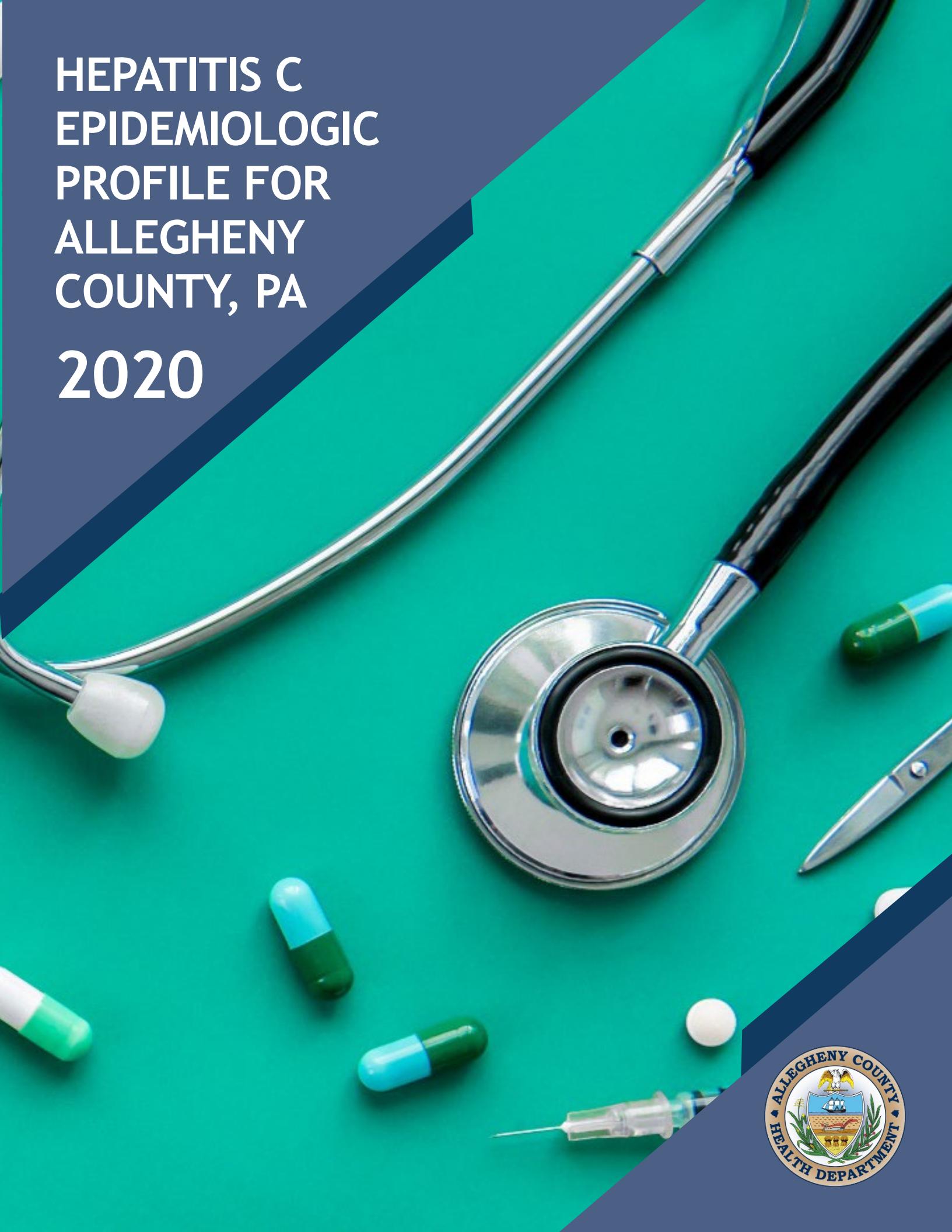
HEPATITIS C EPIDEMIOLOGIC PROFILE FOR ALLEGHENY COUNTY, PA

2020



HEPATITIS C EPIDEMIOLOGIC PROFILE FOR ALLEGHENY COUNTY, PA, 2020

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Allegheny County Health Department

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

Hepatitis C is a liver disease that results from infection with the hepatitis C virus (HCV), which is spread primarily through contact with the blood of an infected person. Hepatitis C infection can be classified as either "acute" or "chronic." Cases are referred to as "acute" if the infection is newly acquired. Most acute infection leads to chronic infection, as only 15-25 percent of persons clear the infection without treatment. According to the Centers for Disease Control and Prevention (CDC), most people become infected with HCV by sharing needles or other equipment to inject drugs.

ACUTE HEPATITIS C

Persons with acute hepatitis C infections often do not have symptoms; 20-30 percent of individuals have mild to severe gastrointestinal symptoms, including jaundice, within six months of infection.

In 2020, 17 confirmed and three probable cases of acute hepatitis C among adults were reported to the Allegheny County Health Department (ACHD). The CDC estimates that the true number of acute cases is up to 14 times higher than what is reported each year.

