

STATE OF IOWA DEPARTMENT OF
Health AND **Human**
SERVICES

STATE OF IOWA
HEPATITIS C (HCV) END-OF-YEAR
2022 SURVEILLANCE REPORT

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Executive Summary

A FEW POINTS DRAWN FROM THE 2022 HEPATITIS C DATA:

Iowans diagnosed with chronic hepatitis C: In 2022, 675 Iowans were diagnosed with chronic hepatitis C (HCV), a 6% decrease in the number of people newly diagnosed with confirmed, chronic hepatitis C compared to 2021. Despite this, diagnoses among those under the age of 40 increased for the first time since 2018. Overall, the number of diagnoses in 2022 was well below the previous 5-year average of 1,115 diagnoses annually from 2017 to 2021.

Sex: Approximately two-thirds (64%) of Iowans diagnosed with HCV in 2022 were males.

Birth cohort: Thirty-three (33) percent of people diagnosed with HCV in 2022 are 'baby boomers,' or those born between 1945 and 1965, while 33% of diagnoses were among people born after 1982.

Race and ethnicity: Unlike for HIV and other sexually transmitted infections, there are no significant racial and ethnic disparities among Iowans diagnosed with HCV infection. Of all people diagnosed with HCV in 2022, 85% were non-Hispanic white persons, 7% were Hispanic/Latino persons, 6% were non-Hispanic Black/African American persons, 2% were American Indian or Alaska Native persons, and 1% were Asian persons. This closely mirrors the distribution of race and ethnicity in Iowa's population as a whole. Given the disparities seen in Iowa among people with other chronic diseases and infections, this lack of disparity among racial and ethnic minorities could indicate that minority populations may not have the same access to testing as white Iowans. Additionally, the lack of disparities may also reflect the increased association of HCV with use of methamphetamines in Iowa, which is more common among white Iowans than Latino or Black Iowans.

People under 40 years of age diagnosed with hepatitis C: There were 222 people under 40 years of age diagnosed with chronic HCV in 2022, accounting for 33% of all diagnoses. Males represent 58% of people under 40 diagnosed with HCV. This was similar to the proportion reported in 2021. Total diagnoses among people under 40 increased by 5% from the previous year. This was the first increase in 4 years. Diagnoses among people under the age of 40 are significant because they likely represent people more recently infected, and therefore more likely to be using drugs and in situations in which they could transmit HCV to partners via sharing of drug equipment. Of the 222 persons under the age of 40 who were eligible for follow up, 77% reported injection drug use as a mode of exposure.

Iowans diagnosed with HCV since 2000: There were 28,845 Iowans reported to the Iowa Department of Health and Human Services (Iowa HHS) Division of Public Health with current or past HCV from 2000 through 2022. Of these, 22,470 had evidence of chronic HCV. The remaining 6,375 persons were reported to HHS with a positive hepatitis C antibody result (indicating past or current infection) but no confirmation of chronic disease. Of those, it is estimated that 15% to 25% cleared the virus spontaneously, and the remaining 75% to 85% likely have or had chronic HCV. Among Iowans ever diagnosed with chronic HCV, over a third (26%) were baby boomers at time of diagnosis, and 25% were under 40 years of age at diagnosis. Nearly two-thirds (65%) were male, and 89% were white, non-Hispanic people. It should be noted that race and ethnicity information was not reported for 24% of people diagnosed with HCV and reported to HHS after 2000. However, the quality and completeness of reporting data have improved since 2015.

Iowans Diagnosed with HIV and HCV: An analysis of co-infection of HIV and HCV revealed that 348 Iowans had been reported to HHS as having both HIV and chronic HCV. Among them, 255 (65%) were alive at the end of 2022, indicating that approximately 8% of people living with HIV have also been diagnosed with chronic HCV.

ORGANIZATION OF THE SURVEILLANCE REPORT

This end-of-year report presents surveillance data on hepatitis C in Iowa. It describes hepatitis C for the state and of its population subgroups. There are four sections to the report: Section 1 describes **data sources**; Section 2 is a **narrative summary** with key highlights; Section 3 employs **charts, graphs, and tables** to illustrate trends; and Section 4 outlines the **reporting requirements** for hepatitis C in Iowa.

DEFINITIONS

Confirmed chronic HCV means the person has HCV RNA circulating in his or her blood, as confirmed by laboratory testing.

HCV antibody positive means that there is a presence of antibodies to HCV in a person's blood. This indicates that a person was exposed to viral hepatitis C and developed an infection, but approximately 15% to 25% of people will spontaneously clear the virus without treatment. Therefore, 75% to 85% of people with positive antibody tests likely have chronic HCV. An HCV RNA test (i.e., PCR) is needed to confirm chronic infection.

SECTION I: SOURCES OF DATA

CORE HCV SURVEILLANCE DATA

Iowa Disease Surveillance System (IDSS)

HCV data are collected in the Iowa Disease Surveillance System, which is a web-based system designed to facilitate reporting, investigation, and surveillance of communicable diseases in Iowa. HCV is a reportable disease as defined by Iowa Code chapter 139A. Reports of HCV infection are submitted by local public health, private providers, laboratories, and others. IDSS is not a static database, as information on cases can be updated daily. Some records have incomplete data, which may include information about treatment, cure, or spontaneous clearing of the virus.

Hepatitis C test results in IDSS are defined by the following criteria:

Screening tests: (usually reported as positive or negative)

- HCV Antibody by enzyme immunoassay (EIA) (See Interpretation of Signal to Cutoff ratio in lab report)
- Serology – HCV antibody (EIA) (positive, negative, equivocal, or not reactive)
- Serology – Anti-HCV antibody test (positive, negative, equivocal, or not reactive)
- Serology – HCV IgG antibody (EIA) (positive, negative, equivocal, not reactive)
- Serology – HCV IgM antibody (EIA) (positive, negative, equivocal, not reactive)

Confirmatory tests:

- Polymerase Chain Reaction (PCR) (detected, equivocal, indeterminate, not detected, not quantified, or not tested)
- Genotype (detected, not detected, or indeterminate)
- Serology – RNA Qualitative (QL) (positive, negative, equivocal, or not reactive)
- Serology – HCV RNA (positive, negative, or not done)
- Serology – HCV DNA QL Log (positive, negative, equivocal, or indeterminate)

DIAGNOSIS DATE AND COMPLETENESS OF SURVEILLANCE DATA

Only people diagnosed with hepatitis C in Iowa for whom last name, date of birth, sex, and date of diagnosis are known are included in this report. Evaluations of the surveillance system indicate that potentially significant numbers of Iowans with HCV may have never been reported to HHS. In addition, these data do not include information on people who have contracted the virus, but who have not been diagnosed. Nationally, CDC estimates that approximately half of people with HCV are undiagnosed.

HIV and HCV Co-infection

Iowans living with both HIV and HCV were determined by a match between HHS and the Iowa enhanced HIV/AIDS Reporting System (eHARS). All people living with HIV who were first diagnosed while living in Iowa, or who have lived in Iowa at some point in time while living with HIV, or who have accessed care at an Iowa facility and have been reported to the HHS, are included in eHARS. All reports of HCV as of December 31, 2022 were matched to HIV reports in eHARS. Matches were based on date of birth, last and first name. People reported in both databases were considered to be living with both HIV and HCV.

