**Supplemental Digital Content 8:** Associations between (a) individual pathogens[[1]](#footnote-1) and (b) grouped pathogens and oral rotavirus vaccine immunogenicity

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Individual** **pathogen** | **Non seroconverter**N=106 | **Seroconverter**N=33 | **Risk ratio for seroconversion** | **Seronegative**N=164 | **Seropositive**N=60 | **Risk ratio for seropositivity** | **Risk difference for GMT** |
| **N** (%) | **N** (%) | **Unadjusted**(95% CI) | **Adjusted[[2]](#footnote-2)**(95% CI) | **N** (%) | **N** (%) | **Unadjusted**(95% CI) | **Adjusted2**(95% CI) | **Unadjusted**(95% CI) | **Adjusted**(95% CI) |
| Campylobacter spp. | 4 (3.8) | 4 (12.1) | 2.24(1.02, 4.94) | **3.35****(1.54, 7.29)** | 8 (4.9) | 4 (6.7) | 1.26(0.53, 3.00) | 1.69(0.69, 4.17) | 1.58(0.13, 18.9) | 2.19(0.15, 32.4) |
| aEPEC | 6 (5.7) | 3 (9.1) | 1.45(0.44, 4.80) | 1.92(0.69, 5.33) | 11 (6.7) | 4 (6.7) | 0.99(0.34, 2.89) | 1.19(0.41, 3.43) | 0.53(0.05, 5.94) | 0.98(0.09, 11.4) |
| EAEC | 25 (23.6) | 9 (27.3) | 1.17(0.62, 2.21) | 1.11(0.56, 2.20) | 40 (24.4) | 13 (21.7) | 0.90(0.53, 1.53) | 0.79(0.44, 1.40) | 0.86(0.22, 3.42) | 0.63(0.14, 2.79) |
| ETEC | 3 (2.8) | 1 (3.0) | 1.24(0.27, 5.69) | 1.31(0.26, 6.49) | 4 (2.4) | 1 (1.7) | 0.76(0.13, 4.31) | 0.88(0.16, 4.85) | 1.05(0.02, 50.6) | 1.54(0.03, 87.9) |
| Shigella | 2 (1.9) | 1 (3.0) | 1.50(0.29, 7.67) | 0.78(0.13, 4.58) | 2 (1.2) | 1 (1.7) | 1.28(0.26, 6.26) | 1.02(0.22, 4.86) | 0.48(0.00, 88.9) | 0.27(0.00, 41.7) |
| Adenovirus 40/41 | 4 (3.8) | 1 (3.0) | 0.82(0.13, 5.12) | 0.63(0.16, 2.50) | 7 (4.3) | 2 (3.3) | 0.83(0.23, 2.93) | 0.91(0.26, 3.19) | 0.73(0.04, 14.3) | 0.94(0.05, 18.5) |
| Astrovirus | 0 (0.0) | 2 (6.1) | -- | -- | 1 (0.6) | 2 (3.3) | -- | -- | -- | -- |
| Norovirus | 6 (5.7) | 1 (3.0) | 0.53(0.07, 4.27) | 0.77(0.13, 4.43) | 9 (5.5) | 1 (1.7) | 0.35(0.05, 2.47) | 0.44(0.06, 3.07) | 0.24(0.01, 5.44) | 0.38(0.02, 8.92) |
| NPEV | 12 (11.3) | 7 (21.2) | 1.65(0.75, 3.62) | 1.77(0.88, 3.57) | 18 (11.0) | 11 (18.3) | 1.51(0.88, 2.59) | 1.41(0.78, 2.53) | 3.91(0.75, 20.3) | 3.65(0.63, 21.0) |
| Sapovirus | 4 (3.8) | 1 (3.0) | 0.85(0.14, 5.06) | 1.02(0.32, 3.24) | 6 (3.7) | 1 (1.7) | 0.51(0.08, 3.36) | 0.54(0.10, 3.00) | 0.49(0.02, 15.9) | 0.45(0.01, 16.4) |
| Cryptosporidium | 2 (1.9) | 1 (3.0) | -- | -- | 2 (1.2) | 1 (1.7) | -- | -- | -- | -- |
| Giardia | 4 (3.8) | 1 (3.0) | 0.83(0.13, 5.08) | 0.94(0.16, 5.46) | 4 (2.4) | 2 (3.3) | 1.25(0.39, 4.02) | 1.51(0.52, 4.39) | 1.79(0.05, 60.0) | 2.21(0.06, 74.9) |
| **Pathogen** **burden** | **Mean** (SD) | **Mean** (SD**)** | **Unadjusted**(95% CI) | **Adjusted**(95% CI) | **Mean (SD)** | **Mean (SD)** | **Unadjusted**(95% CI) | **Adjusted**(95% CI) | **Unadjusted**(95% CI) | **Adjusted**(95% CI) |
| All pathogens | 0.70 (0.96) | 1.00 (0.94) | 1.22(0.93, 1.60) | 1.31(1.02, 1.69) | 0.70 (0.92) | 0.75 (0.86) | 1.04(0.81, 1.33) | 1.07(0.82, 1.38) | 1.16(0.61, 2.19) | 1.20(0.62, 2.31) |
| Bacteria | 0.40 (0.59) | 0.58 (0.83) | 1.27(0.87, 1.85) | 1.31(0.94, 1.81) | 0.41 (0.67) | 0.42 (0.70) | 1.01(0.69, 1.47) | 1.03(0.70, 1.51) | 0.93(0.39, 2.19) | 0.96(0.39, 2.33) |
| Viruses[[3]](#footnote-3) | 0.25 (0.53) | 0.36 (0.55) | 1.26(0.77, 2.08) | 1.40(0.90, 2.19) | 0.25 (0.52) | 0.28 (0.49) | 1.08(0.72, 1.64) | 1.10(0.71, 1.72) | 1.69(0.56, 5.14) | 1.77(0.57, 5.53) |

1. Results for pathogens with >1% prevalence only [↑](#footnote-ref-1)
2. Adjusted for age, sex, birthweight, season of birth, breastfeeding status, receipt of OPV, maternal MUAC and WASH intervention [↑](#footnote-ref-2)
3. Excluding rotavirus and non-polio enterovirus

Effect size (95% CI) marked in bold if P-value is significant at the false discovery rate (0.05). Where detections were too few to compute an effect size, marked in table with -- [↑](#footnote-ref-3)