

## Supplementary material

Table S1. Inter-rater agreement in Senegal (Groups 1, 2 & 3; n = 361)

		Examiner 2		Kappa (95% CI)
		Positive	Negative	
SD Bioline (n=361)	Examiner 1 Positive	41	4	0.90 (0.83-0.97)
	Examiner 1 Negative	4	312	
Insight (n=361)	Examiner 1 Positive	45	5	0.81 (0.73-0.90)
	Examiner 1 Negative	12	299	
OneStep (n=334)	Examiner 1 Positive	59	2	0.96 (0.92-0.99)
	Examiner 1 Negative	2	271	

Table S2. Performance of rapid diagnostic tests (RDTs) for HBeAg detection by laboratory staff in Senegal (Group 1 and Group 2)

		Senegalese samples			
		Group 1: HBeAg-positive cases (n=48)		Group 2: HBeAg-negative controls (n=196)	
		Sensitivity	95% CI	Specificity	95% CI
SD Bioline	Reader 1	31.3% (15/48)	18.7-46.3	100% (196/196)	98.1-100
	Reader 2	29.2% (14/48)	17.0-44.1	100% (196/196)	98.1-100
Insight	Reader 1	31.3% (15/48)	18.7-46.3	100% (196/196)	98.1-100
	Reader 2	33.3% (16/48)	20.4-48.4	100% (196/196)	98.1-100
OneStep	Reader 1	43.9% (18/41)	28.5-60.3	97.9% (183/187)	94.6-99.4
	Reader 2	41.5% (17/41)	26.3-57.9	98.4% (184/187)	95.4-99.7

Table S3. Proportion of HBeAg-positive samples successfully detected by each RDT at various qHBeAg levels in Senegal (all the samples in Group 1 and 68 HBeAg-positive samples in Group 3; n=116)

qHBeAg (log <sub>10</sub> PEIU/ml)	SD Bioline (n=111)*			Insight (n=101)*			OneStep (n=104)*		
	No. tested	No. positive	%	No. tested	No. positive	%	No. tested	No. positive	%
≥3.0	14	11	79	14	12	86	13	13	100
2.5 – 3.0	19	17	90	19	18	95	19	19	100
2.0 – 2.5	14	11	79	14	12	86	14	13	93
1.5 – 2.0	13	1	8	7	1	14	12	6	50
1.0 – 1.5	14	0	0	10	0	0	12	2	17
0.5 – 1.0	15	0	0	15	0	0	14	2	14
<0.5	22	0	0	22	0	0	20	0	0

\* Discordant results between two laboratory staff were excluded.

Table S4. Prevalence of HBeAg by different HBeAg assays at various HBV DNA levels in Senegal (Groups 1, 2 & 3; n = 361)

HBV DNA (log10 IU/ml)	SD Bioline (n=353)*			Insight (n=344)*			OneStep (n=330)*			Architect (n=361)		
	No. tested	No. positive	%	No. tested	No. positive	%	No. tested	No. positive	%	No. tested	No. positive	%
≥8.0	59	29	49	58	33	57	56	36	64	65	55	85
7.0-8.0	57	7	12	50	7	14	49	16	33	57	35	61
6.0-7.0	42	5	12	41	5	12	40	4	10	44	20	46
5.0-6.0	17	0	0	17	0	0	17	0	0	17	2	12
4.0-5.0	17	0	0	17	0	0	17	0	0	17	1	6
3.0-4.0	71	0	0	71	0	0	67	2	3	71	2	3
2.0-3.0	58	0	0	58	0	0	54	1	2	58	0	0
<2.0	32	0	0	32	0	0	30	0	0	32	1	3

\* Discordant results between two laboratory staff were excluded.

Figure S1. Correlation between qHBeAg (log PEIU/ml) and age (years) in HBeAg-positive samples in Senegal (n=116)

