

# **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 foreign 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

# 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.

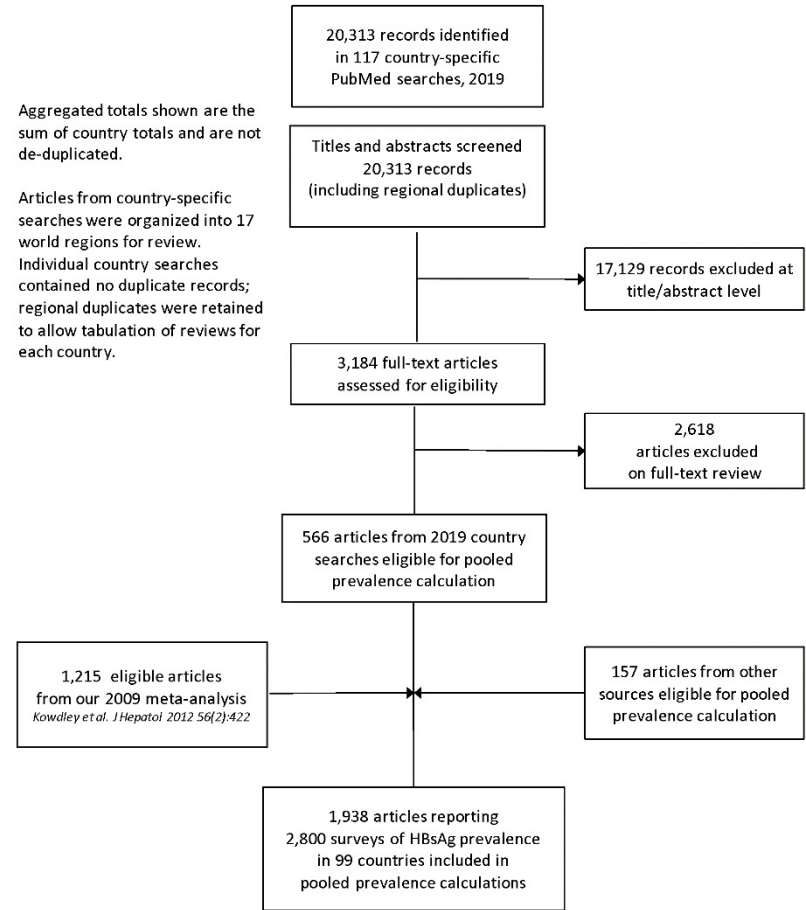
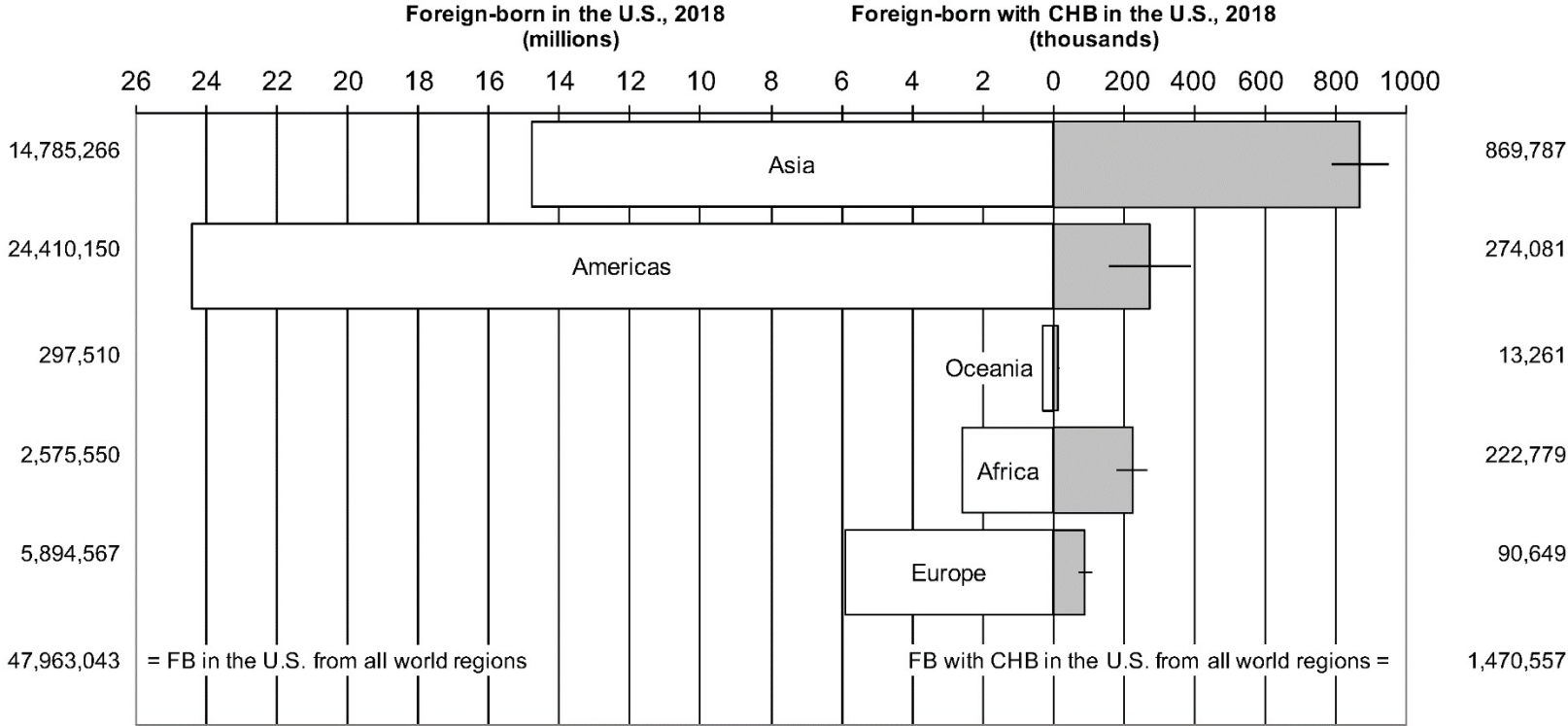