Population Data

The surveillance program has used the 2022 population estimates from the U.S. Census Bureau (<http://www.census.gov>) to calculate rates.

Section 2: Narrative Summary

IOWANS DIAGNOSED WITH HEPATITIS C IN 2022

There were 675 Iowans diagnosed with chronic hepatitis C (HCV) in 2022. This is a decrease of 36 people (5%) from 717 in 2021, and well below the average of 1,142 for the previous five years (2017 through 2021). However, decreases in diagnoses that have been occurring since 2015 have slowed since 2020, and now seem to be leveling off. As seen in Figure 3.1, the annual number of people diagnosed with chronic HCV increased steadily from 2000 through 2014, peaked at 1,644 diagnoses in 2015, and have been decreasing since then.

Case Status

Of the 695 Iowans reported with past or current (chronic) HCV in 2022, 675 (97%) had evidence of a confirmatory (PCR) test indicating chronic HCV, while 20 (3%) had only antibody positive results reported to the Division of Public Health at Iowa HHS. An antibody test for HCV indicates exposure to HCV. It is estimated that 75% to 85% of Iowans with positive antibody results develop chronic HCV, while 15% to 25% clear the virus on their own. In 2022, there were also 2,551 Iowans reported to HHS with a positive antibody result and a negative PCR result. These patients have spontaneously cleared the virus or had a false antibody positive result. Spontaneous clearance may occur during or after the acute infection phase.

Birth Cohort

Thirty-three percent of Iowans (33%) diagnosed with HCV in 2022 were considered to be 'baby boomers,' or those born between 1945 and 1965, while 33% were people born after 1982 (under 40 years of age at diagnosis). The remaining one-third of people diagnosed in 2022 were born between 1966 and 1982 (between the ages of 40 and 56 years of age at diagnosis). A significantly smaller percentage (1%) of people reported with HCV in 2022 were born before 1945.

Diagnoses among people under the age of 40 are significant because they likely represent people more recently infected, and therefore more likely to be using drugs and in situations in which they could transmit HCV to partners via sharing of drug equipment. "Baby boomers," persons born between 1945 and 1965 according to the CDC, account for approximately three fourths of all chronic HCV infections among adults in the United States. Although effective treatments are available to cure HCV infection, most persons with HCV do not know they are living with HCV, do not receive needed care (e.g., education, counseling, and medical monitoring), and are not evaluated for treatment. HCV testing is the first step toward improving health outcomes for persons with HCV.

Sex

In 2022, 64% of Iowans diagnosed with chronic HCV were males. An analysis of people diagnosed with HCV under the age of 40 reveals a similar distribution, with males representing 58% of diagnosed Iowans. Hepatitis C diagnoses among women under the age of 40 is important to note, as HCV can be transmitted perinatally by women to their infants.

Race and Ethnicity

Unlike for HIV and other sexually transmitted infections, there are not significant racial and ethnic disparities among lowans diagnosed with HCV. In 2021, 85% of people diagnosed with hepatitis C were non-Hispanic white persons, 6% were non-Hispanic Black/African American persons, 6% were Hispanic or Latino persons, 2% were American Indian or Alaska Native persons, and 1% were Asian persons. This closely matches the racial and ethnic distribution of lowans overall. However, given the racial disparities among people diagnosed with HCV reported nationally, it is possible that African Americans and other minorities are not being tested at the same rate as white lowans. On the other hand, HCV in Iowa is associated with use of methamphetamine. More than 90% of people in Iowa who were admitted for treatment of methamphetamine use at Iowa's publicly funded treatment sites were white in 2020 (SAMHSA, Treatment Episode Data Set, 2020), and the number of people admitted with methamphetamine use increased steadily from 2008 to 2019. In 2020, meth use was second only to alcohol among people treated at these sites.

Iowans Under 40 Diagnosed with Hepatitis C in 2022

There were 222 lowans under the age of 40 who were diagnosed with chronic HCV in 2022, representing 33% of all lowans diagnosed. Among those under 40 years of age diagnosed in 2022, less than 1% were under 20 years of age, 30% were between the ages of 20 and 29 years of age, and 69% were between 30 and 39 years of age. An analysis of surveillance data indicated that, of the 222 persons under 40 who were eligible for follow up, 77% of people disclosed injection drug use to their health care providers. Race and ethnicity of lowans under 40 diagnosed with HCV was similar to the overall population of Iowa. Eighty-three percent of lowans under 40 diagnosed with HCV in 2021 identified as white, 9% identified as Latino, 6% identified as Black/African American, and 1% identified as Asian.

Iowans Ever Diagnosed with HCV

There have been 28,845 lowans reported to HHS with current or past HCV. Of these, 22,470 had evidence of chronic HCV. This means that a positive HCV RNA result was reported for these lowans. Over half (60%) were baby boomers at diagnosis while 15% were under 40 years of age at diagnosis. Nearly two-thirds (65%) were male, and 89% were white and non-Hispanic. It should be noted that race and ethnicity information were not reported for 24% of people diagnosed with HCV and reported to the Division of Public Health at Iowa HHS since 2000. Active surveillance of hepatitis C did not begin at the Division of Public Health at Iowa HHS until 2015, and this limited the completeness of data reporting.

Deaths of People with Hepatitis C

There were 4,369 deaths among lowans living with hepatitis C from 2000 to 2022. The causes of death were not necessarily related to their hepatitis C diagnoses. In general, the number of deaths among lowans diagnosed with hepatitis C increases each year, with exceptions in 2014, 2018, and 2021. The number of deaths among people with HCV increased by 18% from 2019 to 2020 and by 11% from 2021 to 2022. Mortality related to HCV and among people living with HCV is likely to be underestimated, as death certificates often underreport HCV infection, and approximately half of people with HCV are undiagnosed.

There were few deaths where hepatitis C was listed as the primary cause of death. In 2021, the most recent year for which we have data, only seven lowans died directly as a result of hepatitis C. The number of deaths peaked at 46 in 2013, and have been decreasing fairly steadily since then.

HIV and HCV Co-infection

An analysis of lowans co-infected with HIV and HCV showed that 343 lowans have been reported to HHS as diagnosed with both HIV and chronic HCV since 2000. Among them, 250 (73%) were alive at the end of 2022, indicating that 8% of lowans living with HIV have also been diagnosed with chronic HCV. Ryan White Part C clinics have been making concerted efforts to treat hepatitis C in lowans living with HIV. The Benefits and Drug Assistance Program (BDAP), a part of the Ryan White Part B Program at Iowa HHS, covers hepatitis C treatment for people who are diagnosed with HIV and meet the program's income guidelines. Of people who were co-infected with HIV and HCV, 80% were males, and 63% were white, non-Hispanic people. It is important to note that while only 6% of lowans diagnosed with HCV identify as Black or African American, 21% of lowans with both HIV and HCV are Black or African American. This may provide further evidence that testing for HCV among Black/African American lowans needs to be increased.

