

# Hepatitis C in Colorado 2012 Surveillance Report

## Cases of Acute Hepatitis C and Chronic Hepatitis C (past or present) in Colorado

**Note:** This report is published by the Viral Hepatitis Program (VHP), Disease Control and Environmental Epidemiology Division, Colorado Department of Public Health and Environment, Denver Colorado. Data are presented for acute and chronic hepatitis C cases newly reported to CDPHE in 2012. Technical notes and a public health surveillance summary follow the presentation of the data tables and figure.



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Colorado Department  
of Public Health  
and Environment

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Table 1: Reported Hepatitis C Cases by Case Status, Sex, Age, and Race: Colorado, 2012

	Acute HCV Cases		Past or Present HCV Cases †		All HCV Cases	
	Number	Percent of Total	Number	Percent of Total	Total	Rate of Reported Cases/ 100,000 ‡
Total	42		3181		3223	62.1
<b>Case Status</b>						
Confirmed	42	100.0%	2947	92.6%	2989	57.6
Probable	0	0.0%	0	0.0%	0	0.0
Suspect	0	0.0%	234	7.4%	234	4.5
<b>Gender</b>						
Female	17	40.5%	1142	35.9%	1159	44.9
Male	25	59.5%	2039	64.1%	2064	79.3
Unknown	0	0.0%	0	0.0%	0	0.0
<b>Age</b>						
0-4	0	0.0%	0	0.0%	0	0.0
5-9	0	0.0%	1	0.0%	1	0.3
10-19	1	2.4%	34	1.1%	35	5.1
20-29	11	26.2%	368	11.6%	379	50.6
30-39	7	16.7%	488	15.3%	495	68.4
40-49	12	28.6%	691	21.7%	703	98.8
50-59	9	21.4%	1089	34.2%	1098	151.7
60+	2	4.8%	507	15.9%	509	56.2
Unknown	0	0.0%	3	0.1%	3	0.0
<b>Race/Ethnicity</b>						
Hispanic	11	42.3%	288	9.1%	299	27.5
White non-Hispanic	23	88.5%	560	17.6%	583	16.2
Black non-Hispanic	0	0.0%	86	2.7%	86	43.2
American Indian	2	7.7%	25	0.8%	27	81.8
Asian/Pacific Islander	0	0.0%	26	0.8%	26	17.0
Multiple	1	3.8%	4	0.1%	5	3.47
Other/Missing/Unknown *	5	19.2%	2192	68.9%	2197	

†Past or present cases may include 5-10% of acute cases reported for the same year and cases who have resolved the infection.

‡ Rates per 100,000 were calculated using the U.S. Census Bureau, Population Division, *Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States and States: April 1, 2010 to July 1, 2012*.

<http://www.census.gov/popest/data/index.html>. Rates calculated for counties with few cases and small populations should be interpreted with caution.

\* Of the total other/missing/unknown cases, 565 cases had 'White' marked as race and 53 cases had 'Black' marked as race but no ethnicity was indicated.

Table 2: Reported Hepatitis C Cases by Risk Factor, and Percentage of Cases Reporting the Risk Factor, Colorado, 2012 †

	Acute HCV Cases		Past or Present HCV Cases		All HCV Cases
	Number	Percent of Total	Number	Percent of Total	Total
Total					
<b>IVDU</b>					
Yes	14	33.3	329	10.3	343
No	23	54.8	93	2.9	116
Unknown	0	0.0	436	13.7	436
Missing	5	11.9	2323	73.0	2328
<b>Household Contact</b>					
Yes	7	16.7	8	0.3	15
No	22	52.4	63	2.0	85
Unknown	3	7.1	341	10.7	344
Missing	10	23.8	2769	87.0	2779
<b>Sex Contact</b>					
Yes	12	28.6	36	1.1	48
No	17	40.5	35	1.1	52
Unknown	3	7.1	341	10.7	344
Missing	10	23.8	2769	87.0	2779
<b>MSM</b>					
Yes	5	20.0	15	0.7	20
No	11	44.0	13	0.6	24
Unknown	0	0.0	441	21.6	441
Missing	9	36.0	1570	77.0	1579

†Risk factor categories are not mutually exclusive.

