HBV Epidemiology

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Module 1: HBO 3rd Edition
Lesson 1: HBV Epidemiology

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Background

Hepatitis B virus (HBV) is an enveloped, partially double-stranded DNA virus that is transmitted via infected blood and bodily fluids.[1] Infection with the hepatitis B virus causes hepatocellular necrosis and inflammation, and chronic infection can lead to liver fibrosis, cirrhosis, and hepatocellular carcinoma (HCC).[2] In the United States, there are an estimated 660,000 persons living with chronic HBV.[3,4] Globally, an estimated 254 million people are chronically infected with hepatitis B, making it one of the most prevalent viral infections worldwide and a major public health priority, particularly in highly endemic areas.[1,4]

HBV Incidence in the United States

Definition of HBV Incidence

The incidence of HBV infection is defined as the number of new HBV infections in a given population over a given time period. The Centers for Disease Control and Prevention (CDC) uses the 2012 acute hepatitis B case definition to determine the annual reported incidence of HBV infection in the United States.[5,6] This value is commonly presented as an incidence rate, defined as the number of acute HBV cases per 100,000 persons per year.[6] When observing epidemiologic trends over time, the incidence rate (number of cases per 100,000 persons per year) is preferred over cumulative incidence (number of new cases in the population), as it standardizes population-based follow-up time and is therefore not impacted by changes in populations or population subgroups.

Method of Estimating HBV Incidence

The severity of symptoms in acute HBV infection varies considerably, and many patients do not seek medical care during acute infection. Furthermore, because many diagnosed cases of acute HBV are not reported to local or federal health departments, the reported cases represent only a fraction of the actual cases of acute HBV occurring within the population in a given year. To better estimate the true incidence of acute HBV, the CDC utilizes complex modeling techniques to account for under-ascertainment and under-reporting of cases.[6] Based on these techniques, the CDC estimates the true number of acute HBV cases in the United States is approximately 6.5-fold greater than the reported number of cases.[6]

Importance of HBV Incidence Data

Although most adults and children 5 years of age and older with acute HBV infection do not have progression to chronic HBV infection, data on the incidence of acute HBV infection provide critical information regarding trends in transmission, identification of outbreaks, and effectiveness of prevention interventions.[1] In particular, data stratified by state, age, sex, race, and risk factor for HBV acquisition can further identify populations at highest risk for acute HBV infection and help guide public health prevention efforts.

HBV Incidence Data in the United States

In 2023, in the United States, there were 14,400 estimated cases of acute HBV infection (Figure 1).[6] The incidence of reported acute HBV cases peaked in 1985 and subsequently declined from 1985 to 2010. The HBV incidence remained relatively stable from 2010 to 2019, but then declined to a new lower level that was relatively stable during 2020–2023.[6,7] The major sustained decline in acute HBV that occurred from the mid-1980s through the early 2010s was due largely to the implementation and expansion of routine HBV vaccination.[7,8] Since 2004, the incidence rates of acute HBV have been consistently higher for men than for women, and in 2023, men comprised 62% of acute HBV infections.[6] Persons 40–49 years of age have the highest rate of acute HBV.[6] In 2023, the rates of acute HBV were highest among non-Hispanic Black individuals.[6] At the state level, considerable variability in HBV incidence exists, with Florida, West Virginia, and Kentucky having the highest rates of reported acute hepatitis B cases in 2023.[6]

HBV Prevalence in the United States

Definition of HBV Prevalence

The prevalence of hepatitis B infection is defined as the number of persons living with chronic HBV infection in the total population. Although research studies often use hepatitis B surface antigen (HBsAg) carrier status as a marker for chronic infection, the CDC defines chronic HBV infection as the presence of HBsAg, hepatitis e antigen (HBeAg), or HBV DNA in the absence of immunoglobulin M (IgM) antibodies to hepatitis B core antigen (IgM anti-HBc), which are seen in acute infection.[3,9] The HBV prevalence in the United States is impacted by the number of acute HBV infections, the rate of progression from acute to chronic infection, the number of individuals with chronic HBV infection migrating into or out of the country, the number of persons who have spontaneous resolution of HBV or are cured with therapy, and the rate of death among chronically infected individuals.[10]

HBV Prevalence Estimates

Most of the prevalence estimates in the United States have been based on data collected from the National Health and Nutrition Examination Survey (NHANES). It is important to note that NHANES data suffer from several limitations, including a response rate of only about 50%, and it does not include data on individuals who are incarcerated, living unhoused, on active-duty military duty, or residents of long-term care facilities.[11] Further, the NHANES data excludes data for persons younger than 6 years of age. Nevertheless, the NHANES data provide the best available HBV prevalence data for the United States. Trends in several different studies reporting on NHANES data show that the prevalence rate of chronic HBV infection in the United States has remained less than 0.5% since 2010.[3,7,10,11] The most recent reported HBV prevalence rate in the United States, which was based on NHANES data from January 2017 through March 2020, was 0.2%.[11] Based on these same NHANES 2017–2020 data, an estimated 660,000 persons 6 years of age and older are living with chronic HBV in the United States.[11] This estimate is lower than the 2016 estimate of 862,000 persons living with chronic HBV in the United States.[12] Earlier HBV prevalence estimates for the United States prior to 2015 varied significantly, ranging from approximately 850,000 to 2.2 million.[3,10,13,14]

HBV Prevalence by Groups

Among those living with chronic HBV in the United States, it is not known how many are United States-born versus foreign-born. A recent meta-analysis, which included articles published from 2009 to 2019, estimated there were 1.47 million foreign-born persons with chronic HBV in the United States.[15] Data for the United States from NHANES for 2017 through 2020 showed a 1.0% HBV prevalence rate for persons 20 years of age and older who were born outside the United States, which is much higher than the overall prevalence of 0.3% for all persons in this age group in the United States.[11] Available data suggest very low numbers of HBV infections among persons younger than 20 years of age.[3,11] This extremely low rate of HBV in children and adolescents is a result of the widespread implementation of childhood HBV vaccination during the 1990s in the United States.[6] Data from NHANES for 2017 through 2020 showed higher HBV prevalence among Asian persons (1.9%) and Black persons (0.5%).[6]

Awareness of HBV Infection Status

In a study utilizing NHANES data from January 2017 through March 2020, investigators estimated that 50% of persons living with chronic HBV infection in the United States (who were 6 years of age and older) were aware of their infection status.[11] A similar earlier study analyzing 2013 through 2016 NHANES data found that only 33.9% of those with chronic infection were aware of their HBV status.[16] In addition, this study demonstrated that only 11.7% of persons with past exposure to HBV, defined by the presence of HBcAb, were aware they had been exposed to HBV.[16]

Global HBV Epidemiology

The World Health Organization (WHO) designates the six WHO global regions and epidemiologic reports from the WHO provide region-specific data (Figure 2).[4]

