

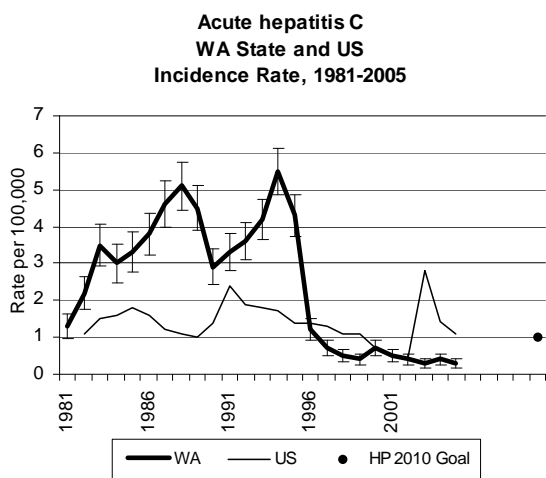
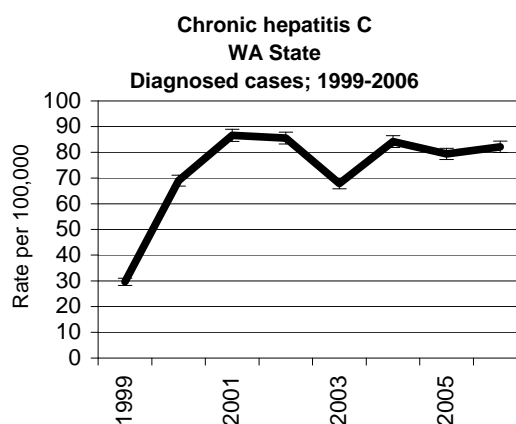
Hepatitis C

Surveillance Update

Definition: A viral infection of the liver manifested variously as an asymptomatic condition, mild to severe liver disease, or fulminating fatal condition. Symptoms include tiredness, loss of appetite, nausea, abdominal discomfort, dark urine, clay-colored bowel movements, muscle and joint pains, and jaundice. Approximately 75% to 85% of individuals with acute hepatitis C infection develop chronic infection, and approximately 20% of individuals with chronic infection will progress to cirrhosis or liver cancer over a period of 10 to 20 years. Infection is primarily from exposure to infected blood, and occurs most often through intravenous drug use. Infection occurs less frequently through sexual activity, occupational exposures, from an infected mother to her baby during birth, or other means. ICD -9 CM codes 070.41, 070.44, 070.51, 070.54, 070.70, 070.71; ICD-10 codes B17.1 and B18.2.

Time Trends

Infections from acute hepatitis C have decreased considerably over the last 15 years. Researchers believe the drop in acute hepatitis C infections has resulted from the use of needle exchange programs and other behavior changes to prevent the transmission of HIV¹. For 2003-2005, Washington's rate of acute C was 0.3 per 100,000. The rate of chronic hepatitis C for 2004-2006 was 81 cases per 100,000 annually. There are no national chronic hepatitis C data for comparison to Washington's rates. There were approximately 40,000 cases of chronic hepatitis C reported in Washington from December 2000 through December 2006.



Year 2010 Goals

The Healthy People 2010 goal for acute hepatitis C is one new case per 100,000, which Washington already meets.

Hepatitis C is the most common bloodborne pathogen in the United States. It infects about 4.1 million people; 3.2 million people are living with chronic infection². Nationally, surveillance programs have been slow to develop, so the Healthy People 2010 goal is to increase the proportion of chronic cases identified by state and local health departments. Chronic hepatitis C became a reportable condition in Washington State in December 2000.

