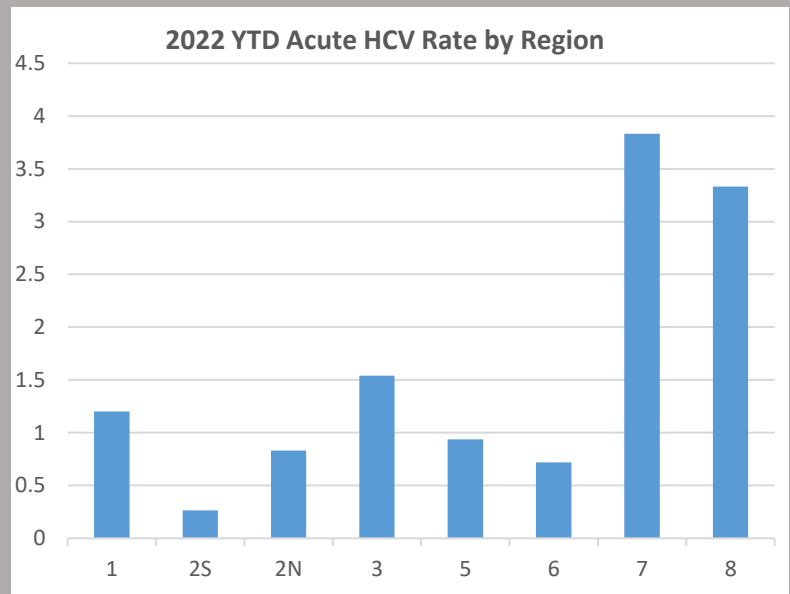
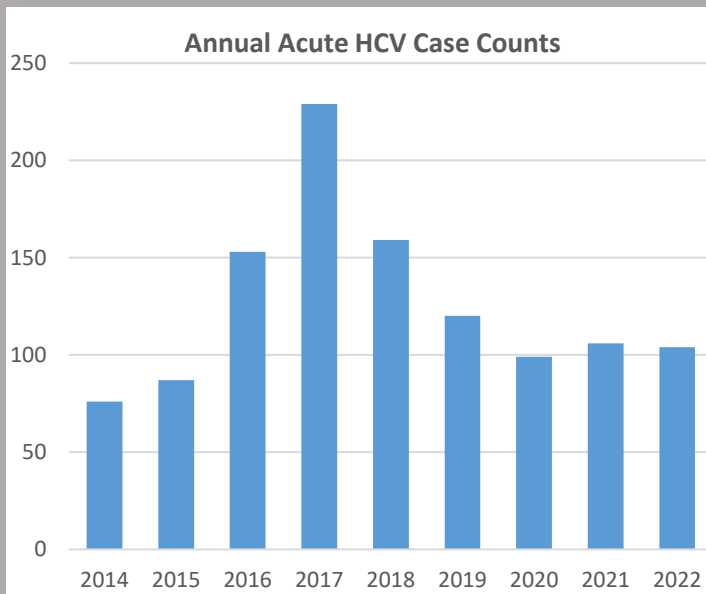


Hepatitis C Virus Quarterly Surveillance Report (Quarter 4, 2022)

(Data referred 10/1/2022 through 12/31/2022—extracted 4/24/2023—Report released 4/24/2023)

This monthly report is designed to inform local health departments (LHD) of Hepatitis C Virus (HCV) cases reported to the Michigan Disease Surveillance System (MDSS) that may be related to injection drug use. These cases include all acute HCV cases and chronic HCV cases among persons aged 18 to 39. The purpose of the report is to highlight areas where transmission of HCV may be occurring among people who inject drugs. The goal is that, when warranted, this information will lead to more timely and effective public health intervention. Below are State-wide data trends. LHD-specific numbers can be found in the table that follows.