Estimation of Prevalence of HCV in Iowa

As of December 31, 2022, there have been 28,845 lowans reported to HHS with past or current (chronic) hepatitis C infection. Among these lowans, 22,470 had evidence of chronic infection, while 6,375 had only positive antibody (screening) results reported. The Centers for Disease Control and Prevention (CDC) estimate that 15% to 25% of people with HCV clear the infection spontaneously, so it is likely that 75% to 85% of the 6,375 persons with only antibody results may actually have chronic HCV infection. In addition, CDC estimates that about 40% of people with HCV have not yet been diagnosed.¹ That gives a prevalence estimate of 45,419 lowans with chronic hepatitis C infection. However, this estimate includes those who may have been treated and cured of chronic hepatitis infection.

Hepatitis C Surveillance Activities

Active public health surveillance of hepatitis C virus began in 2015 in the Bureau of HIV, STI, and Hepatitis at HHS. At that time, the Division of Public Health conducted surveillance follow up with healthcare providers of lowans diagnosed with HCV who were 30 years of age or younger to collect information on injection drug usage. The cutoff age of 30 was chosen because other states were reporting increases in diagnoses in people 30 and under. However, analyses of Iowa's hepatitis C surveillance data indicate that lowans aged 30 to 39 years were also experiencing increases in diagnoses, potentially associated with the expanding number of people who inject drugs related to the opioid epidemic. Therefore, the cutoff age for HCV surveillance follow up was increased to 39, effective January 1, 2017.

Starting January 1, 2018, the Division of Public Health began surveillance follow up with healthcare providers for all lowans reported to HHS with hepatitis C positive test results who did not have evidence of a confirmatory test. The purpose of this follow up is to educate health care providers on testing recommendations and encourage them to provide the confirmatory testing to patients. If health care providers cannot reach a patient, the Viral Hepatitis Epidemiologist at the Division of Public Health will attempt to contact the patient directly to discuss options for confirmatory testing.

¹ Yehia, BR, AJ Schranz, CA Umscheid, and V Lo Re, III. 2014. The treatment cascade for chronic hepatitis C virus infection in the United States: A systematic review and meta-analysis. *PLoS One*. 2014; 9(7): e101554. Published online 2014 Jul 2. doi: [10.1371/journal.pone.0101554](https://doi.org/10.1371/journal.pone.0101554)

Section 3: Tables and Figures

TABLE 3.1 IOWANS DIAGNOSED AND REPORTED WITH CHRONIC HEPATITIS C IN 2022

Characteristics	Iowans Diagnosed with Chronic HCV	
	Number	(%)
Sex at Birth		
Male	431	(64)
Female	244	(36)
Age at Diagnosis		
Under 20 years of age	1	(<1)
20 – 29 years of age	67	(10)
30 – 39 years of age	154	(23)
40 – 49 years of age	131	(19)
50 – 59 years of age	139	(21)
60 – 69 years of age	150	(22)
70 years of age and older	33	(5)
Birth Cohort Year		
Under 40 years of age (0 – 39 years of age)	222	(33)
Baby Boomers (57 – 77 years of age)	224	(33)
Born before 1945 (78 years of age and older)	4	(<1)
All other ages (40 – 56 years of age)	225	(33)
Ethnicity/Race		
Hispanic/Latino, All Races	42	(6)
Not Hispanic, White	575	(85)
Not Hispanic, Black/African American	41	(6)
Not Hispanic, Asian	5	(1)
Not Hispanic, Native Hawaiian/Pacific Islander	1	(<1)
Not Hispanic, American Indian/Alaska Native	11	(2)
Not Hispanic, Multi-race	0	(0)
Totals – Confirmed HCV	675	(100)
Case Status		
Confirmed HCV (positive confirmatory result)	675	-
Past or current HCV (positive screening test)	20*	-
Totals – Confirmed and unconfirmed	695	

*Data for 20 people are not included as they have not been confirmed as living with HCV

TABLE 3.2 IOWANS UNDER AGE 40 DIAGNOSED AND REPORTED WITH CHRONIC HEPATITIS C IN 2022

Characteristics	People reported with HCV Diagnosis	
	Number	(%)
Sex at Birth		
Male	132	(59)
Female	90	(41)
Age at Diagnosis		
Under 20	1	(<1)
20 – 24	16	(7)
25 – 29	51	(23)
30 – 34	74	(33)
35 – 39	80	(36)
Reported Injection Drug Use		
Yes	170	(77)
No	29	(13)
Unknown	23	(10)
Not Assessed (patient under age 13)	0	(0)
Ethnicity/Race		
Hispanic/Latino, All Races	20	(9)
Not Hispanic, White	184	(83)
Not Hispanic, Black/African American	13	(6)
Not Hispanic, Asian	1	(<1)
Not Hispanic, Native Hawaiian/Pacific Islander	0	(0)
Not Hispanic, American Indian/Alaska Native	4	(2)
Not Hispanic, Multi-race	0	(0)
Totals – Confirmed HCV	222	(100)
Case Status		
Confirmed HCV (positive confirmatory result)	222	-
Past or current HCV (positive screening test)	4*	-
TOTALS	226	(100)

*Data for four people are not included as they have not been confirmed as living with HCV

TABLE 3.3 IOWANS DIAGNOSED AND REPORTED WITH CHRONIC HCV FROM 2000 THROUGH 2022

Characteristics	People reported with HCV Diagnosis	
	Number	(%)
Sex at Birth		
Male	14,497	(65)
Female	7,973	(35)
Age at Diagnosis		
Under 40 years of age	5,508	(25)
Under 20 years of age	220	(4)
20 – 29 years of age	1,973	(36)
30 – 39 years of age	3,315	(60)
40 – 49 years of age	5,344	(24)
50 – 59 years of age	7,568	(34)
60 – 69 years of age	3,436	(15)
70 years of age and above	614	(3)
Birth Year		
Born after 1981	3,373	(15)
Born 1945 - 1965 (Baby Boomer)	13,502	(60)
Born 1966 – 1980 (Gen X)	4,906	(22)
Born before 1945	689	(3)
Ethnicity/ Race*		
Hispanic/Latino, All Races	532	(3)
Not Hispanic, White	15,435	(89)
Not Hispanic, Black/African American	1,035	(6)
Not Hispanic, Asian	201	(1)
Not Hispanic, Native Hawaiian/Pacific Islander	11	(<1)
Not Hispanic, American Indian/Alaska Native	150	(1)
Not Hispanic, Multi-race	32	(<1)
Case Status		
Confirmed HCV (positive confirmatory result)	22,470	-
Past or current HCV (positive screening test)	6,375	-
TOTAL	28,845	(100)

*Race and ethnicity data were missing for 24% (n=5,104) of case reports from 2000 through 2022. The percentages for racial and ethnic groups were calculated using a denominator of 17,396.

