Table 79: Summary of Surveys Included in Meta-Analysis: Nigeria Western Africa

Country	Study (survey year*)	Region	Population and sampling method	Sex	Sample (n)	HBsAg positive (%)	lower 95% CI	upper 95% CI	RE weight (%)	FE weight (%)	Reference	Access No	Ref No.
Nigeria	Ayoola 1980*	Ibidan	Adults attending a family planning clinic; no selection described; males (50)	males	50	10.0%	1.68%	18.32%	1.38%	0.0%	Ayoola, E. A., H. A. Odelola, et al. (1980). "Hepatitis B surface antigen in menstrual blood and semen." Int J Gynaecol Obstet 18(3): 185-7.	6109651	1202
Nigeria	Haditsch 1986	Minna and Abeokuta	Residents from the catchment area of the hospitals in Minna and Abeokuta; no selection described males (50)	males	50	18.0%	7.35%	28.65%	1.15%	0.0%	Haditsch, M., G. Biersack, et al. (1988). "[Hepatitis B infection in 2 areas of Nigeria]." Geogr Med Suppl 1: 145-54.	3169555	1198
Nigeria	Sirisena 2002*	Jos	Healthy urban adults; apparently healthy persons who voluntarily turned up for the survey; male (293)	males	293	8.2%	5.06%	11.34%	1.90%	0.3%	Sirisena, N. D., M. O. Njoku, et al. (2002). "Carriage rate of hepatitis-B surface antigen (HBsAg) in an urban community in Jos, Plateau State, Nigeria." Niger Postgrad Med J 9(1): 7-10.	11932753	1216
Nigeria	Jombo 2003	Zawan village; northern	Inhabitants of rural village northern Nigeria; "churches, market square, and traditional heads were used to mobilize people in the community to our Lady of Apostles Hospital, Zawan, the only cottage hospital in the community; subjects recruited by a simple random sampling method; males (193)	males	193	14.0%	9.10%	18.90%	1.74%	0.1%	Jombo, G. T., D. Z. Egah, et al. (2005). "Hepatitis B virus infection in a rural settlement of northern Nigeria." Niger J Med 14(4): 425-8.	16353707	1223
Nigeria	Odaibo 2003*	Ibadan	Patients undergoing dental extraction; consecutive patients who volunteered; male (143)	males	143	23.1%	16.19%	30.01%	1.53%	0.1%	Odaibo, G. N., J. T. Arotiba, et al. (2003). "Prevalence of hepatitis B virus surface antigen (HBsAg) in patients undergoing extraction at the University College Hospital, Ibadan." Afr J Med Med Sci 32(3): 243-5.	15030081	1220
Nigeria	Lesi 2005	Lagos	Medical outpatient clinic attendees; HIV-negative; consecutively recruited for pts seeking routine medical exams; males (57)	males	57	5.3%	-0.52%	11.12%	1.65%	0.1%	Lesi, O. A., M. O. Kehinde, et al. (2007). "Hepatitis B and C virus infection in Nigerian patients with HIV/AIDS." Niger Postgrad Med J 14(2): 129-33.	17599111	1228
Nigeria	Egah 2007*	Jos	Clergymen in training; clergy-men-in-training blood donors at Jos University Hosp; no selection in abstract (258)	males	258	15.1%	10.73%	19.47%	1.79%	0.2%	Egah, D. Z., E. B. Banwat, et al. (2007). "Hepatitis B surface antigen, hepatitis C and HIV antibodies in a low-risk blood donor group, Nigeria." East Mediterr Health J 13(4): 961-6.	17955779	1229
Nigeria	Forbi 2008	Keffi	Students in a Nigerian university; recruited randomly from different academic disciplines; males (2008)	males	208	17.3%	12.16%	22.44%	1.72%	0.1%	Forbi, J., G. Pennap, et al. (2009). "Serological markers and risk factors for hepatitis B and hepatitis C viruses among students in a Nigerian university." East Afr J Public Health 6(2): 152-5.	20000021	1233
Nigeria	Adoga 2008-2009	Abuja and part of Mararaba town (north central)	Apparently healthy urban Nigerias; participants in a vaccination study (prevaccination); most came from different parts of Nigeria; no selection described males (957)	males	957	7.4%	5.76%	9.08%	1.98%	1.2%	Adoga, M. P., S. D. Gyar, et al. "Hepatitis B virus infections in apparently healthy urban Nigerians: data from pre-vaccination tests." J Infect Dev Ctries 4(6): 397-400.	20601793	1234
Nigeria	Ayoola 1980*	Ibidan	Adults attending a family planning clinic; no selection described females (50)	females	50	8.0%	0.48%	15.52%	1.47%	0.1%	Ayoola, E. A., H. A. Odelola, et al. (1980). "Hepatitis B surface antigen in menstrual blood and semen." Int J Gynaecol Obstet 18(3): 185-7.	6109651	1202
Nigeria	Haditsch 1986	Minna and Abeokuta	Residents from the catchment area of the hospitals in Minna and Abeokuta; no selection described females (84)	females	84	22.6%	13.66%	31.54%	1.32%	0.0%	Haditsch, M., G. Biersack, et al. (1988). "[Hepatitis B infection in 2 areas of Nigeria]." Geogr Med Suppl 1: 145-54.	3169555	1198
Nigeria	Ayoola 1981	Ibadan	Pregnant women screened at antenatal clinic at University College Hospital (80)	females	80	11.2%	4.29%	18.11%	1.53%	0.1%	Ayoola, E. A., O. Ogunbode, et al. (1981). "Congenital transmission of hepatitis B antigen in Nigerians." Arch Virol 67(1): 97-9.	7236012	1204