CHRONIC HEPATITIS C

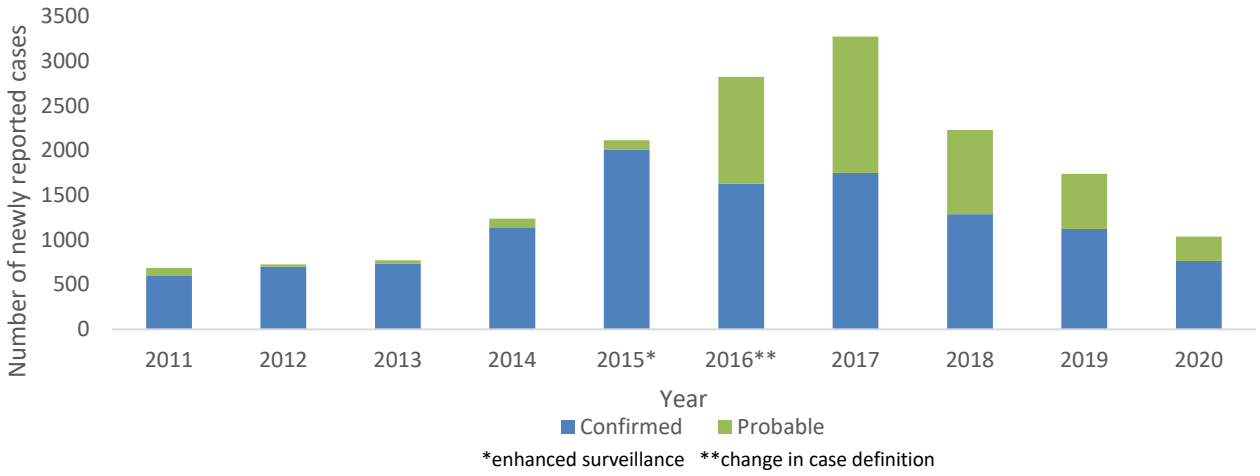
Chronic hepatitis C is associated with liver damage and sometimes liver failure or liver cancer. In 2020, there were 1,036 confirmed, and probable, cases of chronic hepatitis C cases reported among Allegheny County residents. Of that total, 766 (74%) were classified as confirmed chronic cases and 270 (26%) were classified as probable (Table 1; Figure 1).

The COVID-19 pandemic disrupted access to and uptake of HCV services across the United States.[1] In Allegheny County, there was a 40 percent decrease in the number of newly reported chronic HCV infections between 2019 and 2020.

Table 1. Case definition and classification of acute and chronic hepatitis C virus infection[2, 3]

Classification	Description
Acute	
Confirmed	Clinical criteria present and positive HCV nucleic acid test (NAT) for RNA or HCV antigen test **OR**
	Negative HCV antibody test followed within 12 months by a positive HCV antibody test **OR**
	Negative HCV antibody test OR negative HCV detection test (in person without prior diagnosis of HCV infection) followed within 12 months by a positive HCV NAT
Probable	Clinical criteria present, no HCV detection test reported, and no HCV antibody or HCV NAT test within 12 months
Chronic	
Confirmed	Positive HCV NAT, HCV antigen test, or genotype results without clinical information consistent with acute infection (i.e. no present symptoms)
Probable	Positive HCV antibody test but no confirmatory HCV NAT test and no clinical information consistent with acute infection

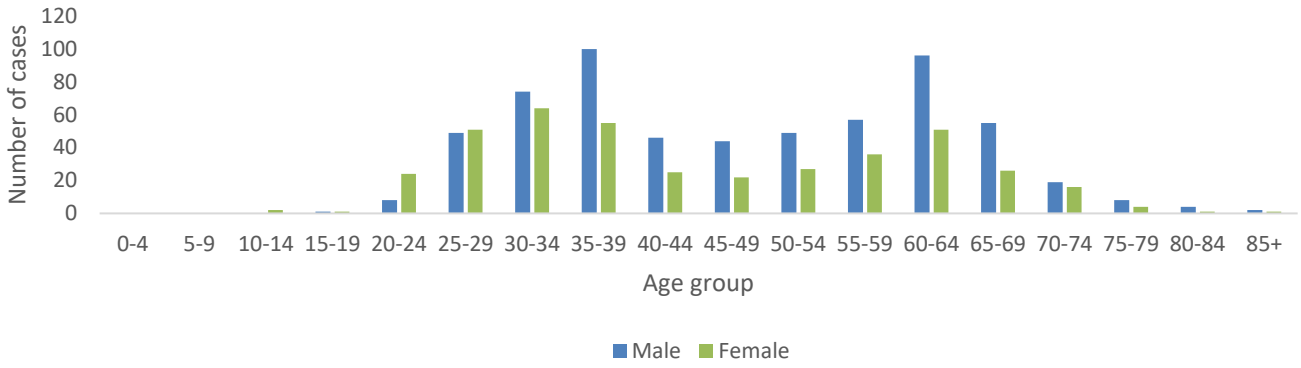
Figure 1. Chronic hepatitis C cases by year and classification, Allegheny County, PA, 2011-2020



*Before 2016, cases were classified as 'probable' only if ACHD received reports of a positive antibody test plus elevated liver enzymes; given the latter are rarely reported, very few cases were classified as 'probable' before 2016. In 2016, the liver enzyme requirement was dropped, increasing the number of cases classified as 'probable.' During 2011-2020, the number of confirmed cases was highest in 2015, most likely due to active investigation by ACHD of all positive lab tests, which was ACHD's practice for one year only.

