

Chronic Hepatitis C in California

2016 Executive Summary

BACKGROUND

Hepatitis C virus is spread when blood from a person infected with the hepatitis C virus enters the body of a person who is not infected. Hepatitis C virus is highly infectious and easily transmitted, even in microscopic amounts of blood. Today, transmission of hepatitis C is primarily through sharing needles, syringes or other drug injection equipment. It can also be transmitted through sexual contact or from a parent to infant at birth. Before 1992, when widespread screening of the blood supply began in the United States, hepatitis C was commonly spread through blood transfusions and organ transplants.

Approximately 70 to 85 percent of people who become infected with hepatitis C become chronically infected.¹ Chronic hepatitis C is a serious disease that can result in long-term health problems, even death. There is no vaccine for hepatitis C. In 2013, a new generation of direct acting antivirals became available that cure more than 90 percent of people with chronic hepatitis C infection.² In 2012, the Centers for Disease Control and Prevention (CDC) issued recommendations that all persons born during 1945-1965 receive one-time hepatitis C testing due to the high prevalence of hepatitis C infection in this age group in the United States.³

In this summary, we describe changes in chronic hepatitis C trends in California over time, including demographic and geographic characteristics of newly reported chronic hepatitis C cases, to inform efforts to reduce viral hepatitis transmission, and limit the progression and implications of viral hepatitis-related liver disease.

SUMMARY

In 2016, the burden of notifiable chronic hepatitis C in California was substantial and increasing when compared to recent years. From 1994 to 2016, 640,930 chronic hepatitis C cases were newly reported to the California Department of Public Health (CDPH). With 38,656 newly

¹ Centers for Disease Control and Prevention, Viral Hepatitis. Available at: [Centers for Disease Control and Prevention \(CDC\) Viral Hepatitis \(https://www.cdc.gov/hepatitis/hcv/index.htm\)](https://www.cdc.gov/hepatitis/hcv/index.htm)

² American Association for the Study of Liver Diseases and the Infectious Diseases Society of America. Guidance on HCV testing and linkage to care available at: [Recommendations for testing, management, and treating hepatitis C \(https://www.hcvguidelines.org/\)](https://www.hcvguidelines.org/)

³ Smith BD, Morgan RL, Beckett GA, et al. Recommendations for the identification of chronic hepatitis C virus infection among persons born during 1945-1965. MMWR Recomm Rep. 2012;61(RR-4):1-32.

reported cases of chronic hepatitis C in 2016, California ranked first among all states that published their surveillance data.^{4,5}

The rate of newly reported chronic hepatitis C infection in California increased 14 percent between 2014 and 2016, from 86 to 98 per 100,000 population. Chronic hepatitis C remained one of the most frequently reported communicable diseases in California.⁶ Important disparities in the gender, age, racial, and geographic distribution of chronic hepatitis C infections persisted.

Although people born during 1945-1965 ("baby boomers") had the highest rates of newly reported chronic hepatitis C infection in 2016 and made up almost half of newly reported cases, there has been an increasing proportion of newly reported chronic hepatitis C cases among adolescents and young adults over the last ten years. From 2014 to 2016, a total of 13,683 new hepatitis C reports were among people ages 15-29, and the rate increased 50 percent in this three-year period. White, African American/Black, and American Indian/Alaska Native persons in the general population remained disproportionately affected by chronic hepatitis C in 2016. Geographically, the rate of newly reported chronic hepatitis C virus (HCV) infections was highest in the northern and central regions of California.

In 2016, nine percent of all newly reported chronic hepatitis C cases in California were reported from state prisons. Among adolescents and young adults ages 15-29 incarcerated in state prisons between 2014 and 2016, the rate of newly reported chronic hepatitis C infection increased 22 percent. Notably, the median age of persons with newly reported chronic hepatitis C infection in state prisons decreased 10 years between 2007 and 2016, from 42 to 32 years. Hispanic/Latino and White persons in state prisons remained disproportionately affected by chronic hepatitis C compared with African Americans.

DISCUSSION

Surveillance data for 2016 suggest a growing percentage of newly reported chronic hepatitis C cases in California are due to recent transmission. These findings are consistent with national surveillance data suggesting the majority of infections among young people during this time

⁴ Forty-two states gave CDC permission to publish their 2016 chronic hepatitis C case data.

