

Working Toward a Hep Free NYC

2023 Hepatitis A, B and C in NYC Report



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Introduction

In 2023, the NYC Health Department received 9,548 new reports of hepatitis A, B and C. As of 2022, more than 314,300 people are estimated to be living with hepatitis B or C in NYC. Without care and treatment, more than 50,100 of these people may progress to serious liver disease, liver cancer or premature death. The NYC Health Department works to improve the health of people affected by hepatitis B and C through:



This report by the NYC Health Department features hepatitis A, B and C surveillance data and summaries of viral hepatitis programs and services delivered in NYC from January 1, 2023 through December 31, 2023, or most recent available data. For additional data, see Supplemental Appendices: nyc.gov/site/doh/data/data-publications/hepatitis-abc-surveillance-data.page. For more information, email hep@health.nyc.gov.

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Health Inequities in Viral Hepatitis

The NYC Health Department takes a health equity approach in monitoring and responding to the viral hepatitis epidemic in NYC. Priority groups for hepatitis A, B and C prevention, testing, care and treatment include immigrants, people of color, people who use drugs, people experiencing homelessness, people with criminal justice involvement, and men who have sex with men (MSM). These groups have historically been excluded from resources and opportunities to live healthy lives. The NYC Health Department prioritizes these groups to address the multiple structural barriers they experience when accessing health care. Barriers include structural racism, stigma and discrimination; cultural and linguistic barriers; lack of and gaps in health insurance coverage; criminalization of drug use; lack of affordable housing; and involuntary relocation of people experiencing homelessness by law enforcement.

NYC Viral Hepatitis Elimination Plan

In 2021, the NYC Health Department and community partners released the Plan to Eliminate Viral Hepatitis as a Major Public Health Threat in New York City by 2030 (NYC Viral Hepatitis Elimination Plan),¹ which sets forth three goals:

1. Reduce new hepatitis C infections among people in NYC by 90% by 2030
2. Reduce premature deaths among people with chronic hepatitis B and chronic hepatitis C in NYC by 65% by 2030; improve the health of people with hepatitis B and C in NYC
3. Reduce health inequities related to viral hepatitis infection among people in NYC

The NYC Health Department partners with Hep Free NYC, a network of community coalitions and stakeholders building capacity to prevent, manage, and treat hepatitis B and C; to support implementation of the plan and collaborates with the New York State (NYS) Department of Health AIDS Institute on policy-related strategies. Since the plan's release, the NYC Health Department and community partners have made progress on several priority strategies.

Strategy	2023 Status update
To increase availability of hepatitis B and C surveillance data:	
Amend the NYC Health Code to require laboratories to report negative test results for hepatitis B and hepatitis C.	In December 2023, the NYC Board of Health voted to amend the NYC Health Code to require laboratories to report negative and indeterminate hepatitis B antigen and surface antigen test results, and negative and indeterminate hepatitis C antibody test results to the NYC Health Department.
To increase accessibility of hepatitis B and C testing and linkage to care:	
Support increased funding for patient navigation programs such as Check Hep B and Check Hep C.	The Hep Free NYC Advocacy Committee continues to call for ongoing and increased funding for the NYC Viral Hepatitis Prevention Initiative. In 2023, the Advocacy Committee met with NYC City Council Members to underscore the importance of investing in this initiative.
To increase acceptability of hepatitis B and C care and treatment	
Engage more primary care and addiction medicine providers to attend in-depth training on trauma-informed, stigma-free, and harm reduction-oriented hepatitis C care and culturally and linguistically responsive hepatitis B care.	The NYC Health Department continues to partner with the Empire Liver Foundation to deliver clinical education on initiating hepatitis B and C treatment for all people diagnosed with hepatitis B or C, including people who use drugs and people with HIV. Tailored programs were delivered to substance use treatment programs including START, Elev8, and ACI.

¹ The NYC Viral Hepatitis Elimination Plan is available at nyc.gov/assets/doh/downloads/pdf/cd/viral-hepatitis-elimination-plan.pdf.

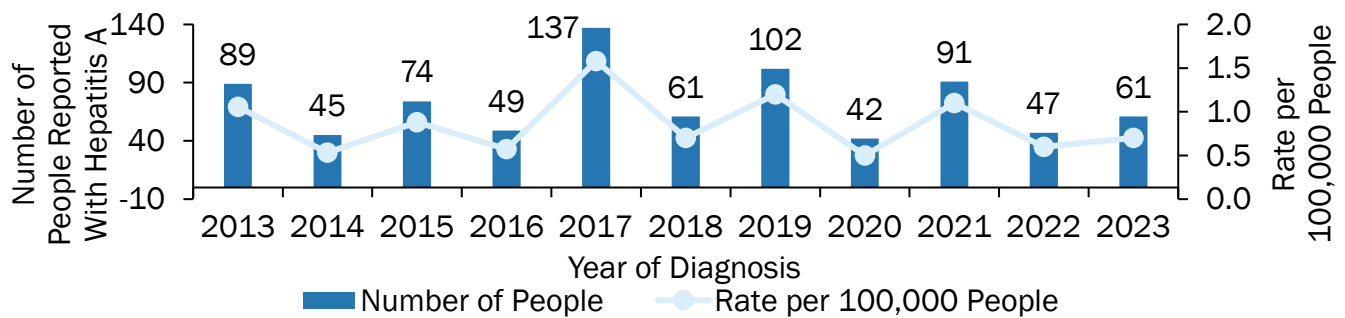
Epidemiology of Hepatitis A, B and C

The NYC Health Department monitors the number of people reported with hepatitis A, B and C in NYC each year. Surveillance data are used to describe trends over time and across groups, inform efforts to prevent new infections, and promote linkage to care and treatment of people with viral hepatitis.

Hepatitis A²

61 Number of people reported with hepatitis A in NYC in 2023
+30% Percentage change from 2022 to 2023
0.7 Rate per 100,000 people in NYC in 2023

Figure 1. Number and rate of people reported with hepatitis A in NYC by year of diagnosis, 2013–2023



The number of people reported with hepatitis A in NYC has been low due to hepatitis A vaccine availability and universal childhood vaccine recommendations. In 2023, the increase in number of people reported with hepatitis A was related to people newly arrived from countries where hepatitis A is endemic.

Figure 2. Percentage of people reported with hepatitis A in NYC by reported transmission categories, 2023

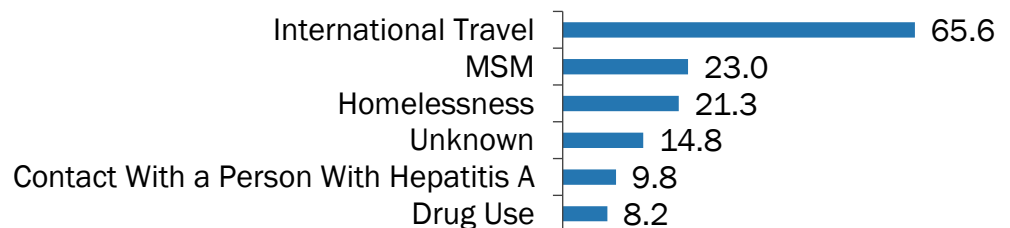
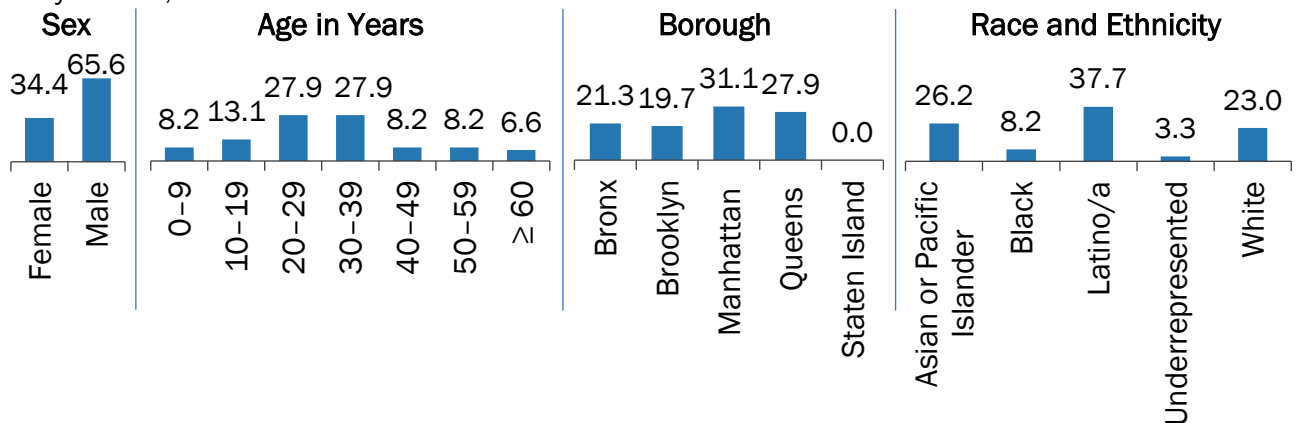


Figure 3. Percentage of people reported with hepatitis A in NYC by sex, age, borough, and race and ethnicity in NYC, 2023



² All data reported to the NYC Health Department as of April 9, 2024.

Acute Hepatitis B

The NYC Health Department investigated 95% of people newly reported with acute hepatitis B in NYC in 2023 through patient and provider interviews and medical chart review. Clinical and risk factor data were collected to inform the epidemiology of new infections and how to focus prevention activities.

19 Number of people confirmed with acute hepatitis B in NYC in 2023³ **0.2** Rate of acute hepatitis B per 100,000 people in NYC in 2023

In 2023, the NYC Health Department initiated 570 acute hepatitis B case investigations as a result of provider reporting and laboratory reporting of IgM anti-HBc test results.

Figure 4. Number of people reported with a positive IgM antibody to hepatitis B core antigen (IgM anti-HBc) test in NYC that were investigated to ascertain case status, 2023

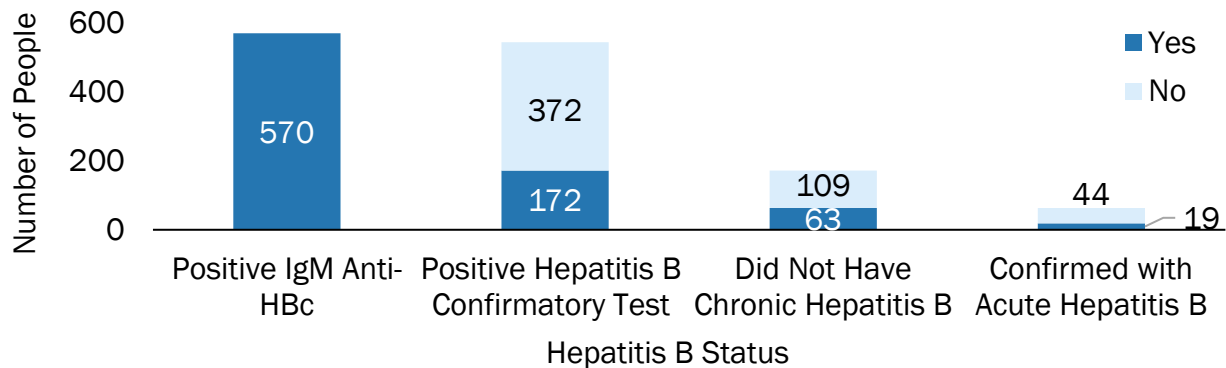
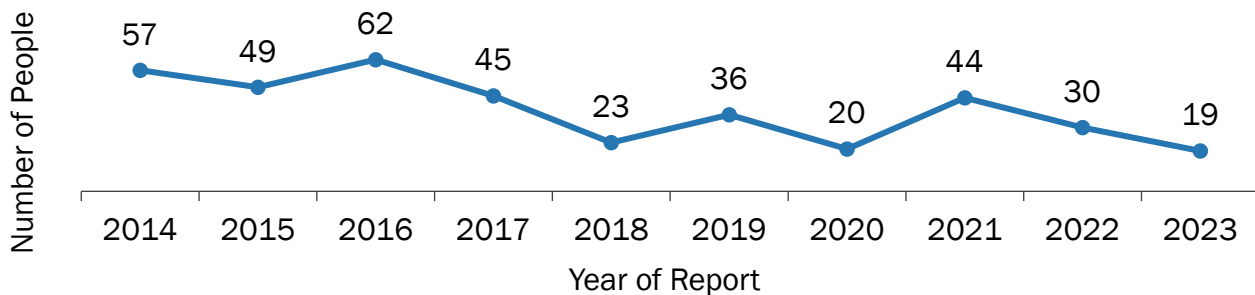


Figure 5. Number of people confirmed with acute hepatitis B in NYC by year of report, 2014–2023



In 2023, people reported with acute hepatitis B in NYC were mostly male (68.4%), 40 years or older (68.4%), Asian or Pacific Islander (31.6%) or Black (31.6%). Health care-related exposure (36.8%) and non-injection drug use (10.5%) were the most common reported transmission categories for acute hepatitis B.⁴

³ Investigations of possible acute hepatitis B cases diagnosed in 2023 were ongoing at the writing of this report. Therefore, the number of people with confirmed acute hepatitis B in NYC in 2023 is likely an underestimate.

⁴ Not mutually exclusive

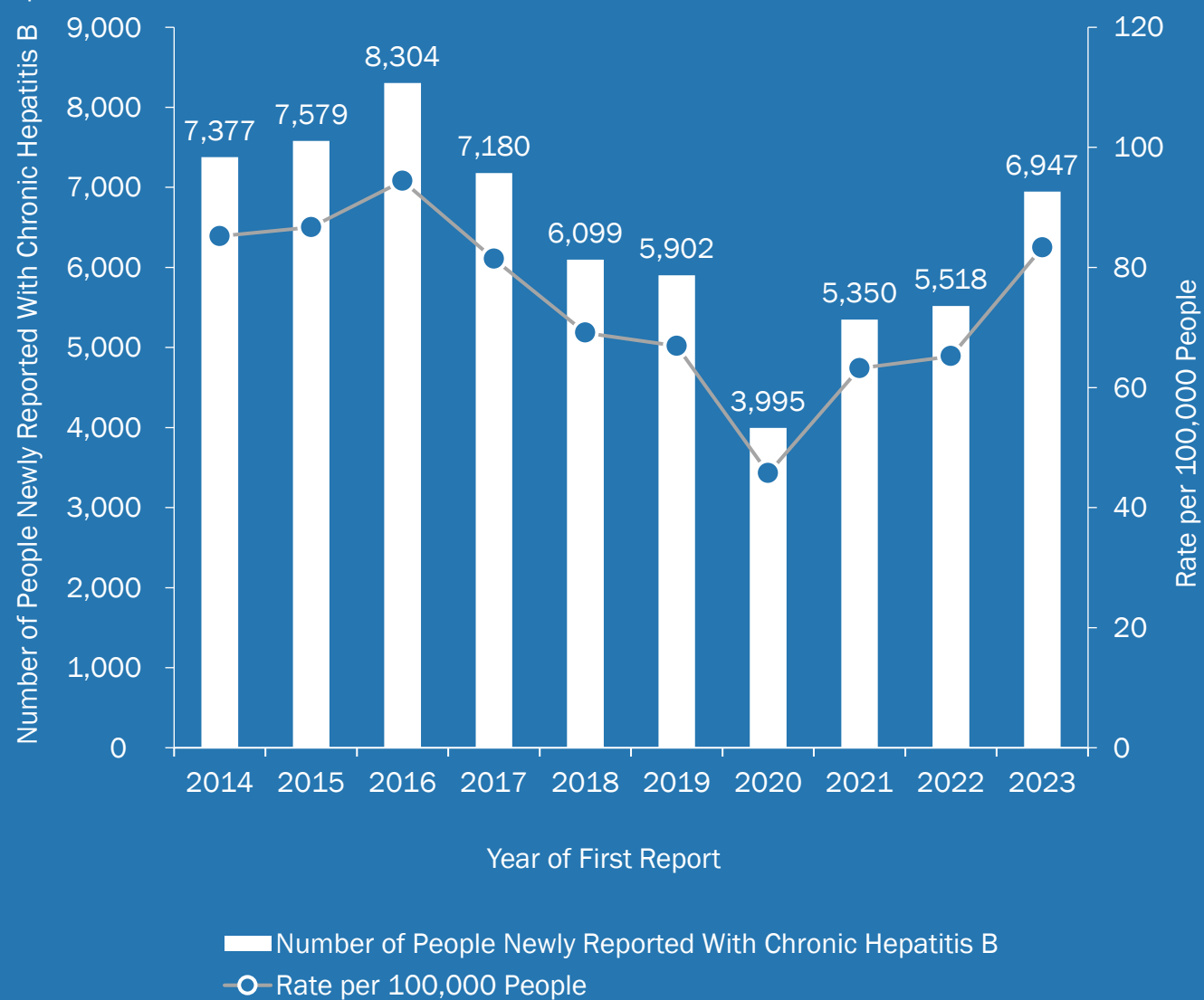
Chronic Hepatitis B

The NYC Health Department estimates that 254,992 people are living with chronic hepatitis B in NYC (3.1% of NYC residents).⁵

6,947	Number of people newly reported with chronic hepatitis B in NYC in 2023	83.3	Rate of newly reported chronic hepatitis B per 100,000 people in NYC in 2023
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In 2021 and 2022, the number of people newly reported with chronic hepatitis B increased, and in 2023 surpassed levels seen in 2019 prior to the COVID-19 pandemic.

Figure 6. Number and rate of people newly reported with chronic hepatitis B in NYC by year of first report, 2014–2023



⁵ Estimate as of 2022. For details on methods used to calculate prevalence estimates, see Technical Notes.

Characteristics of People Newly Reported With Chronic Hepatitis B

Most people with a new diagnosis of chronic hepatitis B in 2023 were male (61%), ages 30 to 39 years (26%), and Asian or Pacific Islander (19%). The highest rates of newly reported cases were in Queens and in neighborhoods with high poverty.

