

# **Updates in the Prevalence of Chronic HBV in the United States**

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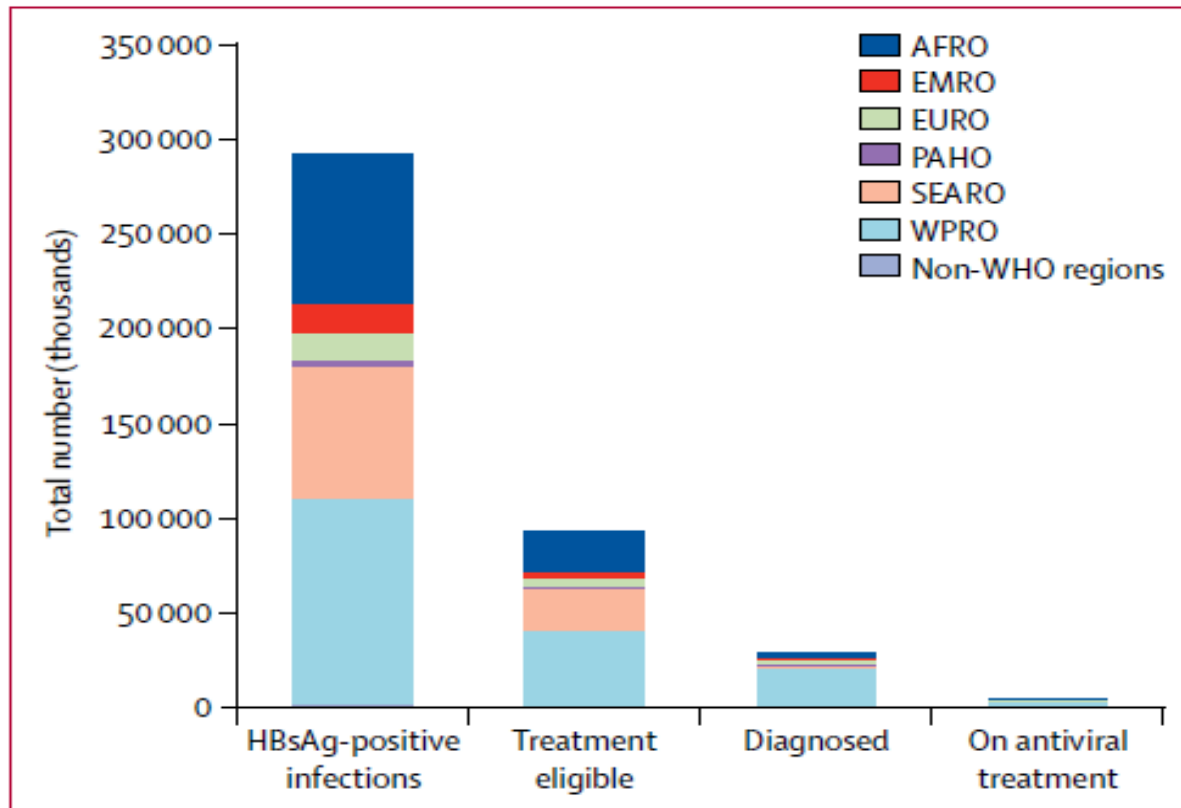
# Objectives

- Review updated estimates of chronic HBV prevalence in the United States

# Background

- The majority of individuals with chronic HBV in the United States are non-US-born
- Existing studies that estimate chronic HBV prevalence using large datasets or surveillance data may be limited in accurately assessing disease prevalence among ethnic minorities and vulnerable populations
- Under-diagnosis or under-reporting due to sub-optimal HBV screening and HBV linkage to care also present challenges to understanding HBV epidemiology

# HBV Cascade of Care – Global Estimates



**Figure 2: Global and regional hepatitis B virus cascade of care in 2016**  
AFRO=Regional Office for Africa. EMRO=Eastern Mediterranean Regional Office.  
EURO=Regional Office for Europe. PAHO=Pan American Health Organization.  
SEARO=South-East Asia Regional Office. WPRO=Western Pacific Regional Office.

