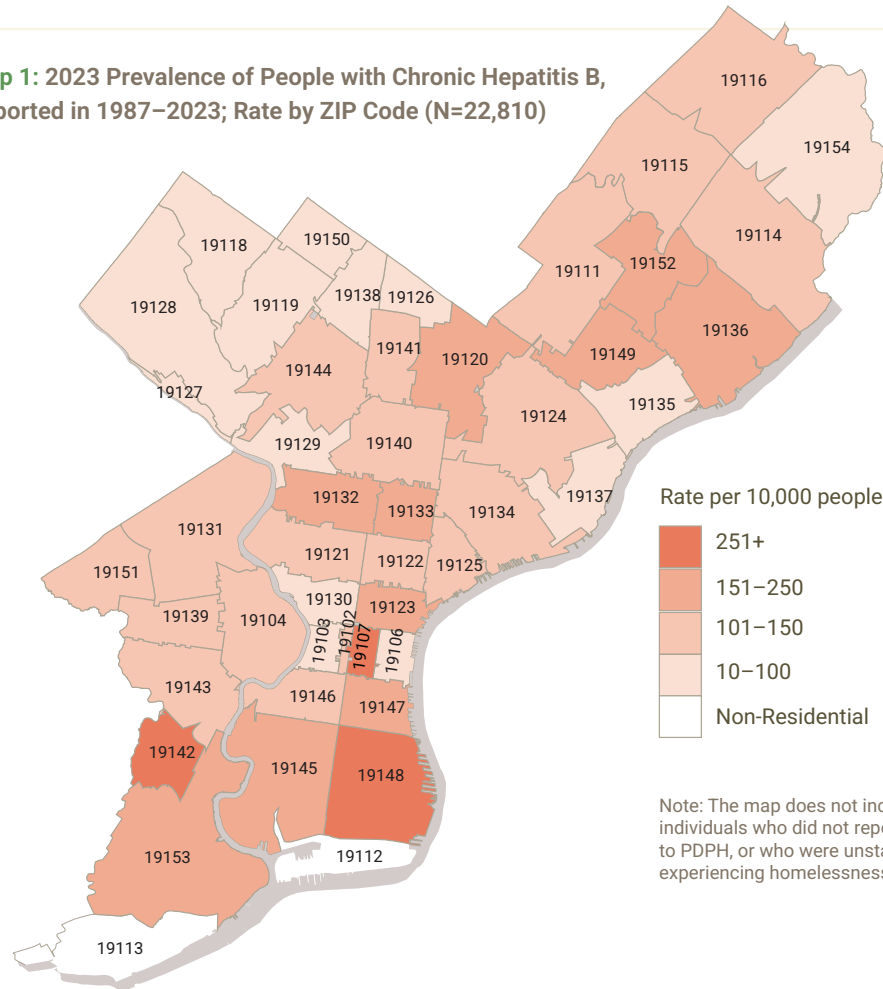
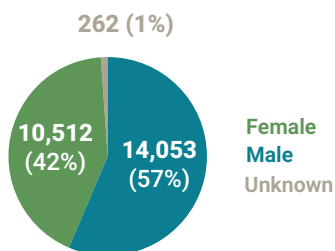
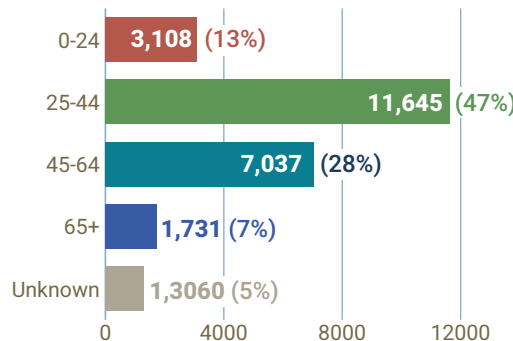


Figure 8: People Reported with Chronic Hepatitis B in Philadelphia, 1987 – 2023 (N=24,268)

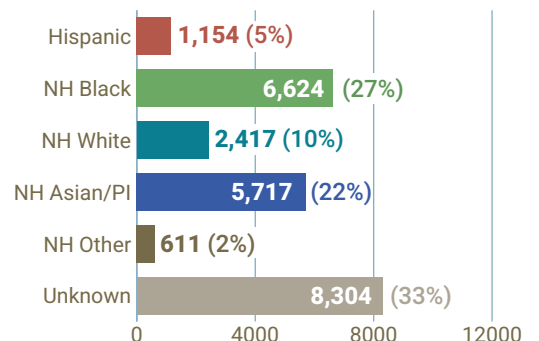
By Sex



By Age (in Years) at Time of Report



By Race/Ethnicity



Note: Race/ethnicity data is often received only through active outreach, which is not comprehensive. As a result, unknown values are elevated and may affect race/ethnicity distribution.

NH=Non-Hispanic PI=Pacific Islander

Please see Appendix 2 for population-adjusted rates.

Hepatitis D

In 2023, the Viral Hepatitis Program expanded its scope to include the surveillance and management of hepatitis D, which only occurs in people who are living with hepatitis B. PDPH estimates 99 people (<0.1% of Philadelphia residents) are living with hepatitis D (1987 – 2023). People with hepatitis D are more likely to be males, non-Hispanic Black, and/or individuals 45-64 years of age. As part of this integration, we have compiled hepatitis D case counts dating back to 1987. In this report, a comprehensive overview of the demographic and risk factor data for hepatitis D cases is provided, offering insights into key populations affected.