Figure 7. Percentage of people newly reported with chronic hepatitis B in NYC by sex, age, and race and ethnicity, 2023

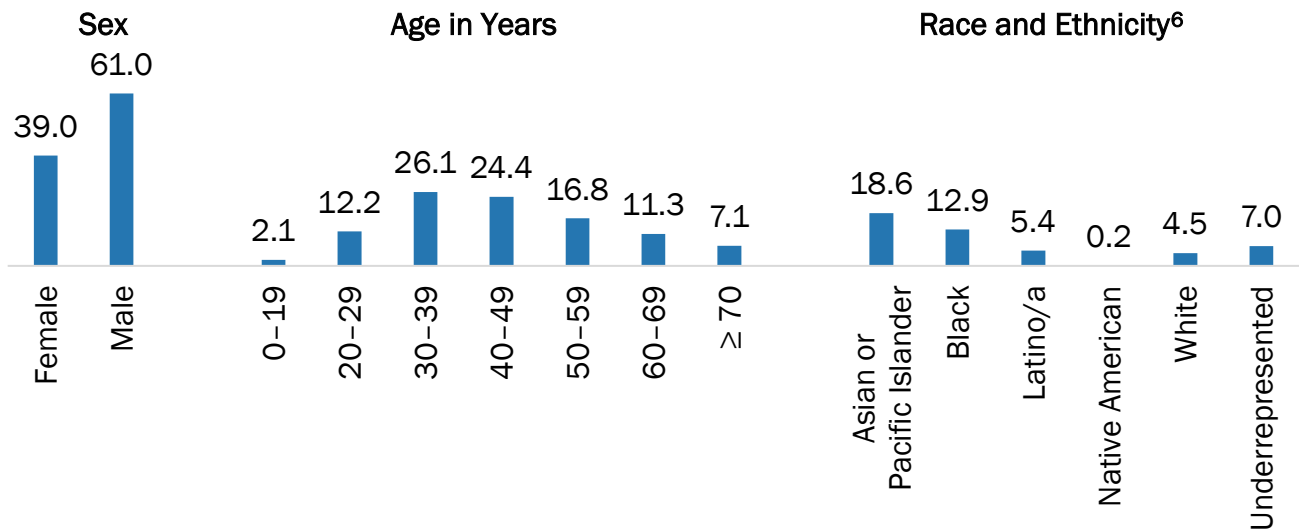
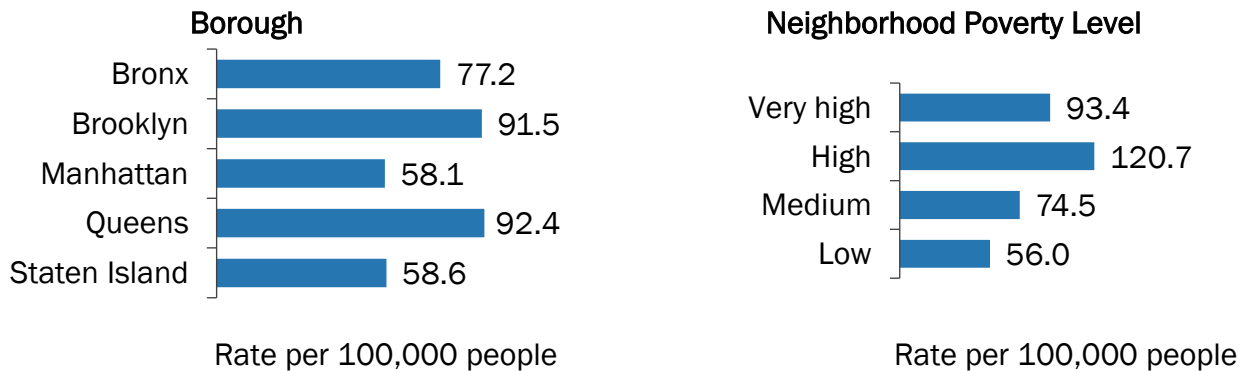


Figure 8. Rate of people newly reported with chronic hepatitis B in NYC by borough and neighborhood poverty level, 2023⁷

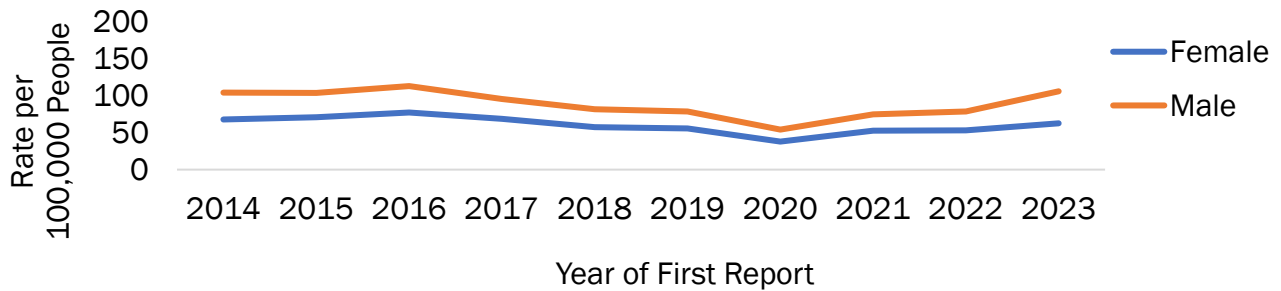


⁶ 52% of people newly reported with chronic hepatitis B had missing or unknown information for race and ethnicity.

⁷ These data exclude people with unknown information.

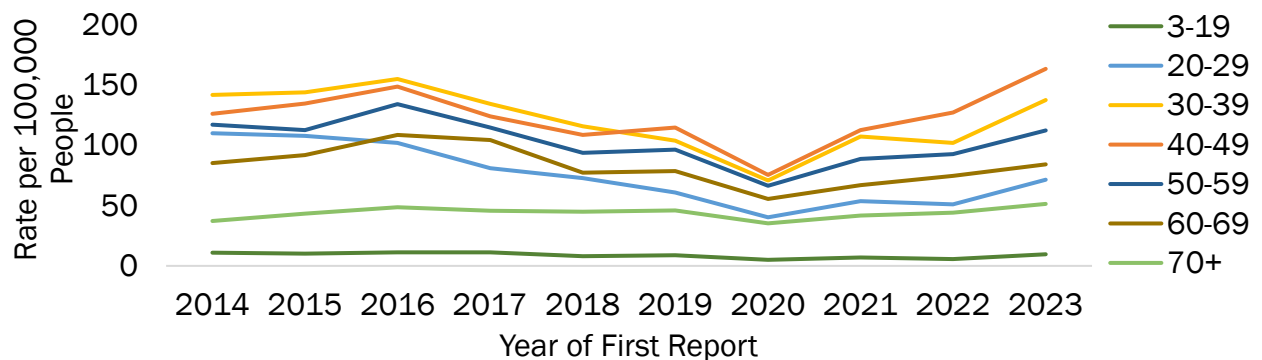
Figure 9. Ten-year trends in rates of people newly reported with chronic hepatitis B in NYC by sex, age, and race and ethnicity, 2014-2023

Sex



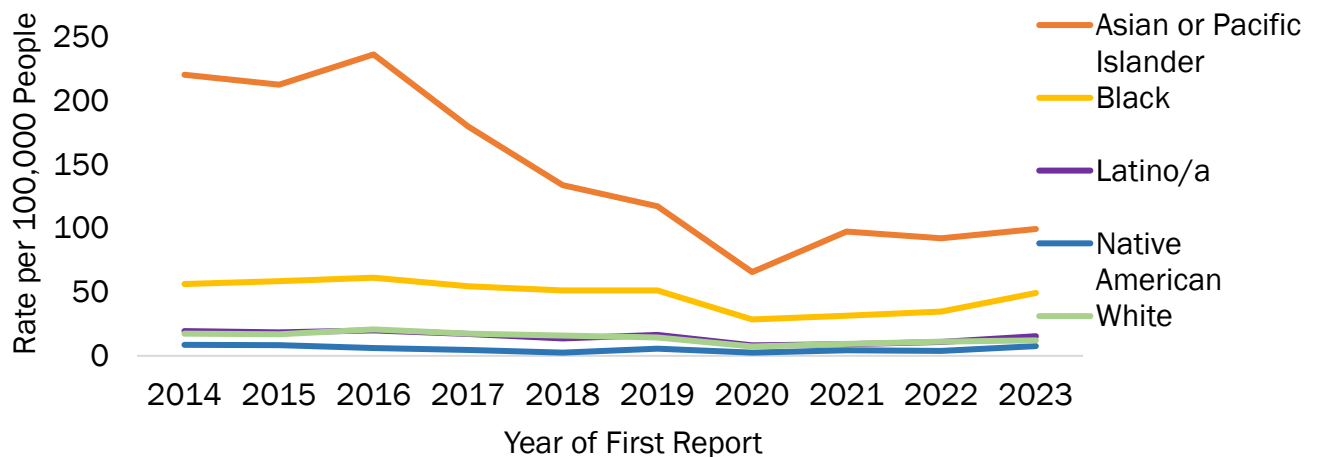
Since 2020, the rate of people newly reported with hepatitis B increased. Over the last 10 years, the rate was consistently higher in males than females.

Age in Years



Rates of people newly reported with hepatitis B across all age groups mostly decreased from 2016 to 2020, followed by an increase through 2023. Over the last 10 years, age groups spanning 30 to 59 years had the highest rates, with people ages 40 to 49 years having the highest rate since 2019 compared with other age groups.

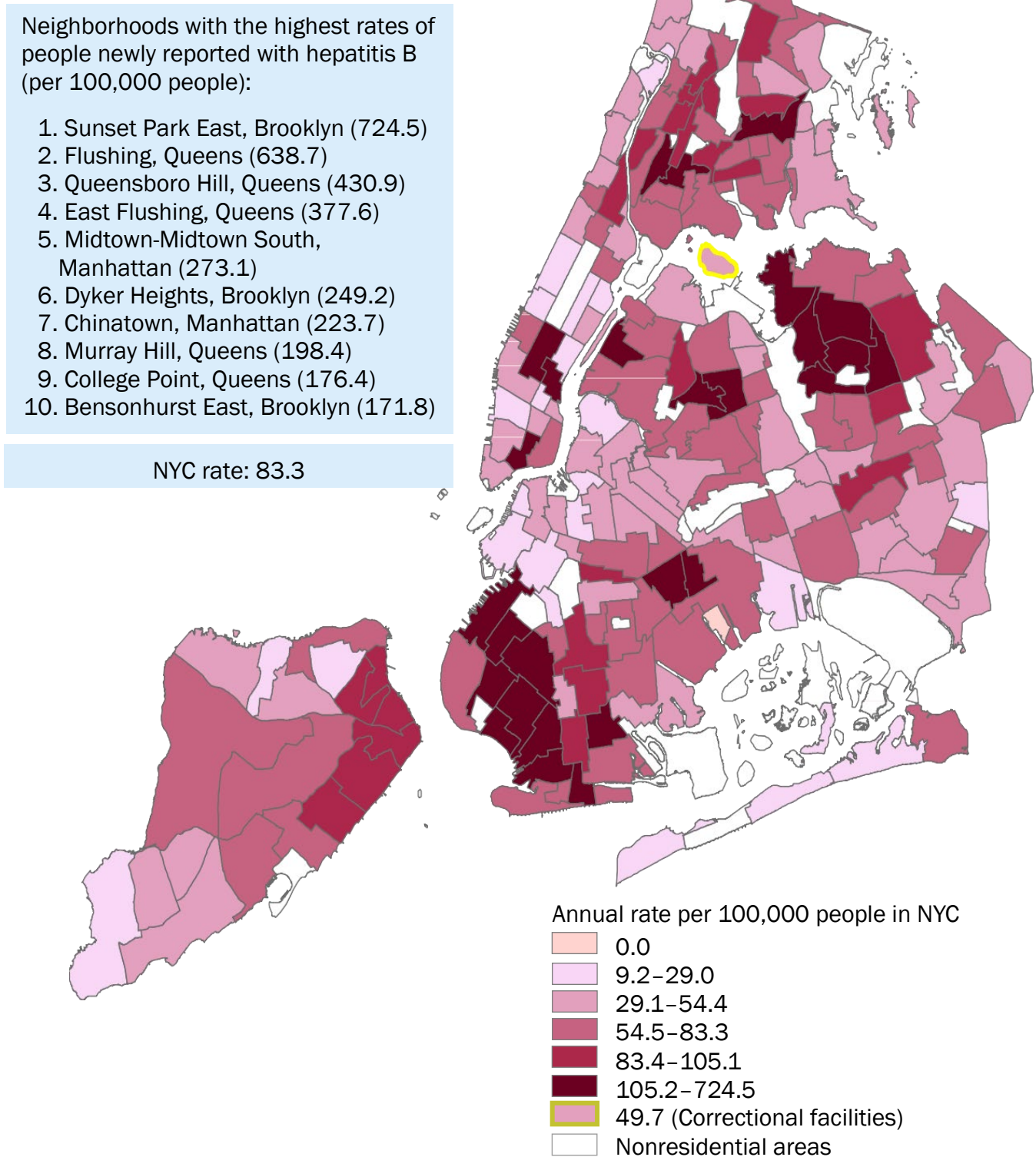
Race and Ethnicity



Over the last 10 years, the rate of Asian or Pacific Islander people newly reported with hepatitis B has been higher compared to rates of other race and ethnicity groups.

Chronic Hepatitis B: Geographic Distribution

Figure 10. Rate of people newly reported with chronic hepatitis B in NYC by neighborhood tabulation area (NTA), 2023⁸



⁸ NTAs could not be determined for 316 people (4.5%) based on their address at first report.

Perinatal Hepatitis B

620

Number of pregnant people with hepatitis B in NYC in 2023

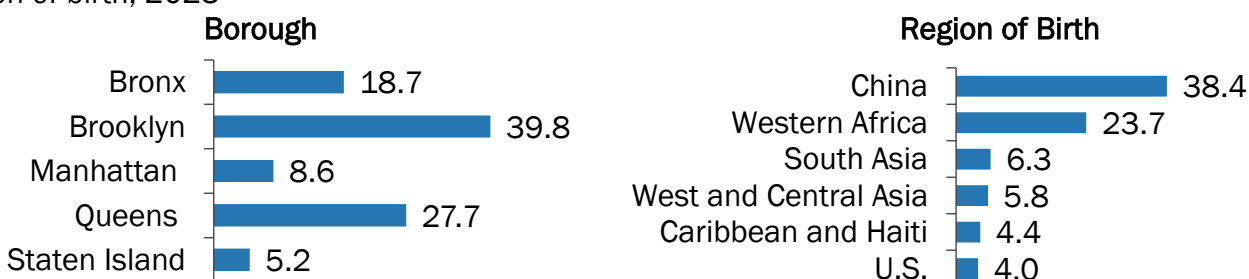
96.0%

Percentage of pregnant people with hepatitis B in NYC in 2023 who were born outside the U.S.

Pregnant People with Chronic Hepatitis B Who Delivered a Live Infant

Hepatitis B can be transmitted from a pregnant person with hepatitis B to an infant during and after delivery. The NYC Health Department provides case management services to pregnant people with hepatitis B to prevent perinatal transmission.

Figure 11. Percentage of people with hepatitis B who delivered a live infant in NYC by borough and region of birth, 2023



Hepatitis B Post-Exposure Prophylaxis (PEP), Vaccination and Testing at Birth

In 2022, 643 infants⁹ were born to pregnant people with hepatitis B in NYC.

Figure 12. Percentage of infants who were born to pregnant people with hepatitis B who received hepatitis B PEP, vaccination and testing in NYC, 2022

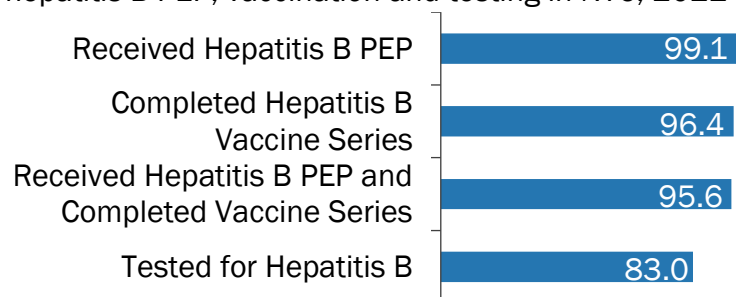
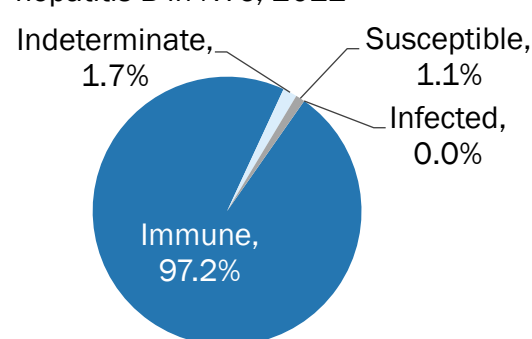


Figure 13. Hepatitis B test results of infants born to pregnant people with hepatitis B in NYC, 2022



Hepatitis B Vaccination at Birth

To protect against hepatitis B infection, the CDC recommends universal hepatitis B vaccination of all infants at birth (known as “the birth dose”). In 2022, there were 96,956 infants born in NYC.¹¹

69.5%

Percentage of infants born in NYC who received the birth dose within one day after birth in 2022¹⁰

75.2%

Percentage of infants born in NYC who received the birth dose within three days after birth in 2022¹¹

⁹ Excludes 27 infants whose families moved out of NYC, and three infants that died prior to their first birthday.

¹⁰ Citywide Immunization Registry, NYC Department of Health and Mental Hygiene, May 29, 2024.

Hepatitis B Deaths

72

Number of deaths where hepatitis B is listed as a cause of death in NYC in 2022

0.7

Rate per 100,000 people where hepatitis B is listed as a cause of death in NYC in 2022

In 2022, the age-adjusted rate of deaths where hepatitis B is listed as a cause of death was the lowest in NYC since 2015, with an overall decline of 9 percentage points.

