

Supplementary Table 1. Acquisition of culturable *H. influenzae* in children (Total Vaccinated Cohort).

	PHiD-CV group			7vCRM group			Vaccine efficacy
	n	N	% (95% CI)	n	N	% (95% CI)	% (95% CI)
Any <i>H. influenzae</i>^a							
Age 11–13 mo	172	512	33.6 (29.5 to 37.9)	83	256	32.4 (26.7 to 38.5)	-3.6 (-36.3 to 20.7)
Age 14–16 mo	95	514	18.5 (15.2 to 22.1)	58	257	22.6 (17.6 to 28.2)	18.1 (-15.6 to 41.5)
Age 18–20 mo	126	510	24.7 (21.0 to 28.7)	64	256	25.0 (19.8 to 30.8)	1.2 (-35.7 to 27.4)
Age 23–25 mo	148	509	29.1 (25.2 to 33.2)	71	254	28.0 (22.5 to 33.9)	-4.0 (-40.1 to 22.1)
Across all visits	391	515	75.9 (72.0 to 79.6)	199	258	77.1 (71.5 to 82.1)	1.6 (-17.3 to 17.2)
Nontypeable <i>H. influenzae</i>^a							
Age 11–13 mo	161	512	31.4 (27.4 to 35.7)	78	255	30.6 (25.0 to 36.6)	-2.8 (-36.5 to 22.0)
Age 14–16 mo	80	513	15.6 (12.6 to 19.0)	45	257	17.5 (13.1 to 22.7)	10.9 (-31.3 to 38.9)
Age 18–20 mo	88	509	17.3 (14.1 to 20.9)	45	254	17.7 (13.2 to 23.0)	2.4 (-43.0 to 32.6)
Age 23–25 mo	104	505	20.6 (17.1 to 24.4)	61	254	24.0 (18.9 to 29.8)	14.2 (-19.6 to 38.1)
Across all visits	367	515	71.3 (67.1 to 75.1)	190	258	73.6 (67.8 to 78.9)	3.2 (-15.9 to 19.0)

For each visit, N indicates the number of subjects with swabs cultured and n (%) indicates the number (percentage) of subjects with new acquisition of the specified bacterium. For across all visits, N indicates the number of subjects with swabs cultured after at least one visit; n (%) indicates the number (percentage) of subjects with new acquisition of the specified bacterium after at least one visit. Vaccine efficacy of PHiD-CV compared to 7vCRM was estimated as $([1 - \text{relative risk}] \times 100)$.^a Data include only results from samples confirmed by PCR as *H. influenzae* after discrimination from *H. haemolyticus*. Samples with invalid test results were excluded from the analysis. Abbreviations: mo, months; CI, confidence interval.

Supplementary Table 2. Link between conventional culture^a and PCR assay^b results across visits (Total Vaccinated Cohort).

	PHiD-CV + DTPa-HBV-IPV/Hib group		PHiD-CV + DTPa-IPV-Hib group		7vCRM + DTPa-IPV-Hib group	
	N=1042		N=1058		N=1039	
<i>H. influenzae</i>^{a,b}	Culture		Culture		Culture	
qPCR	Positive	Negative	Positive	Negative	Positive	Negative
Positive	629 (60%)	118 (11%)	632 (60%)	120 (11%)	608 (59%)	114 (11%)
Negative	24 (2%)	271 (26%)	23 (2%)	283 (27%)	25 (2%)	292 (28%)
	N=1106		N=1113		N=1112	
<i>S. pneumoniae</i>^{a,b}	Culture		Culture		Culture	
qPCR	Positive	Negative	Positive	Negative	Positive	Negative
Positive	532 (48%)	265 (24%)	547 (49%)	241 (22%)	517 (47%)	240 (22%)
Negative	4 (0%)	305 (28%)	9 (1%)	316 (28%)	4 (0%)	351 (32%)
	N=797		N=788		N=756	
Serotype 19A	Culture		Culture		Culture	
PCR	Positive	Negative	Positive	Negative	Positive	Negative
Positive	78 (10%)	86 (11%)	79 (10%)	79 (10%)	80 (11%)	62 (8%)
Negative	1 (0%)	632 (80%)	2 (0%)	628 (80%)	2 (0%)	612 (81%)

Data are n (%), indicating the number (percentage) of swab samples with the identified category. N indicates the number of swab samples with results available for both culture and PCR. ^a Culture indicates results from the primary culture of the original nasopharyngeal swab (and for *H. influenzae* confirmed by PCR as true *H. influenzae*). ^b qPCR indicates results from real-time qPCR targeting the IgtC gene with values of ≥ 200 genomic equivalents per millilitre (GE/mL) defined as positive for *H. influenzae*; values of ≥ 900 GE/mL of IytA defined as positive for *S. pneumoniae*. ^c PCR indicates results from serotype-specific PCR for serotype 19A; only samples that were tested positive for IytA by qPCR and samples with available conventional culture results (including serotyping) were included.

Supplementary Table 3. Acquisition of culturable *S. pneumoniae* in children (Total Vaccinated Cohort).