TABLE 3.4 IOWANS DIAGNOSED & REPORTED WITH HIV AND CHRONIC HCV, 2000 – 2022

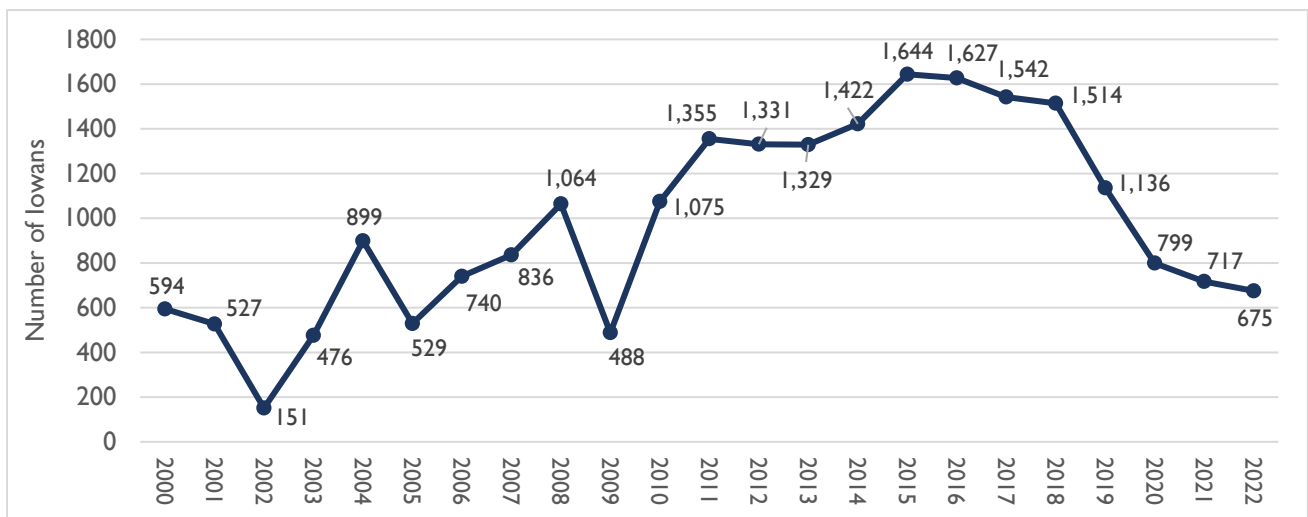
Characteristics	People with HIV and HCV	
	Number	(%)
Sex at Birth		
Male	199	(80)
Female	51	(20)
Birth Cohort Year		
Born after 1981	53	(21)
Born between 1966 and 1980	89	(36)
Born between 1945 and 1965 (Baby Boomers)	107	(43)
Born before 1945	1	(<1)
Ethnicity/ Race		
Hispanic/Latino, All Races	28	(11)
Not Hispanic, White	158	(63)
Not Hispanic, Black/African American	52	(23)
Not Hispanic, Asian	7	(3)
Not Hispanic, Native Hawaiian/Pacific Islander	0	(0)
Not Hispanic, American Indian/Alaska Native	2	(<1)
Not Hispanic, Multi-race	3	(1)
Vital Status (as of Dec. 31, 2021)		
Alive	250	-
Deceased	93	-
TOTALS	343	(100)

Trends in Iowans Diagnosed with Hepatitis C

NUMBER OF IOWANS DIAGNOSED WITH CHRONIC HCV

Diagnoses of chronic hepatitis C infection peaked in 2015 at 1,644 cases. The number of Iowans diagnosed with chronic, confirmed hepatitis C in 2022 (675) is well below the 5-year average of 1,142 (2017 through 2021), and a 5% decrease since 2021. The decrease in 2022 was among all age cohorts.

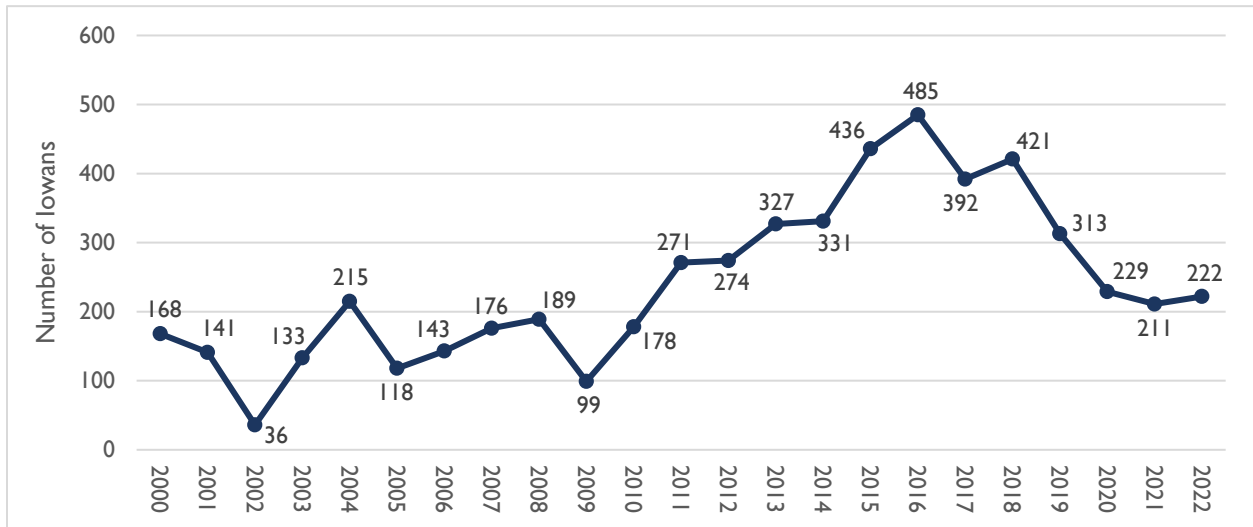
FIGURE 3.1 NUMBER OF IOWANS DIAGNOSED WITH CHRONIC HCV: 2000 - 2022



NUMBER OF IOWANS UNDER 40 DIAGNOSED WITH CHRONIC HCV

There were 222 Iowans under 40 years of age diagnosed with chronic HCV in 2022, representing 33% of all Iowans diagnosed. The number of diagnoses represents a 5% increase compared to 2021, but it remains well below the peak of 485 reached in 2016.

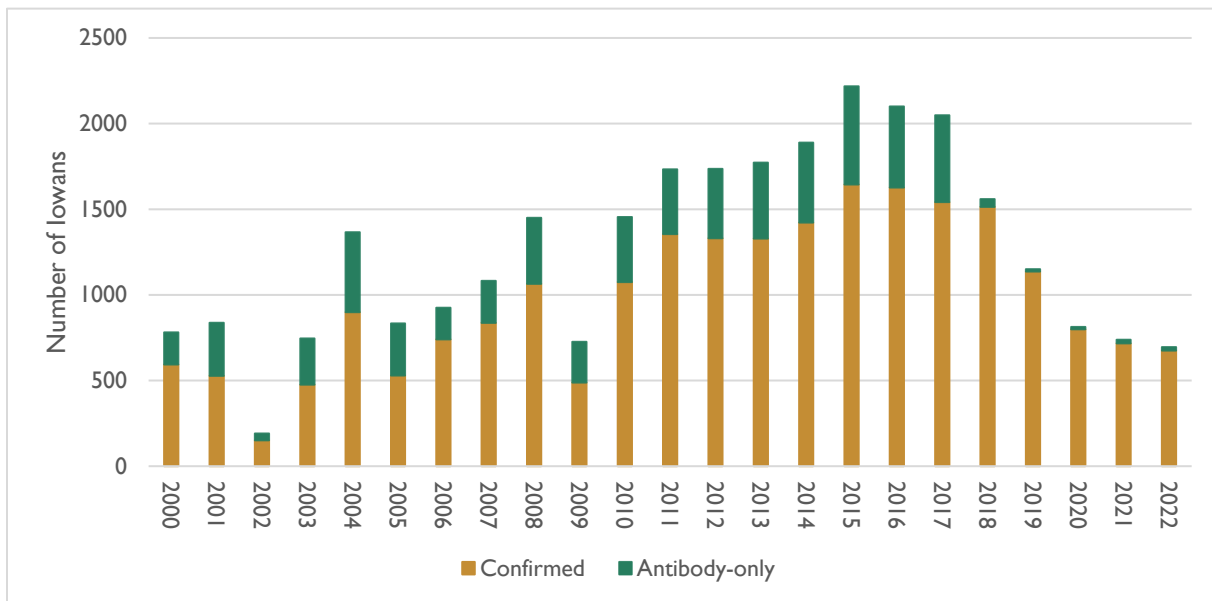
FIGURE 3.2 NUMBER OF IOWANS UNDER 40 YEARS OF AGE DIAGNOSED WITH CHRONIC HCV: 2000 – 2022