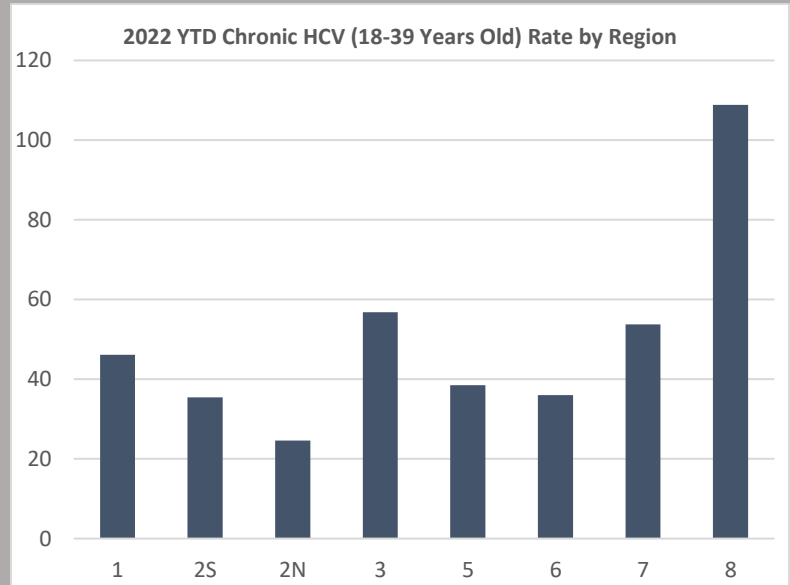
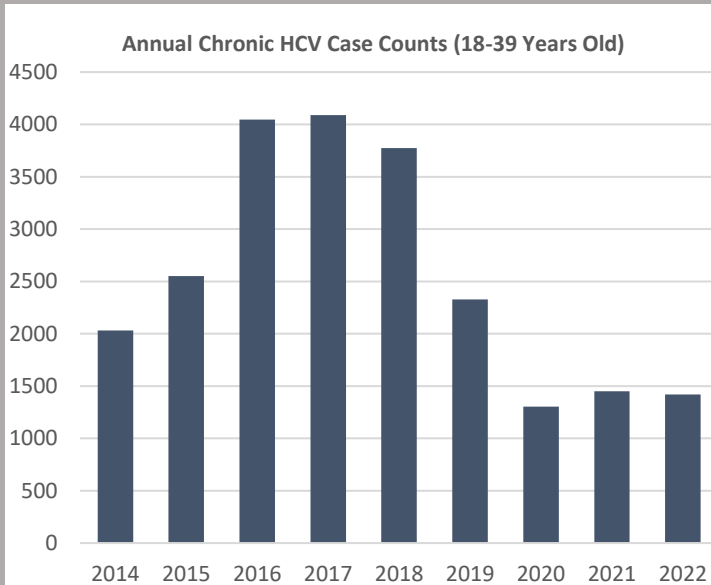
Please refer to **Technical Notes** on the final page of this document for information regarding how the data are obtained and defined, along with data limitations.



Please consider the following when interpreting trends in these data:

- 2016 Case definition change
- 2016-2017 Concurrent hepatitis A outbreak
- 2019 Reporting for negative HCV results
- 2020 COVID-19 pandemic

See technical notes for further elaboration.



Please consider the following when interpreting trends in these data:

- 2016 Case definition change
- 2019 Reporting for negative HCV results
- 2020 Case definition change
- 2020 COVID-19 pandemic

See technical notes section for further elaboration.

County	LHJ	Region	Acute HCV Cases (Oct-Dec 2022)	Acute HCV Cases (Oct-Dec 2021)	Acute HCV Cases (YTD)	Acute HCV Cases (2021 YTD)
Alcona	District Health Department #2	3	0	0	0	0
Alger	Luce-Mackinac-Alger-Schoolcraft	8	0	0	0	0
Allegan	Allegan	5	0	0	1	0
Alpena	District Health Department #4	7	1	0	7	0
Antrim	Northwest Michigan	7	0	0	0	0
Arenac	Central Michigan	3	0	0	0	0
Baraga	Western Upper Peninsula	8	0	0	0	0
Barry	Barry-Eaton	5	0	0	0	0
Bay	Bay	3	2	0	2	0
Benzie	Benzie-Leelanau	7	0	0	0	0
Berrien	Berrien	5	1	0	1	1
Branch	Branch-Hillsdale-St. Joseph	5	0	0	0	0
Calhoun	Calhoun	5	0	0	0	0
Cass	Van Buren-Cass	5	0	0	2	1
Charlevoix	Northwest Michigan	7	0	0	0	0
Cheboygan	District Health Department #4	7	0	0	1	0
Chippewa	Chippewa	8	0	1	2	1
Clare	Central Michigan	6	0	0	0	0
Clinton	Mid-Michigan	1	0	0	0	0
Crawford	District Health Department #10	7	0	0	0	1
Delta	Delta-Menominee	8	1	0	1	3
Detroit City	Detroit City	25	1	1	1	1
Dickinson	Dickinson-Iron	8	1	1	2	2
Eaton	Barry-Eaton	1	0	0	0	0
Emmet	Northwest Michigan	7	0	1	1	1
Genesee	Genesee	3	3	0	8	0
Gladwin	Central Michigan	3	0	0	0	0
Gogebic	Western Upper Peninsula	8	0	0	0	0
Grand Traverse	Grand Traverse	7	0	1	7	7
Gratiot	Mid-Michigan	1	0	0	0	3
Hillsdale	Branch-Hillsdale-St. Joseph	1	0	0	4	2
Houghton	Western Upper Peninsula	8	1	0	1	0
Huron	Huron	3	0	0	0	2
Ingham	Ingham	1	0	3	7	5
Ionia	Ionia	6	0	0	2	2
Iosco	District Health Department #2	3	0	0	4	1
Iron	Dickinson-Iron	8	0	0	1	0
Isabella	Central Michigan	6	0	0	2	1
Jackson	Jackson	1	0	0	0	3
Kalamazoo	Kalamazoo	5	1	2	4	3
Kalkaska	District Health Department #10	7	0	0	1	0
Kent	Kent	6	1	1	1	3