Global HBV Incidence

The WHO estimates that 1.23 million new hepatitis B infections occurred globally in 2022.[4] The global HBV incidence has been decreasing in recent years, and the estimated 1.23 million infections in 2022 were an 18% decrease from the estimated 1.50 million new infections in 2020.[4] The incidence of hepatitis B varies by WHO region, with the African region having by far the highest number of estimated new hepatitis B infections in 2022, accounting for nearly two-thirds of new hepatitis B infections (Figure 3).[4]

Global Hepatitis B Prevalence

In 2022, the WHO estimated that approximately 254 million people, or 3.2% of the global population, are living with chronic hepatitis B infection.[4,17] Among those living with hepatitis B, only approximately 13% have been diagnosed.[4] Globally, most persons living with chronic hepatitis B are adults who acquired HBV before the age of 5 years, prior to the widespread availability of the hepatitis B vaccine.[4,17] A significant reduction in the rate of chronic HBV infection has occurred among children younger than 5 years of age, owing to the implementation of routine HBV vaccination in infancy.[4,17] Nevertheless, some regions are still experiencing high rates of chronic HBV infection in childhood due to gaps in birth-dose HBV vaccination, including the WHO African Region.[4] The Western Pacific, African, and South-East Asia Regions have the highest prevalence of chronic HBV infection (Figure 4).[4,17] Globally, an estimated 1% of persons with chronic HBV have coinfection with HIV.[17]

CDC Global Country HBV Prevalence Rate Groups

The CDC global HBV prevalence classification includes five groups, based on prevalence: high (8% or greater), intermediate (5 to 7.9%), low intermediate (2 to 4.9%), low (less than or equal to 1.9%), and unknown prevalence (data not available).[18] Table 1.

Global Prevalence of Chronic HBV Infection, by Country

Prevalence Category	Country
High (≥8%)	Angola, Cabo Verde, Central African Republic, Chad, Eswatini, Ghana, Guinea, Guinea-Bissau, Kiribati, Lesotho, Liberia, Mali, Mauritania, Niger, Nigeria, Philippines, Sao Tome and Principe, Sierra Leone, Solomon Islands, Taiwan, Timor-Leste, Togo, Tonga, Turkmenistan,

Prevalence Category	Country
	Tuvalu, and Zimbabwe.
Intermediate (5.0-7.9%)	Albania, Benin, Burkina Faso, Cameroon, China, Côte d'Ivoire, Democratic People's Republic of Korea, Djibouti, Eritrea, Ethiopia, Federated States of Micronesia, Gabon, Indonesia, Kyrgyzstan, Moldova, Mongolia, Mozambique, Myanmar, Papua New Guinea, Senegal, Somalia, South Sudan, Syria, Tajikistan, Uzbekistan, Vanuatu, and Vietnam.
Low Intermediate (2.0-4.9%)	Afghanistan, Azerbaijan, Bangladesh, Belarus, Bosnia and Herzegovina, Bulgaria, Burundi, Cambodia, Comoros, Congo, Democratic Republic of Congo, Gambia, Georgia, Guyana, Haiti, Hong Kong, India, Iraq, Jamaica, Jordan, Kazakhstan, South Korea, Laos, Madagascar, Malawi, Malaysia, Marshall Islands, Oman, Pakistan, Romania, Rwanda, Samoa, Singapore, South Africa, Sri Lanka, Sudan, Tanzania,

Prevalence Category	Country
	Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Yemen, and Zambia.
Low (≤1.9%)	Algeria, Argentina, Armenia, Australia, Austria, Bahrain, Belgium, Belize, Bhutan, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Croatia, Cuba, Czechia, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Fiji, Finland, France, Germany, Greece, Guatemala, Honduras, Hungary, Iran, Ireland, Israel, Italy, Japan, Kenya, Kosovo, Kuwait, Lebanon, Libya, Mexico, Morocco, Nepal, Netherlands, New Zealand, Nicaragua, Norway, Palestine, Panama, Paraguay, Peru, Poland, Portugal, Qatar, Russia, Saudi Arabia, Slovakia, Slovenia, Spain, Suriname, Sweden, Switzerland, Ukraine, United Arab Emirates, United Kingdom, United States,

Prevalence Category	Country
	and Venezuela.
Unknown prevalence (data not available)	American Samoa, Andorra, Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bermuda, Bonaire Sint Eustatius and Saba, Botswana, British Virgin Islands, Brunei, Cayman Islands, Cook Islands, Curaçao, Cyprus, Dominica, Equatorial Guinea, Falkland Islands, Faroe Islands, French Guiana, French Polynesia, Gibraltar, Greenland, Grenada, Guadeloupe, Guam, Holy See, Iceland, Isle of Man, Latvia, Liechtenstein, Lithuania, Luxembourg, Macao, Macedonia, Maldives, Malta, Martinique, Mauritius, Mayotte, Monaco, Montenegro, Montserrat, Namibia, Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Puerto Rico, Réunion, Saint Barthélemy, Saint Helena, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Pierre and Miquelon, Saint

Prevalence Category	Country
	Vincent and the Grenadines, San Marino, Serbia, Seychelles, Sint Maarten, Tokelau, Turks and Caicos Islands, U.S. Virgin Islands, Uruguay, Wallis and Futuna, and Western Sahara.

NOTE: This table is based on data from the Centers for Disease Control and Prevention (CDC)
Source:

- Conners EE, Panagiotakopoulos L, Hofmeister MG, et al. Screening and Testing for Hepatitis B Virus Infection: CDC Recommendations - United States, 2023. MMWR Recomm Rep. 2023;72:1-25. [PubMed Abstract]

Global Strategy to Eliminate Hepatitis B

In 2016, the WHO released its first-ever global health sector strategy report on viral hepatitis, which called for the elimination of HBV and HCV by 2030, defined as a 90% reduction in new cases and a 65% reduction in mortality.[4,19] For hepatitis B, this equates to a reduction in new cases from an estimated 1.23 million in 2022 to 850,000 by 2025 and to 170,000 by 2030.[4] Prevention of mother-to-child transmission via birth-dose vaccination is a key cornerstone of global HBV elimination efforts, but despite relatively high rates of childhood vaccination coverage, major gaps in the prevention of mother-to-child transmission exist globally, with only 45% global coverage for timely birth dose of HBV vaccine in 2022.[4] Similarly, major gaps persist in HBV testing and treatment, with an estimated 13% of chronically infected persons diagnosed worldwide and less than 3% receiving hepatitis B treatment.[4]

Risks Associated with HBV Acquisition

Overview of Risk Factors for HBV Acquisition

Hepatitis B virus is transmitted via percutaneous or mucous membrane contact with infected blood or bodily fluids.[20] Major risk factors for HBV transmission vary across countries and geographical regions, with perinatal transmission being the most common mode of infection in high-prevalence countries and sex and injection-drug use being the most common in low-prevalence countries.[21,22] In the United States, among the 976 reported cases of acute HBV infection in 2022 for which risk factor data were available, injection drug use and multiple sex partners (20%) were the most common identified risk factors.[6]

