HIV and viral hepatitis co-infection in Oregon

Hepatitis C (HCV) and hepatitis B (HBV) are common infections among people also infected with HIV. HIV infection accelerates the progression of hepatitis-related liver disease. Liver disease can include severe fatigue, abdominal swelling, cirrhosis and liver cancer. People who are co-infected with viral hepatitis and HIV can also have fewer HIV treatment options.

Monitoring viral hepatitis and HIV in Oregon

Oregon health care providers and laboratories must report all cases† of HIV, HBV and HCV infection to the Oregon Health Authority. Chronic HCV infection was the most recent addition to this list of reportable diagnoses in late 2005. Previously, only acute HCV infection was reportable. The Oregon Health Authority uses information about reported cases of HIV and viral hepatitis to monitor disease occurrence and inform disease control strategies.

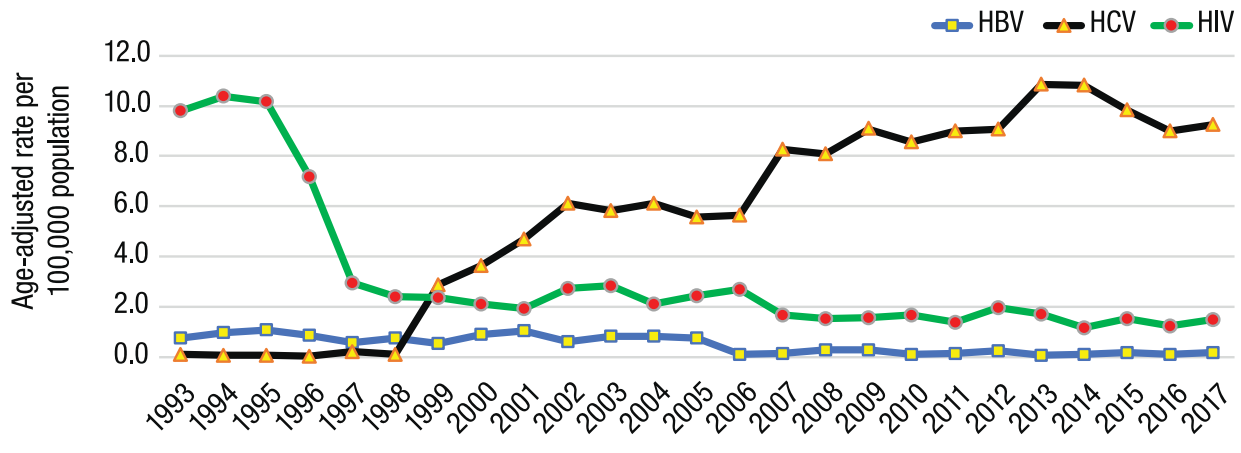
Oregon HIV and viral hepatitis facts at a glance

- Eighteen percent of Oregonians with HIV also have a reported case of hepatitis C virus (HCV) infection. Seventeen percent of Oregonians with HIV also have a reported case of hepatitis B virus infection (HBV).*
- Viral hepatitis prevalence among Oregonians with HIV may be higher because of underreporting of hepatitis.
- Chronic HCV is a more severe infection in people with HIV than in people who are not HIV-infected.

* During 2015–2017, the Medical Monitoring Project (MMP) interviewed 433 patients receiving HIV medical care in Oregon. MMP examines clinical outcomes and behaviors of adults receiving HIV care in the United States.

† For this report, a "case" is defined as an Oregon resident with laboratory-confirmed HIV infection reported to the Oregon Health Authority Public Health Division. Co-infection refers to persons with laboratory-confirmed cases of viral hepatitis and HIV reported to the Oregon Health Division.

Figure 1 Death rate for hepatitis B, hepatitis C and HIV, Oregon 1993–2017



Liver-related mortality in people with HIV

Co-infection with HIV and HBV or HCV increases the risk of death compared with people who have either HIV or viral hepatitis but not both. In survival analyses of Oregonians diagnosed with HIV infection from 2008 to 2017, 10-year probability of survival was 88% among people with HIV infection but not viral hepatitis. This compared to 74% among people with HIV and chronic HBV infection and 79% among people with HIV and chronic HCV infection. We expect the proportion of deaths among HIV-infected people attributable to viral hepatitis to increase as people live longer with HIV infection, and if detection and public health monitoring of both diseases improve. (Figure 1)

HCV in people with HIV

HCV, a blood-borne infection, is common among people who use injection drugs (PWID) because HCV transmission is 10 times more likely than HIV after a single exposure to blood from an infected person. Because of this, a person who uses injection drugs and gets a new HIV infection often already has HCV infection.

Sexual transmission of HCV can occur. Someone who has HIV infection is more likely to acquire HCV infection through anal intercourse than someone who does not have HIV infection. HIV-related changes in the lining of the rectum might make it more susceptible to hepatitis C infection.

Nationally, approximately 25% of everyone with HIV is co-infected with HCV.