PROPORTION OF IOWANS REPORTED WITH CONFIRMED OR UNCONFIRMED (ANTIBODY) HCV

To determine whether a person has chronic HCV, a confirmatory (i.e., RNA PCR) test must be administered. In 2022, 97% of the 695 lowans reported to the HHS with HCV had evidence of a positive confirmatory test, while 3% (20) had only screening (antibody) results reported. Beginning in January 2018, HHS began following up with medical providers who report patients with a hepatitis C antibody positive result without evidence of a confirmatory result. The purpose of this follow up is to inform providers of the testing algorithm for hepatitis C to ensure all lowans with a hepatitis C positive screening result receive confirmatory testing.

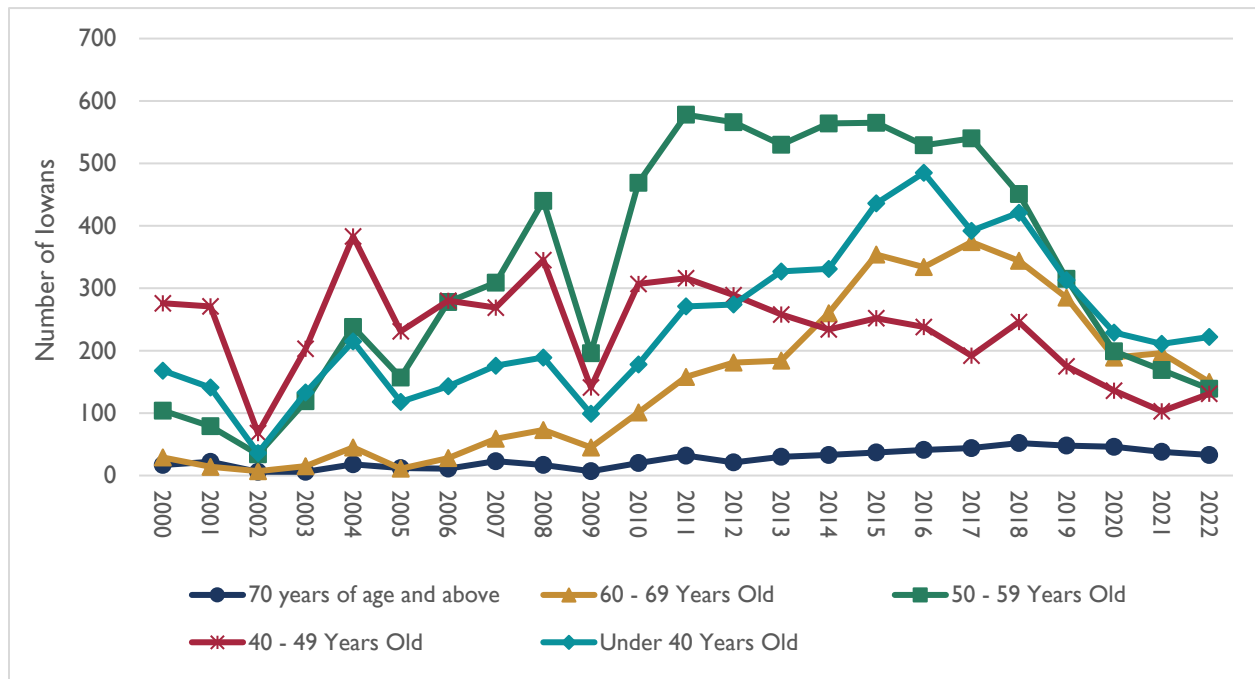
FIGURE 3.3 NUMBER OF IOWANS REPORTED WITH ANTIBODY-ONLY OR CONFIRMATORY HCV TEST RESULTS



NUMBER OF IOWANS REPORTED WITH CHRONIC HCV BY AGE GROUP

The largest single group of people who are diagnosed with hepatitis C had been those aged 50 to 59 years. However, this age group has seen a fairly continuous decrease in diagnoses since the peak in 2011. As of 2022, lowans under the age of 40 have become the group with the most diagnoses. There were 222 lowans under 40 diagnosed with chronic HCV in 2022, which was a 5% increase compared to 2021, and was the most of any age group represented below. However, lowans who were 40 to 49 years of age experienced the steepest increase from 2021 to 2022. There were 131 lowans ages 40 to 49 diagnosed with chronic HCV in 2022, representing a 27% increase from 2021. lowans between 50 and 59 years of age experienced 139 diagnoses in 2022, representing a 18% decrease from 2021. lowans 60 to 69 older experienced a 23% decrease in diagnoses in 2022, with 150 diagnoses. lowans 70 years of age and above experienced a slight decrease in diagnoses from 2021 to 2022, with 33 diagnoses.

FIGURE 3.4 DIAGNOSIS OF HCV BY AGE GROUP IN IOWANS: 2000 THROUGH 2022

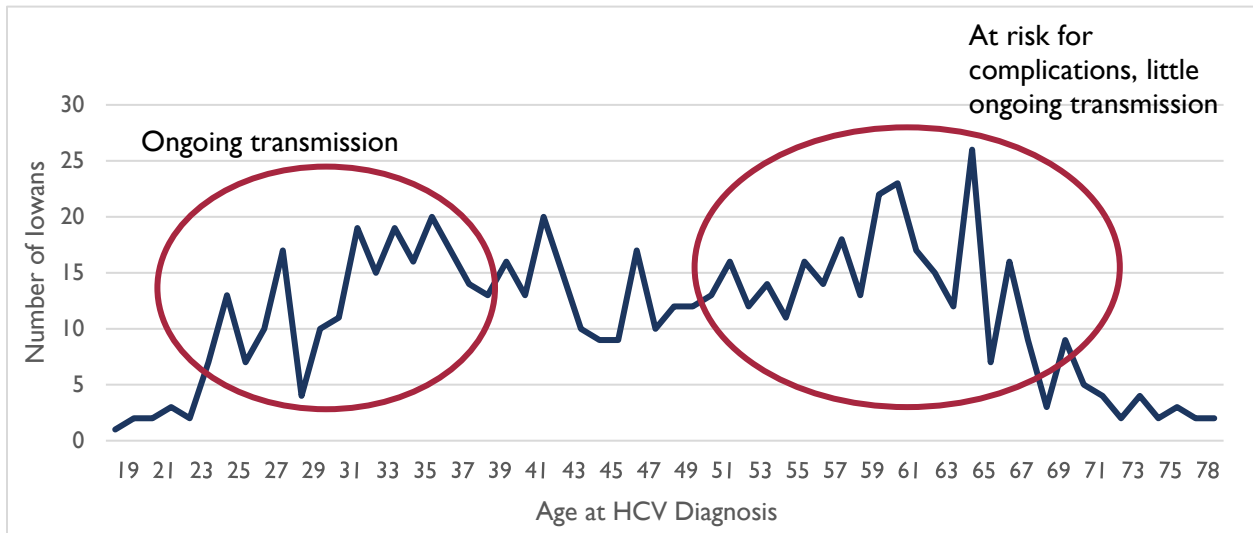


AGE AT DIAGNOSIS OF HCV IN 2022

A distribution of lowans diagnosed with HCV in 2022 by age reveals the two groups of lowans on which we have focused in this report. lowans under 40 years of age at diagnosis with HCV represent those who likely contracted the virus from current or recent injection drug use and who are likely at risk for transmitting to others, although they are less likely to have yet experienced health complications related to HCV. lowans older than 50 years of age diagnosed with HCV are more likely to have acquired the virus decades ago and are at higher risk for immediate health complications. Many of these “baby boomers” may have ceased injecting drugs years previously.

