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Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Im YR, Jagdish R, Leith D, et al. Prevalence of occult hepatitis B virus infection in adults: a systematic review and meta-analysis. *Lancet Gastroenterol Hepatol* 2022; published online Aug 9. https://doi.org/10.1016/S2468-1253(22)00201-1.

Appendix

Overview

Appendix 1: Search terms

MEDLINE(R) ALL (Ovid) [1946 to Aug 14, 2019]

1. occult.mp.
2. exp hepatitis B/ or exp hepatitis B virus/ or exp hepatitis B surface antigens/
3. (hepatitis b or hepatitis-b or ("type b" adj1 hepatitis) or hbv or hep b or hep-b or hbsag or hbs-ag or hbs antigen* or hbs-antigen* or hepatitis b surface antigen* or hepatitis-b surface antigen*).mp.
4. 2 or 3
5. 1 and 4
6. obi.mp.
7. 5 or 6
8. exp prevalence/ or exp seroepidemiologic studies/ or exp "surveys and questionnaires"/
9. (prevalen* or seroprevalen* or sero-prevalen* or seroepidemi* or sero-epidemi* or survey* or proportion* or percent* or rate* or inciden*).mp.
10. 8 or 9
11. 7 and 10

Embase Classic+Embase (Ovid) [1947 to 2019 Aug 14]

1. occult.mp
2. exp Hepatitis B/ or exp Hepatitis B Virus/ or exp Hepatitis B Surface Antigen/ or exp Hepatitis B Antigen/
3. (hepatitis b or hepatitis-b or ("type b" adj1 hepatitis) or hbv or hep b or hep-b or hbsag or hbs-ag or hbs antigen* or hbs-antigen* or hepatitis b surface antigen* or hepatitis-b surface antigen*).mp.
4. 2 or 3
5. 1 and 4
6. obi.mp.
7. 5 or 6
8. exp prevalence/ or exp seroepidemiology/ or exp seroprevalence/ or exp questionnaire/ or exp health survey/
9. (prevalen* or seroprevalen* or sero-prevalen* or seroepidemi* or sero-epidemi* or survey* or proportion* or percent* or rate* or inciden*).mp.

10. 8 or 9
11. 7 and 10

Global Health (Ovid) [Global Health 1973 to 2019 Week 33]

1. occult.mp.
2. exp hepatitis b/ or exp hepatitis b virus/ or exp surface antigens/
3. (hepatitis b or hepatitis-b or ("type b" adj1 hepatitis) or hbv or hep b or hep-b or hbsag or hbs-ag or hbs antigen* or hbs-antigen* or hepatitis b surface antigen* hepatitis-b surface antigen*).mp.
4. 2 or 3
5. 1 and 4
6. obi.af.
7. 5 or 6
8. exp serological surveys/ or exp seroprevalence/ or exp disease prevalence/ or exp surveys/ or exp questionnaires/
9. (prevalen* or seroprevalen* or sero-prevalen* or seroepidemi* or sero-epidemi* or survey* or proportion* or percent* or rate* or inciden*).mp.
10. 8 or 9
11. 7 and 10

Web of Science Core Collection [All Years 1970 - 2019]

1. TS=occult
2. TS=(hepatitis b OR hepatitis-b OR (type b NEAR/1 hepatitis) OR hbv OR hep B OR hep-b OR hbsag OR hbs-ag OR HBS antigen* OR hbs-antigen* OR hepatitis B surface antigen* or hepatitis-b surface antigen*)
3. #1 AND #2
4. TS=OBI
5. #3 OR #4
6. TS=(prevalen* or seroprevalen* or sero-prevalen* or seroepidemi* or sero-epidemi* or survey* or proportion* or percent* or rate* or inciden*)
7. #5 AND #6

Appendix 2: Country-level endemicity

Estimates of country-level HBV endemicity were derived from POLARIS estimates of HBsAg prevalence[1] and, if these were not available, from the meta-analysis by Schweitzer *et al.*[2] For one country, Botswana, data were available from neither source, and we inferred the endemicity from neighbouring countries. Based on the HBsAg prevalence, we categorised countries into low-endemicity (HBsAg prevalence is <2.00%), intermediate-endemicity (2.00-4.99%) and high-endemicity (≥5.00%) countries in line with the WHO guidelines on testing for HBV.[3]

Country	HBsAg prevalence	Endemicity allocated	Source used
Albania	6.9%	High	POLARIS
Argentina	0.2%	Low	POLARIS
Australia	1.0%	Low	POLARIS
Azerbaijan	1.8%	Low	POLARIS
Botswana	N/A	High	Inferred from neighbouring countries
Brazil	0.4%	Low	POLARIS
Bulgaria	3.2%	Intermediate	POLARIS
Burkina Faso	6.1%	High	POLARIS
Cameroon	6.8%	High	POLARIS
Canada	0.6%	Low	POLARIS
China	6.1%	High	POLARIS
Cote d'Ivoire	8.9%	High	POLARIS
Cuba	0.6%	Low	POLARIS
Egypt	1.0%	Low	POLARIS
France	0.5%	Low	POLARIS
Gambia	4.8%	Intermediate	POLARIS
Germany	0.3%	Low	POLARIS
Greece	1.8%	Low	POLARIS
Hong Kong	6.4%	High	POLARIS
India	2.5%	Intermediate	POLARIS

Indonesia	6.8%	High	POLARIS
Iran	1.7%	Low	POLARIS
Iraq	3.5%	Intermediate	POLARIS
Italy	0.6%	Low	POLARIS
Japan	0.6%	Low	POLARIS
Jordan	2.4%	Intermediate	POLARIS
Kazakhstan	2.7%	Intermediate	POLARIS
Kenya	1.2%	Low	POLARIS
Lebanon	1.2%	High	POLARIS
Libya	1.5%	Low	POLARIS
Malaysia	0.9%	Low	POLARIS
Mexico	0.1%	Low	POLARIS
Mongolia	4.1%	Intermediate	POLARIS
Mozambique	7.5%	High	POLARIS
Netherlands	0.3%	Low	POLARIS
Nigeria	11.2%	High	POLARIS
Pakistan	2.1%	Intermediate	POLARIS
Philippines	9.8%	High	POLARIS
Poland	0.9%	Low	POLARIS
Portugal	1.2%	Low	POLARIS
Romania	3.4%	Intermediate	POLARIS
Slovakia	1.6%	Low	POLARIS
South Africa	6.7%	High	Schweitzer et al.
South Korea	2.4%	Intermediate	POLARIS
Spain	0.6%	Low	POLARIS
Sudan	5.3%	High	POLARIS
Switzerland	0.5%	Low	POLARIS
Syria	5.7%	High	POLARIS
Taiwan	9.4%	High	POLARIS
Thailand	3.5%	Intermediate	POLARIS
Tunisia	3.9%	Intermediate	POLARIS
Turkey	2.6%	Intermediate	POLARIS

Ukraine	1.5%	Low	Schweitzer et al.
United Arab Emirates/Saudi Arabia	1.6%	Low	POLARIS
United Kingdom	0.7%	Low	POLARIS
USA	0.3%	Low	POLARIS
Vietnam	8.2%	High	POLARIS
Yemen	3.2%	Intermediate	POLARIS

92

93

94

Appendix 3: OBI prevalence by World Health Organization (WHO) region

Appendix 3, Table 1: OBI prevalence stratified by WHO region and by population type.

	Blood donors	**Low-risk groups other than blood donors**	General population	Healthcare Workers	Pregnant women	**High-risk groups**	HIV	HCV	Haemodialysis	**People with advanced liver disease**	HCC	Cirrhosis
AFR			7.4% (5.0-10.8) n=323 (1 study)			12.7% (6.7-20.2) n=1,087 (6) I^2=						
AMR	<0.01% (0.00-0.01) N=70,225 (2) Median=0.01 %	5.5% N=1,007 (1)	5.5% N=1,007 (1)	N=0	N=0	5.0% (2.0-9.2) N=1,032 (4) I^2=84%	4.0% N=480 (1)	3.3% N=151 (1)	4.4% (2.6-6.7) N=401 (2) Median=8.7 %	<0.1% N=91 (1)	<0.1 % N=91 (1)	N=0
EMR	0.08% (0.00-0.25) N=84,962 (5) I^2=92%	1.4% (0.1-3.8) N=200 (2) Median=3.3 %	<0.1% N=80 (1)	3.3% N=120 (1)	N=0	8.8% (4.3-14.5) N=1,722 (16) I^2=92%	N=0	11.0% (4.8-19.3) N=865 (8) I^2=96%	6.8% (1.3-15.5) N=857 (8) I^2=94%	34.4% (17.6-53.4) N=146 (4) I^2=81%	50.0 % N=40 (1)	29.2% (12.2-49.6) N=106 (3) Median=37.9 %
EUR	N=0	<0.1% N=91 (1)	N=0	<0.1% N=91 (1)	N=0	3.3% (0.7-7.2) N=1,374 (9) I^2=90%	5.8% (3.6-8.5) N=361 (2) Median=5.7 %	2.4% (0.0-15.9) N=347 (3) Median=7.6 %	2.7% (0.0-8.8) N=665 (4) I^2=89%	N=0	N=0	N=0
SEAR	0.20% (0.06-0.41) N=159,512 (5) I^2=98%	1.7% (0.1-5.8) N=376 (4) I^2=72%	4.9% (2.4-8.0) N=243 (2) Median=4.6 %	<0.1% (0.0-1.2) N=133 (2) Median=0.0 %	N=0	9.0% (4.8 -14.4) N=503 (3) Median=7.3 %	6.0% N=100 (1)	7.3% N=260 (1)	14.7% N=143 (1)	<0.1% N=47 (1)	<0.1 % N=47 (1)	N=0
WPR	0.22% (0.11-0.36) N=288,952 (8) I^2=96%	3.3% N=121 (1)	3.3% N=121 (1)	N=0	N=0	5.0% (0.3-14.2) N=3,162 (9) I^2=98%	7.6% N=119 (1)	1.9% (0.2-5.0) N=596 (2) Median=21.7 %	1.9% (0.2-5.0) N=2,447 (6) I^2=89%	12.4% (7.1-18.7) N=349 (6) I^2=47%	9.2% (5.8-13.1) N=285 (4) I^2=0%	21.4% (11.8-32.7) N=64 (2) Median=18.7 %

Effect estimates are stated as pooled prevalence (95% confidence interval), N = number of individuals tested (number of studies in brackets), I^2 = heterogeneity statistic. Abbreviations: AFR = African region, AMR = Region of the Americas, EMR = Eastern Mediterranean Region, EUR = European Region, SEAR = South-East Asia Region, WPR = Western Pacific Region, HCC = hepatocellular carcinoma, HCV = hepatitis C virus, HIV = human immunodeficiency virus.

There are fewer studies than originally included (Table 1) as we performed subgroup analyses and only included blood samples, pre-specified population groups and serological criteria that allow pooling studies.

Appendix 4: Subgroup analyses

OBI prevalence was predicted to differ according to the following definitions of study outcomes:

1. Tissue in which HBV DNA is detected (liver, serum/plasma, peripheral blood mononuclear cells [PBMCs]) due to an inflated prevalence in studies on liver[4] and PBMCs[5] in line with previous reports. The results are summarised in the 'Results' section of the main manuscript as well as Appendix 4, Table 1.

2. Serological criteria used by study to test for OBI (all HBsAg- regardless of anti-HBc and anti-HBs status, HBsAg- anti-HBc+ regardless of anti-HBs status, HBsAg- anti-HBc+ anti-HBs-, HBsAg- anti-HBc- anti-HBs-, any other criteria) due to previous reports of higher OBI prevalence in anti-HBc-positive individuals.[6] The results are summarised below in Appendix 4, Table 1.

Appendix 4, Table 1: OBI prevalence according to serological criteria to test for OBI.

	Plasma/Serum	PBMCs	Liver
HBsAg -	<0.1% (95%CI 0.0-0.0) N=139,938,377 individuals (214 studies) I^2=100%	2.1% (95%CI 0.0-10.1) N=1,106 individuals (3 studies) I^2=96%	34.3% (95%CI 25.9-43.3) N=2,290 individuals (33 studies) I^2=95%
HBsAg - anti-HBc +	9.9% (7.9-12.2) N=188,420 (82) I^2=98%	N=0	36.3% (29.3-43.6) N=178 (2) Median=36.5%
HBsAg - anti-HBc + anti-HBs - (isolated anti-HBc)	11.9% (7.3-17.4) N=15,249 (25) I^2=98%	N=0	42.3% N=130 (1)

HBsAg - anti-HBc- anti-HBs-	7.4% (1.0-18.3) N=369,866 (5) I^2=98%	N=0	N=0
HBsAg- and any other criteria	9.8% (3.2-19.3) N=6,377 (10) I^2=98%	N=0	N=0

Subgroup analyses were also performed to investigate the high heterogeneity observed in our results, both based on different study population criteria and pre-specified sources of heterogeneity. These included:

3. HBV endemicity of country in which the study was conducted (country endemicity), as summarised in the 'Methods' and 'Results' of the main manuscript.
4. Geographical location (WHO region), as summarised below in Appendix 4, Table 1.
5. Whether studies included first-time donors only, or also repeat donors, as summarised below in Appendix 4, Table 2.

We observed a significantly higher OBI prevalence in studies that test for HBV DNA in liver tissue rather than serum/plasma samples ($p<0.001$) (Appendix 4, Table 1). We also observed a significantly higher OBI prevalence in studies that test HBsAg-negative, anti-HBc-positive populations compared to those testing HBsAg-negative individuals irrespective of hepatitis B antibody status ($p<0.001$) (Appendix 4, Table 1). Finally, there was a significantly different OBI prevalence rates in studies including repeat donors compared to those on first-time donors only ($p<0.001$) (Appendix 4, Table 2). This did not seem to be significantly confounded by endemicity (Appendix 4, Table 2).

Therefore, for the purposes of comparing prevalence rates across different regions (by WHO region and country-level endemicity) and across different population groups, we only included studies focussing on HBsAg-negative individuals irrespective of anti-HBc status, focussed on serum/plasma samples (Figure 2 and Appendix 4, Table 1), and excluded repeat donors from the analysis.

Appendix 4, Table 2: OBI prevalence in studies including first-time donors only, vs. studies also including repeat blood donors or donation samples.

First-time donors	Repeat donors
1.1% (95%CI 0.8-1.4) N=609,832 individuals (44 studies) I^2=98% 32 in high, 11 in intermediate, 23 in low-endemicity countries.	<0.1% (0.0-0.0) N= 139,867,719 individuals (89 studies) I^2=100% 7 in high, 2 in intermediate, 9 in low-endemicity countries.