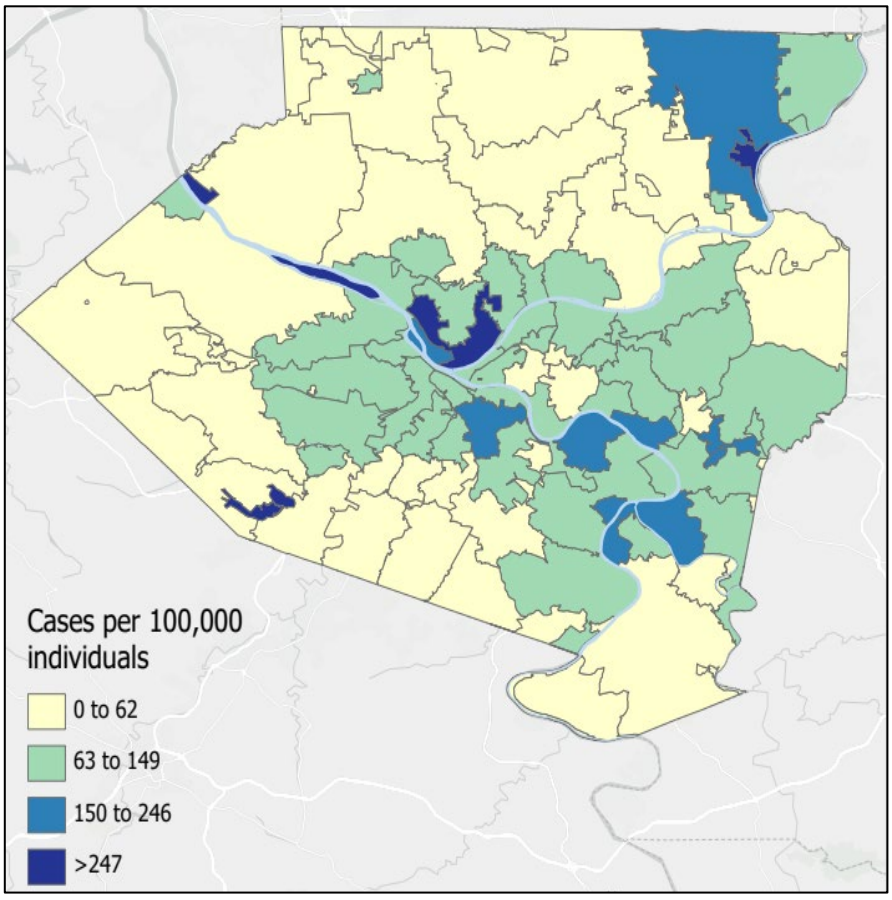
Of the 1,036 confirmed, and probable, cases in 2020, 614 (59%) were males. The age distribution was bimodal with peaks in the 30-39 year and 60-64 year age groups (Figure 2).

Figure 2. Chronic hepatitis C cases by age group and sex, Allegheny County, PA, 2020



The following map (Figure 3) shows rates of newly reported chronic hepatitis C cases in 2020 by zip code of residence.

Figure 3. Newly reported chronic hepatitis C cases per 100,000 population by zip code of residence, Allegheny County, PA, 2020

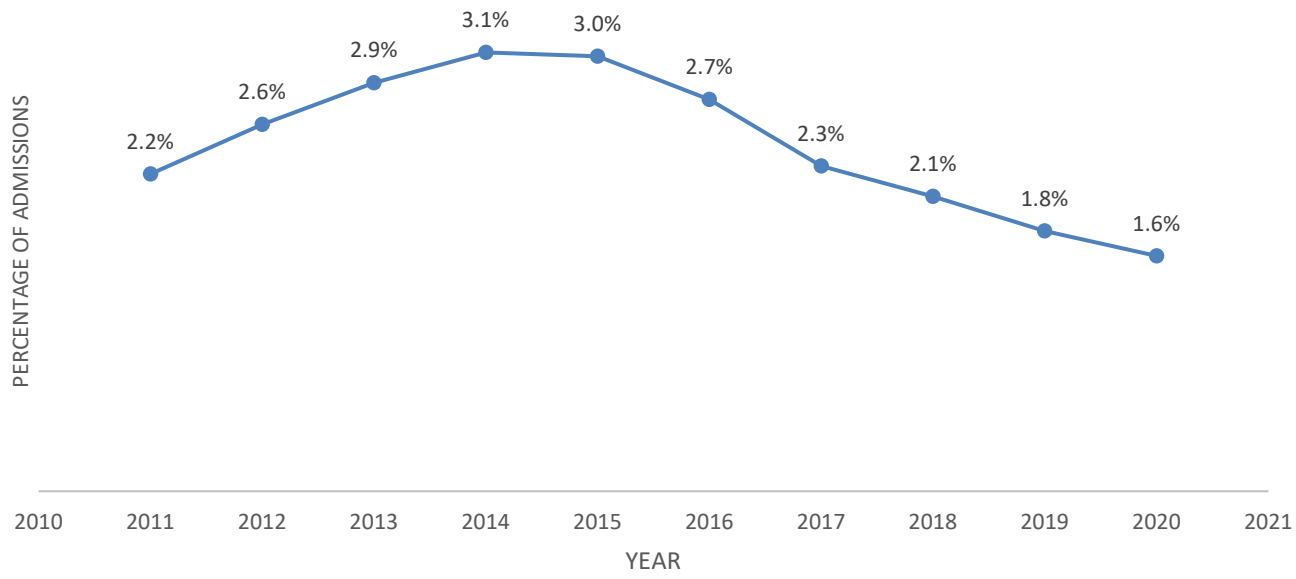


Hospitalizations with HCV Infection

2,218	Number of hospital admissions with an HCV diagnosis in 2020	1.6%	Percentage of all hospital admissions with an HCV diagnosis in 2020

In 2020, there were 2,218 hospitalizations with an HCV diagnosis. The percentage of all hospital admissions in Allegheny County with an HCV diagnosis (includes primary diagnosis and up to 17 secondary diagnoses) has been decreasing since 2014 and was 1.6 percent in 2020 (Figure 4).