County	LHJ	Region	Acute HCV Cases (Oct-Dec 2022)	Acute HCV Cases (Oct-Dec 2021)	Acute HCV Cases (YTD)	Acute HCV Cases (2021 YTD)
Keweenaw	Western Upper Peninsula	8	0	0	0	0
Lake	District Health Department #10	6	0	0	0	2
Lapeer	Lapeer	3	0	0	1	1
Leelanau	Benzie-Leelanau	7	0	0	0	0
Lenawee	Lenawee	1	0	0	0	0
Livingston	Livingston	1	1	0	2	1
Luce	Luce-Mackinac-Alger-Schoolcraft	8	0	0	0	0
Mackinac	Luce-Mackinac-Alger-Schoolcraft	8	0	0	0	0
Macomb	Macomb	2N	2	6	14	25
Manistee	District Health Department #10	7	0	0	0	0
Marquette	Marquette	8	0	3	0	4
Mason	District Health Department #10	6	0	0	2	1
Mecosta	District Health Department #10	6	0	0	2	1
Menominee	Delta-Menominee	8	1	0	2	1
Midland	Midland	3	0	0	0	0
Missaukee	District Health Department #10	7	0	0	0	0
Monroe	Monroe	2S	1	0	1	2
Montcalm	Mid-Michigan	6	0	0	2	0
Montmorency	District Health Department #4	7	0	0	0	0
Muskegon	Muskegon	6	0	0	0	2
Newaygo	District Health Department #10	6	0	0	0	0
Oakland	Oakland	2N	0	0	0	0
Oceana	District Health Department #10	6	0	0	0	1
Ogemaw	District Health Department #2	3	0	1	1	1
Ontonagon	Western Upper Peninsula	8	0	0	0	0
Osceola	Central Michigan	6	0	0	0	0
Oscoda	District Health Department #2	3	0	0	0	0
Otsego	Northwest Michigan	7	0	0	0	0
Ottawa	Ottawa	6	0	0	0	1
Presque Isle	District Health Department #4	7	0	0	0	0
Roscommon	Central Michigan	7	0	0	0	0
Saginaw	Saginaw	3	0	0	0	0
St Clair	St Clair	2N	2	0	5	6
St Joseph	Branch-Hillsdale-St. Joseph	5	0	0	0	0
Sanilac	Sanilac	3	0	0	0	0
Schoolcraft	Luce-Mackinac-Alger-Schoolcraft	8	0	0	1	0
Shiawassee	Shiawassee	1	0	0	0	0
Tuscola	Tuscola	3	0	0	1	0
Van Buren	Van Buren-Cass	5	0	3	1	6
Washtenaw	Washtenaw	2S	1	1	2	1
Wayne	Wayne	2S	1	2	2	7
Wexford	District Health Department #10	7	0	0	0	0
MDOC	Michigan Department of Corrections	MDOC	0	0	2	0
STATEWIDE			22	27	104	106