Nigeria	Nasidi 1986*	metropolian Lagos	Healthy females; no selection reported; 1090 were pregnant; 64 non-pregnant (1,154)	females	1,154	13.7%	11.72%	15.68%	1.97%	0.8%	Nasidi, A., T. O. Harry, et al. (1986). "Prevalence of hepatitis B infection markers in representative areas of Nigeria." Int J Epidemiol 15(2): 274-6.	3721692	1200
Nigeria	Brunengo 1987	Niamey	Pregnant women Hopital National; no selection (230)	females	230	10.0%	6.12%	13.88%	1.84%	0.2%	Brunengo, J. F., F. Morier, et al. (1988). "Cost of preventing transfusion of hepatitis B virus in hyperendemic areas." Lancet 1(8594): 1105.	2896931	1197
Nigeria	Abiodun 1989*	Benin City	Pregnant women attending antenatal clinic; from all social groups; "fairly representative of adult population in our area" (265)	females	265	7.5%	4.33%	10.67%	1.89%	0.3%	Abiodun, P. O., J. C. Ihongbe, et al. (1986). "HBsAg carrier rate among the adult population in Benin City, Nigeria (ELISA-method)." Public Health 100(6): 362-7.	3492004	1199
Nigeria	Obi 1993*	Lagos	Pregnant women attending the Obstetrics and Gynecology Clinic of the Lagos University Teaching Hospital (250)	females	250	4.4%	1.86%	6.94%	1.94%	0.5%	Obi, C. L., C. E. Anyiwo, et al. (1993). "A comparison of human immunodeficiency virus (HIV) seropositivity and hepatitis B surface antigenemia (HBs Ag) among the same group of apparently healthy pregnant women in Lagos, Nigeria: a preliminary report." Viral Immunol 6(1): 43-7.	8476507	1210
Nigeria	Harry 1994*	Maiduguri	Pregnant women; consecutive women attending antenatal clinic at Maiduguri University Teaching Hospital (224)	females	224	11.6%	7.41%	15.79%	1.81%	0.2%	Harry, T. O., M. D. Bajani, et al. (1994). "Hepatitis B virus infection among blood donors and pregnant women in Maiduguri, Nigeria." East Afr Med J 71(9): 596-7.	7875094	1207
Nigeria	Bada 1996*	Ilorin, Kwara State	Pregnant women; no selection in abstract (100)	females	295	21.7%	17.00%	26.40%	1.76%	0.1%	Bada, A. S., P. O. Olatunji, et al. (1996). "Hepatitis B surface antigenaemia in Ilorin, Kwara State, Nigeria." Cent Afr J Med 42(5): 139-41.	8771932	1211
Nigeria	Onakewhor 1997-1998	Benin City	Pregnant women determined through unlinked anonymous testing of volunteers at delivery at the University of Benin Teaching Hospital(320)	females	320	2.2%	0.59%	3.79%	1.99%	1.2%	Onakewhor, J. U., E. Offor, et al. (2001). "Maternal and neonatal seroprevalence of hepatitis B surface antigen (HBsAg) in Benin City, Nigeria." J Obstet Gynaecol 21(6): 583-6.	12521773	1218
Nigeria	Ikeme 2000-2004	Enugu (southeast)	Pregnant women evaluation of routine screening of all pregnant women at Univ Nigeria Teaching Hospital (7,581)	females	7,581	0.8%	0.63%	1.05%	2.02%	75.4%	Ikeme, A. C., H. U. Ezegwui, et al. (2006). "Sero prevalence of hepatitis B surface antigen (HBsAg) in pregnant women in Southeast Nigeria." Trop Doct 36(2): 128.	16611460	1225
Nigeria	Onah 2002-2004	Enugu (southeast)	HIV-negative pregnant women; women delivering at University of Nigeria Teaching Hospital; the next two HIV-negative women following an HIV-positive patient (100)	females	100	1.0%	-0.95%	2.95%	1.97%	0.8%	Onah, H. E., S. N. Obi, et al. (2007). "Pregnancy outcome in HIV-positive women in Enugu, Nigeria." J Obstet Gynaecol 27(3): 271-4.	17464809	1227
Nigeria	Sirisena 2002*	Jos	Healthy urban adults; apparently healthy persons who voluntarily turned up for the survey; female (231)	females	231	13.0%	8.66%	17.34%	1.80%	0.2%	Sirisena, N. D., M. O. Njoku, et al. (2002). "Carriage rate of hepatitis-B surface antigen (HBsAg) in an urban community in Jos, Plateau State, Nigeria." Niger Postgrad Med J 9(1): 7-10.	11932753	1216
Nigeria	Jombo 2003	Zawan village; northern	Inhabitants of rural village northern Nigeria; "churches, market square, and traditional heads were used to mobilize people in the community to our Lady of Apostles Hospital, Zawan, the only cottage hospital in the community; subjects recruited by a simple random sampling method; females (107)	females	107	10.3%	4.54%	16.06%	1.65%	0.1%	Jombo, G. T., D. Z. Egah, et al. (2005). "Hepatitis B virus infection in a rural settlement of northern Nigeria." Niger J Med 14(4): 425-8.	16353707	1223
Nigeria	Odaibo 2003*	Ibadan	Patients undergoing dental extraction; consecutive patients who volunteered; female (157)	females	157	14.0%	8.57%	19.43%	1.69%	0.1%	Odaibo, G. N., J. T. Arotiba, et al. (2003). "Prevalence of hepatitis B virus surface antigen (HBsAg) in patients undergoing extraction at the University College Hospital, Ibadan." Afr J Med Med Sci 32(3): 243-5.	15030081	1220

