**Table S1. Bivariable analysis assessing the association between colonization with *S. aureus* in the nares and/or oropharynx and participant demographics and risk factors in adults (n=174)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Risk Factor | Number Positive (%) | Total (N) | PRa | 95% CI | p-value |
| Age | NA | NA | 0.98b | 0.97-1.00 | 0.082 |
| Sex |  |  |  |  |  |
| Male | 38 (40) | 94 | -ref- | -ref- | -ref- |
| Female | 38 (49) | 78 | 1.25 | 0.85-1.82 | 0.254 |
| Race |  |  |  |  |  |
| White | 68 (42) | 162 | -ref- | -ref- | -ref- |
| Other | 8 (67) | 12 | 1.64 | 0.98-2.74 | 0.062 |
| House size |  |  |  |  |  |
| One | 0 (0) | 1 | -ref- | -ref- | -ref- |
| Two | 32 (42) | 77 | 1.10 | 0.87-1.38 | 0.431 |
| Three | 15 (38) | 40 | 1.09 | 0.89-1.34 | 0.409 |
| Four | 19 (50) | 38 | 1.09 | 0.90-1.30 | 0.379 |
| Five | 9 (56) | 16 | 1.08 | 0.92-1.26 | 0.342 |
| Six | 0 | 0 | 1.07 | 0.94-1.23 | 0.295 |
| Seven | 1 (50) | 2 | 1.07 | 0.96-1.19 | 0.237 |
| Number of children in the home |  |  |  |  |  |
| Zero | 36 (41) | 87 | -ref- | -ref- | -ref- |
| One | 12 (39) | 31 | 1.07 | 0.88-1.31 | 0.502 |
| Two | 18 (45) | 40 | 1.07 | 0.89-1.28 | 0.480 |
| Three | 9 (64) | 14 | 1.06 | 0.90-1.25 | 0.452 |
| Four | 0 (0) | 0 | 1.06 | 0.92-1.22 | 0.419 |
| Five | 1 (50) | 2 | 1.06 | 0.93-1.20 | 0.378 |
| Number of *S. aureus* positive environmental sites in the home |  |  |  |  |  |
| Zero | 45 (37) | 122 | -ref- | -ref- | -ref- |
| One | 11 (48) | 23 | 1.34 | 1.07-1.66 | 0.009 |
| Two | 12 (67) | 18 | 1.26 | 1.10-1.43 | <0.001 |
| Three | 4 (80) | 5 | 1.18 | 1.11-1.26 | <0.001 |
| Four | 3 (75) | 4 | 1.12 | 1.09-1.16 | <0.001 |
| Five | 1 (50) | 2 | 1.08 | 1.03-1.13 | <0.001 |
| Currently have asthma |  |  |  |  |  |
| No | 70 (44) | 158 | -ref- | -ref- | -ref- |
| Yes | 6 (33) | 15 | 0.77 | 0.35-1.71 | 0.527 |
| History of eczema |  |  |  |  |  |
| No | 69 (44) | 158 | -ref- | -ref- | -ref- |
| Yes | 7 (44) | 16 | 0.99 | 0.50-1.97 | 0.974 |
| History of other skin conditions |  |  |  |  |  |
| No | 69 (45) | 155 | -ref- | -ref- | -ref- |
| Yes | 7 (37) | 19 | 0.75 | 0.35-1.62 | 0.471 |
| History of diabetes |  |  |  |  |  |
| No | 73 (44) | 165 | -ref- | -ref- | -ref- |
| Yes | 2 (25) | 8 | 0.80 | 0.27-2.43 | 0.701 |
| Disorder of the immune system |  |  |  |  |  |
| No | 66 (42) | 156 | -ref- | -ref- | -ref- |
| Yes | 3 (38) | 8 | 1.27 | 0.74-2.18 | 0.383 |

aPR=prevalence ratio. PRs were adjusted for age and estimated at age=43. For continuous variables, PR estimates are calculated as each discrete value over the previous discrete value (i.e. Prevalence ratio for housesize=2 was calculated as prevalence given housesize=2/ prevalence given housesize=1). For dichotomous variables, PR estimates are estimated for prevalence given yes over prevalence given no.

