



# Viral hepatitis annual report

2023

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## Report highlights

- Hepatitis C is the most common health problem reported in Utah.
- Cases of hepatitis A and B remain low, but affect non-white Utahns more often.
- Hepatitis C (acute and chronic) infection occurred in 30-39 year olds more often than in the baby boomer population and at more than double the rate of the general population.
- Incarceration and risks associated with incarceration are the most common risk factors for hepatitis C.
- Only 16% of those people diagnosed with hepatitis C cases are treated within the year of diagnosis.

## Introduction

Hepatitis is inflammation of the liver. Hepatitis A virus (HAV), hepatitis B virus (HBV), and hepatitis C virus (HCV) are some of the most common viruses that cause hepatitis. Hepatitis A is a vaccine-preventable liver infection caused by the hepatitis A virus. It is spread when someone unknowingly ingests the virus through close personal contact with an infected person or through consumption of contaminated food or drink. Most people with hepatitis A do not have long-lasting illness. HBV is spread through blood, sexual fluid, or other body fluids and is vaccine-preventable. HCV is spread through blood only. While HAV and HBV are vaccine-preventable, there are currently no treatments to cure the illness. There is no vaccine available for HCV, but medication that works very well is available to clear the virus from the body. Illness from HBV and HCV may last a few weeks (acute) or become a lifelong illness (chronic). Acute HBV and HCV infection can range in severity from a very mild illness with few or no symptoms to a serious condition which requires hospitalization, while chronic infection can cause serious health problems, including liver disease, liver failure, liver cancer, and even death. Symptoms, including fever, fatigue, loss of appetite, nausea, vomiting, dark urine, gray-colored stool, joint pain, and yellow skin and eyes, are common with HAV but rare with HBV and HCV.


The Utah Department of Health and Human Services (DHHS) Disease Response, Evaluation, Analysis, and Monitoring (DREAM) Program's Viral Hepatitis Program manages and, with the support of local health departments, conducts surveillance for viral hepatitis cases,

which are reportable conditions in Utah through Utah Administrative Code, Title R386-702 [Communicable Disease Rule](#) (CD rule). Labs reporting electronically are required to report both negative and positive viral hepatitis results. More than 90% of labs in Utah report electronically. Demographics, risk factors, and laboratory results are collected in Utah's surveillance system, EpiTrax. This report presents hepatitis A, B, and C surveillance data collected by DHHS in 2023.

## State demographics

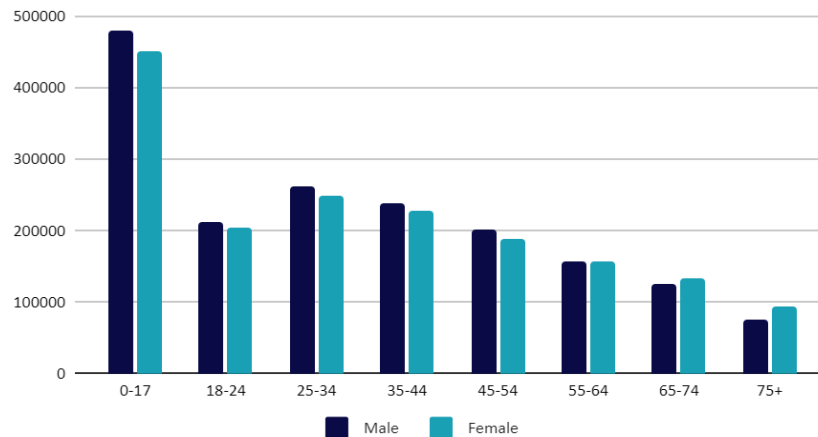
Utah is primarily a desert state with most of the population and resources gathered along the Wasatch mountains near the natural snowmelt watersheds. A large majority of the state's land is considered rural and 7 of the 13 local health district's (LHD) populations make up less than 3% of the entire state's population. As of July 1, 2023, the state's total population was estimated at 3,456,483 and divided evenly between male and female residents with a large youth population and healthy reproductive-age population.

**Population by local health district (LHD), 2023**

LHD	Population (%)	LHD Map
Bear River	205,674 (6)	
Central	82,848 (2)	
Davis	377,381 (11)	
Salt Lake County	1,220,570 (35)	
San Juan	14,956 (<1)	
Southeast	40,530 (1)	
Southwest	285,420 (8)	
Summit	43,492 (1)	
Tooele	79,409 (2)	
TriCounty	57,638 (2)	
Utah	727,756 (21)	
Wasatch	37,934 (1)	
Weber-Morgan	282,875 (8)	
<b>Total</b>	<b>3,456,483 (100)</b>	

Note: LHD Map from "Local Health Districts" by The Utah Department of Health and Human Services, Division of Data, Systems, and Evaluation, 2022, Public Health Indicator Based Information System (IBIS), "Map of Utah's 13 local health districts" (<https://ibis.health.utah.gov/ibisph-view/about/LocalHealth.html>).