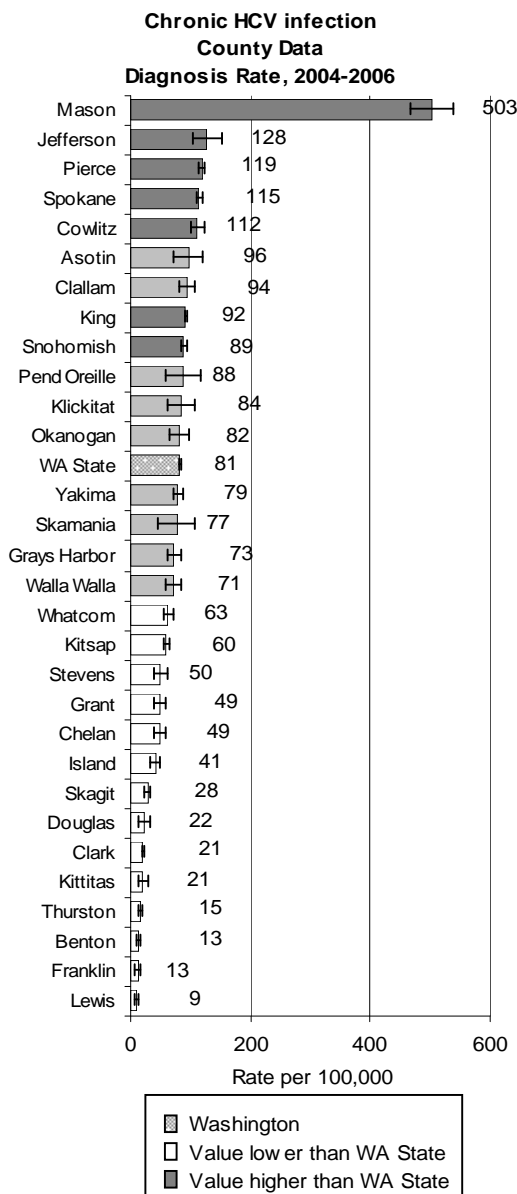
Geographic Variation

Infection rates vary among counties. It is not possible to determine if the differences are due to true differences in the number of infections or to differences in detection and reporting. Resources devoted to disease surveillance vary widely among counties, and this variability could result in different rates.

For 2004-06, several counties had too few cases to calculate reliable rates. These include Adams, Columbia, Ferry, Garfield, Lincoln, Pacific, San Juan, Wahkiakum, and Whitman counties.

A county's rate can be influenced by the presence of a state correctional facility, because new cases from those institutions are counted as residents of the county in which the institution is located. For example, Mason County's exceptionally high rate of 503 cases per 100,000 is due primarily to cases at the Washington Corrections Center, which processes almost all of the state's inmates before they are sent to other facilities.

Other counties that have significantly higher rates than the state include Jefferson, Pierce, Spokane, Cowlitz, King, and Snohomish counties.

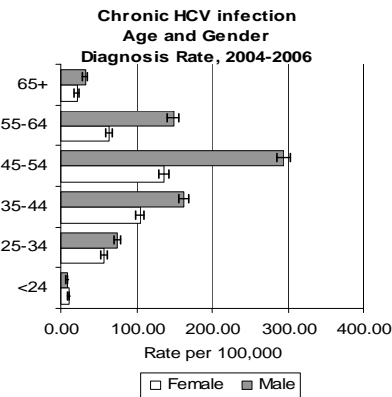


Age and Gender

In Washington, 64% of the cases reported in 2004-06 were among males and 36% were among females. The male rate was 102 per 100,000, and the female rate was 57 per 100,000.

Cases in children are uncommon. For all ages above 24 years, men have higher rates of infection than women. Eighty percent of new cases were in people ages 35-64, and those ages 45-54 had the highest rates.

These data are similar to national data that show more infection among males. The recent National Health and Nutrition Examination Survey (NHANES), conducted in 1999 through 2002, found the overall prevalence of antibody to hepatitis C virus (HCV) was 2.1% among males and 1.1% among females².



Race and Hispanic origin

Significant numbers of Washington's chronic hepatitis C case reports do not identify race or Hispanic origin. For 2004-2006, 56% of reported cases did not include race or ethnicity. Reliable rates cannot be calculated for these subgroups.