bPR for age estimated at age=44 vs. age=43

**Table S1. Bivariable analysis assessing the association between colonization with *S. aureus* in the nares and/or oropharynx and participant demographics and risk factors in adults (n=174) continued**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Risk Factor | Number Positive (%) | Total (N) | PRa | 95% CI | p-value |
| Current heart condition |  |  |  |  |  |
| No | 69 (42) | 162 | -ref- | -ref- | -ref- |
| Yes | 6 (60) | 10 | 1.61 | 0.96-2.71 | 0.072 |
| Ever had cancer |  |  |  |  |  |
| No | 71 (44) | 163 | -ref- | -ref- | -ref- |
| Yes | 5 (46) | 11 | 1.27 | 0.63-2.57 | 0.504 |
| Currently take cancer medications |  |  |  |  |  |
| No | 72 (43) | 166 | -ref- | -ref- | -ref- |
| Yes | 4 (50) | 8 | 1.02 | 0.40-2.58 | 0.963 |
| Used an antibiotic in the last 90 days |  |  |  |  |  |
| No | 70 (46) | 154 | -ref- | -ref- | -ref- |
| Yes | 6 (30) | 20 | 0.60 | 0.26-1.42 | 0.245 |
| Family member had an SSTI |  |  |  |  |  |
| No | 73 (47) | 157 | -ref- | -ref- | -ref- |
| Yes | 2 (15) | 13 | 0.36 | 0.11-1.18 | 0.093 |
| Participant worked in healthcare |  |  |  |  |  |
| No | 61 (45) | 136 | -ref- | -ref- | -ref- |
| Yes | 15 (42) | 36 | 0.83 | 0.49-1.41 | 0.496 |
| Visited a hospital in last 90 days. |  |  |  |  |  |
| No | 44 (42) | 105 | -ref- | -ref- | -ref- |
| Yes | 32 (47) | 68 | 1.32 | 0.86-2.04 | 0.209 |
| Admitted to an outpatient facility |  |  |  |  |  |
| No | 70 (44) | 160 | -ref- | -ref- | -ref- |
| Yes | 6 (50) | 12 | 0.92 | 0.41-2.04 | 0.834 |
| Family member hospitalized in last 90 days |  |  |  |  |  |
| No | 73 (43) | 170 | -ref- | -ref- | -ref- |
| Yes | 3 (75) | 4 | 1.82 | 0.96-3.47 | 0.069 |
| Had a child in daycare |  |  |  |  |  |
| No | 63 (44) | 142 | -ref- | -ref- | -ref- |
| Yes | 13 (41) | 32 | 0.72 | 0.38-1.39 | 0.335 |
| Played team sports |  |  |  |  |  |
| No | 70 (43) | 162 | -ref- | -ref- | -ref- |
| Yes | 6 (55) | 11 | 1.05 | 0.49-2.24 | 0.908 |
| Had a family member play team sports |  |  |  |  |  |
| No | 41 (42) | 98 | -ref- | -ref- | -ref- |
| Yes | 32 (47) | 68 | 1.06 | 0.70-1.62 | 0.779 |
| Used a fitness center |  |  |  |  |  |
| No | 49 (41) | 120 | -ref- | -ref- | -ref- |
| Yes | 27 (53) | 51 | 1.22 | 0.74-2.02 | 0.431 |

aAdjusted for the age and PRs estimated at age=43. For dichotomous variables, PR estimates are estimated for prevalence given yes over prevalence given no.

**Table S1. Bivariable analysis assessing the association between colonization with *S. aureus* in the nares and/or oropharynx and participant demographics and risk factors in adults (n=174) continued**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Risk Factor | Number Positive (%) | Total (N) | PRa | 95% CI | p-value |
| Shared bath towels with other members of the household |  |  |  |  |  |
| No | 52 (46) | 114 | -ref- | -ref- | -ref- |
| Yes | 22 (38) | 58 | 0.79 | 0.49-1.28 | 0.340 |
| Shared hand towels with other members of the household |  |  |  |  |  |
| No | 10 (42) | 24 | -ref- | -ref- | -ref- |
| Yes | 66 (44) | 150 | 0.92 | 0.50-1.67 | 0.775 |
| Used antibacterial hand soap |  |  |  |  |  |
| No | 15 (41) | 37 | -ref- | -ref- | -ref- |
| Yes | 61 (45) | 137 | 1.22 | 0.69-2.17 | 0.491 |
| Worked with livestock |  |  |  |  |  |
| No exposure | 46 (42) | 110 | -ref- | -ref | -ref- |
| Exposure | 23 (53) | 42 | 0.73 | 0.44-1.05 | 0.167 |

aAdjusted for the age and PRs estimated at age=43. For dichotomous variables, PR estimates are estimated for prevalence given yes over prevalence given no.