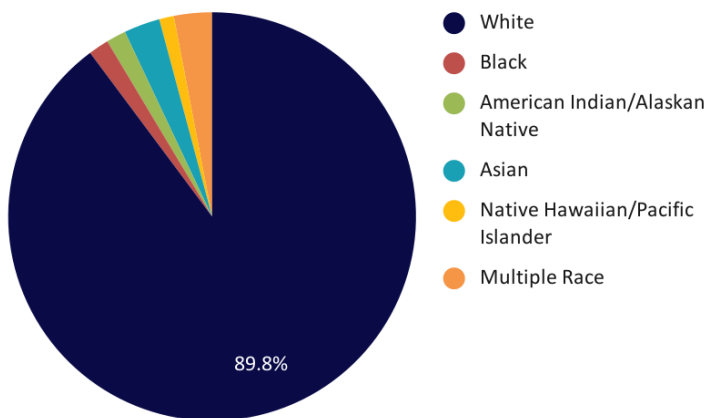
Population by age group and sex, 2023



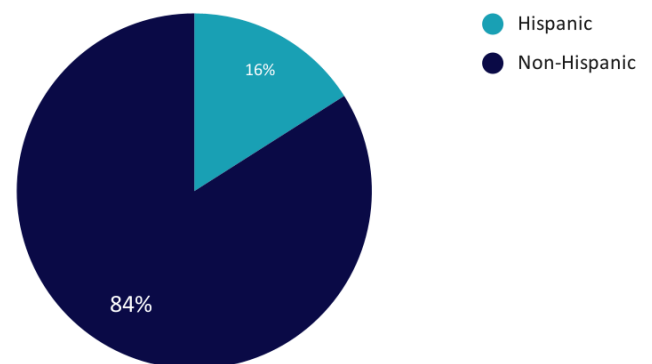
### Race and ethnicity

Utahns who identify as White make up 90% of the population. The next largest racial group is persons who are Asian, at only 3%. Utah also has a growing number of residents who identify as Hispanic (of any race) at about 15% (IBIS US Census Bureau, 2023).

Population proportion by race, 2023



Population proportion by ethnicity, 2023



## Hepatitis A virus (HAV)

Although anyone can get hepatitis A, certain groups of people are at higher risk for getting infected including international travelers, men who have sex with men (MSM), people who

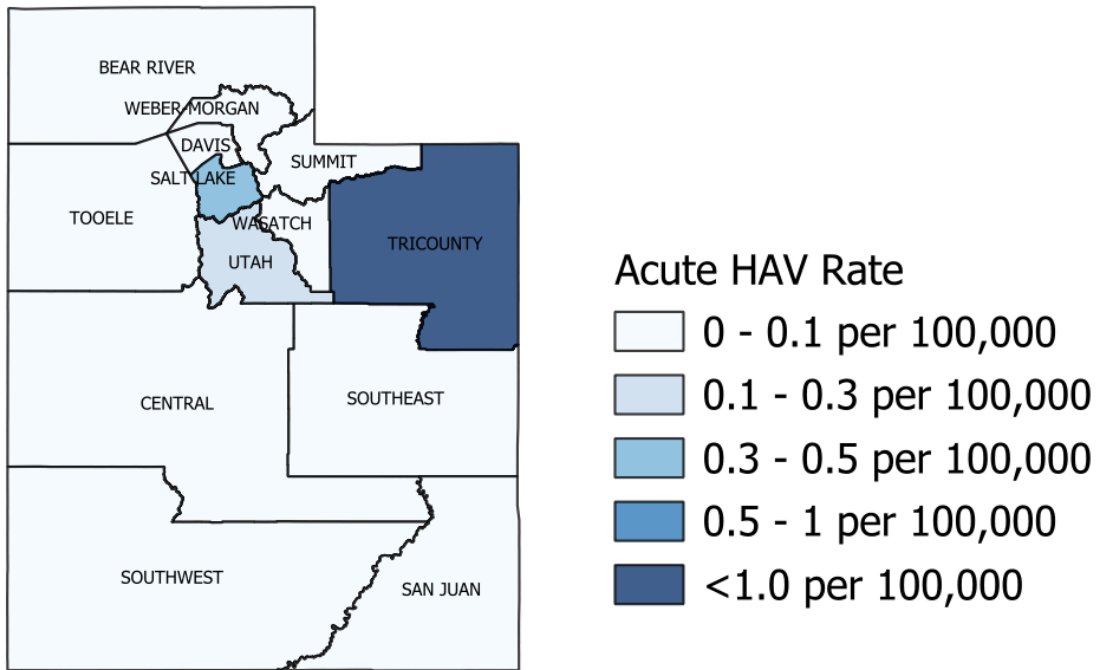
use injection or noninjection drugs, people with occupational risk for exposure such as those who work with HAV in a lab, and people experiencing homelessness. Hepatitis A is a reportable disease in Utah and surveillance data are used to detect outbreaks, monitor disease incidence, determine the epidemiologic characteristics of infected persons, identify sources of infection, and assess and reduce missed opportunities for vaccination. While the average number of annual hepatitis A infections reported to CDC in recent years has declined substantially, fluctuations have occurred due to some large outbreaks. In recent years, hepatitis A outbreaks have occurred from several different sources including foodborne and person-to-person transmission. No outbreaks occurred in Utah in 2023. When comparing rates across LHDs, it appears there is a high concentration in TriCounty, however this is a result of a low case count and numbers relative to the rest of the state, not an indication of an outbreak or particularly high volume.

Acute HAV cases reported, 2023	Acute HAV cases per 100,000 population, 2023
<b>7</b>	<b>0.2</b>

### Groups most affected by hepatitis A, Utah, 2023

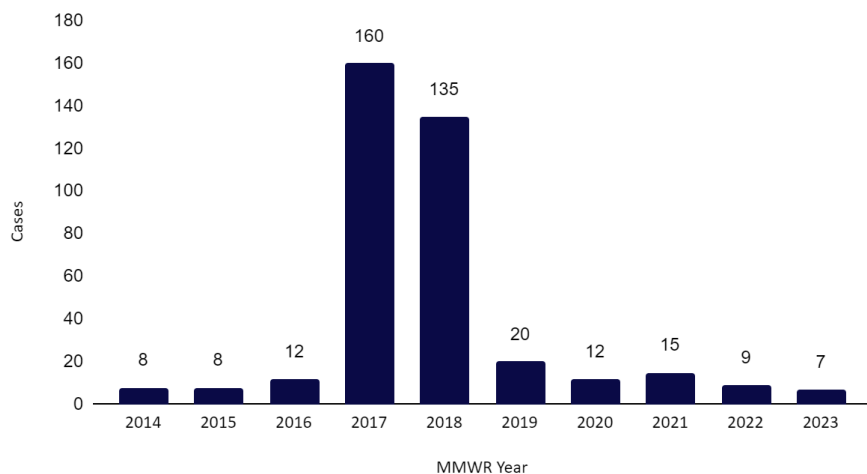
By age	By sex	By race/ethnicity
 20-29 years: <b>0.5 cases</b> per 100,000 people 30-39 years: <b>0.4 cases</b> per 100,000 people	 Males: <b>0.3 cases</b> per 100,000 people	 Hispanic people: <b>3x higher rate</b> than the general population Asian people: <b>5x higher rate</b> than the general population