County	LHJ	Region	Chronic HCV Cases, Adults Under 40 (Oct-Dec 2022)	Chronic HCV Cases, Adults Under 40 (Oct-Dec 2021)	Chronic HCV Cases, Adults Under 40 (YTD)	Chronic HCV Cases, Adults Under 40 (YTD 2021)
Alcona	District Health Department #2	3	0	<5	<5	<5
Alger	Luce-Mackinac-Alger-Schoolcraft	8	0	0	<5	0
Allegan	Allegan	5	<5	<5	5	<5
Alpena	District Health Department #4	7	<5	<5	<5	5
Antrim	Northwest Michigan	7	0	<5	<5	<5
Arenac	Central Michigan	3	0	0	<5	0
Baraga	Western Upper Peninsula	8	0	0	<5	<5
Barry	Barry-Eaton	5	<5	<5	7	6
Bay	Bay	3	<5	15	13	15
Benzie	Benzie-Leelanau	7	0	<5	<5	<5
Berrien	Berrien	5	<5	9	13	23
Branch	Branch-Hillsdale-St. Joseph	5	<5	<5	6	7
Calhoun	Calhoun	5	<5	7	17	13
Cass	Van Buren-Cass	5	0	<5	<5	<5
Charlevoix	Northwest Michigan	7	<5	0	<5	<5
Cheboygan	District Health Department #4	7	0	<5	<5	6
Chippewa	Chippewa	8	<5	5	20	12
Clare	Central Michigan	6	0	<5	7	8
Clinton	Mid-Michigan	1	<5	<5	<5	<5
Crawford	District Health Department #10	7	<5	<5	<5	8
Delta	Delta-Menominee	8	<5	<5	9	15
Detroit City	Detroit City	25	19	26	32	30
Dickinson	Dickinson-Iron	8	0	<5	10	11
Eaton	Barry-Eaton	1	<5	<5	<5	14
Emmet	Northwest Michigan	7	0	<5	0	9
Genesee	Genesee	3	18	13	65	24
Gladwin	Central Michigan	3	<5	0	8	6
Gogebic	Western Upper Peninsula	8	<5	<5	<5	<5
Grand Traverse	Grand Traverse	7	<5	<5	8	18
Gratiot	Mid-Michigan	1	<5	<5	5	<5
Hillsdale	Branch-Hillsdale-St. Joseph	1	<5	0	<5	9
Houghton	Western Upper Peninsula	8	<5	0	<5	<5
Huron	Huron	3	0	0	5	<5
Ingham	Ingham	1	12	8	56	36
Ionia	Ionia	6	<5	<5	12	13
Iosco	District Health Department #2	3	<5	<5	9	<5
Iron	Dickinson-Iron	8	<5	<5	7	8
Isabella	Central Michigan	6	0	0	9	9
Jackson	Jackson	1	12	10	52	31
Kalamazoo	Kalamazoo	5	8	9	40	21
Kalkaska	District Health Department #10	7	<5	0	<5	6
Kent	Kent	6	13	11	59	65
Keweenaw	Western Upper Peninsula	8	0	0	0	0

County	LHI	Region	Chronic HCV Cases, Adults Under 40 (Oct-Dec 2022)	Chronic HCV Cases, Adults Under 40 (Oct-Dec 2021)	Chronic HCV Cases, Adults Under 40 (YTD)	Chronic HCV Cases, Adults Under 40 (YTD 2021)
Lake	District Health Department #10	6	0	0	<5	<5
Lapeer	Lapeer	3	<5	<5	11	13
Leelanau	Benzie-Leelanau	7	0	<5	<5	<5
Lenawee	Lenawee	1	<5	<5	11	10
Livingston	Livingston	1	<5	<5	11	26
Luce	Luce-Mackinac-Alger-Schoolcraft	8	<5	<5	<5	<5
Mackinac	Luce-Mackinac-Alger-Schoolcraft	8	0	0	0	0
Macomb	Macomb	2N	21	21	73	108
Manistee	District Health Department #10	7	<5	<5	<5	<5
Marquette	Marquette	8	<5	5	24	27
Mason	District Health Department #10	6	<5	0	5	7
Mecosta	District Health Department #10	6	<5	<5	<5	<5
Menominee	Delta-Menominee	8	<5	<5	<5	11
Midland	Midland	3	<5	<5	11	13
Missaukee	District Health Department #10	7	0	<5	<5	<5
Monroe	Monroe	2S	<5	20	32	41
Montcalm	Mid-Michigan	6	5	<5	9	8
Montmorency	District Health Department #4	7	0	0	0	0
Muskegon	Muskegon	6	8	25	32	32
Newaygo	District Health Department #10	6	<5	<5	6	6
Oakland	Oakland	2N	23	41	51	157
Oceana	District Health Department #10	6	<5	0	5	0
Ogemaw	District Health Department #2	3	0	<5	<5	<5
Ontonagon	Western Upper Peninsula	8	<5	0	<5	<5
Osceola	Central Michigan	6	<5	<5	5	6
Oscoda	District Health Department #2	3	<5	0	<5	0
Otsego	Northwest Michigan	7	0	<5	<5	8
Ottawa	Ottawa	6	<5	<5	18	18
Presque Isle	District Health Department #4	7	<5	0	<5	0
Roscommon	Central Michigan	7	0	<5	7	11
Saginaw	Saginaw	3	6	9	22	33
St Clair	St Clair	2N	<5	6	31	26
St Joseph	Branch-Hillsdale-St. Joseph	5	<5	<5	6	<5
Sanilac	Sanilac	3	<5	<5	<5	<5
Schoolcraft	Luce-Mackinac-Alger-Schoolcraft	8	0	0	<5	0
Shiawassee	Shiawassee	1	<5	7	<5	15
Tuscola	Tuscola	3	<5	<5	<5	<5
Van Buren	Van Buren-Cass	5	<5	<5	9	8
Washtenaw	Washtenaw	2S	7	31	20	35
Wayne	Wayne	2S	40	38	158	168
Wexford	District Health Department #10	7	0	<5	8	11
MDOC	Michigan Department of Corrections	MDOC	38	75	297	160
STATEWIDE			325	480	1419	1449