**Table S2. Bivariable analysis assessing the association between colonization with *S. aureus* in the nares and/or oropharynx and participant demographics and risk factors in minors (n=83)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Risk Factor | Number Positive (%) | Total (N) | PRa | 95% CI | p-value |
| Age |  |  |  |  |  |
| Sex |  |  |  |  |  |
| Male | 13 (35) | 37 |  |  |  |
| Female | 17 (37) | 46 |  |  |  |
| Race |  |  |  |  |  |
| White | 27 (36) | 74 | -ref- | -ref- | -ref- |
| Other | 3 (33) | 9 | 0.74 | 0.13-4.19 | 0.736 |
| House size |  |  |  |  |  |
| Two | 2 (50) | 4 | -ref | -ref- | -ref- |
| Three | 2 (11) | 18 | 1.37 | 0.76-2.48 | 0.298 |
| Four | 11 (36) | 31 | 1.34 | 0.79-2.27 | 0.281 |
| Five | 14 (54) | 26 | 1.30 | 0.84-2.01 | 0.242 |
| Six | 0 (0) | 0 | 1.25 | 0.90-1.74 | 0.175 |
| Seven | 1 (25) | 4 | 1.21 | 0.98-1.50 | 0.083 |
| Number of children in the home |  |  |  |  |  |
| One | 0 (0) | 1 | -ref- | -ref- | -ref- |
| Two | 3 (16) | 19 | 1.68 | 0.83-3.41 | 0.150 |
| Three | 13 (35) | 37 | 1.54 | 0.90-2.64 | 0.113 |
| Four | 13 (59) | 22 | 1.39 | 1.01-1.91 | 0.041 |
| Five | 0 (0) | 4 | 1.25 | 1.07-1.46 | 0.004 |
| Number of *S. aureus* positive environmental sites in the home |  |  |  |  |  |
| Zero | 12 (23) | 53 | -ref- | -ref- | -ref- |
| One | 4 (44) | 9 | 1.68 | 1.07-2.64 | 0.025 |
| Two | 4 (57) | 7 | 1.53 | 1.08-2.18 | 0.018 |
| Three | 2 (50) | 4 | 1.38 | 1.10-1.72 | 0.005 |
| Four | 6 (86) | 7 | 1.24 | 1.09-1.41 | <0.001 |
| Five | 2 (67) | 3 | 1.14 | 1.04-1.25 | 0.006 |
| Currently have asthma |  |  |  |  |  |
| No | 21 (30) | 70 | -ref- | -ref- | -ref- |
| Yes | 8 (67) | 12 | 2.18 | 1.15-4.15 | 0.017 |
| History of eczema |  |  |  |  |  |
| No | 25 (34) | 74 | -ref- | -ref- | -ref- |
| Yes | 5 (56) | 9 | 2.06 | 0.82-5.18 | 0.126 |
| History of other skin conditions |  |  |  |  |  |
| No | 26 (37) | 71 | -ref- | -ref- | -ref- |
| Yes | 4 (33) | 12 | 0.84 | 0.21-3.34 | 0.81 |
| Used an antibiotic in the last 90 days |  |  |  |  |  |
| No | 25 (37) | 67 | -ref- | -ref- | -ref- |
| Yes | 5 (31) | 16 | 0.50 | 0.12-2.13 | 0.348 |
| Family member had an SSTI |  |  |  |  |  |
| No | 25 (35) | 72 | -ref- | -ref- | -ref- |
| Yes | 5 (50) | 10 | 1.51 | 0.48-4.74 | 0.476 |

aAdjusted for the age, gender, and age by gender interaction. Estimates for PR are calculated at the values of gender=Female and age=10. For continuous variables, PR estimates are calculated as each discrete value over the previous discrete value (i.e. Prevalence ratio for housesize=2 was calculated as prevalence given housesize=2/ prevalence given housesize=1). For dichotomous variables, PR estimates are estimated for prevalence given yes over prevalence given no.