Figure 14. Number of deaths and age-adjusted death rate¹¹ where hepatitis B is listed as a cause of death in NYC, 2015–2022

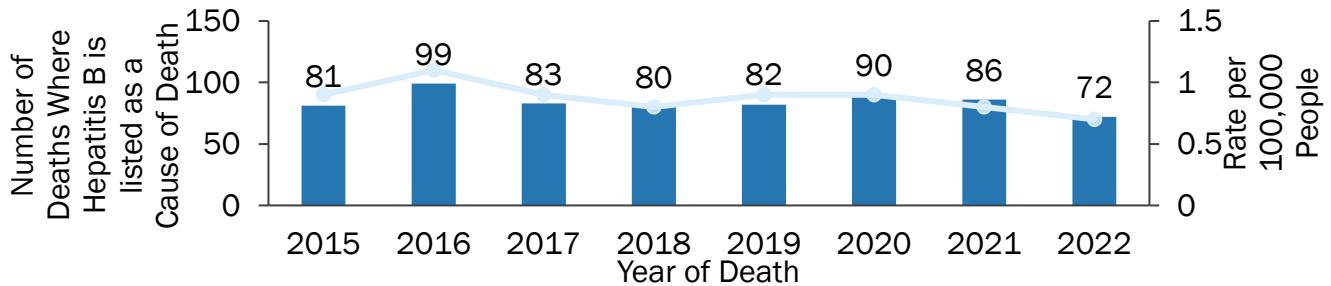
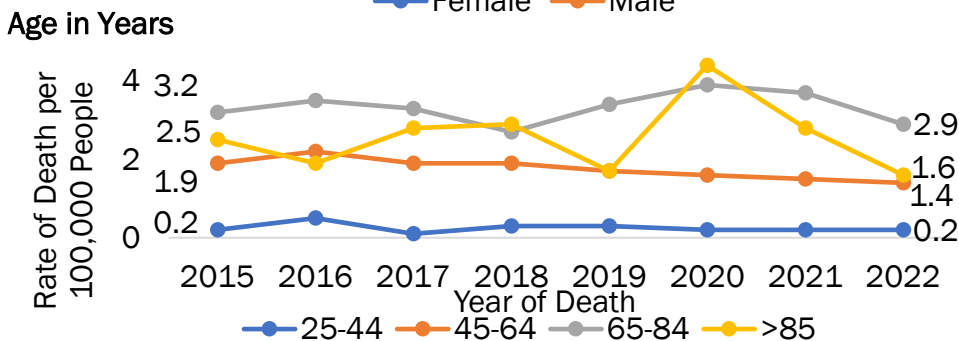
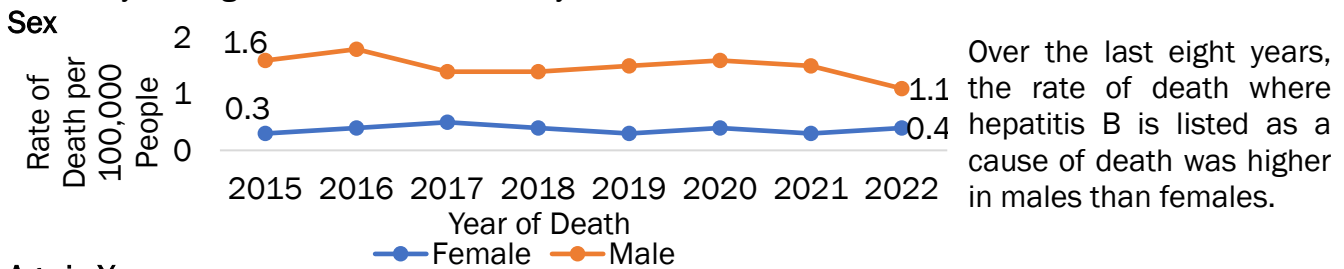
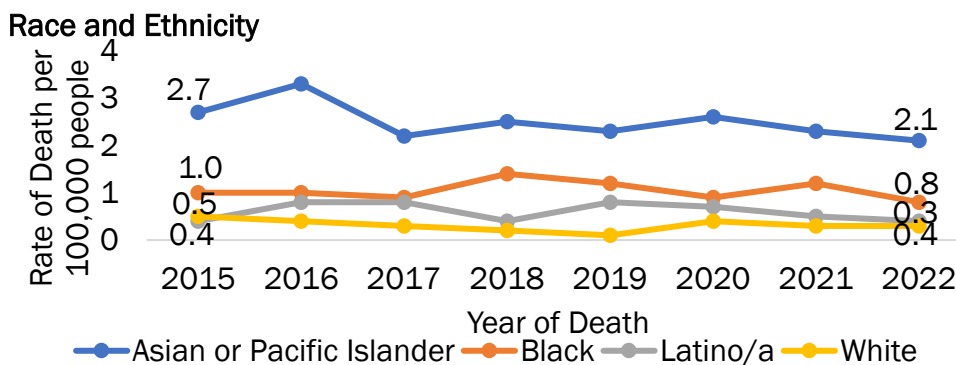


Figure 15. Age-adjusted or age-specific death rate¹² where hepatitis B is listed as a cause of death in NYC by sex, age, and race and ethnicity in NYC, 2015–2022



Over the last eight years, people ages 65 to 84 years and people 85 years or older had the highest rates of death where hepatitis B is listed as a cause of death compared with other age groups.



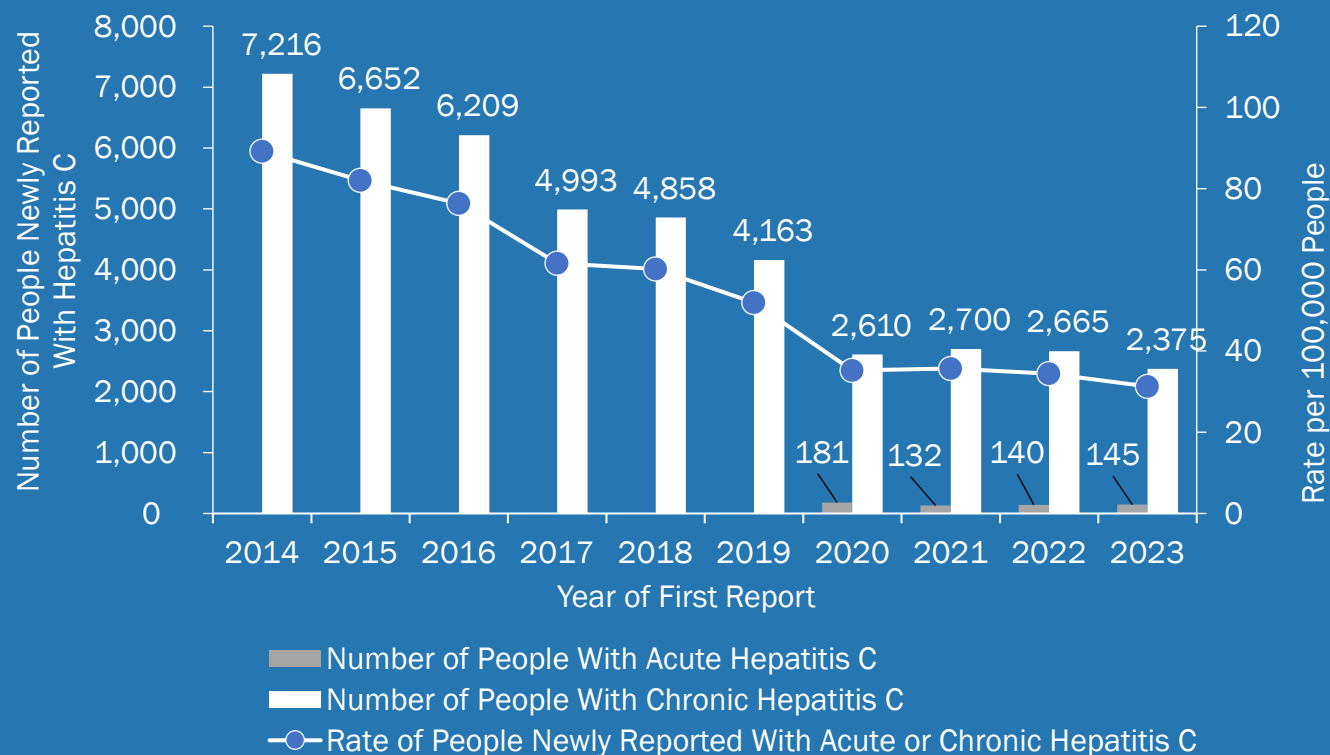
Over the last eight years, Asian or Pacific Islander people had the highest rates of death where hepatitis B is listed as a cause of death compared with other race and ethnicity groups. Black people had second highest rate.

¹¹ The population used in the rate calculation are based on 2020 Census population estimates, 2022 vintage. The 2020 Census counts are higher than the estimates, rendering potentially overestimated rates.

Hepatitis C

From 2014 to 2023, the number of people newly reported with hepatitis C in NYC declined by 65.0%. A small proportion (<1%) of people newly reported with hepatitis C are determined to have acute hepatitis C.

Figure 16. Number and rate of people newly reported with acute or chronic hepatitis C in NYC by year of first report, 2014–2023¹²



Acute Hepatitis C

Monitoring acute hepatitis C helps to determine where new infections occur, in what populations, and how to focus prevention activities. The NYC Health Department identifies acute hepatitis C through electronic laboratory reporting of liver function tests (ALTs), provider reports and enhanced surveillance investigations to obtain clinical and laboratory evidence of a new infection, symptoms, negative hepatitis C antibody test results and liver function tests not reported electronically. The NYC Health Department conducts enhanced surveillance investigations for people ages 18 years or older newly reported with acute hepatitis C in NYC.

145

Number of people newly reported with acute hepatitis C in NYC in 2023

1.8

Rate of people newly reported with acute hepatitis C per 100,000 people in NYC in 2023

In 2023, 113 (77.9%) people newly reported with acute hepatitis C were identified through mandatory laboratory reporting of ALTs and 32 (22.1%) through enhanced surveillance investigations.

¹² These case counts include people >3 years of age.

Chronic Hepatitis C

The NYC Health Department estimates that 59,400 people are living with chronic hepatitis C in NYC (0.7% of NYC residents).¹³

2,375

Number of people newly reported with chronic hepatitis C in NYC in 2023

29.5

Rate of people newly reported with chronic hepatitis C per 100,000 people in NYC in 2023

Characteristics of People Newly Reported with Hepatitis C (Acute or Chronic)

Figure 17. Percentage of people reported with hepatitis C in NYC by sex, age, and race and ethnicity, 2023

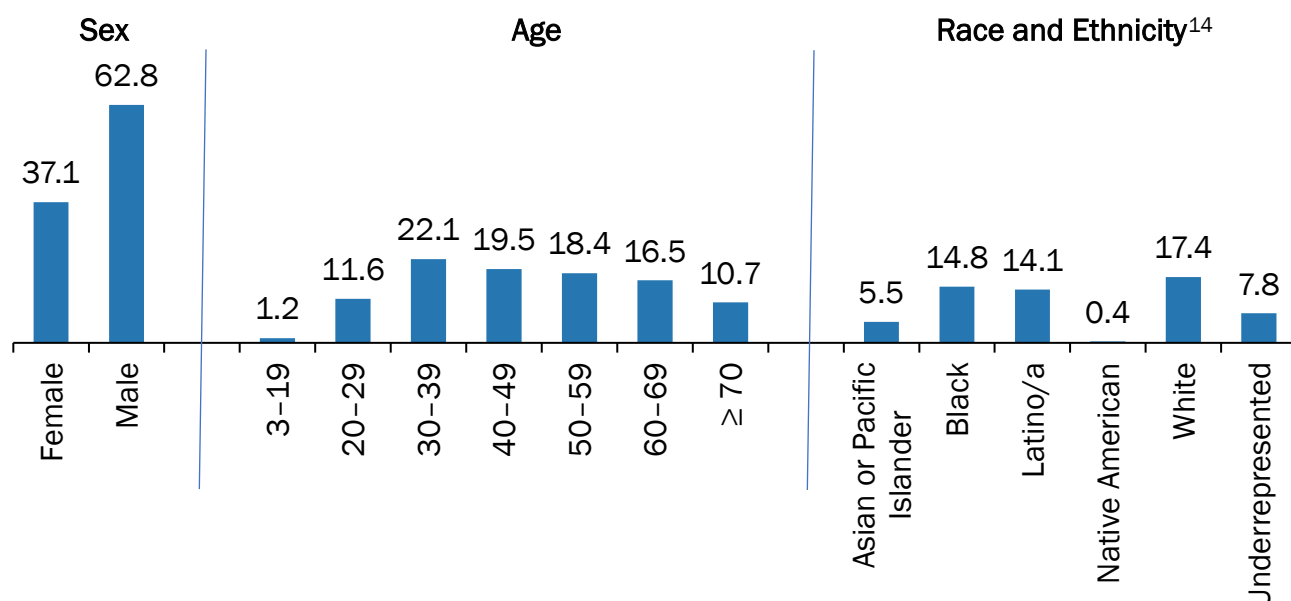
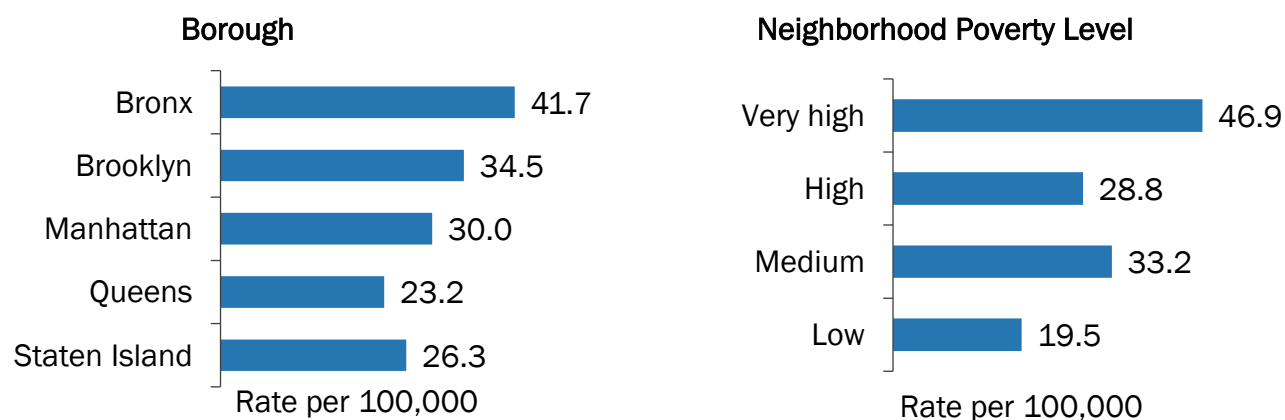


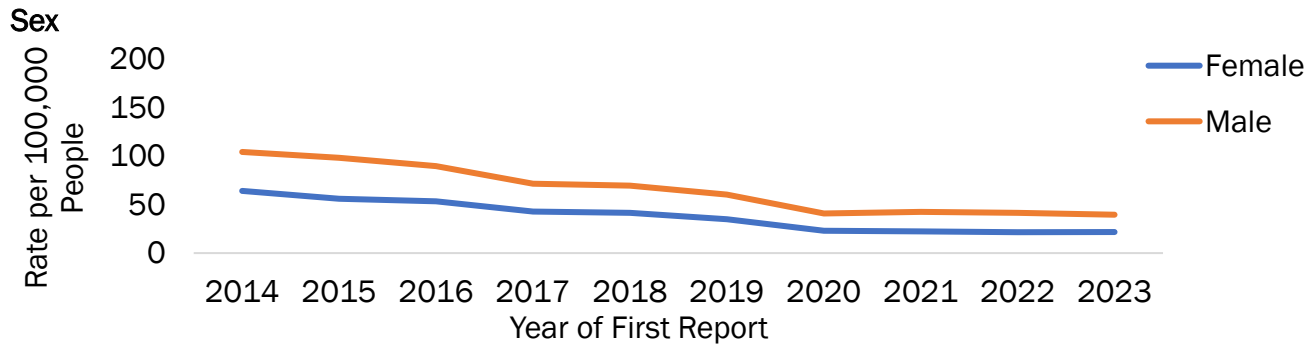
Figure 18. Rate of people newly reported with hepatitis C in NYC by borough and neighborhood poverty level, 2023



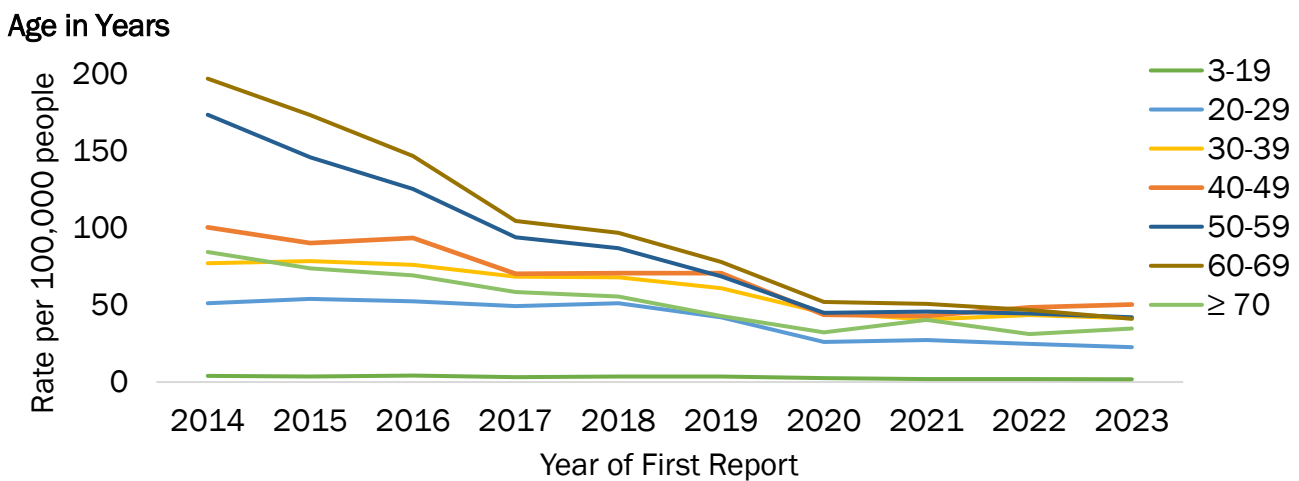
¹³ Estimate as of 2022. For details on methods used to calculate prevalence estimates, see Technical Notes.

¹⁴ 40% of people newly reported with hepatitis C had missing or unknown information for race and ethnicity.

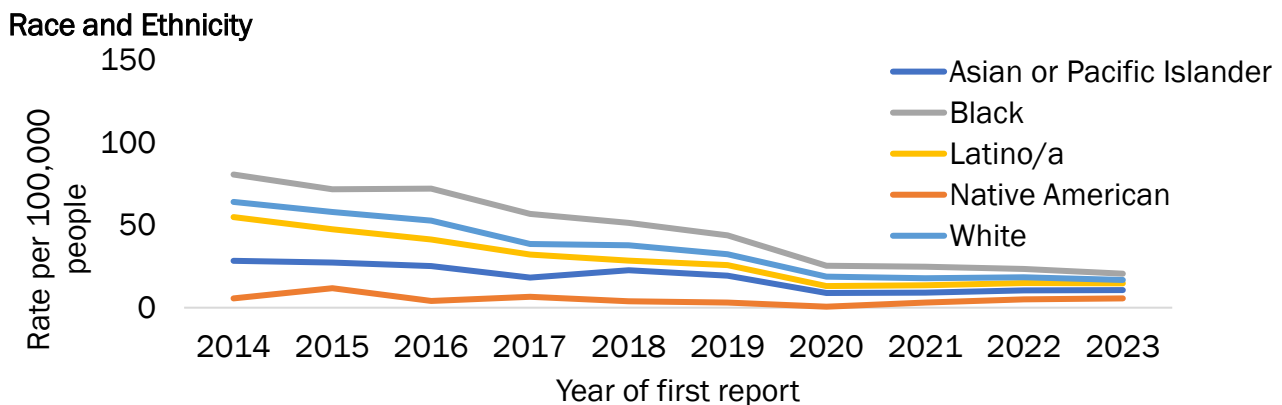
Figure 19. Ten-year trends in rates of people newly reported with hepatitis C in NYC by sex, age, and race and ethnicity, 2014-2023



In the past 10 years, the rate of people newly reported with hepatitis C decreased in both males and females.