Nigeria	Lesi 2005	Lagos	Medical outpatient clinic attendees; HIV-negative; consecutively recruited for pts seeking routine medical exams; females (63)	females	63	7.9%	1.24%	14.56%	1.56%	0.1%	Lesi, O. A., M. O. Kehinde, et al. (2007). "Hepatitis B and C virus infection in Nigerian patients with HIV/AIDS." Niger Postgrad Med J 14(2): 129-33.	17599111	1228
Nigeria	Forbi 2008	Keffi	Students in a Nigerian university; recruited randomly from different academic disciplines; females (2008)	females	192	6.3%	2.83%	9.67%	1.87%	0.3%	Forbi, J., G. Pennap, et al. (2009). "Serological markers and risk factors for hepatitis B and hepatitis C viruses among students in a Nigerian university." East Afr J Public Health 6(2): 152-5.	20000021	1233
Nigeria	Akani 2005*	Port Harcourt	Pregnant women; serial recruitment of women attending prenatal clinic; (600)	females	600	4.3%	2.68%	5.92%	1.99%	1.2%	Akani, C. I., A. C. Ojule, et al. (2005). "Sero-prevalence of hepatitis B surface antigen (HBsAg) in pregnant women in Port Harcourt, Nigeria." Niger Postgrad Med J 12(4): 266-70.	16380737	1224
Nigeria	Obi 2005	Enugu (southeast)	Pregnant women screened as part of routine care at University of Nigeria teaching Hospital and Enugu State University Hospital (1,499)	females	1,499	4.6%	3.54%	5.66%	2.00%	2.8%	Obi, S. N., H. E. Onah, et al. (2006). "Risk factors for hepatitis B infection during pregnancy in a Nigerian obstetric population." J Obstet Gynaecol 26(8): 770-2.	17130027	1226
Nigeria	Onuzulike 2006	Owerri, Imo State	Pregnant women attending the antenatal clnic at the federal medical center Owerri (300)	females	300	10.3%	6.86%	13.74%	1.87%	0.3%	Onuzulike N, Ogueri Eo (2007) Sero-prevalence of hepatitis B surface antigen (HBsAg) in pregnant women in Owerri, Imo State of Nigeria. Res J Biol Sci 1(2):178-182	NPM	1235
Nigeria	Adoga 2008-2009	Abuja and part of Mararaba town (north central)	Apparently healthy urban Nigerias; participants in a vaccination study (prevaccination); most came from different parts of Nigeria; no selection described females (924)	females	924	4.6%	3.25%	5.95%	2.00%	1.7%	Adoga, M. P., S. D. Gyar, et al. "Hepatitis B virus infections in apparently healthy urban Nigerians: data from pre-vaccination tests." J Infect Dev Ctries 4(6): 397-400.	20601793	1234
Nigeria	Otu 1978-1982	Calabar (SE)	Out-patient clinic controls for HCC pts; pts attending outpatient clinics for minor ailments, non-icteric, no hx jaundice; generally healthy on exam (1978-1982)	both	400	7.5%	4.92%	10.08%	1.93%	0.5%	Otu, A. A. (1987). "Hepatocellular carcinoma, hepatic cirrhosis, and hepatitis B virus infection in Nigeria." Cancer 60(10): 2581-5.	2822223	1196
Nigeria	Kaine 1981*	Enugu	Healthy control children for SCD; presenting to general pediatric outpatient clinic with malaria, diarrhea, malaise, respiratory infections; hx jaundice or transfuson excluded (116)	both	116	4.3%	0.61%	7.99%	1.85%	0.2%	Kaine, W. N. and G. O. Okafor (1983). "Hepatitis B surface antigen in Nigerian children with sickle cell anaemia." J Trop Pediatr 29(1): 55-7.	6834464	1203
Nigeria	Fakunle 1981*	Zaria northern	Healthy children and adults attending outpatient clinics for minor ailments (111)	both	111	31.7%	23.04%	40.36%	1.35%	0.0%	Fakunle, Y. M., M. B. Abdurrahman, et al. (1981). "Hepatitis-B virus infection in children and adults in Northern Nigeria: a preliminary survey." Trans R Soc Trop Med Hyg 75(5): 626-9.	7330917	1205
Nigeria	Akinsola 1984*		Healthy controls for pts with chronic glomerulonephritides; no selection in abstract (180)	both	180	6.0%	2.53%	9.47%	1.87%	0.3%	Akinsola, A., O. Olusanya, et al. (1984). "Role of hepatitis Bs antigen in chronic glomerulonephritides in Nigerians." Afr J Med Med Sci 13(1-2): 33-9.	6087637	1201
Nigeria	Nasidi 1986*	Lagos and Bauchi state	Healthy children; no selection reported (252)	both	252	10.3%	6.55%	14.05%	1.85%	0.2%	Nasidi, A., T. O. Harry, et al. (1986). "Prevalence of hepatitis B infection markers in representative areas of Nigeria." Int J Epidemiol 15(2): 274-6.	3721692	1200
Nigeria	Brunengo 1987	Niamey	Surgical patients; Hopital National (blood bank and surgical department) (156)	both	156	14.1%	8.64%	19.56%	1.69%	0.1%	Brunengo, J. F., F. Morier, et al. (1988). "Cost of preventing transfusion of hepatitis B virus in hyperendemic areas." Lancet 1(8594): 1105.	2896931	1197
Nigeria	Amazigo 1990*	villages in Anambra state (Eastern)	Rural school chlidren; voluntary; no selection described (173)	both	173	8.7%	4.50%	12.90%	1.81%	0.2%	Amazigo, U. O. and A. B. Chime (1990). "Hepatitis-B virus infection in rural and urban populations of eastern Nigeria: prevalence of serological markers." East Afr Med J 67(8): 539-44.	2261867	1195