Injection-Drug Use

Injection-drug use is one of the most common risk factors for acute HBV in the United States.[6,23] In 2023, injection-drug use was reported in 19% (186 of 963) reported cases of acute HBV for which information on injection-drug use was available.[6] Prior longitudinal CDC data indicate HBV infection increased 114% during the time period 2009 through 2013 in the three-state Appalachian region involving Kentucky, Tennessee, and West Virginia; more than 50% of persons diagnosed with acute hepatitis B reported injection drug use.[24] This increase paralleled an increased incidence of acute HBV among White persons aged 30 to 39 years residing in non-urban areas of these three states, likely owing to the ongoing opioid epidemic.[23,24] On a national scale, the prevalence of chronic HBV among persons who inject drugs is poorly defined, with estimates of HBsAg positivity among persons who inject drugs ranging from 3.5 to 20%.[25] More recently, a study utilizing 2001 through 2016 NHANES data reported the prevalence of anti-HBc, which indicates current or prior infection, was 19.7% among persons who inject drugs compared with 4.6% in the general United States population.[26]

Sexual Exposure

In 2023, among CDC case reports of acute HBV that included information on risk factors, sexual exposure was frequently reported: 20% (104 of 528) cases reported multiple sex partners, and 21% (54 of 256) male cases involving males with information available reported male-to-male sexual contact.[6]

Infants Born to Mothers with Chronic HBV

Perinatal transmission is the predominant mode of HBV transmission worldwide, particularly in areas with a high HBV prevalence.[27] Although less common, transmission still occurs in low-prevalence areas, and data from the CDC indicate that 800 to 1,000 cases of perinatally acquired HBV occurred yearly from 2000 to 2009 in the United States.[28,29] The rate of HBV transmission from an HBsAg-positive mother to her neonate ranges from 5 to 90% in the absence of maternal antiviral treatment or neonatal immunoprophylaxis, with approximately 90% of perinatal HBV infections becoming chronic.[28,30,31,32,33] In the United States, however, receipt of an appropriate birth-dose vaccination and hepatitis B immune globulin has been shown to reduce the risk of transmission to less than 1%.[6,34] The use of antiviral therapy for mothers with high HBV viral loads—in addition to standard immunoprophylaxis—can further reduce the risk of perinatal HBV transmission.[8]

Persons Born Outside of the United States

In the United States, up to 70% of chronic HBV infections occur in foreign-born persons who migrate from endemic areas, particularly East Asia, the Caribbean, and sub-Saharan Africa.[10,13,27] Although foreign-born persons constitute the highest number of prevalent cases of chronic HBV in the United States, CDC data indicate that they do not constitute the highest number of incident cases of acute HBV, with rates of acute HBV declining for all races and ethnic groups in the United States from 2001 through 2012 and then remaining largely unchanged from 2013 to 2019.[6]

Household Contacts

The CDC estimates that among persons living in the same household as an individual with chronic HBV infection, 16% have evidence of current infection and 45% have evidence of past infection.[8] This risk is highest among unvaccinated children and sex partners of persons chronically infected with HBV.[8,35]

Correctional Facilities

The prevalence rate of chronic hepatitis B infection among incarcerated persons in the United States is estimated to be 1.0 to 3.7%, which is considerably higher than the national average.[36,37] High prevalence rates in correctional settings are likely due to co-occurring risk factors for HBV among this population, such as injection drug use and multiple sex partners.[8] Although most HBV infections are acquired in the community, outbreaks of acute HBV within the correctional setting have been described, and incidence rates have been estimated at 0.82 to 3.8% per year.[37]

Persons at Risk for Occupational Exposure to HBV

The number of occupational HBV infections among health care workers in the United States has declined dramatically since the implementation of routine HBV vaccination of health care workers and better safety measures.[8,38] In 2013, the CDC reported a 98% reduction in the number of acute HBV cases among health care workers from 1983 through 2010, owing largely to routine HBV vaccination and safety improvements in phlebotomy and injections.[38] Despite this very low number of cases, occupational exposure to HBV remains a concern, particularly among nonimmune health care workers, owing to the highly infectious nature of HBV, with seroconversion rates that can exceed 30% after a needle stick injury in susceptible hosts who do not receive appropriate prophylaxis.[38]

Persons Receiving Hemodialysis

The prevalence of chronic HBV among individuals receiving dialysis in the United States declined substantially from the late 1970s through the early 1990s.[39] Since 1995, the seroprevalence of HBsAg in the dialysis population has remained stable at 1%, which is currently approximately twice the current national average.[8,39]

Persons with HCV

Due to co-occurring modes of transmission, higher rates of HBV infection have been reported in persons infected with hepatitis C virus (HCV), likely due to overlapping risk factors for acquisition of these two hepatitis viruses.[40] In a National Veterans Affairs cohort of persons infected with HCV, the prevalence of HBV coinfection was 1.4%. In this same cohort, the prevalence of prior or current HBV infection was 36.6%.[41] Similarly, in a large United States cohort of adults with chronic HCV infection from four integrated health care systems, 1.1% were positive for either HBsAg and/or HBV DNA.[42] Injection drug use is a major mode of transmission for both HBV and HCV; during the years 2009 through 2013, the incidence of acute hepatitis B infection rose 114% in the Appalachian states of Kentucky, Tennessee, and West Virginia, mainly among White persons aged 30 to 39 who reported a history of injection drug use.[24] A concurrent 364% increase in acute HCV infections was seen among young persons in Kentucky, Tennessee, Virginia, and West Virginia between 2006 and 2012, primarily in non-urban areas with a high rate of injection-drug use.[43]

Persons with HIV

Owing to similar modes of transmission, the global prevalence of chronic HBV among persons with HIV is 7.6–8.4%.[44,45] In the United States, the estimated hepatitis B prevalence is 5–15% among persons with HIV.[46,47] Earlier CDC data from 1998 through 2001 reported a 7.6% prevalence rate of chronic HBV among unvaccinated adults with HIV infection, with the highest incidence rates for acute HBV infection among Black

persons, individuals with alcohol use disorder, persons who had recently injected drugs, and those with a history of AIDS-defining conditions.[48]

Travelers to Countries Where HBV is Endemic

The risk of HBV acquisition while traveling depends on the prevalence of HBV in the destination country, the duration of travel, the activities undertaken while abroad, and the traveler's vaccination status.[49] In a review of hepatitis B and C epidemiology in international travelers, the estimated monthly incidence of HBV in long-term travelers to endemic countries was 25 to 420 per 100,000 travelers.[49]

Persons with Diabetes

In the United States, the prevalence of past or present HBV infection is 1.6 times higher among adults with diabetes than among adults who do not have diabetes.[50] Although recurrent outbreaks of acute HBV related to misuse of blood glucose monitoring devices in institutionalized care settings likely contribute to this higher prevalence, the prevalence remains elevated even among persons with diabetes who are not in an institutional setting.[50,51,52]

Blood Transfusion

The risk of acquiring HBV through blood transfusion in the United States is now exceedingly rare. In the United States, all blood donations are screened for HBsAg, anti-HBc, and HBV DNA—a screening process that has led to an exceedingly low risk of HBV transmission through blood transfusions (approximately 1 in 1,000,000).[53] In contrast, the risk of HBV transmission through blood transfusion is higher in other parts of the world, where screening protocols are not as rigorous.