Over the last 10 years, the rate of people newly reported with hepatitis C decreased most steeply for people ages 50 to 69 years compared with other age groups. Before 2019, rates of people newly reported with hepatitis C were highest among “baby boomers” (people born between 1945 and 1965). Since 2020, rates of people newly reported with hepatitis C are more similar across age groups.



While rates of people newly reported with hepatitis C declined for most race and ethnicity groups in the past 10 years, Black people consistently had the highest rate of hepatitis C compared with other race and ethnicity groups.

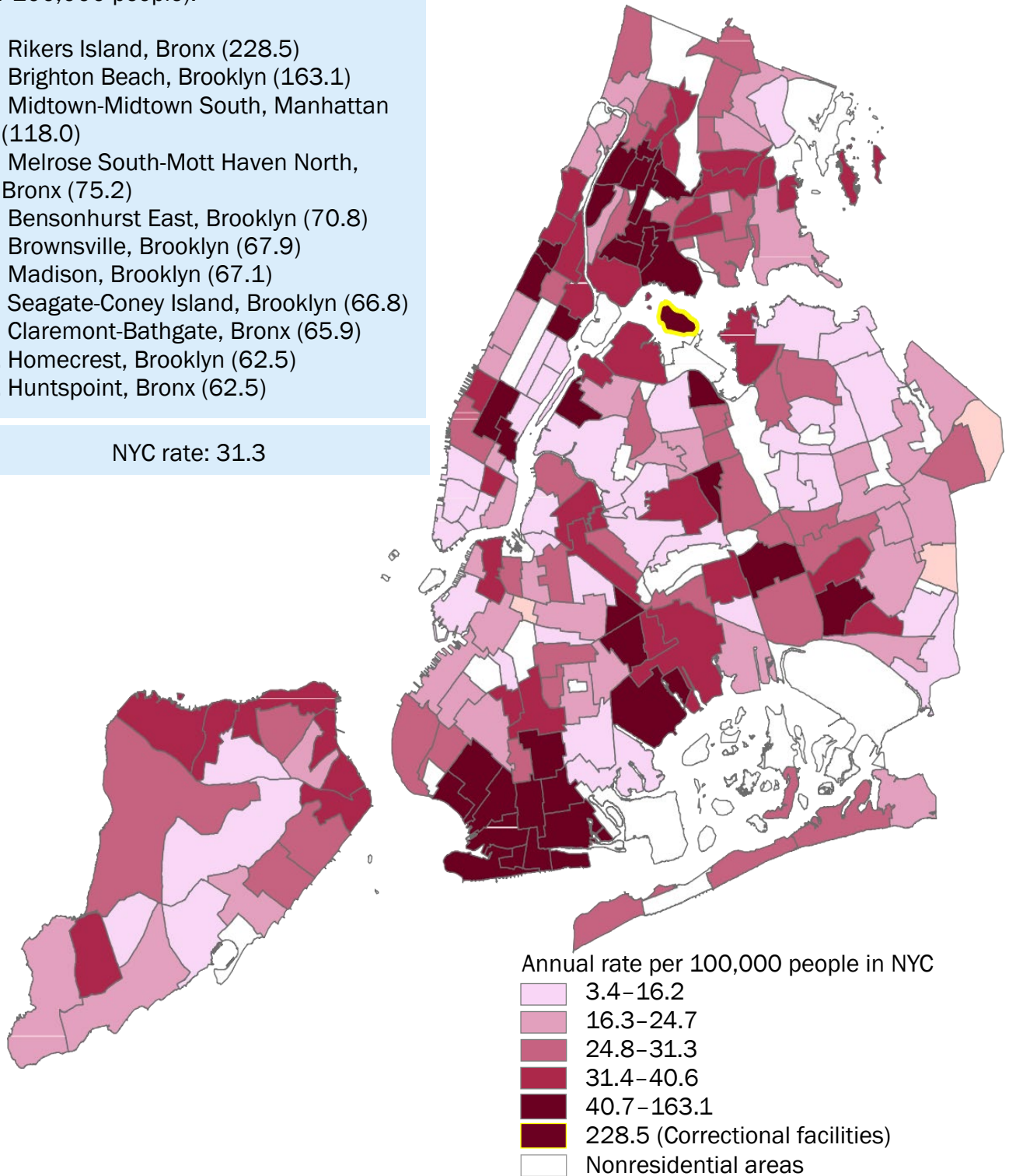
Hepatitis C: Geographic Distribution

Figure 20. Rate of people newly reported with hepatitis C in NYC by NTA,¹⁵ 2023

Neighborhoods with the highest rates of people newly reported with hepatitis C (per 100,000 people):

1. Rikers Island, Bronx (228.5)
2. Brighton Beach, Brooklyn (163.1)
3. Midtown-Midtown South, Manhattan (118.0)
4. Melrose South-Mott Haven North, Bronx (75.2)
5. Bensonhurst East, Brooklyn (70.8)
6. Brownsville, Brooklyn (67.9)
7. Madison, Brooklyn (67.1)
8. Seagate-Coney Island, Brooklyn (66.8)
9. Claremont-Bathgate, Bronx (65.9)
10. Homecrest, Brooklyn (62.5)
11. Huntspoint, Bronx (62.5)

NYC rate: 31.3

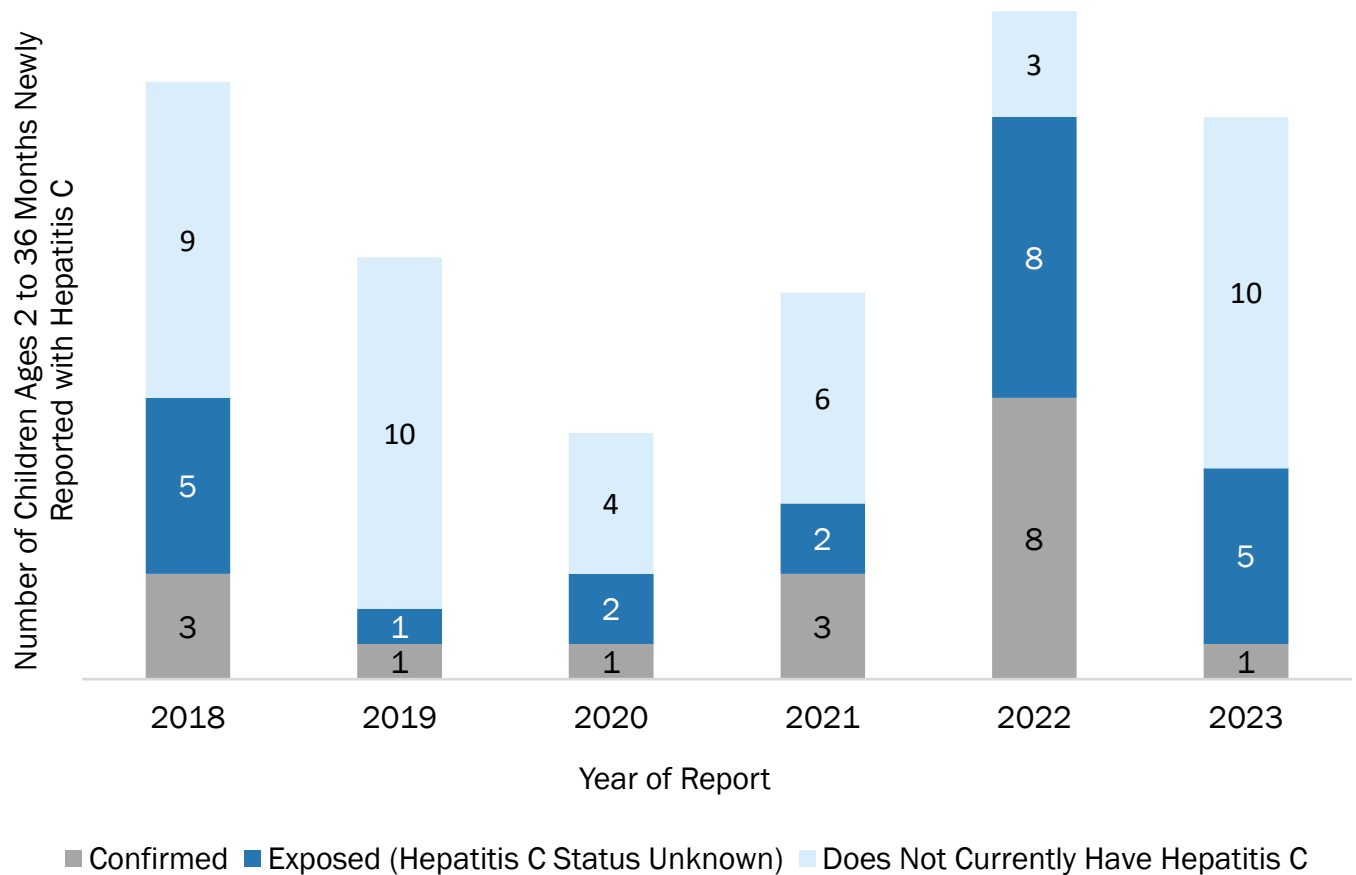


Perinatal Hepatitis C

The NYC Health Department investigates confirmed and possible perinatal hepatitis C cases through medical chart review and provider outreach. Case investigators obtain additional testing information and assess the need for linkage to a hepatitis C care provider for the child and birthing parent.

1	Number of children ages 2 to 36 months with confirmed hepatitis C newly reported in NYC in 2023	5	Number of children ages 2 to 36 months with possible perinatal exposure newly reported in NYC in 2023
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Figure 21. Number of children ages 2 to 36 months newly reported with hepatitis C in NYC, 2018–2023



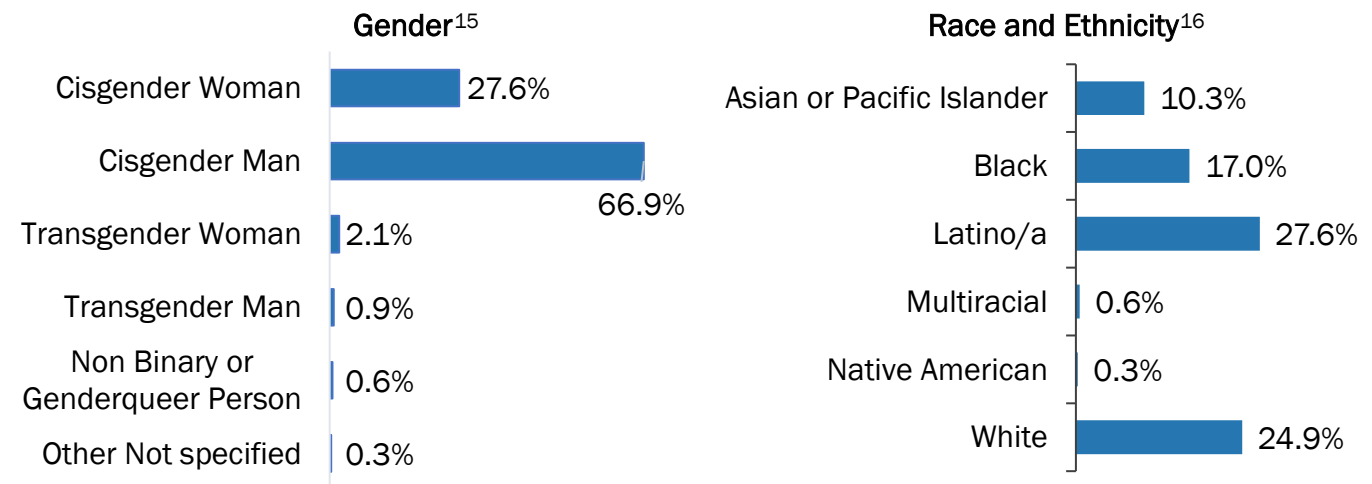
Enhanced Hepatitis C Surveillance

The NYC Health Department investigates select people ages 18 years or older newly reported with hepatitis C to identify or confirm acute hepatitis C; collect information on demographics, risk factors and health care; and provide hepatitis C care and treatment navigation.

In 2023, the NYC Health Department investigated 341 people newly reported with hepatitis C in NYC, of whom 68 (19.9%) were confirmed to have acute hepatitis C. Investigations included medical chart reviews and health care provider interviews for 307 (90%) people, and patient interviews for 163 (48%) people. 36 people with acute hepatitis C were classified using ALT reports required from laboratories, and 32 additional people matched symptom and screening history criteria.

Enhanced Surveillance: Demographics

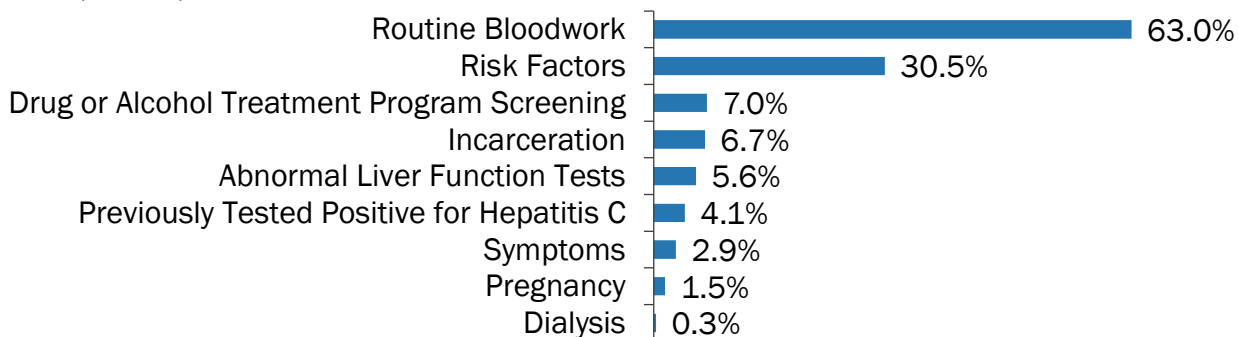
Figure 22. Percentage of people ages 18 years or older newly reported with hepatitis C and investigated through enhanced surveillance in NYC by gender and race and ethnicity, 2023 (n=341)



Enhanced Surveillance: Hepatitis C Screening

Routine bloodwork and testing based on risk factors remain the two most reported reasons for hepatitis C testing in 2023 in people with hepatitis C investigated through enhanced surveillance.

Figure 23. Percentage of people ages 18 years or older newly reported with hepatitis C and investigated through enhanced surveillance in NYC by reported reason(s) for hepatitis C screening, 2023 (n=341)¹⁷



¹⁵ Gender was unknown for 6 (1.8%) people.

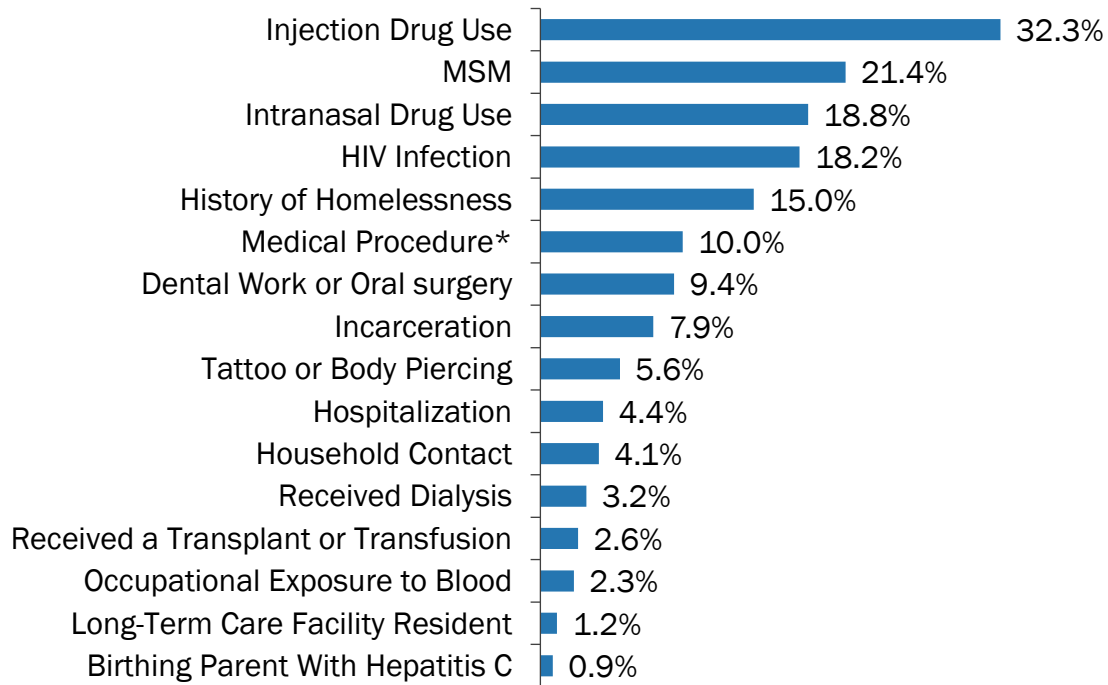
¹⁶ Race and ethnicity were unknown for 66 (19.4%) people.

¹⁷ Not mutually exclusive.

Enhanced Surveillance: Hepatitis C Risk Factors

Injection drug use or intranasal drug use were reported risk factors for hepatitis C in 37.2% of people investigated through enhanced surveillance in 2023.

Figure 24. Percentage of people ages 18 years or older newly reported with hepatitis C and investigated through enhanced surveillance in NYC by reported risk factors, 2023 (n=341)¹⁸



*Involving injections, anesthesia, or blood products

Enhanced Surveillance: Health Care and Treatment

At the time of patient or provider interview, among 341 people ages 18 years or older investigated through enhanced surveillance in NYC in 2023:

74.8%	Percentage of people who had health insurance	12.0%	Percentage of people who were referred to NYC Health Department navigator for linkage to care
29.3%	Percentage of people who were undergoing treatment for hepatitis C	22.6%	Percentage of people who were vaccinated against hepatitis A, B or both

¹⁸ Not mutually exclusive.