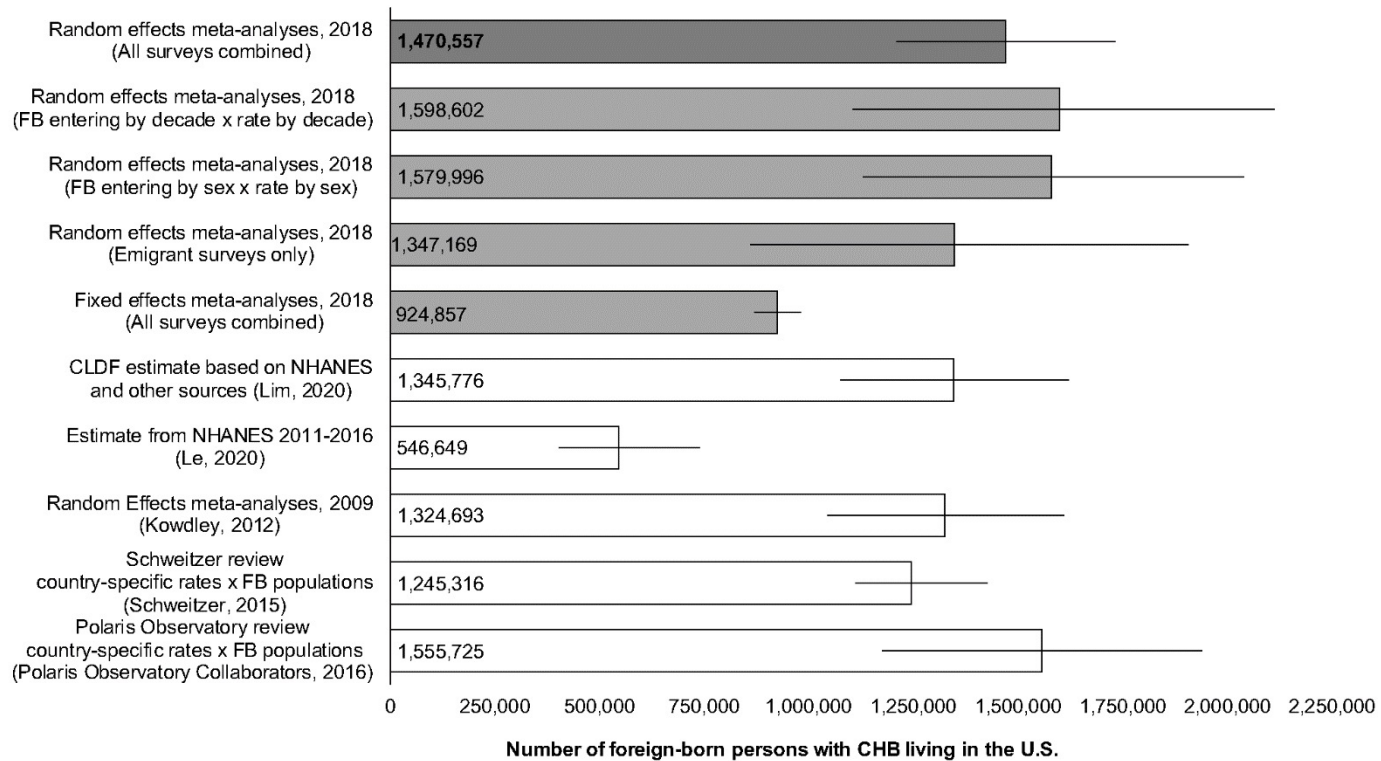
Figure 1. Flow Chart of PubMed Searches and Study Selection for 2019 Systematic Review (Aggregate Results for 99 Country-Specific Searches)

