

Supplementary Materials:

Table S1.Hepatitis B annual positive rate (per 100,000) among first-time CBS donors, 2005 to 2020

| Year | Total n | Clinical Scenario 2 | | Clinical Scenarios 1/3 | |
|-------------------------------------|------------------|----------------------------|------------------------------|------------------------------------|---------------------------------|
| | | Likely Chronic hepatitis B | | Likely Resolved/Occult hepatitis B | |
| | | Positive n | Rate per 100,000 (95% CI) | Positive n | Rate per 100,000 (95% CI) |
| 2005 | 59,979 | 28 | 46.7 (31.0 - 67.5) | 735 | 1,225.4 (1138.4 - 1317.3) |
| 2006 | 88,804 | 68 | 76.6 (59.5 - 97.1) | 1,200 | 1,351.3 (1275.9 - 1430.0) |
| 2007 | 85,591 | 70 | 81.8 (63.8 - 103.3) | 1,016 | 1,187.0 (1115.2 - 1262.3) |
| 2008 | 90,490 | 66 | 72.9 (56.4 - 92.8) | 1,095 | 1,210.1 (1139.5 - 1283.9) |
| 2009 | 87,389 | 52 | 59.5 (44.4 - 78.0) | 1,052 | 1,203.8 (1132.2 - 1278.8) |
| 2010 | 81,471 | 56 | 68.7 (51.9 - 89.3) | 1,020 | 1,252.0 (1176.3 - 1331.2) |
| 2011 | 92,745 | 52 | 56.1 (41.9 - 73.5) | 1,228 | 1,324.1 (1251.0 - 1400.3) |
| 2012 | 92,066 | 53 | 57.6 (43.1 - 75.3) | 1,234 | 1,340.3 (1266.6 - 1417.3) |
| 2013 | 90,886 | 42 | 46.2 (33.3 - 62.5) | 1,147 | 1,262.0 (1190.0 - 1337.2) |
| 2014 | 96,543 | 43 | 44.5 (32.2 - 60.0) | 1,148 | 1,189.1 (1121.3 - 1259.9) |
| 2015 | 81,589 | 32 | 39.2 (26.8 - 55.4) | 1,070 | 1,311.5 (1234.1 - 1392.5) |
| 2016 | 88,806 | 51 | 57.4 (42.8 - 75.5) | 1,382 | 1,556.2 (1475.2 - 1640.5) |
| 2017 | 101,755 | 48 | 47.2 (34.8 - 62.6) | 1,456 | 1,430.9 (1358.3 - 1506.3) |
| 2018 | 102,037 | 41 | 40.2 (28.8 - 54.5) | 1,371 | 1,343.6 (1273.5 - 1416.7) |
| 2019 | 87,201 | 54 | 61.9 (46.5 - 80.8) | 1,264 | 1,449.5 (1370.7 - 1531.7) |
| 2020 | 74,251 | 31 | 41.8 (28.4 - 59.3) | 1,003 | 1,350.8 (1268.5 - 1437.1) |
| Overall 2005 to 2020 | 1,401,603 | 787 | 56.1 (52.3-62.1) | 18,421 | 1314.3 (1295.5 – 1333.4) |

Table S2. Breakdown of HBV-positive rates by clinical scenario among first-time donors by sex, age, and region, 2019.

| Demographics | Clinical Scenario 2 Likely Chronic | | Clinical Scenario 1 and 3 Likely Occult and Resolved | |
|---|---------------------------------------|---|---|---|
| | Total Tested | Rate/100,000 first-time donors (95% CI) | Total Tested | Rate/100,000 first-time donors (95% CI) |
| Sex | | | | |
| Female | 46,117 | 36.9 (21.5 - 59.0) | 46,117 | 1,047.3 (956.0 - 1145.0) |
| Male | 41,084 | 90.1 (63.4 - 124.1) | 41,084 | 1,901.0 (1770.0 - 2039.1) |
| Age Group | | | | |
| 17-29 | 42,487 | 37.7 (21.5 - 61.2) | 42,487 | 313.0 (262.1 - 371.0) |
| 30-39 | 17,084 | 122.9 (76.1 - 188.0) | 17,084 | 1,574.6 (1392.1 - 1774.5) |
| 40-49 | 12,198 | 65.6 (28.4 - 129.3) | 12,198 | 3,328.4 (3012.5 - 3668.5) |
| 50+ | 15,432 | 58.3 (26.7 - 110.7) | 15,432 | 2,954.9 (2689.9 - 3239.0) |
| Province or Region of Residence* | | | | |
| British Columbia | 14,718 | 88.3 (47.1 - 151.1) | 14,718 | 1,644.3 (1443.6 - 1865.0) |
| Alberta | 16,873 | 35.6 (13.1 - 77.4) | 16,873 | 1,535.0 (1353.8 - 1733.8) |
| Saskatchewan | 3,554 | 140.7 (45.9 - 328.4) | 3,554 | 1,012.9 (709.6 - 1402.4) |
| Manitoba | 3,866 | 51.7 (6.5 - 187.0) | 3,866 | 1,474.4 (1116.9 - 1910.5) |
| Ontario | 40,789 | 63.7 (41.7 - 93.4) | 40,789 | 1,532.3 (1414.5 - 1657.3) |
| Atlantic Canada** | 7,401 | 27.0 (3.4 - 97.7) | 7,401 | 608.0 (443.6 - 813.7) |
| Total | 87,201 | 61.9 (46.5 - 80.8) | 87,201 | 1,449.5 (1370.7 - 1531.7) |

* Province or region of residence at the time of CBS hepatitis B first-time blood donor screening.

** Atlantic Canada is a summary of CBS first-time donors who were screened for hepatitis B who resided in the provinces of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland & Labrador at the time of blood donor screening.

Table S3. Output from univariate logistic regression model of case-control interviews with clinical scenario 2 (likely chronic infection) as the dependent variable.

| Variable | Odds Ratio (OR) | 95% CI | P Value |
|---|----------------------------|---------------|----------------|
| Ever received a blood transfusion | 2.58 | 1.53 – 4.37 | 0.0004 |
| Lived with someone who had hepatitis (any) | 10.49 | 4.94 – 22.13 | <0.0001 |
| Lived with someone who had liver disease | 2.75 | 1.00 – 7.56 | 0.0500 |
| Vaccinated for hepatitis B | 0.56 | 0.41 – 0.76 | 0.0003 |
| High-risk ethnic origin ¹ | 7.22 | 5.38 – 9.77 | <0.0001 |
| Body piercing | 0.40 | 0.20 – 0.77 | 0.0064 |
| 10+ sexual partners in lifetime | 0.35 | 0.22 – 0.58 | <0.0001 |
| Tattoo | 0.36 | 0.23 – 0.59 | <0.0001 |
| Born in high-risk country (>5% prevalence)* | 9.21 | 6.62 -12.81 | <0.0001 |

*Ethnic origin was classified as high-risk if the donor self-reported their ancestral ethnicity to be from a high-risk country (5% or higher HBV prevalence (Schweitzer et al., 2015)); these ethnicities included Asian (unspecified, East, Southeast, West, and South), African, Chinese, and Filipino. People of African, Asian, Chinese, and Filipino ethnic origin have an increased likelihood of having been born in or having lived with people born in HBV-endemic countries and were considered “high-risk”