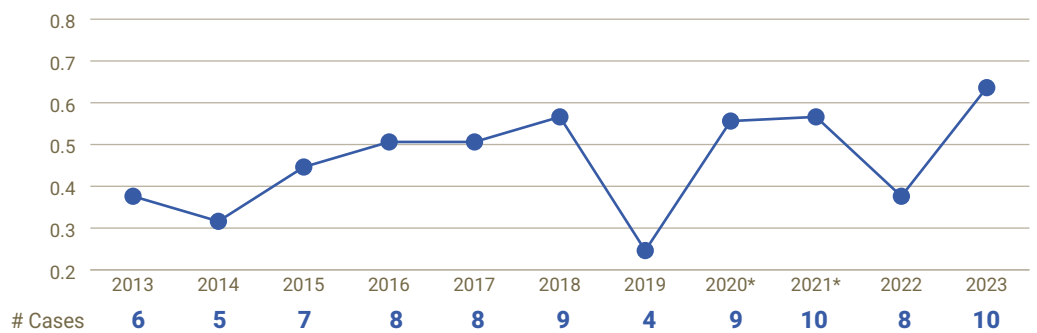
Number of People Reported with Hepatitis D in 2023:

10

Rate of Hepatitis D in 2023:

0.6 per 100,000 people

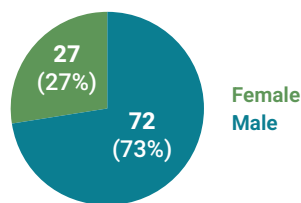
Figure 9: Rate of Reported Hepatitis D: Philadelphia, 2013 – 2023



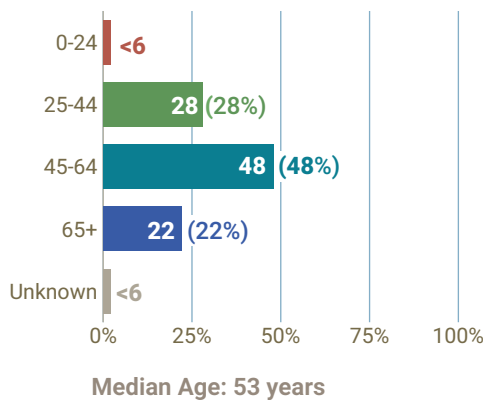
*Totals for 2020 and 2021 may have been impacted by the COVID-19 pandemic.

Figure 10: People Ever Reported with Hepatitis D in Philadelphia, 1987 - 2023 (N=99)

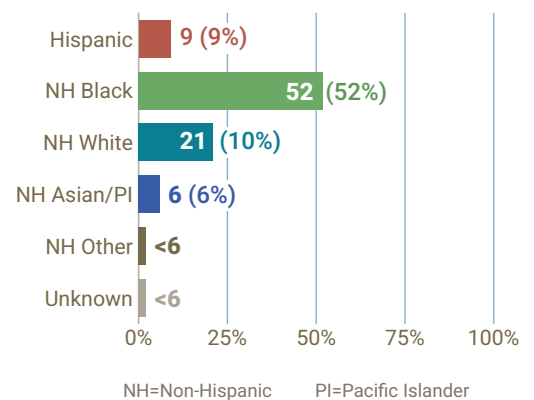
By Sex



By Age (in Years) at Time of Report



By Race/Ethnicity



By Reported Risk Factor

24% (n=24)
Born in a Hepatitis B Endemic Country

19% (n=19)
Had a History of Substance Use

3% (n=3)
Other Risk Factors

53% (n=53)
Were Cases of Unknown Risk Factors

Note: Other risk factors include having HIV & living in a country where hepatitis B and hepatitis D are endemic.

Acute Hepatitis C

Reports of acute hepatitis C steadily increased between 2013 and 2018. In 2019 a decrease was likely associated with a hepatitis A outbreak, the subsequent COVID-19 pandemic (see Note) and harm reduction interventions. The largest proportion of acute hepatitis C was among individuals 30-39 years of age and where risk factors is known, among people who use drugs.

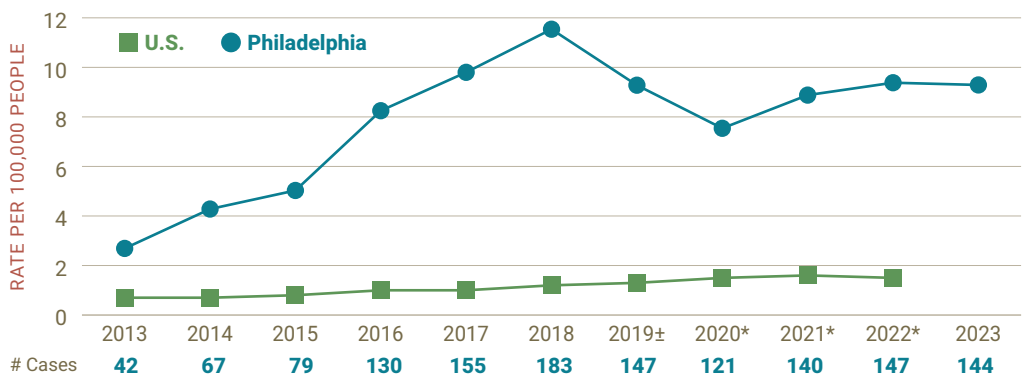
Number of People Reported with Acute Hepatitis C in 2023:

144

Rate of Acute Hepatitis C in 2023:

9.3 per 100,000 people

Figure 11: Number and Rate of Confirmed Acute Hepatitis C: Philadelphia and U.S., 2013 – 2023



*Totals for 2020, 2021, and 2023 may have been impacted by the COVID-19 pandemic.
Note: US national rate data is from 2013-2022.

± A local hepatitis A outbreak in 2019 related to substance use occurred. There were many people with suspected acute hepatitis C infections that also had a hepatitis A infection and could not be counted as hepatitis C cases according to the CDC case definition. (<https://ndc.services.cdc.gov/case-definitions/hepatitis-c-acute-2020/>). Therefore, additional suspected acute hepatitis C cases occurred in 2019 that are not shown here.