Transplant Recipients

Transmission of hepatitis B has been reported after both solid organ and hematopoietic stem cell transplantation. The risk of transmission is highest for nonimmune liver transplantation recipients who receive an HBsAg-negative, anti-HBc-positive organ (note the use of HBsAg-positive organs is not endorsed by the American Society of Transplant Surgeons).[54] The use of antiviral prophylaxis can reduce the risk of HBV acquisition, particularly in susceptible liver transplant recipients, and may be helpful in susceptible non-liver recipients.[54]

CDC Case Definition and Reporting

According to the CDC, “a surveillance case definition is a set of uniform criteria used to define a disease for public health surveillance.” Case definitions help public health officials consistently identify and classify cases of a specific disease across different public health jurisdictions. Although case definitions are extremely valuable in epidemiologic surveillance, it is important to note that they are not meant to substitute for diagnostic criteria in the clinical setting. The CDC case definitions for hepatitis B include acute hepatitis B, chronic hepatitis B, and perinatal infection.[5,9,55] For details on the most recent CDC Hepatitis B Case Definition and Reporting, see the CDC page on Hepatitis B, Acute and Chronic 2024 Case Definition.

HBV Disease Burden and HBV-Related Deaths

HBV-Related Deaths in the United States

In the United States, from 2015 to 2023, the number of deaths with HBV listed as the cause of death averaged approximately 1,650-1,800 deaths per year (Figure 5).[6] The HBV-related mortality rates correlated closely with age—the highest rates occurred in persons 65 years of age and older; the lowest in persons younger than 35 years of age.[6] In 2023, the number of HBV-related deaths was highest in White persons.[6] In addition, in 2023, the HBV-related mortality rate was approximately three times higher among men than women (0.65 per 100,000 versus 0.23 per 100,000).[6] Data evaluating overall and cause-specific death rates among a large United States-based cohort of persons with chronic HBV found that, on average, individuals with chronic HBV died 14 years younger than the general United States population (59.8 vs. 73.9 years).[56] In this same study, a further increased risk of death was seen among those with chronic HBV who also had one of the following conditions: diabetes, history of alcohol use disorder, coinfection with HCV, coinfection with HIV, hepatocellular carcinoma, history of liver transplantation, or history of treatment for chronic HBV.[56]

Global HBV-Related Deaths

In 2022, there were an estimated 1.1 million deaths caused globally by hepatitis B.[4] More than half of these deaths involved persons in the Western Pacific region.[4] In 2017, estimates from the Institute for Health Metrics and Evaluation indicated that deaths due to viral hepatitis outnumbered those of tuberculosis, HIV, or malaria, with deaths from viral hepatitis projected to exceed the combined mortality of tuberculosis, HIV, and malaria by 2040 (Figure 6).[57,58]. Globally, the majority of deaths due to HBV are from complications of cirrhosis and hepatocellular carcinoma, with a small minority from acute infection.[4]

Summary Points

- In the United States, there were approximately 14,400 new HBV infections in 2023.
- Among new hepatitis B infections in the United States in 2023, approximately 60% were males and persons 40–49 years of age had the highest rate of new HBV infection.
- In the United States, there are an estimated 660,000 people living with chronic hepatitis B, which corresponds with a hepatitis B prevalence rate of 0.2%.
- An estimated 50% of persons living with chronic hepatitis B in the United States are aware of their hepatitis B infection status.
- Globally, there were an estimated 1.2 million new hepatitis B infections in 2022, with nearly two-thirds of these new infections occurring in the African region.
- Globally, an estimated 254 million people are living with chronic hepatitis B infection. Of these, the majority live in the WHO-defined Western Pacific, African, and South-East Asia Regions.
- Injection-drug use and sexual exposure are the major risk factors for HBV acquisition in the United States, with injection-drug use playing an increasingly important role in transmission as a result of the ongoing opioid epidemic.
- The CDC has established uniform case definitions for acute HBV, chronic HBV, and HBV perinatal infection to assist with public health reporting.
- In the United States, in 2023, there were 1,769 deaths with HBV listed as the cause of death. Persons with chronic HBV in the United States die, on average, 14 years younger than persons in the general population.
- Globally, there were an estimated 1.1 million deaths caused by hepatitis B in 2022, with more than half of these deaths involving persons in the Western Pacific Region

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Figures

Figure 1 New Acute HBV Infections Among People in the United States

Source: Centers for Disease Control and Prevention (CDC). 2023 Viral Hepatitis Surveillance Report—Hepatitis B. Published April 2025.

This is a dynamic visualization. Please visit our website to experience this dynamic content.

Figure 2 World Health Organization (WHO) Regions

WHO Member States are grouped into six regions. Each region has a regional office. The map shows the WHO regions.

Source: Global hepatitis report 2024: action for access in low- and middle-income countries. Geneva: World Health Organization; 2024:1-239.

