

**Washington State  
Chronic Hepatitis B and Chronic Hepatitis C  
Surveillance Report**

***Summary of Cases Reported  
December 2000 through December 2011***



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## Technical Notes

The following report describes all statewide probable and confirmed cases of chronic hepatitis B and chronic hepatitis C reported to the Washington State Department of Health (DOH) through December 31, 2011, although required reporting began in December 2000. All unique cases reported to DOH, including cases diagnosed and reported prior to 2001, are included. When more than one county reported an individual, the report assigns that person to the county with the earliest diagnosis date. The report counts cases diagnosed within Washington State prisons as 'State Corrections' cases. It does NOT count them in the county in which the facility is located.

For each disease report, a case is counted as 'Confirmed' or 'Probable' if a county or other reporting entity designated the case as such. If the reporter did not classify the case as 'Confirmed' or 'Probable', then this report counts it according to the classification criteria defined by the Centers for Disease Control and Prevention (CDC) (see <http://wwwn.cdc.gov/NNDSS/script/SearchResults.aspx?Searchfor=hepatitis>) for current case definitions). The diagnosis date for each case equals the earliest diagnosis date reported. If a case report did not include a diagnosis date, then it equals the date of laboratory data that defines the case. In the absence of laboratory data, it equals the date that a person entered the case into the system.

The tables and figures in this report describe the summary amount of cases reported (confirmed plus probable plus unknown). However, in the event the CDC provides future funding for chronic hepatitis based on case counts, they may disallow cases with insufficient data to determine their classifications.

Washington State deaths related to hepatitis B and C include all deaths with hepatitis B or hepatitis C ICD-9 or ICD-10 codes noted on the death certificate, whether hepatitis B or C was the underlying cause or one of multiple causes. Not all of these deaths were reported as hepatitis cases. See Appendix for list of codes associated with viral hepatitis.

## Additional Resources

*The Health of Washington State*, 2012 Edition:

<http://www.doh.wa.gov/Portals/1/Documents/5500/ID-HEP2012.pdf>

Acute hepatitis B data:

<http://www.doh.wa.gov/PublicHealthAndHealthcareProviders/NotifiableConditions/HepatitisB.aspx>

Acute hepatitis C data:

<http://www.doh.wa.gov/PublicHealthAndHealthcareProviders/NotifiableConditions/HepatitisC.aspx>

# Hepatitis B

## Frequently Asked Questions

The Frequently Asked Questions below are adapted from those published by the Centers for Disease Control and Prevention.

### What is hepatitis B?

Hepatitis B is a contagious liver disease that ranges in severity from a mild illness lasting a few weeks to a serious, lifelong illness. It results from infection with the hepatitis B virus (HBV). HBV infection is either “acute” or “chronic.” Acute HBV infection is a short-term illness that occurs within the first 6 months after someone comes in contact with the virus. Acute infection can — but does not always — lead to chronic infection. Chronic HBV infection is a long-term illness that occurs when the virus remains in a person’s body.

### How many people have hepatitis B?

There were about 43,000 new HBV infections in the U.S. in 2007. The number of reported cases is much lower because many infected people do not go to the doctor because they do not have symptoms. In the U.S., approximately 1.2 million people have chronic HBV. Globally, it affects about 350 million people and contributes to about 620,000 annual deaths. Rates of acute HBV in the U.S. have dropped by about 82% since 1990. At that time, many states began routine HBV vaccination of children, which dramatically decreased the rates of the disease, particularly among children.

### What are the symptoms of acute hepatitis B?

Although a majority of adults develop symptoms from acute HBV infection, many young children do not. Adults and children over the age of five years are more likely to have symptoms. Seventy percent of adults will develop symptoms from the infection. On average, symptoms appear three months after exposure, but they can appear any time between six weeks and six months after exposure. Symptoms usually last a few weeks, but some people can be ill for as long as 6 months. Symptoms of acute HBV, if they appear, can include:

- Fever
- Fatigue
- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Dark urine
- Clay-colored bowel movements
- Joint pain
- Jaundice (yellow color in the skin or the eyes)

## **What long-term health problems does hepatitis B cause?**

Many people with chronic HBV infection do not know they have HBV because they may not feel or look sick. However, they still can spread the virus to others and are at risk of serious health problems. These include liver damage, liver failure, liver cancer, or even death. Approximately 3,000 people die every year in the U.S. from HBV-related liver disease.

## **Does everyone infected with hepatitis B experience long-term effects?**

The chance of long-term sickness depends upon the age at infection. People who are young at infection have greater chances of developing chronic HBV than do older people. About 90% of infected infants will develop chronic infection. The risk goes down as a child gets older. About 25%–50% of children infected between the ages of 1 and 5 years will develop chronic HBV. The risk drops to 6%–10% when exposure occurs in a person over 5 years of age. Worldwide, transmission occurred in most people with chronic HBV at birth or during early childhood.

Some people have ongoing symptoms similar to acute HBV, but most people with chronic HBV remain free of symptoms for as long as 20 or 30 years. About 15%–25% of people with chronic HBV develop serious liver conditions, such as cirrhosis (scarring of the liver) or liver cancer. Even as the liver becomes diseased, some people still do not have symptoms, although certain blood tests for liver function might begin to show some abnormalities.

## **How is hepatitis B spread?**

Transmission occurs when blood, semen, or other body fluid infected with the hepatitis B virus enters the body of a person who is not infected. Adults in the United States most commonly spread HBV through sexual contact, which accounts for nearly two-thirds of acute hepatitis B cases. People can become infected with the virus during activities such as:

- Birth (spread from an infected mother to her baby during birth)
- Sex with an infected partner
- Sharing needles, syringes, or other drug-injection equipment
- Sharing items such as razors or toothbrushes with an infected person
- Direct contact with the blood or open sores of an infected person
- Exposure to blood from needlesticks or other sharp instruments

The virus does not spread routinely through food or water. However, there have been instances in which people have transmitted HBV to babies when they gave them pre-chewed food. People do not spread HBV by sharing eating utensils, breastfeeding, hugging, kissing, holding hands, coughing, or sneezing.