However, as this report and the graph below has revealed, there is no longer a bimodal distribution of people being diagnosed with HCV (i.e., higher numbers of people under 40 and people who are baby boomers). There are now equal numbers of people who are under 40 years of age, who are from 40 to 57 years of age, and who are considered to be baby boomers.

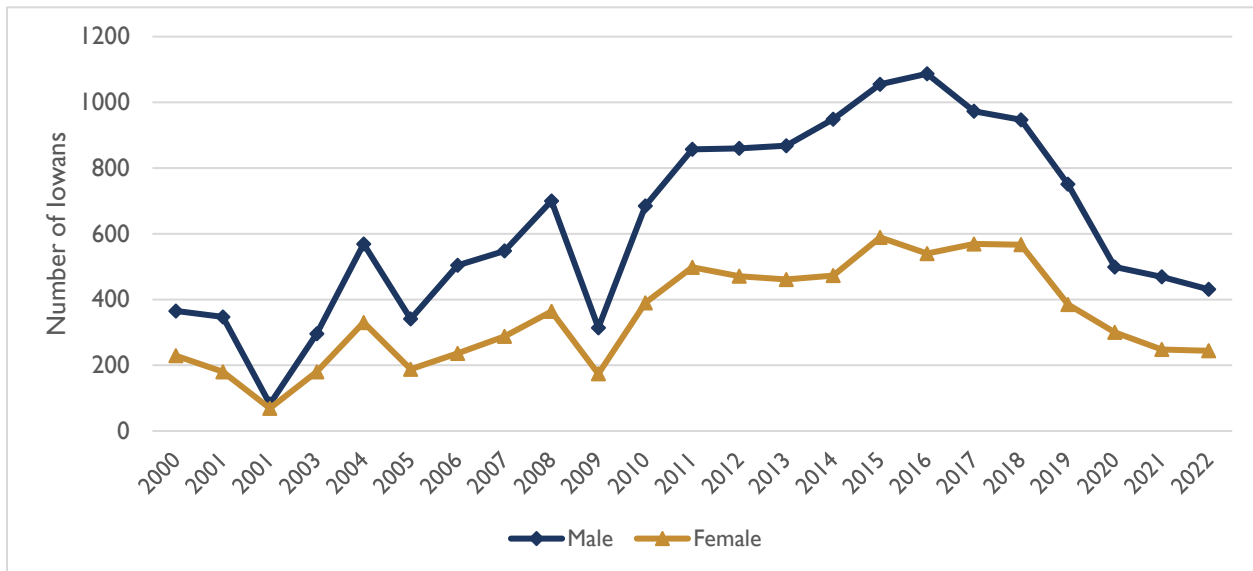
FIGURED 3.5 IOWANS DIAGNOSED WITH HCV IN 2022, BY AGE



NUMBER OF IOWANS DIAGNOSED WITH CHRONIC HCV IN 2022, BY SEX

Hepatitis C virus disproportionately impacts males in Iowa. From 2000 through 2022, there were about 1.8 males diagnosed for every female diagnosed. This gap has narrowed since 2016. It is important to note that this ratio varies by age, as well. For people under 40, there were only 1.3 males diagnosed to every female diagnosed.

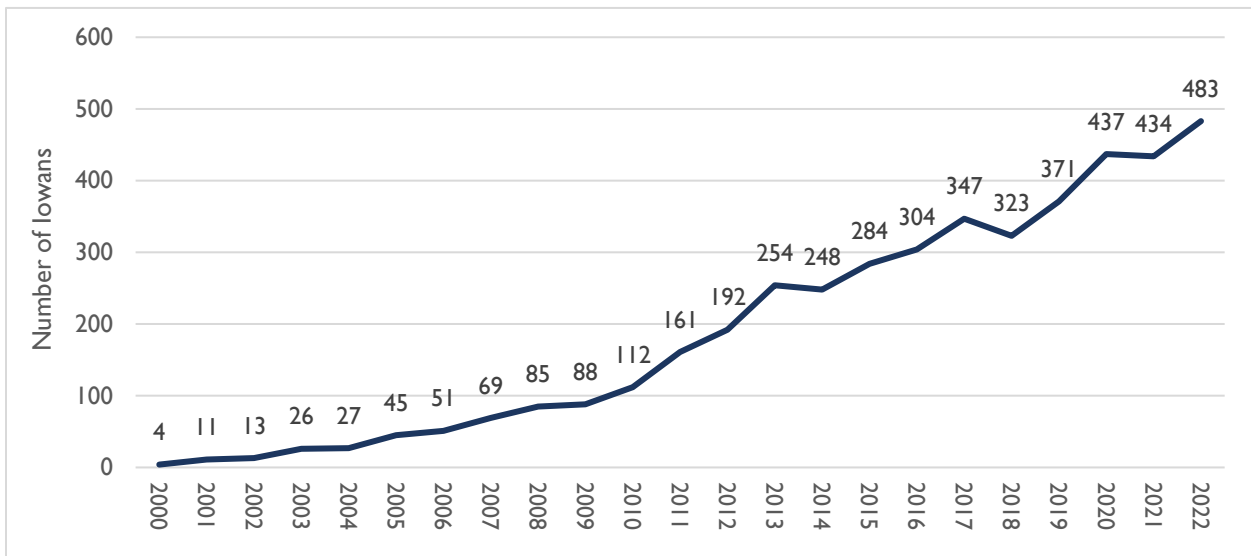
FIGURE 3.6 IOWANS DIAGNOSED WITH HCV BY SEX: 2000 THROUGH 2022



DEATHS OF IOWANS WITH HEPATITIS C

The number of Iowans with hepatitis C who died has increased fairly steadily since 2000. There was a slight decrease in 2018, when there were 323 Iowans with hepatitis C who died. Deaths are discovered by matching the HCV surveillance data with Vital Records at HHS and with the National Death Index at CDC. An analysis of death certificate data indicated that between 2000 and 2022, there were 4,369 Iowans who died from hepatitis C-related causes (i.e., hepatitis C was listed on the death certificate). Mortality from hepatitis C is likely to be underestimated, as death certificates often underreport HCV infection, and approximately half of all people with hepatitis C are undiagnosed.