Nigeria	Amazigo 1990*	villages in Anambra state (Eastern)	Rural outpatients; voluntary; no selection described (113)	both	130	11.5%	6.02%	16.98%	1.68%	0.1%	Amazigo, U. O. and A. B. Chime (1990). "Hepatitis-B virus infection in rural and urban populations of eastern Nigeria: prevalence of serological markers." East Afr Med J 67(8): 539-44.	2261867	1195
Nigeria	Amazigo 1990*	University of Nigeria, Nsukka	Undergraduate students; voluntary; no selection described (319)	both	319	5.3%	2.84%	7.76%	1.94%	0.5%	Amazigo, U. O. and A. B. Chime (1990). "Hepatitis-B virus infection in rural and urban populations of eastern Nigeria: prevalence of serological markers." East Afr Med J 67(8): 539-44.	2261867	1195
Nigeria	Olatunji 1991*		Controls for pts with lymphoproliferative disorders (5,690)	both	5,690	7.7%	7.01%	8.39%	2.01%	6.6%	Olatunji, P. O., I. E. Okpala, et al. (1991). "Hepatitis B surface antigenaemia in patients with malignant lymphoproliferative disorders." Tokai J Exp Clin Med 16(3-4): 171-3.	1811350	1194
Nigeria	Bello 1992*	Jos	Controls for STD clinic attendees; no selection described (100)	both	100	11.0%	4.87%	17.13%	1.62%	0.1%	Bello, C. S., S. O. Opajobi, et al. (1992). "Hepatitis-B virus infection in sexually transmitted disease clinic attenders in an African city, (Jos, Nigeria)." Genitourin Med 68(5): 342.	1427810	1193
Nigeria	Onyekwere 1992	Lagos	Diabetics selected from population of outpatients at Lagos Univ Teaching Hospital (100)	both	100	20.0%	12.16%	27.84%	1.43%	0.1%	Onyekwere, C. A., E. E. Anomneze, et al. (2002). "Prevalence of serological markers of chronic hepatitis B virus infection in diabetics in the Lagos University Teaching Hospital, Lagos." Niger Postgrad Med J 9(3): 129-33.	12501266	1217
Nigeria	Onyekwere 1992	Lagos	Diabetics selected from population of outpatients at Lagos Univ Teaching Hospital (100)	both	80	17.5%	9.17%	25.83%	1.38%	0.0%	Onyekwere, C. A., E. E. Anomneze, et al. (2002). "Prevalence of serological markers of chronic hepatitis B virus infection in diabetics in the Lagos University Teaching Hospital, Lagos." Niger Postgrad Med J 9(3): 129-33.	12501266	1217
Nigeria	Onyekwere 1992	Lagos	Diabetic outpatients attending GI outpatient clinic at Lago University Teaching Hospital for dyspepsia or ulcer; enrolled first 80 consecutive pts who met criteria; no confirmed LD or significant ETOH(100)	both	100	20.0%	12.16%	27.84%	1.43%	0.1%	Onyekwere, C. A., E. E. Anomneze, et al. (2002). "Prevalence of serological markers of chronic hepatitis B virus infection in diabetics in the Lagos University Teaching Hospital, Lagos." Niger Postgrad Med J 9(3): 129-33.	12501266	1217
Nigeria	Onyekwere 1992	Lagos	Non-diabetic outpatients attending GI outpatient clinic at Lago University Teaching Hospital for dyspepsia or ulcer; enrolled first 80 consecutive pts who met criteria; no confirmed LD or significant ETOH (80)	both	80	17.5%	9.17%	25.83%	1.38%	0.0%	Onyekwere, C. A., E. E. Anomneze, et al. (2002). "Prevalence of serological markers of chronic hepatitis B virus infection in diabetics in the Lagos University Teaching Hospital, Lagos." Niger Postgrad Med J 9(3): 129-33.	12501266	1217
Nigeria	Obi 1993*	Lagos	Apparently healthy adults seen in lab for routine testing; no selection described (260)	both	260	9.2%	5.71%	12.75%	1.87%	0.3%	Obi, C. L., F. I. Esumeh, et al. (1993). "Prevalence of hepatitis B surface antigen (HBsAg) among apparently healthy human adults seen at the Central Public Health Laboratory, Yaba, Lagos." Cent Afr J Med 39(4): 81-3.	8306391	1209
Nigeria	Olubuyide 1993*	Ibadan (capital city)	Urban adults; non-hospitalized individuals from the urban population of Ibadan; in satisfactory condition on exam and no history of jaundice (189)	both	89	47.0%	36.63%	57.37%	1.18%	0.0%	Olubuyide, I. O., S. M. Maxwell, et al. (1993). "HBsAg and aflatoxins in sera of rural (Igbo-Ora) and urban (Ibadan) populations in Nigeria." Afr J Med Med Sci 22(4): 77-80.	7839935	1206
Nigeria	Olubuyide 1993*	Igbo-Ora	Rural adults; non-hospitalized individuals from the rural population of Igbo-Ora; in satisfactory condition on exam and no history of jaundice (189)	both	100	49.0%	39.20%	58.80%	1.23%	0.0%	Olubuyide, I. O., S. M. Maxwell, et al. (1993). "HBsAg and aflatoxins in sera of rural (Igbo-Ora) and urban (Ibadan) populations in Nigeria." Afr J Med Med Sci 22(4): 77-80.	7839935	1206
Nigeria	Mutimer 1994*	Benin City	Clinic patients; controls for SCD patients; pts attending clinics at hospital associated with Univ of Benin Med school (228)	both	228	5.9%	2.84%	8.96%	1.90%	0.3%	Mutimer, D. J., A. Olomu, et al. (1994). "Viral hepatitis in Nigeria--sickle-cell disease and commercial blood donors." QJM 87(7): 407-11.	7922292	1208