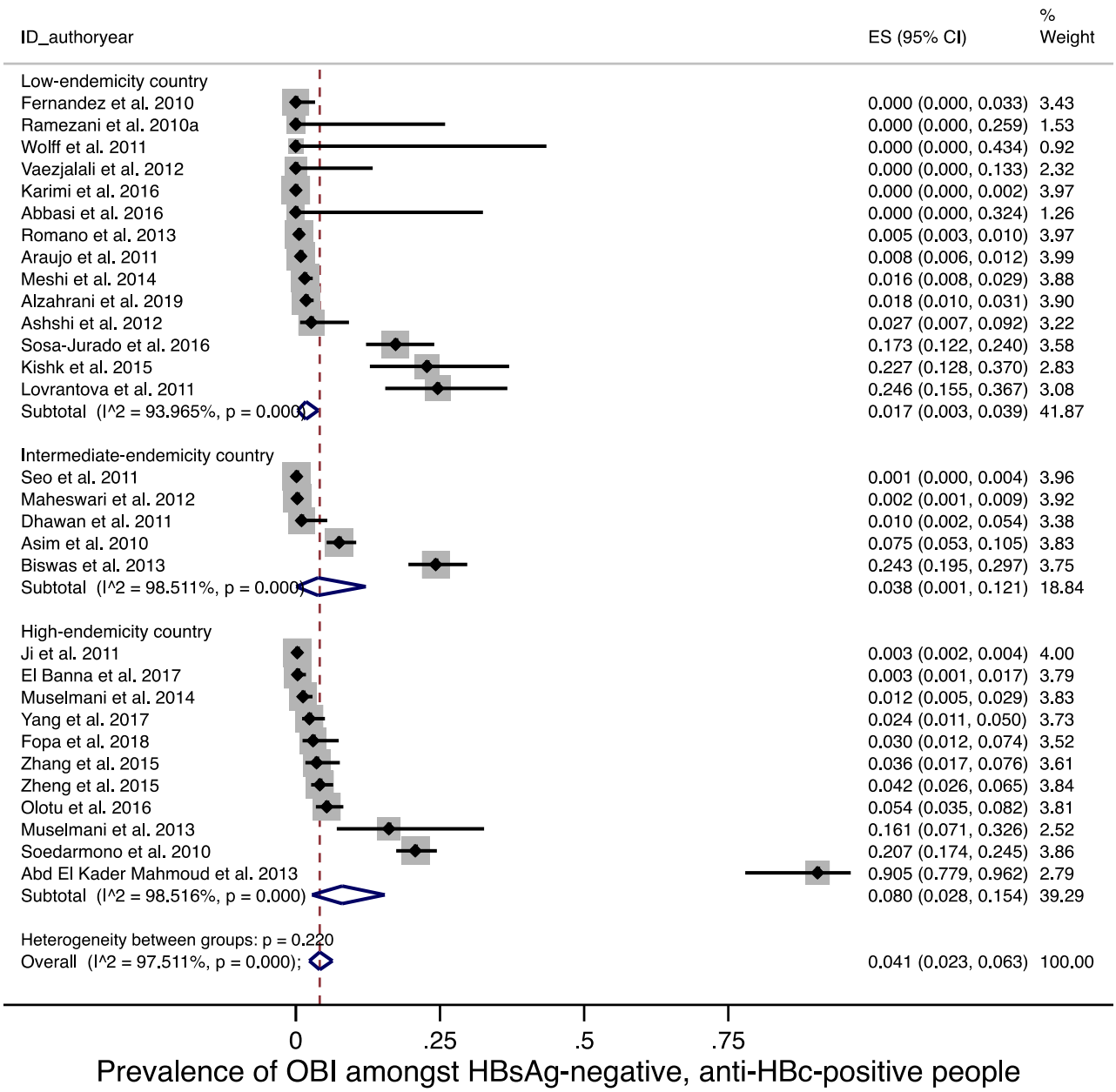
Appendix 5: OBI and anti-HBc

Figures 1 and 2 present the forest plots of OBI prevalence in blood donors positive for anti-HBc and blood donors negative for anti-HBc, respectively.

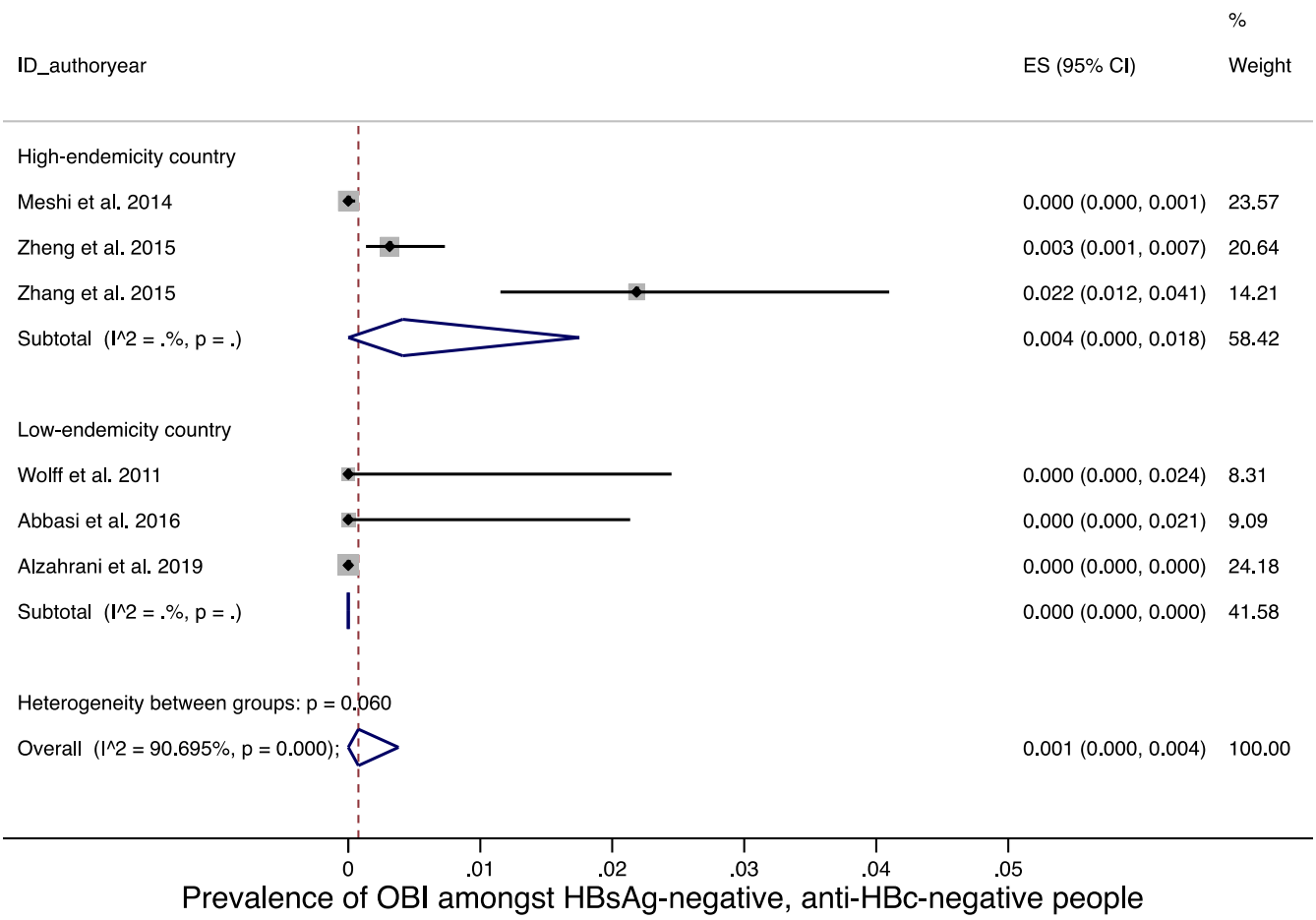
Figure 3 presents the hierarchical summary receiver operating characteristics (HSROC) curve based on logit estimates of sensitivity, specificity, and respective variances that were derived from the bivariate random-effects model using the “midas” command of Stata.[7] The HSROC curve is displayed along with the observed study data. The dashed line around the summary point estimate indicates the 95% confidence region. The area under the curve (AUC) was used as a global measure of test performance.[7]

Figure 4 presents the Chi-squared probability plot of squared Mahalanobis distances for the assessment of the bivariate normality assumption.

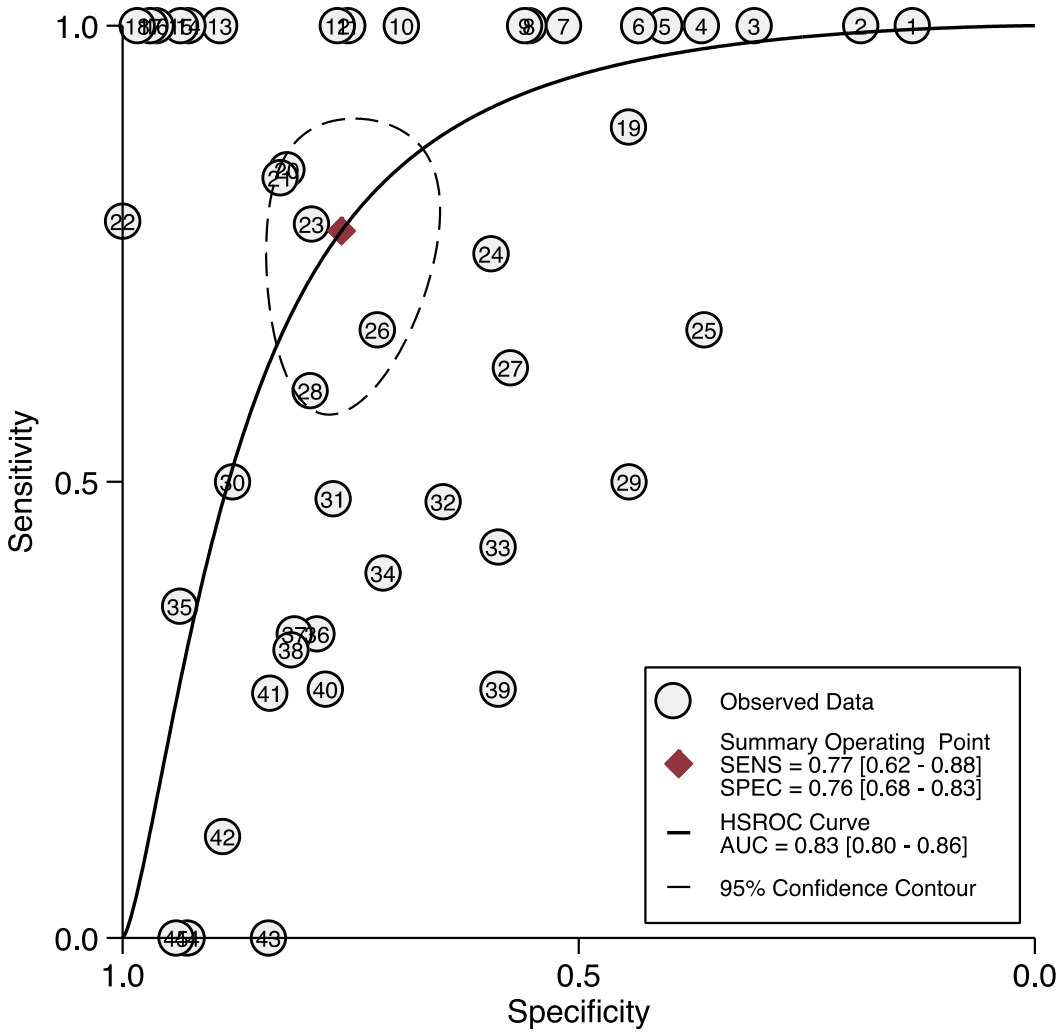
Appendix 5, Figure 1: OBI prevalence in blood donors positive for anti-HBc, stratified by endemicity. ES = effect size (OBI prevalence).



Appendix 5, Figure 2: OBI prevalence in blood donors negative for anti-HBc, stratified by endemicity. ES = effect size (OBI prevalence).

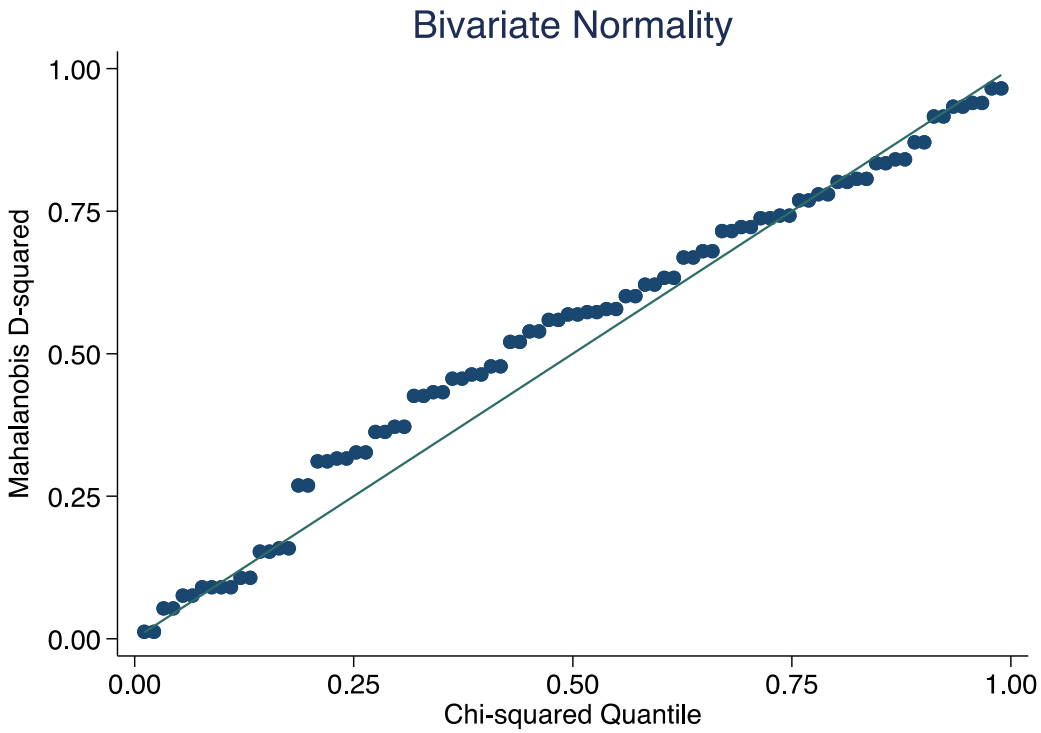


Appendix 5, Figure 3: Hierarchical summary receiver operating characteristic (HSROC) curve for the performance of anti-HBc to identify OBI.



AUC = area under the curve, SENS = sensitivity, SPEC = specificity, HSROC = hierarchical summary receiver operating characteristic. Each numbered data point refers to an individual study. 95% confidence intervals are stated in square brackets. The dashed line presents the 95% confidence region.

Appendix 6, Figure 4: Chi-squared probability plot of squared Mahalanobis distances for assessment of the bivariate normality assumption.



Appendix 6: OBI prevalence and analytical sensitivity of assays used

We categorised the HBsAg assays in chemiluminescent enzyme immunoassays (CLIA), enzyme-linked immunoassays (ELISA), radioimmunometric assays (RIA), and other/unspecified assay type. In total, 245/375 studies stated the type of HBsAg assay used. Of these, 79/245 used CLIA, 133/245 used ELISA/ELIA, 6/245 used RIA, and the remaining 27/245 used multiple assays or assays of a type that was not specified. 159/275 studies also stated the exact name of the model used. In total, 46 unique HBsAg assays were used, which may have been an additional source of high heterogeneity.