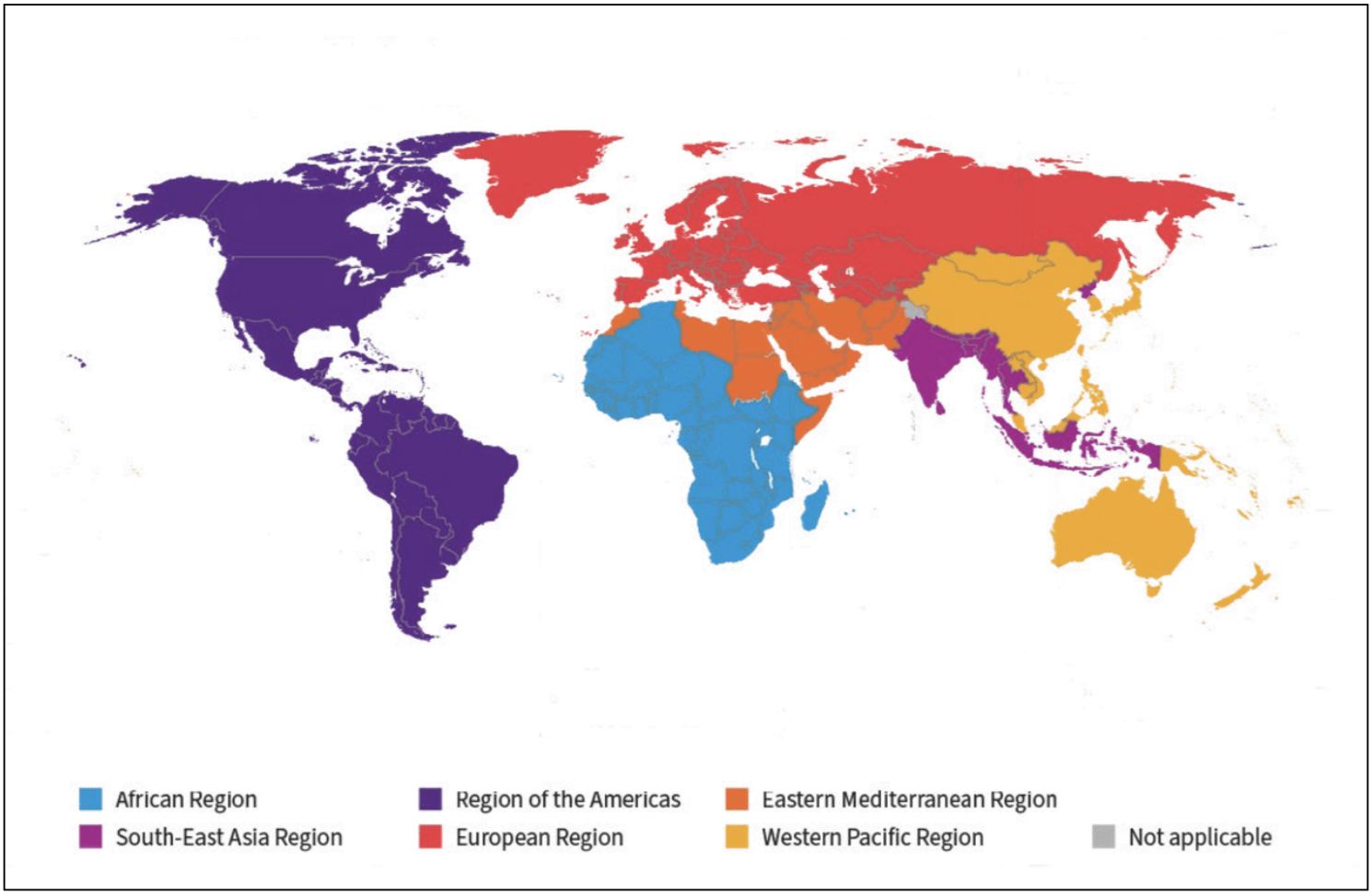

Figure 3 Hepatitis B Global Incidence Estimates, by World Health Organization Regions, 2022

Source: Global hepatitis report 2024: action for access in low- and middle-income countries. Geneva: World Health Organization; 2024:1-239.

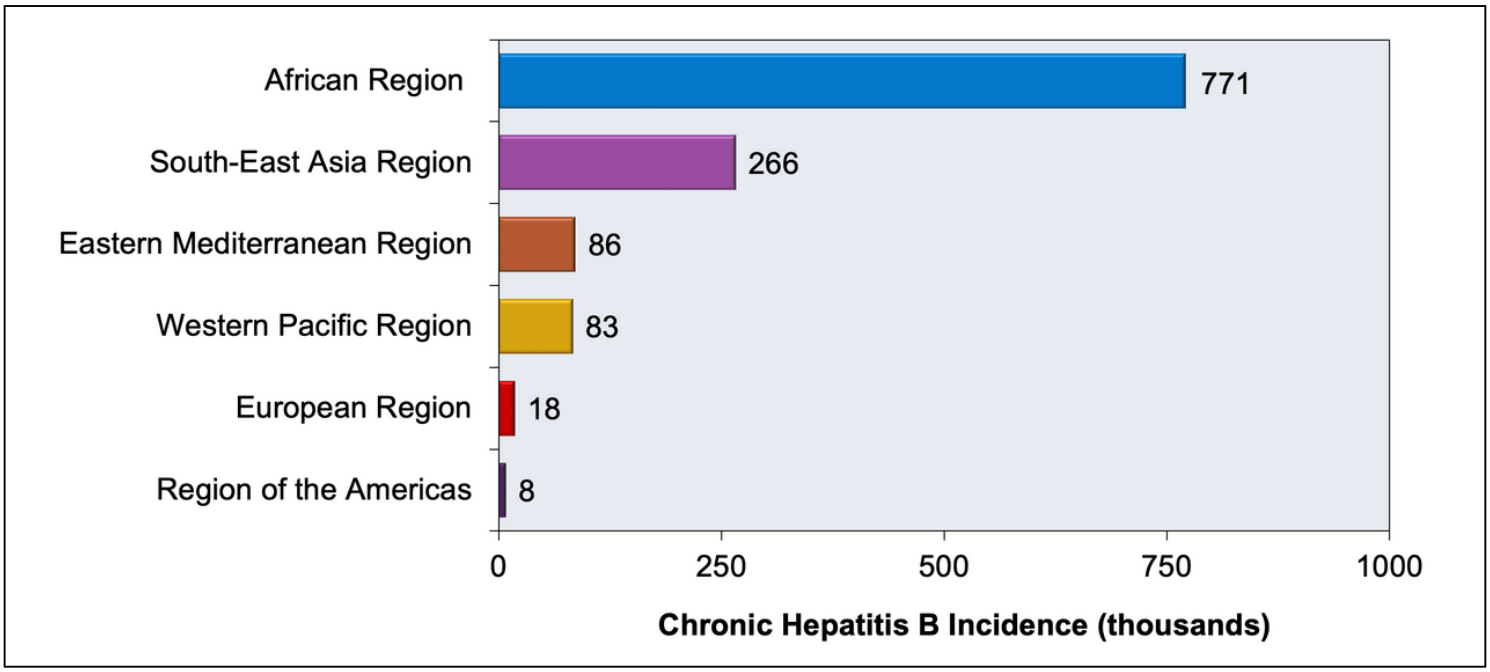

Figure 4 Hepatitis B Global Prevalence Estimates, by World Health Organization Regions, 2022

Source: Global hepatitis report 2024: action for access in low- and middle-income countries. Geneva: World Health Organization; 2024:1-239.

