

Jenny Ngo, B.S., David Wyles, M.D., Sarah Rowan, M.D., Kevin Kamis, MPH  
Department of Infectious Disease, University of Colorado Anschutz Medical Campus, Aurora, CO

## Background

- Hepatitis B virus (HBV) is a vaccine-preventable viral infection of the liver that affects the global population.
- Chronic hepatitis B (CHB) disproportionately impacts non-U.S. born individuals, particularly Asian/Pacific Islander and Black populations.
- High risk groups includes individuals who inject drugs, infants born to infected mothers, males who have sexual intercourse with other males, hemodialysis patients, healthcare workers, individuals who have hepatitis C and/or HIV, and household contacts of patients with CHB.
- Untreated HBV infection can progress to a chronic state associated with cirrhosis and hepatocellular carcinoma (HCC), contributing to mortality rates.
- Approximately 15-40% of chronic HBV patients proceed to end stage liver disease (ESLD) including cirrhosis and HCC.
- Gaps exist in awareness/knowledge, screening, and long-term follow-up.
- Safety net hospitals like Denver Health serve high risk populations, but the population is under-characterized.

## Methods

- A qualitative, descriptive analysis study that was deemed as QI by QuIRCC.
- Data source from ReLink Project registry on EPIC.
- Population is adults ages 18-100 with CHB.
- CHB infection was defined by the persistence of hepatitis B surface antigen on two occasions at least 6 months apart.
- Variables:
  - Demographics: age, sex, Country of birth
  - Risk factors: IVDU, STIs, ESRD/dialysis, immunocompromised, high-risk sexual behavior, parental history of HBV.
  - Diagnostics: HIV, HCV, HDV, cirrhosis
  - Care engagement: PCP, specialty, treatment
- Data analyzed using pivot tables on Microsoft Excel.

No conflicts of interest to disclose.

## Results

- 915 individuals with CHB.
- 56% male, median age 46 years (IQR 38-58).
- 90.6% non-Hispanic, 12.7% White, 6.4% Black.
- 27.8% born in US, 20.1% born in Southeast Asia, 12.5% born in East Africa.
- 38.6% lost to follow-up.
- 29.8% receive primary care at Lowry clinic, 19.1% at Denver Health main campus.
- 10.7% history of STIs, 7.7% high-risk sexual behaviors, 10.3% history of IVDU, 1.4% dialysis-dependent, 15.4% immunocompromised.
- 8.1% +HCV RNA, 0.76% +HDV antibody, 11.1% +HIV, 5.2% +Cirrhosis.

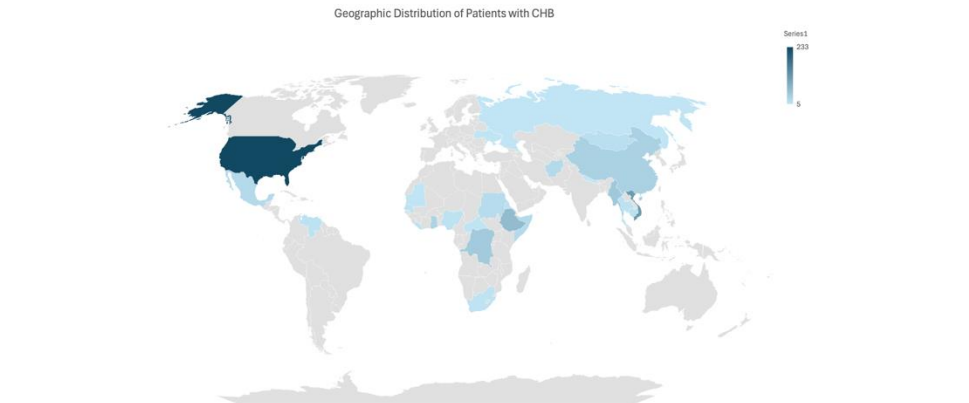


Figure 1. World map to represent the geographic distribution of patients with CHB

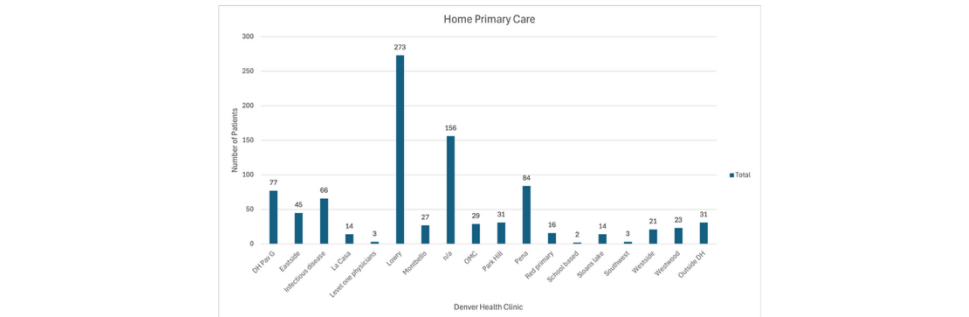


Figure 2. The distribution of primary care clinics of patients with HBV within the Denver Health care system.

## Conclusions

- Population is majority non-Hispanic male with a median age of 46 either born in North America, Southeast Asia, or East Africa, and receiving CHB care at the Lowry clinic.
- A high percentage of patients are lost to follow-up highlighting the area we can improve at Denver Health.
- There was limited serology testing for co-infection with hepatitis D, another viral liver infection that only occurs concurrently with hepatitis B.
- Higher percentages (>10%) of patients with risk factors such as history of STIs, history of intravenous drug use, and immunocompromised status when compared to other risk factors of history of high-risk sexual behaviors, parents with HBV, and dialysis-dependence.
- Women of reproductive age and who are pregnant will come into Denver Health, found to have HBV by serologies, and do not follow up after delivering their child.
- Specialty notes from infectious disease/gastroenterology are often more in depth in identifying risk factors and detailed about patient history compared to primary care notes.

## Future Directions

- Review patient records across the different health institutions in Colorado as a state to gain better insight on the state population and develop a statewide initiative.
- Initiatives to consider: educational workshops in different languages, patient informational handouts, standardize order set to include HDV serology, and standardized protocol for management of HBV infection at Denver Health.

## Resources

- Tripathi N, Mousa OY. Hepatitis B. [Updated 2023 Jul 9]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK555945/>
- World Health Organization. (2025, July 23). *Hepatitis B*. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/hepatitis-b>
- Tan NC, Cheah SL. What barriers do primary care physicians face in the management of patients with chronic hepatitis B infection in primary care? Singapore Med J. 2005 Jul;46(7):333-9. PMID: 15968445. <https://pubmed.ncbi.nlm.nih.gov/15968445/>