Nigeria	Olubuyide 1997*	Ibadan	Hospital controls for pts with HCC; patients admitted to hospital for illness other than neoplasm or liver disease (64)	both	64	50.0%	37.75%	62.25%	1.01%	0.0%	Olubuyide, I. O., B. Aliyu, et al. (1997). "Hepatitis B and C virus and hepatocellular carcinoma." Trans R Soc Trop Med Hyg 91(1): 38-41.	9093625	1212
Nigeria	Halim 1995	Benin City	Accident and emergency patients; consecutively attending the accident and emergency dept of University of Benin Teaching Hospital (150)	both	150	29.3%	22.02%	36.58%	1.49%	0.1%	Halim, N. K., U. Madukwe, et al. (2001). "Hepatitis B surface antigen and antibody to hepatitis C virus among accident and emergency patients." East Afr Med J 78(9): 480-3.	11921582	1215
Nigeria	Ejele 1996-2000	Port Harcourt	Hospital patients; results of HBsAg screening at the University of Port Harcourt Teaching Hospita (920)	both	920	28.4%	25.46%	31.28%	1.91%	0.4%	Ejele, O. A. and A. C. Ojule (2004). "The prevalence of hepatitis B surface antigen (HBsAg) among prospective blood donors and patients in Port Harcourt, Nigeria." Niger J Med 13(4): 336-8.	15523857	1221
Nigeria	Akenami 1997*	Calabar (SE), Warri (Niger delta), Ibadan (SW)	Malnourished children; collected from nursery schools vaccination centers (206)	both	206	27.0%	20.94%	33.06%	1.62%	0.1%	Akenami, F. O., M. Koskiniemi, et al. (1997). "Seroprevalence and coprevalence of HIV and HBsAg in Nigerian children with/without protein energy malnutrition." Acta Trop 64(3-4): 167-74.	9107364	1213
Nigeria	Akenami 1997*	Calabar (SE), Warri (Niger delta), Ibadan (SW)	Non-malnourished children; collected from nursery schools vaccination centers (20o)	both	200	20.0%	14.46%	25.54%	1.68%	0.1%	Akenami, F. O., M. Koskiniemi, et al. (1997). "Seroprevalence and coprevalence of HIV and HBsAg in Nigerian children with/without protein energy malnutrition." Acta Trop 64(3-4): 167-74.	9107364	1213
Nigeria	Angyo 1998	Jos	Control children (no sickle-cell); ; no selection described(501)	both	501	20.0%	16.50%	23.50%	1.87%	0.3%	Angyo, I. A., H. O. Okuonghae, et al. (1998). "Prevalence of hepatitis B surface antigen (HBsAg) in children with sickle cell anaemia." J Trop Pediatr 44(6): 376-7.	9972086	1214
Nigeria	Belo 2000*	Lagos	Hospital administrators Lagos; exclude for hx jaundice, blood transfusion, and liver disease (193)	both	193	15.0%	9.96%	20.04%	1.73%	0.1%	Belo, A. C. (2000). "Prevalence of hepatitis B virus markers in surgeons in Lagos, Nigeria." East Afr Med J 77(5): 283-5.	12858922	1219
Nigeria	Okpalugo 2008*	Lagos	Pre-op patients; randomly selected from patients admitted for emergency and elective surgical procedures Lagos University Teaching Hospital (100)	both	100	18.0%	10.47%	25.53%	1.47%	0.1%	Okpalugo, C. E. and O. O. Oguntibeju (2008). "Prevalence of human immunodeficiency virus and hepatitis B virus in preoperative patients: potential risk of transmission to health professionals." Pak J Biol Sci 11(2): 298-301.	18817208	1230
Nigeria	Ola 2008*		Healthy Nigerian adults (74)	both	74	39.2%	28.08%	50.32%	1.11%	0.0%	Ola, S. O., D. O. Olaleye, et al. (2008). "Serology of HBV and its clinical implications among Nigerian subjects." Trop Gastroenterol 29(3): 163-6.	19115609	1232
Nigeria	Ola 2008*	Ibadan	Traders; controls for butchers; selected by multistage statified sampling (180)	both	180	3.3%	0.69%	5.91%	1.93%	0.5%	Ola, S. O., J. A. Otegbayo, et al. (2008). "Risk of hepatitis B virus in the slaughter house." Trop Doct 38(4): 249-50.	18820203	1231
				total studies	59	28,167			100.00%	100.00%			
* indicates publication year; survey year not reported				males	9								
				females	21								
				both	29								

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Table 80: Summary of Surveys Included in Meta-Analysis: Ghana Western Africa

Country	Study (survey year*)	Region	Population and sampling method	Sex	Sample (n)	HBsAg positive (%)	lower 95% CI	upper 95% CI	RE weight (%)	FE weight (%)	Reference	Access No	Ref No.
Ghana	Martinson 1994	rural Ashanti-Akim North district	Children; multistage sampling; random sample of all school-going children in the district; ; exclude married; male (392)	males	392	18.6%	14.75%	22.45%	11.37%	6.1%	Martinson, F. E., K. A. Weigle, et al. (1996). "Seroepidemiological survey of hepatitis B and C virus infections in Ghanaian children." J Med Virol 48(3): 278-83.	8801290	1179
Ghana	Martinson 1994	rural Ashanti-Akim North district	Children; multistage sampling; random sample of all school-going children in the district; ; exclude married; female (411)	females	411	13.2%	9.93%	16.47%	12.03%	8.5%	Martinson, F. E., K. A. Weigle, et al. (1996). "Seroepidemiological survey of hepatitis B and C virus infections in Ghanaian children." J Med Virol 48(3): 278-83.	8801290	1179
Ghana	Acquaye 1994*	Accra	Pregnant women Accra; women referred for antenatal testing (692)	females	692	6.4%	4.58%	8.22%	13.41%	27.2%	Acquaye, J. K. and J. A. Mingle (1994). "Hepatitis B viral markers in Ghanaian pregnant women." West Afr J Med 13(3): 134-7.	7841099	1178
Ghana	Apea-Kubi 2000-2001	Accra	Non-pregnant women attending gyn clinic Accra; University of Ghana Medical School; largest hospital in the country (223)	females	223	21.5%	16.11%	26.89%	9.58%	3.1%	Apea-Kubi, K. A., S. Yamaguchi, et al. (2006). "HTLV-1 and other viral sexually transmitted infections in antenatal and gynaecological patients in Ghana." West Afr J Med 25(1): 17-21.	16722353	1181
Ghana	Apea-Kubi 2000-2001	Accra	Pregnant women Accra; antenatal clinics at Korle-Bu Teaching Hospital; University of Ghana Medical School; largest hospital in the country (294)	females	294	13.3%	9.42%	17.18%	11.34%	6.0%	Apea-Kubi, K. A., S. Yamaguchi, et al. (2006). "HTLV-1 and other viral sexually transmitted infections in antenatal and gynaecological patients in Ghana." West Afr J Med 25(1): 17-21.	16722353	1181
Ghana	Damale 2005*	Accra	Pregnant women; women at Korle Bu Teaching Hospital; randomly selected (638)	females	638	10.5%	8.12%	12.88%	12.94%	16.0%	Damale, N. K., A. T. Lassey, et al. (2005). "Hepatitis B virus seroprevalence among parturients in Accra, Ghana." Int J Gynaecol Obstet 90(3): 240-1.	16005878	1180
Ghana	Candotti 2007*	Kumasi	Pregnant women; samples collected at delivery at Dept OBGyn Komfor Anokye teaching Hosptial (1,368)	females	1,368	12.6%	10.84%	14.36%	13.46%	29.3%	Candotti, D., K. Danso, et al. (2007). "Maternofetal transmission of hepatitis B virus genotype E in Ghana, west Africa." J Gen Virol 88(Pt 10): 2686-95.	17872520	1183
Ghana	Manzardo 2000-2004	migants to Spain	Migrants from Ghana to Spain; screened at the migrant clinic at Unit of Tropical Medicine and International health 'Drassanes" of Barcelona; pts referred by various NGOs and orgs (81)	both	92	16.3%	8.75%	23.85%	7.32%	1.6%	Manzardo, C., B. Trevino, et al. (2008). "Communicable diseases in the immigrant population attended to in a tropical medicine unit: epidemiological aspects and public health issues." Travel Med Infect Dis 6(1-2): 4-11.	18342267	1184
Ghana	Dash 2001	Ashanti region (predominantly agricultural)	Healthy residents of Ashanti region; voluntary; Health Director introduced the investigators to the village leaders and villagers; no selection method or response rate reported (105)	both	105	12.4%	6.10%	18.70%	8.56%	2.3%	Dash, B., E. Afriyie-Gyawu, et al. (2007). "Determinants of the variability of aflatoxin-albumin adduct levels in Ghanaians." J Toxicol Environ Health A 70(1): 58-66.	17162498	1182
			total studies	9	4,215				100.00%	100.00%			
* indicates publication year; survey year not reported			males	1									
			females	6									
			both	2									

