**Appendix A: Supplementary results**

*Different definitions of secondary cases and how they affect the calculation of the household secondary attack rate.*

Generally, the secondary attack rate is defined as follows;

$$SAR= \frac{number of secondary cases}{number of family members-index case(s)}×100$$

In the appendix we look at alternative ways to define SAR. Specifically, we look at three definitions:

SAR14

This is the definition used in the main text.

* Index cases: The first person(s) to test positive based on date of sample collection.
* Numerator: All non-index household members who tested positive by PCR within 14 days after the testing date of the index case
* Denominator: All household members excluding (1) index cases and (2) household members having tested positive previously

SAR3-10

* Index cases: The first person(s) to test positive based on date of sample collection.
* Numerator: All non-index household members who tested positive by PCR 3–10 days after the testing date of the index case
* Denominator: All household members excluding (1) index cases and (2) household members having tested positive previously and (3) household members having tested positive on day 1–2 after index

This definition will have the same number of index cases as the first definition.

SAR3-10 strict

* Index cases: The first person to test positive based on date of sample collection. Excluding (1) multiple indexes and (2) index cases where another household member tests positive 1-2 days after the index case
* Numerator: All non-index household members who tested positive by PCR 3–10 days after the testing date of the index case
* Denominator: All household members excluding (1) index cases and (2) household members having tested positive previously

Table A1: Household secondary attack rate when the index case is a hospital worker

|  |  |  |
| --- | --- | --- |
|  | **SAR3–10** | **SAR3–10 strict** |
| **Occupation** | **Overall** | **Aug 2020–Dec 2020** | **Jan 2021–Aug 2021** | **Index cases** | **Overall** | **Aug 2020–Dec 2020** | **Jan 2021–Aug 2021** |
| Physicians | 0.141 (0.106, 0.186) | 0.122 (0.077, 0.189) | 0.157 (0.109, 0.22) | 106 | 0.13 (0.093, 0.177) | 0.106 (0.06, 0.18) | 0.147 (0.098, 0.214) |
| Specialist nurses | 0.197 (0.151, 0.252) | 0.183 (0.124, 0.262) | 0.211 (0.146, 0.294) | 94 | 0.182 (0.134, 0.243) | 0.172 (0.109, 0.261) | 0.192 (0.126, 0.280) |
| Nurses | 0.121 (0.099, 0.146) | 0.09 (0.063, 0.126) | 0.145 (0.114, 0.182) | 319 | 0.1 (0.079, 0.125) | 0.076 (0.051, 0.113) | 0.119 (0.089, 0.156) |
| Nursing Associates | 0.083 (0.059, 0.116) | 0.124 (0.077, 0.194) | 0.062 (0.038, 0.1) | 173 | 0.061 (0.04, 0.092) | 0.125 (0.076, 0.199) | 0.028 (0.013, 0.059) |
| Health care assistants | 0.167 (0.126, 0.218) | 0.146 (0.086, 0.239) | 0.176 (0.127, 0.241) | 96 | 0.145 (0.103, 0.199) | 0.078 (0.034, 0.17) | 0.175 (0.121, 0.245) |
| Other HCWs | 0.183 (0.145, 0.229) | 0.178 (0.127, 0.242) | 0.19 (0.136, 0.258) | 115 | 0.151 (0.112, 0.199) | 0.146 (0.097, 0.213) | 0.157 (0.101, 0.234) |
| Administrative or support staff | 0.158 (0.129, 0.193) | 0.098 (0.062, 0.152) | 0.19 (0.151, 0.236) | 195 | 0.155 (0.124, 0.193) | 0.099 (0.06, 0.16) | 0.185 (0.143, 0.235) |
| *Total* | 0.143 (0.131, 0.157) | 0.126 (0.108, 0.147) | 0.155 (0.138, 0.174) | 1098 | 0.124 (0.131, 0.157) | 0.126 (0.108, 0.147) | 0.155 (0.138, 0.174) |

Note: 95 % Confidence intervals in parenthesis. SAR is reported as a proportion.

*Household acquired cases dependent on different definitions of secondary cases*

We looked at two other definitions of secondary cases, which correspond to the definition of secondary cases for SAR3-7 and SAR3-7 strict, and where the secondary case is a hospital worker.

Table A2: Number of hospital workers who are secondary cases in their own household, and

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Secondary cases 1–14 days** | **Secondary cases 3–10 days** | **Secondary cases 3–10 days (strict)** |
| **Occupation** | **Freq** | **Prop.** | **Freq** | **Prop.** | **Freq** | **Prop.** |
| Physicians | 51 | 0.15 | 23 | 0.07 | 19 | 0.05 |
| Specialist nurses | 69 | 0.25 | 27 | 0.1 | 22 | 0.08 |
| Nurses | 113 | 0.15 | 49 | 0.07 | 41 | 0.05 |
| Nursing Associates | 39 | 0.09 | 15 | 0.04 | 7 | 0.02 |
| Health care assistants | 30 | 0.13 | 13 | 0.06 | 9 | 0.04 |
| Other HCWs | 101 | 0.26 | 43 | 0.11 | 29 | 0.08 |
| Administrative or support staff | 131 | 0.22 | 53 | 0.09 | 45 | 0.08 |
| *Total* | 534 | 0.18 | 223 | 0.07 | 172 | 0.06 |

Table A3: Number of hospital workers who are secondary cases in their own household, and

|  |  |
| --- | --- |
|  | **Secondary cases 1–14 days** |
|  | **Aug 2020–Dec 2020** | **Jan 2021–Aug 2021** |
| **Occupation** | **Freq** | **Prop.** | **Freq** | **Prop.** |
| Physicians | 21 | 0.14 | 30 | 0.16 |
| Specialist nurses | 19 | 0.15 | 50 | 0.32 |
| Nurses | 25 | 0.08 | 88 | 0.2 |
| Nursing Associates | 12 | 0.08 | 27 | 0.1 |
| Health care assistants | 5 | 0.07 | 25 | 0.16 |
| Other HCWs | 32 | 0.21 | 69 | 0.3 |
| Administrative or support staff | 41 | 0.22 | 90 | 0.22 |
| *Total* | 155 | 0.14 | 379 | 0.2 |