The assays most commonly used across all studies are listed in Appendix 6, Table 1. The assays most commonly used in blood donor studies were PRISM (Abbott) (n=15), Architect (Abbott) (n=10) and Murex (Abbott) (n=3). Note that no study on blood donors used radioimmunometric or other previously used assays with lower sensitivity.[3]

When comparing OBI prevalence by HBsAg assay type, OBI prevalence appeared significantly higher in studies using ELIA/ELISA, both when all studies were considered ($p<0.001$) and HBsAg-negative blood donors only ($p<0.001$). OBI prevalence appeared to be highest with the use of RIA, which are generally less sensitive; however, it is difficult to draw this conclusion given that only six studies assessed this, most of them (5 out of 6 studies) in the Western Pacific Region and on high-risk populations (5 out of 6). Overall, this analysis was likely confounded by endemicity (see annotation in Appendix 6, Table 2), and further subgroup analyses were not possible due to small sample sizes.

Appendix 6, Table 1: The five most frequently used HBsAg assays.

HBsAg assay brand & model	Assay type	Number of studies (out of a total of 159)
Architect (Abbott)	CLIA	34 (21%)
PRISM (Abbott)	CLIA	16 (10%)
Hepanostika (Biomerieux)	ELIA/ELISA	9 (6%)

AxSYM (Abbott)	ELIA/ELISA	7 (4%)
Murex (Abbott)	ELIA/ELISA	5 (3%)

Appendix 6, Table 2: OBI prevalence according to type of HBsAg assay used.

	CLIA	**ELIA/ELISA**	**RIA**
All studies	<0.1% (0.0-0.0) I^2=100% N= 77,046,907 (79)	3.2% (2.9-3.5) I^2=99% N=2,279,152 (133)	4.4% (1.7-8.1) I^2=83% N=1,569 (2)
Studies on blood donors including all HBsAg- individuals	0.1% (0.0-0.1) I^2=97% N= 313,103 (8) 0 studies in high, 5 studies in intermediate, 3 studies in low-endemicity countries.	1.9% (0.5-4.0%) I^2=98% N= 19,041 (6) 5 studies in high, 1 study in intermediate, 0 studies in low-endemicity countries.	N=0

In terms of HBV nucleic acid testing (NAT), overall, 67 different assays were used across all included studies. We categorised the assays in nested PCR, real-time PCR (RT-PCR), and other types of NAT. 304 studies specified the type of NAT used. 79/304 used nested PCR, 194/304 used RT-PCR, 31/304 used a mixture of models or unspecified models. The most commonly used models are listed in Appendix 6, Table 3.

When considering all studies, OBI prevalence appeared to be significantly higher in studies using nested PCR ($p<0.001$) (Appendix 6, Table 4). However, when restricting the analysis to blood donors and high-endemicity countries (insufficient data were available to compare low or intermediate-endemicity countries), the 95% confidence intervals overlapped and there was no increased OBI prevalence with nested PCR (Appendix 6, Table 4).

Appendix 6, Table 3: The five most commonly used HBV NAT assays. RT-PCR = real-time polymerase chain reaction, TMA = transcription-mediated amplification.

HBV NAT assay brand & model	Assay type	Number of studies (out of a total of 205)
Nested PCR (in-house)	Nested PCR	79
Roche Cobas TaqMan	RT-PCR	21
ProCleix Ultrio	TMA	19
Applied Biosystems TaqMan	RT-PCR	10
Qiagen Artus	RT-PCR	9

Appendix 6, Table 4: OBI prevalence according to type of HBsAg assay used.

	Nested PCR	Real-time PCR
All studies	12.92% (11.52-14.38) I^2=99% n=368,940 (79 studies)	<0.01% (0.00-0.01) I^2=99% n=66,086,175 (194 studies)
Studies on blood donors including all HBsAg- individuals	1.47% (0.33-3.33) I^2=98% n=9,159 (6 studies) 5 in high, 1 in low-endemicity countries.	0.03% (0.02-0.04) I^2=99% n=66,043,725 (40 studies) 13 in high, 10 in intermediate, 17 in low-endemicity countries.
Studies on blood donors including all HBsAg- individuals in high-endemicity countries only	1.90% (0.50-4.14) I^2=98% n=18,556 (6 studies)	0.61% (0.41-0.85) I^2=100% n=1,108,949 (13 studies)

Next, we aimed to assess the effect of analytical sensitivity (or lower limit of detection [LOD]) of the HBsAg and HBV DNA assays used on OBI prevalence. When designing the study quality assessment (Appendix 9), we pre-defined cut-offs for low and high sensitivity assays based on current WHO guidance on testing HBV.[3] We therefore categorised HBsAg and HBV DNA assays used by at least three different studies in low-sensitivity (HBsAg LOD ≥0.13 IU/ml, HBV DNA LOD >15 IU/ml) or high-sensitivity assays (HBsAg LOD <0.13 IU/ml, HBV DNA LOD ≤15 IU/ml). Because different studies reported different analytical sensitivities for a given assay, we searched the manufacturer's catalogues and otherwise comparative analyses in the literature to settle discrepancies in reported LOD values.[8–10]

We then cross-tabulated OBI prevalence according to HBsAg LOD and HBV DNA LOD. We hypothesised that the likelihood of being diagnosed as OBI to be B>A, B>D, A>C, D>C, if:

	HBsAg LOD <0.05 IU/ml	HBsAg LOD ≥0.05 IU/ml
HBV PCR LOD ≤15 IU/ml)	A	B
HBV PCR LOD >15 IU/ml	C	D

The results are shown in Appendix 6, Table 5 for all blood donors, and in Appendix 6, Table 6 for all studies on serum/plasma samples for the reasons discussed below.

Appendix 6, Table 5: Cross-tabulation of OBI prevalence according to the sensitivity of the HBsAg assay and the sensitivity of HBV NAT across <u>blood donor</u> studies reporting these data.

	HBsAg LOD <0.05 IU/ml	HBsAg LOD ≥0.05 IU/ml
HBV PCR LOD ≤15 IU/ml)	0.022% (0.016-0.030) I^2=99% n=38,384,631 (18 studies) 3 in high, 3 in intermediate,	0.008% (0.000-0.024) Median=0.153% n=35,608 (2 studies) 1 in low,

	11 in low-endemicity countries. This includes studies across EUR (n=7), WPR (n=5), EMR (n=2), SEAR (n=2), AMR (n=1), mixed (n=1), and none in AFR.	1 in intermediate-endemicity countries. Both in EUR (n=2).
HBV PCR LOD >15 IU/ml	0.006% (0.002-0.015) n=70,067 (1 single study) 1 in low-endemicity countries. Single study in AMR.	n=0 (no studies)

In blood donors, using a more sensitive HBsAg assay (LOD <0.05 IU/ml) was not associated with a significantly higher OBI prevalence amongst those studies also using highly sensitive NAT (p=0.425). Insufficient data did not permit this analysis on studies using less sensitive NAT.

In terms of HBV NAT, we did observe a trend towards increased OBI detection when a higher-sensitivity assay was used (p=0.002) but this was based on a single study in the less sensitive HBV DNA assay arm, not allowing a meaningful statistical interpretation.

Because so few studies were available to perform this analysis, we also checked the same analysis including all studies on serum/plasma samples that tested HBsAg-negative individuals.

278 **Appendix 6, Table 5:** Cross-tabulation of OBI prevalence according to the sensitivity of the
279 HBsAg assay and the sensitivity of HBV NAT across all studies reporting these data.

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	HBsAg LOD <0.05 IU/ml	HBsAg LOD ≥0.05 IU/ml
HBV PCR LOD ≤15 IU/ml)	<0.01% (0.00-0.00) I^2=99% N=38,393,625 (22) 3 in high, 6 in intermediate, 12 in low-endemicity countries.	1.88% (3.52-7.38) I^2=95% N=35,788 (7) 1 in high, 6 in intermediate, 7 in low-endemicity countries.
HBV PCR LOD >15 IU/ml	0.78% (0.03-2.23) I^2=94% N=72,578 (8) 1 in high, 1 in intermediate, 6 in low-endemicity countries. These studies were based in the Eastern Mediterranean Region (n=4), European Region (n=3) and Region of the Americas (n=1).	4.65% (3.38-6.10) I^2=29% N=1,478 (6) 5 in high, 1 in low-endemicity countries. Half of these studies were from the African Region (n=3) and the remainder from the Western Pacific Region (n=2) and the Regions of the America (n=1).

281

282 HBsAg assay sensitivity appeared to be predictive of OBI prevalence when pooling all
283 studies, whereas we did not find what we expected for HBV DNA sensitivity. However, the
284 whole analysis was confounded by the effect of country-level HBV endemicity on the
285 association between assay sensitivity and OBI prevalence: high-endemicity countries had
286 higher OBI prevalence and tended to use less sensitive NAT. Of 29 studies using high-
287 sensitivity HBV DNA assays, 19 were conducted in low-endemicity countries (4 in Iran; 2 in
288 Netherlands, Poland, Spain, and Malaysia each; 1 in Argentina, Australia, Greece, Italy, the

UEA, and USA each) and three studies were conducted in high-endemicity countries (2 in Hong Kong, 1 in Albania). Of 14 studies using low-sensitivity HBV DNA assays, 7 were conducted in low-endemic countries (2 in Germany and Italy each, 1 in Argentina, Brazil and Japan each) and 6 were conducted in high-endemic countries (2 in Botswana and China each, 1 in Nigeria and Cameroon each).

To conclude, because of this confounding, our data did not allow us to comment on the effect of analytical sensitivity of assays used on OBI prevalence conclusively. This was likely due to a combination of (i) high degrees of heterogeneity in methodology (i.e. use of a large number of different assays), (ii) the lack of reporting of methodology, (iii) important moderators of OBI prevalence identified in this study restricting the sample size of studies that could be assessed, (iv) the use of higher-sensitivity assays in higher-income countries.

Appendix 7: HBV genotypes amongst people with OBI

Appendix 7, Table 1

Genotype	AFR	AMR	EMR	EUR	SEAR	WPR
A	12 (57%)	66 (27%)	3 (2%)	1 (1%)	8 (3%)	5 (1%)
B	0	7 (3%)	12 (8%)	1 (1%)	13 (5%)	247 (42%)
C	0	6 (2%)	6 (4%)	0	13 (5%)	320 (54%)
D	0	36 (15%)	128 (83%)	74 (93%)	213 (86%)	18 (3%)
E	9 (43%)	0	0	4 (5%)	0	0
F	0	10 (4%)	0	0	0	0
G	0	1	0	0	0	0
H	0	117 (48%)	0	0	0	0
Mixed	0	0	5 (3%)	0	0	0
Total OBI cases	21	243	154	80	248	590

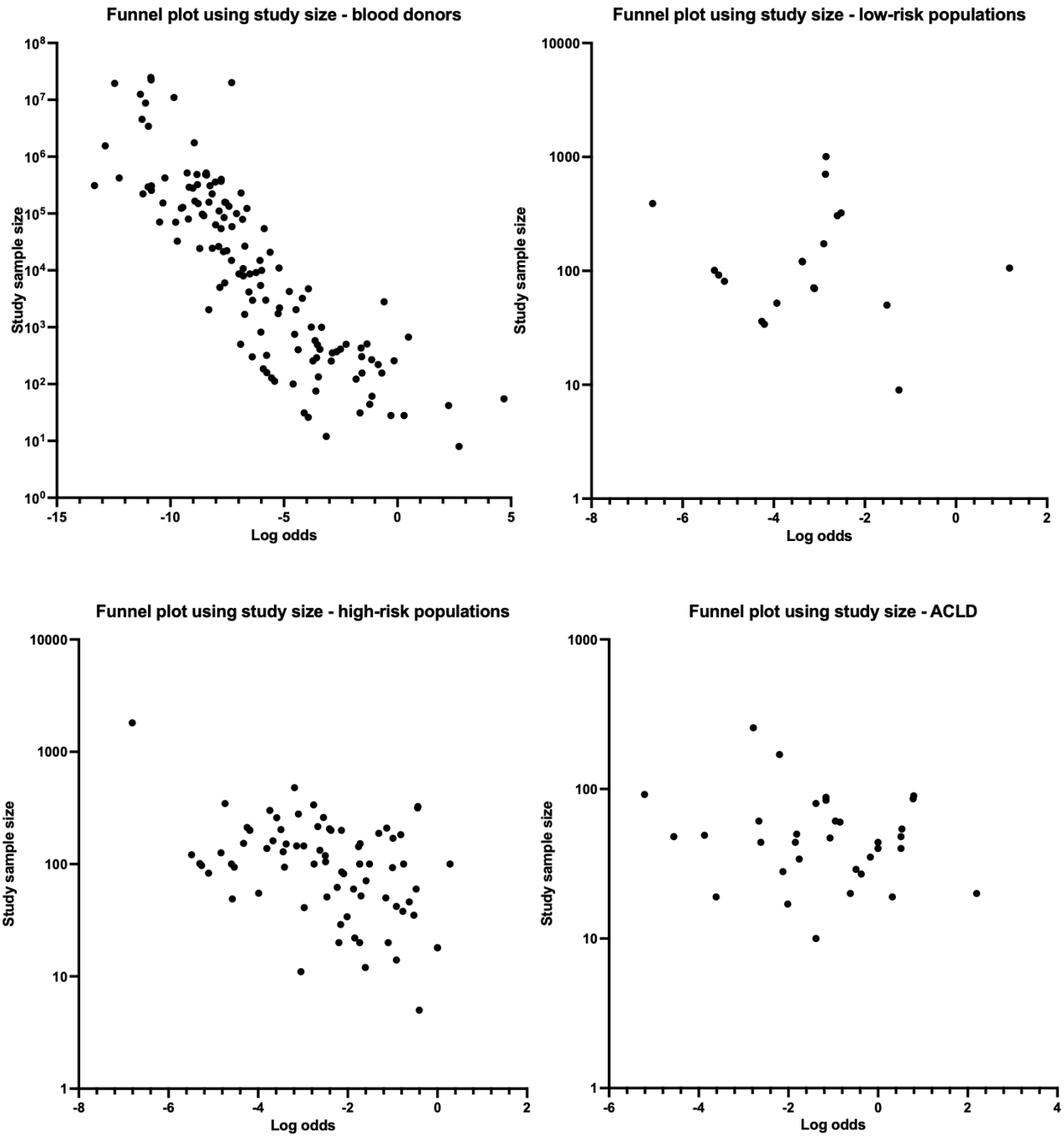
Appendix 8: Publication bias assessment

Please see overleaf for Appendix 8 Figure 1.

While the funnel plots were grossly symmetrical for low-risk, high-risk, and ACLD populations, they were asymmetrical for blood donors.

Although we cannot preclude a possibility that publication bias has distorted findings, we also suspect that this asymmetry may be explained by endemicity and how resourceful the country of study is. Resource-rich countries tend to conduct larger-scale studies and have lower HBV endemicity rates; therefore, larger-scale blood donor studies may observe lower OBI prevalence rates. By contrast, resource-limited countries are often unable to conduct very large studies, while also observing higher HBV endemicity and OBI prevalence rates.

Appendix 8, Figure 1: Funnel plot using study size including pooled population groups.



