

**Table S5. Carriage prevalence, OM incidence, and progression rate by season.**

		Rate (95% CrI) <sup>†</sup>		Reduction in progression (95% CrI)
		Pre-PCV7 rollout	Post-PCV13 rollout	$1 - \text{Rate}_{\text{Pre}}/\text{Rate}_{\text{Post}}$
<b>PCV7/13 serotypes</b>				
Bedouin children				
0-11m				
	April-November	20.9 (16.5, 26.6)	3.3 (1.8, 5.8)	<b>0.84 (0.71, 0.92)</b>
	December-March	49.6 (38.1, 65.1)	5.8 (3.1, 10.3)	<b>0.88 (0.78, 0.94)</b>
12-35m				
	April-November	3.3 (2.8, 3.8)	3.2 (1.8, 5.3)	0.04 (-0.65, 0.46)
	December-March	6.1 (5.1, 7.3)	6.7 (3.7, 11.7)	-0.10 (-0.99, 0.40)
Jewish children				
0-11m				
	April-November	48.7 (34.9, 68.8)	16.8 (9.1, 31.0)	<b>0.66 (0.31, 0.83)</b>
	December-March	97.3 (67.4, 142.3)	23.0 (12.0, 44.4)	<b>0.76 (0.50, 0.89)</b>
12-35m				
	April-November	14.8 (11.8, 18.5)	6.9 (3.8, 12.4)	<b>0.53 (0.13, 0.75)</b>
	December-March	30.2 (22.8, 40.2)	17.4 (9.4, 31.8)	0.43 (-0.12, 0.71)
<b>Non-vaccine serotypes</b>				
Bedouin children				
0-11m				
	April-November	6.5 (5.0, 8.4)	2.6 (2.0, 3.3)	<b>0.60 (0.44, 0.72)</b>
	December-March	15.4 (11.6, 20.4)	4.5 (3.3, 6.1)	<b>0.71 (0.56, 0.81)</b>
12-35m				
	April-November	2.7 (2.2, 3.3)	2.2 (1.8, 2.8)	0.18 (-0.11, 0.40)
	December-March	5.0 (4.0, 6.2)	4.7 (3.5, 6.3)	0.06 (-0.37, 0.35)
Jewish children				
0-11m				
	April-November	8.2 (6.0, 11.1)	8.3 (6.3, 11.0)	-0.02 (-0.55, 0.33)
	December-March	16.3 (11.5, 23.1)	11.4 (8.0, 16.3)	0.30 (-0.15, 0.57)
12-35m				
	April-November	4.2 (3.1, 5.6)	3.2 (2.6, 4.0)	0.23 (-0.10, 0.47)
	December-March	8.6 (6.1, 12.0)	8.1 (6.1, 10.6)	0.06 (-0.46, 0.39)

<sup>†</sup>Due to lower number of observations within seasonal strata, we calculate rates within seasons pooling serotype-specific frequencies in carriage and disease according to vaccine types and non-vaccine type (in contrast to the serotype-specific estimates of the main analysis). Prior to PCV7 rollout, the relative rates of progression for in December-March (ref. April-November) were 2.37 (95%CrI: 1.77, 3.19) and 2.00 (1.37, 2.92) among Bedouin and Jewish children ages 0-11m, respectively, and 1.84 (1.54, 2.21) and 2.04 (1.49, 2.81) among Bedouin and Jewish children ages 12-35m; after rollout, relative rates in December-March (ref. April-November) were 1.74 (1.09, 2.78) and 1.37 (0.86, 2.18) among Bedouin and Jewish children ages 0-11m, and 2.13 (1.41, 3.19) and 2.51 (1.73, 3.65) among Bedouin and Jewish children ages 12-35m.