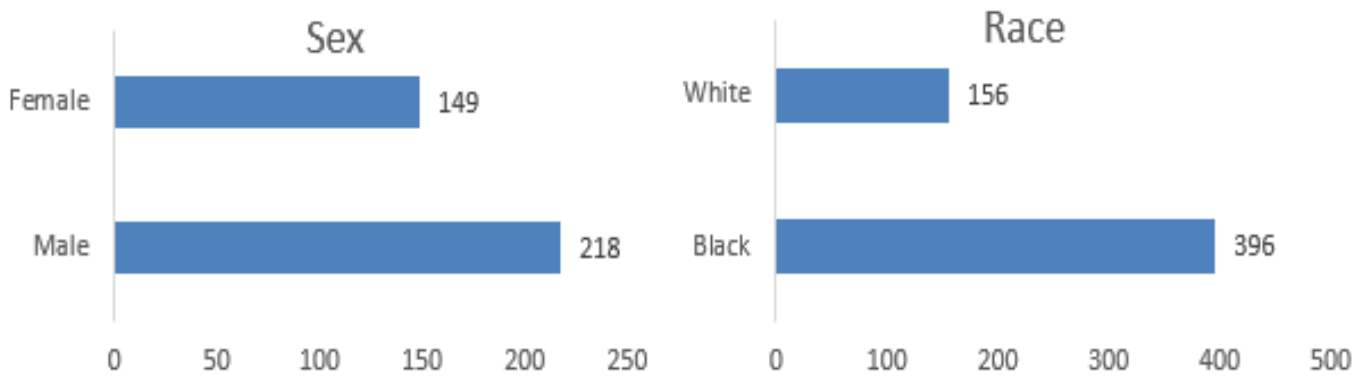
Figure 4. Percentage of all hospital admissions with a hepatitis C diagnosis* among Allegheny County residents, by year



*Includes primary diagnosis and up to 17 secondary diagnoses
Data Source: Pennsylvania Health Care Cost Containment Council

In 2020, there were 179 hospital admissions with an HCV diagnosis per 100,000 population in Allegheny County. However, the rate of hospitalization with an HCV diagnosis for Black residents (396 per 100,000) was more than twice the rate for white residents (156 per 100,000), and higher for males (218) than for females (149) (Figure 5).

Figure 5. Admissions with a hepatitis C diagnosis* per 100,000 population in Allegheny County by sex and race, 2020



*Includes primary diagnosis and up to 17 secondary diagnoses
Data Source: Pennsylvania Health Care Cost Containment Council

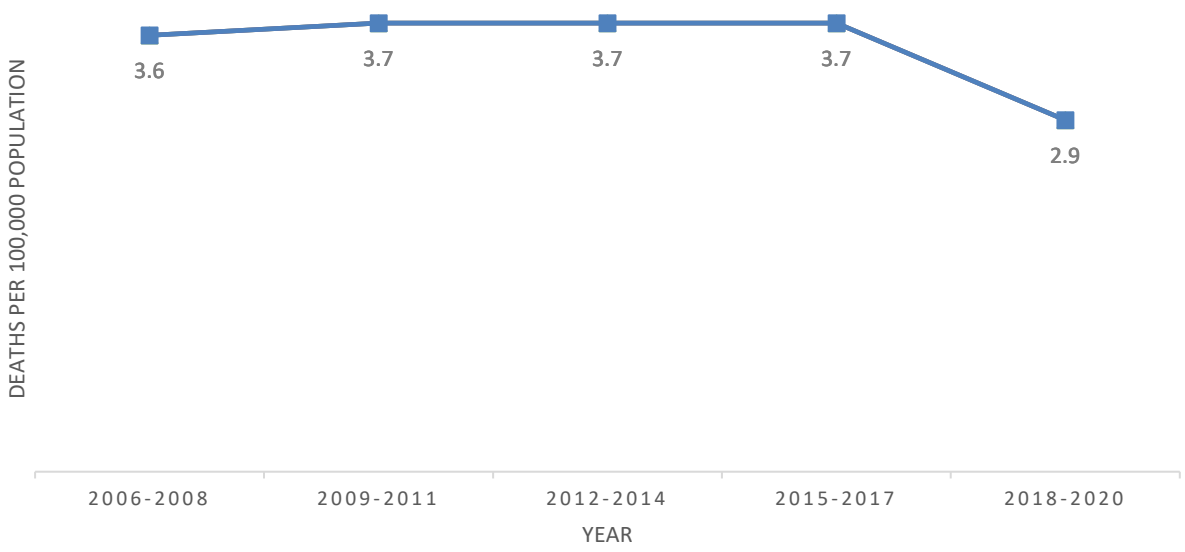
Disclaimer: The Pennsylvania Health Care Cost Containment Council (PHC4) is an independent state agency responsible for addressing the problem of escalating health costs, ensuring the quality of health care, and increasing access to health care for all citizens. While PHC4 has provided data for this study, PHC4 specifically disclaims responsibility for any analyses, interpretations or conclusions.

Hepatitis C Deaths

51	Deaths in 2020 with hepatitis C listed as a cause	4.7	The age-adjusted mortality rate was 4.7 times higher for Black residents than for white residents

HCV-related mortality, defined as deaths with hepatitis C listed as an underlying or contributing cause of death on the death certificate, decreased from an average annual age-adjusted rate of 3.7 per 100,000 in 2009-2017 to 2.9 per 100,000 in 2018-2020 in Allegheny County.