Appendix 9: Risk of bias assessment

Question	Number of studies that fulfil this criterion (n=375)	%	Comment
Is this either a population based or a facility-based study? If either is known, put 1. If neither, 0.	369	98%	
Were study participants sampled consecutively? If unknown (as for most papers), put 0.	131	35%	Not scored if NA. It is difficult to comment on this as most studies did not describe this and were scored 0.
Is the sample size >500?.	156	42%	This applies to the total population size, not only to the number of people tested for OBI. Note that only 108 out of 375 (29%) studies tested >500 people for OBI.
Is sex distribution reported?	202	54%	Not scored if NA. It is difficult to comment on this as most studies did not describe this. Some were not included in Table 1 as they declared data in a format which could not be summarised (e.g. range or proportion only).
Is age distribution reported?	198	53%	Not scored if NA. It is difficult to comment on this as most studies did not describe this. Some were not included in Table 1 as they declared data in a format which could not be summarised (e.g. range or proportion only).
Is the population character (Blood donors, HIV, HCV etc) described?	365	97%	
Is the centre where the research was conducted described?	310	83%	
Is the country described?	367	98%	
Is the study period defined?	298	79%	This was often not the case, especially for conference abstracts.
Is the subject/setting appropriate?	159	42%	This only scored if each of the previous three questions scored.

Coverage for HBsAg test (n) out of total study population (N) >=80%	358	95%	
Coverage for HBV DNA (m) in HBsAg-negative subjects (M) >=80%	269	72%	Many studies did not state why they picked a random subsample, which could have been biased. These studies emerged as outliers in our analysis and therefore we removed them from comparative/sub-group analyses. Others declared legitimate reasons, e.g. not having sufficient samples for retrospective NAT. We have included these studies and the number stated here refers to the remaining studies, of which 72% tested >=80% of eligible individuals and 28% tested <80% while giving a legitimate reason for this.
Is the data analysis appropriate?	259	69%	This only scored if each of the previous two questions scored.
HBV DNA LOD <15 IU/mL (<75 copies/mL)	103	27%	Not scored if NA. It is difficult to comment on this as most studies did not describe this. Also only scored if declared by study authors.
HBsAg <0.13 IU/mL	22	6%	Not scored if NA. It is difficult to comment on this as most studies did not describe this. Also only scored if declared by study authors.
Is the Methodology appropriate?	11	3%	This only scored if each of the previous two questions scored, therefore very low (see Appendix 7).
Were the same techniques and tools used for all participants?	332	89%	
Number who enrolled in the study / number who were eligible for the study >=80%	361	96%	
Total score for quality assessment	Total 19		Median 11, mean 11.4

330

331

Appendix 10: Summary of included studies

Anti-HBc = hepatitis B core antibody, anti-HBs = hepatitis B surface antibody, HBsAg = hepatitis B surface antigen, HBV = hepatitis B virus, HCC = hepatocellular carcinoma, HCV = hepatitis C virus, HIV = human immunodeficiency virus.

Author and year	Country	Population	Details if "other"	Study setting	Number of participants recruited to study	Number of participants negative for HBsAg	Number of participants tested for HBV DNA	Tissue tested	Serological criteria to test for OBI	Total OBI	OBI prevalence (total OBI / number tested for HBV DNA)
Abbasi et al. 2016	Iran	Blood Donors		A blood transfusion centre in Ahvaz City, Iran	184	184	184	Blood	HBsAg -	0	0.0%
Abd El Kader Mahmoud et al. 2013	Sudan	Blood Donors		The central blood bank in Sudan	100	100	42	Blood	HBsAg -, anti-HBc +	38	90.5%
Aghakhani et al. 2010	Iran	Haemodialysis patients		Five dialysis units in Tehran, Iran	289	281	18	Blood	HBsAg -, anti-HBc +	9	50.0%
Aghasadeghi et al. 2014	Iran	Others without liver disease/deranged LFTs	Non-responders to HBV vaccine	Ethical committee from Iranian Society for Support of Patients with Infectious Diseases	52	52	52	Blood	HBsAg -	0	0.0%
Aghayeva et al. 2018	Azerbaijan	HCV positive patients			194	170	170	Blood	HBsAg -, anti-HBc +	46	27.1%
Aires et al. 2012	Brazil	Others without liver disease/deranged LFTs	TB patients	Anuar Auad Hospital (the reference hospital for infectious diseases in Goiânia)	402	389	90	Blood	HBsAg -, anti-HBc +	13	14.4%
Akhoundi et al. 2015	Iran	Healthcare workers		51st Annual Congress if the Iranian Dental Association	1628	1621	52	Blood	HBsAg -, anti-HBc +	1	1.9%
Al-Kubaisy et al. 2015	Jordan	Blood Donors		Blood Bank Unit Islamic Hospital	578	578	30	Blood	HBsAg -, anti-HBc +	0	0.0%
Al-Moslih et al. 2010	United Arab Emirates/Saudi Arabia	Patients with liver impairment for any other reason	Chronic liver disease patients	United Arab Emirates	248	159	159	Blood	HBsAg -	22	13.8%
Alavian et al. 2011	Iran	Haematology patients	Thalassemic and hemophilic patients with chronic HCV without HBsAg	Tehran hepatitis Centre (THC)	145	145	145	Blood	HBsAg -	0	0.0%
Alizadeh et al. 2014	Iran	Blood Donors		Blood transfusion centers in Tehran	5000	5000	5000	Blood	HBsAg -	2	0.0%

Alzahrani et al. 2019	United Arab Emirates/Saudi Arabia	Blood Donors			22842	22103	22103	Blood	HBsAg -	12	0.1%
Ansari et al. 2015	Iran	Cirrhotic patients, incl. cryptogenic/other aetiologies	Cryptogenic cirrhosis patients	the Imam Khomeini Hospital of Ahvaz	38	27	27	Blood	HBsAg -	11	40.7%
Anvari et al. 2014	Iran	Cirrhotic patients, incl. cryptogenic/other aetiologies	Cryptogenic cirrhosis patients	Tehran Hepatitis Network	29	29	29	Blood	HBsAg -	11	37.9%
Araujo et al. 2011	Brazil	Blood Donors		COLSAN-Associação Beneficente de Coleta de Sangue (São Paulo, Brazil)	250136	248761	4252	Blood	HBsAg -, anti-HBc +	36	0.8%
Ashshi et al. 2012	United Arab Emirates/Saudi Arabia	Blood Donors		Hera'a General Hospital	1000	1000	75	Blood	HBsAg -, anti-HBc +	2	2.7%
Asim et al. 2010	India	Blood Donors		Blood bank of Lok Nayak Hospital, New Delhi	2175	2175	413	Blood	HBsAg -, anti-HBc +	31	7.5%
Asli et al. 2016	Iraq	Others without liver disease/deranged LFTs		Loghman Hospital in Tehran	229		59	Blood	HBsAg -, anti-HBc +	13	22.0%
Athira et al. 2018	India	Blood Donors		Department of Transfusion Medicine and Microbiology, JIPMER, Puducherry	1102	1102	156	Blood	HBsAg -, anti-HBc +	52	33.3%
Attia et al. 2012	Cote d'Ivoire	HIV positive patients		Multiple centres in Abidjan, Cote D'Ivoire: (Integrated Center of Bioclinical Research of Abidjan, General Medicine Department of Yopougon Teaching Hospital, Department of Infectious and Tropical Diseases of Treichville Teaching Hospital, Integrated Center for Bio-Clinical Research in Treichville, Abidjan)	491	425	188	Blood	HBsAg -, anti-HBc +	40	21.3%
Ayatollahi et al. 2016	Iran	Haemodialysis patients		Hospitals of Yazd, Iran	126	126	126	Blood	HBsAg -	1	0.8%
Bae et al. 2012	South Korea	Others without liver disease/deranged LFTs	Renal transplant patients	Samsung Medical Center	377	291	217	Blood	Other criteria	5	2.3%
Baghbanian et al. 2016	Iran	Haematology patients	Patients with haematological and solid cancer	Yazd Shahid Sadoughi University School of Medicine	204	204	204	Blood	HBsAg -, anti-HBc +	9	4.4%
Bakaloudi et al. 2019	Greece	Blood Donors		AHEPA Center of molecular screening of blood donors (Greece)	1755862	1753702	1753702	Blood	HBsAg -	228	0.0%

Barth et al. 2010	Netherlands	HIV positive patients		University Medical Centre Utrecht	846	733	259	Blood	HBsAg -, anti-HBc +	7	2.7%
Barth et al. 2010	South Africa	HIV positive patients		Ndlovu Medical Centre	248	241	62	Blood	HBsAg -, anti-HBc +	6	9.7%
Belen Pisano et al. 2016	Argentina	Blood Donors		Fundacion Banco Central de Sangre in the city of Cordoba	70102		70067	Blood	HBsAg -	4	0.0%
Bhattacharya et al. 2014	India	Others without liver disease/deranged LFTs	Tribes - six aboriginal tribes on the Car Nicobar Islands of India	Two villages of Car Nicobar Islands	612	558	558	Blood	Other criteria	62	11.1%
Biswas et al. 2013	India	Blood Donors		Eastern India	2195	2195	268	Blood	HBsAg -, anti-HBc +	65	24.3%
Boavida et al. 2010	Portugal	Blood Donors		Lisbon Regional Blood Center	221165	221077	221077	Blood	HBsAg -	3	0.0%
Borzooy et al. 2015	Iran	Healthcare workers		3 hospitals (Tehran Cardiac Center, Mirza Koochak Khan and Bahrami)	120	120	120	Blood	HBsAg -	4	3.3%
Cable et al. 2011	South Africa	Blood Donors			649754		409	Blood	HBsAg -	13	3.2%
Calvaruso et al. 2018	Italy	HCV positive patients	HCV positive cirrhotic patients	Liver and GI Unit of University of Palermo	104	96	96	Blood	HBsAg -	0	0.0%
Capezzuto et al. 2010	Italy	Blood Donors		City of Parma and the surrounding province	32608	32608	32608	Blood	HBsAg -	2	0.0%
Cardoso et al. 2013	Portugal	HCV positive patients			100	100	100	Liver	HBsAg -	57	57.0%
Cardoso et al. 2013	Portugal	HCV positive patients			100	100	100	Blood	HBsAg -	0	0.0%
Carimo et al. 2018	Mozambique	HIV positive patients		Two public health centers from Maputo city, Mozambique	518	471	206	Blood	HBsAg -, anti-HBc +	17	8.3%
Cavalcanti de Albuquerque et al. 2012	Brazil	Haemodialysis patients		5 clinics in Recife, Pernambuco	752	752	201	Blood	HBsAg -, anti-HBc +	3	1.5%
Cavaretto et al. 2018	Brazil	Others without liver disease/deranged LFTs	Manicurists and their clients	Community in Campo Grande, MS, Central Brazil	514	512	27	Blood	HBsAg -, anti-HBc +	1	3.7%
Caviglia et al. 2012	Italy	HCV positive patients			35	35	35	Liver	HBsAg -	13	37.1%
Caviglia et al. 2013	Italy	Others without liver disease/deranged LFTs	Liver donors	Department of Medical Sciences, University of Torino, Turin, Italy	56	56	56	Liver	HBsAg -	22	39.3%
Caviglia et al. 2015	Italy	Others without liver disease/deranged LFTs		Medical Sciences and Surgical Sciences, University of Turin, Turin, Italy. Liver Transplant Center,Città della Salute e della Scienza, Molinette Hospital, Turin, Italy. Gastroenterology, Città della Salute e della Scienza,	78	78	78	Liver	HBsAg -, anti-HBc +	44	56.4%

				Molinette Hospital, Turin, Italy.							
Caviglia et al. 2018	Italy	Others without liver disease/deranged LFTs		Liver Transplant Center of the University of Turin.	100	100	100	Blood	HBsAg -, anti-HBc +	52	52.0%
Chadwick et al. 2013	United Kingdom	HIV positive patients		HIV clinics in London (Royal Free Hospital), Newcastle (Royal Victoria Infirmary) and Middlesbrough (James Cook University Hospital)	335	335	216	Blood	HBsAg -	14	6.5%
Chandra et al. 2011	India	HIV positive patients			100	100	100	Blood	HBsAg -	6	6.0%
Chang et al. 2013	Taiwan	HCC patients		Chang Gung Medical Center (CGMC)	115	80	80	Liver	HBsAg -	16	20.0%
Chen et al. 2012	Taiwan	Haemodialysis patients			158	133	133	Blood	HBsAg -	9	6.8%
Chen et al. 2017	Taiwan	HCV positive patients		National Taiwan University Hospital	183	183	183	Blood	HBsAg -, anti-HBc +	56	30.6%
Chenari et al. 2014	Iran	Others without liver disease/deranged LFTs	Asymptomatic healthy HTLV-I positive carriers	Department of Immunology, Ghaem Hospital, Mashhad	109	109	109	Blood	HBsAg -	1	0.9%
Cheung et al. 2011	Hong Kong	Haematology patients	Lymphoma patients	United Christian Hospital, Hong Kong	47	47	47	Blood	Other criteria	10	21.3%
Chinchilla-Reyes et al. 2013	USA	Others without liver disease/deranged LFTs	Organ/tissue donors	Mendez National Institute of Transplantation, Los Angeles	4216	4179	4179	Blood	HBsAg -	5	0.1%
Cho et al. 2016	South Korea	Cirrhotic patients, incl. cryptogenic/other aetiologies		Seoul National University Bundang Hospital	47	47	47	Blood	HBsAg -	12	25.5%
Cho et al. 2016	South Korea	HCC patients		Seoul National University Bundang Hospital	44	44	44	Blood	HBsAg -	6	13.6%
Costa et al. 2019	Brazil	Others without liver disease/deranged LFTs	Leprosy patients	The outpatient dermatology clinic of a Reference Center for Infectious Diseases in Paraíba, in the Northeast region of Brazil	403		114	Blood	Other criteria	6	5.3%
David et al. 2017	India	HCC patients		Departments of Gastroenterology and Hepatology, Christian Medical College Hospital, Vellore	138	75	47	Blood	HBsAg -	0	0.0%
de Castro Sant'Anna et al. 2018	Brazil	Patients with liver impairment for any other reason	Unclear	Foundation Center of Hemotherapy and Hematology of Pará (HEMOPA)	965		181	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	26	14.4%

de Matos et al. 2013	Brazil	Others without liver disease/deranged LFTs		34 public, private and charitable drug treatment centres in the capitals cities of three states (18 in Goiânia, state of Goiás, 8 in Campo Grande, state of Mato Grosso do Sul and 8 in Cuiabá, state of Mato Grosso)	150	149	149	Blood	HBsAg -	19	12.8%
Deng et al. 2012	China	Blood Donors		Dalian, China	63393	63327	63327	Blood	HBsAg -	21	0.0%
Dhawan et al. 2011	India	Blood Donors			1700	1700	100	Blood	HBsAg -, anti-HBc +	1	1.0%
Diarra et al. 2018	Burkina Faso	Others without liver disease/deranged LFTs	Unclear	Ouagadougou, at the Pietro Annigoni Biomolecular Research Center of Burkina Faso	219	219	219	Blood	HBsAg -	56	25.6%
Diniz et al. 2013	Brazil	HCC patients		Alfa Institute of Gastroenterology from Clinical Hospital	49		49	Liver	HBsAg -	1	2.0%
Diniz et al. 2013	Brazil	Patients with liver impairment for any other reason	Chronic liver disease patients without HCC	Alfa Institute of Gastroenterology from Clinical Hospital	22		22	Liver	HBsAg -	3	13.6%
Dodd et al. 2018	USA	Blood Donors		American Red Cross blood donors	22370271	22367284	22367284	Blood	HBsAg -	433	0.0%
Dong et al. 2014	China	Blood Donors		Blood centre of Zhejiang province, China	178447	78963	78963	Blood	HBsAg -	86	0.1%
Dong et al. 2014	China	Blood Donors		Blood centre of Zhejiang province, China	178447	99484	99484	Blood	HBsAg -	83	0.1%
El Banna et al. 2017	Lebanon	Blood Donors		Transfusion center of a major hospital in Beirut, Lebanon	7437	320	320	Blood	HBsAg -, anti-HBc +	1	0.3%
El Makarem et al. 2012	Egypt	Haemodialysis patients		Dialysis unit of the Department of Internal Medicine, Minia University and the dialysis unit of the Department of Internal Medicine, Assuit University	145	145	145	Blood	HBsAg -	6	4.1%
El-Ghitany et al. 2013	Egypt	Blood Donors		Main blood banks in Alexandria	256	254	254	Blood	HBsAg -	13	5.1%
El-Ghitany et al. 2013	Egypt	Others without liver disease/deranged LFTs	HCV +ve blood donors; not strictly people with "liver disease" but HCV +ve	Main blood banks in Alexandria	256	254	254	Blood	HBsAg -	8	3.1%
El-Maraghy et al. 2015	Egypt	Patients with liver impairment for any other reason	Chronic liver disease patients	Internal medicine department, Faculty of Medicine, Suez Canal	50	50	50	Blood	HBsAg -	3	6.0%