# HBV Epidemiology and Disease Prevalence

HBV Infections (2016) †  
291,992,185  
(3.9%)



Diagnosed  
10%



Treated  
5%



Annual Deaths  
864,863



Deaths per minute  
2



Birth Dose  
46%



3+ Dose  
87%

## WHO GOALS by 2030

90% diagnosed

80% treated

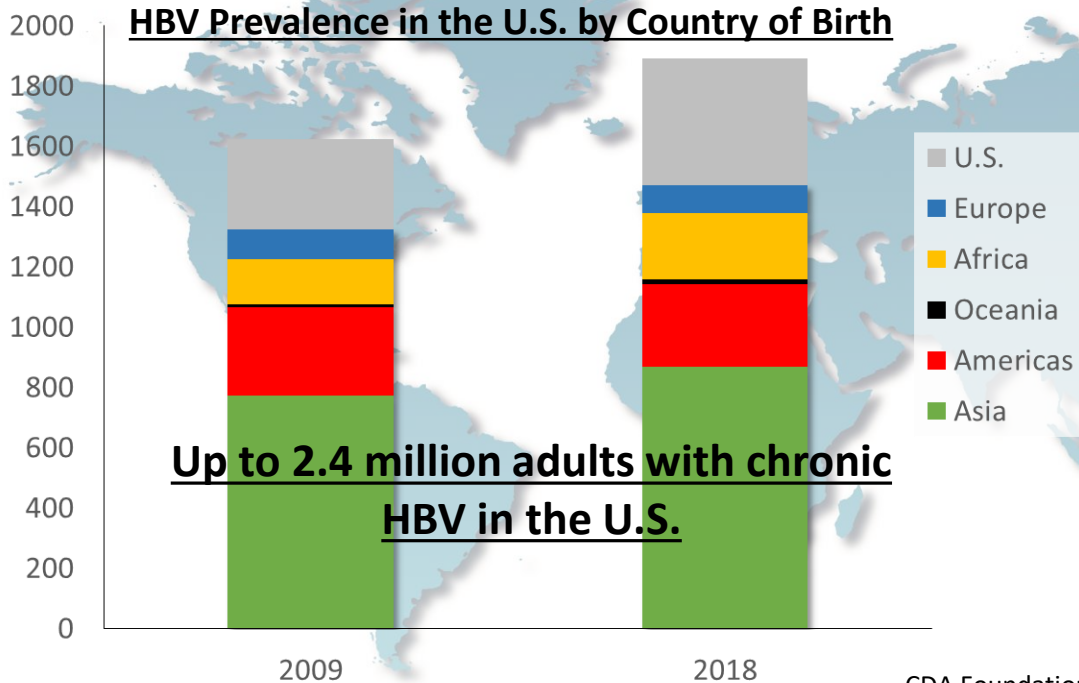
65% reduction in mortality

~270 million (2020 estimates)

Less new infections – vaccination

Increased mortality of aging HBV population

# HBV Epidemiology – United States






### United States

Population: 331,002,651 | 2020 Adult Population: 257,509,854 | World Bank Classification: High income

Polaris Estimate | HBV Status: Verified

Diagnosed 35%	Treated 31%	Annual Deaths 3,100	Deaths per day 8
Birth Dose 64%	3+ Dose 93%	HBIG 50%	Tx Pregnant Women 20%

# An Updated Assessment of Chronic Hepatitis B Prevalence Among Foreign-Born Persons Living in the United States

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Kris V. Kowdley,<sup>7</sup> Anna S. Lok,<sup>8</sup> Naoky Tsai,<sup>9</sup> John Ward,<sup>10</sup> Steven S. Wong,<sup>4</sup> and Robert G. Gish <sup>5</sup>

(HEPATOLOGY 2021;74:607-626).

# Methods

- Systematic review of country and region specific chronic CHB prevalence with focus on population-based studies
- Linked data from country specific studies assessing CHB prevalence to the 2018 U.S. Census Bureau American Community Survey Public Use Microdata Sample to calculate country-specific populations by country of birth and decade of entry
- Pooled CHB prevalence estimates were calculated for each country of origin using random effects meta-analyses
- To estimate the number of foreign-born adults with CHB in the U.S. in 2018 by country of origin, pooled CHB rates from country-specific meta-analyses were multiplied by the number of FB from each country living in the U.S. in 2018
- Estimates were added to existing U.S. born estimates of CHB to provide an overall estimate of CHB prevalence in the U.S.