### Acute hepatitis A rates by LHD, Utah, 2023

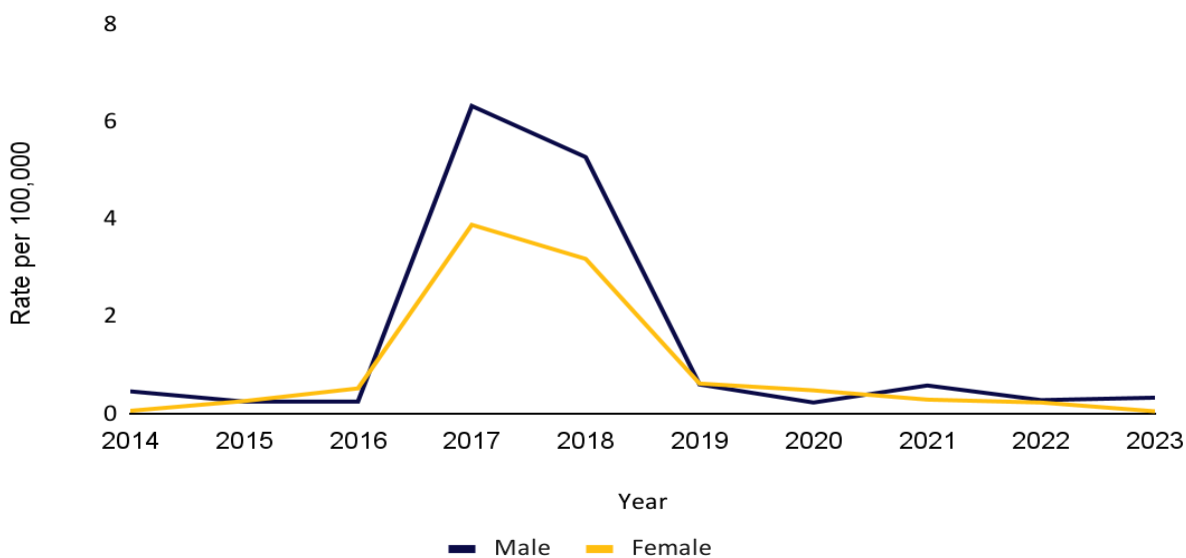


There was a >10-fold increase in hepatitis A cases in 2017–18 compared to the previous baseline with a return to expected numbers in 2019–2020. The increase in 2017–2018 was due to unprecedented person-to-person outbreaks reported in Utah, primarily among people who use drugs and people who experience homelessness.

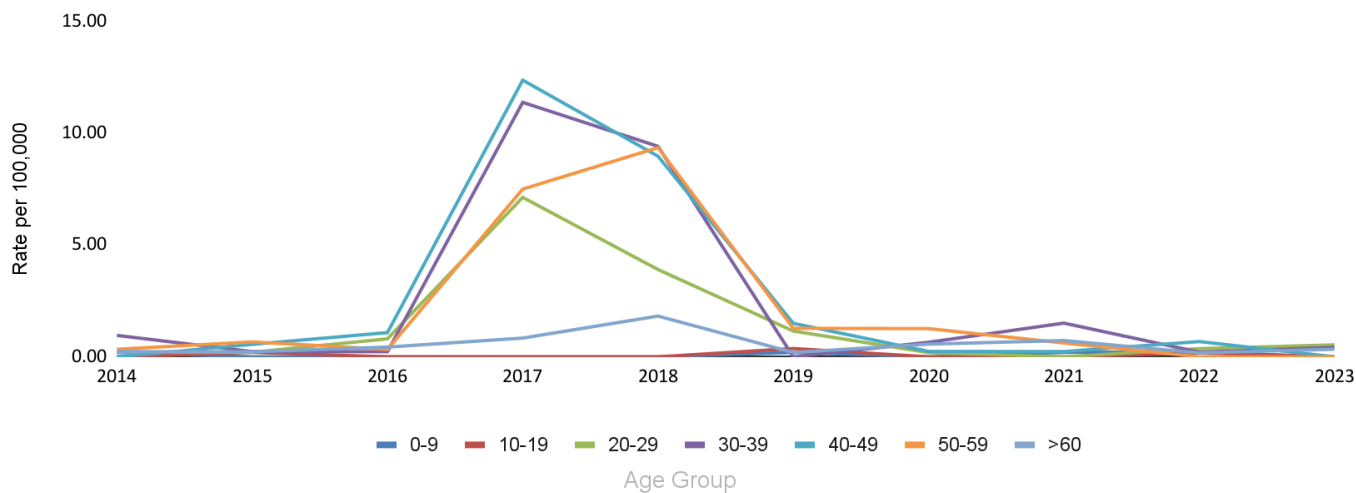
Acute hepatitis A cases by year, Utah, 2014-2023