				University (FOMSCU), Ismailia, Egypt							
El-Sheredy et al. 2015	Sudan	Haematology patients	Patients with haematological disorders	Medical Research Institute Hospital, Alexandria University.	60	60	60	Blood	HBsAg -	32	53.3%
Elbakush et al. 2014	Libya	HIV positive patients		The infectious disease department of Tripoli Medical Center and in the National Center Disease Control	143	143	20	Blood	HBsAg -, anti-HBc +	3	15.0%
Elbedewy et al. 2015	Egypt	Haematology patients	Polytransfused patients	Hematology Unit, Internal Medicine Department, Faculty of Medicine, Tanta University	79	79	12	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	5	41.7%
Elgohry et al. 2012	Egypt	Haemodialysis patients		Alexandria Main University Hospital Dialysis Unit	93	93	93	Blood	HBsAg -	25	26.9%
Elkady et al. 2017	Egypt	Haematology patients	Patients with haematological malignancies	Oncology Department of the Sohag Faculty of Medicine and South Egypt Cancer Institution	165	152	54	Blood	HBsAg -, anti-HBc +	23	42.6%
Esmail et al. 2016	Egypt	Haemodialysis patients		Minia University Hospital (MUH)	144	144	50	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	12	24.0%
Faro Stief et al. 2010	Brazil	Others without liver disease/deranged LFTs	Prisoners	3 prisons in Mato Grosso do Sul	408	406	71	Blood	HBsAg -, anti-HBc +	0	0.0%
Fernandez et al. 2010	Argentina	Blood Donors			260	111	111	Blood	HBsAg -, anti-HBc +	0	0.0%
Ferrari et al. 2014	Brazil	Others without liver disease/deranged LFTs	Liver donors (explanted livers)	Hospital das Clinicas, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil	68	68	68	Liver	HBsAg -	3	4.4%
Fontenele et al. 2015	Brazil	Haemodialysis patients		Clinical Research Center of the University Hospital at the Federal University of Maranhão (Hospital Universitário da Universidade Federal do Maranhão—HUUFMA), in the Central Public Health Laboratory of Maranhão-Oswaldo Cruz Institute (Laboratório Central de Saúde Pública do Maranhão-Instituto Oswaldo Cruz—LACEN), Brazil, and in	301	301	301	Blood	HBsAg -	7	2.3%

				two of the three dialysis units in São Luís, the capital of Maranhão state							
Fopa et al. 2018	Cameroon	Blood Donors		Yaounde, Cameroon	1167	1082	134	Blood	HBsAg -, anti-HBc +	4	3.0%
Franz et al. 2013	Brazil	Others without liver disease/deranged LFTs	Renal transplant patients	Renal Transplantation Unit of the Clementino Fraga Filho University Hospital, Rio de Janeiro, Brazil	207	207	207	Blood	HBsAg -	2	1.0%
Gachara et al. 2017	Cameroon	HIV positive patients		Mutengene Baptist Health Centre in the South West Region of Cameroon	455	337	337	Blood	HBsAg -	20	5.9%
Gad et al. 2011	Egypt	Others without liver disease/deranged LFTs	Apparently healthy individuals prepared as potential liver donors	Gastroenterology Surgical Centre	107	107	107	Liver	HBsAg -	21	19.6%
Garcia-Montalvo et al. 2011	Mexico	Blood Donors		Central Blood Bank of the Ignacio Garcia Tellez National Medical Center, in Merida, Yucatan, Mexico	20328		372	Blood	HBsAg -, anti-HBc +	24	6.5%
Giardina et al. 2013	Italy	Others without liver disease/deranged LFTs	Rheumatology patients with inflammatory joint diseases	Academic Unit of Rheumatology at the University of Palermo	57	53	53	Blood	HBsAg -	0	0.0%
Gill et al. 2013	Pakistan	Others without liver disease/deranged LFTs	Healthy patients applying for employment in gulf regions		100	100	100	Blood	HBsAg -	6	6.0%
Gonzalez et al. 2010	Spain	Blood Donors		Spanish Red Cross Blood Transfusion Centre	128212	128177	128177	Blood	HBsAg -	10	0.0%
Gonzalez et al. 2010	Spain	Blood Donors		Transfusion Center of the Community of Madrid	255,055	254897	254897	Blood	HBsAg -	5	0.0%
Gouas et al. 2012	Gambia	Cirrhotic patients, incl. cryptogenic/other aetiologies	Cirrhotic patients	Three tertiary hospitals sites in The Gambia	78	34	34	Blood	HBsAg -	5	14.7%
Gouas et al. 2012	Gambia	HCC patients		Three tertiary hospitals sites in The Gambia	198	88	88	Blood	HBsAg -	21	23.9%
Gouas et al. 2012	Gambia	Others without liver disease/deranged LFTs	Hospital controls	Three tertiary hospitals sites in The Gambia	325	274	274	Blood	HBsAg -	8	2.9%
Grabarczyk et al. 2015	Poland	Blood Donors		Institute of Hematology and Transfusion Medicine (IHTM)	421,447		421447	Blood	HBsAg -	2	0.0%
Grabarczyk et al. 2015	Poland	Blood Donors		Institute of Hematology and	1,554,270		1554270	Blood	HBsAg -	4	0.0%

				Transfusion Medicine (IHTM)							
Grabarczyk et al. 2015	Poland	Blood Donors		Institute of Hematology and Transfusion Medicine (IHTM)	4,548,911		4548911	Blood	HBsAg -	59	0.0%
Grabarczyk et al. 2015	Poland	Blood Donors		Institute of Hematology and Transfusion Medicine (IHTM)	3,426,077		3426077	Blood	HBsAg -	59	0.0%
Haghazali et al. 2011	Iran	Haemodialysis patients		Buali Hospital of Qazvin university of medical sciences	134	129	129	Blood	HBsAg -	4	3.1%
Hao et al. 2017	China	HCV positive patients		86 of HCV infected patients from Guangzhou blood center and 193 of them from Yang-jiang prison drug addicts	279	279	279	Blood	HBsAg -	12	4.3%
Hashemi et al. 2015a	Iran	Cirrhotic patients, incl. cryptogenic/other aetiologies	Cryptogenic cirrhosis patients	Gastroenterology and hepatology clinics of Ahvaz Jundishapur University	50	50	50	Blood	HBsAg -	7	14.0%
Hashemi et al. 2015a	Iran	General population		Gastroenterology and hepatology clinics of Ahvaz Jundishapur University	80	80	80	Blood	HBsAg -	0	0.0%
Hashemi et al. 2015b	Iran	Haemodialysis patients			82	82	82	Blood	HBsAg -	0	0.0%
Hashemi et al. 2015b	Iran	Haemodialysis patients		Hemodialysis Unit at the Imam Khomeini Hospital	82	82	82	Blood	HBsAg -	9	11.0%
Hassan et al. 2011	Egypt	HCC patients		National Cancer Institute, Cairo University	40	40	40	Liver	HBsAg -	25	62.5%
Hassan et al. 2011	Egypt	HCC patients		National Cancer Institute, Cairo University	40	40	40	Blood	HBsAg -	20	50.0%
Hayashi et al. 2012	Japan	Others without liver disease/deranged LFTs	IBD patients		107	107	107	Blood	HBsAg -	0	0.0%
Helaly et al. 2015	Egypt	Haemodialysis patients		Hemodialysis Unit of theMedical Research Institute of Alexandria University	100	100	100	Blood	HBsAg -	32	32.0%
Hernandez et al. 2013	USA	HCC patients		Hawaii Tumor Registry	61	44	44	Liver	HBsAg -	3	6.8%
Hon-Lok Tang et al. 2016	Hong Kong	Haemodialysis patients		Dialysis unit of Princess Margaret Hospital, Hong Kong	106	93	55	Blood	HBsAg -, anti-HBc +	1	1.8%
Hong et al. 2015	South Korea	Others without liver disease/deranged LFTs	Patients without liver disease	Sung-Shim local hospital (a center for primary care) in Seoul, South Korea	87	87	87	Blood	HBsAg -	6	6.9%

Huang et al. 2010	China	Others without liver disease/deranged LFTs	Inpatients, not further specified	Changhai Hospital, Zhongshan Hospital, Changzheng Hospital, and Jinan Infectious Disease Hospital	254	254	254	Blood	HBsAg -	15	5.9%
Huang et al. 2010	China	Patients with liver impairment for any other reason	Anti-HBc positive patients, unspecified		183	183	183	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	3	1.6%
Hudu et al. 2014	Malaysia	Blood Donors			1000	1000	55	Blood	HBsAg -, anti-HBc +	55	100.0%
Huzmeli et al. 2018	Turkey	Haemodialysis patients		Cumhuriyet University HD, peritoneal dialysis and nephrology clinics	200	200	200	Blood	HBsAg -	3	1.5%
Iglecias et al. 2016	Brazil	Others without liver disease/deranged LFTs	Prisoners	Prisons (Pres´ıdio de Transito de Campo Grande (PTCG), Instituto Penal de Campo Grande (IPCG) and Estabelecimento PenalJair Ferreira de Carvalho (EPJFC) Estabelecimento Penal Feminino Irma˜ Irma Zorzi (EPFIIZ))	216	213	19	Blood	HBsAg -, anti-HBc +	2	10.5%
Jang et al. 2011	South Korea	Patients with liver impairment for any other reason	Chronic liver disease patients		71	71	71	Liver	HBsAg -	23	32.4%
Ji et al. 2011	China	Blood Donors			10080	9972	9972	Blood	HBsAg -, anti-HBc +	25	0.3%
Jianguo et al. 2011	China	HCC patients		Tangdu Hospital and Xijing Hospital of the Fourth Military Medical University, and Xian Jiaotong University, Xian, China	268	61	61	Liver	HBsAg -	17	27.9%
Jianguo et al. 2011	China	HCC patients		Tangdu Hospital and Xijing Hospital of the Fourth Military Medical University, and Xian Jiaotong University, Xian, China	268	61	61	Blood	HBsAg -	4	6.6%
Jonaidi-Jafari et al. 2017	Iran	Haematology patients	Patients with other coagulation factor deficiencies	Tehran hepatitis center	15	15	15	Blood	HBsAg -	0	0.0%
Jonaidi-Jafari et al. 2017	Iran	Haematology patients	Patients with thalassemia	Tehran hepatitis center	35	35	35	Blood	HBsAg -	0	0.0%
Jonaidi-Jafari et al. 2017	Iran	Haematology patients	Patients with haemophilia	Tehran hepatitis center	95	95	95	Blood	HBsAg -	0	0.0%
Kalantari et al. 2016	Iran	Haemodialysis patients		Nephrology and dialysis units in Kashani, Faiz and	400	400	10	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	0	0.0%

				Al-Zahra Hospitals in Isfahan, Iran						
Kang et al. 2010	South Korea	Haemodialysis patients			161	161	161	Blood	HBsAg -	4	2.5%
Kang et al. 2010	South Korea	Patients with liver impairment for any other reason	Anti-HBc positive patients, unspecified	Department of Laboratory Medicine, The East-West Neo Medical Center, School of Medicine, Kyung-Hee University, Seoul, Korea	17677	16796	230	Blood	HBsAg -, anti-HBc +	4	1.7%
Karaosmanoglu et al. 2013	Turkey	HIV positive patients		4 centres following-up HIV patients in Istanbul	567	321	29	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	3	10.3%
Karimi et al. 2016	Iran	Blood Donors		2 main blood collection centres (Kermanshah and Ahwaz)	86182	86080	2031	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	0	0.0%
Katayama et al. 2015	Japan	Haemodialysis patients		9 dialysis centers in Hiroshima Prefecture, Japan	1860	1812	1812	Blood	HBsAg -	2	0.1%
Keechilot et al. 2016	India	Blood Donors		A blood bank in Kerala	24338	24292	24214	Blood	HBsAg -	4	0.0%
Khatoon et al. 2016	Pakistan	HCV positive patients		Fauji Foundation Hospital, Rawalpindi	105	105	105	Blood	HBsAg -	8	7.6%
Khil et al. 2013	Ukraine	Haemodialysis patients		Ukraine	1080	914	46	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	16	34.8%
Kim et al. 2012	South Korea	Blood Donors		Hanmaeum Blood Center	149471		149310	Blood	HBsAg -	23	0.0%
Kim et al. 2013	South Korea	Others without liver disease/deranged LFTs	Outpatients, not further specified	Jeju National University Hospital and one other hospital in South Korea	624	624	624	Blood	HBsAg -	41	6.6%
Kim et al. 2015	South Korea	Haemodialysis patients		Artificial Kidney Unit of 2 referral hospitals, Jeju National University Hospital and Dankook University Hospital	153	153	153	Blood	HBsAg -	2	1.3%
Kim et al. 2015	South Korea	Others without liver disease/deranged LFTs	Apparently healthy people receiving routine health checks per Korea National Health Policy	Artificial Kidney Unit of 2 referral hospitals, Jeju National University Hospital and Dankook University Hospital	121	121	121	Blood	HBsAg -	3	2.5%
Kim et al. 2017	South Korea	Patients with liver impairment for any other reason	Unclear		1060	1060	1060	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	42	4.0%
Kishk et al. 2015	Egypt	Blood Donors		"Northeastern Egypt", not further specified	126	44	44	Blood	HBsAg -, anti-HBc +	10	22.7%