In Oregon, based on disease reporting, the following were co-infected with HCV:

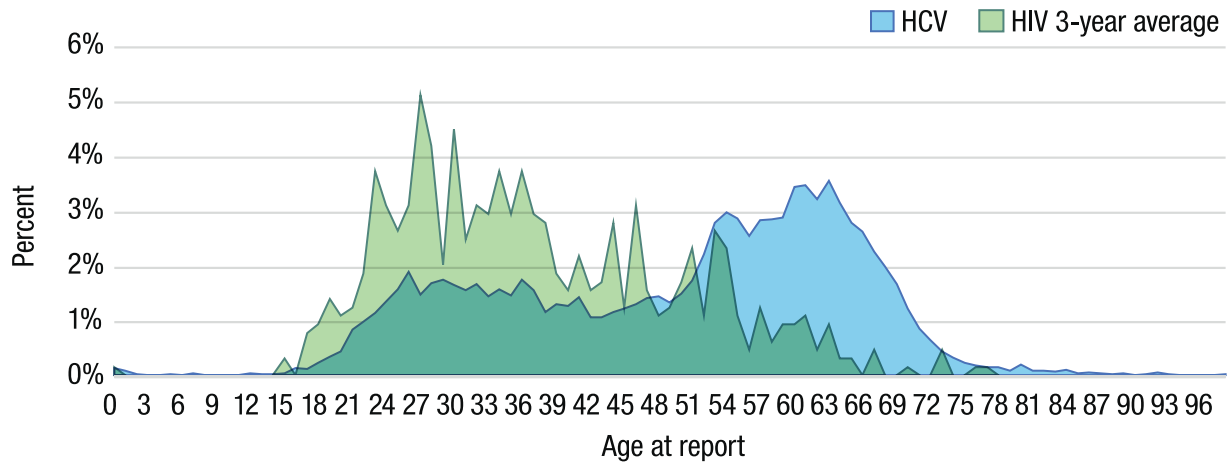
- Approximately 12% (874/7,557) of people living with HIV as of the end of 2017
- 37% (482/1,299) of those with HIV who reported injecting drugs
- 46% among male and 50% among female PWID with HIV
- 28% among men who have sex with men who also reported injecting drugs (MSM/IDU).

HCV was more common in the following groups with a greater proportion of PWID.

- Females (16%)
- American Indian/Alaska Natives (33%) compared to Whites (12%)
- PLWH with hemophilia (74%)
- Non-foreign-born persons, and
- PLWH in age groups 25–29 (5%) and younger compared to 30–34 year-olds (10%) and older age groups.

A person with both HIV and HCV might have had different routes of exposure for HIV and HCV. Prior to the early 1990s HCV in North America, specifically genotype 1a, spread mostly through contaminated blood products and medical/dental equipment (hemodialysis, injections, surgery). (1,2) Since the mid-1960s, the spread of HCV has been through untested blood products, shared injection equipment, unsafe tattooing, high-risk sex, blood exposures during incarceration (e.g., fighting or sharing razors), and from HCV-positive mothers to their children during pregnancy or at delivery. (3,4,5) It was not until July 1992 that HCV testing of blood for transfusion and of tissue/

Figure 2 **2017 age distribution of newly reported Oregon chronic HCV cases and HIV cases, 3-year average (2015–2017), (HCV, n=5,990)**



organ transplants became available; many people exposed to HCV before 1992 may not know how they were infected. The age distribution of people reported with HCV in Oregon has two peaks: one among people in their mid-20s and the second among people in their 50s and 60s. The latter peak is higher. Because the United States began to test blood products for HCV in the early 1990s, people with HCV who are in their 20s likely acquired their infection from shared injection equipment, unsafe tattooing, high-risk sex or blood exposures during incarceration (e.g., fighting or sharing razors). People in their 50s and 60s with HCV probably reflect a mixture of health care-related exposures (blood products and medical procedures) in addition to behavioral or lifestyle exposures prevalent among the younger group. (Figure 2)

HCV outcomes are generally worse in people who also have HIV. Individuals with HIV infection who are newly infected with HCV are more likely to develop chronic HCV infection, more likely to experience faster progression of liver disease, and less likely to be cured with treatment than people who have acute HCV infection without HIV infection. Unlike HIV, HCV can be cured. New, highly effective HCV treatments cure more than 90% of people.

HBV in people with HIV

Like HIV, HBV can be transmitted sexually or through injection drug use. It can also be transmitted from an infected mother to a newborn. Because of the availability of a preventive vaccine and efficient screening of the U.S. blood supply, neither HIV nor HBV is commonly transmitted anymore through transplants or transfusions. In the United States, 10% of people with HIV also have HBV infection. Among 2014–15 Oregon MMP participants, 17% reported ever having HBV. Like HCV, HBV is more efficiently transmitted via bloodborne exposure than HIV.

Unlike HCV, HBV can be prevented by vaccination. However, many adults at risk for HBV infection have not been vaccinated. Vaccination is recommended for men who have sex with men, adults with multiple sex partners and persons who inject drugs. All people with HIV who do not have evidence of HBV immunity should be vaccinated. As the number of U.S. adults vaccinated for HBV increases, public health officials hope to see the proportions of HIV/HBV co-infections decline.

References

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3. Klevens RM et al. Evolving epidemiology of hepatitis C virus in the United States. Clin Infect Dis. (2012) 55 (suppl 1): S3-S9. doi: 10.1093/cid/cis393.
4. Frederick T et al. Factors associated with prevalent hepatitis C infection among HIV-infected women with no reported history of injection drug use: the Women's Interagency HIV Study (WIHS). AIDS Patient Care STDS. 2009 Nov;23(11):915-23. doi: 10.1089/apc.2009.0111.
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Epidemiologic resources:

Oregon Health Authority, HIV/AIDS epidemiology: https://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/DiseaseSurveillanceData/HIVData/Pages/index.aspx

Centers for Disease Control and Prevention: www.cdc.gov/hiv.

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