### Acute hepatitis A rates by sex, Utah, 2014-2023



### Acute hepatitis A rates by age group, Utah, 2014-2023





# Hepatitis B virus (HBV)

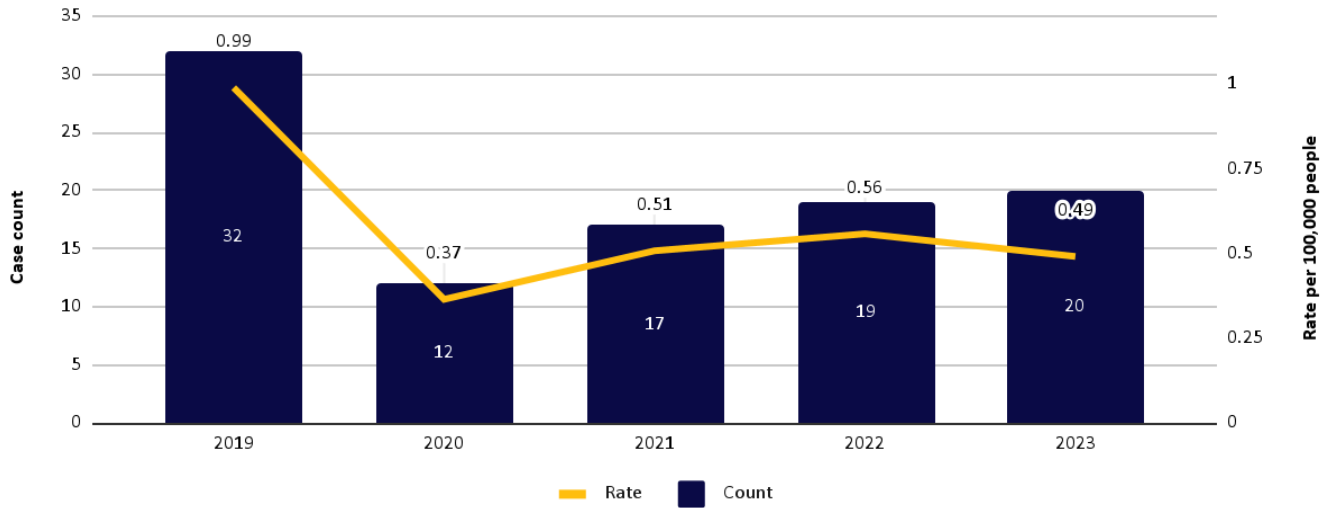
While HBV is the most prevalent hepatitis worldwide, routine childhood HBV vaccination in the United States (US) has dropped rates of infection nationally and in Utah. Per the Utah Communicable Disease Rule, any hepatitis B surface antigen (HBsAg) positive result detected in any person is reportable to public health. Most infections in Utah are from non-US born individuals and are disproportionately in persons who are non-White. In 2023, the rate of new HBV infection was significantly higher in persons who are Native Hawaiian/Pacific Islander, Black, and Asian. Infections did not tend to cluster in any specific age group. In the past 5 years, Utah has, at most, only had 32 acute cases a year (in 2019). The high number of cases detected in 2019 was largely due to increased testing during the HAV outbreak. Since that time there has been a stable number of acute cases

Acute and chronic cases reported, 2023	Cases per 100,000 population, 2023
<b>92</b>	<b>2.66</b>

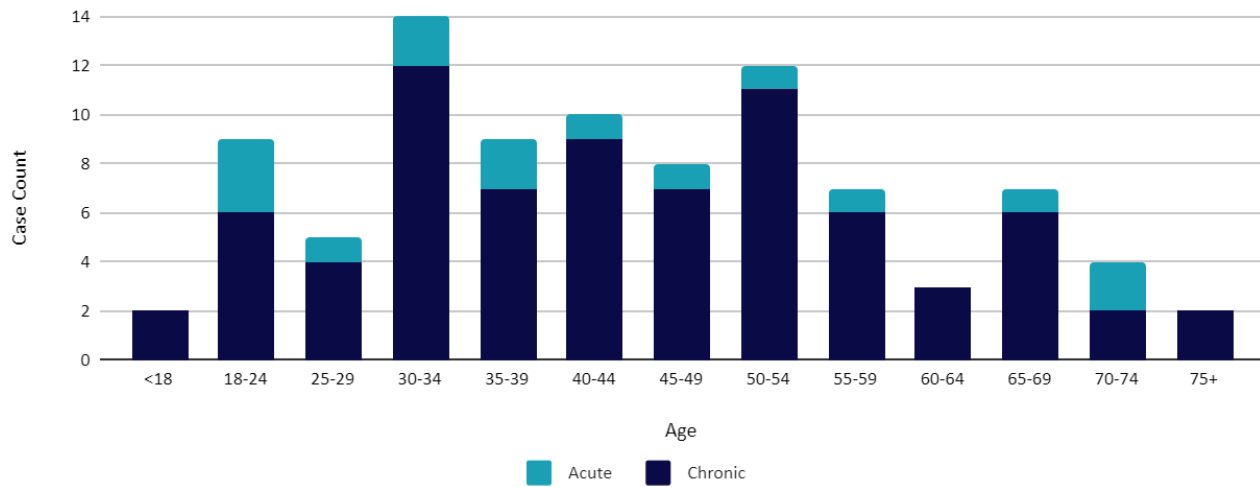
## Groups most affected by hepatitis B

By age	By sex	By race/ethnicity
 25–34 years: <b>2.5 cases</b> per 100,000 people  45–54 years: <b>4.4 cases</b> per 100,000 people	 Male rate per 100,000: <b>1.4 times</b> <b>greater</b> than rate of females	 Persons who are Black: <b>8.6x higher rate</b> than the general population  Persons who are Asian: <b>9.5x higher rate</b> than the general population  Persons who are Native Hawaiian/Pacific Islander: <b>8.6x higher rate</b> than the general population

### Acute HBV cases and rates in Utah, 2019–2023



### Acute and chronic HBV cases by age groups in Utah, 2023



### HBV (acute and chronic) cases by race/ethnicity, 2023. (n=92)

Race/ethnicity	Rate (per 100,000)	95% CI
White	0.81	0.50–1.13
Black	21.79	9.46–34.11
American Indian/Alaskan Native	1.87	0.00–5.53
Asian	24.61	14.76–34.46
Native Hawaiian/Pacific Islander	22.60	7.83–37.36
Multiple race	0.97	0.00–2.87
Hispanic	1.83	0.70–2.96
Non-Hispanic	2.16	1.62–2.70