## Who is at risk for hepatitis B?

Although anyone can get hepatitis B, some people are at greater risk, such as those who:

- Have sex with an infected person
- Have multiple sex partners
- Have a sexually transmitted disease
- Are men who have sexual contact with other men
- Inject drugs or share needles, syringes, or other drug equipment
- Live with a person who has chronic hepatitis B
- Are infants born to infected mothers
- Are exposed to blood on the job
- Are hemodialysis patients
- Travel to countries with moderate to high rates of hepatitis B

## Who should be tested for hepatitis B?

Health care providers should routinely test the following people for hepatitis B infection:

- Persons born in regions of the world where hepatitis B is common
- U.S.-born persons not vaccinated as infants whose parents were born in regions of the world where hepatitis B is common
- Injection-drug users
- Men who have sex with men
- Persons needing immunosuppressive therapy, including chemotherapy, immunosuppression related to organ transplantation, and immunosuppression for rheumatologic or gastroenterologic disorders
- Persons with elevated liver enzymes of unknown reason
- Donors of blood, plasma, organs, tissues or semen
- Hemodialysis patients
- Pregnant women
- Infants born to mothers who have had a positive hepatitis B surface antigen test
- Household, needle-sharing, or sex contacts of persons known to have had a positive hepatitis B surface antigen test
- Persons who are the source of blood or body fluids resulting in an exposure (for example, a needlestick or sexual assault) that might require postexposure prophylaxis
- HIV-positive persons

## How is hepatitis B treated?

There is no medication available to treat acute hepatitis B. During this short-term infection, doctors usually recommend rest, adequate nutrition, and fluids, although some people may be sick enough to stay in the hospital. People with chronic hepatitis B virus infection should seek the care or consultation of a doctor with experience treating hepatitis B. People with chronic hepatitis B should go to a doctor regularly to check for signs of liver disease and discuss possible treatment. There are several medications for chronic hepatitis B treatment, and

companies are developing new drugs. However, not every person with chronic hepatitis B needs to be on medication, and the drugs may cause side effects in some patients.

### **What can a person with chronic hepatitis B do to take care of his or her liver?**

Doctors with experience in care for people with HBV should regularly monitor people with chronic infection. People with HBV should avoid alcohol because it can cause additional liver damage. They also should check with a health care provider before taking any prescription pills, supplements, or other medications, as these may damage the liver.

### **Is there a vaccine that prevents hepatitis B?**

Yes. The best way to prevent hepatitis B is by getting the hepatitis B vaccine. The hepatitis B vaccine is safe and effective and people usually get them as 3-4 shots over a 6-month period. The hepatitis B vaccine series is a series of shots that make a person's natural immune system protect against hepatitis B. After a person receives the vaccine, the body makes antibodies that protect a person against the virus. An antibody is a substance that the body produces in response to a virus invading the body. The body then stores these antibodies and fights off the infection if it comes in contact with hepatitis B virus in the future.

### **Who should get vaccinated against hepatitis B?**

Public health officials recommend hepatitis B vaccination for:

- All infants, starting with the first dose of hepatitis B vaccine at birth
- All children and adolescents younger than 19 years of age who have not been vaccinated
- People whose sex partners have hepatitis B
- Sexually active persons who are not in a long-term, mutually monogamous relationship.
- Persons seeking evaluation or treatment for a sexually transmitted disease
- Men who have sexual contact with other men
- People who share needles, syringes, or other drug-injection equipment
- People who have close household contact with someone infected with the hepatitis B virus
- Healthcare and public safety workers at risk for exposure to blood or blood-contaminated body fluids on the job
- People with end-stage renal disease, including predialysis, hemodialysis, peritoneal dialysis, and home dialysis patients
- Residents and staff of facilities for developmentally disabled persons
- Travelers to regions with moderate or high rates of hepatitis B
- People with chronic liver disease
- People with HIV infection
- Anyone who wishes to be protected from hepatitis B virus infection



In order to reach individuals at risk for hepatitis B, public health officials also recommend vaccination for anyone in or seeking treatment from the following:

- Sexually transmitted disease treatment facilities
- HIV testing and treatment facilities
- Facilities providing drug-abuse treatment and prevention services
- Healthcare settings targeting services to injection drug users
- Healthcare settings targeting services to men who have sex with men
- Chronic hemodialysis facilities and end-stage renal disease programs
- Correctional facilities
- Institutions and nonresidential day care facilities for developmentally disabled persons

## **Washington State Surveillance Summary**

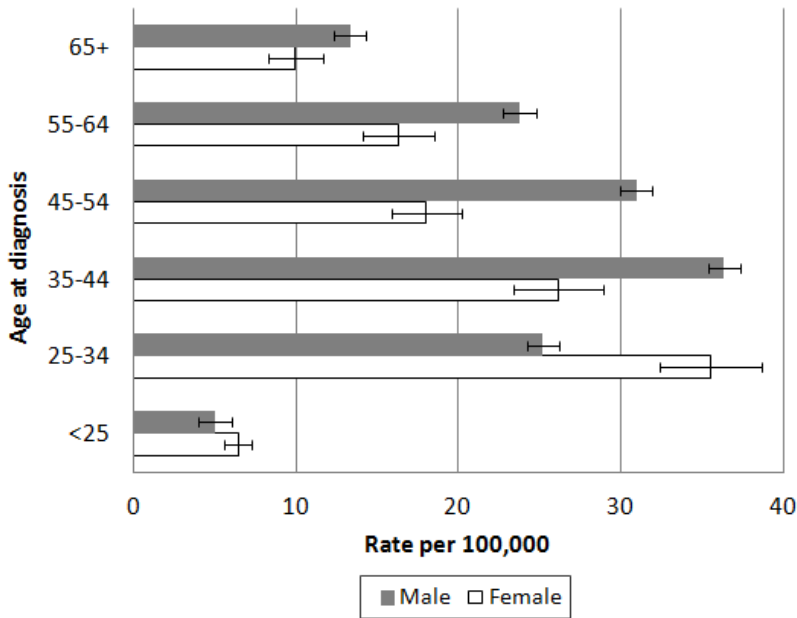
From December 2000 through December 2011, the following traits describe chronic HBV cases in Washington:

- Total cases: 15,664
- Case classification: Confirmed = 45%, Probable = 55%, Unknown = 1%
- About 54% were among males, 45% among females, and 1% were of unknown sex (Table 1)
- Most cases are found in persons age 25-54 years old (Table 1)
- Males have higher rates of infection in most age categories, though females age 25-34 years old have higher rates than males of similar age (Figure 1)
- Many case reports are missing race and risk information, so it is not possible to draw summary conclusions about race/ethnicity and risk (Tables 2 and 3)
- Statewide, there were approximately 1350 cases diagnosed annually from 2007 through 2011 (Table 4)
- The annual rate of reported cases statewide was 18 per 100,000 for the years 2009 through 2011 (Figure 2)
- For the years 2006 through 2010, there were approximately 50 hepatitis B deaths annually (Figure 5)

**Table 1. Sex and age at diagnosis of chronic hepatitis B cases reported through December 31, 2011**

Age	Female		Male		Unknown		Total	
	N	%	N	%	N	%	N	%
<25 years	1090	15%	784	9%	16	7%	1890	12%
25-34 years	2152	31%	1576	19%	24	11%	3752	24%
35-44 years	1539	22%	2402	29%	29	13%	3970	25%
45-54 years	1111	16%	2164	26%	25	11%	3300	21%
55-64 years	703	10%	998	12%	21	10%	1722	11%
65+ years	414	6%	465	6%	8	4%	887	6%
Unknown	25	0%	22	0%	96	44%	143	1%
<b>Total</b>	<b>7034</b>	<b>100%</b>	<b>8411</b>	<b>100%</b>	<b>219</b>	<b>100%</b>	<b>15664</b>	<b>100%</b>
<i>Percent of Total Cases</i>		45%		54%		1%		

**Figure 1. Chronic hepatitis B diagnosis rate per 100,000 by sex and age at diagnosis, 2009 through 2011**



There are a large number of cases with unknown race or ethnicity. It is not correct to draw conclusions about the race or ethnicity of missing cases based on those reported (Table 2). Prevalence of HBV antibodies is relatively low in most of North America and Europe (<2%) compared to other countries. Areas of the world with high prevalence of HBV antibodies ( $\geq 8\%$ ) include countries in southeast Asia and central and south Africa.

**Table 2. Race/ethnicity of chronic hepatitis B cases reported through December 31, 2011**

<b>Race/Ethnicity</b>	<b>Total</b>	<b>%</b>
Asian, non-Hispanic	1821	12%
Black, non-Hispanic	345	2%
Hispanic all races	331	2%
Multiple	23	0%
Native American/Alaska Native non-Hispanic	149	1%
Unknown or not reported	10938	70%
White non-Hispanic	2057	13%
<b>Total</b>	<b>15664</b>	<b>100%</b>

There are a large number of cases with unknown risk factors. It is not correct to draw conclusions about the risk factors of missing cases based on those reported (Table 3).

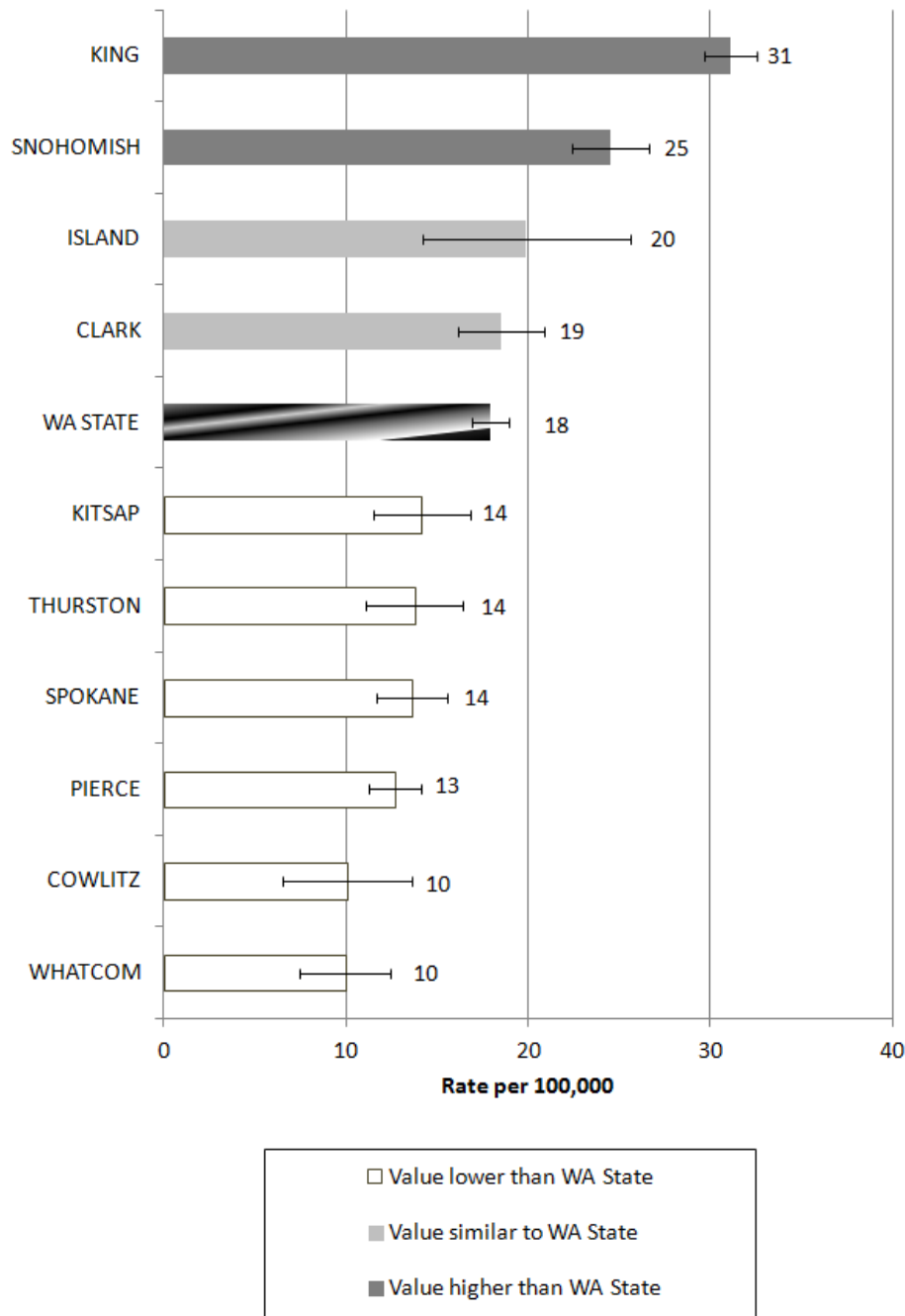
**Table 3. Exposure risk factors of chronic hepatitis B cases reported through December 31, 2011**