Kopacz et al. 2012	Poland	Haematology patients	Patients at the Institute of Haematology and Transfusion	Institute of Hematology and Transfusion Medicine	468	452	452	Blood	HBsAg -	28	6.2%
Kopacz et al. 2017	Poland	Blood Donors		Blood centres in Poland	12513283		12502764	Blood	HBsAg -	151	0.0%
Kucharska et al. 2016	Poland	Haematology patients	HCV-infected haemophiliacs	Polish Coagulopathy Centres	71	64	64	Blood	HBsAg -	0	0.0%
Kwon et al. 2010	South Korea	Cirrhotic patients, incl. cryptogenic/other aetiologies	Cirrhotic patients (non-alcoholic)	Gachon Unviersity Gil Hospital, Inchon, Korea	17	17	17	Blood	HBsAg -	2	11.8%
Kwon et al. 2010	South Korea	HCC patients		Gachon Unviersity Gil Hospital, Inchon, Korea	10	10	10	Blood	HBsAg -	2	20.0%
La et al. 2014	South Korea	Patients with liver impairment for any other reason	Cirrhotic or HCC patients		94	94	94	Blood	HBsAg -	2	2.1%
La et al. 2014	South Korea	Patients with liver impairment for any other reason	Cirrhotic or HCC patients		114	114	114	Blood	HBsAg -	3	2.6%
Lago et al. 2015	Brazil	Others without liver disease/deranged LFTs	Afro-Brazilian community within Brazil	Furnas dos Dionisios (FD), a semi-isolated Afro-descendant community in Central Brazil	139	131	26	Blood	HBsAg -, anti-HBc +	3	11.5%
Lai et al. 2015	Taiwan	General population		Epidemiological study for vaccine preventable disease	705	705	705	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	38	5.4%
Lai et al. 2016	Taiwan	Others without liver disease/deranged LFTs	Completely HBV immunized individuals negative for anti-hepatitis B core antibody.	Chang-Gung Memorial Hospital	30	30	30	Blood	HBsAg -	2	6.7%
Lam et al. 2013	Malaysia	Blood Donors		National Blood Centre, Kuala Lumpur	222082	221643	221643	Blood	HBsAg -	63	0.0%
Lam et al. 2013	Malaysia	Blood Donors		National Blood Centre, Kuala Lumpur	279885	279193	279193	Blood	HBsAg -	34	0.0%
Langat et al. 2018	Kenya	Blood Donors		Six Regional Blood Transfusion Centres	1006	1006	127	Blood	HBsAg -, anti-HBc +	0	0.0%
Launay et al. 2011	France	Patients with liver impairment for any other reason	Unclear	Cochin Hospital clinical microbiology laboratory	6431	6112	349	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	8	2.3%
Le Naht Minh et al. 2016	Vietnam	Blood Donors		Cho Ray Blood Transfusion Centre	27270	26620	26620	Blood	HBsAg -	32	0.1%
Leetrakool et al. 2019	Thailand	Blood Donors		Chiang Mai University Hospital	59380		58703	Blood	HBsAg -	40	0.1%
Leetrakool et al. 2019	Thailand	Blood Donors		Chiang Mai University Hospital	55799		54304	Blood	HBsAg -	153	0.3%
Lelie et al. 2013	Mixed	Blood Donors		South-East Asia (Singapore, Hong Kong, Malaysia), Egypt, South Africa,	10981776	10973148	10973148	Blood	HBsAg -	583	0.0%

				Mediterranean (Italy, Spain), Central-North Europe (Switzerland, SLovenia, Poland, Finland, Denmark, Ireland), South Pacific (Australia, New Zealand).							
Lelie et al. 2017	Egypt	Blood Donors		Egypt	80631	79782	79782	Blood	HBsAg -	8	0.0%
Lelie et al. 2017	Mixed	Blood Donors		Oceania (Australia and New Zealand)	152961	152838	152838	Blood	HBsAg -	5	0.0%
Lelie et al. 2017	Mixed	Blood Donors		Mediterranean (Italy and Spain)	290042	289484	289484	Blood	HBsAg -	30	0.0%
Lelie et al. 2017	Mixed	Blood Donors		North and Central Europe (Switzerland, Slovenia, Finland, Denmark, Ireland, Poland)	294367	293923	293923	Blood	HBsAg -	5	0.0%
Lelie et al. 2017	Mixed	Blood Donors		South East Asia (Singapore, Hong Kong, Malaysia)	324665	321270	321270	Blood	HBsAg -	48	0.0%
Lelie et al. 2017	South Africa	Blood Donors		South Africa	360818	358085	358085	Blood	HBsAg -	117	0.0%
Levi et al. 2013	Brazil	Blood Donors		Hospital Israelita Albert Einstein (HIAE) blood bank	24441	24412	24412	Blood	HBsAg -	7	0.0%
Li Cavoli et al. 2017	Italy	Haemodialysis patients		Palermo, Italy	48	48	48	Blood	HBsAg -	0	0.0%
Liang et al. 2010	China	Others without liver disease/deranged LFTs	HIV patients that were mostly HCV +ve, too	Shanghai Public Health Clinical Center	97	97	92	Blood	HBsAg -	27	29.3%
Lin et al. 2016a	China	Blood Donors		Jiangsu Province Blood Center	157119	154791	154791	Blood	HBsAg -	81	0.1%
Liu et al. 2010	China	Blood Donors		Nanjing Red Cross Blood Center	2972	2972	2972	Blood	HBsAg -	5	0.2%
Liu et al. 2016b	China	Blood Donors		NAT program launched by Chinese National Health from 2010	20084187	20084187	20084187	Blood	HBsAg -	13551	0.1%
Lok et al. 2011	USA	HCC patients		HALT-C trials	91	91	28	Liver	HBsAg -	3	10.7%
Lok et al. 2011	USA	HCC patients		HALT-C trials	91	91	91	Blood	HBsAg -	0	0.0%
Louisirirotchanakul et al. 2011	Thailand	Blood Donors		National Blood Centre, Thai Red Cross Society	486,676	486676	486676	Blood	HBsAg -	71	0.0%
Louisirirotchanakul et al. 2011	Thailand	Blood Donors		National Blood Centre, Thai Red Cross Society	486,676	486676	486676	Blood	HBsAg -	104	0.0%
Lovrantova et al. 2011	Slovakia	Blood Donors		4 large centres from different regions of Slovakia	65010	65010	61	Blood	HBsAg -, anti-HBc +	15	24.6%
Magvansuren et al. 2015	Mongolia	Blood Donors		NCTM in Ulaanbaatar	16700	14948	14948	Blood	HBsAg -	35	0.2%
Maheswari et al. 2012	India	Blood Donors		Department of Transfusion Medicine,	9100	8901	820	Blood	HBsAg -, anti-HBc +	2	0.2%

				The Tamilnadu Dr. MGR Medical University, Guindy, Chennai, India							
Mahmoud et al. 2016	Egypt	HCV positive patients		Hepatology outpatient department in Medical Research Institute, Alexandria, Egypt	100	100	100	Blood	HBsAg -	18	18.0%
Makroo et al. 2011	India	Blood Donors		Indraprastha Apollo Hospitals	94247	93113	8660	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	13	0.2%
Makvandi et al. 2014	Iran	Patients with liver impairment for any other reason	Unclear	Patients from different regions in Khuzestan province who attended Danesh Medical Laboratory in Ahvaz, Iran	120	120	120	Blood	HBsAg -	12	10.0%
Mardian et al. 2017	Indonesia	Blood Donors		Dr. Sardjito Hospital, Yogyakarta, Indonesia	456	456	122	Blood	Other criteria	17	13.9%
Margaritis et al. 2011	Australia	Blood Donors		Australian Red Cross Blood Service	421272	421209	421209	Blood	HBsAg -	15	0.0%
Marinho et al. 2014	Brazil	Others without liver disease/deranged LFTs	Recyclable waste pickers OBI was tested for HBsAg-neg anti-HBc positive participants	15 recycling cooperatives in Goiânia City, Brazil	431	428	52	Blood	HBsAg -, anti-HBc +	1	1.9%
Mbangiwa et al. 2018	Botswana	Others without liver disease/deranged LFTs	HIV +ve pregnant women	From the completed Tshipidi study	384	372	299	Blood	HBsAg -	17	5.7%
Mbangiwa et al. 2018	Botswana	Pregnant women	HIV -ve pregnant women	From the completed Tshipidi study	368	364	323	Blood	HBsAg -	24	7.4%
Meilani et al. 2016	Indonesia	Pregnant women		Perak Public Health Centre, Surabaya, East Java, Indonesia	193	50	50	Blood	HBsAg -, anti-HBc +	9	18.0%
Meshi et al. 2014	United Arab Emirates/Saudi Arabia	Blood Donors		Central blood bank in Jazan province in Saudi Arabia	8099	7983	7983	Blood	HBsAg -	9	0.1%
Mhalla et al. 2017	Tunisia	Haemodialysis patients		Haemodialysis unit of the Nephrology Department (F. Bourguiba Teaching Hospital of Monastir)	109	105	5	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	2	40.0%
Min et al. 2013	South Korea	Others without liver disease/deranged LFTs		Bucheon St. Mary's Hospital (Participants from = the Incheon Probation & Parole Office Monitoring Rehabilitation Program (Incheon, Kyungki-do)	318	297	297	Blood	HBsAg -	16	5.4%
Mina et al. 2010	Greece	Haemodialysis patients		Six Dialysis Units in Central Greece	366	346	346	Blood	HBsAg -	3	0.9%

Minuk et al. 2014	Canada	General population		Epidemiological (serological) survey of HBV infection in the Canadian North	1007	1007	1007	Blood	HBsAg -	55	5.5%
Mitsumoto-Kaseida et al. 2019	Japan	HIV positive patients		Kyushu University Hospital	147	126	119	Blood	HBsAg -	9	7.6%
Mohanraj et al. 2015	India	Patients with liver impairment for any other reason	Chronic liver disease patients	Kilpauk Medical College	132	132	132	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	8	6.1%
Mok et al. 2017	China	Others without liver disease/deranged LFTs	Rheumatology patients		310	299	105	Blood	HBsAg -, anti-HBc +	9	8.6%
Monari et al. 2016	Italy	General population	Routine screening as part of study evaluating the effect of introducing the HBV vaccine in Italy in 1991. No further information on setting given.	Routine screening as part of study evaluating the effect of introducing the HBV vaccine in Italy in 1991. No further information on setting given.	2,454	86	9	Blood	HBsAg -, anti-HBc +	2	22.2%
Moresco et al. 2014	Brazil	Blood Donors		Collection and Transfusion Units co-ordinated by FHEMOAM (The Hematology and Hemotherapy State of Amazonas Foundation), Manaus	3600	3564	291	Blood	HBsAg -, anti-HBc +	8	2.7%
Mori et al. 2011	Japan	Others without liver disease/deranged LFTs	Rheumatoid arthritis patients	Clinical Research Center for Rheumatic Disease, Department of Rheumatology, NHO Kumamoto Saishunsou National Hospital	239	237	237	Blood	HBsAg -	2	0.8%
Mortensen et al. 2016	USA	Others without liver disease/deranged LFTs	Veterans undergoing dental procedures	two Veterans Affairs medical center	1891	1887	273	Blood	HBsAg -, anti-HBc +	6	2.2%
Motta et al. 2010	Brazil	Haemodialysis patients		1hemodialysis center in Rio de Janeiro, Brazil	100	100	100	Blood	HBsAg -	15	15.0%
Msomi et al. 2019	South Africa	Haemodialysis patients		Two hospital HD units in Durban, South Africa	86	86	85	Blood	HBsAg -	9	10.6%
Muche et al. 2018	Germany	Others without liver disease/deranged LFTs	Haemodialysis and renal transplant patients		834	777	777	PBMC	HBsAg -	0	0.0%
Muche et al. 2018	Germany	Others without liver disease/deranged LFTs	Haemodialysis and renal transplant patients		834	777	777	Blood	HBsAg -	1	0.1%

Muselmani et al. 2013	Syria	Blood Donors		Blood Transfusion Center of Damascus University	1939	1913	31	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	5	16.1%
Muselmani et al. 2014	Syria	Blood Donors		Different blood transfusion centers in all Syrian geographic areas	3896	3830	402	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	5	1.2%
Muto et al. 2018	Japan	HCC patients		Kyushu University Hospital	90	75	60	Liver	HBsAg -	18	30.0%
N'Dri-Yoman et al. 2010	Cote d'Ivoire	HIV positive patients		Four HIV Outpatient Clinics in Abdijan	495	432	209	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	51	24.4%
Naderi et al. 2018	Iran	Patients with liver impairment for any other reason		Comprehensive Hemophilia Care Center in Iran	100	100	100	PBMC	HBsAg -	3	3.0%
Naderi et al. 2018	Iran	Patients with liver impairment for any other reason		Comprehensive Hemophilia Care Center in Iran	100	100	100	Blood	HBsAg -	1	1.0%
Nagakawa et al. 2013	Japan	Haemodialysis patients		Four haemodialysis units in Chiba, Japan	1041	1035	212	Blood	HBsAg -, anti-HBc +	3	1.4%
Ngonyolo et al. 2018	South Africa	Others without liver disease/deranged LFTs	Patients, not further specified	Fuur provinces of South Africa (Gauteng, Limpopo, Northwest and Mpumalanga)	80	78	39	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	7	17.9%
Ni et al. 2012	Taiwan	General population		Schools, institutes, or workplaces in Taipei City	378		71	Blood	HBsAg -, anti-HBc +	3	4.2%
Niazi et al. 2015	Pakistan	Blood Donors		Armed Forces Institute of Transfusion (AFIT) in Rawalpindi, Northern Pakistan	56772	56053	54438	Blood	HBsAg -	23	0.0%
Nna et al. 2014	Nigeria	Blood Donors		Nnamdi Azikiwe University Teaching Hospital	113	100	8	Blood	HBsAg -, anti-HBc +	8	100.0%
Oliveira et al. 2016a	Brazil	HIV positive patients		Anuar Auad Hospital	505	480	480	Blood	HBsAg -	19	4.0%
Oliveira et al. 2016b	Brazil	Others without liver disease/deranged LFTs	Men who have sex with men	Goiania, the capital of the State of Goias, Central Brazil	522	517	517	Blood	HBsAg -	0	0.0%
Olotu et al. 2016	Nigeria	Blood Donors		OAUTHC and SDAH blood banks	507	502	354	Blood	HBsAg -, anti-HBc +	19	5.4%
Oluyinka et al. 2015	Nigeria	Blood Donors		Two major blood banks in southwestern Nigeria	429	429	429	Blood	HBsAg -	72	16.8%
Omar et al. 2018	Egypt	HCC patients		Outpatient clinic at the Internal Medicine Department at the Suez Canal University Hospital, Ismailia, Egypt	240	240	84	Blood	HBsAg -, anti-HBc +	20	23.8%