- A total of 2,800 HBsAg seroprevalence surveys involving 112M subjects were included in the analyses
- Of these, 457 were surveys in emigrants (involving 1.2M subjects from 65 countries) and 2,343 were surveys of populations living in countries of origin (involving 110.8M subjects in 98 countries).
- About 21% of the surveys were conducted before 1990, 25% from 1990–1999, 33% from 2000–2009, and 20% in 2010 and later.
- Overall, 27% of the 112.0M survey participants were male and 58% female; sex was not reported for 15% of the sample.

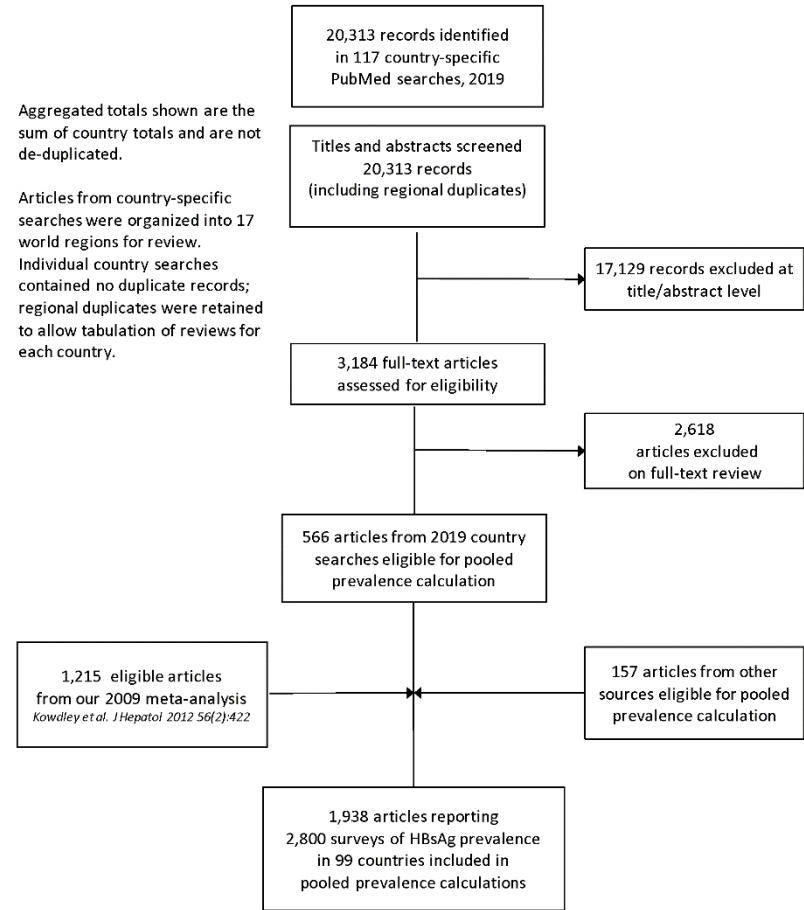
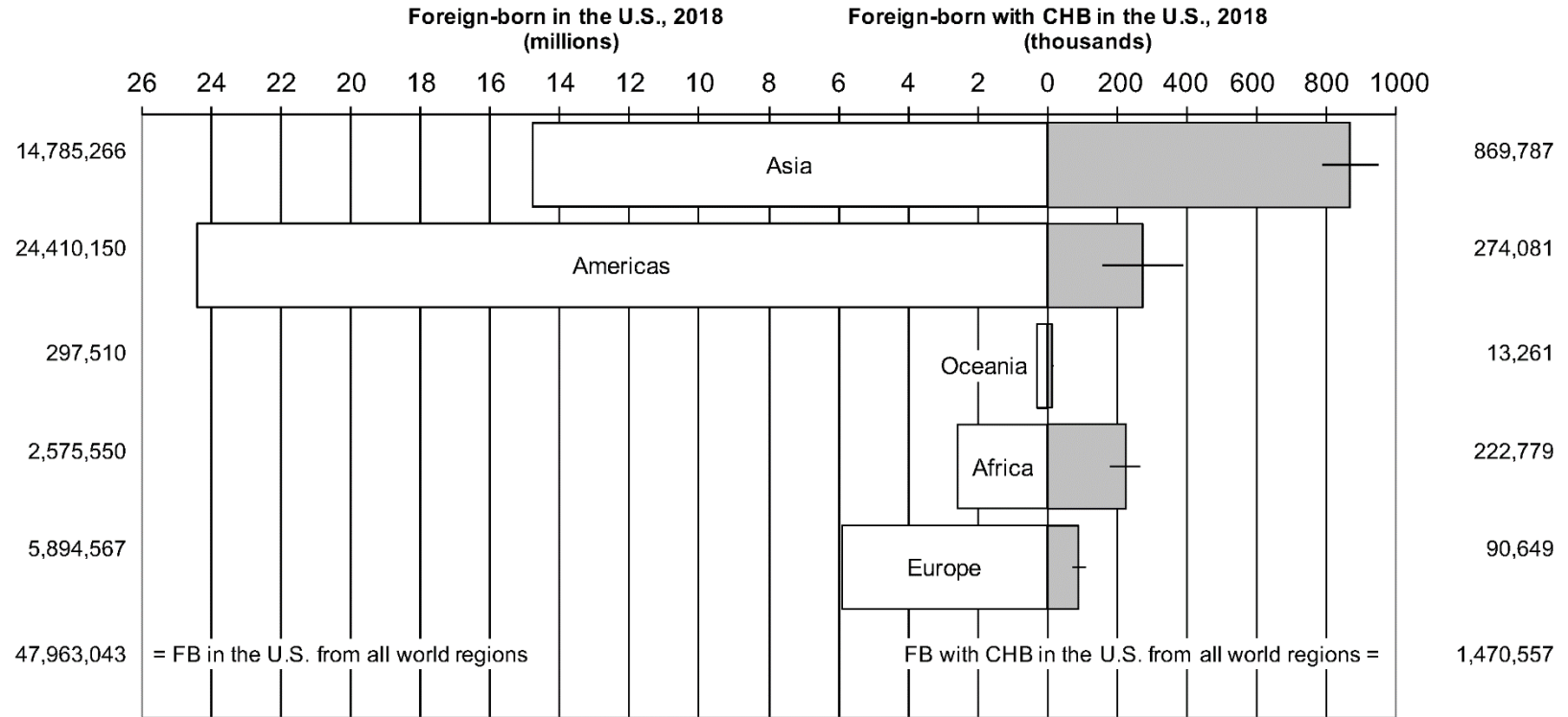