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Table 81: Summary of Surveys Included in Meta-Analysis: Liberia Western Africa

Country	Study (survey year*)	Region	Population and sampling method	Sex	Sample (n)	HBsAg positive (%)	lower 95% CI	upper 95% CI	RE weight (%)	FE weight (%)	Reference	Access No	Ref No.
Liberia	Prince 1978	22 vilages in Grand Cape Mont	New mothers; purpose of study presented at town meeting; participation voluntary; no participation rate reported (436)	females	436	7.6%	5.09%	10.05%	15.83%	27.3%	Prince, A. M., T. White, et al. (1981). "Epidemiology of hepatitis B infection in Liberian infants." Infect Immun 32(2): 675-80.	7251143	1192
Liberia	Lifson 1999	migrants to US	Refugees to Minnesota; All refugess requested to have health assessment and screening tests within 90 days (352)	both	352	15.0%	11.27%	18.73%	15.08%	12.1%	Lifson, A. R., D. Thai, et al. (2002). "Prevalence of tuberculosis, hepatitis B virus, and intestinal parasitic infections among refugees to Minnesota." Public Health Rep 117(1): 69-77.	12297684	1188
Liberia	Rein 2006-2008	migrants to US	Refugees arriving in the US 2006-2008; information from states with an active refugee health coordinator (433)	both	433	12.2%	9.12%	15.28%	15.50%	17.7%	Rein DB, Lesesne SB, O'Fallon A, Weinbaum CM (2009) Prevalence of hepatitis B surface antigen among refugees entering the United States between 2006 and 2008. Hepatology. 2010 Feb;51(2):431-4	19902482	229
Liberia	Neppert 1973	Harbel; Bong Town; Yekepa	Individuals who lived in settlements of agricultural and iron ore mining companies: Firestone Plantations, Bong Mining Co; Liberian American Swedish Minerals Co (430)	both	430	17.0%	13.45%	20.55%	15.20%	13.3%	Neppert, J., S. Gohring, et al. (1986). "No evidence of LAV infection in the Republic of Liberia, West Africa, in the year 1973." Blut 53(2): 115-7.	3015288	1189
Liberia	Prince 1978	22 vilages in Grand Cape Mont	Infants and young children; purpose of study presented at town meeting; participation voluntary; no participation rate reported (617)	both	617	12.8%	10.16%	15.44%	15.75%	24.2%	Prince, A. M., T. White, et al. (1981). "Epidemiology of hepatitis B infection in Liberian infants." Infect Immun 32(2): 675-80.	7251143	1192
Liberia	Holzer 1980-1981	Bong countty; central	Residents and outpatients without schistosomiasis from three villages in Bong county; central Liberia; randomly selected (105)	both	57	18.0%	8.03%	27.97%	9.94%	1.7%	Holzer, B., K. Saladin, et al. (1983). "The impact of schistosomiasis among rural populations in Liberia." Acta Trop 40(3): 239-59.	6138975	1190
Liberia	Goudsmidt 1984*	isolated Gbawein and Wroughbarh Clan region of Grand Bassa County	Epileptics, their non-epileptic relatives, and non-epileptic controls; no selection in abstract (201)	both	201	37.8%	31.10%	44.50%	12.70%	3.7%	Goudsmit, J., F. van der Waals, et al. (1984). "Infections with the hepatitis B virus associated delta agent in an isolated West-African community." J Trop Med Hyg 87(6): 257-62.	6534990	1191
				total studies	7	2,526			100.00%	100.00%			
				males	0								
				females	1								
				both	6								

* indicates publication year; survey year not reported

Table 82: Summary of Surveys Included in Meta-Analysis: Cape Verde Western Africa

Country	Study (survey year*)	Region	Population and sampling method	Sex	Sample (n)	HBsAg positive (%)	lower 95% CI	upper 95% CI	RE weight (%)	FE weight (%)	Reference	Access No	Ref No.
Cape Verde	Haditsch 1986		Haditsch 1986; residents of Cape Verde; no selection described; females (90)	females	90	3.3%	-0.39%	6.99%	58.72%	72.2%	Haditsch, M., H. Withalm, et al. (1988). "[Hepatitis B studies on the Cape Verde Islands]." Geogr Med Suppl 1: 115-24.	3169552	1375
Cape Verde	Haditsch 1986		Haditsch 1986; residents of Cape Verde; no selection described; males (89)	males	89	9.0%	3.05%	14.93%	41.28%	27.8%	Haditsch, M., H. Withalm, et al. (1988). "[Hepatitis B studies on the Cape Verde Islands]." Geogr Med Suppl 1: 115-24.	3169552	1375
				total studies	2	179			100.00%	100.00%			
* indicates publication year; survey year not reported				males	1								
				females	1								
				both	0								

Table 83: Summary of Surveys Included in Meta-Analysis: Sierra Leone Western Africa