⁵ Number of newly reported case reports of confirmed past or present hepatitis C submitted by states and jurisdictions can be found at: [Surveillance for Viral Hepatitis - United States, 2016](#)

⁶ Centers for Infectious Diseases-related disease cases among California residents, by year, 2015. Available at: [CHHS Open Data Portal, Infectious Disease Cases](#)

period were associated with injection drug use.^{7,8} Newly reported chronic hepatitis C cases among adolescents and young adults indicate a need for hepatitis C prevention among people who inject drugs, including access to syringe service programs, opportunities for medication-assisted treatment programs and comprehensive health services that include HCV testing and linkage to care.⁹

During 2014-2016, more than 3,000 cases of chronic hepatitis C were newly reported from California state prisons, annually. These reports represent cases that were not initially identified in the community and highlight the important role of prison-based testing and treatment for chronic hepatitis C management. In 2016, California state prisons began screening all newly incarcerated people for HCV infection at intake. This policy likely contributed to an increase in hepatitis C detection compared to previous years.

National prevalence data show people born during 1945-1965 account for two thirds of the population living with chronic hepatitis C infection. In 2012, CDC recommended all adults born during 1945-1965 receive one-time testing for HCV, regardless of risk history. Recent increases in rates of newly reported hepatitis C among people ages 50-59 years and 60 years of age and older likely represents increased efforts in California to identify and treat chronic hepatitis C infection.

From 2014 to 2016, race/ethnicity data were not specified for 66 percent of case reports. This limits the conclusions about trends in chronic hepatitis C virus by race/ethnicity. For example, the increase in proportion of reports in Asian Pacific Islanders from 3 percent in 2014 to 5 percent in 2016 may represent an increase in transmission, improved case detection in this population or more complete race and ethnicity information from healthcare providers.

KEY FINDINGS: CHRONIC HEPATITIS C IN CALIFORNIA (INCLUDING STATE PRISONS)

Overall

- In 2016, CDPH received 38,656 new reports of chronic hepatitis C infections. The rate of newly reported chronic hepatitis C infection increased 14 percent since 2014, from 86.0 to 98.2 per 100,000 population.

⁷ Zibbell JE, Asher AK, Patel RC, et al. Increases in Acute Hepatitis C Virus Infection Related to a Growing Opioid Epidemic and Associated Injection Drug Use, 2004 to 2014. *Amer J Public Health*. 2018 Feb;108(2):175-81.

⁸ Increases in Hepatitis C Virus Infection Related to Injection Drug Use among Persons Aged ≤30 Years — Kentucky, Tennessee, Virginia, and West Virginia, 2006–2012. *MMWR*. May 8, 2015 / 64(17);453-458

⁹ National Viral Hepatitis Action Plan 2017-2020. Available at: [National Viral Hepatitis Action Plan](#)

- From 1994 to 2016, 640,630 chronic hepatitis C cases were newly reported to CDPH.

By Gender

- From 2014 to 2016, 63 percent of newly reported chronic hepatitis C cases in California were among males, and males had almost twice the rate of newly reported chronic hepatitis C infection of females.

By Age

- Almost half (47 percent) of newly reported chronic hepatitis C cases in California in 2016 were among persons born during the years 1945-1965.
- In 2016, persons ages 50-59 years and 60 years of age and older—age groups including the baby boomer cohort—had the highest rate of newly reported chronic hepatitis C infections among all age groups, and rates among males were up to 76 percent higher than rates among females in the same age groups.
- In 2016, there were 6,380 new reports of chronic hepatitis C infection among adolescents and young adults (age 15-29 years). This age group accounted for 17 percent of all new reports in 2016. Reports in this age group, considered to be associated with sharing of injection drug use equipment, increased 50 percent in the three-year period.
- In 2016, the age distribution of newly reported chronic hepatitis C cases continued to show an increasingly bimodal distribution since 2007, with young persons—particularly males ages 20-29 years—composing a higher proportion of newly reported chronic hepatitis C infections (from 5 percent in 2007 to 11 percent in 2016).
- From 2014 to 2016, rates of newly reported chronic hepatitis C infection among females increased substantially among those ages 15-29, 20-29 and 30-39 - by at least 60% in each age group. Rates among males increased the most among those ages 15-29 (from 10.4 to 16.2 per 100,000; an increase of 56 percent).
- In the past ten years, there has been an increase in rate of chronic hepatitis C among women of childbearing age (15-44 years), from 53.7 per 100,000 in 2007 to 62.4 per 100,000 in 2016. As hepatitis C can be transmitted from an infected gestational birth parent to their baby at birth, this has implications for perinatal hepatitis C infection.

By Race/Ethnicity

- Race/ethnicity data were not specified for 61 percent of newly reported chronic hepatitis C cases in 2016. Of cases with race/ethnicity reported, White, African American/Black, and American Indian/Alaska Native persons in California continued to be disproportionately affected by chronic hepatitis C in 2016.