Figure 1. Flow Chart of PubMed Searches and Study Selection for 2019 Systematic Review (Aggregate Results for 99 Country-Specific Searches)

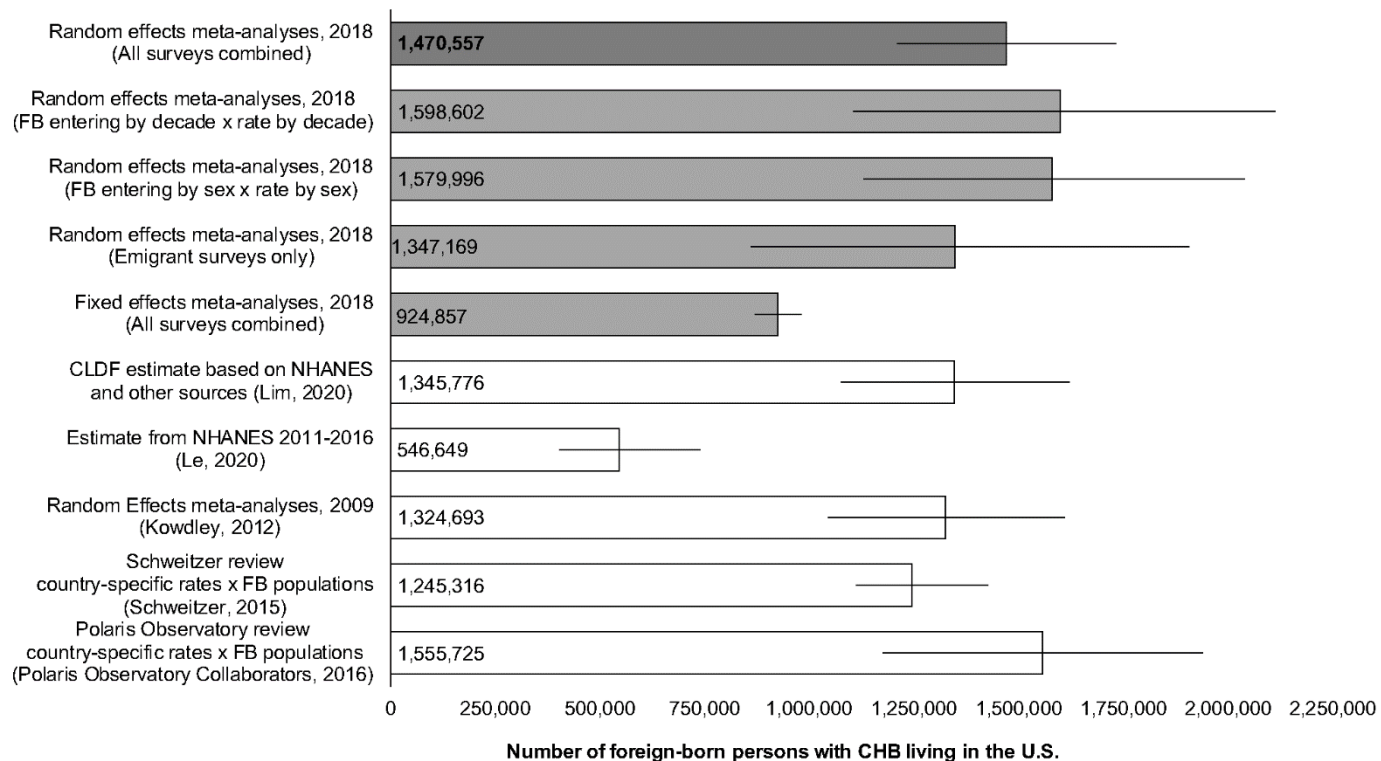
Figure 2: FB Populations Living in the U.S. and Number of FB with CHB Living in the U.S. from Random Effects Meta-Analysis by World Region of Origin, 2018



Abbreviations: CHB, chronic hepatitis B; FB, Foreign-born.