Technical Notes

Hepatitis C Virus Monthly Surveillance Report

Data in this report should be interpreted with caution and with acknowledgement of the limitations. Please direct any questions or comments regarding this report or methodology to the MDHHS Viral Hepatitis Unit (MDHHS-Hepatitis@michigan.gov)

Acute and Chronic HCV Infection

- Acute HCV and Chronic HCV data are obtained from the Michigan Disease Surveillance System ([MDSS](#)).
- Only completed cases meeting [CDC/CSTE case definitions](#) are pulled for inclusion in the report. Included in the analysis are:
 - All Probable and Confirmed Acute HCV cases
 - Probable and Confirmed Chronic HCV cases between the ages of 18 and 39 years old
- Data is exported no earlier than 30 days from the end of the reporting month (e.g. January-March data is extracted no earlier than May 1st). These data are not finalized and are subject to change throughout the year.
- CDC/CSTE case definitions for [Acute](#) and [Chronic](#) HCV were significantly changed in calendar year 2016. Therefore, increases in Acute and Chronic HCV cases in 2016 reflect the change in case counting methods and not necessarily an increase in new cases.
- A rise in Acute HCV cases in 2016 and 2017 is likely due to the concurrent Hepatitis A outbreak. As clinical presentation of Hepatitis A and Hepatitis C disease is indistinguishable, symptomatic cases coinfecting with HCV and HAV were classified as both Acute HCV and HAV cases.
- In calendar year 2019, the MDSS began receiving electronic lab reports of negative HCV RNA results. Consequently, Hepatitis C cases that may have previously been reported as Probable with no HCV RNA result reported, could more accurately be classified as non-cases.
- CDC/CSTE case definitions for [Acute](#) and [Chronic](#) HCV were adjusted again in calendar year 2020. Therefore, changes in Acute and Chronic HCV cases in 2020 may reflect the change in case counting methods and not necessarily an increase or decrease in new cases.
- Due to impacts of the COVID-19 pandemic, there may be under-reporting of cases for 2020 and 2021 data.

For Acute and Chronic HCV acquisition, complete risk factor information is needed in order for MDHHS to identify trends in transmission related to injection drug use, health care transmission, and emerging risk factors. The temporality of Chronic HCV infections is often unknown due to the lack of symptoms and awareness of the time of infection. Timely and comprehensive follow-up is needed to maximize the effectiveness of this report.

Regional Rates and Projections

- Year to date case rates are stratified by Michigan Public Health Preparedness Regions (MPHPR). A map of the MPHPRs can be accessed here ([Regional Map](#)).
- Cases from the Michigan Department of Corrections (MDOC) are removed from regional case rates.
- Rates are calculated using Census population estimates as of July 1, 2019 (American Community Survey 5-year estimates).
- The projected number of cases in 2021 is calculated by multiplying the year to date cases by the proportion of months remaining in the year.