- In 2016, Whites represented 38 percent of the general population in California, but 48 percent of newly reported chronic hepatitis C cases; African Americans/Blacks represented 6 percent of the general population in California, but 10 percent of newly reported chronic hepatitis C cases; and American Indian/Alaska Natives were 0.5 percent of the general population but one percent of newly reported chronic hepatitis C cases.
- In 2016, Hispanics/Latinos and Asian Pacific Islanders (APIs) were underrepresented among chronic hepatitis C cases in California. Hispanics/Latinos were 40 percent of the general population, but only 25 percent of reported chronic hepatitis C cases, and APIs were 13 percent of the state population, but only 5 percent of reported chronic hepatitis C cases.

By Geography

- Among local health jurisdictions with population $\geq 100,000$ (populous jurisdictions), Humboldt county had the highest rates of newly reported chronic hepatitis C cases in California in 2016, followed by San Francisco, Shasta, Alameda, and Butte counties. The top five jurisdictions had higher rates of newly reported chronic hepatitis C infection than the statewide rate, as did Berkeley City, Kern, Sacramento, Santa Cruz, Solano, Sonoma, and Stanislaus counties. Together, the top five local health jurisdictions with population $\geq 100,000$ and highest chronic hepatitis C rate accounted for 11 percent (n=4,133) of all newly reported cases in 2016.
- Among local health jurisdictions with population $< 100,000$ (non-populous jurisdictions), Lake county had the highest rate of newly reported chronic hepatitis C infection in California in 2016, followed by Del Norte, Lassen, Tuolumne and Mariposa counties. These top five jurisdictions had higher rates of newly reported chronic hepatitis C infection than the statewide rate, as did Amador, Calaveras, Inyo, Mendocino, Nevada, Siskiyou, Trinity and Yuba counties. Together, the top five local jurisdictions with population $< 100,000$ and highest chronic hepatitis C rate accounted for < 1 percent (n=323) of newly reported cases in 2016.
- From 2014 to 2016, notable increases in rates of newly reported chronic hepatitis C infection occurred in non-populous and populous jurisdictions in California. Of non-populous jurisdictions, Lake county reported a significant increase of 91 percent. Populous jurisdictions that reported more than twice the rate of chronic hepatitis C infection in 2016 compared to 2014 include Alameda (426 percent) and Solano (137 percent) counties.

KEY FINDINGS: CHRONIC HEPATITIS C IN CALIFORNIA STATE PRISONS

Overall

- In 2016, CDPH received 3,459 new reports of chronic hepatitis C infections in state prison facilities. The rate of newly reported chronic hepatitis C infection in state prisons increased 4 percent since 2014, from 2,818.2 to 2,943.7 per 100,000 population.
- The rate of chronic hepatitis C reported from California prisons in 2016 (2,943.7 per 100,000) was 32 times higher than the rate reported from the statewide non-incarcerated population (89.7 per 100,000).
- Nine percent of all newly reported chronic hepatitis C cases in California in 2016 were reported from state prisons.
- From 1994 to 2016, 74,008 chronic hepatitis C cases in California prisons were newly reported to CDPH.

By Gender

- From 2014 to 2016, the vast majority (95 percent) of newly reported chronic hepatitis C cases in California state prisons were among males, which roughly corresponded to the gender distribution of people incarcerated in California state prisons.
- Rates of chronic hepatitis C reported among females incarcerated in California state prison more than doubled from 2014 to 2016 (121 percent) with the greatest increase among females ages 30-39.

By Age

- In 2016, 13 percent of newly reported chronic hepatitis C cases in California state prisons were among persons born during the years 1945-1965; in contrast, more than half (62 percent) of newly reported chronic hepatitis C cases were among persons born in 1980 or later years.
- Males ages 20-39 years incarcerated in state prisons comprised almost 70 percent of all cases reported from California state prisons in 2016 and one-third (33 percent) of all cases reported among males in their age group statewide.
- For each year during 2014-2016, males ages 20-29 had the highest rate of newly reported chronic hepatitis C among persons incarcerated in state prisons.
- Among males ages 50-59 incarcerated in state prisons, rates of newly reported chronic hepatitis C cases decreased 30 percent between 2014 and 2016, from 2,353.8 to 1,638.3 per 100,000 population.
- The median age of persons with newly reported chronic hepatitis C infection in state prisons decreased 10 years between 2007 and 2016, from 42 to 32 years.

By Race/Ethnicity

- In 2016, Hispanic/Latino and White persons continued to be disproportionately affected by chronic hepatitis C in state prisons. Hispanics/Latinos represented 42 percent of the population in state prisons, but 57 percent of reported chronic hepatitis C cases with race/ethnicity specified, and Whites represented 22 percent of the population in state prisons, but 37 percent of reported chronic hepatitis C cases with race/ethnicity specified. In contrast, African Americans/Blacks were underrepresented among chronic hepatitis C cases in state prisons, making up 29 percent of the state prison population, but only 2 percent of reported chronic hepatitis C cases.