Table S4 Infection by composite measures, unadjusted odds ratios and odds ratios adjusted for covariables as proposed by alternative DAG: region, living alone, living with children, living in a deprived area, and ethnicity, adjusted odds ratios additionally adjusted for number of known contacts, adjusted odds ratios additionally adjusted for age

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Activity** | **Category** | **N=11,413 (% in category)** | **Number of infections n= 493 (% within category)** | **Unadjusted OR (95% CI), p**  | **Adjusted OR (95% CI), p** | **Adjusted OR additionally adjusted for number of known contacts (95% CI), p**  | **Adjusted OR additionally adjusted for age (95% CI), p** |
| Leaves home for work or education | NoneAt least once | 7,294 (64%)4,119 (36%) | 259 (3.6%)234 (5.7%) | 1.001.64 (1.37 – 1.96)p<0.0001 | 1.001.34 (1.09 – 1.62)P=0.0038 | 1.001.32 (1.09 – 1.62)P=0.0058 | 1.001.08 (0.88-1.33)P=0.4631 |
| Public transport | NoneAt least once | 5,902 (52%)5,511 (48%) | 219 (3.7%)274 (4.9%) | 1.001.36 (1.13 – 1.62)P=0.0009 | 1.001.28 (1.04 – 1.57)P=0.0206 | 1.001.27 (1.03 – 1.57)P=0.0232 | 1.001.28 (1.04 – 1.57)P=0.0214 |
| Retail | NoneUp to once More than once to thriceMore than thrice |  482 (4%)2,022 (18%)5,745 (50%)3,164 (28%) |  14 (2.9%)110 (5.4%)262 (4.6%)107 (3.4%) | 0.85 (0.49 – 1.50)1.64 (1.25 – 2.16)1.37 (1.09 – 1.72)1.00P=0.0010 | 1.06 (0.59 – 1.89)1.83 (1.37 – 2.46)1.51 (1.19 – 1.92)1.00P=0.0002 | 1.06 (0.59 – 1.91)1.84 (1.37 – 2.47)1.51 (1.19 – 1.92)1.00P=0.0002 | 1.03 (0.57 – 1.85)1.81 (1.35 – 2.43)1.49 (1.17 – 1.89)1.00P=0.0002 |
| Indoor hospitality and socialising (pub, restaurant, party) | Up to onceMore than once | 6,531 (57%)4,882 (43%) | 258 (3.9%)235 (4.8%) | 1.001.23 (1.03 – 1.47)P=0.0254 | 1.001.21 (0.99 – 1.48)P=0.0661 | 1.001.20 (0.98 – 1.47)P=0.0804 | 1.001.22 (0.99 – 1.49)P=0.0605 |
| Outdoor hospitality and socialising (pub, restaurant, party) | NoneAt least once | 6,777 (59%)4,636 (41%) | 276 (4.1%)217 (4.7%) | 1.001.16 (0.96 – 1.39)P=0.1179 | 1.001.14 (0.94 – 1.39)P=0.1840 | 1.001.14 (0.94 – 1.39)P=0.1894 | 1.001.10 (0.91 – 1.34)P=0.3278 |
| Indoor leisure (gym, theatre/cinema etc) | NoneAt least once  | 6,713 (59%)4,700 (41%) | 258 (3.8%)235 (5.0%) | 1.001.32 (1.01 – 1.58)P=0.0029 | 1.001.24 (1.02 – 1.51)P=0.0312 | 1.001.23 (1.01 – 1.50)P=0.0362 | 1.001.21 (0.99 – 1.47)P=0.0571 |
| Outdoor leisure (team sport outdoors) | NoneAt least once  | 10,570 (93%) 843 (7%) | 449 (4.3%) 44 (5.2%) | 1.001.24 (0.90 – 1.71)p=0.1943 | 1.001.14 (0.81 – 1.58)P=0.4605 | 1.001.13 (0.81 – 1.58)P=0.4755 | 1.001.15 (0.82 – 1.60)P=0.4224 |
| Non-social activity (hairdresser/beautician etc) | NoneAt least once | 7,469 (65%)3,944 (35%) | 351 (4.7%)142 (3.6%) | 1.000.76 (0.62 – 0.92)P=0.0053 | 1.000.74 (0.60 – 0.91)P=0.0039 | 1.000.74 (0.60 – 0.91)P=0.0038 | 1.000.74 (0.60 – 0.91)P=0.0044 |