#### Vaccination rate

Hepatitis B vaccine is available for all age groups. It is recommended for all newborns, all children or adolescents younger than 19 years of age who have not been vaccinated, all adults aged 19 through 59 years, and adults aged 60 or older with or without risk factors for hepatitis B infection. Vaccine data comes from 2 different sources. The first is the National Immunization Survey (NIS), which reports childhood vaccination data for children aged 24 months in each birth year. This is based on survey data and therefore may be biased based on patients' reports. The second is data from the Utah Statewide Immunization Information System (USIIS). USIIS data is based on vaccine data from clinics, however, it is limited as providers are not required to report immunizations into the database and the database does not contain immunization records from out of state. These 2 data sources are different and therefore will have discrepancies.

Based on NIS, the estimated HBV vaccination coverage among children aged 24 months in 2022 (most recently available year of data) was 91.8%, which was on par with the estimated US coverage rate of 91.5%. In contrast, USIIS indicates that only 89.6% of children aged 24 months in 2021 were fully immunized for HBV. Among adults aged 19 and older with

records in USIIS, 35% had 3 or more doses of HBV vaccine which is similar to the national coverage rate reported in 2021 at 34.2%.

### Perinatal hepatitis B

The disease burden of hepatitis B in pregnancy in Utah is relatively low, with about 50–80 infected pregnant people identified annually. In order to prevent vertical transmission of hepatitis B, testing is routine for each pregnancy. Public health follows up on all children born to HBV positive persons to make sure hepatitis B immune globulin (HBIG) is administered at birth, followed by a complete hepatitis B vaccine series and post vaccination serologic testing (PVST). In addition, the infected mother's other children and household contacts are identified and become managed cases. Public health makes every effort to make sure infants do not become infected with HBV, as earlier infection increases the likelihood of chronic hepatitis and liver cancer later in life.

## Acute hepatitis C virus (HCV)

In 2023, 201 acute cases were reported statewide. Both acute and chronic cases increased starting in 2021. This increase is related to a settlement agreement between the Utah Department of Corrections and state offenders. The agreement mandated all state offenders be tested for HCV and any new inmates be tested upon intake. Positive cases meeting criteria outlined in the settlement agreement must be treated. As a result, many more people were tested and the number of acute cases associated with the prison compared to the community increased. Geographically, the greatest number of cases occur in jurisdictions along the Wasatch Front but the greatest rate of acute HCV was in central and southern Utah. Of the 201 acute HCV cases in 2023, 34% reported injecting drugs, 28% reported noninjection drug use, and 43% reported incarceration as risk factors. Additionally, 41% of cases reported tattoos as a risk factor, the majority of which were associated with incarceration. A large portion (25%) of Utah's acute cases were found among state offenders. The major proportion of HCV cases related to incarceration has led to it becoming a priority population for future elimination efforts. Fortunately, since the settlement agreement in 2021, 1255 inmates have received testing and ~280 have received treatment as of April, 2024. The Utah Department of Corrections and DHHS continue to collaborate on ways to increase access to hepatitis C testing and treatment in the state prison system.

In 2020, the Council for State and Territorial Epidemiologists (CSTE) updated the HCV case definition to address the fact that the majority of cases are asymptomatic. The new definition of an acute case dropped the symptom requirement in favor of elevated liver function tests via alanine transaminase (ALT) (>200 IU/L) and/or peak elevated bilirubin levels ( $\geq 3.0$  mg/dL) in addition to a positive antibody test and/or viral load with the absence of a more likely diagnosis. This change in definition led to Utah seeing a 95% increase in acute cases that would have otherwise been considered chronic.

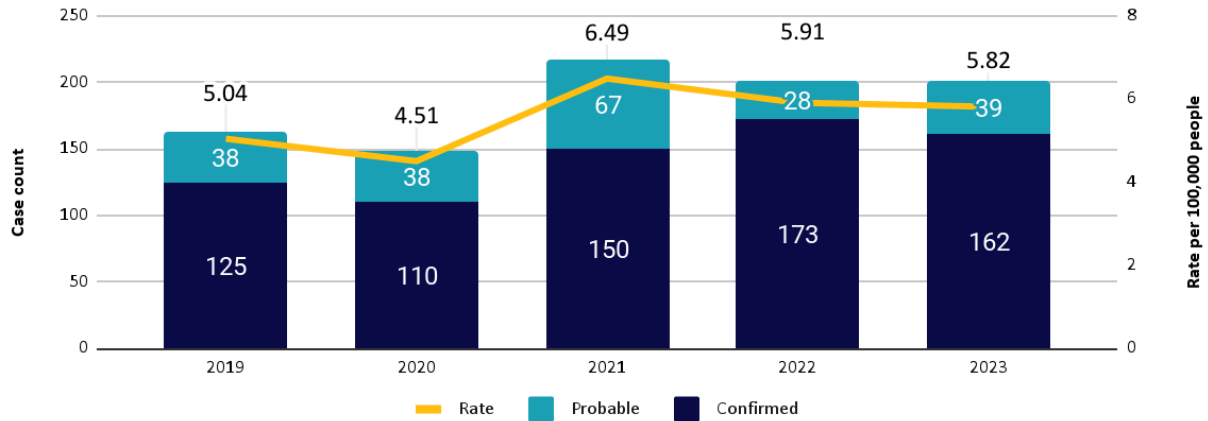
In 2020, the CDC also augmented their hepatitis C screening recommendations issued in 2012. In addition to routine testing for persons who have ongoing risk factors, the CDC now advises at least once in a lifetime screening for all adults 18 and older and a screening for all pregnant persons for each pregnancy.