Table 3: Number and Percentage of Reported Acute and Chronic Hepatitis C Cases by County of Residence: Colorado, 2012

	Acute HCV Cases		Past or Present HCV Cases †		All HCV Cases	
	Number	Percent of Total	Number	Percent of Total	Total	Rate of Reported Cases/ 100,000 ‡
Total	42		3181		3223	
<b>County of Residence</b>						
Adams	2	4.8	222	6.98	224	48.7
Alamosa	0	0.0	9	0.28	9	55.7
Arapahoe	1	2.4	217	6.82	218	36.6
Archuleta	0	0.0	9	0.28	9	74.6
Baca	0	0.0	3	0.09	3	80.0
Bent	0	0.0	1	0.03	1	17.3
Boulder	1	2.4	100	3.14	101	33.1
Broomfield	0	0.0	17	0.53	17	29.2
Chaffee	0	0.0	8	0.25	8	44.1
Cheyenne	0	0.0	1	0.03	1	53.4
Clear Creek	0	0.0	3	0.09	3	33.2
Conejos	1	2.4	3	0.09	4	48.3
Costilla	0	0.0	3	0.09	3	83.5
Crowley	0	0.0	5	0.16	5	93.2
Custer	0	0.0	2	0.06	2	47.1
Delta	0	0.0	15	0.47	15	49.3
Denver	11	26.2	549	17.26	560	88.3
Dolores	0	0.0	2	0.06	2	100.3
Douglas	0	0.0	53	1.67	53	17.8
Eagle	0	0.0	6	0.19	6	11.6
Elbert	0	0.0	7	0.22	7	31.3
El Paso	7	16.7	309	9.71	316	49.0
Fremont	2	4.8	23	0.72	25	53.4
Garfield	0	0.0	35	1.10	35	61.5
Gilpin	0	0.0	2	0.06	2	36.4
Grand	0	0.0	4	0.13	4	28.2
Gunnison	0	0.0	4	0.13	4	25.8
Hinsdale	0	0.0	1	0.03	1	123.5
Huerfano	0	0.0	3	0.09	3	45.5
Jackson	0	0.0	0	0.00	0	0.0
Jefferson	3	7.1	202	6.35	205	37.6

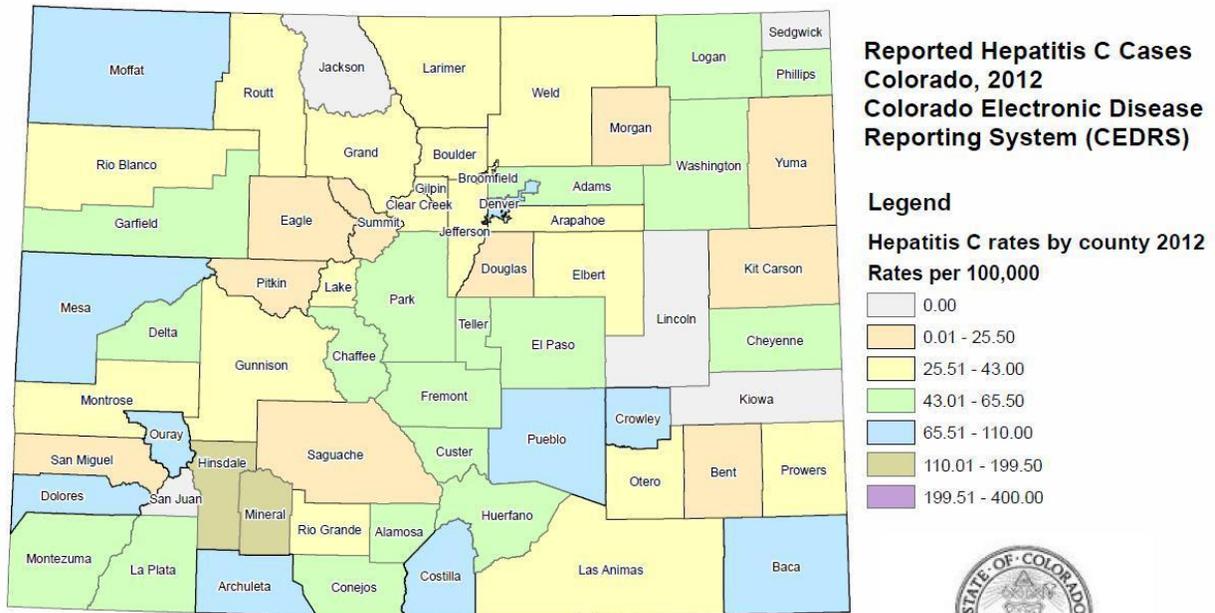
Kiowa	0	0.0	0	0.00	0	0.0
Kit Carson	0	0.0	1	0.03	1	12.4
Lake	0	0.0	2	0.06	2	27.3
La Plata	1	2.4	22	0.69	23	43.9
Larimer	4	9.5	127	3.99	131	42.2
Las Animas	0	0.0	6	0.19	6	40.1
Lincoln	0	0.0	0	0.00	0	0.0
Logan	0	0.0	11	0.35	11	48.6
Mesa	1	2.4	104	3.27	105	71.0
Mineral	0	0.0	1	0.03	1	141.0
Moffat	0	0.0	11	0.35	11	83.3
Montezuma	0	0.0	11	0.35	11	43.3
Montrose	0	0.0	14	0.44	14	34.4
Morgan	0	0.0	6	0.19	6	21.1
Otero	0	0.0	6	0.19	6	32.1
Ouray	0	0.0	4	0.13	4	88.3
Park	0	0.0	10	0.31	10	62.4
Phillips	0	0.0	2	0.06	2	45.8
Pitkin	0	0.0	3	0.09	3	17.4
Prowers	0	0.0	4	0.13	4	32.3
Pueblo	4	9.5	139	4.37	143	88.9
Rio Blanco	0	0.0	2	0.06	2	29.2
Rio Grande	0	0.0	5	0.16	5	41.9
Routt	0	0.0	7	0.22	7	30.0
Saguache	0	0.0	1	0.03	1	15.9
San Juan	0	0.0	0	0.00	0	0.0
San Miguel	0	0.0	1	0.03	1	13.2
Sedgwick	0	0.0	0	0.00	0	0.0
Summit	0	0.0	7	0.22	7	25.0
Teller	0	0.0	14	0.44	14	59.9
Washington	0	0.0	3	0.09	3	62.9
Weld	2	4.8	107	3.36	109	41.3
Yuma	0	0.0	1	0.03	1	9.9
Unspecified	2	4.8	731	22.98	733	—