People Reported with Acute Hepatitis C in 2023:

Figure 12: By Sex

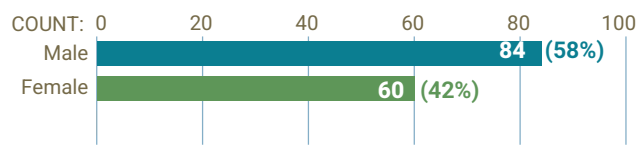


Figure 13: By Age (in Years) at Time of Report

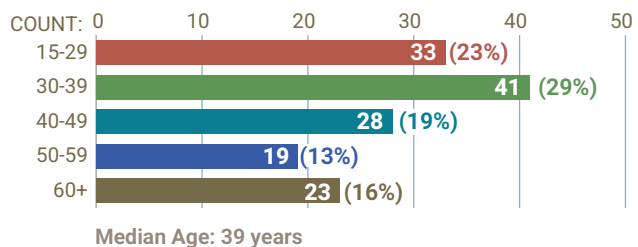


Figure 14: By Race/Ethnicity NH=Non-Hispanic PI=Pacific Islander

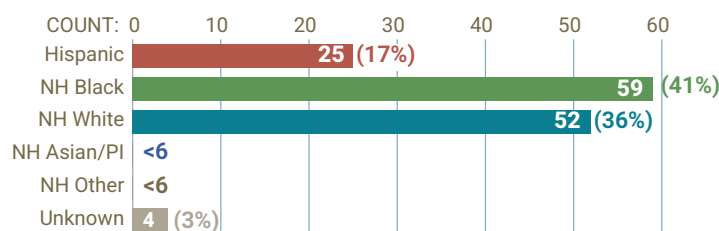
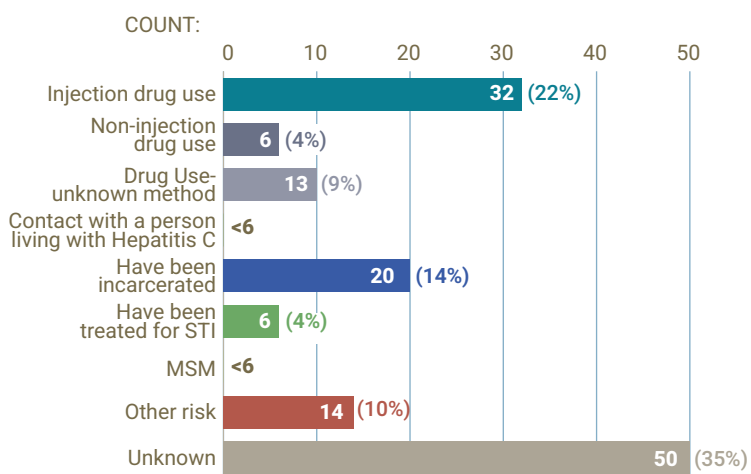


Figure 15: By Reported Risk Factors



Other risk factors: non-commercial tattoo, transplant of a HCV positive organ, born in a HCV endemic country, ever living homeless.

Note: Risk data is often received only through active outreach to providers and patients. As a result, unknown values are elevated and may affect distribution.

Note: MSM= Men who have sex with men, STI= Sexually transmitted infection.

Chronic Hepatitis C

While reports of chronic hepatitis C have declined since a peak in 2016, 1,089 new individuals were reported in 2023, consistent with the past few years. The majority of these individuals were male, 30-39 years or 60 years and older, and non-Hispanic White or non-Hispanic Black.

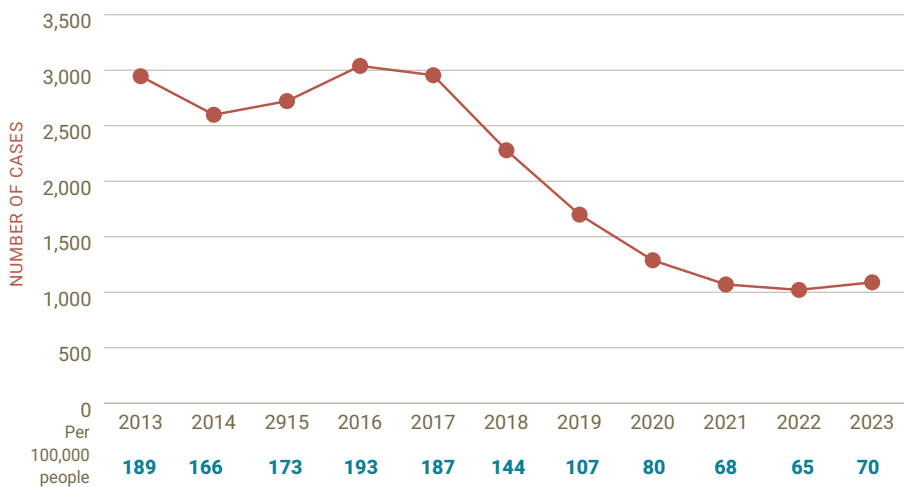
Number of People with Newly Reported Chronic Hepatitis C in 2023:

1,089

Rate of Newly Reported Chronic Hepatitis C in 2023:

70 per 100,000 people

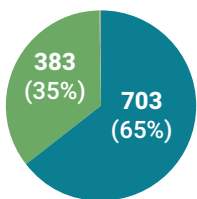
Figure 16: Number & Rate of People Newly Reported with Chronic Hepatitis C in Philadelphia by Year of First Report, 2013 – 2023



*Totals for 2020 and 2021 may have been impacted by the COVID-19 pandemic.