Country	Study (survey year*)	Region	Population and sampling method	Sex	Sample (n)	HBsAg positive (%)	lower 95% CI	upper 95% CI	RE weight (%)	FE weight (%)	Reference	Access No	Ref No.
Sierra Leone	Torlesse 1995-1996	rural stie in Kaffu-Bollum Chiefdom and peri-urban sites around Freetown	Pregnant women attending antenatal clinics in rural and peri-urban sites (179)	females	179	11.2%	6.58%	15.82%	27.54%	21.3%	Torlesse, H., I. M. Wurie, et al. (1997). "The use of immunochromatography test cards in the diagnosis of hepatitis B surface antigen among pregnant women in West Africa." Br J Biomed Sci 54(4): 256-9.	9624735	1378
Sierra Leone	Wurie 2005*	Harbel; Bong Town; Yekepa	Pregnant women middle and high socio-economic status (302)	females	302	6.2%	3.48%	8.92%	31.74%	61.6%	Wurie, I. M., A. T. Wurie, et al. (2005). "Sero-prevalence of hepatitis B virus among middle to high socio-economic antenatal population in Sierra Leone." West Afr J Med 24(1): 18-20.	15909704	1379
Sierra Leone	Manzardo 2000-2004	migrants to Spain	Migrants from Sierra Leone to Spain; screened at the migrant clinic at Unit of Tropical Medicine and International Health; pts referred by various NGOs and orgs (133)	both	133	15.8%	9.60%	22.00%	23.70%	11.9%	Manzardo, C., B. Trevino, et al. (2008). "Communicable diseases in the immigrant population attended to in a tropical medicine unit: epidemiological aspects and public health issues." Travel Med Infect Dis 6(1-2): 4-11.	18342267	1184
Sierra Leone	Hodges 1998*	Freetown	Primary school children 6-12 yo; middle class children at a governments school; voluntary (66)	both	66	18.2%	8.89%	27.51%	17.01%	5.3%	Hodges, M., E. Sanders, et al. (1998). "Seroprevalence of hepatitis markers; HAV, HBV, HCV and HEV amongst primary school children in Freetown, Sierra Leone." West Afr J Med 17(1): 36-7.	9643158	1377
				total studies	4	680			100.00%	100.00%			
				males	0								
				females	2								
				both	2								

* indicates publication year; survey year not reported

Table 84: Summary of Surveys Included in Meta-Analysis: Senegal Western Africa

Country	Study (survey year*)	Region	Population and sampling method	Sex	Sample (n)	HBsAg positive (%)	lower 95% CI	upper 95% CI	RE weight (%)	FE weight (%)	Reference	Access No	Ref No.
Senegal	Sobeslavsky 1980*	Dakar	Apparently healthy non-institutionalized population of Dakar male (838)	males	838	12.3%	10.08%	14.52%	6.17%	3.0%	Sobeslavsky O. (1980) Prevalence of markers of hepatitis B virus infection in various countries: a WHO collaborative study. 58(4):621-8	6969134	371
Senegal	Barin 1981*	Niakhar region	Infants < 2 yrs Niakhar rural district; from the randomly selected HB vaccine trial villages and DT-polio control villages; blood drawn during regular pediatrics survey sessions; males (920)	males	920	7.7%	6.00%	9.44%	6.29%	5.0%	Barin, F., J. Perrin, et al. (1981). "Cross-sectional and longitudinal epidemiology of hepatitis B in Senegal." Prog Med Virol 27: 148-62.	6972051	1239
Senegal	Barin 1981*	Niakhar region	Children 2-13 yrs Niakhar rural district; from the randomly selected HB vaccine trial villages and DT-polio control villages; blood drawn during regular pediatrics survey sessions; males (214)	males	214	20.6%	15.18%	26.02%	4.98%	0.5%	Barin, F., J. Perrin, et al. (1981). "Cross-sectional and longitudinal epidemiology of hepatitis B in Senegal." Prog Med Virol 27: 148-62.	6972051	1239
Senegal	Yvonnet 1982-1986	Dakar	Healthy adults Dakar; no selection described; males (4,506)	males	4,506	16.2%	15.12%	17.28%	6.40%	12.8%	Yvonnet, B., P. Vincelot, et al. (1989). "Hepatitis B virus infection in lepromatous and tuberculoid patients from Senegal." Acta Leprol 7(1): 63-6.	2624077	1236
Senegal	Evans 1992-1993	all	Male soldiers on active duty in Armed Forces of Senegal; drawn from all ethnic groups and geographical regions (13,036)	males	13,036	20.0%	19.31%	20.69%	6.45%	31.5%	Evans, A. A., A. P. O'Connell, et al. (1998). "Geographic variation in viral load among hepatitis B carriers with differing risks of hepatocellular carcinoma." Cancer Epidemiol Biomarkers Prev 7(7): 559-65.	9681522	1242
Senegal	Marinier 1977-1980	Thies (2nd largest urban center in Senegal)	Pregnant women delivering at mother-child clinic; "only time and personnel available determined which women were selected"; (1,442)	females	1,442	9.8%	8.27%	11.33%	6.33%	6.3%	Marinier, E., V. Barrois, et al. (1985). "Lack of perinatal transmission of hepatitis B virus infection in Senegal, West Africa." J Pediatr 106(5): 843-9.	3998929	1238
Senegal	Sobeslavsky 1980*	Dakar	Apparently healthy non-institutionalized population of Dakar female (940)	females	940	9.4%	7.53%	11.27%	6.25%	4.3%	Sobeslavsky O. (1980) Prevalence of markers of hepatitis B virus infection in various countries: a WHO collaborative study. 58(4):621-8	6969134	371
Senegal	Barin 1981*	Niakhar region	Infants < 2 yrs Niakhar rural district; from the randomly selected HB vaccine trial villages and DT-polio control villages; blood drawn during regular pediatrics survey sessions; females (932)	females	932	7.2%	5.53%	8.85%	6.30%	5.4%	Barin, F., J. Perrin, et al. (1981). "Cross-sectional and longitudinal epidemiology of hepatitis B in Senegal." Prog Med Virol 27: 148-62.	6972051	1239
Senegal	Barin 1981*	Niakhar region	Children 2-13 yrs Niakhar rural district; from the randomly selected HB vaccine trial villages and DT-polio control villages; blood drawn during regular pediatrics survey sessions; females (146)	females	146	12.3%	6.97%	17.63%	5.02%	0.5%	Barin, F., J. Perrin, et al. (1981). "Cross-sectional and longitudinal epidemiology of hepatitis B in Senegal." Prog Med Virol 27: 148-62.	6972051	1239
Senegal	Yvonnet 1982-1986	Dakar	Healthy adults Dakar; no selection described; females (1,581)	females	1,581	13.1%	11.44%	14.76%	6.30%	5.4%	Yvonnet, B., P. Vincelot, et al. (1989). "Hepatitis B virus infection in lepromatous and tuberculoid patients from Senegal." Acta Leprol 7(1): 63-6.	2624077	1236
Senegal	Roingeard 1993	Dakar	Pregnant women seeking prenatal care at the OBGYN clinic at Le Dantec Hospital(1,442)	females	284	13.7%	9.70%	17.70%	5.57%	0.9%	Roingeard, P., A. Diouf, et al. (1993). "Perinatal transmission of hepatitis B virus in Senegal, west Africa." Viral Immunol 6(1): 65-73.	8476509	1241
Senegal	Manzardo 2000-2004	migants to Spain	Migrants from Senegal to Spain; screened at the migrant clinic; pts referred by various NGOs and orgs (81)	both	81	22.2%	13.15%	31.25%	3.52%	0.2%	Manzardo, C., B. Trevino, et al. (2008). "Communicable diseases in the immigrant population attended to in a tropical medicine unit: epidemiological aspects and public health issues." Travel Med Infect Dis 6(1-2): 4-11.	18342267	1184