Hepatitis C Testing and Care

The NYC Health Department analyzes surveillance data to determine how many people have current infection and how many were cured or cleared.¹⁹

Hepatitis C Diagnosis

Hepatitis C RNA testing is an essential step in hepatitis C diagnosis so that people with current infection can initiate treatment. The NYC Health Department works with health care facilities to increase the number of people in NYC who receive a confirmatory test (which could include an RNA or a genotype test) after a positive hepatitis C antibody test. From 2014 to 2023, this percentage increased from 69.1% to 89.7%.²⁰

Figure 25. Percentage of people with a positive hepatitis C antibody test who received an RNA test in NYC, 2014–2023

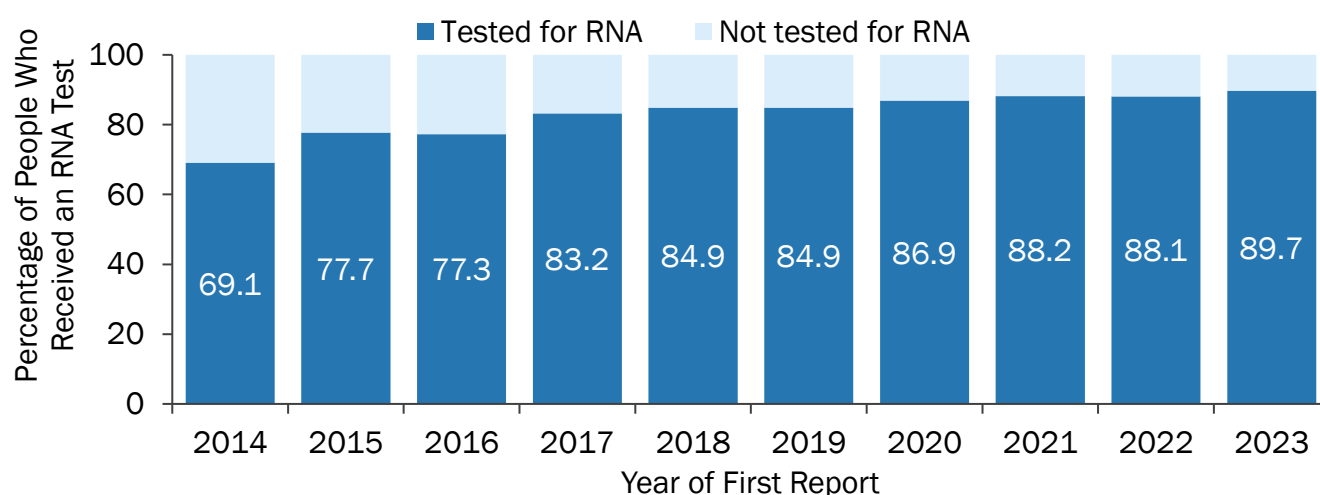
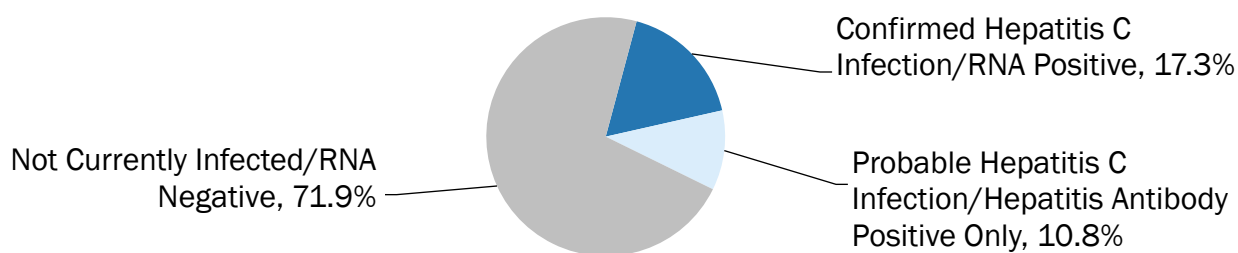


Figure 26. Percentage of people newly reported with a positive hepatitis C antibody test in NYC by hepatitis C RNA test results, 2023



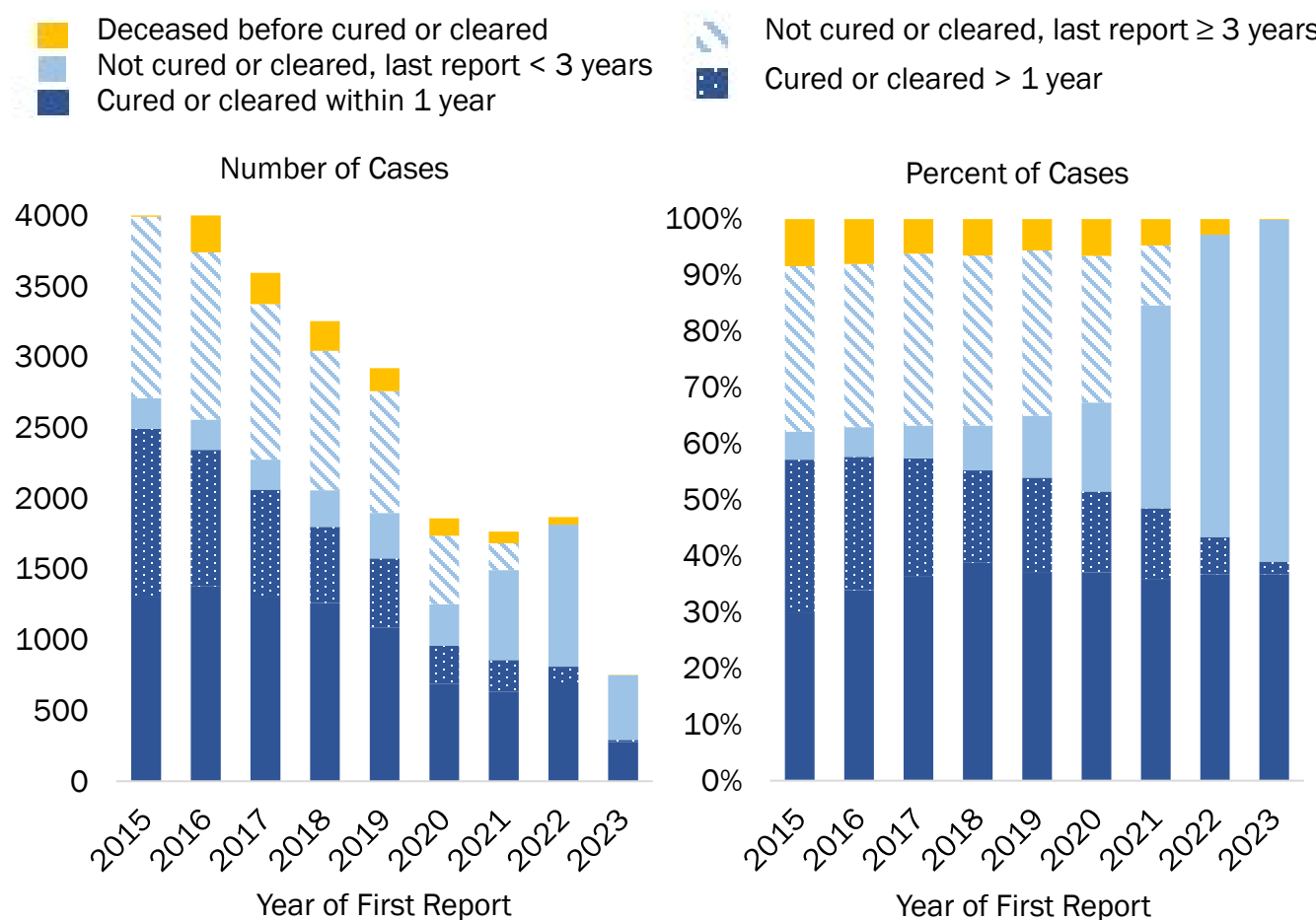
¹⁹ People who are cured or cleared are those with a confirmed hepatitis C infection who have a negative or undetectable hepatitis C RNA test. Cure or clearance can be achieved with treatment or spontaneously.

²⁰ Since 2017, the NYC Health Code has required laboratories in NYC to routinely perform a confirmatory hepatitis C RNA test if an initial hepatitis C antibody test is positive.

Hepatitis C Cure or Clearance

One of the goals of the NYC Viral Hepatitis Elimination Plan is to increase the percentage of people cured or cleared within one year of hepatitis C diagnosis (as indicated by a negative hepatitis C RNA test). To reach this goal, more people should start treatment as soon as they are diagnosed with hepatitis C. Surveillance data show that a substantial proportion of patients go on to be cured or cleared of hepatitis C after one year of diagnosis.

Figure 27. Hepatitis C cure and clearance among people newly reported with a positive hepatitis C RNA test in NYC by year of first report as of April 30, 2024, 2015–2023

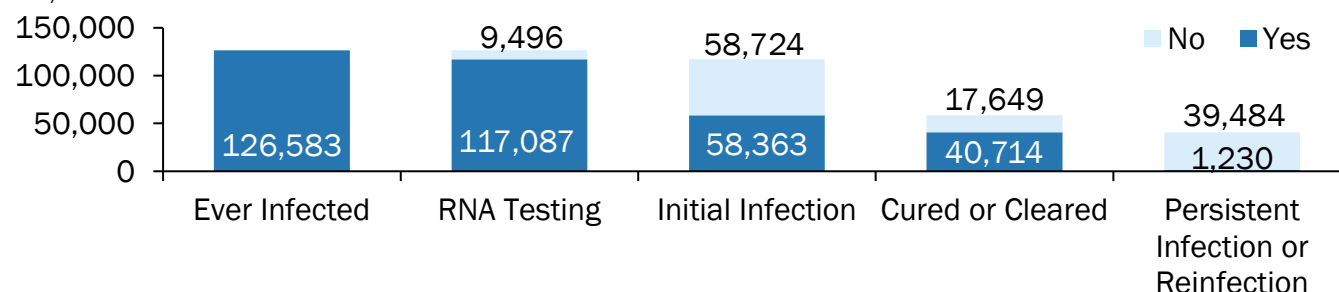


Although seven years have passed for people newly reported with hepatitis C in 2015, only 57% of them had an RNA negative test indicating cure or clearance as of April 30, 2024. Some may have moved or died outside of NYC.

Hepatitis C Clearance Cascade

The NYC Health Department monitors the progression of people reported with hepatitis C from testing, to cure or clearance. ²¹

Figure 28. Laboratory result-based hepatitis C clearance cascade for NYC, July 1, 2014–December 31, 2023²²



In addition to calculating the number of people cured or cleared, the NYC Health Department calculates the percentage of people at each stage of the hepatitis C care to identify gaps in care. Of people with initial infection (positive hepatitis C RNA test), 69.8% were cured or cleared the infection.

Figure 29. Percentage of people at each stage of hepatitis C care for laboratory-based hepatitis C clearance cascade in NYC, July 1, 2014–December 31, 2023

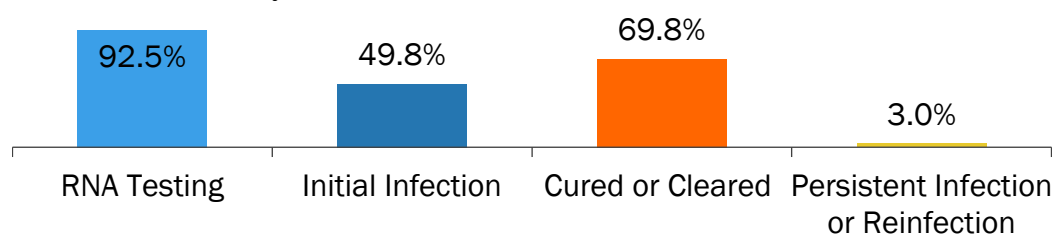
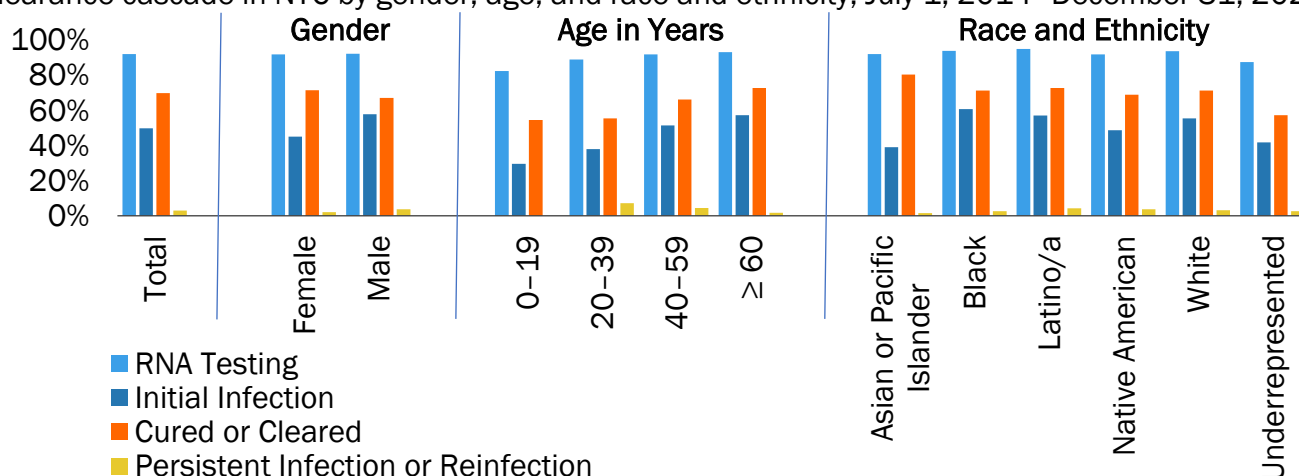


Figure 30. Percentage of people at each stage of hepatitis C care in laboratory-based hepatitis C virus clearance cascade in NYC by gender, age, and race and ethnicity, July 1, 2014–December 31, 2023



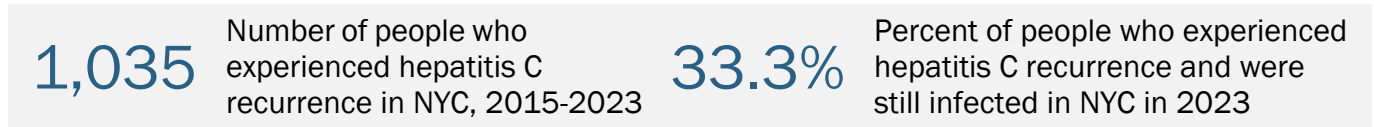
The percentage of people ever diagnosed with hepatitis C in NYC who received a hepatitis C RNA test is similar across gender, age, and race and ethnicity groups. A higher percentage of people ages 40 years or older were cured or cleared of hepatitis C compared with people younger than 40 years. Persistent infection or reinfection was higher among people ages 20 to 39 years.

²¹ CDC laboratory result-based method for calculating number and percentage of people tested, and cured or cleared of hepatitis C. Montgomery MP, Sizemore L, Wingate H, et al. Development of a Standardized, Laboratory Result–Based Hepatitis C Virus Clearance Cascade for Public Health Jurisdictions. *Public Health Reports*. 2024;139(2):149-153.

²² The NYC clearance cascade analytic period starts July 1, 2014, when negative hepatitis C RNA test reporting began.

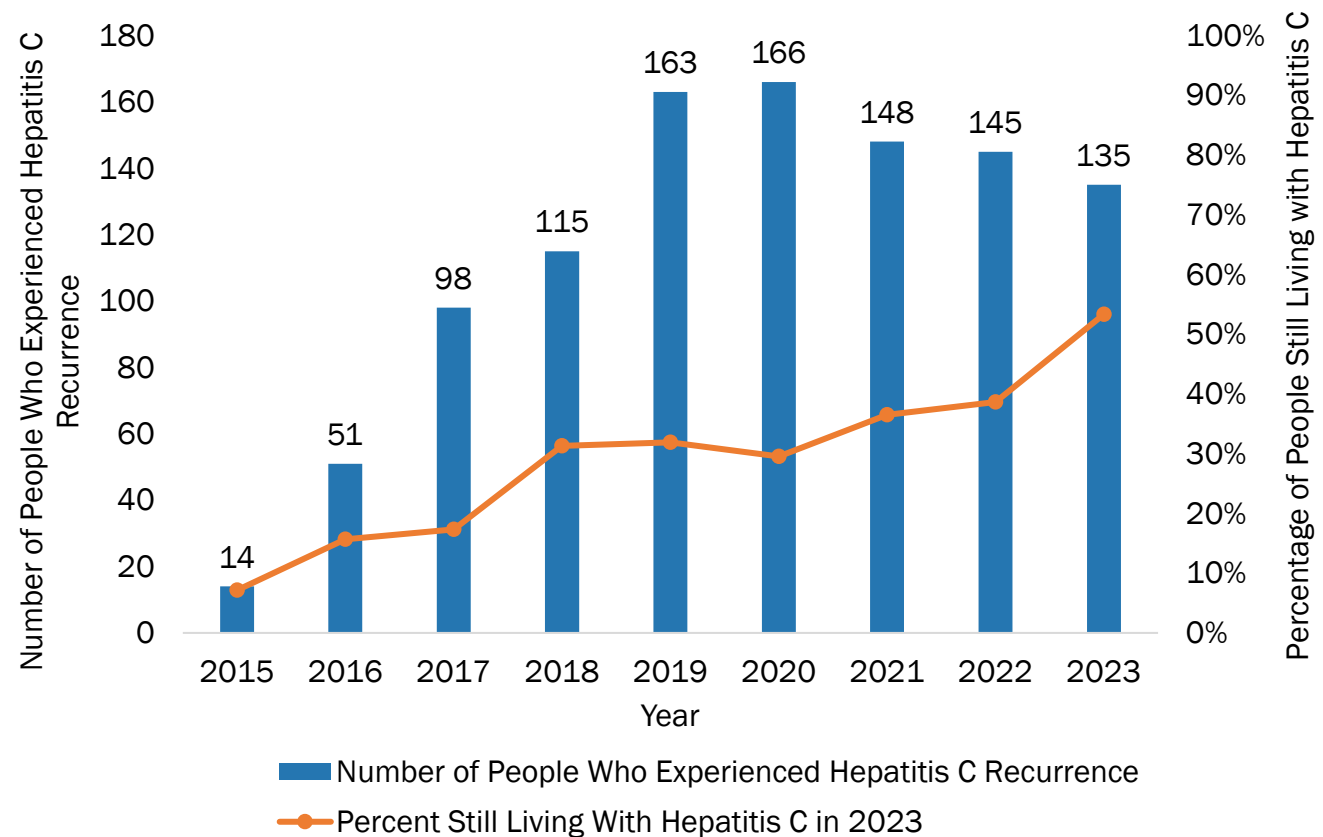
Hepatitis C Recurrence: Persistent Infection or Reinfection

Hepatitis C recurrence occurs when a person has a positive hepatitis C RNA test at any time after cure or clearance.²³ Using laboratory-based surveillance data alone is not sufficient to distinguish persistent infection from reinfection, which could be caused by incomplete treatment, treatment failure or viral breakthrough.



Among people who experienced hepatitis C recurrence, most were male (76%), White (32%) and 30-39 years old (31%).