<b>Risk</b>	<b>Cases</b>	<b>%</b>
Unknown or not reported	13972	89%
Non-IDU street drug use	819	5%
Multiple risks	483	3%
IDU	143	1%
Maternal transmission	98	1%
Blood products or solid organ transplant	80	1%
Occupational needlestick	33	0%
Sexual	31	0%
Chronic hemodialysis	5	0%
<b>Total</b>	<b>15664</b>	<b>100%</b>

**Table 4. Year of diagnosis of chronic hepatitis B cases reported through December 31, 2011**

County	Pre-2007	2007	2008	2009	2010	2011	Total	%
ADAMS	10	1	0	2	0	0	13	0%
ASOTIN	7	4	2	1	1	0	15	0%
BENTON	39	1	1	0	1	0	42	0%
CHELAN	15	8	10	2	6	4	45	0%
CLALLAM	55	1	5	1	1	0	63	0%
CLARK	539	66	74	99	72	66	916	6%
COLUMBIA	2	0	0	0	0	1	3	0%
COWLITZ	75	5	8	4	12	15	119	1%
DOUGLAS	11	1	1	0	3	1	17	0%
FERRY	5	0	0	0	0	0	5	0%
FRANKLIN	15	1	2	0	0	0	18	0%
GARFIELD	0	0	0	0	0	0	0	0%
GRANT	47	1	4	5	6	6	69	0%
GRAYS HARBOR	32	4	3	0	2	0	41	0%
ISLAND	51	0	4	20	15	12	102	1%
JEFFERSON	27	4	0	1	1	0	33	0%
KING	4340	799	840	628	652	517	7776	50%
KITSAP	105	26	28	39	39	29	266	2%
KITTITAS	9	3	7	7	4	2	32	0%
KLICKITAT	13	1	1	0	3	3	21	0%
LEWIS	21	3	4	3	6	5	42	0%
LINCOLN	2	0	1	0	1	0	4	0%
MASON	36	3	7	2	0	1	49	0%
OKANOGAN	35	5	4	2	1	0	47	0%
PACIFIC	5	8	7	1	2	2	25	0%
PEND OREILLE	15	1	1	0	5	1	23	0%
PIERCE	1019	150	109	104	104	96	1582	10%
SAN JUAN	7	0	2	0	3	0	12	0%
SKAGIT	32	4	8	4	5	6	59	0%
SKAMANIA	2	1	0	0	2	0	5	0%
SNOHOMISH	815	209	194	204	180	140	1742	11%
SPOKANE	313	66	61	74	70	48	632	4%
STEVENS	24	4	2	1	4	2	37	0%
THURSTON	91	56	41	39	29	36	292	2%
WAHKIAKUM	0	0	0	0	0	0	0	0%
WALLA WALLA	35	1	0	2	1	1	40	0%
WHATCOM	93	16	21	23	17	20	190	1%
WHITMAN	21	4	2	5	9	1	42	0%
YAKIMA	236	7	4	7	5	3	262	2%
STATE CORRECTIONS	716	92	119	24	21	9	981	6%
UNKNOWN	0	0	0	1	1	0	2	0%
<b>Total</b>	<b>8915</b>	<b>1556</b>	<b>1577</b>	<b>1305</b>	<b>1284</b>	<b>1027</b>	<b>15664</b>	<b>100%</b>

**Figure 2. Washington State chronic hepatitis B diagnosis rate per 100,000 by county, 2009 through 2011**



Note: Several counties reported too few cases to calculate a rate. These include: Adams, Asotin, Benton, Chelan, Clallam, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Grays Harbor, Island, Jefferson, Kittitas, Klickitat, Lewis, Lincoln, Okanogan, Pacific, Pend Oreille, San Juan, Skagit, Skamania, Stevens, Wahkiakum, Walla Walla, Whitman, and Yakima. Low rates could reflect a low number of cases. It could also from the lack of case finding due to insufficient surveillance resources.

# Hepatitis C

## Frequently Asked Questions

The Frequently Asked Questions below are adapted from those published by the Centers for Disease Control and Prevention

### What is hepatitis C?

Hepatitis C is a contagious liver disease that ranges in severity. It can be a mild illness lasting a few weeks or a serious, lifelong illness. It results from infection with the hepatitis C virus (HCV), which spreads most often through contact with the blood of an infected person. The disease can be either “acute” or “chronic.” Acute HCV infection is a short-term illness that occurs within the first six months after exposure to the virus. For most people, acute infection leads to chronic infection. For every ten people who get HCV, about eight develop long-term (chronic) infection. Chronic HCV infection is a long-term illness that occurs when the virus remains in a person’s body. Chronic infection can last a lifetime and lead to serious liver problems, including scarring or cancer.

### How many people have hepatitis C?

There were about 17,000 new HCV infections in the U.S. in 2007. The official number of reported cases is much lower because many infected people never go to the doctor because they do not have symptoms. About 3.2 million people in the U.S. have chronic HCV infection.

### What are the symptoms of acute hepatitis C?

Approximately three-fourths of people with acute HCV do not have any symptoms. Some people can have mild to severe symptoms soon after they get the virus. These include:

- Fever
- Fatigue
- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Dark urine
- Clay-colored bowel movements
- Joint pain
- Jaundice (yellow color in the skin or eyes)

If symptoms occur, the average time is 6–7 weeks after exposure, but this can range from 2 weeks to 6 months. Even if a person with hepatitis C has no symptoms, he or she can still spread the virus to others. In many cases, there are no symptoms of the disease until liver problems have developed. In people without symptoms, HCV is often detected during routine blood tests to measure liver function and liver enzyme (protein produced by the liver) level.