Total Unspecified	Acute and Chronic HCV Cases	
	Number	%
CDOC	271	37.0
FCI	83	11.3
Other	379	51.7

†Past or present chronic cases may include 5-10% of acute cases reported for the same year

‡ Rates per 100,000 were calculated using the U.S. Census Bureau, Population Division, *Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2012*, <http://www.census.gov/popest/data/index.html>. Rates calculated for counties with few cases and small populations should be interpreted with caution

Figure 1.



Rates per 100,000 were calculated using the 2012 estimates from the U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2012, <http://www.census.gov/popest/data/index.html>. Rates calculated for counties with few cases and small populations should be interpreted with caution.



## Technical Notes Hepatitis C Surveillance

### ***Epidemiology***

Viral hepatitis surveillance in Colorado is primarily based on laboratory reporting of serologic results. Laboratory-based reporting enables the identification of asymptomatic persons infected by the virus as well as those displaying symptoms. In Colorado, the Board of Health requires physicians and other health care providers to report suspected cases of acute hepatitis C within 7 days, and laboratories to report positive HCV serologic tests (including positive serum antibody titers with signal-to-cutoff ratios or more specific tests) within 7 days. Upon receipt of these reports, either electronically, by fax, or via another reporting system, the Viral Hepatitis Program (VHP) uses established case definitions to assign the appropriate diagnosis and case status for each patient.

### **Acute Hepatitis C**

Acute hepatitis C is the first stage of hepatitis C infection and may be identified two weeks to six months after the exposure to the virus. Many people with hepatitis C do not have symptoms and do not know they are infected. If symptoms occur, they may include fever, headache, malaise, nausea,

vomiting, diarrhea, abdominal pain, and jaundice. Abnormal liver function tests are one of the most characteristic features. CDPHE uses case definitions published by the National Notifiable Diseases Surveillance System (NNDSS) to define an acute case. These can be found at <http://wwwn.cdc.gov/NNDSS/script/conditionsummary.aspx?CondID=83>