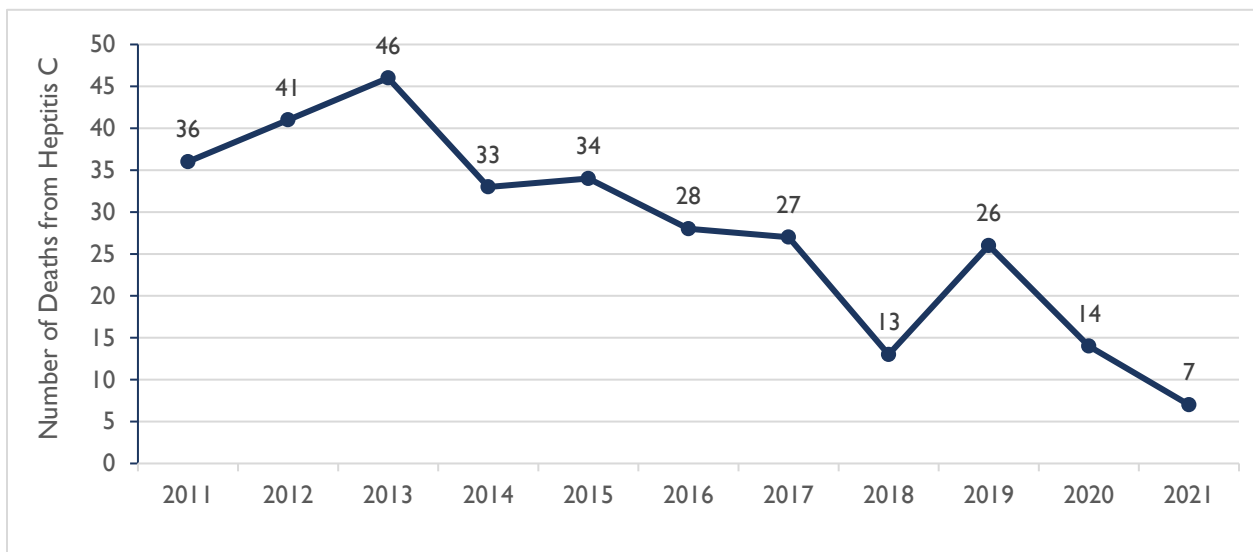
FIGURE 3.7 DEATHS OF IOWANS WITH HCV: 2000 THROUGH 2022



DEATHS WHERE HEPATITIS C WAS LISTED AS A PRIMARY CAUSE

The Bureau of HIV, STI, and Hepatitis at Iowa HHS identified a goal of reducing deaths and improving the health of people living with hepatitis in the 2016-2021 statewide hepatitis plan. The primary objective was to reduce the number of deaths with chronic viral hepatitis listed as the primary cause of death in Iowa. From 2011 through 2013, there was a steady increase in the number of deaths with chronic hepatitis C listed as primary cause of death. In 2013, the FDA approved new medications to treat chronic hepatitis C. With the success of these medications and with new medications being introduced, hepatitis C deaths have continued to decrease over the years.

FIGURE 3.8 DEATHS WHERE HEPATITIS C WAS LISTED AS A PRIMARY CAUSE



IOWANS DIAGNOSED WITH HIV AND CHRONIC HCV

In the United States, it is estimated that 25% of people with HIV also have hepatitis C.² Co-infection with HIV and HCV is particularly common among people who inject drugs. Iowa is a low-prevalence state for HIV disease. At the end of 2022, there were 3,228 people diagnosed and living with HIV in Iowa. People who inject drugs represented 19% of people diagnosed with HIV in 2020 and 2021, and 20% in 2022.

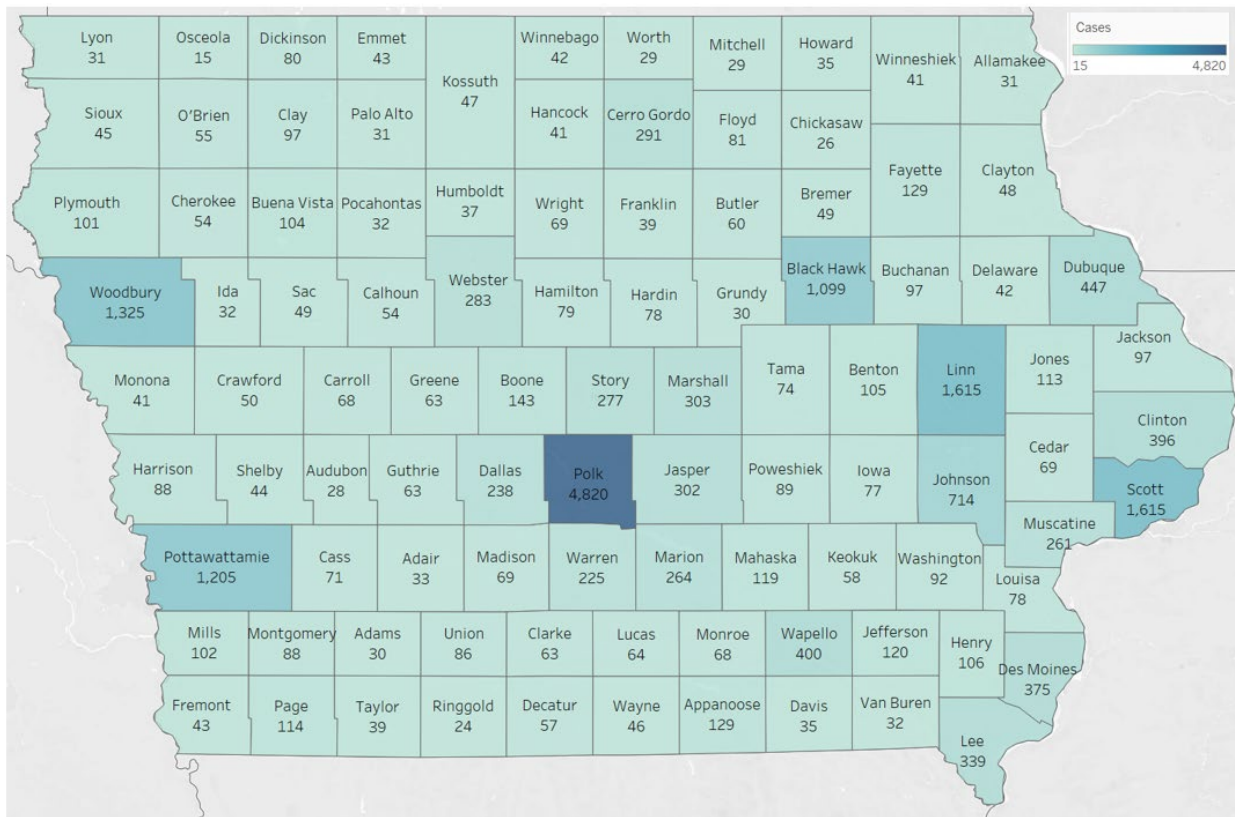
To ascertain co-diagnoses of HIV and HCV among Iowans, the HIV surveillance system was matched with the HCV surveillance system for Iowans diagnosed through 2022. A total of 348 persons were ever reported to Iowa HHS as having both HIV and chronic HCV. Of those people, 255 were alive at the end of 2022 and living in Iowa, indicating that 8% of Iowans with HIV have also been diagnosed with chronic HCV. This is likely an underestimate, as previous analyses have indicated that up to half of people co-diagnosed had not been reported to HHS as having HCV. Among people co-diagnosed with HIV and HCV, 78% were males, and 62% were white and non-Hispanic. It is important to note that while only 6% of Iowans diagnosed with HCV identify as Black or African American, 15% of people who were co-diagnosed with HIV and HCV were Black or African American. This relatively high proportion may indicate that HCV infections among Black/African American Iowans without HIV are not getting diagnosed. This may be the case if Black and African American Iowans are not being tested for HCV at the same rate as white Iowans.