### **What long-term health problems does hepatitis C cause?**

Chronic hepatitis C is a serious disease that can result in long-term health problems. These include liver damage, liver failure, liver cancer, or even death. It is the leading cause of cirrhosis and liver cancer in the United States. It is also the most common reason for liver transplants. About 12,000 people die every year from HCV-related liver disease.

### **Does everyone infected with hepatitis C experience long-term effects?**

Of every 100 people infected with the hepatitis C virus, about

- 75–85 people will develop chronic HCV infection; of those,
  - 60–70 people will go on to develop chronic liver disease
  - 5–20 people will go on to develop cirrhosis over a period of 20–30 years
  - 1–5 people will die from cirrhosis or liver cancer

About 15%–25% of people who get HCV will clear the virus from their bodies without treatment and will not develop chronic infection. Experts do not know why this happens for some people but not others.

### **How is hepatitis C spread?**

The virus spreads when blood from a person infected with the hepatitis C virus enters the body of someone who is not infected. Today, most people become infected with the hepatitis C virus when they share needles or other equipment to inject drugs. In 1992, the U.S. began to screen its blood supply for HCV. Before then, people got HCV when they received infected blood or organ transplants.

People can spread HCV within a household, but this does not occur very often. If it does happen, it is most likely a result of direct, through-the-skin exposure to the blood of an infected household member. Pregnant women rarely pass HCV to their babies. About 4 of every 100 infants born to mothers with hepatitis C become infected with the virus. However, the risk is higher if the mother has both HIV infection and hepatitis C. People do not spread HCV by sharing eating utensils, breastfeeding, hugging, kissing, holding hands, coughing, or sneezing. It is also not spread through food or water.

## Who is at risk for hepatitis C?

Some people are at increased risk for hepatitis C, including

- Current injection drug users
- Past injection drug users, including those who injected only one time or many years ago
- Recipients of donated blood, blood products, and organs (once a common means of transmission but now rare in the United States since blood screening became available in 1992)
- People who received a blood product for clotting problems made before 1987
- Hemodialysis patients or persons who spent many years on dialysis for kidney failure
- People who received body piercing or tattoos done with non-sterile instruments
- People with known exposures to the hepatitis C virus, such as
  - Healthcare workers injured by needlesticks
  - Recipients of blood or organs from a donor who tested positive for the hepatitis C virus
- HIV-infected persons
- Children born to mothers infected with the hepatitis C virus

## Who should be tested for hepatitis C?

Talk to your doctor about being tested for hepatitis C if any of the following are true:

- Persons born from 1945 through 1965
- You are a current or former injection drug user, even if you injected only one time or many years ago
- You were treated for a blood clotting problem before 1987
- You received a blood transfusion or organ transplant before July 1992
- You are on long-term hemodialysis treatment
- You have abnormal liver tests or liver disease
- You work in healthcare or public safety and were exposed to blood through a needlestick or other sharp object injury
- You are infected with HIV

Persons born from 1945 through 1965 make up approximately 27% of the population, but account for approximately 75% of all HCV infections in the United States. They also have the highest rates of HCV-associated mortality and are at greater risk for HCV-related liver disease, including liver cancer. For these reasons, in 2012 the recommendations for testing were changed to include one-time testing for all individuals born from 1945 through 1965 regardless of risk factors. This recommendation does not replace guidelines for testing based on risk factors or clinical information, but add an additional group recommended for testing.



## **How is hepatitis C treated?**

There are no drugs for treating acute hepatitis C infection. Doctors usually recommend rest, adequate nutrition, and fluids. Each person should discuss treatment options with a doctor who specializes in treating hepatitis. This can include some internists, family practitioners, infectious disease doctors, or hepatologists (liver specialists). People with chronic hepatitis C should regularly go to their doctor to have their livers checked for damage. There are six different types of the hepatitis C virus; types 1–3 are most common in the United States. Until 2011, the best treatment for chronic HCV was a 48-week course of pegylated alpha interferon and ribavirin. Approximately 70%–80% of individuals with types 2 or 3 respond successfully to this treatment, while only about 40%–45% of individuals with type 1 do so.

The national Food and Drug Administration approved two new medications for use in the United States in 2011. These medications have the potential to improve the percent of successful outcomes in individuals with type 1 HCV, including those who were previously treated unsuccessfully. The new medications might also improve outcomes in other populations that did not respond well to the pegylated alpha interferon and ribavirin. Both of the new medications, Victrelis and Incivek, are given in addition to pegylated alpha interferon and ribavirin. Treatment courses can be as short as 24 weeks. Patients need to be closely monitored during treatment, so that treatment can be stopped if patients are not responding. Both of the new medications are expensive, but the drug companies that produce them offer patient assistance programs in Washington.

## **What can a person with chronic hepatitis C do to take care of his or her liver?**

People with chronic HCV should get regular medical exams and liver monitoring. They should avoid alcohol because it can cause liver damage. They should check with a health care provider before taking any prescription pills, supplements, or over-the-counter medications. People with HCV also should talk with their doctors about getting vaccinated against hepatitis A and hepatitis B.

## Washington State Surveillance Summary

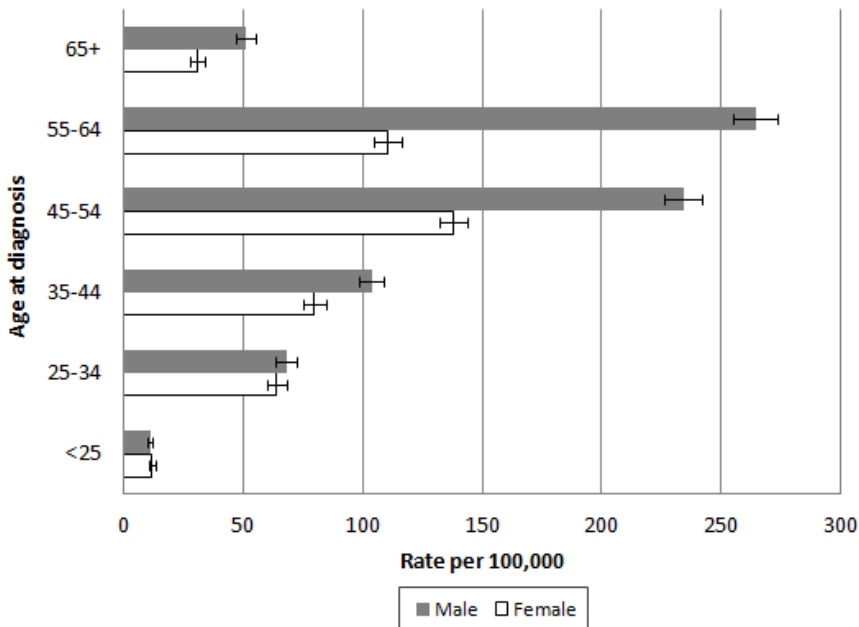
From December 2000 through December 31, 2011, the following traits describe chronic HCV cases in Washington:

- Total cases: 69,459
- Case classification: Confirmed = 22%, Probable = 77%, Unknown = 1%
- About 62% were among males, 36% among females, and 2% were of unknown sex (Table 5)
- Most cases are found in persons age 35-54 years old (Table 5)
- Males have higher rates of infection in most age categories (Figure 3)
- Many case reports are missing race and risk information, so it is not possible to draw summary conclusions about race/ethnicity and risk (Tables 6 and 7)
- Statewide, there were approximately 5800 cases diagnosed annually from 2007 through 2011 (Table 8)
- The annual rate of reported cases statewide was 83 per 100,000 for the years 2009 through 2011 (Figure 4)
- For the years 2006 through 2010, there were an average of 329 hepatitis C-related deaths annually among males and 147 such deaths annually on average among females (Table 9)

**Table 5. Sex and age at diagnosis of chronic HCV cases reported through December 31, 2011**

Age	Female		Male		Unknown		Total	
	N	%	N	%	N	%	N	%
<25 years	1442	6%	1257	3%	62	5%	2761	4%
25-34 years	3411	14%	4123	10%	138	10%	7672	11%
35-44 years	6304	25%	9604	22%	273	21%	16181	23%
45-54 years	8696	34%	16946	39%	440	33%	26082	38%
55-64 years	3822	15%	8813	21%	246	19%	12881	19%
65+ years	1357	5%	1878	4%	61	5%	3296	5%
Unknown	196	1%	283	1%	107	8%	586	1%
<b>Total</b>	<b>25228</b>	<b>100%</b>	<b>42904</b>	<b>100%</b>	<b>1327</b>	<b>100%</b>	<b>69459</b>	<b>100%</b>
<i>Percent of Total Cases</i>		36%		62%		2%		

**Figure 3. Chronic HCV diagnosis rate per 100,000 by sex and age at diagnosis, 2009 through 2011**



There are a large number of cases with unknown race/ethnicity. It cannot be assumed that their race/ethnicity distribution is the same as for cases with known race/ethnicity (Table 6).

**Table 6. Race/ethnicity of chronic HCV cases reported through December 31, 2011**

<b>Race/Ethnicity</b>	<b>Total</b>	<b>%</b>
Asian, non-Hispanic	888	1%
Black, non-Hispanic	1613	2%
Hispanic all races	1983	3%
Multiple	1983	3%
Native American/Alaska Native non-Hispanic	1297	2%
Unknown or not reported	47277	68%
White non-Hispanic	16309	23%
<b>Total</b>	<b>69459</b>	<b>100%</b>

There are a large number of cases with unknown risk factors. It cannot be assumed that their risk factor distribution is the same as for cases with reported risk factors (Table 7).

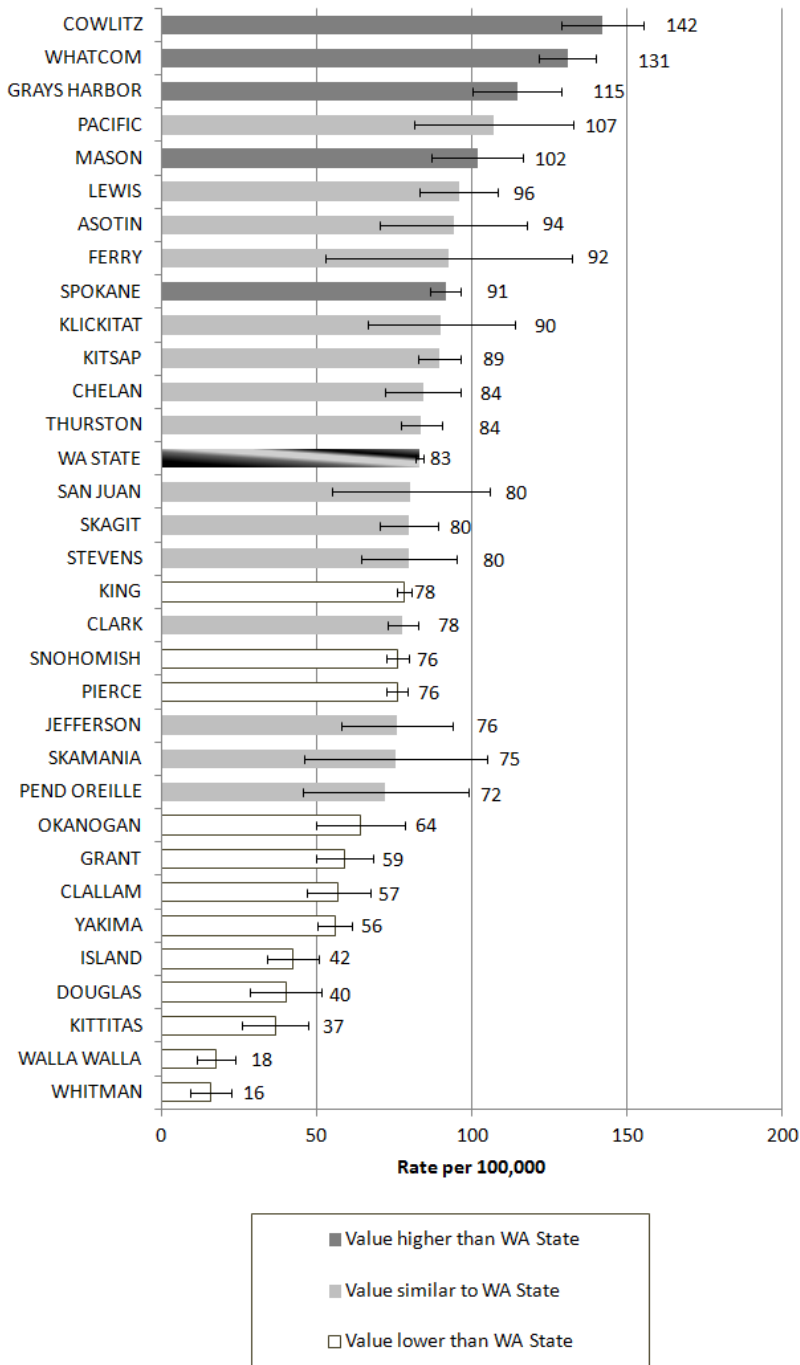
**Table 7. Exposure risk factors of chronic HCV cases reported through December 31, 2011**