Omar et al. 2018	Egypt	HCV positive patients		Outpatient clinic at the Internal Medicine Department at the Suez Canal University Hospital, Ismailia, Egypt	240	240	52	Blood	HBsAg -, anti-HBc +	8	15.4%
Ostankova et al. 2017	Kazakhstan	Blood Donors			500	500	500	Blood	HBsAg -	0	0.0%
Ostankova et al. 2017	Kazakhstan	Blood Donors			500	500	500	Blood	HBsAg -	47	9.4%
Ou et al. 2012	China	Blood Donors		Xiamen, China	9188	9159	9159	Blood	HBsAg -	18	0.2%
Ozdemir et al. 2017	Turkey	Blood Donors		Necmettin Erbakan University Meram Medical Faculty Blood Center	3000	3000	3000	Blood	HBsAg -	9	0.3%
Panigrahi et al. 2010	India	Blood Donors		The Red Cross blood bank in the city of Behrampur	729	729	220	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	66	30.0%
Panigrahi et al. 2012	India	HIV positive patients		The Apex Referral Centre for HIV/AIDS at MedicalnCollege, Kolkata	1077	112	38	Blood	HBsAg -, anti-HBc +	12	31.6%
Papa et al. 2010	Italy	Others without liver disease/deranged LFTs	IBD patients	Inpatients and outpatients affected by IBD seen in the Department of Internal Medicine and Gastroenterology, Catholic University of Rome, Italy	301	300	22	Blood	HBsAg -, anti-HBc +	0	0.0%
Pessoni et al. 2019	Brazil	Haematology patients	Patients with haematological disorders	Two referral hospitals in Goiás, CentralBrazil	322	318	41	Blood	HBsAg -, anti-HBc +	3	7.3%
Pinato et al. 2012	Italy	Haematology patients	Patients with haematological malignancies and healthy patients		240	229	229	PBMC	HBsAg -	15	6.6%
Pollicino et al. 2019	Italy	Patients with liver impairment for any other reason	Intrahepatic cholangiocarcinoma patients	Three Italian liver centres located in distinct geographic areas of the country (Milan, Rome, and Messina).	47	47	47	Liver	HBsAg -	29	61.7%
Punde et al. 2011	India	Blood Donors			1000	1000	1000	Blood	HBsAg -	22	2.2%
Punde et al. 2011	India	Healthcare workers			100	100	100	Blood	HBsAg -	0	0.0%
Punzalan et al. 2016	Philippines	Blood Donors		The Department of Health identified lead blood service facilities (BSF)	3233	3221	3221	Blood	HBsAg -	48	1.5%
Raimondo et al. 2018	Italy	Patients with liver impairment for any other reason	Liver disease patients undergoing bariatric surgery	Two distinct liver centres (Trieste in Northern Italy,	186	186	186	Liver	HBsAg -	24	12.9%

				Messina in Southern Italy)							
Ramezani et al. 2010a	Iran	Blood Donors		Blood Transfusion Organization in Tehran, Iran	531	531	11	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	0	0.0%
Ramezani et al. 2010a	Iran	Haemodialysis patients		5 dialysis units in Tehran	289	289	18	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	9	50.0%
Ramezani et al. 2010a	Iran	HIV positive patients		Iranian Research Center for HIV/AIDS in Tehran, Iran	106	106	22	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	3	13.6%
Ramezani et al. 2010b	Iran	Others without liver disease/deranged LFTs	Mixture of haemodialysis and HIV +ve patients		395		40	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	12	30.0%
Ramezani et al. 2015	Iran	Haemodialysis patients		a main di-alysis unit in Tehran, Iran unit in Tehran, Iran	100	100	100	Blood	HBsAg -	1	1.0%
Ranganathan et al. 2013	India	Blood Donors		Apollo Hospital Dialysis Unit	21291	21291	21291	Blood	HBsAg -	10	0.0%
Rastegarvand et al. 2015	Iran	Haemodialysis patients		Dialysis units of 4 hospitals in Ahvaz city from January 2012 to April 2012.	203	203	203	Blood	HBsAg -, anti-HBc +	6	3.0%
Ravula et al. 2018	India	Others without liver disease/deranged LFTs	Deferred blood donors		1000	992	992	Blood	HBsAg -	1	0.1%
Rinonce et al. 2013	Indonesia	Haemodialysis patients		A hemodialysis unit in Yogyakarta, Indonesia	196	143	143	Blood	HBsAg -	21	14.7%
Rinonce et al. 2013	Indonesia	Healthcare workers		Haemodialysis unit in Yogyakarta, Indonesia	35	33	33	Blood	HBsAg -	0	0.0%
Rizvi et al. 2014	India	Patients with liver impairment for any other reason	Unclear		847	630	381	Blood	HBsAg -, anti-HBc +	29	7.6%
Roman et al. 2010	Mexico	Others without liver disease/deranged LFTs	Native communities	Nahuas community, Huichol community, and Mestizos community	306	289	289	Blood	HBsAg -	41	14.2%
Romano et al. 2013	Italy	Blood Donors		21 Blood Transfusion Services in Italy (North, Central, South)	46,147	31088	2186	Blood	HBsAg -, anti-HBc +	12	0.5%
Rosa et al. 2017	Brazil	HCV positive patients		Clementino Fraga Filho University Hospital (HUCFF), Rio de Janeiro, Brazil	151	151	151	Blood	HBsAg -	5	3.3%
Sahu et al. 2018	India	Patients with liver impairment for any other reason	Chronic liver disease patients	SCB Medical College, Cuttack and MKCG Medical College, Berhampur.	554	353	79	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	45	57.0%
Said et al. 2013	Egypt	Blood Donors		2 main blood transfusion centers	3167	3167	303	Blood	HBsAg -, anti-HBc +	52	17.2%

Saijo et al. 2015	Japan	Haemodialysis patients			161	157	41	Blood	Other criteria	2	4.9%
Saitta et al. 2015	Italy	HCC patients		. All these cases had been included in previously published studies by the authors and were selected on the basis of the availability of amounts of stored tumor tissues sufficient to perform this further investigation.	61	54	54	Liver	HBsAg -	34	63.0%
Samiei et al. 2018	Iran	Haemodialysis patients		Golestan hospital in Ahvaz	84	82	14	Blood	HBsAg -, anti-HBc +	4	28.6%
Sang et al. 2011	China	Blood Donors		Shaoxing	8692	8644	8644	Blood	HBsAg -	8	0.1%
Saravanan et al. 2013	India	General population		National Referral Centre for Viral Hepatitis, Department of Microbiology, Faculty of Medicine, Dr ALM Post Graduate Institute of Basic Medical Sciences, University of Madras, and Chennai, India	260	70	70	Blood	HBsAg -	3	4.3%
Saravanan et al. 2013	India	HCV positive patients		National Referral Centre for Viral Hepatitis, Department of Microbiology, Faculty of Medicine, Dr ALM Post Graduate Institute of Basic Medical Sciences, University of Madras, and Chennai, India	260	260	260	Blood	HBsAg -	19	7.3%
Sauleda et al. 2011	Spain	Blood Donors		Blood bank in Catalonia	123,527		123282	Blood	HBsAg -	9	0.0%
Sauleda et al. 2011	Spain	Blood Donors		Blood bank in Catalonia	517,054		517048	Blood	HBsAg -	49	0.0%
Sav et al. 2010	Turkey	Haemodialysis patients		Erciyes University School of Medicine	71	71	71	Blood	HBsAg -	12	16.9%
Sav et al. 2010	Turkey	Others without liver disease/deranged LFTs	Peritoneal dialysis patients	Erciyes University School of Medicine	71	71	71	Blood	HBsAg -	7	9.9%
Seferi et al. 2017	Albania	Blood Donors			20,810	20810	20810	Blood	HBsAg -	76	0.4%
Selim et al. 2011	Egypt	HCV positive patients		Outpatient Clinics of National Liver Institute, Menoufiya, Egypt	60	60	60	Blood	HBsAg -	23	38.3%

Seo et al. 2011	South Korea	Blood Donors		Korean Red Cross Blood Center	12461	1676	1676	Blood	HBsAg -, anti-HBc +	2	0.1%
Shafiulla Sinha et al. 2016	India	Haematology patients	Non-Hodgkin lymphoma patients		156	156	156	Blood	HBsAg -	23	14.7%
Sharifi et al. 2013	Iran	Blood Donors		Sistan-o-Baluchistan	3000	3000	300	Blood	HBsAg -, anti-HBc +	0	0.0%
Sharifi et al. 2017	Iran	HCV positive patients			120	120	120	Blood	HBsAg -	0	0.0%
Sheneef et al. 2012	Egypt	HCV positive patients		Departments of Medical Microbiology & Immunology, Clinical Pathology and Internal Medicine of Soahg University hospital, Egypt; patients were recruited from outpatient clinics of Internal Medicine Department, Sohag university hospital.	60	60	60	Blood	HBsAg -	8	13.3%
Shetty et al. 2011	USA	Cirrhotic patients, incl. cryptogenic/other aetiologies	HCV +ve cirrhosis; explanted liver of liver transplant recipients	Inpatient and outpatient liver transplantation services at the Hospital of the University of Pennsylvania, Philadelphia, PA, USA.	56	44	44	Liver	HBsAg -	22	50.0%
Shetty et al. 2011	USA	Patients with liver impairment for any other reason	HCV +ve cirrhosis liver transplant recipients	Inpatient and outpatient liver transplantation services at the Hospital of the University of Pennsylvania, Philadelphia, PA, USA.	56	56	56	Blood	HBsAg -	16	28.6%
Shim et al. 2011	South Korea	Healthcare workers		Kyung Hee Medical Center	1812	1755	389	Blood	Other criteria	0	0.0%
Shim et al. 2017	South Korea	Patients with liver impairment for any other reason	Chronic liver disease patients	National Cancer Center (NCC) Hospital, Korea	162	162	130	Liver	HBsAg -, anti-HBc +ve, anti-HBs -	55	42.3%
Simonova et al. 2013	Bulgaria	HCV positive patients		Military Medical Academy, Sofia, Bulgaria	152	152	152	Blood	HBsAg -	23	15.1%
Simonova et al. 2016	Bulgaria	Cirrhotic patients, incl. cryptogenic/other aetiologies		Gastroenterology Clinic, Military Medical Academy – Sofia	35	35	35	Liver	HBsAg -	16	45.7%

Simonova et al. 2016	Bulgaria	HCC patients		Gastroenterology Clinic, Military Medical Academy – Sofia	19	19	19	Liver	HBsAg -	11	57.9%
Simonova et al. 2016	Bulgaria	HCV positive patients		Gastroenterology Clinic, Military Medical Academy – Sofia	42	42	42	Liver	HBsAg -	12	28.6%
Singh et al. 2016	India	General population		Coastal Odisha	173	173	173	Blood	HBsAg -	9	5.2%
Soedarmono et al. 2010	Indonesia	Blood Donors			7913	7913	507	Blood	HBsAg -, anti-HBc +	105	20.7%
Sofian et al. 2012	Iran	Others without liver disease/deranged LFTs		Arak City, Iran	153	142	11	Blood	HBsAg -, anti-HBc +	0	0.0%
Sondlane et al. 2016	South Africa	Healthcare workers		Gauteng and Mpumalanga provinces.	314	305	305	Blood	HBsAg -	21	6.9%
Sood et al. 2016	India	Others without liver disease/deranged LFTs	Blood donors with alcohol dependence	Tertiary centre, India	369	369	369	Blood	HBsAg -	12	3.3%
Sosa-Jurado et al. 2016	Mexico	Blood Donors		10 sampling sites distributed throughout the state of Puebla, Mexico and blood bank of the national health centre “Manuel Avila Camacho” (Instituto Mexicano del Seguro Social)	120,552		156	Blood	HBsAg -, anti-HBc +	27	17.3%
Sosa-Jurado et al. 2018	Mexico	Others without liver disease/deranged LFTs	Gastroenterology patients	Gastroenterology Service of National Health Centre, Mexico	116	116	45	Blood	HBsAg -, anti-HBc +	29	64.4%
Sosa-Jurado et al. 2018	Mexico	Others without liver disease/deranged LFTs	Gastroenterology patients	Gastroenterology Service of National Health Centre, Mexico	116	116	45	Blood	HBsAg -, anti-HBc +	34	75.6%
Souza et al. 2012	Brazil	Pregnant women		Four public maternity hospitals of São Luís	541		35	Blood	HBsAg -, anti-HBc +	0	0.0%
Sowole et al. 2015	United Kingdom	Haemodialysis patients		The Royal Free Hospital and its satellite dialysis units	793	778	138	Blood	HBsAg -, anti-HBc +	3	2.2%
Spreafico et al. 2012	Italy	Blood Donors			28		28	Blood	HBsAg -, anti-HBc +	12	42.9%
Spreafico et al. 2012	Italy	Blood Donors			28		28	Blood	HBsAg -, anti-HBc +	16	57.1%
Spreafico et al. 2015	Italy	Blood Donors		Alessandro Manzoni Hospital’s Department of Transfusion Medicine in Lecco, Italy	97214	97213	97213	Blood	HBsAg -	18	0.0%
Squadrito et al. 2013	Italy	HCV positive patients		Division of Clinical and Molecular Hepatology, University of Messina, Messina, Italy	326	326	326	Liver	HBsAg -	128	39.3%
Stolz et al. 2010	Switzerland	Blood Donors		Blood Transfusion Service SRC Berne	306,000	305976	305976	Blood	HBsAg -	6	0.0%
Su et al. 2011	Taiwan	Blood Donors		Taipei Blood Centre	10824	10727	10727	Blood	HBsAg -	12	0.1%

Suo et al. 2019	China	Blood Donors		Quinghai Blood Centre	750	750	750	Blood	HBsAg -	8	1.1%
Sykes et al. 2018	South Africa	Blood Donors			91540	91357	91357	Blood	HBsAg -	18	0.0%
Taha et al. 2013	Egypt	HCC patients		Internal Medicine Clinic of Ain Shams University (Cairo, Egypt)	40	20	20	Liver	HBsAg -	18	90.0%
Taha et al. 2013	Egypt	HCC patients	HCV + HCC	Internal Medicine Clinic of Ain Shams University (Cairo, Egypt)	40	20	20	Blood	HBsAg -	7	35.0%
Taha et al. 2013	Egypt	HCV positive patients		Internal Medicine Clinic of Ain Shams University (Cairo, Egypt)	40	20	20	Liver	HBsAg -	5	25.0%
Taha et al. 2013	Egypt	HCV positive patients		Internal Medicine Clinic of Ain Shams University (Cairo, Egypt)	40	20	20	Blood	HBsAg -	2	10.0%
Taha et al. 2017	Egypt	HCV positive patients		Gastroenterology and hepatology department in the Suez Canal University Hospital, Ismailia, Egypt	200	200	200	Blood	HBsAg -	17	8.5%
Taira et al. 2013	Japan	Blood Donors		Tokyo Blood Center	640,628	640628	4742	Blood	Other criteria	92	1.9%
Taira et al. 2013	Japan	Blood Donors		Japanese Red Cross (JRC) blood centers	8,746,037	8746037	8746037	Blood	HBsAg -	133	0.0%
Taira et al. 2013	Japan	Blood Donors		Japanese Red Cross (JRC) blood centers	19,513,054	19513054	19513054	Blood	HBsAg -	76	0.0%
Taira et al. 2013	Japan	Blood Donors		Japanese Red Cross (JRC) blood centers	24,702,784	24702784	24702784	Blood	HBsAg -	473	0.0%
Takeda et al. 2013	Japan	Patients with liver impairment for any other reason	Chronic hepatitis (HBsAg -ve) patients	The Researche Center for Hepatitis & Immunology, National Center for Global Health and Medicine, chiba, Japan	84	84	84	Blood	HBsAg -	7	8.3%
Tandoi et al. 2014	Italy	Others without liver disease/deranged LFTs		Liver Transplant Center of the University of Turin.	70	70	70	Liver	HBsAg -	30	42.9%
Tandoi et al. 2014	Italy	Others without liver disease/deranged LFTs		Liver Transplant Center of the University of Turin.	70	70	70	Blood	HBsAg -	5	7.1%
Tang et al. 2018	China	Blood Donors		Guangzhou blood transfusion centre	1,732	1732	1732	Blood	HBsAg -, anti-HBc +	9	0.5%
Tang et al. 2018	China	Blood Donors		Guangzhou blood transfusion centre	14,937	14928	14928	Blood	HBsAg -	10	0.1%
Thabit et al. 2012	Yemen	Patients with liver impairment for any other reason	Chronic liver disease patients		280	236	22	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	11	50.0%