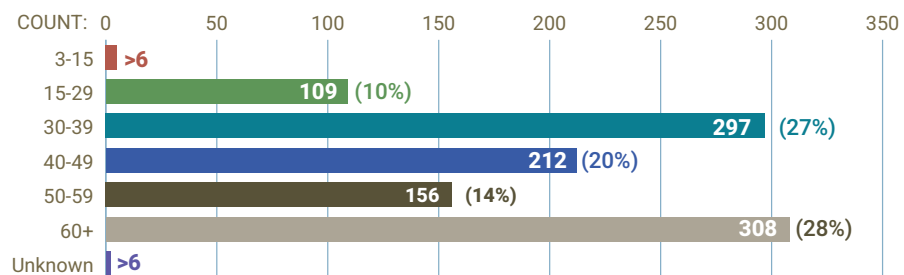
Characteristics of People Newly Reported with Chronic Hepatitis C in 2023:

Figure 17: By Sex



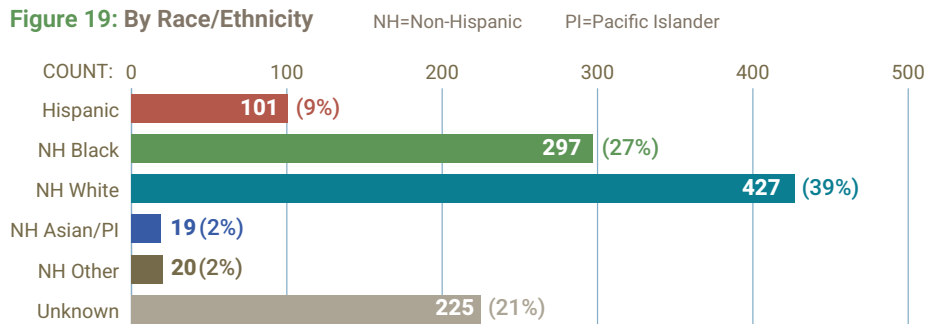
Female Male
3 Unknown

Figure 18: By Age (in Years) at Time of Report



Median Age: 45 years

Figure 19: By Race/Ethnicity



Vital Statistics: Hepatitis C

In 2023, there were 48 live births to people living with chronic hepatitis C. 92% of these people were born in a country where hepatitis C is not endemic. In 2023, there were 3 detected instances of perinatal transmission identified. There were 199 deaths associated with hepatitis C in 2023, and 35% of liver cancer was associated with hepatitis C.

Perinatal Hepatitis C

People (Age 15–44) Who Could Become Pregnant While Living with Chronic Hepatitis C in 2023:

Number:

3,529*

Rate:

892 per 100,000 people

*HCV has decreased significantly in people of childbearing age and pregnant people in Philadelphia due to HCV treatment and emigration.

92%

(n=44) of pregnant people with hepatitis C who delivered a baby were NOT born in an endemic country.

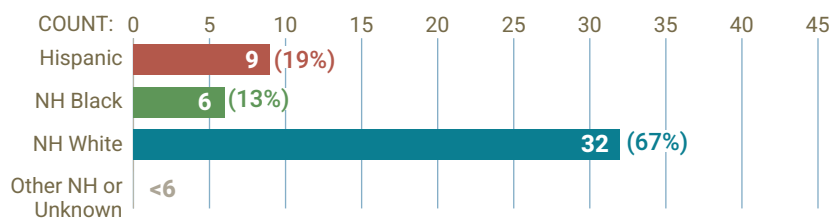
New Infections Identified in 2023 from Perinatal Hepatitis C Transmission Among Infants Born to Persons Living with Chronic Hepatitis C:

3

Number of Infants Born to a Pregnant Person Living with Chronic Hepatitis C, Live Births:

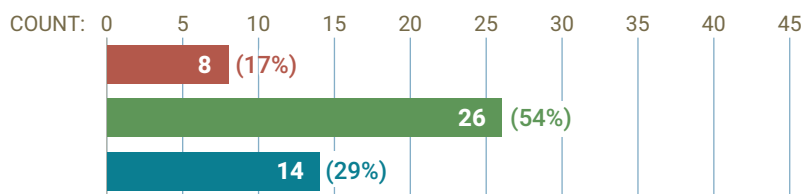
48*

Figure 20: By Race/Ethnicity



NH=Non-Hispanic

Figure 21: By Age (in Years) at Time of Report



Deaths from Hepatitis C, 2022

199

Deaths

12.6

per 100,000 people

Liver Cancer Diagnoses in Individuals with Hepatitis C, 2022

63

Diagnoses

35%

of people with Liver Cancer Diagnosis have Hepatitis C

Prevalence: Hepatitis C

Of the 23,396 Philadelphia residents living with chronic hepatitis C in 2023, the majority were male, non-Hispanic Black or non-Hispanic White, and 25-64 years old.

PDPH estimates that **51,490** people have had chronic hepatitis C since 2013. Currently, because of treatment and natural clearance, **23,396** people (1.5% of Philadelphia residents) are living with chronic hepatitis C.