	PHiD-CV group			7vCRM group		
	n	N	% (95% CI)	n	N	% (95% CI)
Any <i>S. pneumoniae</i>^a						
Age 11–13 mo	217	514	42.2 (37.9 to 46.6)	107	258	41.5 (35.4 to 47.7)
Age 14–16 mo	181	514	35.2 (31.1 to 39.5)	90	257	35.0 (29.2 to 41.2)
Age 18–20 mo	233	514	45.3 (41.0 to 49.7)	125	258	48.4 (42.2 to 54.7)
Age 23–25 mo	245	512	47.9 (43.5 to 52.3)	110	257	42.8 (36.7 to 49.1)
Across all visits	457	515	88.7 (85.7 to 91.3)	224	258	86.8 (82.1 to 90.7)
Serotypes common to both vaccines^b						
Age 11–13 mo	25	514	4.9 (3.2 to 7.1)	12	257	4.7 (2.4 to 8.0)
Age 14–16 mo	15	514	2.9 (1.6 to 4.8)	7	257	2.7 (1.1 to 5.5)
Age 18–20 mo	19	514	3.7 (2.2 to 5.7)	6	258	2.3 (0.9 to 5.0)
Age 23–25 mo	9	512	1.8 (0.8 to 3.3)	6	257	2.3 (0.9 to 5.0)
Across all visits	59	515	11.5 (8.8 to 14.5)	27	258	10.5 (7.0 to 14.9)
Serotype 19A						
Age 11–13 mo	29	514	5.6 (3.8 to 8.0)	16	257	6.2 (3.6 to 9.9)
Age 14–16 mo	28	514	5.4 (3.6 to 7.8)	16	257	6.2 (3.6 to 9.9)
Age 18–20 mo	45	514	8.8 (6.5 to 11.5)	22	258	8.5 (5.4 to 12.6)
Age 23–25 mo	22	512	4.3 (2.7 to 6.4)	14	257	5.4 (3.0 to 9.0)
Across all visits	114	515	22.1 (18.6 to 26.0)	65	258	25.2 (20.0 to 31.0)

For each visit, N indicates the number of subjects with swabs cultured and n (%) indicates the number (percentage) of subjects with new acquisition of the specified bacterium. For across all visits, N indicates the number of subjects with swabs cultured after at least one visit and n (%) indicates the number (percentage) of subjects with new acquisition of the specified bacterium after at least one visit. ^a Data include any *S. pneumoniae* as identified by conventional culture methods, excluding nontypeable strains. ^b Pneumococcal serotypes common to both vaccines are serotypes 4, 6B, 9V, 14, 18C, 19F, and 23F. Abbreviations: mo, months; CI, confidence interval.

Supplementary Table 4. Serotype-specific nasopharyngeal colonisation of culturable *S. pneumoniae* in children across all visits (Total Vaccinated Cohort).

	PHiD-CV group N=520		7vCRM group N=260	
	n	% (95% CI)	n	% (95% CI)
Serotypes common to both vaccines				
4	1	0.2 (0.0 to 1.1)	0	0.0 (0.0 to 1.4)
6B	28	5.4 (3.6 to 7.7)	8	3.1 (1.3 to 6.0)
9V	3	0.6 (0.1 to 1.7)	4	1.5 (0.4 to 3.9)
14	3	0.6 (0.1 to 1.7)	1	0.4 (0.0 to 2.1)
18C	11	2.1 (1.1 to 3.8)	4	1.5 (0.4 to 3.9)
19F	30	5.8 (3.9 to 8.1)	15	5.8 (3.3 to 9.3)
23F	25	4.8 (3.1 to 7.0)	13	5.0 (2.7 to 8.4)
Additional serotypes in PHiD-CV				
1	2	0.4 (0.0 to 1.4)	2	0.8 (0.1 to 2.8)
5	2	0.4 (0.0 to 1.4)	1	0.4 (0.0 to 2.1)
7F	2	0.4 (0.0 to 1.4)	6	2.3 (0.9 to 5.0)
Non-PHiD-CV serotypes^a				
3	24	4.6 (3.0 to 6.8)	17	6.5 (3.9 to 10.3)
6A	44	8.5 (6.2 to 11.2)	16	6.2 (3.6 to 9.8)
6C	49	9.4 (7.1 to 12.3)	17	6.5 (3.9 to 10.3)
10A	49	9.4 (7.1 to 12.3)	21	8.1 (5.1 to 12.1)
11A	83	16.0 (12.9 to 19.4)	40	15.4 (11.2 to 20.4)
15B	43	8.3 (6.0 to 11.0)	22	8.5 (5.4 to 12.5)
15C	36	6.9 (4.9 to 9.5)	24	9.2 (6.0 to 13.4)
16F	66	12.7 (10.0 to 15.9)	25	9.6 (6.3 to 13.9)
19A	146	28.1 (24.3 to 32.2)	80	30.8 (25.2 to 36.8)
21	38	7.3 (5.2 to 9.9)	21	8.1 (5.1 to 12.1)
22F	37	7.1 (5.1 to 9.7)	16	6.2 (3.6 to 9.8)
23A	50	9.6 (7.2 to 12.5)	26	10.0 (6.6 to 14.3)
23B	49	9.4 (7.1 to 12.3)	17	6.5 (3.9 to 10.3)
33F	35	6.7 (4.7 to 9.2)	24	9.2 (6.0 to 13.4)
35B	27	5.2 (3.4 to 7.5)	18	6.9 (4.2 to 10.7)
35F	35	6.7 (4.7 to 9.2)	16	6.2 (3.6 to 9.8)

N indicates the number of subjects with swab cultured after at least one visit and n (%) indicates the number (percentage) of subjects with swabs positive for the specified serotype after at least one visit. Abbreviation: CI, confidence interval. ^a Data included are all serotypes not included in PHiD-CV with a prevalence of at least 5% across visits in either group.