**Supplementary table 1: Number of cases vaccinated and unvaccinated and adjusted vaccine effectiveness for vaccination at any time for the 4,423 PPV23 ID cases by serotype.**

|  |  |  |  |
| --- | --- | --- | --- |
| Serotype | Unvaccinated | Vaccinated | VE (95% CI) |
| 1 | 21 | 31 | 7 (-75 to 50) |
| 3 | 177 | 396 | 2 (-21 to 21) |
| 4 | 10 | 9 | 55 (-18 to 83) |
| 5 | 2 | 2 | 48 (-302 to 93) |
| 6B | 8 | 21 | -10 (-155 to 53) |
| 7F | 117 | 137 | 39 (19 to 54) |
| 8 | 303 | 488 | 27 (11 to 39) |
| 9N | 174 | 200 | 50 (37 to 61) |
| 9V | 9 | 12 | 42 (-42 to 76) |
| 10A | 51 | 98 | 18 (-18 to 43) |
| 11A | 60 | 108 | 22 (-10 to 44) |
| 12F | 174 | 265 | 28 (10 to 43) |
| 14 | 11 | 14 | 38 (-42 to 73) |
| 15B/C | 40 | 62 | 36 (2 to 58) |
| 17F | 24 | 57 | 2 (-61 to 41) |
| 18C | 3 | 2 | 67 (-109 to 95) |
| 19F | 16 | 33 | 17 (-55 to 55) |
| 19A | 142 | 245 | 26 (6 to 42) |
| 20 | 30 | 46 | 43 (7 to 65) |
| 22F | 213 | 356 | 29 (13 to 42) |
| 23F | 8 | 17 | 17 (-97 to 65) |
| 33F | 89 | 142 | 33 (10 to 50) |