Figure 31. Number of people who experienced hepatitis C recurrence by year of reported recurrence in NYC, 2015–2023, and percentage of people still living with hepatitis C in NYC in 2023



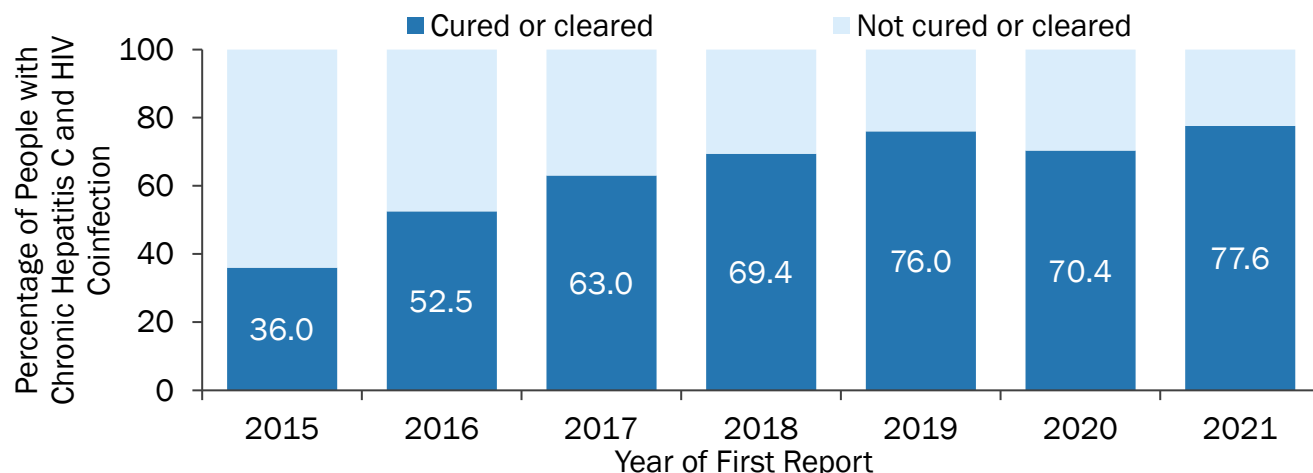
In 2023, the NYC Health Department identified 135 people who experienced hepatitis C recurrence. Of these, 53% were still living with hepatitis C as of April 30, 2024.

²³ Cure is defined as having a subsequent hepatitis C RNA test result “not detected” following a confirmatory positive hepatitis C RNA test result.

Hepatitis C and HIV Coinfection

The NYC Health Department monitors hepatitis C cure or clearance in people with HIV.

Figure 32. Percentage of people with chronic hepatitis C and HIV coinfection who were cured or cleared of hepatitis C in NYC by year of first report, 2015–2022

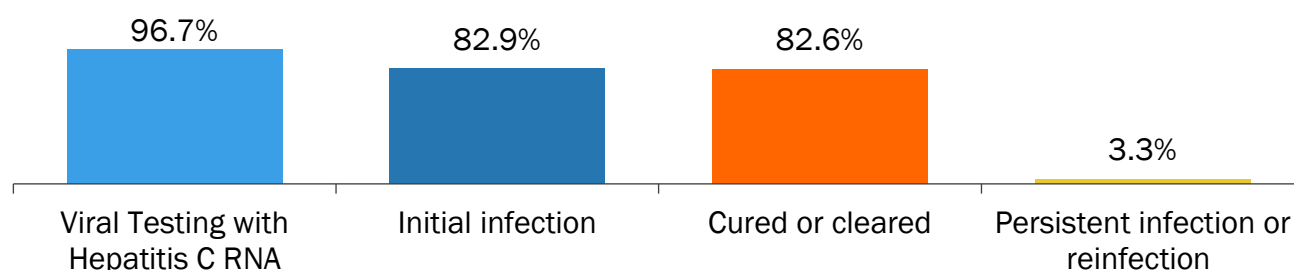


By the end of 2022, 78.2% of people with HIV in NYC who had ever tested positive for hepatitis C RNA from 2014 to 2022 had evidence of hepatitis C cure or clearance.

Hepatitis C Clearance Cascade for People With HIV

The NYC Health Department calculates the percentage of people at each stage of hepatitis C testing and cure or clearance using the laboratory-based hepatitis C virus clearance cascade.

Figure 33. Laboratory-based hepatitis C clearance cascade for people with HIV ever infected with hepatitis C in NYC, July 1, 2014–December 31, 2023 (n=10,230)



In NYC, of people with hepatitis C and HIV coinfection (with a positive hepatitis C RNA test), 82.6% were cured or cleared of hepatitis C.

Hepatitis C Deaths

179

Number of deaths where hepatitis C is listed as a cause of death in NYC in 2022

1.7

Rate per 100,000 people where hepatitis C is listed as a cause of death in NYC in 2022

Figure 34. Number of deaths and age-adjusted death rate²⁴ where hepatitis C is listed as a cause of death in NYC, 2015–2022

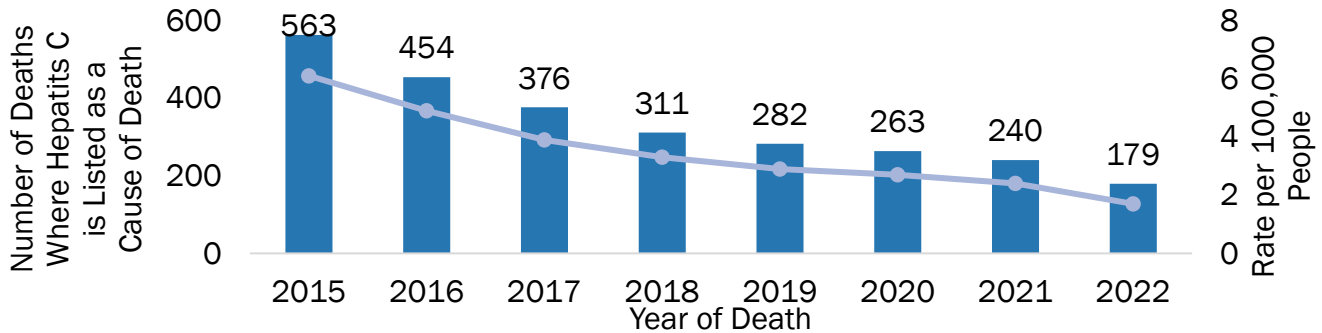
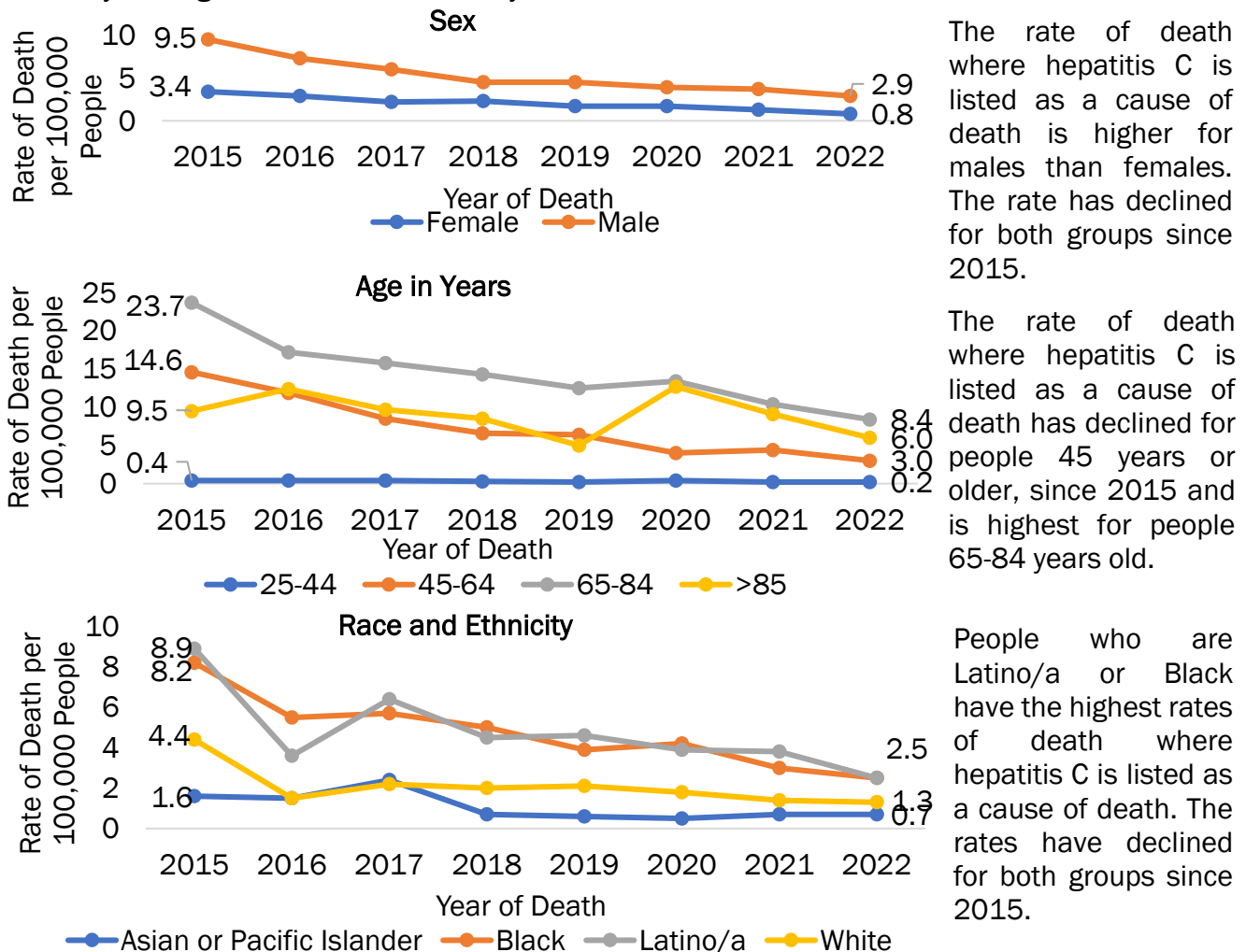


Figure 35. Age-adjusted or age-specific death rate²² where hepatitis C is listed as a cause of death in NYC by sex, age, and race and ethnicity, 2015–2022



²⁴ The population used in the rate constructions are based on 2020 Census population estimates, 2022 vintage. 2020 Census counts are higher than the estimates, rendering potentially overestimated rates.

Tele-Navigation

The NYC Health Department uses surveillance data to identify people with hepatitis B and C who are not in care and reach out to offer assistance, including health care navigation services and support linkage to care and treatment.

631

Number of people with hepatitis B or C in NYC called to offer tele-navigation services in 2023

249

Number of people with hepatitis B or C in NYC reached who received tele-navigation services in 2023

Hepatitis B Tele-Navigation Program

In 2023, the NYC Health Department provided linkage to care services to 69 people with hepatitis B in NYC, including people who were pregnant or recently gave birth.

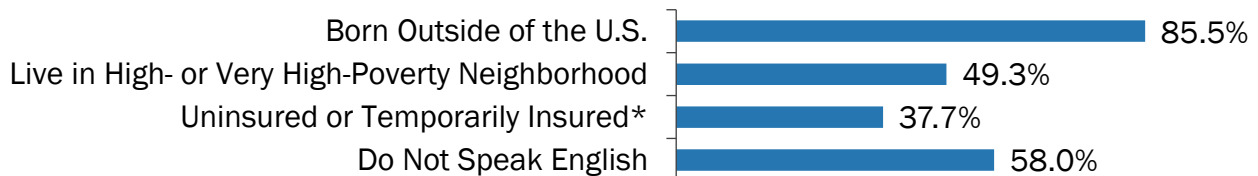
61%

Percentage of people linked to hepatitis B medical care in 2023

67%

Percentage of people linked to hepatitis B medical care who went on to be virally suppressed in 2023

Figure 36. Characteristics of people who received hepatitis B tele-navigation services in NYC, 2023



*Temporary Medicaid for pregnant people only

Hepatitis C Tele-Navigation Program

The NYC Health Department prioritizes several groups for its Hepatitis C tele-navigation program, including people with hepatitis C who are coinfectd with HIV, have recently given birth, or tested positive for hepatitis C in NYC jails, NYC Health Department Sexual Health Clinics, urgent care facilities or substance use treatment facilities. In 2023, the NYC Health Department provided linkage to care services to 180 people with hepatitis C in NYC.

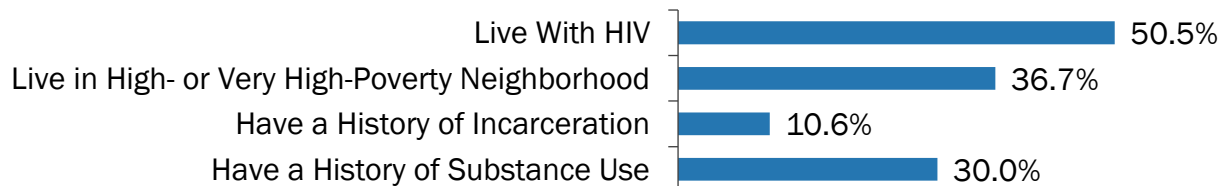
82%

Percentage of people linked to hepatitis C care in 2023

58%

Percentage of people linked to hepatitis C care who tested negative for hepatitis C RNA

Figure 37. Characteristics of people who received hepatitis C tele-navigation services in NYC, 2023



Prevention and Screening

The NYC Health Department promotes hepatitis A, B, and C prevention and screening among people at high risk of acquiring these infections, including people who use drugs; people who have sex partner(s) with hepatitis A, B or C; MSM; and infants born to pregnant people with hepatitis B or C.

Hepatitis A and B Vaccinations

The NYC Health Department offers low- or no-cost hepatitis A and B vaccinations, including to people who are underinsured or uninsured.

	Number of Vaccine Doses Provided at NYC Health Department Clinics in 2023	Number of People Who Completed the Vaccine Series in NYC in 2023*
Hepatitis A	3,064	98,907
Hepatitis B	5,410	125,124

*As reported to the Citywide Immunization Registry (CIR).²⁵

Viral Hepatitis in Correctional Facilities

Since 2013, people in the custody of the NYC Department of Correction have been screened for hepatitis C. In 2018, NYC Health + Hospital (H+H)/Correctional Health Services (CHS) implemented universal hepatitis C screening, based on self-reported or documented histories and/or laboratory testing, at the intake examination upon admission to jail. Testing for hepatitis C, like all CHS health services, is voluntary. CHS also provides hepatitis B vaccinations.

5,246	Number of people who received laboratory-based hepatitis C testing as part of medical intake in NYC jails in 2023*	26%	Percentage of people who received laboratory-based hepatitis C testing as part of medical intake in NYC jails in 2023*
99	Number of people treated for hepatitis C in NYC jails in 2023*	102	Number of people vaccinated against hepatitis B in NYC jails in 2023*

*Includes those who completed or partially completed treatment or vaccination, respectively.

²⁵ Under NYS Public Health Law, health care providers are required to report all immunizations administered to children ages 0 to 18 years; vaccinations administered to adults ages 19 years and older may be reported only with consent of the individual being vaccinated. As such, CIR data for adults is an undercount of vaccinations administered.

Syringe Service Programs and Medications for Opioid Use Disorder

The NYC Health Department funds 14 syringe service programs²⁶ across NYC to provide health care services to people who use drugs. Services include hepatitis B vaccination, hepatitis C testing and care coordination, overdose prevention and harm reduction education, distribution of sterile syringes and other drug use equipment to prevent the transmission of viral hepatitis and other blood-borne infections, and access to buprenorphine treatment.

22,693	Number of people served in syringe service programs in NYC in 2023	6,080,211	Number of syringes distributed in NYC in 2023
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The NYC Health Department works to expand access to methadone and buprenorphine, which are medications for opioid use disorder. Treatment with methadone and buprenorphine has helped reduce the risk of acquiring hepatitis B and C and risk of overdose.

23,422	Number of people in methadone treatment in NYC in 2023 ²⁷
15,232	Number of people filling a buprenorphine prescription in NYC in 2023
3,508	Number of health care providers who issued buprenorphine prescriptions to NYC residents in 2023

Provisional data show that in 2023 there were 3,046 overdose deaths in NYC.²⁸ The NYC Health Department estimates there are more than 10,000 nonfatal overdoses each year. People with a history of nonfatal overdose are at risk for hepatitis B and C and should be tested and linked to care.

²⁶ For more information on syringe service programs in NYC, visit nyc.gov/site/doh/health/health-topics/alcohol-and-drug-use-services.page.

²⁷ An estimate through July 3, 2023, due to a six-month data lag.

²⁸ For more information on drug overdose in NYC, see the NYC Health Department's Epi Data Brief at nyc.gov/assets/doh/downloads/pdf/epi/databrief142.pdf.

Capacity Building

The NYC Health Department engages organizations throughout NYC to build capacity to prevent, screen and treat hepatitis B and C. The NYC Health Department convenes coalition meetings, distributes public and provider educational materials, trains nonclinical providers, and conducts data-to-care quality improvement projects.

Hep Free NYC Community Coalitions and Initiatives

Since 2004, the NYC Health Department has engaged with community organizations to convene Hep Free NYC, a citywide network of health care providers, patients and public health professionals working together to prevent, manage and treat hepatitis B and C in NYC.

132	Number of participating organizations in 2023	565	Number of unique meeting attendees in 2023
6,616	Number of Hep Free NYC newsletter subscribers in 2023	19%	Percentage of highly engaged Hep Free NYC newsletter subscribers

At Hep Free NYC meetings, attendees review the latest viral hepatitis data, share best practices, collaborate on special projects to meet community needs, and develop new patient referral relationships. To sign up for Hep Free NYC meetings, events and a monthly newsletter, email hep@health.nyc.gov. For more information, visit hepfree.nyc.

Figure 38. Percentage of Hep Free NYC meeting attendees by type of organization, 2023*

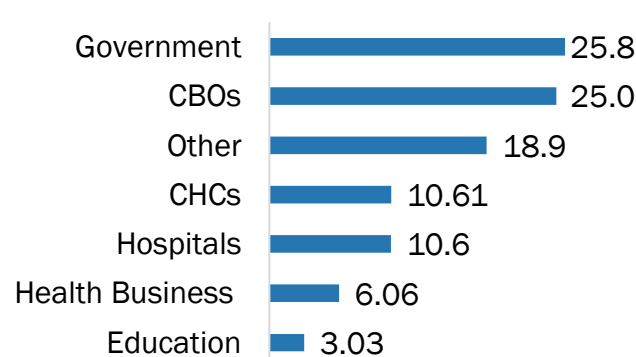
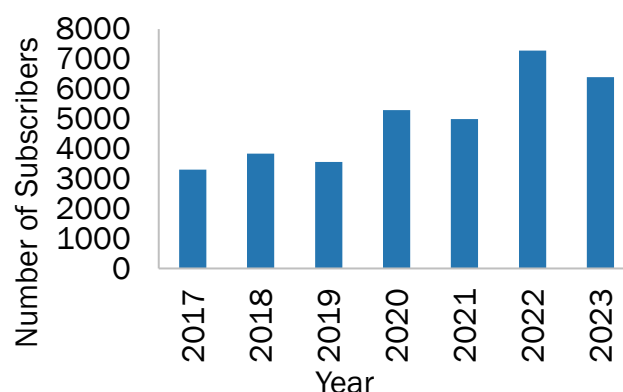


Figure 39. Number of Hep Free NYC newsletter subscribers, 2017–2023



*CBOs = community-based organizations, CHCs = community health centers

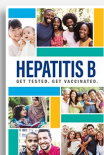
2023 Hep Free NYC Highlights

- Hep Free NYC led six active committees, including Advocacy, Awareness Day Planning, Clinical Education, Communications, Coalition Against Hepatitis in People of African Origin-NYC, and South Asian Hepatitis Initiative.
- In recognition of Hepatitis Awareness Month, over 75 organizations joined the #HepFreeNYC Awareness & Testing event at Adam Clayton Powell Monument Plaza in Harlem
- South Asian Hepatitis Initiative supported the 2023 Hep B United mini-grant recipient United Sikhs and linked them to Korean Community Services, a Check Hep B Program, to provide hepatitis B testing at more than six Gurdwara Community Centers, hosting 11 testing events and testing 199 people for hepatitis B.