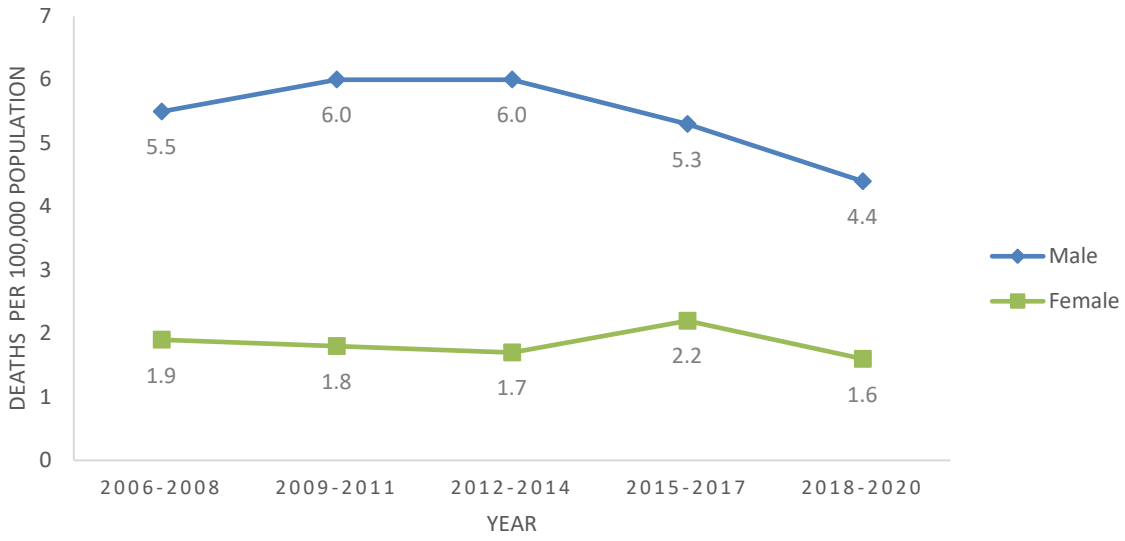
Figure 6. Age-adjusted average annual HCV-related mortality rate Allegheny County, 2006-2020



Date Source: CDC WONDER

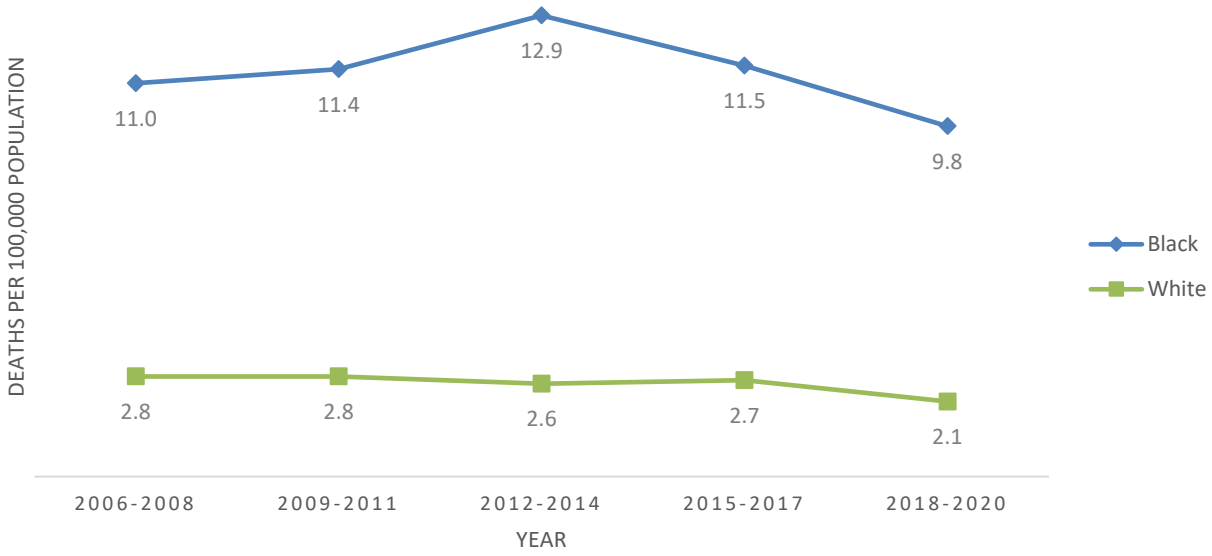
The HCV-related mortality rate is consistently higher in males compared to females and consistently higher in Black residents compared to white residents (Figure 10, 11). In 2018-2020, the HCV-related mortality rate was over twice as high in males compared to females and over four times higher in Black residents compared to white residents.

Figure 7. Age-adjusted average annual HCV-related mortality rate by sex, Allegheny County, 2006-2020



Date Source: CDC WONDER

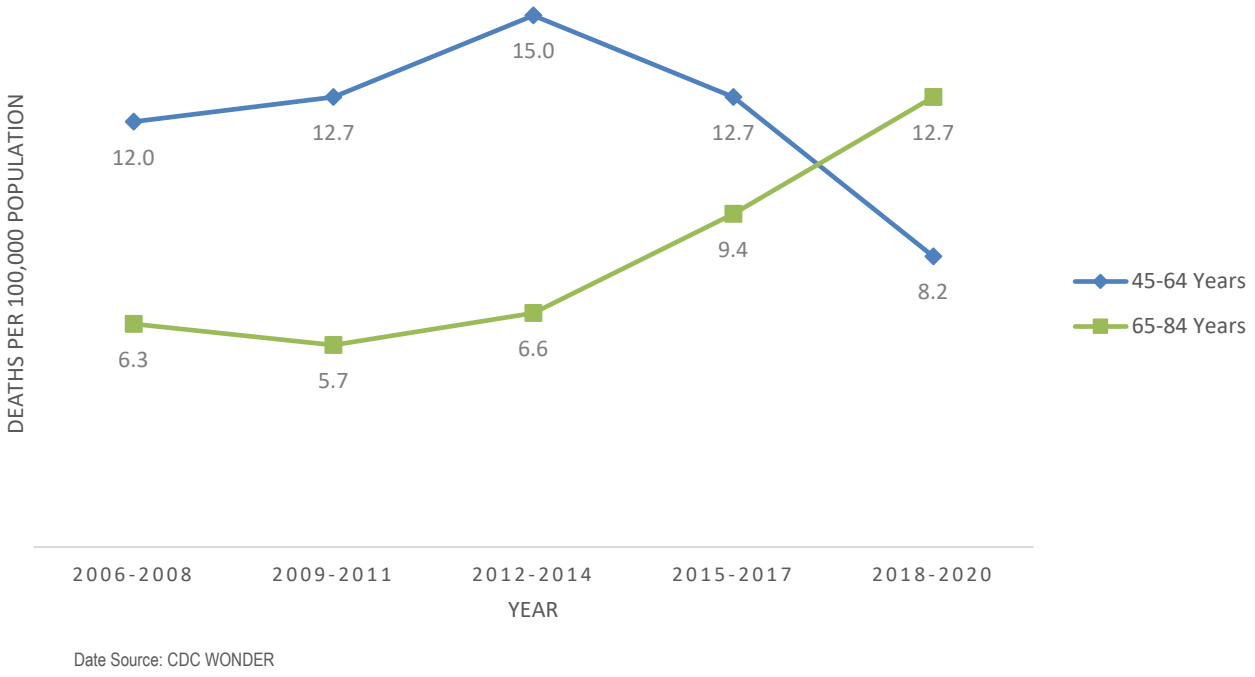
Figure 8. Age-adjusted average annual HCV-related mortality rate by race, Allegheny County, 2006-2020