Nationally, non-Hispanic blacks are disproportionately affected. Their overall prevalence of antibody to HCV is 3.0% compared to 1.5% among non-Hispanic whites and 1.3% among Mexican-Americans².

Income and Education

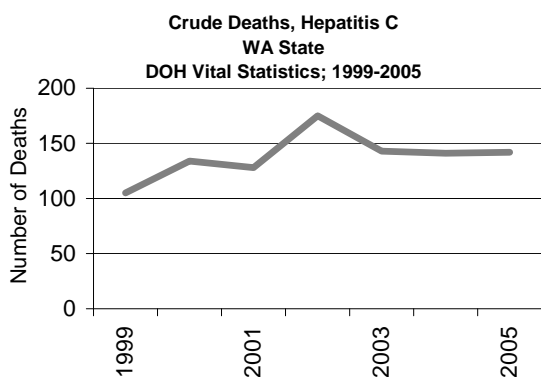
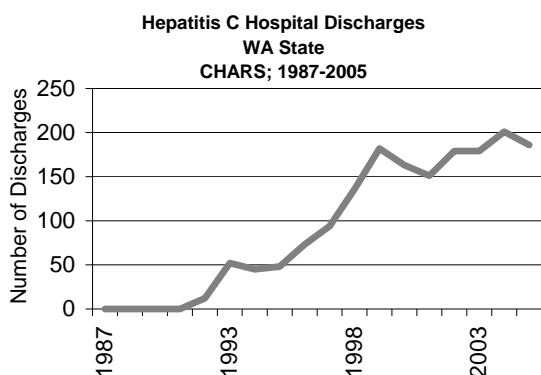
Washington case reports do not include information about income or education. Nationally, greater prevalence of antibody to HCV is found among people with less than a high school education; they have an overall prevalence of 2.8% compared to 1.3% among those with more than a high school education. Prevalence of HCV antibody among people with incomes at or above two times the federal poverty threshold is 1.0%. It is 2.3% among

people with incomes that are 100%-200% of the poverty threshold, and 3.2% among people with incomes below 100% of poverty².

Nationally, there is not a significant association between prevalence of HCV antibody and service in the U.S. armed forces. Among males 20 years or older, prevalence among those who served in the military is 2.8% (CI 1.9-4.2) compared to 2.7% (CI 2.1-3.3) among those without such service².

Hospital Discharges and Deaths

The number of hospitalizations associated with hepatitis C has increased over the last 15 years. In 1987, there were 12 hospitalization discharges that listed hepatitis C as the principal diagnosis, and in 2005, that number increased to 186. There are about 140 deaths per year in Washington that list hepatitis C as the underlying cause of death.



Technical Notes

The Washington State chronic hepatitis C data reflect total unduplicated cases of infection reported by local health jurisdictions to the state surveillance system. They are presented by year of diagnosis and include cases classified according to the CDC's case definition as either 'Confirmed' or 'Probable'. According to the CDC's 2005 case definition of chronic hepatitis C, a 'Probable' case is one that is anti-HCV enzyme immunoassay (EIA) positive but is not verified by a more specific test. A 'Confirmed' case is verified by an additional assay, such as: 1) positive recombinant immunoblot assay for HCV; or 2) positive nucleic acid test for HCV; or 3) HCV genotype; or 4) a screening test with a high signal to cutoff ratio for the specific test (e.g. > 3.8 for EIAs).

Endnotes

¹ Chen S.L. & Morgan T.R. (2006). The Natural History of Hepatitis C Virus (HCV) Infection. *International Journal of Medical Sciences*, 3(2), 47-52.

² Armstrong G.L., Wasley A., Simard E.P., McQuillan G.M., Kuhnert W.L., & Alter M.J. (2006). The Prevalence of Hepatitis C Virus Infection in the United States, 1999 through 2002. *Annals of Internal Medicine*, 144(10), 705-714.