Acute cases reported, 2023	Rate per 100,000 people
<b>201</b>	<b>5.82</b>

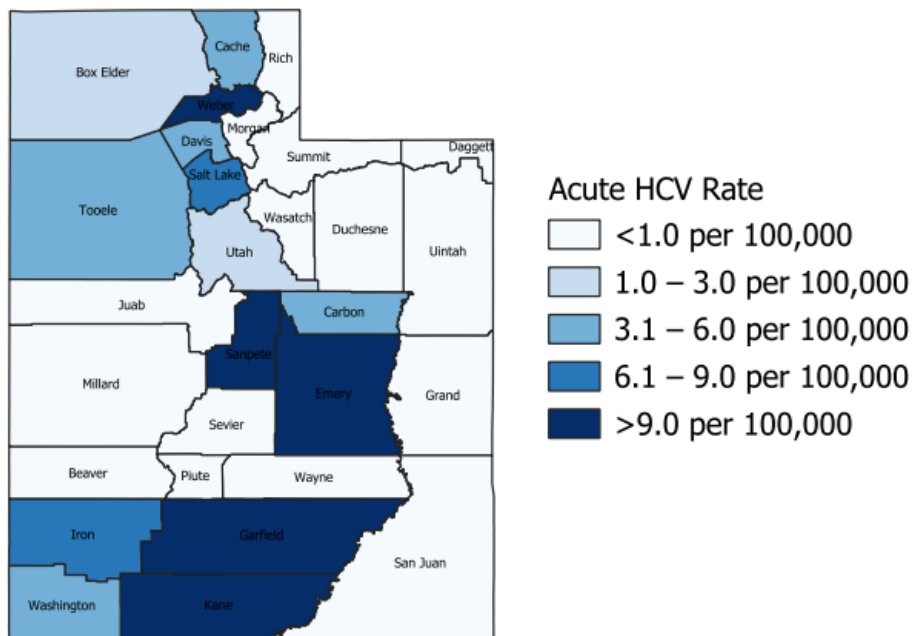
### Groups most affected by acute hepatitis C

By sex	By race/ethnicity	By age
		
The rate of infection in men was <b>more than double</b> the rate of women	Black Utahns: <b>2.3x higher rate</b> than the general population  Persons who are American Indian/Alaska Native: <b>1.6x higher rate</b> than the general population	Age 30–39: <b>2.5x higher rate than the general population</b>

### Acute HCV cases and rates in Utah, 2019–2023



### Acute HCV rates by county, Utah, 2023



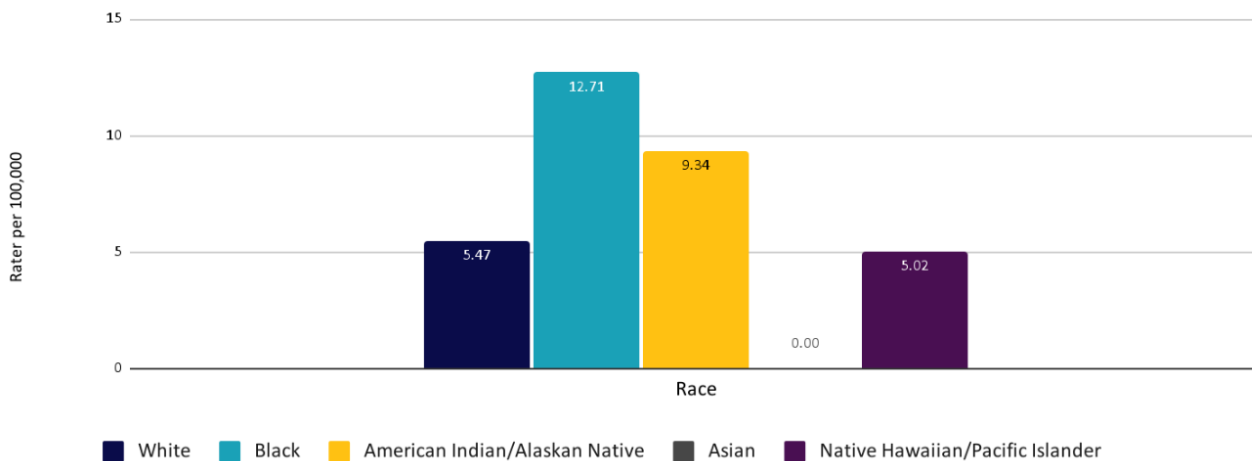
HCV is transmitted through blood-to-blood contact. In order to determine the likely cause of acute HCV infection in Utah, each acute case is investigated to determine the individual's exposures based on possible blood-to-blood contact. In general, **injection drug use** is the most common health risk among cases and can be prevented by safer injection practices such as not sharing equipment. In 2023, **past or current incarceration** was 1 of the single greatest risk factors making state prison facilities a primary target for elimination efforts.

### Exposures of investigated acute HCV cases, 2023

Risk factor	% of cases
Tattoo	41
Past incarceration	43
Injection drug use	34
Non-injection drug use	28
Unknown	29