<b>Risk</b>	<b>Cases</b>	<b>%</b>
Unknown or not reported	56502	81%
Non-IDU street drug use	4230	6%
IDU	4030	6%
Multiple risks	3650	5%
Blood products or solid organ transplant	732	1%
Occupational needlestick	127	0%
Maternal transmission	104	0%
Sexual	45	0%
Chronic hemodialysis	33	0%
Factor concentrates before 1987	6	0%
<b>Total</b>	<b>69459</b>	<b>100%</b>

**Table 8. Year of diagnosis of chronic HCV cases reported through December 31, 2011**

County	Pre-2007	2007	2008	2009	2010	2011	Cases	%
ADAMS	70	6	3	3	2	13	97	0%
ASOTIN	179	15	31	18	23	20	286	0%
BENTON	190	5	0	1	3	5	204	0%
CHELAN	402	73	53	44	31	108	711	1%
CLALLAM	511	104	69	54	41	27	806	1%
CLARK	1230	390	427	428	443	121	3039	4%
COLUMBIA	14	0	0	4	4	0	22	0%
COWLITZ	809	150	141	142	135	159	1536	2%
DOUGLAS	119	25	9	17	10	19	199	0%
FERRY	45	1	11	11	9	1	78	0%
FRANKLIN	79	1	0	3	0	4	87	0%
GARFIELD	3	1	0	1	2	2	9	0%
GRANT	284	75	49	75	57	25	565	1%
GRAYS HARBOR	283	91	108	78	90	82	732	1%
ISLAND	220	27	59	52	41	7	406	1%
JEFFERSON	166	22	4	8	25	35	260	0%
KING	11519	1785	1530	1547	1277	1702	19360	28%
KITSAP	1217	259	259	213	205	258	2411	3%
KITTITAS	71	33	23	24	13	8	172	0%
KLICKITAT	113	40	24	19	15	21	232	0%
LEWIS	122	104	90	78	70	69	533	1%
LINCOLN	50	2	8	7	2	3	72	0%
MASON	301	70	84	71	55	59	640	1%
OKANOGAN	236	45	36	28	10	41	396	1%
PACIFIC	62	46	23	22	25	20	198	0%
PEND OREILLE	99	2	8	9	11	8	137	0%
PIERCE	8338	812	608	602	473	741	11574	17%
SAN JUAN	48	10	9	13	4	21	105	0%
SKAGIT	255	136	141	138	82	60	812	1%
SKAMANIA	49	11	6	11	9	5	91	0%
SNOHOMISH	3362	529	485	546	495	583	6000	9%
SPOKANE	3539	358	340	383	446	460	5526	8%
STEVENS	200	5	22	38	45	21	331	0%
THURSTON	353	275	219	249	190	193	1479	2%
WAHKIAKUM	8	3	3	1	5	2	22	0%
WALLA WALLA	252	11	14	10	1	20	308	0%
WHATCOM	656	331	287	260	241	287	2062	3%
WHITMAN	31	3	2	14	4	3	57	0%
YAKIMA	1670	118	133	159	75	173	2328	3%
STATE CORRECTIONS	3023	756	471	365	255	704	5574	8%
UNKNOWN	0	0	0	0	1	1	2	0%
<b>TOTAL</b>	<b>40178</b>	<b>6730</b>	<b>5789</b>	<b>5746</b>	<b>4925</b>	<b>6091</b>	<b>69459</b>	<b>100%</b>