Public Education

The NYC Health Department develops and distributes free educational materials to community organizations and health care facilities to promote up-to-date hepatitis B and C health prevention, testing, care and treatment, and to promote referrals to resources in NYC. Materials are available in Albanian, Arabic, Bengali, English, French, Hausa, Hindi, Korean, Russian, Simplified Chinese, Spanish, Traditional Chinese, Twi/Akan, Urdu and Uzbek.

Select Public and Provider Education Materials



Hepatitis B: The Facts

Booklet with information on hepatitis B prevention, testing, care and treatment.



Hepatitis B Vaccine

Palm card to track hepatitis B vaccine doses.



Hepatitis C and Your Liver

Booklet with information on hepatitis C prevention, testing, care and treatment.



Hepatitis C: Get Checked, Get Cured

Palm card with information on hepatitis C prevention, testing, care and treatment.



Reduce Your Risk of Overdose, Hep C and HIV

Palm card with tips for reducing harms related to injection drug use.



Alcohol and Hepatitis

Palm card with alcohol use reduction tips and action plan.



Take Care, Take Charge: Safety Tips for People Who Use or Inject Drugs

Booklet with information on safer drug use, including hepatitis C prevention.



Get Hepatitis C Checked Get Hepatitis C Cured

Posters promoting hepatitis C testing and treatment.



Dear Colleague Letter: Universal Hepatitis C Screening Is Recommended for Pregnant People, 2021



Dear Colleague Letter: Hepatitis B Vaccination Recommendations, 2022

To order free materials or to request additional languages, email hep@health.nyc.gov.

Training and Workforce Development

The NYC Health Department staff trains nonclinical service providers on effective outreach, prevention, testing, linkage to care and treatment adherence strategies. In 2023, 11 trainings were completed, garnering 221 participants from 84 organizations in NYC.

Since 2014, the NYC Health Department has administered the NYC City Council Viral Hepatitis Prevention Initiative, which has supported the following organizations to train peer and patient navigators and health care providers in hepatitis B and C prevention, testing, and care.

National Harm Reduction Coalition (NHRC) Navigation Training Program Outcomes

Since 2014, NHRC has hosted monthly technical assistance calls with 14 NYC syringe service programs that conduct hepatitis C peer navigation activities; and provides trainings on hepatitis C basics and overdose prevention topics. NHRC works to build capacity of people with lived experience and service providers to support people with hepatitis C through testing, care, and treatment. In Fiscal Year (FY) 2023 (from July 1, 2022, through June 30, 2023), HRC developed an online start-up training for new hepatitis C peer navigators and a two-part training series on Hep C Patient Navigation and trained 34 navigators and case managers.

Empire Liver Foundation (ELF) Clinical Training Program Outcomes

Since 2014, ELF has trained more than 7,512 health care providers treating people at risk for hepatitis B and C. ELF also provides in-person and virtual clinical educational sessions to hospitals or health centers including grand rounds, hepatitis B or C overview and special topics. In FY 2023, special topic trainings included “Hepatitis C Treatment in People Experiencing Homelessness,” “Universal Screening and Vaccination to Achieve Viral Hepatitis Elimination,” and “Hepatitis B and C During Pregnancy.” 97.0% of health care providers felt confident in treating hepatitis C, rather than referring patients to a specialist, and 84.0% felt they gained valuable information about how and when to treat hepatitis B.

The session related to treating hepatitis C among injection drug users was really helpful and supported my plan to begin treating my patients with hepatitis C as soon as I can.

— Health care provider in Queens

Clinical Training Event	Number of Sessions	Number of Participants
Clinical hepatitis B and C grand rounds	2	108
Hepatitis B Clinical Training Series	5	144
Hepatitis C Clinical Training Series	10	397
Special topic viral hepatitis trainings	9	262

Hepatitis C Mentor and Support Group (HCMMSG) Education Program Outcomes

Since 2018, HCMMSG has reached 5,000 people at risk for or living with hepatitis C through educational programs and support groups at community organizations, substance use treatment and harm reduction programs. In FY 2023, HCMMSG provided in-person or virtual trainings to 410 care managers, health educators and other program staff at 20 community organizations.

Our team found this training to be very informative. It was a great opportunity to better understand how hepatitis C can be prevented, treated, and cured.

— Program Coordinator in Staten Island

Community Hepatitis Navigation Programs

The NYC City Council Viral Hepatitis Prevention Initiative funds community organizations to support the Check Hep B, Check Hep C, and Hep C Navigation at Syringe Service Programs designed to help people at risk for hepatitis B and C overcome barriers to testing, care and treatment. Since 2014, the initiative has enabled 30 community health organizations to hire and train hepatitis B patient navigators and hepatitis C peer and patient navigators. The navigators link people to viral hepatitis care by ensuring they have health coverage and attend health care appointments.

Organizations hire and train peer and patient navigators to provide:

- Outreach and prevention (such as harm reduction) for people at risk for hepatitis B and C
- Health promotion and help accessing supportive services such as food, shelter, transportation, and mental health
- Navigation through complete hepatitis B and C testing
- Linkage to hepatitis A and B vaccination and hepatitis B and C care and treatment

Peer and Patient Navigators are trained in:

- Peer and patient navigation program protocols
- Patient navigation approaches, including Motivational Interviewing
- Hepatitis B and C transmission, prevention, and recommended testing and care practices
- Trauma-informed care
- Mental health first aid
- Overdose prevention

Program Outcomes

FY 2015 to FY 2023 (From July 1, 2014, through June 30, 2023):

220	Number of peer and patient navigators trained and employed at community organizations such as health centers, hospitals, and syringe service programs
23,406	Number of people at risk for or living with hepatitis B or C who received hepatitis education and navigation services
8,186	Number of people who were linked to hepatitis B or C medical care
4,947	Number of people who initiated treatment for hepatitis B or C

Check Hep B Patient Navigation Program

Since 2014, the Viral Hepatitis Initiative has supported hospitals, health centers, and community organizations to provide patient navigation to people with chronic hepatitis B. Check Hep B patient navigators help patients complete hepatitis B testing, evaluation, and treatment.

Program Outcomes

FY 2015 to FY 2023 (From July 1, 2014, through June 30, 2023):

2,784	Number of people enrolled	97%	Percentage of people with a hepatitis B medical evaluation completed	93%	Percentage of treatment-eligible people who started treatment
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Participant Characteristics

89%	Percentage of people who were born outside the U.S.	76	Number of countries of birth of people who were born outside of the U.S. The top five countries were China, South Korea, Senegal, Ghana, and Dominican Republic.
28%	Percentage of people who were uninsured	46	Number of languages other than English spoken by people. The top five languages spoken were Chinese Mandarin, French, Korean, Chinese Cantonese, and Spanish

Most people enrolled in Check Hep B were born outside the U.S. and experienced healthcare costs, and cultural and linguistic barriers when accessing quality medical care services.

In FY 2023 alone (July 1, 2022, through June 30, 2023), there were 11 bilingual or multilingual patient navigators employed speaking 10 languages. 961 people with chronic hepatitis B received education and linkage to care services, including people served in previous years who needed ongoing care coordination. Three organizations coordinated regular community outreach events and screened 1,026 people at risk for hepatitis B and vaccinated 250 people at risk for hepatitis B.

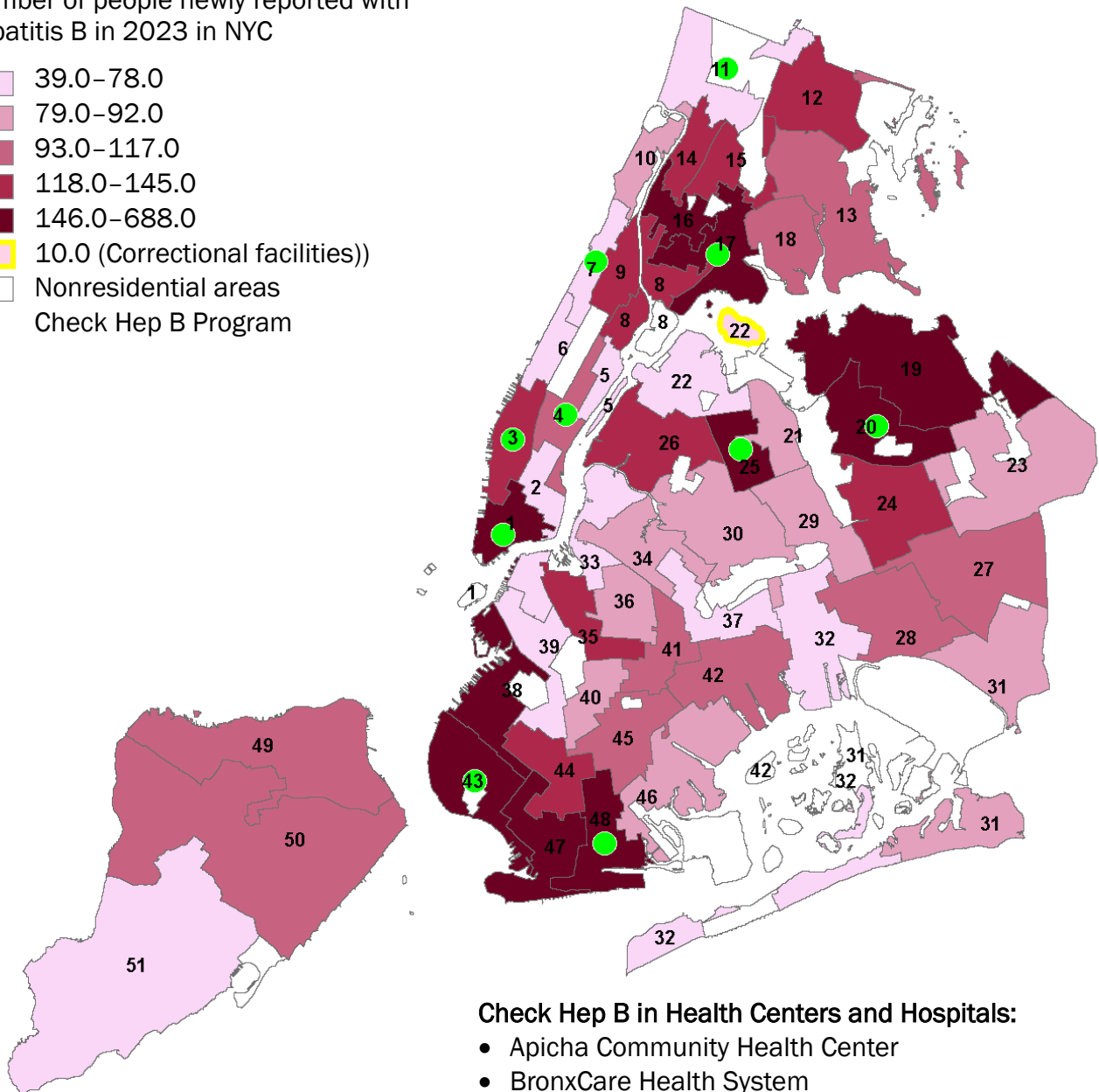
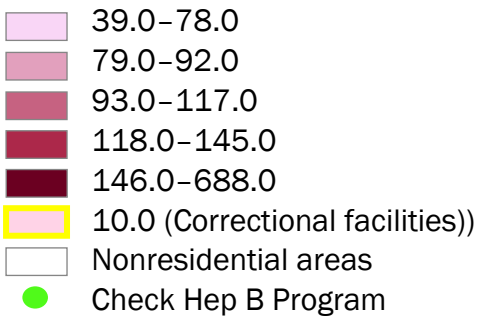
“Patient navigators make it easier for patients to visit hospitals, understand treatment, and talk to doctors. This makes patients happier and healthcare services better.
— Hepatitis B Patient Navigator”

Between 2021–2022, the Check Hep B program evaluated participant satisfaction using an incentivized web-based survey available in English, Mandarin, and French. Overall, the survey garnered 91 responses from people enrolled in the program and 96% self-reported being satisfied or very satisfied with hepatitis B patient navigation services. Eighty-six percent of respondents noted that their navigator was highly effective and “very important” in finding a healthcare provider, and that the navigator’s fluency in their native language was key in accessing hepatitis B care.

Hepatitis B Distribution by NYC City Council District and Check Hep B Patient Navigation Program Sites

Figure 40. Number of people newly reported with chronic hepatitis B in NYC by City Council District and Check Hep B Patient Navigation Program sites, 2023^{29,30}

Number of people newly reported with hepatitis B in 2023 in NYC



Check Hep B in Health Centers and Hospitals:

- Apicha Community Health Center
- BronxCare Health System
- Charles B. Wang Community Health Center
- Montefiore Medical Center
- NYC H+H/Bellevue
- NYC H+H/South Brooklyn Health, Ruth Bader Ginsburg Hospital
- NYC H+H/Elmhurst
- Seventh Avenue Family Health Center at NYU Langone

Check Hep B in Community Organizations:

- African Services Committee
- Korean Community Services

²⁹ Multiple locations in the same district are represented by one dot in the map.

³⁰ 282 people with hepatitis B had addresses that could not be geocoded.

Check Hep C Patient Navigation Program

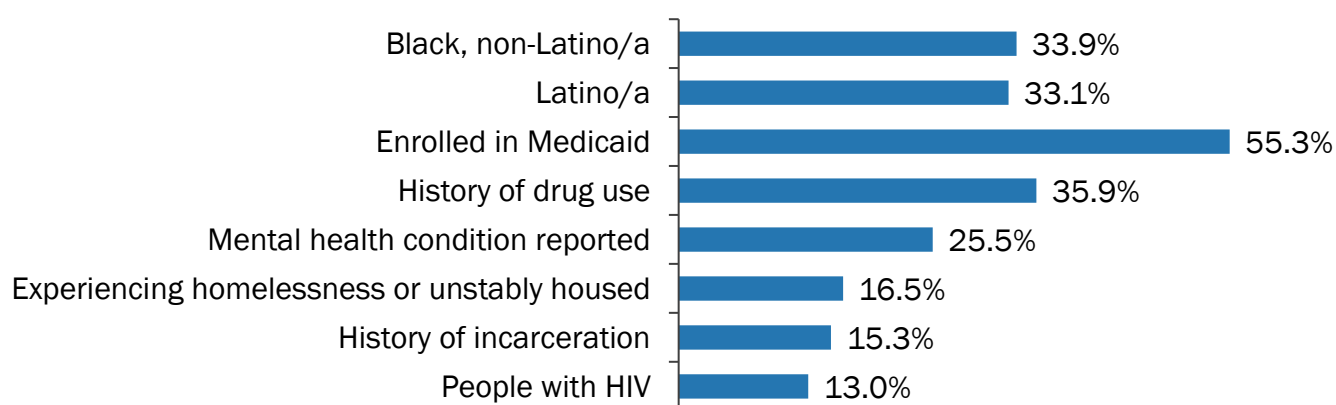
Since 2014, the Viral Hepatitis Initiative has supported health centers and hospitals to provide patient navigation to people with chronic hepatitis C. Check Hep C patient navigators help patients complete hepatitis C testing, evaluation, and treatment.

Program Outcomes

FY 2015 to FY 2023 (From July 1, 2014, through June 30, 2023)

5,313	Number of people enrolled	88%	Percentage of people linked to care	68%	Percentage of people linked to care who received treatment
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Figure 39. Percentage of participants in Check Hep C Patient Navigation Program by social and demographic characteristics, FY 2015–FY 2023



In FY 2023 (from July 1, 2022, through June 30, 2023), there were 14 patient navigators employed. 723 people with chronic hepatitis C received education and linkage to care services, including people served in previous years who needed ongoing care coordination.

Between 2021–2022, the NYC Health Department evaluated participant satisfaction with services provided in the Check Hep C program and Hep C Navigation in Syringe Services Program. People enrolled in 2021 received a link to a brief and confidential web-based survey in English and Spanish, followed by a paid 30-minute semi-structured interview. A total of 34 people responded and 91% reported being satisfied with hepatitis C peer and patient navigation services. Over half of patients reported they could not have made it to their first hepatitis C medical appointment without the help of the navigator.

I wasn't aware, before the program, about the medication and stuff like that. So, I didn't know it could be cured, you know. So, I think that was the obstacle for me. I wasn't aware."

— Hepatitis C Participant

Hep C Navigation in Syringe Service Programs

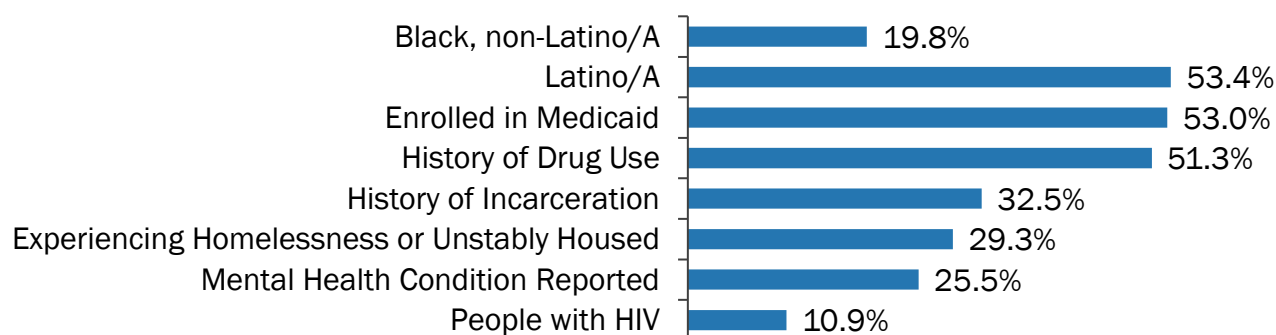
Since 2014, the Viral Hepatitis Initiative has supported syringe service programs in NYC to provide peer and/or patient navigation services to people at risk for hepatitis C through the Hep C Peer Program and the Integrated Hep C Peer and Check Hep C Programs. Peers use lived experience expertise to conduct outreach, prevention, and linkage to care, while patient navigators coordinate care to support patients in completing hepatitis C treatment.