Map 2: 2023 Prevalence of People with Chronic Hepatitis C, Reported in 2013 – 2023, Rate by ZIP Code (N=22,490)

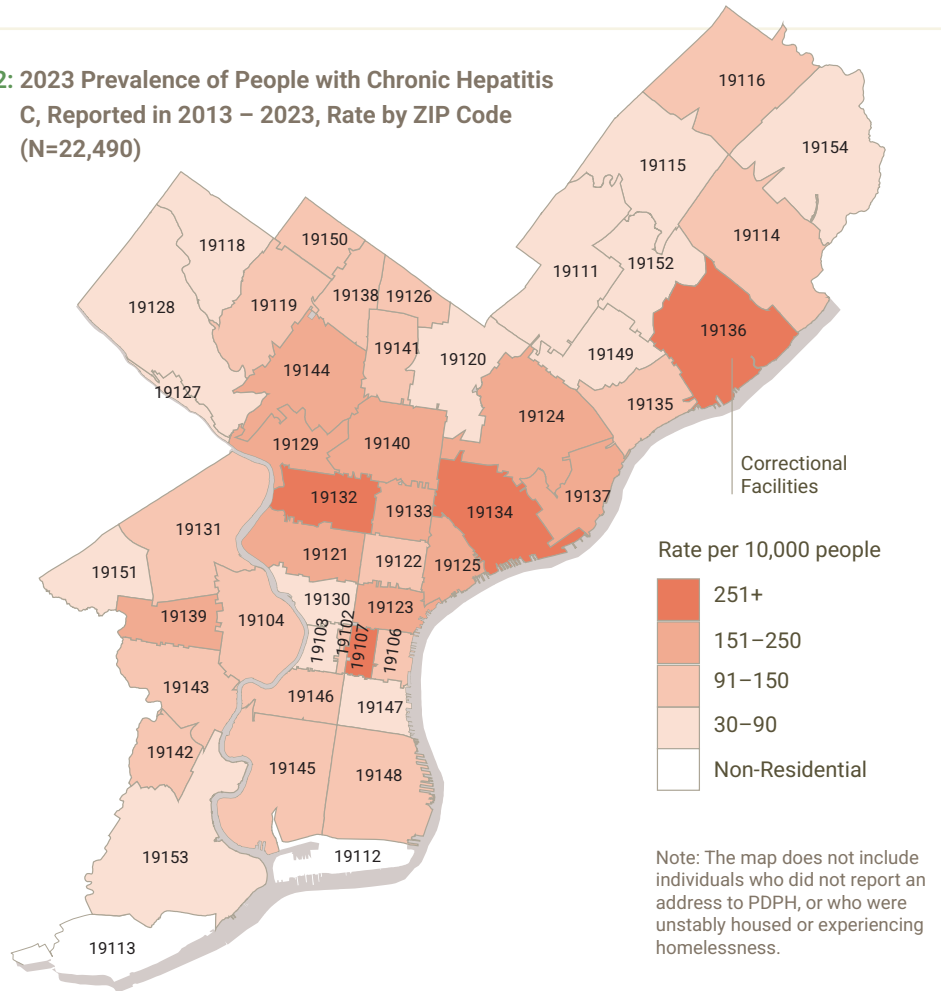
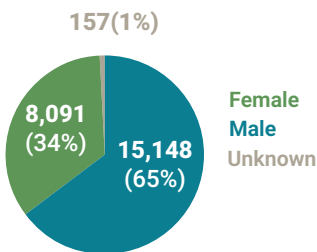
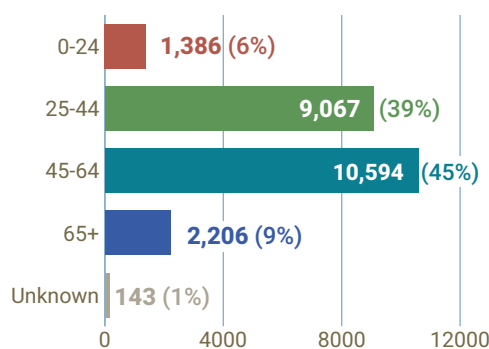


Figure 22: People Reported with Chronic Hepatitis C in Philadelphia, 2013 – 2023 (N=23,396)

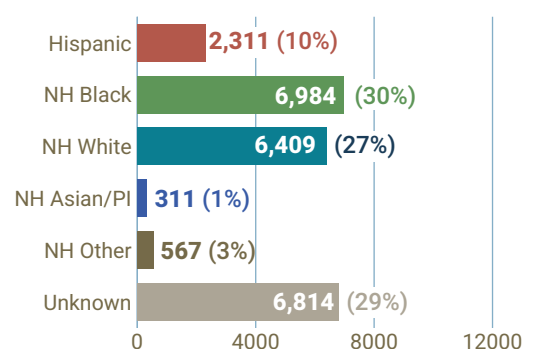
By Sex



By Age (in Years) at Time of Report



By Race/Ethnicity



Note: Race/ethnicity data is often received only through active outreach which is not comprehensive. As a result, unknown values are elevated and may affect race/ethnicity distribution. Please see Appendix 2 to see population-adjusted rate.

NH=Non-Hispanic PI=Pacific Islander

Continuum of Care: Hepatitis C

In 2023, of the 52,495 Philadelphia residents who were ever reported with chronic hepatitis C, 88% received HCV viral load testing with 73% were ever reported with an active infection (positive viral load). From curative treatments or people's natural immune responses, 57% of these individuals cleared their infections. 43% of people with active chronic hepatitis C are still in need of treatment.

The Hepatitis C Continuum of Care is a way to visualize the progress of people through each step of care, from diagnosis to viral clearance. The figure below shows progress, or lack of progress, of individuals from one bar to the next, with each bar representing a step in the continuum. A percentage is indicated from each bar to the next showing the proportion of people who have progressed to the next step. The ultimate goal of elimination efforts is to ensure that everyone who was Ever Infected undergoes Viral Testing, and for the Viral Clearance group to equal 100% of the people in the Initial Infection group (defined as anyone reported to PDPH with an infection). This would indicate that all people who need to be treated for hepatitis C have received those services and are cured. The first figure shows this continuum for all groups in Philadelphia with subsequent figures looking at progress within race/ethnicity and age groups.

