### Supplemental B

Supplemental B1: Comparison of demographics among cases, the two samples drawn of non-cases, and the original population sample

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | |  |  |  | |  | |
|  | **Original Dataset** | | |  |  | **Sample 1** | | **Sample 2** | |
|  | *Cases* | | *Non-cases* | | | |
| **Variable** | n | | % | n | % | n | % | n | % |
| *Self-Identified Sex* |  | |  |  |  |  |  |  |  |
| Male | 16,323,176 | | 42.9% | 465,269 | 55.1% | 3,636,036 | 42.6% | 3,635,734 | 42.6% |
| Female | 21,765,363 | | 57.1% | 379,256 | 44.9% | 4,903,038 | 57.4% | 4,903,324 | 57.4% |
| *Race/Ethnicity* |  | |  |  |  |  |  |  |  |
| NH-White | 15130737 | | 40.7% | 390,343 | 47.2% | 3,378,830 | 40.6% | 3,380,722 | 40.6% |
| Hispanic | 13867895 | | 37.3% | 286,199 | 34.6% | 3,112,928 | 37.4% | 3,112,980 | 37.4% |
| NH-Asian/Pacific Islander | 3562245 | | 9.6% | 57,077 | 6.9% | 803,409 | 9.6% | 805,619 | 9.7% |
| NH-African American/Black | 4426486 | | 11.9% | 87,433 | 10.6% | 996,649 | 12.0% | 993,344 | 11.9% |
| NH-Other | 177545 | | <1% | 5,195 | <1% | 39,572 | <1% | 39,662 | <1% |
| *Insurance Type* |  | |  |  |  |  |  |  |  |
| Private | 10606963 | | 27.9% | 191,318 | 22.7% | 2,387,008 | 28.0% | 2,388,640 | 28.0% |
| Public | 24616861 | | 64.7% | 575,389 | 68.2% | 5,514,371 | 64.7% | 5,512,981 | 64.7% |
| Uninsured | 2809905 | | 7.4% | 77,518 | 9.2% | 625,095 | 7.3% | 625,217 | 7.3% |
| *Age* |  | |  |  |  |  |  |  |  |
| 18-34 years | 12941938 | | 34.0% | 277,254 | 32.8% | 2,902,901 | 34.0% | 2,903,445 | 34.0% |
| 35-64 years | 17289610 | | 45.4% | 440,709 | 52.2% | 3,864,881 | 45.3% | 3,864,721 | 45.3% |
| Over 65 years | 7858748 | | 20.6% | 126,601 | 15.0% | 1,771,698 | 20.7% | 1,771,314 | 20.7% |