Program Outcomes

FY 2015 to FY 2023 (From July 1, 2014, through June 30, 2023):

15,309	Number of people at risk for hepatitis C who were reached and received hepatitis C health education and prevention services
3,142	Number of people who tested positive for hepatitis C
1,158	Number of people with chronic hepatitis C referred to care
823	Number of people with chronic hepatitis C linked to care or attended a health care appointment
618	Number of people with chronic hepatitis C who received treatment

Figure 40. Percentage of participants in Hep C Navigation at Syringe Service Programs by social and demographic characteristics, FY 2015-2023³¹



In FY 2023 (from July 1, 2022, through June 30, 2023), organizations employed 15 peer navigators and six patient navigators. 1,814 people at risk for hepatitis C received education, prevention, and linkage to care services.

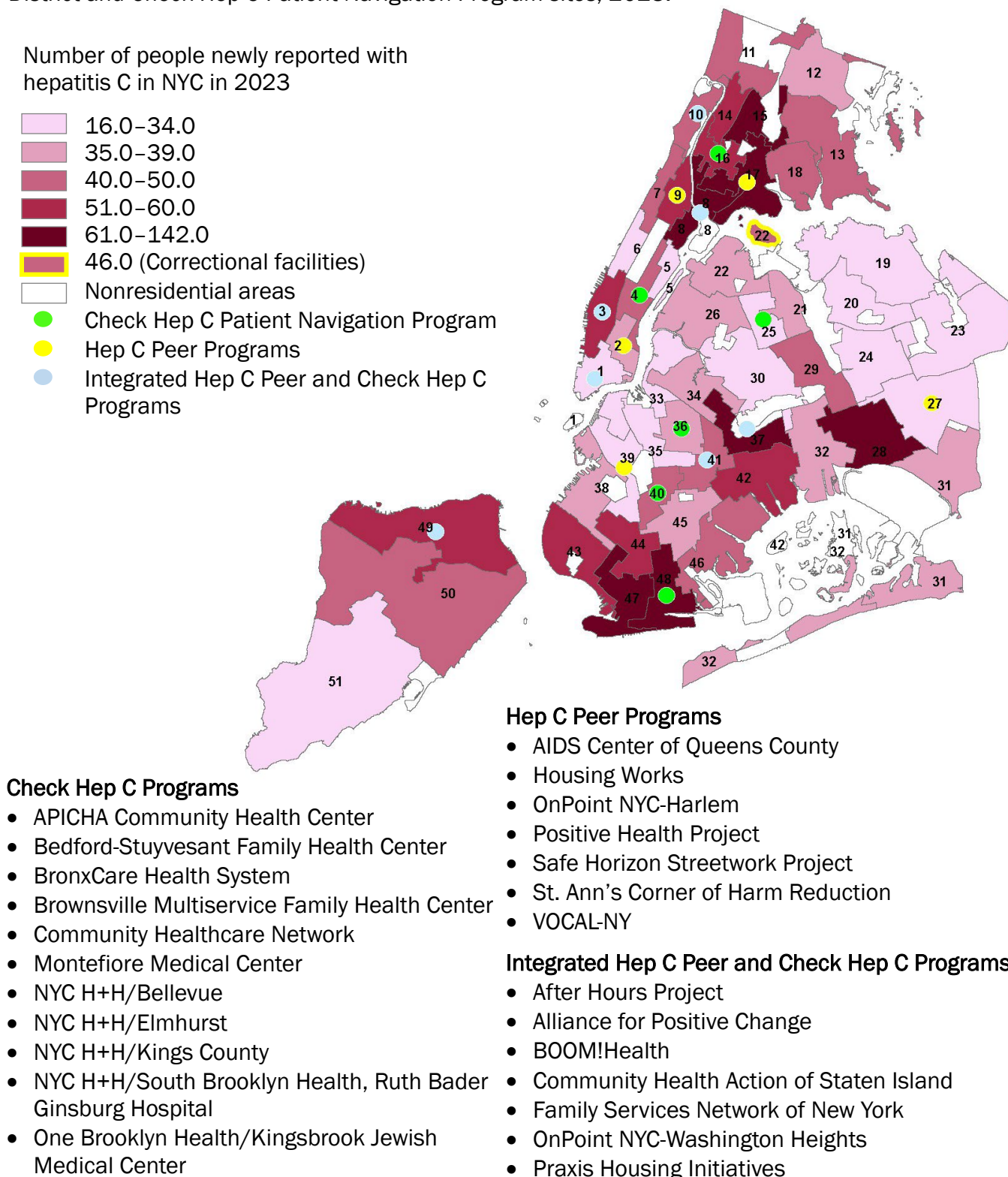
“ My patient navigator did not make me feel like I was being interrogated or like I did something wrong. I just think that she had a balance [...] of being able to relate.

— Hepatitis C Participant ”

³¹ Based on available data from 3,142 people who tested positive for hepatitis C

Chronic Hepatitis C Distribution by NYC City Council District and Check Hep C Patient Navigation Program Sites

Figure 41. Number of people newly reported with chronic hepatitis C in NYC by NYC City Council District and Check Hep C Patient Navigation Program sites, 2023. ^{32,33}



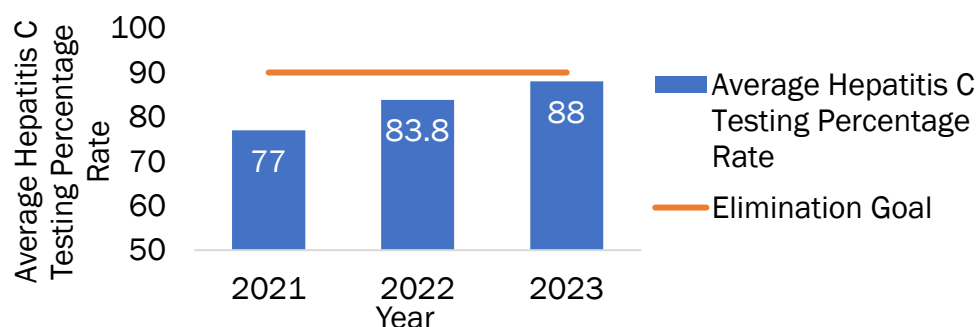
³² Multiple locations in the same district are represented by one dot in the map.

³³ 103 people with hepatitis C had addresses that could not be geocoded.

Health Care Practice Facilitation

The NYC Health Department identifies health care organizations in high prevalence neighborhoods or serving a high number of people with hepatitis B, hepatitis C or both to conduct health care practice facilitation projects to improve hepatitis B and C testing and treatment rates. Facilities engage in an array of tailored interventions, including testing and treatment assessment using electronic health record and surveillance data; clinical and nonclinical training and peer-to-peer mentorship; and patient workflow changes to support linkage or return to hepatitis care.

Figure 42. Average hepatitis C testing percentage rate of six substance use treatment programs participating in health care practice facilitation projects.



Integration of Overdose Prevention in Hepatitis C Patient Navigation

From September 1, 2022, through August 31, 2023, the NYC Health Department monitored the integration of overdose prevention services into NYC Health Department Hepatitis C Telephone Navigation, Check Hep C and Hep C Navigation at Syringe Service Programs.

18

Number of new navigators trained in overdose prevention education for people with hepatitis C

4,111

Number of people with hepatitis C who received overdose prevention education

571

Number of people linked to integrated care for treatment of hepatitis C and medication for opioid use disorder (MOUD)

Improving Linkage to Hepatitis C Care in a Substance Use Treatment Facility

In 2023, the NYC Health Department completed a four-year project with Addiction Care Interventions (ACI), a substance use treatment facility that provides inpatient, outpatient and detox services, to increase linkage to hepatitis C and substance use care for people at risk for overdose.

From September 1, 2019, through August 31, 2023:

47

Number of health care providers trained in hepatitis C treatment for people who use drugs

39

Number of nonclinical staff* trained in overdose prevention and hepatitis C patient navigation services

*Nonclinical staff include case managers, social workers, and phlebotomists.

From October 1, 2020 through August 31, 2023, ACI served 13,653 patients:

12,713

Number of people who received overdose prevention education

9,359

Number of people who received Naloxone

950

Number of people with hepatitis C

264

Number of people with hepatitis C referred to integrated care for hepatitis C and opioid use disorder

Hepatitis C Treatment via Telemedicine at Substance Use Treatment Programs

In 2023, the NYC Health Department continued to partner with Mount Sinai REACH to offer hepatitis C treatment via telemedicine to people served in two inpatient substance use treatment programs experienced in treating opioid use disorder. Both programs admitted 7551 people and screened 96% for hepatitis C and developed a workflow to link those who tested positive to care and treatment.

From May 2022 through April 2023:

581	Number of people admitted with a positive hepatitis C RNA test
169	Number of people with a positive hepatitis C RNA test linked to hepatitis C care
40	Number of people linked to hepatitis C care referred to telemedicine services at Mount Sinai REACH
39	Number of people referred to telemedicine services and attended at least one telemedicine visit
22	Number of people who attended a telemedicine visit and began hepatitis C treatment
13	Number of people who completed treatment

People served in the two inpatient substance use treatment programs faced barriers to engaging in care that included homelessness (39%) and justice involvement (8%). Mount Sinai REACH hired three community health workers (CHWs) who visited the substance use treatment centers weekly to support people through hepatitis C care and liaised with the substance use treatment programs. The integration of CHWs led to an 11% increase in the linkage to care rate from the previous year.

Integrating Hepatitis C and HIV Care at Substance Use Treatment Programs

In 2023, the NYC Health Department facilitated integration of hepatitis C and HIV testing and linkage to care at four substance use treatment programs located in the Bronx, Brooklyn, Manhattan, and Queens. 77 clinical and nonclinical staff participated in 9 trainings on patient navigation, harm reduction, and hepatitis B, hepatitis C and HIV clinical management. In 2022, the organizations presented and exchanged best practices at the “New York State Hepatitis C Learning Collaborative for Substance Use Disorder Treatment Programs” held by the New York State Department of Health.

From August 2022 through July 2023, a total of 1239 people were admitted to the four substance use treatment programs:

55%	Percentage of people ages 20 to 49 years	32%	Percentage of people experiencing homelessness
47%	Percentage of people who were diagnosed with opioid use disorder	2%	Percentage of people who identified as transgender or non-binary

The programs conducted 769 hepatitis C antibody tests, and 242 (31%) people were hepatitis C antibody positive. Of the 47 people who tested hepatitis C RNA positive, 17 (36%) were linked to care. The programs conducted 805 HIV tests; 53 (6%) people were HIV positive and 18 (34%) were linked to care. The programs found 3 people had both HIV and hepatitis C, all of whom were linked to care.

Technical Notes

Acute and Chronic Infection: Hepatitis A is an acute (short-term) infection lasting a few weeks to several months, without causing long-term illness or damage to the liver. Hepatitis B and C infections can be acute or chronic (long-term). Acute hepatitis B and C infections occur in the first six months after exposure to the respective viruses. Some people can develop chronic hepatitis B and C infections which, left untreated, can cause liver damage.

Capacity Building Data: The NYC Health Department collects aggregate and person-level data from organizations offering grant-funded services. Data are provisional and may be subject to change.

Case Definitions: Cases included in this report meet CDC and Council of State and Territorial Epidemiologists (CSTE) criteria for confirmed hepatitis A,³⁴ confirmed acute hepatitis B,³⁵ confirmed and probable chronic hepatitis B,³⁶ confirmed perinatal hepatitis B,³⁷ confirmed acute hepatitis C,³⁸ confirmed and probable chronic hepatitis C,³⁹ or confirmed perinatal hepatitis C.⁴⁰

Case Numbers and Case Rates: This report presents case numbers and case rates per 100,000 people newly reported with hepatitis A, B, and C in NYC. Age-adjusted rates were calculated using the following age categories: 0-24, 25-44, 45-64, 65-84 and ≥ 85 years, weighted to the U.S. 2000 standard population. 2021 intercensal estimates provided by the NYC Health Department's Bureau of Epidemiology Services were used to calculate all rates except those for Rikers Island, for which estimates were provided by NYC Correctional Health Services.

Cause of Death: This report includes underlying and non-underlying (multiple) causes of death for deaths occurring in NYC or among NYC residents. Causes of death are not mutually exclusive and are coded using ICD-10 classifications. The codes used for acute and chronic hepatitis B are B16.0, B17.0, B18.0 and B18.1; the codes used for acute and chronic hepatitis C are B17.1 and B18.2.⁴¹

City Council Districts (CCD): CCD maps in this report replace previous Neighborhood Tabulation Area maps to better reflect NYC Viral Hepatitis Prevention Initiative programs. CCDs are NYC-created geographic boundaries that use decennial census data. NYC is divided into 51 CCDs of roughly equal population that are redrawn following each decennial census. As such, chronic hepatitis B or C case numbers by CCDs approximate trends in case rates.

Correctional Facilities: The NYC Health Department combines people reported from any NYC correctional facility to Rikers Island in maps. Even though the jail at Rikers Island has a Queens ZIP code (11370), all Rikers Island data is categorized as reported from the Bronx.

Electronic Laboratory Reporting: Laboratories are required to report specific hepatitis A, B and C test results electronically to the NYC Health Department in compliance with NYC Health Code (Article 13). Visit, wadsworth.org/sites/default/files/WebDoc/CDRG%20102120_NYC_HM%202_0.pdf

³⁴ Centers for Disease Control and Prevention (CDC). National Notifiable Diseases Surveillance System (NNDSS). Hepatitis A, Acute 2019 Case Definition. ndc.services.cdc.gov/case-definitions/hepatitis-a-acute-2019

³⁵ CDC. NNDSS. Hepatitis B, Acute (historical version) 2012 Case Definition. ndc.services.cdc.gov/case-definitions/hepatitis-b-acute-2012

³⁶ CDC. NNDSS. Hepatitis B, Chronic (historical version) 2012 Case Definition. ndc.services.cdc.gov/case-definitions/hepatitis-b-chronic-2012

³⁷ CDC. NNDSS. Hepatitis B, Perinatal Infection 2017 Case Definition. ndc.services.cdc.gov/case-definitions/hepatitis-b-perinatal-virus-infection-2017

³⁸ CDC. NNDSS. Hepatitis C, Acute 2020 Case Definition. ndc.services.cdc.gov/case-definitions/hepatitis-c-acute-2020

³⁹ CDC. NNDSS. Hepatitis C, Chronic 2020 Case Definition. ndc.services.cdc.gov/case-definitions/hepatitis-c-chronic-2020

⁴⁰ CDC. NNDSS. Hepatitis C, Perinatal Infection 2018 Case Definition. ndc.services.cdc.gov/case-definitions/hepatitis-c-perinatal-infection-2018

⁴¹ CDC. National Center for Health Statistics. Health, United States, 2020-2021. Cause of death. cdc.gov/nchs/hus/sources-definitions/cause-of-death.htm

Hepatitis A, B and C: Hepatitis A, B, and C are caused by viruses that infect and can damage the liver. Hepatitis A is usually passed from one person to another through contaminated food or water, or through sexual contact, and is usually resolved within six months. Hepatitis B is passed from one person to another through blood, semen or vaginal fluids, and can develop into a lifelong infection that can cause liver failure and cancer. Hepatitis C is passed from one person to another through blood and can cause liver failure and cancer. Vaccines can protect against hepatitis A and B, and medications can manage hepatitis B and cure hepatitis C. Visit nyc.gov/health/hepatitis.

Neighborhood Poverty: The NYC Health Department uses American Community Survey data from 2017 to 2021 to define an area's poverty level as the percentage of residents within a ZIP code with incomes below 100% of the Federal Poverty Level (FPL). Neighborhood poverty categories include: Low (less than 10% below FPL); Medium (10% to less than 20% below FPL); High (20% to less than 30% below FPL); Very high (greater than or equal to 30% below FPL).⁴² These categories do not apply to people whose first or most recently reported address is a NYC correctional facility.

Neighborhood Tabulation Area (NTA): NYC Department of City Planning developed aggregations of census tracts that are subsets of NYC's 55 Public Use Microdata Areas. NTA boundaries and associated names may not definitively represent neighborhoods. Visit, nyc.gov/site/planning/data-maps/open-data/dwn-nynta.page.

Prevalence Estimates: The NYC Health Department calculates hepatitis B and C prevalence using most recent and complete surveillance data, accounting for death, out-migration from NYC, and undiagnosed and cleared infection.^{43,44} This report presents 2022 prevalence estimates reflecting the most recent year that Internal Revenue Service data were available to estimate out-migration.

Provider Reporting Guidance: Health care providers must report all hepatitis A, acute hepatitis B, acute hepatitis C, and acute or chronic hepatitis B in pregnant and postpartum people to the NYC Health Department. For instructions, visit nyc.gov/site/doh/providers/health-topics/hepatitis.page.

Race and Ethnicity: Race and ethnicity information are often missing in laboratory reports, which are the primary data source for viral hepatitis in NYC. NYC Health Department uses other sources such as provider reports, electronic health records, and interviews conducted for case investigation to obtain race and ethnicity information. In the report, we combined race and ethnicity into these mutually exclusive categories: Asian or Pacific Islander, Black, Latino/a, Native American, Underrepresented (Other, Not specified or Multiracial) and Unknown.

Reporting Year: Variability in reporting year in this report is due to data lag or follow-up time required to measure outcomes. Perinatal hepatitis B data reflect most recent birth data and vaccination outcomes as of 2021 from the NYC Health Department's Office of Vital Statistics. Hepatitis B and C death data are only available starting in 2015. Hepatitis C cure and clearance data lag is due to follow-up time required to measure outcomes, reflecting the earliest year data were available after hepatitis C negative RNA reporting began in 2015. Capacity-building data reporting periods reflect grant budget periods. Multi-year program summaries include 2023 data and cumulative data.

Sex and Gender Identity: Surveillance data on the sex of people with viral hepatitis come from laboratory reports and cannot be parsed as sex assigned at birth, legal sex or gender identity. Gender identity is collected when investigating hepatitis A, B, or C cases, and this information is reported.

Viral Hepatitis Surveillance: The NYC Health Department maintains a registry of people living in NYC with current or previous hepatitis A, B, or C infection reported to the NYC Health Department as required by the NYC Health Code.

⁴² Toprani A, Hadler JL. Selecting and applying a standard area-based socioeconomic status measure for public health data: Analysis for New York City. New York City Department of Health and Mental Hygiene: *Epi Res Report*. May 2013

⁴³ Moore MS, Bocour A, Winters A. Surveillance-Based Estimate of the Prevalence of Chronic Hepatitis B Virus Infection, New York City, 2016. *Public Health Rep*. 2019 Nov/Dec;134(6):695-702.

⁴⁴ Bocour A, Greene SK, Laraque F, Winters A. Estimating the prevalence of chronic hepatitis C virus infection in New York City, 2015. *Epidemiol Infect*. 2018 Sep;146(12):1537-1542.

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