**Supplementary Material**

**Supplemental Figure 1 Secondary analysis of meningococcal carriage before (2014/15) and after (2018) the introduction of the MenACWY adolescent vaccination programme in August 2015**



LR - Logistic Regression; OR - Odds Ratio of carriage in 2018 compared with 2015 (bars represent 95% CI of the odds ratio); RFQ - Carriage Risk Factor Questionnaire. Figure shows ORs using: unadjusted LR; LR with sites as a co-variable (primary analysis); LR adjusting for clustering in schools; LR with site as a covariable and carriage RFQs included and; LR including only sites that were surveyed in both 2014/15 & 2018.

**Supplemental Table 2 Carriage by genogroup (gg) by study site**

|  |  |
| --- | --- |
| **2014/15** | **2018** |
|   | any Nm *n* (%) | gg C | gg W | gg Y | total participants | any Nm *n* (%) | gg C | gg W | gg Y | total participants |
| Brighton | - | - | - | - | - | - | 34 | (5.09) | 0 | 0 | 3 | 668 |
| Bristol | 61 | (6.19) | 0 | 4 | 13 | 986 | 55 | (5.18) | 2 | 1 | 4 | 1,062 |
| Cardiff | 93 | (7.42) | 1 | 1 | 22 | 1,254 | 63 | (6.23) | 0 | 1 | 10 | 1,011 |
| Glasgow | 82 | (5.67) | 1 | 4 | 27 | 1,446 | - | - | - | - | - | - |
| Imperial | - | - | - | - | - | - | 1 | (1.85) | 0 | 0 | 0 | 54 |
| Maidstone | 7 | (1.96) | 0 | 0 | 2 | 358 | 53 | (2.78) | 0 | 3 | 3 | 1,907 |
| Manchester | 29 | (5.07) | 0 | 2 | 10 | 572 | 36 | (4.46) | 2 | 0 | 3 | 808 |
| Nottingham | - |   | - | - | - | 0 | 60 | (4.56) | 2 | 2 | 9 | 1,315 |
| Oxford | 51 | (4.50) | 0 | 4 | 19 | 1,134 | 57 | (4.45) | 3 | 1 | 10 | 1,280 |
| Preston | 52 | (10.44) | 2 | 0 | 8 | 498 | 26 | (0.71) | 0 | 0 | 4 | 368 |
| Southampton | - |   | - | - | - | - | 25 | (2.66) | 0 | 0 | 4 | 939 |
| St\_Georges | 15 | (1.29) | 0 | 0 | 6 | 1,165 | 14 | (2.68) | 0 | 0 | 2 | 522 |
| Stockport | 118 | (9.52) | 3 | 10 | 28 | 1,240 | 138 | (5.97) | 7 | 2 | 14 | 2,311 |
| Wigan | 37 | (9.87) | 0 | 5 | 11 | 375 | 35 | (5.07) | 1 | 2 | 2 | 691 |
| Plymouth | 71 | (4.45) | 0 | 6 | 24 | 1,596 | 6 | (1.20) | 0 | 0 | 0 | 502 |
| Total | 616 | (5.80) |   | 36 | 170 | 10624 | 603 | (4.46) | 17 | 12 | 68 | 13438 |

Nm: *Neisseria meningitidis.*

\*any *N. meningitidis* includes genogroup W/Y; other single genogroup columns do not include these isolates

gg - genogroup