² Centers for Disease Control and Prevention. (2015) *HIV/AIDS and Viral Hepatitis*. Retrieved from www.cdc.gov.

DISTRIBUTION OF IOWANS DIAGNOSED WITH CHRONIC HCV

The map below shows the county of residence for lowans reported with chronic HCV from January 1, 2000, through December 31, 2022. It indicates the counties where people were living at the time of diagnosis. There were 716 lowans reported without residence information, so this map reflects 21,754 out of the 22,470 lowans who have been reported with hepatitis C. The ten most populous counties are home to 61% of lowans who have been reported with HCV. This compares to 53% of lowans who live in those ten counties (Black Hawk, Dallas, Dubuque, Johnson, Linn, Polk, Pottawattamie, Scott, Story, and Woodbury).

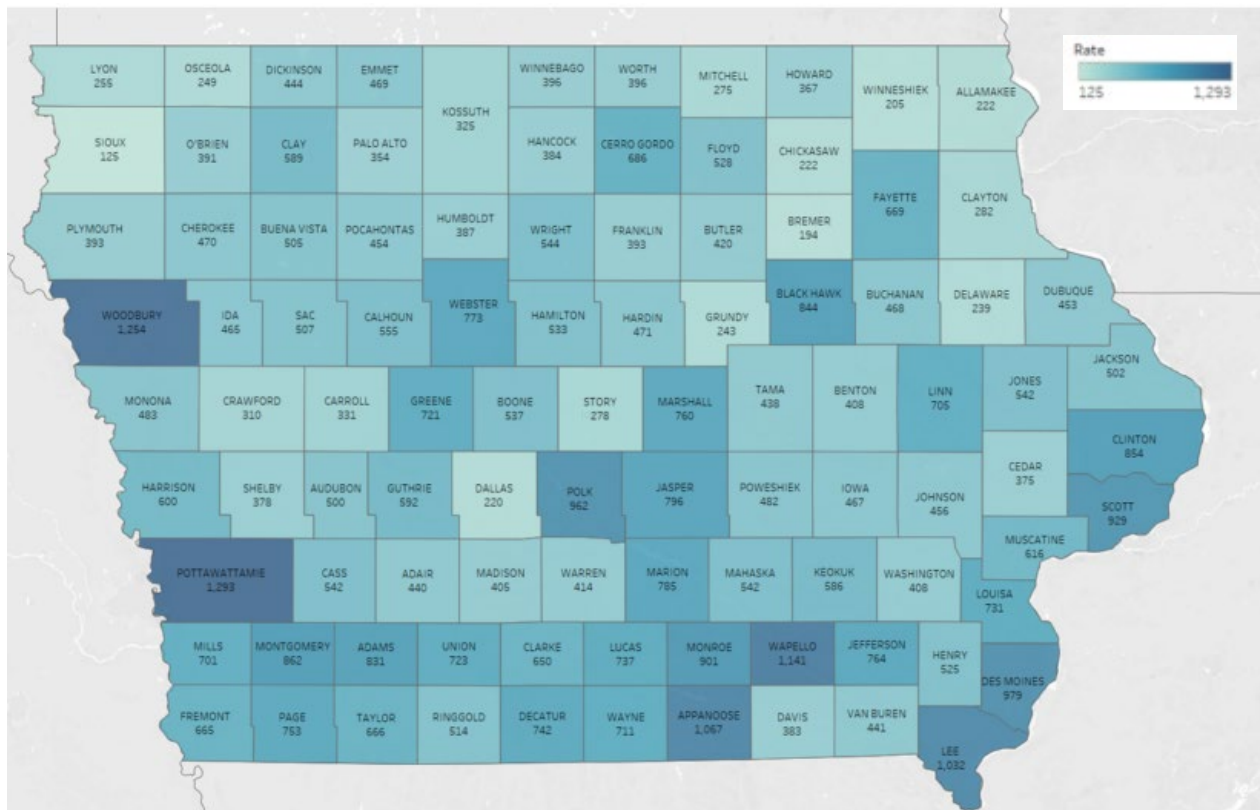
FIGURE 3.9 NUMBER OF IOWANS DIAGNOSED WITH HCV FROM 2000 THROUGH 2022, BY COUNTY OF RESIDENCE AT DIAGNOSIS



PREVALENCE OF HCV IN IOWA

Figure 3.10 shows the prevalence of HCV per 100,000 population by county for people diagnosed from January 1, 2000, through December 31, 2022. Rates were calculated based on counties where persons were living at the time of diagnosis. Woodbury County (Sioux City) in northwest Iowa and Pottawattamie County (Council Bluffs) in southwest Iowa have the highest rates at 1,254 and 1,293 cases of HCV per 100,000 population, respectively. These are followed by Wapello County (Ottumwa), Appanoose (Centerville) and Lee County (Keokuk) in far southeast Iowa. The state's overall prevalence is 680 cases per 100,000 population.

FIGURE 3.10 PREVALENCE OF HCV PER 100,000 POPULATION BY COUNTY OF RESIDENCE AT DIAGNOSIS



State of Iowa Chronic HCV Rate: 680 per 100,000 population
County populations are based on the 2022 U.S. Census estimates

Section 4: Reporting Patients with HCV in Iowa

All forms of viral hepatitis are reportable to the Iowa Department of Health and Human Services (HHS), pursuant to Iowa Code section 139A.3. Below are detailed the reportable events related to hepatitis C.

What laboratory results should be reported?

Screening tests: Anti-HCV: Positive or reactive only

HCV Antibody by EIA antibody

Serology – HCV antibody (EIA)

Serology – Anti-HCV antibody test

Serology – HCV IgG antibody (EIA)

Serology – HCV IgM antibody (EIA)

Confirmatory Testing: HCV RNA, NAT, PCR, and Genotyping: All results

Polymerase Chain Reaction (PCR) (detected, equivocal, indeterminate, not detected, not quantified, or not tested)

Genotype (detected, not detected, or indeterminate)

Serology – RNA Qualitative (QL) (positive, negative, equivocal, or not reactive)

Serology – HCV RNA (positive, negative, or not done)

Serology – HCV DNA QL Log (positive, negative, equivocal, or indeterminate)

Medical providers who diagnose people with HCV (acute or chronic) and laboratories who find positive results for viral are required to report. Many laboratories now have automated processes (e.g., Electronic Laboratory Reporting) to report their results. The technology for automated reporting from medical providers is not fully developed at this time.

The most common method of reporting by medical providers is by completing the form titled, “Iowa Disease Reporting Card” located at this link. The form may be faxed in to the number located at the top of the form. For questions, please contact Shane Scharer at (515) 657-1129.

See <https://hhs.iowa.gov/hivstihep/hep> for this report.