### **Past or Present Hepatitis C**

Up to 85% of persons infected with hepatitis C, develop chronic infection. Chronic liver disease or liver cancer develops in approximately 15 -25% of people infected with the hepatitis C virus for 20 years or longer. When symptoms appear, they are often a sign of advance liver disease and may include the same symptoms as an acute infection. The surveillance case definition relates to past or present cases of hepatitis C rather than truly chronic infections. A present case can only be identified with additional viral load testing, and only 52.3% of cases included both an anti-HCV and an HCV RNA test. The case definition for hepatitis C past or present can be found at <http://wwwn.cdc.gov/NNDSS/script/conditionsummary.aspx?CondID=84>

The CDPHE Viral Hepatitis Program attempts to interview all acute cases. In 2012, it also attempted to follow-up on a subset of chronic cases by soliciting more risk and clinical information from healthcare providers. If a demographic or risk variable is reported as missing, the information was not located by the disease investigators. If the variable is reported as unknown, then the investigator asked the question or located the information in a report and it was marked unknown. For example, a case investigator reviewed a medical record for a case and found a question related to race that was not marked. In that case, the variable was “missing”. If a person did not know whether or not their household contacts had hepatitis C, they would respond “don’t know” or “unknown”.

### **Surveillance Summary**

#### Gender

In 2011, a total of 42 acute cases of hepatitis C were reported in Colorado. The majority of the reported acute cases of hepatitis C were men (n=25; 59.5%); 17 female cases were reported (41.5%). For chronic HCV infections, 64.1% of the total 3,181 reported cases were among men (n=2,039), as compared to 1,159 (35.9%) in women.

#### Age

Persons 40-49 years of age had the highest number of reported acute cases (n=12; 28.6%), followed closely by persons 20-29 years of age (n=11; 26.2%). For chronic infections, persons 50-59 years of age had the highest number of reported cases (n=1,089; 34.2%). These reports support recent recommendations by the U.S. Centers for Disease Control and Prevention (CDC). The recommendation states that adults born during 1945-1965 should receive one-time testing for HCV without prior ascertainment of HCV risk.<sup>1</sup>

#### Race/Ethnicity

Data on race and ethnicity was missing, unknown, or reported as other for most of the reported cases of chronic HCV (n=2,192; 68.9%). Among the reported cases that included race, White non-Hispanics had the highest number of chronic cases (n=560; 17.6%) and acute cases (n=23; 88.5%). However, rate per 100,000 is much higher among Black non-Hispanics and American Indian/Alaska Natives (43.2 per 100,000 and 81.8 per 100,000, respectively). Rates per 100,000 were calculated using the 2012 estimates from the U.S. Census Bureau, Population Division.<sup>2</sup>

### Risk Factors

Risk factor data include: injection drug use (IDU), household contact, sex contact, and healthcare exposures. These data were obtained through patient interviews, medical record reviews, or information provided by a physician, hospital, or other healthcare provider. The VHP collected risk factor information on 37 (88.1%) acute HCV cases and 858 (27.0%) chronic cases.

### County Distribution

Acute hepatitis C was reported in 13 of the 64 Colorado counties. Chronic hepatitis C was reported in 59 of the 64 Colorado counties. Sixty-two percent of cases were reported from counties along Colorado's front range (Adams, Arapahoe, Boulder, Denver, El Paso, Jefferson, Larimer, Pueblo, and Weld.) Outside of Denver, rural and frontier counties (rural areas sparsely populated that are isolated from population centers and services), had the highest rates of reported chronic cases. However, this is based on small numbers of cases reported, and five rural and frontier counties did not report a case. Incarcerated HCV chronic cases are counted in the "Unspecified" section under Colorado Department of Corrections (CDCO) of Federal Correctional Institute (FCI).

Figure 1 map shows the rate distribution of hepatitis C per 100,000 county populations in Colorado. The rate is calculated using the 2012 estimated population figures from the U.S. Census Bureau, Population Division.<sup>3</sup>

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<sup>1</sup>Centers for Disease Control and Prevention. (17 August 2012). Recommendations for the Identification of Chronic Hepatitis C Virus Infection Among Persons Born During 1945–1965. *MMWR* 61(RR04), 1-18.

<sup>2</sup>US Census Bureau, Population Division. (June 2013). *Annual Estimates of the Resident Population by Sex, Age, Race, and Hispanic Origin for the United States and States: April 1, 2010 to July 1, 2012*. Retrieved from <http://www.census.gov/popest/data/index.html>.

<sup>3</sup>US Census Bureau, Population Division. (December 2012). *Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2012*. Retrieved from <http://www.census.gov/popest/data/index.html>.