Date Source: CDC WONDER

The HCV-related mortality rate is higher in those aged 65-84 years compared to those aged 45-64 years. The HCV-related mortality rate decreased among those aged 45-64 years from 2012-2014 to 2018-2020 while increasing among those aged 65-84 years.

Figure 9. Average annual HCV-related mortality rate by age group, Allegheny County, 2006-2020



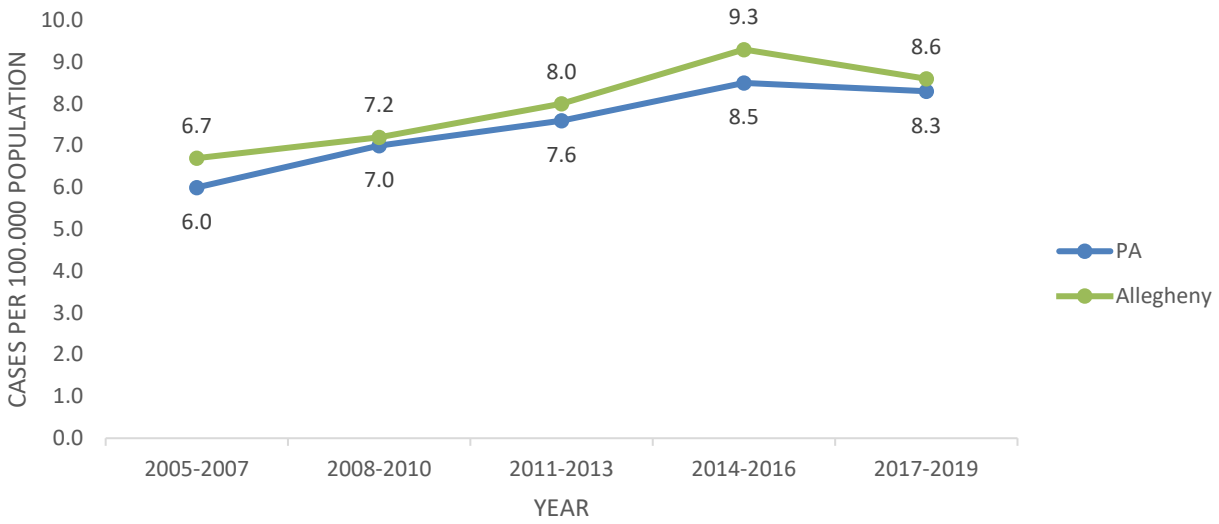
Date Source: CDC WONDER

Liver Cancer

150	Average number of liver cancer cases per year, 2017-2019	29.3%	Percent increase in the liver cancer incidence rate from 2005-2007 to 2017-2019

HCV infection increases the likelihood of developing cirrhosis of the liver; those who have cirrhosis are at higher risk of developing hepatocellular cancer.[4] Incidence rates of liver and intrahepatic bile duct cancer in Allegheny County and in PA have increased since 2005-2007 (Figure 10).

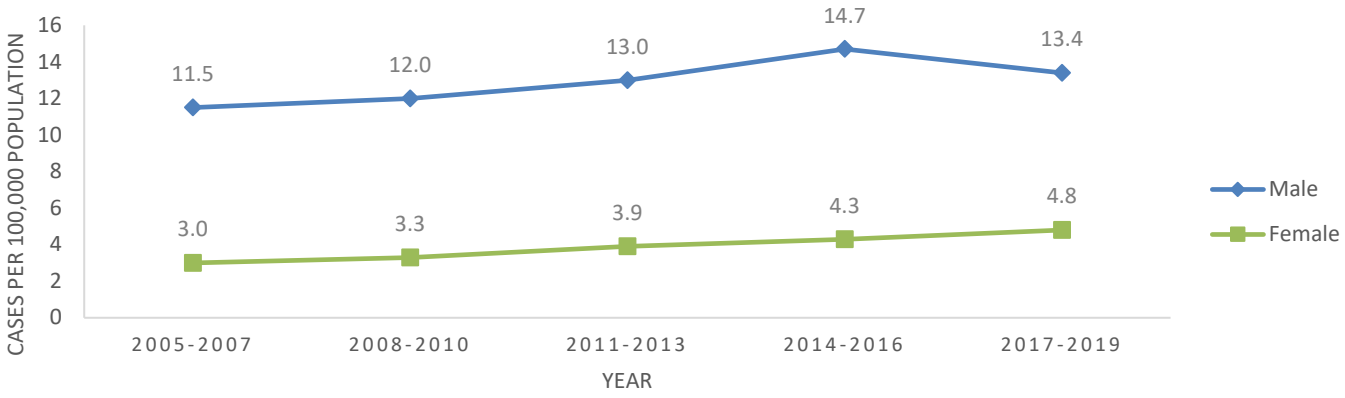
Figure 10. Age-adjusted liver and intrahepatic bile duct cancer incidence rate, Allegheny County and PA, 2005-2019