Definitions of Hepatitis C Care Continuum Categories

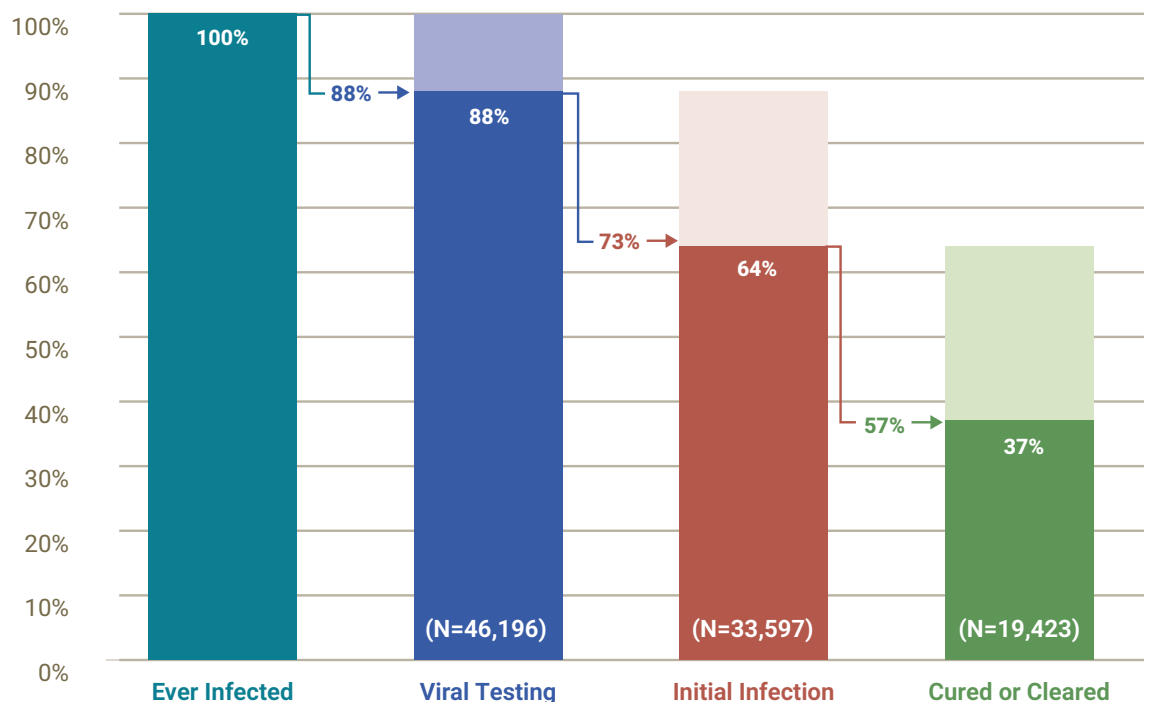
Ever Infected: Ever reported with a positive HCV antibody or HCV RNA or HCV genotype between January 1, 2013 and December 31, 2022

Viral Testing: An HCV RNA or HCV genotype test of any result reported between January 1, 2013 and December 31, 2022

Initial Infection: Ever reported with a positive HCV RNA test

Cured or Cleared: A reported negative HCV RNA test result following a positive HCV RNA over any time period

Figure 23:
Laboratory-based Hepatitis C Virus Continuum of Care for 2023 Evaluation Year-Philadelphia, January 1, 2013 – December 31, 2023 (N=52,495)



Continuum of Care: Hepatitis C

Figure 24: Laboratory-based Hepatitis C Virus Continuum of Care for 2023 Evaluation Year by Reported Race/Ethnicity- Philadelphia, January 1, 2013 – December 31, 2023 (N=43,122).