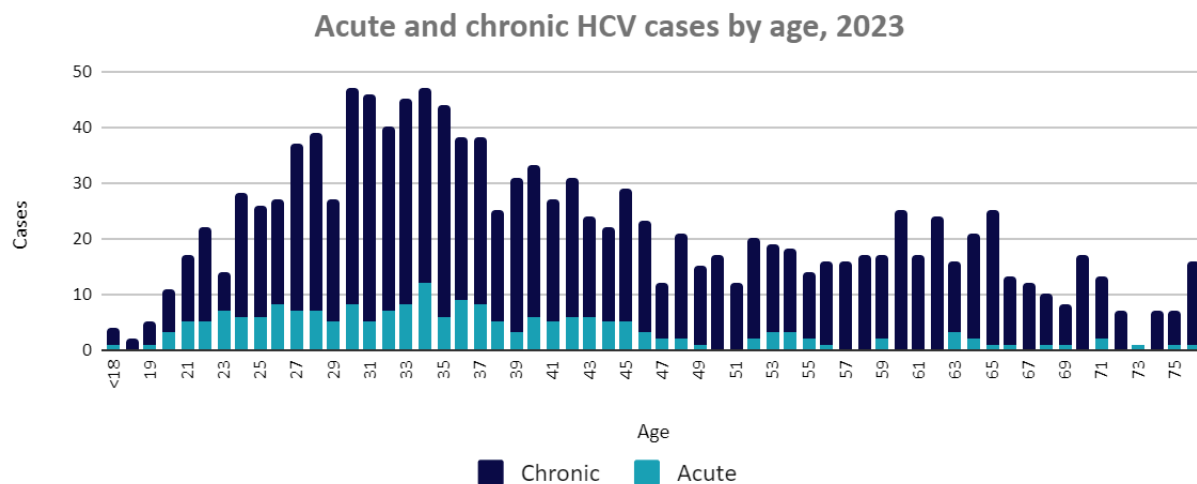
Utah's population is overwhelmingly White and can dictate the overall state rate from year to year. However, in 2023, acute HCV disproportionately affected people who are Black and American Indian/Alaska Native. It is important to note that the population sizes of these racial groups are small and a few cases can impact the rate dramatically.

Acute HCV infection by race, 2023



The age distribution of HCV is described as bimodal with 2 main age groups infected. The majority of cases occur among young adults and baby boomers. Historically, baby boomers

have had the highest rates of chronic infection as a result of the limited use of universal precautions and universal blood screening. However, within the past 10 years there has been an increase in HCV infections among younger individuals. The US has been in the middle of an opioid epidemic for the past several years driven by the misuse of prescription and illicit opioids. This increase in drug use has led to overlapping epidemics of opioid use disorder, HIV, and HCV among young adults who use and inject opioids.



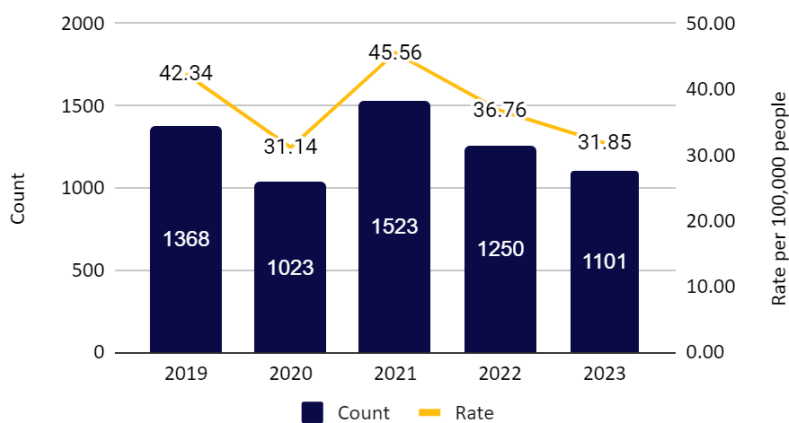
Chronic HCV counts have trended slightly downward in the past 5 years with a notable uptick in 2021 that can be attributed to the state prison system beginning to test all current and incoming inmates. The downward trend since 2021 can likely be attributed to a variety of factors, including the increase in acute case finding, increase in availability and practice of confirmatory testing and negative reporting to rule out cases who have self-resolved or have been treated, and the availability of highly effective and affordable treatments. Unfortunately, limited funding and investigation capacity limits data available for chronic hepatitis C. Many of the data available in acute cases are not available for chronic cases. However, when stratified by jurisdiction, the rate among tribal jurisdictions was very high and illustrates a need for further outreach to those communities.



Chronic cases reported, 2023	Rate per 100,000 people
<b>1101</b>	<b>31.85</b>

By sex	By race/ethnicity	By age
 The rate of infection in <b>men was more than double</b> the rate in women	 Black Utahns: <b>2.7x higher</b> rate than the general population	 30-39 year olds: <b>More than double</b> the rate of the general population