Date Source: Enterprise Data Dissemination Informatics Exchange (EDDIE)

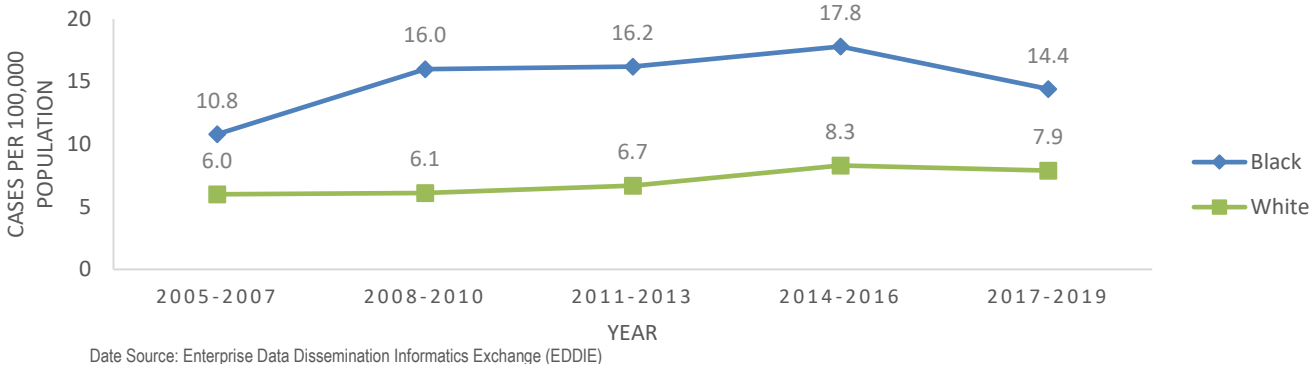
Rates are greater in males than in females, greater in Black residents than in white residents, and greater in older persons (50+) than in younger persons (<50 years) (Figures 11-13).

Figure 11. Age-adjusted liver and intrahepatic bile duct cancer incidence rate by sex, Allegheny County, 2005-2019



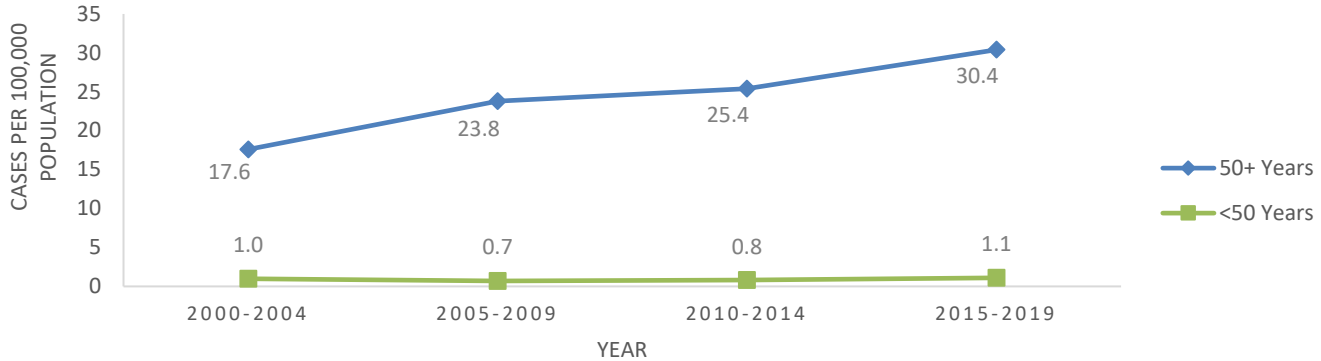
Date Source: Enterprise Data Dissemination Informatics Exchange (EDDIE)

Figure 12. Age-adjusted liver and intrahepatic bile duct cancer incidence rate by race, Allegheny County, 2005-2019



Date Source: Enterprise Data Dissemination Informatics Exchange (EDDIE)

Figure 13. Age-adjusted liver and intrahepatic bile duct cancer incidence rate by age group, Allegheny County, 2000-2019



Date Source: Enterprise Data Dissemination Informatics Exchange (EDDIE)

Disclaimer: These data were provided by the Pennsylvania Department of Health. The Department specifically disclaims responsibility for any analyses, interpretations, or conclusions.