**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.

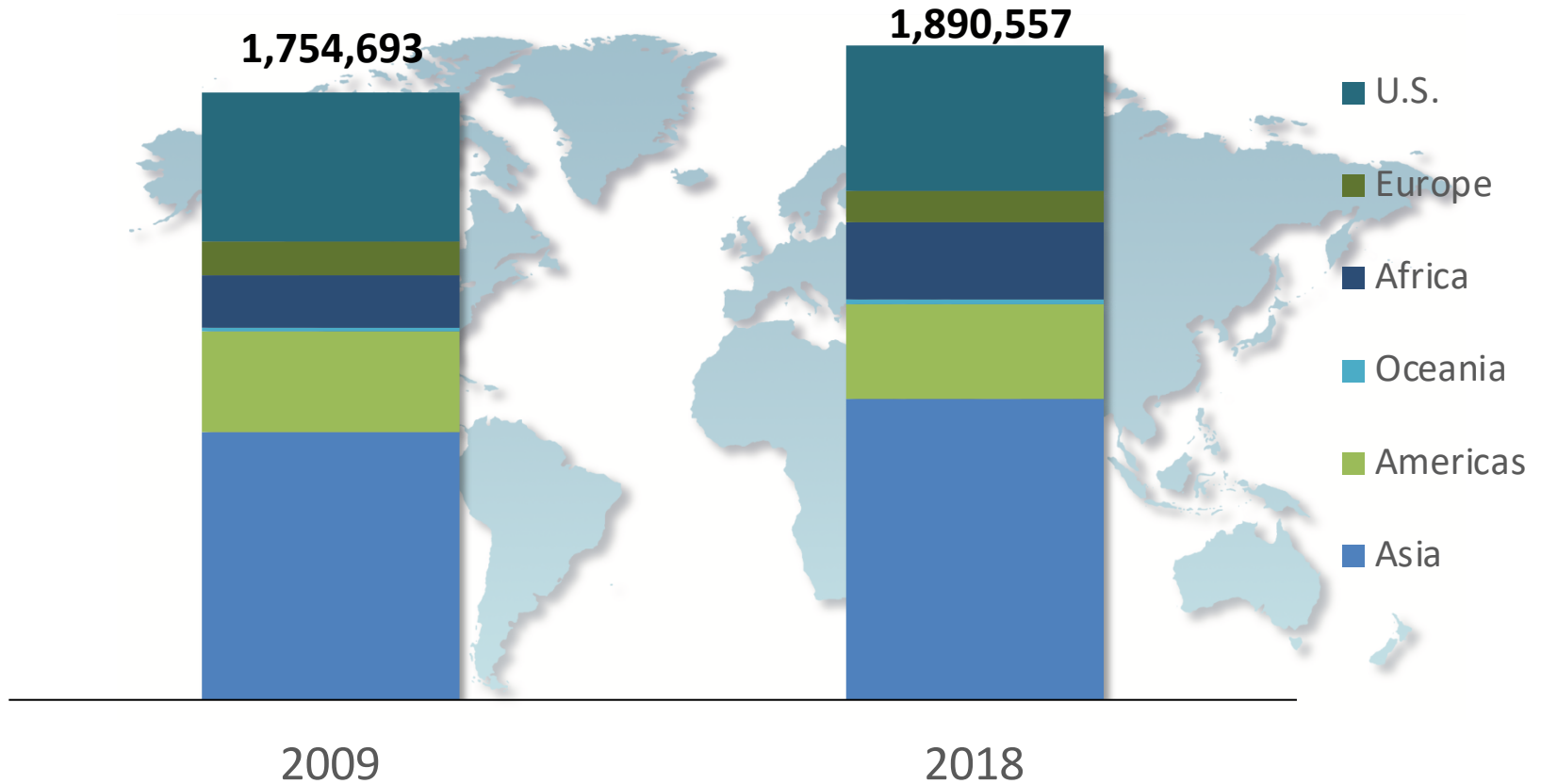
**Figure 3. Number of Foreign-Born Persons with CHB Living in the U.S.: Comparison of Estimates**



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



# Take Home Points

- Comprehensive meta-analyses of studies from 1980 – 2019 that incorporated potential changes in immigration patterns affecting U.S. populations as well as changes in country-specific CHB prevalence demonstrated:
  - Number of foreign-born adults with CHB living in the U.S. in 2018 was **1.47M (95% CI: 1.21–1.73)**
  - This represented an increase of 11% from 1.32M (95% CI: 1.04–1.61) in 2009, primarily drive by increased immigration.
  - Estimating 0.42M (95% CI: 0.28–0.67) U.S.-born persons with CHB in 2018, estimated total CHB in the U.S. was **1.89M (range 1.49–2.40)** persons with CHB (FB and U.S.-born) may be living in the U.S. in 2018

# Thank You

- Questions and Discussion

# Tables from CHB Prevalence Manuscript (backup)



Microsoft Word  
Document