**Figure 4. Washington State chronic HCV diagnosis rate per 100,000 by county, 2009 through 2011**

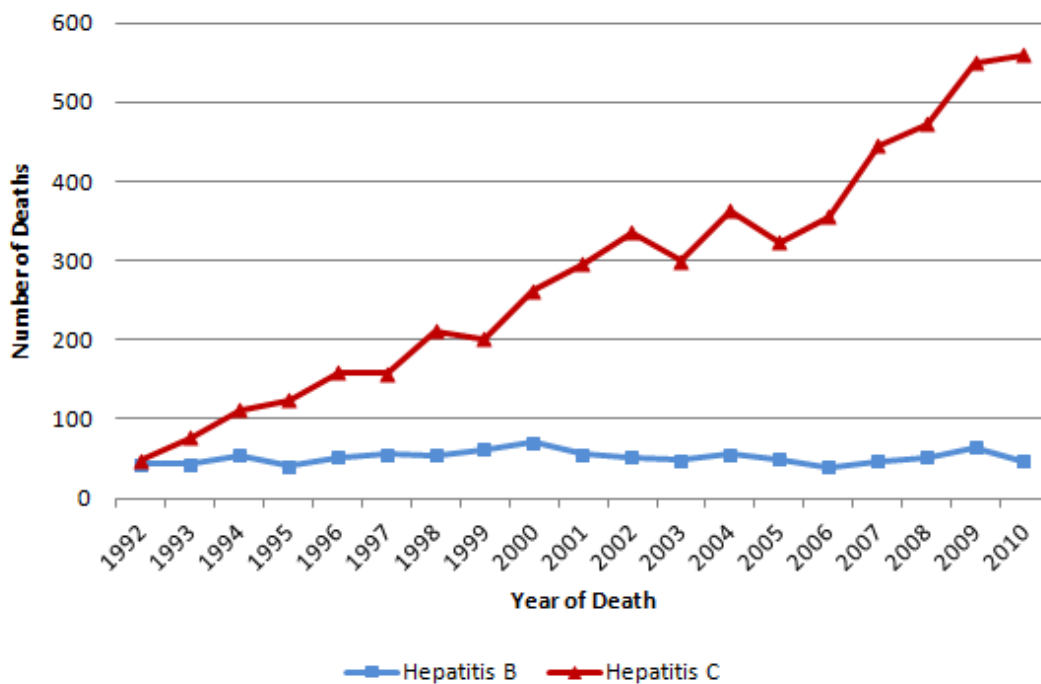


Note: A county’s rate for chronic hepatitis C can be influenced by the resources it devotes to chronic hepatitis surveillance, as well as the actual prevalence. Several counties reported too few cases to calculate a rate, including Adams, Benton, Columbia, Franklin, Garfield, Lincoln, and Wahkiakum counties.

# Hepatitis B and Hepatitis C Deaths

Figure 5 and Table 9 describe deaths from hepatitis B and hepatitis C. They include deaths in which either condition was listed as the underlying cause, or one of multiple causes. Also, they include all hepatitis B and hepatitis C deaths, including acute and chronic. The number of annual hepatitis B deaths is stable at about 50 per year. The number of hepatitis C deaths continues to climb, and was about 550 in 2010. Premature death is a problem for people with hepatitis, particularly HCV (Table -9). For example, among all female deaths in Washington State for the years 2006 through 2010, only 21% of females died before age 65. Among all female HBV-related deaths, 60% died before age 65; among female HCV-related deaths, 76% of females died before age 65. For males, 32% of all deaths were among males of age less than 65 years. 71% of males with HBV-related deaths died before age 65, and 85% of males with HCV-related deaths died before age 65. This may reflect both effects of the disease and risk factors contributing to the disease, such as injection drug use, that also affect mortality.

**Figure 5. Washington State deaths related to hepatitis B and hepatitis C, 1992 through 2010**



**Table 9. All Washington State deaths, and deaths related to hepatitis B and hepatitis C, 2006 through 2010**

**Female Deaths, 2006-2010**

<b>Age</b>	<b>WA State Total</b>		<b>Hepatitis B</b>		<b>Hepatitis C</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<45 years	5689	5%	6	8%	47	6%
45-54 years	6748	6%	17	24%	225	31%
55-64 years	11733	10%	20	28%	286	39%
65-74 years	16405	14%	11	15%	92	12%
75-84 years	30458	26%	16	22%	59	8%
85+ years	48243	40%	2	3%	28	4%
<b>Total</b>	<b>119276</b>	<b>100%</b>	<b>72</b>	<b>100%</b>	<b>737</b>	<b>100%</b>

**Male Deaths, 2006-2010**

<b>Age</b>	<b>WA State Total</b>		<b>Hepatitis B</b>		<b>Hepatitis C</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<45 years	10563	9%	17	10%	77	5%
45-54 years	10393	9%	49	28%	524	32%
55-64 years	17204	15%	59	33%	793	48%
65-74 years	21095	18%	26	15%	171	10%
75-84 years	30273	26%	19	11%	66	4%
85+ years	28923	24%	7	4%	14	1%
<b>Total</b>	<b>118451</b>	<b>100%</b>	<b>177</b>	<b>100%</b>	<b>1645</b>	<b>100%</b>



# Appendix

## International Classification of Disease (ICD) Codes for Viral Hepatitis

### ICD-9 codes

070 Viral hepatitis

070.0 Viral hepatitis A with hepatic coma

070.1 Viral hepatitis A without mention of hepatic coma

070.2 Viral hepatitis B with hepatic coma

070.3 Viral hepatitis B without mention of hepatic coma

070.4 Other specified viral hepatitis with hepatic coma

070.41 Acute hepatitis C with hepatic coma

070.42 Hepatitis delta without mention of active hepatitis B disease with hepatic coma

070.43 Hepatitis E with hepatic coma

070.44 Chronic hepatitis C with hepatic coma

070.49 Other specified viral hepatitis with hepatic coma

070.5 Other specified viral hepatitis without mention of hepatic coma

070.51 Acute hepatitis C without mention of hepatic coma

070.52 Hepatitis delta without mention of active hepatitis B disease or hepatic coma

070.53 Hepatitis E without mention of hepatic coma

070.54 Chronic hepatitis C without mention of hepatic coma

070.59 Other specified viral hepatitis without mention of hepatic coma

070.6 Unspecified viral hepatitis with hepatic coma

070.7 Unspecified viral hepatitis C

070.7 Unspecified viral hepatitis C without hepatic coma

070.71 Unspecified viral hepatitis C with hepatic coma

070.9 Unspecified viral hepatitis without mention of hepatic coma

## **ICD-10 codes**

### **B15 Acute hepatitis A**

- B15.0 Hepatitis A with hepatic coma
- B15.9 Hepatitis A without hepatic coma

### **B16 Acute hepatitis B**

- B16.0 Acute hepatitis B with delta-agent (co-infection) with hepatic coma
- B16.1 Acute hepatitis B with delta-agent (co-infection) without hepatic coma
- B16.2 Acute hepatitis B without delta-agent with hepatic coma
- B16.9 Acute hepatitis B without delta-agent and without hepatic coma

### **B17 Other acute viral hepatitis**

- B17.0 Acute delta-(super)infection of hepatitis B carrier
- B17.1 Acute hepatitis C
- B17.2 Acute hepatitis E
- B17.8 Other specified acute viral hepatitis

### **B18 Chronic viral hepatitis**

- B18.0 Chronic viral hepatitis B with delta-agent
- B18.1 Chronic viral hepatitis B without delta-agent
- B18.2 Chronic viral hepatitis C
- B18.8 Other chronic viral hepatitis
- B18.9 Chronic viral hepatitis, unspecified

### **B19 Unspecified viral hepatitis**

- B19.0 Unspecified viral hepatitis hepatic with coma
- B19.9 Unspecified viral hepatitis without hepatic coma