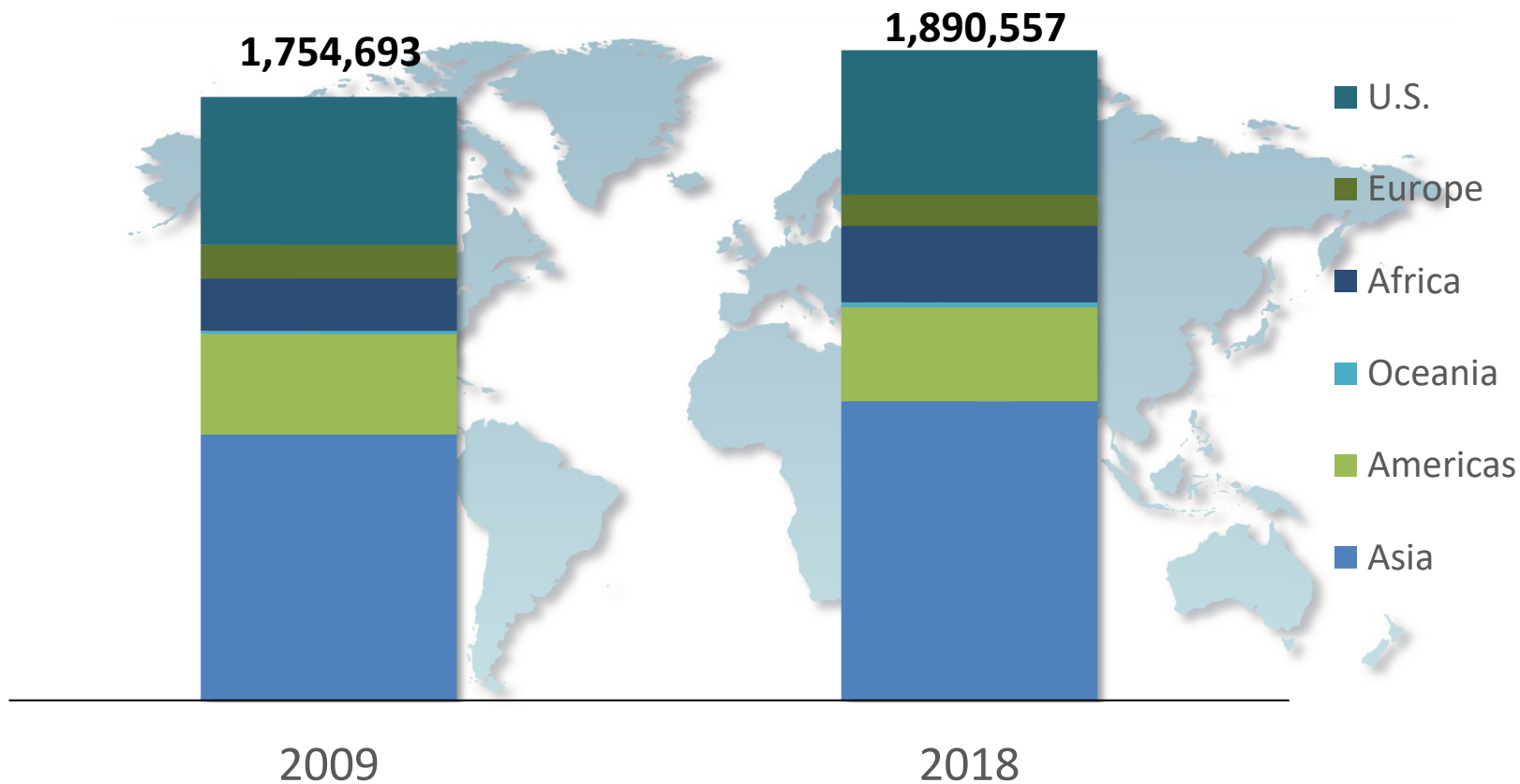
\* Northern America = FB from Canada and Bermuda living in the U.S.

**Figure 3. Number of Foreign-Born Persons with CHB Living in the U.S.: Comparison of Estimates**



Abbreviations: CLDF, Chronic Liver Disease Foundation; FB, Foreign-born; NHANES, National Health and Nutrition Examination Survey.

# Estimating Chronic HBV Prevalence Among U.S. Adults by Place of Birth



# Updated HBV Screening and Testing Recommendations – CDC, March 10, 2023

- HBV screening at least once during lifetime for adults aged  $\geq 18$  years
- Triple panel testing: HBsAg, anti-HBs, total anti-HBc
- Rationale for new recommendations:
  - Simplifying implementation of screening to improve diagnosis
  - Risk-based testing has failed and has been a barrier to timely diagnosis
  - Assessment of risk is complex and risks stigmatizing individuals
  - Early diagnosis and treatment reduces morbidity and mortality and reduces transmission
  - Cost-effective
  - Readily available inexpensive testing
  - Identify individuals at risk of reactivation and appropriate for linking to HBV vaccination

## Universal Hepatitis B Vaccination in Adults Aged 19–59 Years: Updated Recommendations of the Advisory Committee on Immunization Practices — United States, 2022

*Weekly* / April 1, 2022 / 71(13):477–483

*Please note:* This report has been corrected.

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# Take Home Points

- Most recently updated estimate of chronic HBV prevalence in the U.S. is **1.89M (range 1.49–2.40)**.
- Large proportion of chronic HBV remains undiagnosed and not linked to viral hepatitis care and treatment.
- Recent updates in guidelines and policy changes recommending universal HBV screening and near-universal HBV vaccination is an important first step to improve HBV care.
- However, more resources and advocacy are needed to continue to improve HBV care cascade and progress towards viral hepatitis elimination efforts.

# Thank You

- Questions and Discussion

# Tables from CHB Prevalence Manuscript (backup)



Microsoft Word  
Document