| Region | East MidlandsEast of EnglandLondonNorth EastNorth WestSouth EastSouth WestWalesW. MidlandsYorkshire & The HumberMissing | 1,065 (9%)2,551 (23%)1,202 (11%) 581 (5%)1,192 (11%)2,210 (19%) 924 (8%) 266 (2%) 626 (6%) 615 (5%)181 |  35 (3.3%) 92 (3.6%) 57 (4.7%) 35 (6.0%) 62 (5.2%)102 (4.6%) 33 (3.6%) 18 (6.8%) 33 (5.3%) 15 (2.4%) | 1.001.10 (0.74 – 1.64)1.47 (0.95 – 2.25)1.89 (1.17 – 3.05)1.61 (1.06 – 2.46)1.42 (0.96 – 2.11)1.09 (0.67 – 1.77)2.14 (1.19 – 3.83)1.64 (1.01 – 2.66)0.74 (0.39 – 1.36)P=0.0028 | 1.001.12 (0.75 – 1.68)1.07 (0.66 – 1.76)1.88 (1.15 – 3.07)1.59 (1.03 – 2.45)1.46 (0.98 – 2.18)1.21 (0.74 – 1.97)2.58 (1.42 – 4.69)1.56 (0.95 – 2.56)0.71 (0.38 – 1.32)P=0.0016 | 1.001.12 (0.75 – 1.68)1.07 (0.66 – 1.76)1.88 (1.15 – 3.08)1.59 (1.03 - 2.46)1.46 (0.98 – 2.18)1.20 (0.73 – 1.96)2.59 (1.43 – 4.71)1.56 (0.95 – 2.57)0.71 (0.38 – 1.32)P=0.0016 | 1.001.13 (0.75 – 1.68)1.08 (0.66 – 1.77)1.94 (1.18 – 3.17)1.59 (1.03 – 2.46)1.48 (0.99 – 2.21)1.22 (0.74 – 1.99)2.57 (1.41 – 4.67)1.58 (0.96 – 2.59)0.73 (0.39 – 1.35)P=0.0017 |
| Ethnic group  | White BritishWhite OtherAsianBlackMixedOtherMissing | 10,286 (91%) 628 (6%) 213 (2%) 54 (<1%) 91 (1%) 49 (<1%) 92 | 433 (4.2%) 31 (4.9%) 9 (4.2%) 5 (9.3%) 8 (8.8%) 1 (2.0%) | 1.001.18 (0.81 – 1.72)1.00 (0.51 – 1.97)2.32 (0.92 – 5.86)2.19 (1.05 – 4.56)0.47 (0.07 – 3.44)P=0.1882 | 1.000.93 (0.62 – 1.39), p=0.7350.69 (0.33 – 1.47), p=0.3431.75 (0.66 – 4.66), p=0.2631.69 (0.79 – 3.63), p=0.1780.33 (0.04 – 2.49), p=0.284\* | 1.000.93 (0.62 – 1.39), p=0.7250.69 (0.33 – 1.47), p=0.3431.75 (0.66 – 4.66), p=0.2611.69 (0.79=8 – 3.63), p=0.1800.33 (0.04 – 2.49), p=0.285 | 1.000.88 (0.59 – 1.32), p=0.5510.66 (0.31 – 1.39), p=0.2721.64 (0.62 – 4.34), p=0.3241.58 (0.73 – 3.38), p=0.2430.32 (0.04 – 2.39), p=0.269 |
| Lives alone | Lives aloneLives with someone | 2,869 (25%)8,544 (75%) | 81 (2.8%)412 (4.8%) | 1.001.74 (1.37 – 2.22)P <0.0001 | 1.001.55 (1.19 – 1.99)P=0.0005 | 1.001.54 (1.19 – 1.99)P=0.0006 | 1.001.55 (1.19 – 1.99)P=0.0005 |
| Lives with children | NoYes | 10,679 (94%) 734 (6%) | 404 (3.8%) 89 (12.1%) | 1.003.51 (2.58– 4.47)p<0.0001 | 1.002.96 (2.27 – 3.87)P<0.0001 | 1.002.96 (2.27 – 3.88)P<0.0001 | 1.002.43 (1.85 – 3.18)P<0.0001 |
| Residential area | Any ruralAny urbanAny conurbationMissing | 2,886 (26%)5,209 (46%)3,137 (28%)181 | 106 (3.7%)216 (4.2%)160 (5.1%) | 1.001.13 (0.89 – 1.43)1.41 (1.09 – 1.81)P=0.0201 | 1.001.09 (0.85 – 1.39)1.35 (0.99 – 1.84)P=0.1567 | 1.001.09 (0.85 – 1.39)1.35 (0.99 – 1.84)P=0.1571 | 1.001.06 (0.83 – 1.36)1.31 (0.96 – 1.78)P=0.2129 |
| Deprivation score (IMD quintile) 1= most deprived | 12345Missing |  852 (8%)1,589 (14%)2,290 (20%)3,032 (27%)3,469 (31%)181 |  44 (5.2%) 69 (4.3%) 94 (4.1%)141 (4.7%)134 (3.9%) | 1.36 (0.96 – 1.92)1.13 (0.84 – 1.52)1.07 (0.81 – 1.39)1.21 (0.95 – 1.55)1.00P=0.3764 | 1.34 (0.93 – 1.94)1.14 (0.84 – 1.56)1.16 (0.88 – 1.53)1.22 (0.96 – 1.57)1.00P=0.4425 | 1.34 (0.93 – 1.95)1.14 (0.84 – 1.56)1.16 (0.88 – 1.53)1.23 (0.96 – 1.57)1.00P=0.4334 | 1.26 (0.87 – 1.83)1.09 (0.79 – 1.48)1.13 (0.86 – 1.49)1.19 (0.93 – 1.53)1.00P=0.6045 |
| Age | Working Age65 and aboveMissing | 5,370 (47%)6,042 (53%)1 | 331 (6.2%)162 (2.7%) | 2.38 (1.97 – 2.89)1.00P<0.0001 | Not in model | Not in model | 1.87 (1.49 – 2.33)1.00P<0.001\* |
| Contacts | 0 – 5 More than 5  | 6,124 (54%)5,289 (46%) | 242 (3.9%)251 (4.8%) | 1.001.21 (1.01- 1.45)P=0.0377 | Not in model  | 1.001.05 (0.86 – 1.28)P=0.6341 | Not in model |

**\*where there are missing values, Wald test p-values are given**