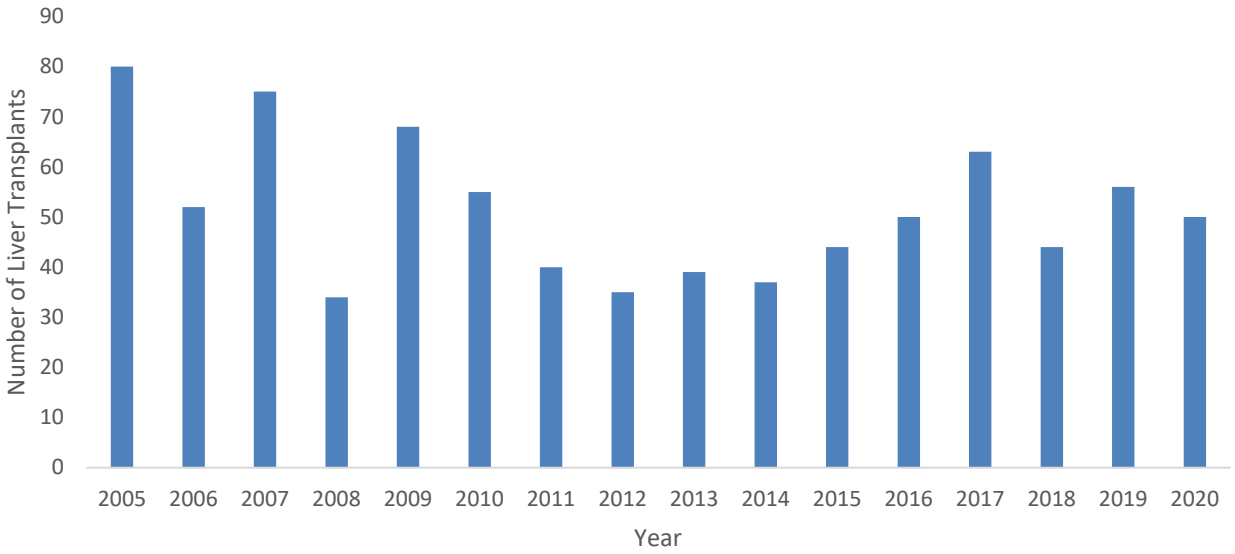
Liver Transplants

106	Number of liver transplants received by Allegheny County residents in 2019-2020	15.1%	HCV positivity among liver transplant recipients tested for HCV in in 2019-2020

Chronic hepatitis C is the leading indication for a liver transplant in the US. Data from United Network for Organ Sharing (UNOS) indicate that from 2001-2020, 863 Allegheny County residents received a liver transplant. Hepatitis C serology results were reported for 589 individuals who received a liver transplant and of these, 184 (31.2%) were HCV-positive.

In 2019-2020, 106 of these Allegheny County residents received liver transplants. Of these recipients, 15.1 percent tested positive for HCV antibodies.

Figure 14. Number of liver transplants for Allegheny County residents, 2005-2020



Date Source: OPTN data as of May 2022

The data reported here have been supplied by the United Network for Organ Sharing as the contractor for the Organ Procurement and Transplantation Network. The interpretation and reporting of these data are the responsibility of the author(s) and in no way should be seen as an official policy of or interpretation by the OPTN or the U.S. Government.

Hepatitis C Testing

2020 Facility Survey

The health Department conducts annual surveillance of hepatitis C testing at facilities serving high risk populations in the county. In 2020, 80 facilities, representing 176 sites, were contacted and 36 facilities, representing 66 sites (38%) responded to the survey. In 2020, 69 percent of respondents provided hepatitis C antibody testing, 61 percent provided hepatitis C RNA testing, and 56 percent provided hepatitis C treatment but not all provided it themselves. For example, 67 percent of drug and alcohol treatment facilities provided hepatitis C RNA testing but just 14 percent provided RNA testing themselves; the others relied on periodic testing by outside agencies (Tables 2-3).

Table 2. Percentage of facilities providing hepatitis C testing and treatment in Allegheny County, by facility type, 2020

Facility	# Facilities Contacted (# Sites Represented)	# Submitted Data (# Sites Represented)	# (%) Providing Ab Testing	# (%) Providing RNA Testing	# (%) Providing Treatment
Blood & Plasma and Dialysis	7 (43)	3 (3)	3 (100%)	2 (67%)	1 (33%)
Drug & Alcohol Treatment	37 (81)	21 (45)	16 (76%)	14 (67%)	13 (62%)
FQHC	19 (34)	4 (10)	3 (75%)	3 (75%)	3 (75%)
HIV Clinics	7 (8)	4 (4)	3 (75%)	3 (75%)	3 (75%)
Homeless	9 (9)	4 (4)	0	0	0
Other	1 (1)	0 (0)	0	0	0
Total	**80 (176)**	**36 (66)**	**25 (69%)**	**22 (61%)**	**20 (56%)**

Table 3. Facilities providing hepatitis C screening themselves in Allegheny County, by facility type, 2020

Facility	# Facilities Submitted Data (# Sites Represented)	# (%) Respondents Doing Own Ab Testing	# (%) Respondents Doing Own RNA Testing	# (%) Respondents Providing Own Treatment
Blood/Plasma and Dialysis	3 (3)	2 (67%)	1 (33%)	0 (0%)
Drug & Alcohol Treatment	21 (45)	3 (14%)	2 (10%)	4 (19%)
FQHC	4 (10)	3 (75%)	1 (25%)	1 (25%)
HIV Clinics	4 (4)	3 (75%)	3 (75%)	3 (75%)
Homeless	4 (4)	0 (0%)	0 (0%)	0 (0%)
Other	0 (0)	0 (0%)	0 (0%)	0 (0%)
Total	**36 (66)**	**16 (44%)**	**7 (19%)**	**8 (22%)**

Treatment

Direct-acting antiviral (DAA) treatment is available and highly effective for treating HCV infection and cures approximately 95 percent of cases (5). It is recommended for nearly all individuals. Recent data shows that of those diagnosed with HCV, only 1 in 3 people with insurance receive timely treatment (5). Individuals on Medicaid were 46 percent less likely to receive treatment than those with private insurance. Further, Medicaid recipients reporting Black or other race were 27 percent less likely to get timely treatment than white Medicaid recipients (5). To reduce HCV-related morbidity and mortality, quickly linking identified cases to treatment is crucial.

ACHD Response

The ACHD is a leader in the Hep C Free Allegheny (HCFA) initiative. Launched in March 2018, HCFA unites public health agencies, private health care organizations, community-based organizations, drug and alcohol treatment facilities, and other partners to identify methods to increase testing for HCV and provide improved access to care and treatment within Allegheny County. The HCFA envisions a county where new hepatitis C infections are rare and quickly identified, and people with hepatitis C are linked to care and treated, reducing hepatitis C related inequities. The HCFA seeks to maximize the health and wellness of all Allegheny County residents living with and at risk for hepatitis C by expanding prevention, harm reduction, education, testing and timely access to care and treatment. The ACHD's Bureau of Data, Reporting and Disease Control leads the HCFA surveillance workgroup and will continue to monitor cases and complications of HCV infection in Allegheny County to inform the work of HCFA.

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