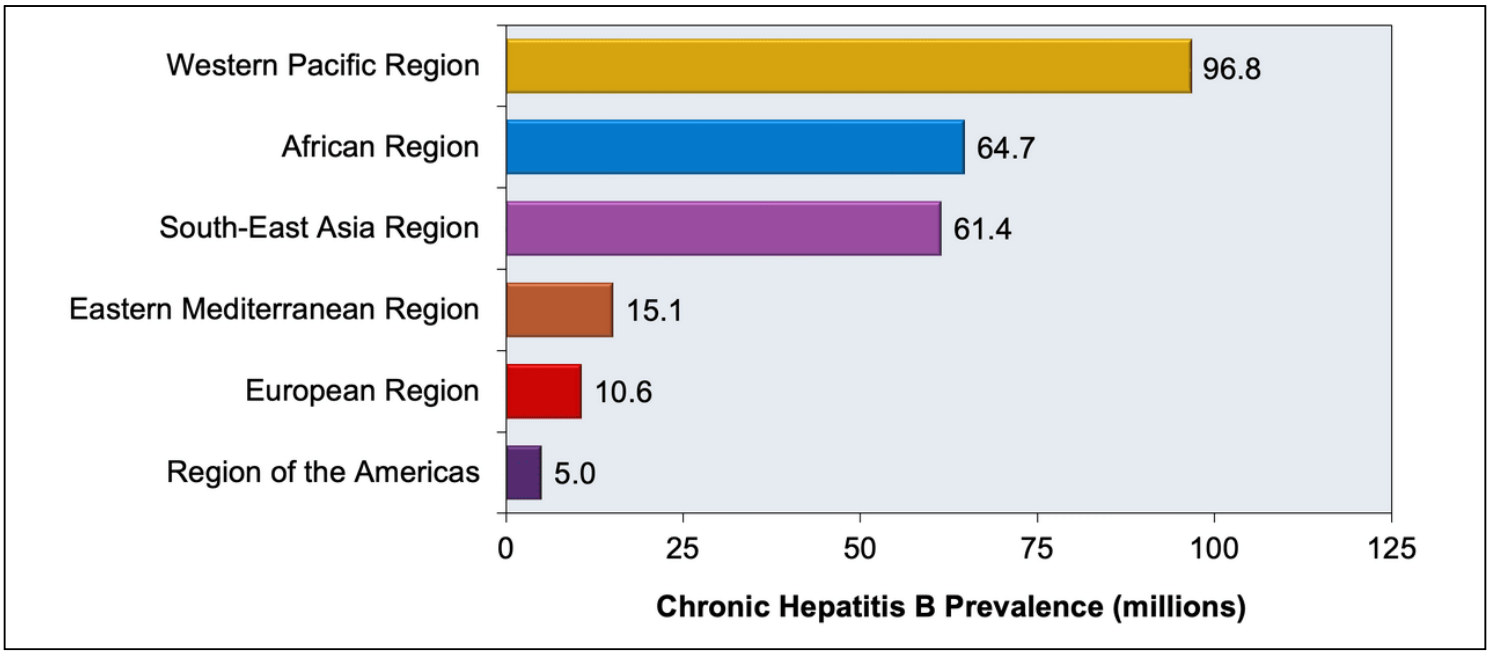

Figure 5 (Image Series) - HBV-Related Deaths in United States (Image Series) - Figure 5 (Image Series) - HBV-Related Deaths in United States
Image 5A: Deaths with Hepatitis B Virus Listed as Cause of Death (Rate), United States, 2015-2023

Source: Centers for Disease Control and Prevention (CDC). 2023 Viral Hepatitis Surveillance Report—Hepatitis B. Published April 15, 2025.

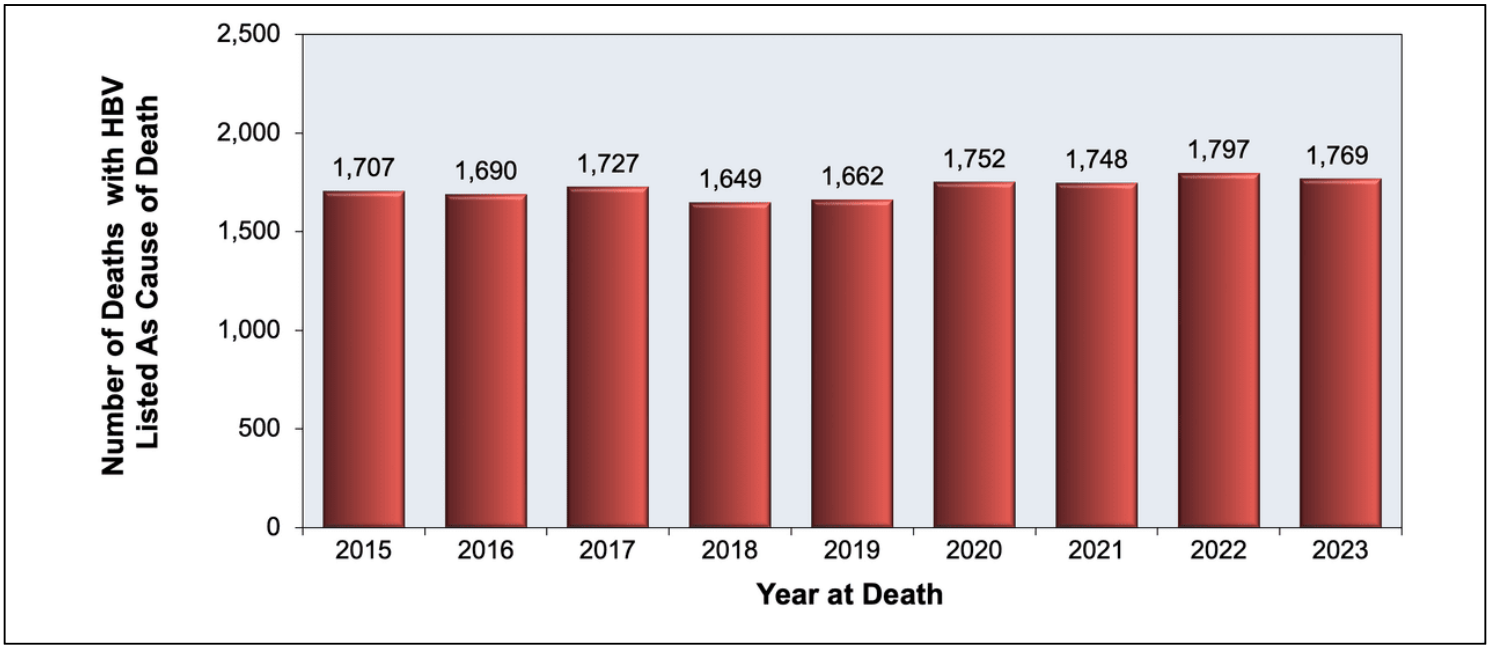

Figure 5 (Image Series) - HBV-Related Deaths in United States
Image 5B: Deaths with Hepatitis B Virus Listed as Cause of Death (Rate), by Age Group, United States, 2023

Source: Centers for Disease Control and Prevention (CDC). 2023 Viral Hepatitis Surveillance Report—Hepatitis B. Published April 15, 2025.