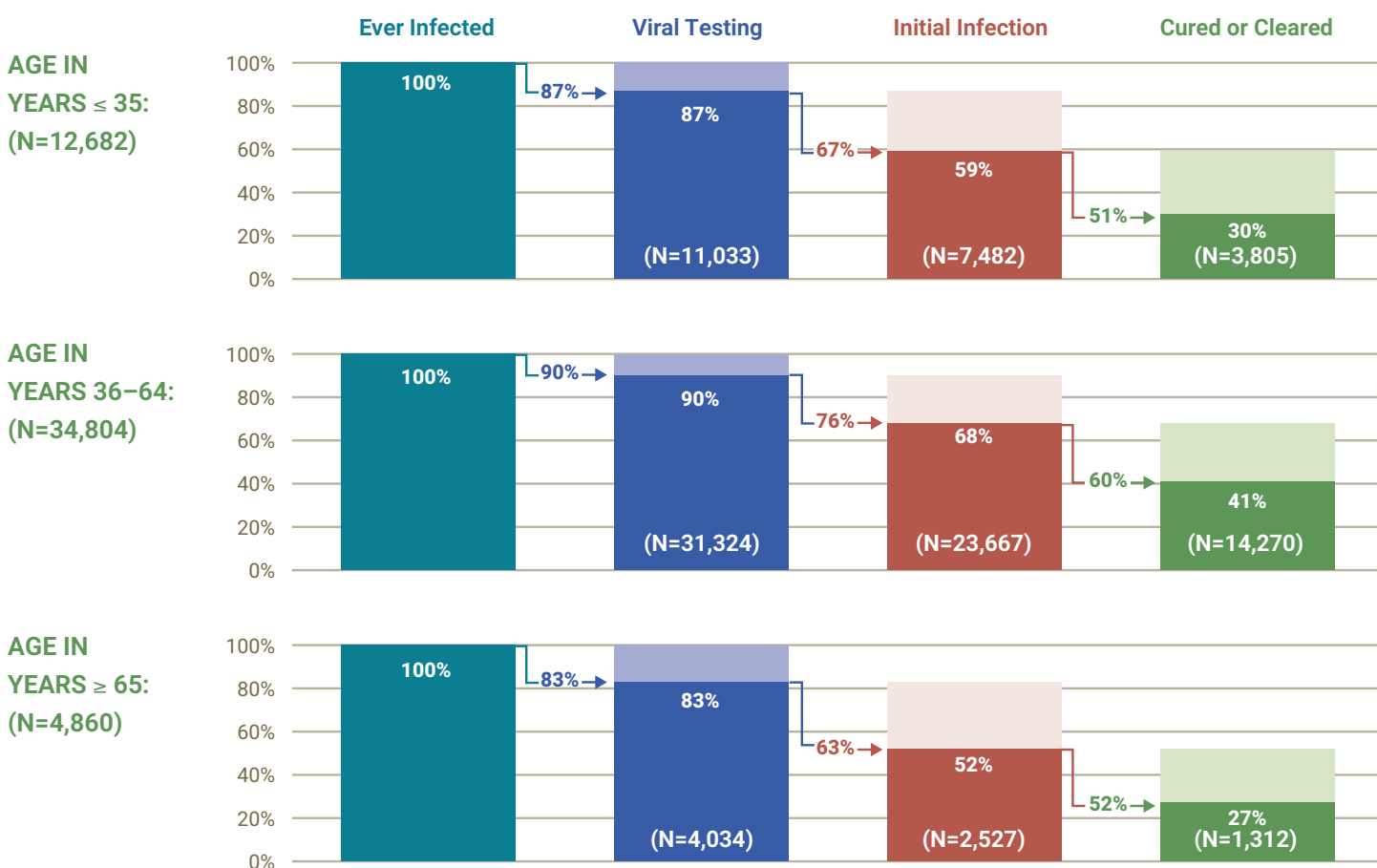
NH=Non-Hispanic PI=Pacific Islander

Note: People with missing race & ethnicity information (Figure 24) and age (Figure 25) are excluded.

Continuum of Care: Hepatitis C

Variations in testing and treatment/clearance exist among race and ethnicity groups and age groups. For example, non-Hispanic White and Hispanic individuals are less likely than other groups to be cured or to clear hepatitis C infections. People 36-64 years old are more likely to be cured or to have cleared hepatitis C than younger or older individuals.

Figure 25: Laboratory-based Hepatitis C Virus Continuum of Care for 2023 Evaluation Year by Age Group Philadelphia, January 1, 2013 – December 31, 2023 (N=52,346).



Note: People with missing race & ethnicity information (Figure 24) and age (Figure 25) are excluded.

Elimination Goals

Impact Target

Since 2019, the baseline of tracking Elimination Indicators, there has been a 36% decrease in chronic hepatitis C reports to PDPH and a 25% decrease in deaths related to hepatitis C. These two successes are likely due to intensive work to provide harm reduction tools and a hepatitis C treatment rate of 57% in Philadelphia.

Hepatitis B elimination work has led to small decreases in chronic disease reported to PDPH and deaths related to hepatitis B, and improvements in the number of newborns vaccinated for hepatitis B within 24 hours.

Much work remains, however, to reach our elimination targets by 2030.

Source: World Health Organization. *Global Health Sector Strategy on Viral Hepatitis, 2016-2021: Towards Ending Viral Hepatitis*. 2016.

WHO Indicator	WHO 2030 Target
New Cases of Chronic Hepatitis B Infections	90% reduction
New Cases of Chronic Hepatitis C Infections	
Hepatitis B Deaths	65% reduction
Hepatitis C Deaths	

Source:
World Health Organization. *Global Health Sector Strategy on Viral Hepatitis, 2016-2021: Towards Ending Viral Hepatitis*. 2016.

Philadelphia Indicator	Philadelphia Baseline Data	Latest Available Philadelphia Data	Percent Change
Newly Reported Cases of Chronic Hepatitis B	679 (2019)	655 (2023)	4% decrease
Newly Reported Cases of Chronic Hepatitis C	1,699 (2019)	1,089 (2023)	36% decrease
% of People with Hepatitis B Who Died Prematurely*	65% (2019)	61% (2023)	6% decrease
% of People with Hepatitis C Who Died Prematurely*	59% (2019)	44% (2023)	25% decrease

Note: World Health Organization. (2016) *Combating Hepatitis B and C to Reach Elimination by 2030: Advocacy Brief*. World Health Organization

Source: World Health Organization. *Combating Hepatitis B and C to Reach Elimination by 2030: Advocacy Brief* 2016.

* Died Prematurely is defined as occurring before the age of 65 years.

WHO Indicator	WHO 2030 Target
Hepatitis B childhood third dose vaccination coverage	90%
Hepatitis B virus birth dose vaccination coverage	90%
Blood safety and safe injections	90%
Hepatitis B diagnosis	90% diagnosed
Hepatitis C diagnosis	

Philadelphia Indicator	Philadelphia Baseline Data	Latest Available Philadelphia Data
Percentage of hepatitis B childhood third dose vaccination coverage	96% (2019)	93% (2023)
Percentage of newborns receiving the birth dose within the first 12-24 hours after birth	79% (2019)	85% (2023)
Hepatitis B and C transmission in healthcare facilities has essentially been eliminated due to national blood safety and infection control policies.		
Proportion of people infected with hepatitis B who are diagnosed	Not available	Not available
Proportion of people infected with hepatitis C who are diagnosed	Not available	Not available
Hepatitis C treatment rate (estimated using surveillance data)	37% (2019)	57% (2023)

PDPH Viral Hepatitis Program (HEP) coordinates public health surveillance and epidemiology-related activities including direct education and outreach to people living with hepatitis B and hepatitis C. Using data to inform activities, HEP programming includes prevention activities including education and some direct care navigation for perinatal hepatitis B and hepatitis C, as well as for people living with a substance use disorder. Additional work by PDPH includes outreach and engagement through leadership of the local hepatitis C coalition, Hepatitis C Allies of Philadelphia, facilitating technical assistance for providers to integrate hepatitis B and hepatitis C services into their practices, as well as support for provider treatment training programs.