**Table S2. Bivariable analysis assessing the association between colonization with *S. aureus* in the nares and/or oropharynx and participant demographics and risk factors in minors (n=83) continued.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Risk Factor | Number Positive (%) | Total (N) | PRa | 95% CI | p-value |
| Participant had an SSTI |  |  |  |  |  |
| No | 29 (36) | 81 | -ref- | -ref- | -ref- |
| Yes | 1 (50) | 2 |  |  |  |
| Participant worked or volunteered in healthcare |  |  |  |  |  |
| No | 16 (28) | 82 | -ref- | -ref- | -ref- |
| Yes | 14 (54) | 26 | 2.15 | 0.93-4.94 | 0.073 |
| Visited a hospital in last 90 days. |  |  |  |  |  |
| No | 19 (30) | 64 | -ref- | -ref- | -ref- |
| Yes | 11 (58) | 19 | 2.15 | 0.92-5.02 | 0.078 |
| Admitted to an outpatient center |  |  |  |  |  |
| No | 27 (36) | 75 | -ref- | -ref- | -ref- |
| Yes | 3 (38) | 8 | 1.04 | 0.25-4.33 | 0.952 |
| Family member hospitalized in last 90 days |  |  |  |  |  |
| No | 27 (36) | 76 | -ref- | -ref- | -ref- |
| Yes | 3 (43) | 7 | 1.05 | 0.18-5.93 | 0.960 |
| Had a child in daycare |  |  |  |  |  |
| No | 21 (40) | 53 | -ref- | -ref- | -ref- |
| Yes | 9 (30) | 30 | 0.89 | 0.26-3.13 | 0.860 |
| Played team sports |  |  |  |  |  |
| No | 13 (31) | 42 | -ref- | -ref- | -ref- |
| Yes | 17 (43) | 40 | 0.70 | 0.22-2.22 | 0.542 |
| Had a family member play team sports |  |  |  |  |  |
| No | 6 (29) | 21 | -ref- | -ref- | -ref- |
| Yes | 24 (39) | 61 | 1.001 | 0.33-3.02 | 0.998 |
| Used a fitness center |  |  |  |  |  |
| No | 11 (28) | 40 | -ref- | -ref- | -ref- |
| Yes | 18 (43) | 42 | 1.59 | 0.59-4.29 | 0.362 |
| Shared bath towels with other members of the household |  |  |  |  |  |
| No | 19 (39) | 49 | -ref- | -ref- | -ref- |
| Yes | 11 (33) | 33 | 0.75 | 0.27-2.07 | 0.574 |
| Shared hand towels with other members of the household |  |  |  |  |  |
| No | 3 (30) | 10 | -ref- | -ref- | -ref- |
| Yes | 27 (37) | 73 | 1.80 | 0.32-10.23 | 0.506 |

aAdjusted for the age, gender, and age by gender interaction. Estimates for PR are calculated at the values of gender=Female and age=10. For dichotomous variables, PR estimates are estimated for prevalence given yes over prevalence given no.

**Table S2. Bivariable analysis assessing the association between colonization with *S. aureus* in the nares and/or oropharynx and participant demographics and risk factors in minors (n=83) continued.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Risk Factor | Number Positive (%) | Total (N) | PRa | 95% CI | p-value |
| Used antibacterial hand soap |  |  |  |  |  |
| No | 3 (21) | 14 | -ref- | -ref- | -ref- |
| Yes | 27 (39) | 69 | 1.66 | 0.33-8.36 | 0.542 |
| Worked with livestock |  |  |  |  |  |
| No exposure | 19 (36) | 55 | -ref- | -ref | -ref- |
| Exposure | 8 (33) | 24 | 1.28 | -0.03-2.60 | 0.055 |

**Figure S1: Minimum spanning tree and resistance proportions.**

Minimum spanning tree of spa type diversity of 147 isolates comprising 57 spa types by county. The size of the circle is proportional to the number of isolates within the set; thickness of connecting lines is proportional to genetic distance.