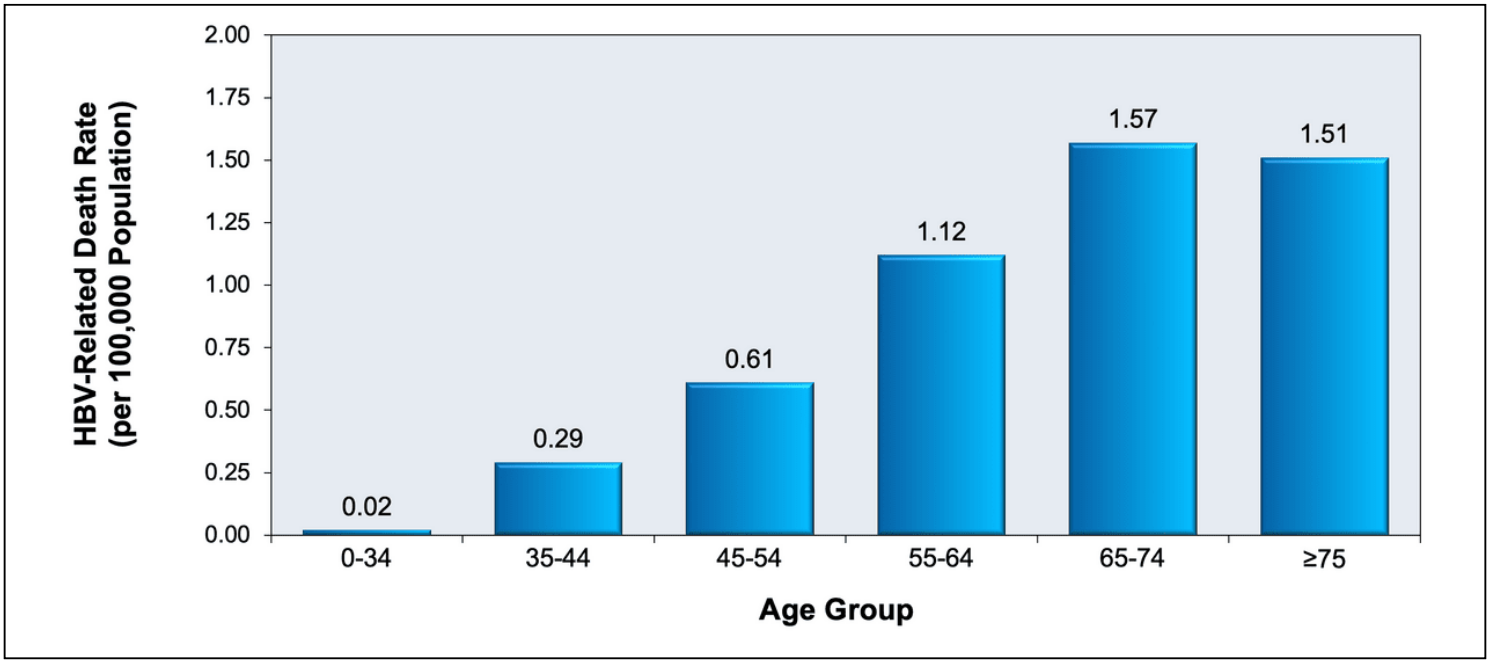

Figure 5 (Image Series) - HBV-Related Deaths in United States
Image 5C: Deaths with Hepatitis B Virus Listed as Cause of Death, by Race/Ethnicity, United States, 2023

Source: Centers for Disease Control and Prevention (CDC). 2023 Viral Hepatitis Surveillance Report—Hepatitis B. Published April 15, 2025.

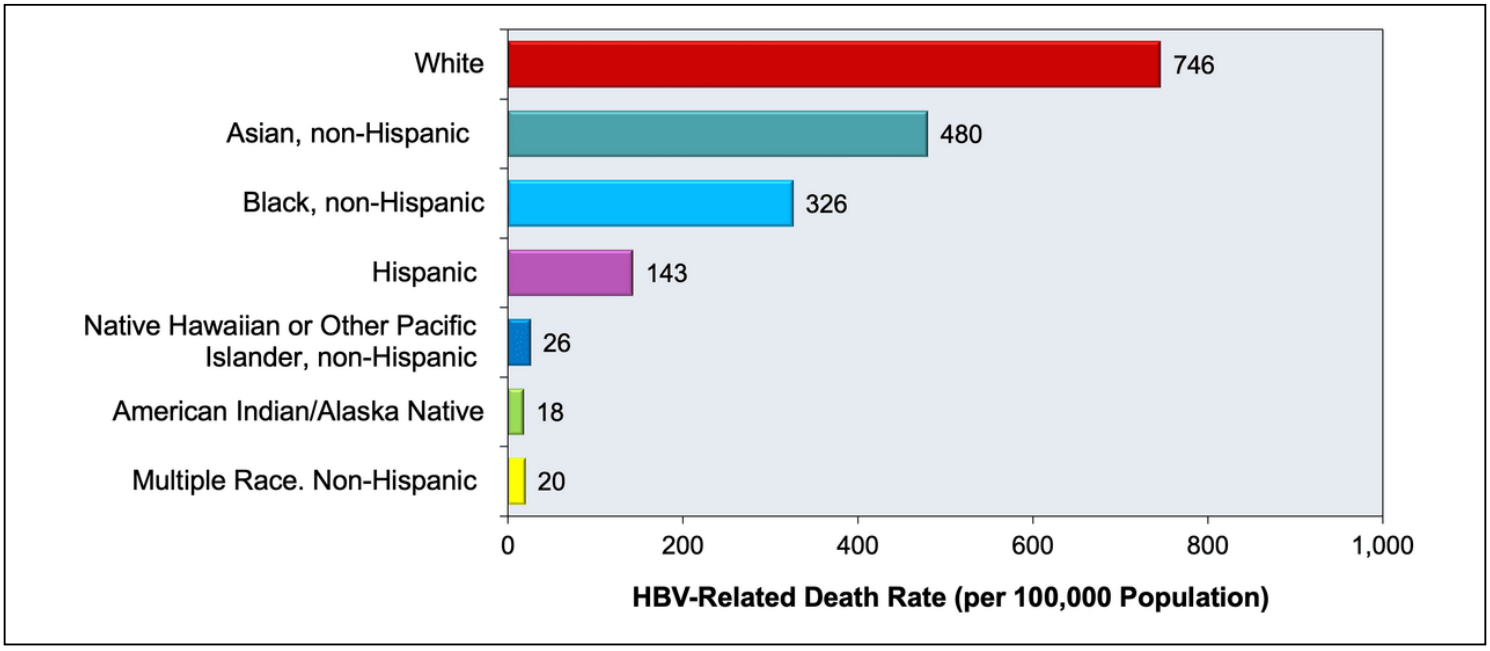

Figure 6 Worldwide Projected Deaths from Viral Hepatitis Compared with Deaths from Tuberculosis and HIV

Source: Thomas DL. Global Elimination of Chronic Hepatitis. N Engl J Med. 2019;380:2041-50. Copyright ©2019 Massachusetts Medical Society. Reproduced with permission from Massachusetts Medical Society.