Abbreviations and Technical Notes

Abbreviations

ACS: American Community Survey (from U.S. Census Bureau)

ALT: Alanine aminotransferase

DDC: Division of Disease Control at Philadelphia Department of Public Health

HBV: Hepatitis B virus, the virus that causes hepatitis B infections

HCV: Hepatitis C virus, the virus that causes hepatitis C infections

HDV: Hepatitis D virus, the virus that causes hepatitis D infection in individuals living with HBV

HEP: Viral Hepatitis Program at PDPH

MSM: Men who have sex with men

NH: Non-Hispanic

PDPH: Philadelphia Department of Public Health

RNA: Ribonucleic acid

STI: Sexually transmitted infection

Technical Notes

Acute Hepatitis B: A new HBV infection, reported with jaundice or elevated alanine aminotransferase (ALT) levels, and Hepatitis B Surface Antigen (HBsAg) and Immunoglobulin M (IgM) antibody to hepatitis B core antigen (IgM anti-HBc) positive (if done). Alternatively, a reported HBV infection with a negative HBsAg result followed by an HBsAg or hepatitis B virus DNA (HBV DNA) positive result within 6 months.

Acute Hepatitis C: A new HCV infection in a person older than 3 years of age, reported with jaundice, elevated bilirubin or ALT levels, no evidence of a more likely diagnosis, AND a positive HCV RNA result. Alternatively, a reported HCV infection with a negative anti-HCV antibody and/or HCV RNA laboratory test result followed by positive HCV antibody (anti-HCV) and/or HCV RNA laboratory test result within 12 months.

Chronic Hepatitis B: An HBV infection reported to PDPH with at least one positive laboratory test result for HBsAg, hepatitis B e Antigen (HBeAg), or nucleic acid test for HBV DNA and not known to have an acute HBV infection in the same year.

Chronic Hepatitis C: An HCV infection reported to PDPH with at least 1 positive anti-HCV and/or HCV RNA or HCV genotype laboratory test result. If an undetected HCV RNA result was reported, the infection is considered cleared or cured.

Hepatitis D: An HDV infection, reported to PDPH, among individuals living with HBV who have a laboratory test result positive for anti-HDV and/ or HDV RNA.

Inclusion Criteria: All data pertains to people who were Philadelphia residents and were not known to have died or moved as of December 31, 2023.

Newly Reported: Infections that are reported to PDPH for the first time in the given year. In the case of chronic hepatitis B and chronic hepatitis C, these may not be newly acquired infections because many people are asymptomatic and may be screened for infections without the presence of risk or symptoms.

Perinatal Hepatitis B: Hepatitis B infection in infant or child due to HBV transmission from the birthing person occurring during pregnancy or during labor and delivery.

Perinatal Hepatitis C: Hepatitis C infection in infant or child due to HCV transmission from the birthing person occurring during pregnancy or during labor and delivery.

Prevalence: Hepatitis B and C prevalence estimates were updated for 2023 and included individuals who had a positive diagnostic hepatitis B laboratory test reported to PDPH from January 1, 1987- December 31, 2023 or a positive hepatitis C laboratory test reported to PDPH from January 1, 2013- December 31, 2023. Individuals were excluded if they were reported to PDPH to have died or were no longer a resident of Philadelphia throughout the identified time period. The hepatitis C estimate also excludes individuals who had resolved (most recent hepatitis C RNA was negative) infection through 2023.

Appendix 1

Data Sources

All surveillance data is collected by the Philadelphia Department of Public Health as a part of mandated reporting of hepatitis B, hepatitis C, and hepatitis D infections among Philadelphia residents. Pregnancy among these individuals is also reportable. Also, supplementary information on demographics, transmission risk factors, and clinical care are collected through patient and provider interviews.

Birth, death, and cancer data is sourced from the Pennsylvania Vital Registration System.

These data were supplied by the Bureau of Health Statistics and Research, Pennsylvania Department of Health, Harrisburg, Pennsylvania. The Pennsylvania Department of Health specifically disclaims responsibility for any analyses, interpretations, or conclusions.

Population estimates for Philadelphia residents are sourced from the U.S. Census Bureau; American Community Survey, 2023 American Community Survey 1-Year Estimates. Prevalence rates by ZIP Code is sourced from U.S. Census Bureau; American Community Survey, 2022 American Community Survey 5-Year Estimates. References to U.S. rates of acute hepatitis B and acute hepatitis C were sourced from the Centers for Disease Control and Prevention. United States Viral Hepatitis Surveillance Reports, 2013 – 2023.

All hepatitis vaccine data is collected by the Philadelphia Department of Public Health as part of mandated reporting under the Philadelphia Health Code. All facilities providing immunizations are required to report both vaccine administration details and demographic information.

Authorship

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Appendix 2

Figure 26: Population-Adjusted Demographic Characteristics of Chronic Hepatitis B (1987 – 2023; N= 24,828) and Chronic Hepatitis C (2013 – 2023; N=23,396) 2023 Prevalence in Philadelphia.

	PREVALENCE OF HEPATITIS B PER 10,000 PEOPLE	PREVALENCE OF HEPATITIS C PER 10,000 PEOPLE
TOTAL	160	151
GENDER		
Male	191	207
Female	129	99
RACE/ETHNICITY		
Hispanic	47	95
NH Black	108	114
NH White	46	122
NH Asian/PI	450	25
NH Other	170	158
AGE AT TIME OF REPORT (in Years)		
0-24	65	29
25-44	234	182
45-64	208	313
65+	74	94

NH=Non-Hispanic PI=Pacific Islander



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