Thabit et al. 2017	Egypt	HCV positive patients			200	200	200	Blood	HBsAg -	21	10.5%
Tirri et al. 2013	Italy	Others without liver disease/deranged LFTs	Rheumatology patients		303		50	Blood	HBsAg -, anti-HBc +	0	0.0%
Tjempakasari et al. 2014	Indonesia	Haemodialysis patients		4 hospitals in Surabaya	136		51	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	4	7.8%
Torres et al. 2012	USA	Patients with liver impairment for any other reason	Patients with haematological disorders and abnormal liver function		18	18	18	Blood	HBsAg -	2	11.1%
Tramuto et al. 2013a	Italy	Others without liver disease/deranged LFTs	Immigrants of non-Italian ethnicity	Migration Medicine ambulatory of the University Hospital ‘‘P. Giaccone’’—Palermo (Italy)	339	339	339	Blood	HBsAg -	11	3.2%
Tramuto et al. 2013b	Italy	HIV positive patients		Infectious Diseases ward of the University Hospital P. Giaccone, Palermo, Italy	405	145	145	Blood	HBsAg -	7	4.8%
Trinks et al. 2010	Argentina	Others without liver disease/deranged LFTs		Buenos Aires	80	64	64	Blood	HBsAg -, anti-HBc +	9	14.1%
Trinks et al. 2010	Argentina	Others without liver disease/deranged LFTs		Buenos Aires	80	66	66	Blood	HBsAg -, anti-HBc +	1	1.5%
Tsaneva-Damyanova et al. 2018	Bulgaria	Patients with liver impairment for any other reason	Liver disease patients without HCC	University Hospital St. Marina, Varna, Bulgaria	78	78	78	Blood	HBsAg -, anti-HBc +	16	20.5%
Tsoi et al. 2013	Hong Kong	Blood Donors		Hong Kong Red Cross Blood Transfusion Service	399,326	398349	398349	Blood	HBsAg -	169	0.0%
Tsoi et al. 2013	Hong Kong	Blood Donors		Hong Kong Red Cross Blood Transfusion Service	517,072	515258	515258	Blood	HBsAg -	113	0.0%
Us et al. 2017	Turkey	Patients with liver impairment for any other reason	Hepatitis B patients	Eskisehir Osmangazi University Medical Faculty, Medical Microbiology Laboratory	4036		4036	Blood	HBsAg -	105	2.6%
Vaezjalali et al. 2012	Iran	Blood Donors			300	300	25	Blood	HBsAg -, anti-HBc +	0	0.0%
van de Laar et al. 2015	Netherlands	Blood Donors			311,259	311259	311259	Blood	HBsAg -	0	0.0%
van de Laar et al. 2015	Netherlands	Blood Donors			70,914		70883	Blood	HBsAg -	2	0.0%
Varaklioti et al. 2017	Greece	Haematology patients	Patients with inherited bleeding disorders (haemophilias A/B, von Willebrand disease, factor VII deficiency)	National Reference Center for Congenital Bleeding Disorders Disorders in Laiko General Hospital of Athens	114	112	112	Blood	HBsAg -	2	1.8%

Velasquez et al. 2011	Philippines	Haemodialysis patients		Philippines-Philippine General Hospital	120		12	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	2	16.7%
Voiculescu et al. 2010	Romania	Healthcare workers		Romania	93	91	91	Blood	HBsAg -	0	0.0%
Voiculescu et al. 2010	Romania	Others without liver disease/deranged LFTs	Contacts of hepatitis patients	Romania	44	43	43	Blood	HBsAg -	0	0.0%
Wang et al. 2015a	China	Blood Donors		12 blood centers (Shanghai Blood Center [SH], Baoji Central Blood Bank [BJ], Chengdu Blood Center [CD], Changzhou Central Blood Bank [CZ], Jiangsu Province Blood Center [JS], Jiangxi Province Blood Center [JX], Qingdao Blood Center [QD], Blood Center of Shandong Province [SD], Tianshui Central Blood Bank [TS], Wuhan Blood Center [WH], Xianyang Central Blood Bank [XY], and Yancheng Center Blood Bank [YC])	826044	826044	667	Blood	HBsAg -	413	61.9%
Wang et al. 2015b	China	Blood Donors		Blood donors in three Chinese cities.	482370	368940	368940	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	156	0.0%
Wang et al. 2015c	China	Haematology patients	Multiple myeloma patients	5 grade-III hospitals (Xi'an Central Hospital, Shaanxi People's Hospita', Xi'an Jiaotong University Xibei Hospital, "so on")	185	170	170	Blood	HBsAg -	6	3.5%
Wang et al. 2015c	China	Others without liver disease/deranged LFTs	Tumor-free patients	5 grade-III hospitals (Xi'an Central Hospital, Shaanxi People's Hospita', Xi'an Jiaotong University Xibei Hospital, "so on")	182	174	170	Blood	HBsAg -	1	0.6%
Wang et al. 2016	China	Blood Donors		Shenzhen, Southern China	569145	555949	475538	Blood	HBsAg -	106	0.0%
Wang et al. 2017a	China	HCV positive patients		Humanity and Health Medical Centre, Hong	327	317	317	Blood	HBsAg -	124	39.1%

				Kong Special Administrative Region, China						
Wang et al. 2017b	China	Blood Donors		Clinical Laboratory Jiangxi Blood center, Nanchang, China	158232	158205	158205	Blood	HBsAg -	79	0.0%
Watanabe et al. 2013	Japan	Others without liver disease/deranged LFTs	SLE patients who were receiving or planned to receive immunosuppressive therapy	Department of Hematology and Rheumatology in Tohoku University hospital.	248	246	41	Blood	Other criteria	1	2.4%
Wolff et al. 2011	Brazil	Blood Donors		Eight blood centers in Porto Alegre, Southern Brazil: Hospital de Clínicas de Porto Alegre, Santa Casa de Misericórdia de Porto Alegre, Hospital Moinhos de Vento, Hospital Ernesto Dorneles, Laboratório Marques-Pereira, Hospital Nossa Sen-hora da Conceição, Hospital São Lucas, Hemocentro do Rio Grande do Sul	534	158	158	Blood	HBsAg -	0	0.0%
Wong et al. 2011	Hong Kong	HCC patients		Asian HCC patients in HK whom underwent liver resection.	61	40	48	Liver	HBsAg -	30	62.5%
Wong et al. 2019	Hong Kong	HCC patients		Queen Mary Hospital, Hong Kong	90	90	90	Liver	HBsAg -	62	68.9%
Wong et al. 2019	Hong Kong	Patients with liver impairment for any other reason		Queen Mary Hospital, Hong Kong	20	20	20	Liver	HBsAg -	3	15.0%
Wu et al. 2011	China	Others without liver disease/deranged LFTs	Inpatients and outpatients, not further specified	Ruijin Hospital	468	468	468	Blood	HBsAg -	69	14.7%
XiaoKun et al. 2013	China	Blood Donors		Blood donors in Zhangjiakou	5498	5417	5417	Blood	HBsAg -	13	0.2%
Xie et al. 2012	China	Blood Donors			63351	84990	84990	Blood	HBsAg -	41	0.0%
Xie et al. 2015	China	Patients with liver impairment for any other reason	Patients undergoing LT for alcoholic hepatitis	Tianjin First Center Hospital	43	43	43	Liver	HBsAg -	18	41.9%
Xin et al. 2011	China	Blood Donors		Shenzhen Blood Centre	165371	165371	165371	Blood	HBsAg -	22	0.0%
Xu et al. 2010	China	General population			2919	2859	106	Blood	Other criteria	81	76.4%
Xu et al. 2017a	China	Blood Donors		Baoji Blood Center	110,843		110843	Blood	HBsAg -	43	0.0%
Xu et al. 2017b	China	Patients with liver impairment for any other reason	Unclear	Research Center for Clinical and Translational	130	120	100	Liver	HBsAg -, anti-HBc +	22	22.0%

				Medicine, Beijing 302 Hospital							
Xu et al. 2017c	China	Blood Donors		Five blood services in the Zhejiang Province, China	230000	230000	230000	Blood	HBsAg -	234	0.1%
Xu et al. 2017d	China	Blood Donors			157985		157985	Blood	HBsAg -, anti-HBc +	39	0.0%
Yamaji et al. 2018	Japan	HCC patients		Saga Prefecture	257	257	257	Liver	HBsAg -	15	5.8%
Yang et al. 2010	Taiwan	Blood Donors		Taipei Blood Center	4210	4179	4179	Blood	HBsAg -	6	0.1%
Yang et al. 2010	Taiwan	Blood Donors		Taipei Blood Center	6080	6044	6044	Blood	HBsAg -	3	0.0%
Yang et al. 2012	China	Haematology patients	HBV positive non-Hodgkin lymphoma patients	West China Hospital	846	418	25	Blood	HBsAg -, anti-HBc +	0	0.0%
Yang et al. 2013	China	Blood Donors		Qingdao Blood Center	10,967	10967	10967	Blood	HBsAg -	59	0.5%
Yang et al. 2015	Taiwan	HCC patients			170	170	170	Blood	HBsAg -	17	10.0%
Yang et al. 2015	Taiwan	Others without liver disease/deranged LFTs	"Healthy" controls as in HCC-free, including many HCV +ves in REVEAL study		723	723	723	Blood	HBsAg -	53	7.3%
Yang et al. 2017	China	Blood Donors		Affiliated hospital of Jiangxi University of Traditional Chinese Medicine, Nanchang, China	1134		255	Blood	HBsAg -, anti-HBc +	6	2.4%
Yang et al. 2017	China	Others without liver disease/deranged LFTs	Hyperlipidaemia patients	Affiliated hospital of Jiangxi University of Traditional Chinese Medicine, Nanchang, China	1036		252	Blood	HBsAg -, anti-HBc +	24	9.5%
Yazigi et al. 2017	Syria	Haemodialysis patients		Al-Assad university hospital, Latakia National Hospital, Latakia Military Hospital , Damascus Kidney Surgical Hospital.	122	122	34	Blood	HBsAg -, anti-HBc +	4	11.8%
Ye et al. 2013	China	Blood Donors		Shenzhen blood center, China	307740	307740	307740	Blood	HBsAg -	80	0.0%
Ye et al. 2017	China	Blood Donors		Shenzhen Blood Centre	1033	1033	490	Blood	HBsAg -, anti-HBc +	14	2.9%
Ye et al. 2019	China	Blood Donors		Shenzhen Blood Center (SZBC)	259	257	257	Blood	HBsAg -	119	46.3%
Ye et al. 2019	China	Blood Donors		Shenzhen Blood Center (SZBC)	123280	122552	122552	Blood	HBsAg -	162	0.1%
Yeh et al. 2010	USA	HCC patients		University of Washington + Johns Hopkins University	18	18	18	Liver	HBsAg -	0	0.0%
Yilmaz et al. 2013	Turkey	Others without liver disease/deranged LFTs	Rheumatology patients	Rheumatology Outpatient Clinic	116	116	116	Blood	HBsAg -	0	0.0%

Yoo et al. 2013	South Korea	Haemodialysis patients		HA Bundang Medical Center (Seongnam, Korea)	98	94	94	Blood	HBsAg -	1	1.1%
Yoo et al. 2013	South Korea	Haemodialysis patients		HA Bundang Medical Center (Seongnam, Korea)	98	94	94	Blood	HBsAg -	3	3.2%
You et al. 2013	South Korea	Patients with liver impairment for any other reason	Unclear	Hospital / Health Promotion Centre in Korea (Unspecified)	14235		571	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	27	4.7%
Yuan et al. 2010	China	Blood Donors		Xiamen Blood Service, Fujian Province, China	19518	19360	995	Blood	HBsAg -, anti-HBc +ve, anti-HBs -	34	3.4%
Yuan et al. 2015	China	Others without liver disease/deranged LFTs	Patients, not further specified	Chongqing Medical University	110	110	110	Blood	HBsAg -	26	23.6%
YuQiong et al. 2014	China	Patients with liver impairment for any other reason	Cryptogenic intrahepatic cholangiocarcinoma (ICC) patients from original group randomly selected (above)	Eastern Hepatobiliary Surgery Hospital of the Second Military Medical University (Shanghai, China)	44	44	44	Liver	HBsAg -	28	63.6%
Zhang et al. 2013	China	General population			121	121	121	Blood	HBsAg -	4	3.3%
Zhang et al. 2013	China	Others without liver disease/deranged LFTs	Healthy controls		121	121	121	Blood	HBsAg -	4	3.3%
Zhang et al. 2015	China	Blood Donors		14 different hospitals in China, including The First Hospital Affiliated to Anhui Medical University, The Second People's Hospital of Fuyang City, People's Hospital of Luan City, The First People's Hospital of Hefei City, People's Hospital of Taihe County, People's Hospital of Jieshou City, People's Hospital of Chizhou City, People's Hospital of Huaibei City, Mine Workers' General Hospital of Huaibei, People's Hospital of Suixi City, and People's Hospital of Huoqiu County	579	579	579	Blood	HBsAg -	15	2.6%

Zhang et al. 2017	China	Blood Donors		National Center of Clinical Laboratories, Beijing (NCCL)	2977	2795	2795	Blood	HBsAg -	998	35.7%
Zhang et al. 2019	China	Haematology patients	Haploidentical haematopoietic stem cell transplantation (HSCT) patients	Peking University Institute of Haematology	227	189	189	Blood	HBsAg -	15	7.9%
Zhao et al. 2016	China	Blood Donors			26374	26374	26374	Blood	HBsAg -	10	0.0%
Zhen-Feng et al. 2015	China	HCC patients		Fifth Department of Hepatic Surgery, Eastern Hepatobiliary Surgery Hospital, Second Military Medical University (Shanghai, China)	610	106	86	Liver	HBsAg -	59	68.6%
Zheng et al. 2015	China	Blood Donors		Shenzhen Blood Center, Shenzhen, China	2028	2028	2028	Blood	HBsAg -	23	1.1%
Zheng et al. 2017	China	Blood Donors		Ningxia Hui minority areas	134495	133744	133744	Blood	HBsAg -	80	0.1%

37

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