Chronic HCV cases and rate, 2019-2023

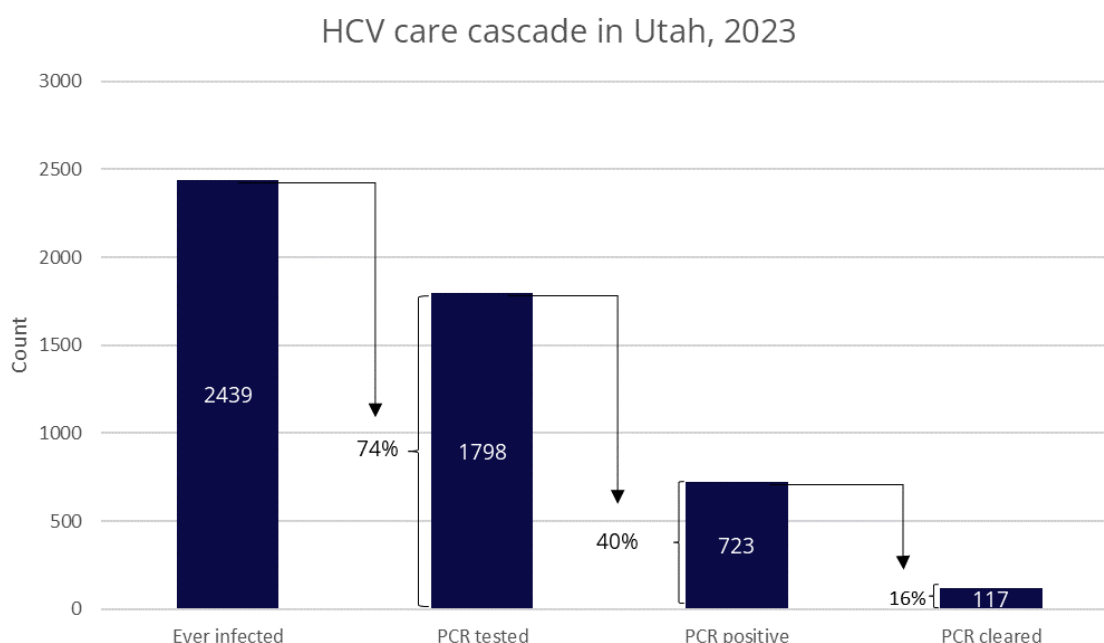


Chronic HCV cases and rate by LHD, Utah, 2023

LHD	Cases	Rate (per 100,000)	95% CI
Bear River	33	16.04	10.57-21.52
Central	28	33.80	21.28-46.32
Davis	72	19.08	14.67-23.49
Salt Lake County	499	40.88	37.30-44.47
San Juan	<5	SR	-
Southeast	23	56.75	33.56-79.94
Southwest	89	31.18	24.70-37.66
Summit	5	11.50	1.42-21.57
Tooele	32	40.30	26.34-54.26
TriCounty	20	34.70	19.49-49.91
Utah	139	19.10	15.92-22.28
Wasatch	7	18.45	4.78-32.12
Weber-Morgan	132	46.66	38.70-54.62
Tribal jurisdictions	20	223.99	125.82-322.16

## HCV care cascade

Below is the HCV surveillance based care cascade. It is intended to show the effectiveness of Utah's efforts to identify those infected with hepatitis C through screening and treat those who have active infections within a given year. In 2023, 2439 individuals screened positive with either an antibody test or a viral load test. Of those, 74% received a subsequent PCR test at some point in 2023. Fewer than half (40%) of those tested were PCR positive, with 60% having cleared the virus prior to their test. Only 16% of PCR positive individuals had evidence of cure, which would be indicated by a repeat negative PCR test. This means that the vast majority of people do not get treatment for their HCV. This gap in diagnosis to treatment represents a major focus area of improvement for Utah. Comparing these data to the 2020 care cascade, we see a marked increase in PCR tested individuals (from 66% in 2020 to 74% in 2023). This is likely due to policy changes in certain high volume laboratories to automatically reflex antibody positive tests to PCR tests. These data were derived from surveillance data and it is important to note they have their limitations, including: limited to lab results from 2023, no account for false positives/negatives, unable to determine treatment vs. self-resolved cases, PCR cleared number only accounts for those receiving repeat testing. As such these should only be taken as a rough estimate from Utah's most readily available data source.



## Perinatal hepatitis C

The disease burden of perinatal hepatitis C in Utah is very low (<5 cases per year). Per the Utah Communicable Disease Rule, pregnancy in an HCV positive person is reportable to public health, as is any clinical diagnosis and/or a positive hepatitis C lab in a child  $\leq 36$  months of age. There is currently not a public health process for follow-up with HCV positive pregnant persons or children born to HCV positive persons; however state and local public health officials have started work on a plan to implement tracking, education, and follow-up with these groups.

## Insurance coverage

Given the cost of hepatitis-related treatments and immunizations, insurance plays an important role in delivering care to those infected. In 2022, 8.8% of Utahns aged >18 years old were without health insurance (BRFSS, 2022). As of February 2022, Utah had 466,747 (14%) individuals enrolled in Medicaid. Utah Medicaid operates as a fee-for-service (FFS) program and contracts with managed care organizations (MCOs). Most beneficiaries (more than 75%) are enrolled in an MCO. The remaining beneficiaries participate in FFS. Utah uses 4 MCOs: Steward Health Choice Utah (Health Choice), Health Plans University of Utah (Healthy U), Molina Healthcare (Molina), and SelectHealth Community Care (SelectHealth). These MCOs vary in restrictions for HCV treatment prior to authorization, which complicates the treatment process. Fortunately, these MCOs are trending toward fewer to no restrictions as data on treatment adherence grows. Another common hurdle to care are restrictions that only allow treatment for those who do not have liver damage or who are able to pass sobriety restrictions. Utah's Medicaid fee-for-service program does not have these restrictions. Medicaid allows general practitioners to provide this medication and only requires a prescription for medication be written **in consultation** with a specialist for patients who are not treatment-naive and/or under specific circumstances. The use of Project ECHO (page 20) has helped expand treatment access in rural areas where specialists are limited or do not exist.

# Partner services

DHHS provides a limited number of rapid HCV test kits to community-based organizations (CBOs) and local health districts (LHDs) in an effort to target and screen populations at risk

for hepatitis C. The majority of supported CBOs provide syringe services and/or opioid treatment. Tests are free of charge for any person who has a history of injecting or using drugs. In 2023, Utah DHHS provided 1890 HCV rapid antibody tests to CBOs and LHDs. The tests yielded a 16% positivity rate overall.

[Project ECHO](#) is a technology-enabled collaborative learning platform for health care providers that began in New Mexico in 2003. The project's goal was to improve health care in rural and underserved populations by bringing access to specialist care where there is limited to none available via telehealth. The University of Utah was the third site in the world to replicate the ECHO model in 2011 which has enabled treatment of HCV patients in these underserved areas. In 2023, 168 cases from these areas were diagnosed with HCV and started treatment.

To support CBOs and LHDs, Utah DHHS developed a [Hepatitis C Resource Guide](#).

## Limitations/disclosures

The data represented in this report reflect the state of finalized cases at the date of data export (May 15, 2024). We recognize there may be discrepancies between this report and previous reports. This is due to an error in our system where correct data was overwritten by new incoming data. This problem affected the report produced in 2020. This has since been resolved and should not impact future reports.