Senegal	Feret 1977-1981	rural villages 200 km E of Dakar	Populations of two villages (3,034)	both	3,034	11.9%	10.75%	13.05%	6.39%	11.2%	Feret, E., B. Larouze, et al. (1987). "Epidemiology of hepatitis B virus infection in the rural community of Tip, Senegal." Am J Epidemiol 125(1): 140-9.	3788943	1237
Senegal	Excler 1993	Kolda	Children in medical zone where vaccination offered (229)	both	229	3.9%	1.39%	6.41%	6.09%	2.4%	Excler, J. L., B. Yvonnet, et al. (1995). "[Inclusion of hepatitis B vaccination in the Expanded Program of Immunization: feasibility study in the medical region of Kolda (Senegal)]." Sante 5(1): 37-42.	7894828	1240
Senegal	Excler 1993	Kolda	Children in medical zone where vaccination NOT offered (211)	both	211	10.9%	6.69%	15.11%	5.49%	0.8%	Excler, J. L., B. Yvonnet, et al. (1995). "[Inclusion of hepatitis B vaccination in the Expanded Program of Immunization: feasibility study in the medical region of Kolda (Senegal)]." Sante 5(1): 37-42.	7894828	1240
Senegal	Sall Diallo 1999	Dakar and Thies	Children <5 yrs old; preschools and other establishments for children Dakar (1,193)	both	2,009	12.1%	10.67%	13.53%	6.35%	7.3%	Sall Diallo, A., M. Sarr, et al. (2004). "[Hepatitis B infection in infantile population of Senegal]." Dakar Med 49(2): 136-42.	15786625	1243
Senegal	Sall Diallo 1999	Dakar and Thies	Newborns from maternity hospitals and health centers Dakar (1,193)	both	953	17.2%	14.80%	19.60%	6.12%	2.6%	Sall Diallo, A., M. Sarr, et al. (2004). "[Hepatitis B infection in infantile population of Senegal]." Dakar Med 49(2): 136-42.	15786625	1243
				total studies	17	31,356			100.00%	100.00%			
* indicates publication year; survey year not reported				males	5								
				females	6								
				both	6								

Table 85: Summary of Surveys Included in Meta-Analysis: Guinea Western Africa

Country	Study (survey year*)	Region	Population and sampling method	Sex	Sample (n)	HBsAg positive (%)	lower 95% CI	upper 95% CI	RE weight (%)	FE weight (%)	Reference	Access No	Ref No.
Guinea	Ivanov, 1987*		Apparently normal urban and rural resident; no selection in abstract; males (897)	males	897	15.9%	13.51%	18.29%	43.54%	45.2%	Ivanov, A. P., O. E. Ivanova, et al. (1990). "[The results of serological research to determine hepatitis A and B markers in the blood sera of the population of the Republic of Guinea]." Vopr Virusol 35(5): 382-4.	2176420	1185
Guinea	Diallo, 1993	Kindia region of lower Guinea	Males living in the Kindia region; recruited from a number of vlllages; three main ethnic goups (Mandinka, Fula, Soussa); no selection or response rate reported (75)	males	75	14.7%	6.69%	22.71%	4.54%	4.0%	Diallo, M. S., A. Sylla, et al. (1995). "Prevalence of exposure to aflatoxin and hepatitis B and C viruses in Guinea, West Africa." Nat Toxins 3(1): 6-9.	7749585	1186
Guinea	Ivanov, 1987*		Apparently normal urban and rural residents; no selection in abstr females (290)	females	290	14.1%	10.09%	18.11%	17.30%	16.1%	Ivanov, A. P., O. E. Ivanova, et al. (1990). "[The results of serological research to determine hepatitis A and B markers in the blood sera of the population of the Republic of Guinea]." Vopr Virusol 35(5): 382-4.	2176420	1185
Guinea	Ivanov, 1987*	10 prefectures	General population; "subjects randomly selected from 10 prefectures"; no further info (765)	both	765	18.2%	15.47%	20.93%	34.63%	34.6%	Ivanov, A. P., O. E. Ivanova, et al. (1990). "[The results of serological research to determine hepatitis A and B markers in the blood sera of the population of the Republic of Guinea]." Vopr Virusol 35(5): 382-4.	2176420	1185
			total studies	4	2,027				100.00%	100.00%			
* indicates publication year; survey year not reported			males	2									
			females	1									
			both	1									