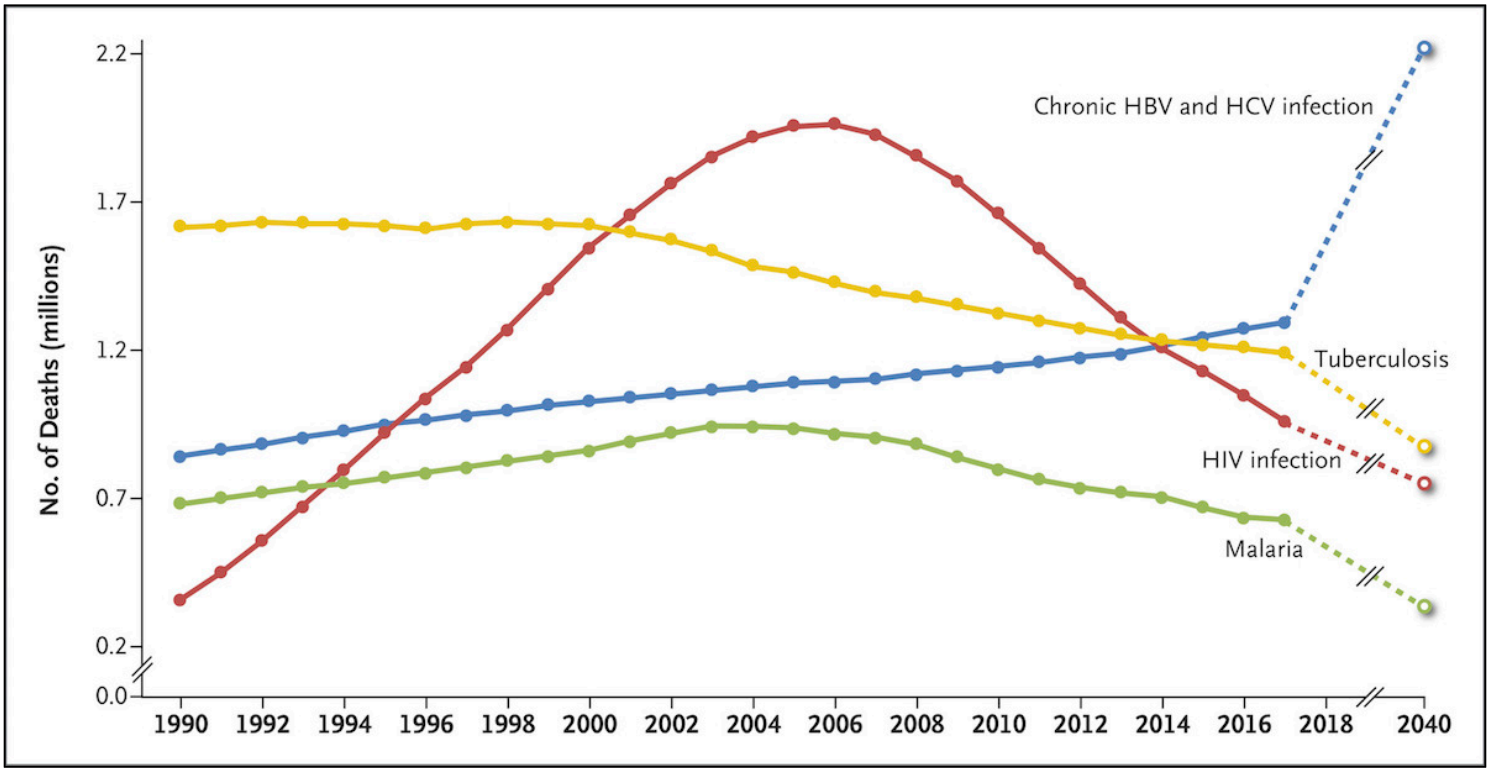

Table 1.

Global Prevalence of Chronic HBV Infection, by Country

Prevalence Category	Country
High (≥8%)	Angola, Cabo Verde, Central African Republic, Chad, Eswatini, Ghana, Guinea, Guinea-Bissau, Kiribati, Lesotho, Liberia, Mali, Mauritania, Niger, Nigeria, Philippines, Sao Tome and Principe, Sierra Leone, Solomon Islands, Taiwan, Timor-Leste, Togo, Tonga, Turkmenistan, Tuvalu, and Zimbabwe.
Intermediate (5.0-7.9%)	Albania, Benin, Burkina Faso, Cameroon, China, Côte d'Ivoire, Democratic People's Republic of Korea, Djibouti, Eritrea, Ethiopia, Federated States of Micronesia, Gabon, Indonesia, Kyrgyzstan, Moldova, Mongolia, Mozambique, Myanmar, Papua New Guinea, Senegal, Somalia, South Sudan, Syria, Tajikistan, Uzbekistan, Vanuatu, and Vietnam.
Low Intermediate (2.0-4.9%)	Afghanistan, Azerbaijan, Bangladesh, Belarus, Bosnia and Herzegovina, Bulgaria, Burundi, Cambodia, Comoros, Congo, Democratic Republic of Congo, Gambia, Georgia, Guyana, Haiti, Hong Kong, India, Iraq, Jamaica, Jordan, Kazakhstan, South Korea, Laos, Madagascar, Malawi, Malaysia, Marshall Islands, Oman, Pakistan, Romania, Rwanda, Samoa, Singapore, South Africa, Sri Lanka, Sudan, Tanzania, Thailand, Trinidad and Tobago, Tunisia, Turkey, Uganda, Yemen, and Zambia.
Low	Algeria, Argentina,

Prevalence Category	Country
(≤1.9%)	Armenia, Australia, Austria, Bahrain, Belgium, Belize, Bhutan, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Croatia, Cuba, Czechia, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Fiji, Finland, France, Germany, Greece, Guatemala, Honduras, Hungary, Iran, Ireland, Israel, Italy, Japan, Kenya, Kosovo, Kuwait, Lebanon, Libya, Mexico, Morocco, Nepal, Netherlands, New Zealand, Nicaragua, Norway, Palestine, Panama, Paraguay, Peru, Poland, Portugal, Qatar, Russia, Saudi Arabia, Slovakia, Slovenia, Spain, Suriname, Sweden, Switzerland, Ukraine, United Arab Emirates, United Kingdom, United States, and Venezuela.
Unknown prevalence (data not available)	American Samoa, Andorra, Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bermuda, Bonaire Sint Eustatius and Saba, Botswana, British Virgin Islands, Brunei, Cayman Islands, Cook Islands, Curaçao, Cyprus, Dominica, Equatorial Guinea, Falkland Islands, Faroe Islands, French Guiana, French Polynesia, Gibraltar, Greenland, Grenada, Guadeloupe, Guam, Holy See, Iceland, Isle of Man, Latvia, Liechtenstein, Lithuania, Luxembourg, Macao, Macedonia, Maldives, Malta, Martinique, Mauritius, Mayotte, Monaco, Montenegro, Montserrat, Namibia,

Prevalence Category	Country
	Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Puerto Rico, Réunion, Saint Barthélemy, Saint Helena, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Pierre and Miquelon, Saint Vincent and the Grenadines, San Marino, Serbia, Seychelles, Sint Maarten, Tokelau, Turks and Caicos Islands, U.S. Virgin Islands, Uruguay, Wallis and Futuna, and Western Sahara.

NOTE: This table is based on data from the Centers for Disease Control and Prevention (CDC)
Source:

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