Supplemental B2: Comparison of mediation analysis results across the two randomly chosen samples of non-cases (ORs and 95% CrIs)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sample 1** | | | |  | **Sample 2** | | | |
| **Base Model** | | | |  | **Base Model** | | | |
| **Variable** | **0.025** | **0.5** | **0.975** |  | **Variable** | **0.025** | **0.5** | **0.975** |
| povertyQ2 | 1.023 | 1.061 | 1.100 |  | povertyQ2 | 1.024 | 1.062 | 1.101 |
| povertyQ3 | 1.072 | 1.111 | 1.152 |  | povertyQ3 | 1.072 | 1.112 | 1.153 |
| povertyQ4 | 1.080 | 1.120 | 1.162 |  | povertyQ4 | 1.083 | 1.123 | 1.165 |
| race\_ethhispanic | 0.752 | 0.757 | 0.761 |  | race\_ethhispanic | 0.752 | 0.757 | 0.761 |
| race\_ethnhapi | 0.638 | 0.644 | 0.650 |  | race\_ethnhapi | 0.636 | 0.642 | 0.648 |
| race\_ethnhblack | 0.688 | 0.694 | 0.700 |  | race\_ethnhblack | 0.691 | 0.697 | 0.703 |
| race\_ethother | 0.994 | 1.025 | 1.058 |  | race\_ethother | 0.993 | 1.024 | 1.057 |
| sexcatmale | 1.611 | 1.619 | 1.626 |  | sexcatmale | 1.611 | 1.618 | 1.626 |
| insurancepublic | 1.451 | 1.459 | 1.467 |  | insurancepublic | 1.451 | 1.459 | 1.468 |
| insuranceuninsured | 1.510 | 1.524 | 1.538 |  | insuranceuninsured | 1.512 | 1.525 | 1.539 |
| agec18-34 | 1.518 | 1.529 | 1.540 |  | agec18-34 | 1.517 | 1.529 | 1.540 |
| agec35-64 | 1.765 | 1.777 | 1.789 |  | agec35-64 | 1.764 | 1.776 | 1.788 |
| **Spatial Model** | | | |  | **Spatial Model** | | | |
| povertyQ2 | 1.012 | 1.040 | 1.069 |  | povertyQ2 | 1.013 | 1.041 | 1.070 |
| povertyQ3 | 1.038 | 1.070 | 1.102 |  | povertyQ3 | 1.039 | 1.071 | 1.104 |
| povertyQ4 | 1.053 | 1.089 | 1.126 |  | povertyQ4 | 1.059 | 1.095 | 1.131 |
| race\_ethhispanic | 0.753 | 0.757 | 0.762 |  | race\_ethhispanic | 0.753 | 0.757 | 0.761 |
| race\_ethnhapi | 0.638 | 0.644 | 0.650 |  | race\_ethnhapi | 0.636 | 0.642 | 0.648 |
| race\_ethnhblack | 0.689 | 0.694 | 0.700 |  | race\_ethnhblack | 0.691 | 0.697 | 0.703 |
| race\_ethother | 0.990 | 1.021 | 1.053 |  | race\_ethother | 0.989 | 1.020 | 1.052 |
| sexcatmale | 1.611 | 1.619 | 1.626 |  | sexcatmale | 1.611 | 1.618 | 1.625 |
| insurancepublic | 1.450 | 1.459 | 1.467 |  | insurancepublic | 1.451 | 1.459 | 1.468 |
| insuranceuninsured | 1.510 | 1.524 | 1.538 |  | insuranceuninsured | 1.511 | 1.525 | 1.539 |
| agec18-34 | 1.518 | 1.529 | 1.540 |  | agec18-34 | 1.518 | 1.529 | 1.540 |
| agec35-64 | 1.765 | 1.777 | 1.789 |  | agec35-64 | 1.764 | 1.776 | 1.788 |
| **HCSA Model** | | | |  | **HCSA Model** | | | |
| povertyQ2 | 1.009 | 1.037 | 1.066 |  | povertyQ2 | 1.010 | 1.038 | 1.067 |
| povertyQ3 | 1.028 | 1.060 | 1.093 |  | povertyQ3 | 1.030 | 1.062 | 1.095 |
| povertyQ4 | 1.038 | 1.074 | 1.112 |  | povertyQ4 | 1.044 | 1.080 | 1.118 |
| race\_ethhispanic | 0.753 | 0.757 | 0.761 |  | race\_ethhispanic | 0.753 | 0.757 | 0.761 |
| race\_ethnhapi | 0.638 | 0.644 | 0.650 |  | race\_ethnhapi | 0.636 | 0.642 | 0.648 |
| race\_ethnhblack | 0.689 | 0.694 | 0.700 |  | race\_ethnhblack | 0.691 | 0.697 | 0.703 |
| race\_ethother | 0.990 | 1.021 | 1.053 |  | race\_ethother | 0.989 | 1.020 | 1.052 |
| sexcatmale | 1.611 | 1.619 | 1.626 |  | sexcatmale | 1.611 | 1.618 | 1.625 |
| insurancepublic | 1.450 | 1.459 | 1.467 |  | insurancepublic | 1.451 | 1.459 | 1.467 |
| insuranceuninsured | 1.510 | 1.524 | 1.538 |  | insuranceuninsured | 1.511 | 1.525 | 1.539 |
| agec18-34 | 1.518 | 1.529 | 1.540 |  | agec18-34 | 1.518 | 1.529 | 1.540 |
| agec35-64 | 1.765 | 1.777 | 1.789 |  | agec35-64 | 1.764 | 1.776 | 1.788 |
| hcsa | 1.007 | 1.034 | 1.060 |  | hcsa | 1.007 | 1.033 | 1.059 |
| **CF Model** | | | |  | **CF Model** | | | |
| povertyQ2 | 1.013 | 1.041 | 1.070 |  | povertyQ2 | 1.014 | 1.042 | 1.071 |
| povertyQ3 | 1.038 | 1.070 | 1.102 |  | povertyQ3 | 1.039 | 1.071 | 1.104 |
| povertyQ4 | 1.055 | 1.091 | 1.128 |  | povertyQ4 | 1.062 | 1.097 | 1.134 |
| race\_ethhispanic | 0.753 | 0.757 | 0.762 |  | race\_ethhispanic | 0.753 | 0.757 | 0.761 |
| race\_ethnhapi | 0.638 | 0.644 | 0.650 |  | race\_ethnhapi | 0.636 | 0.642 | 0.648 |
| race\_ethnhblack | 0.689 | 0.694 | 0.700 |  | race\_ethnhblack | 0.691 | 0.697 | 0.703 |
| race\_ethother | 0.990 | 1.021 | 1.053 |  | race\_ethother | 0.989 | 1.020 | 1.052 |
| sexcatmale | 1.611 | 1.619 | 1.626 |  | sexcatmale | 1.611 | 1.618 | 1.625 |
| insurancepublic | 1.450 | 1.459 | 1.467 |  | insurancepublic | 1.451 | 1.459 | 1.468 |
| insuranceuninsured | 1.510 | 1.524 | 1.538 |  | insuranceuninsured | 1.511 | 1.525 | 1.539 |
| agec18-34 | 1.518 | 1.529 | 1.540 |  | agec18-34 | 1.518 | 1.529 | 1.540 |
| agec35-64 | 1.765 | 1.777 | 1.789 |  | agec35-64 | 1.764 | 1.776 | 1.788 |
| prison | 0.930 | 0.967 | 1.005 |  | prison | 0.928 | 0.964 | 1.001 |
| **Pollution Model** | | | |  | **Pollution Model** | | | |
| povertyQ2 | 0.996 | 1.026 | 1.057 |  | povertyQ2 | 0.998 | 1.028 | 1.059 |
| povertyQ3 | 1.014 | 1.051 | 1.088 |  | povertyQ3 | 1.018 | 1.055 | 1.092 |
| povertyQ4 | 1.024 | 1.067 | 1.112 |  | povertyQ4 | 1.034 | 1.077 | 1.122 |
| race\_ethhispanic | 0.753 | 0.757 | 0.761 |  | race\_ethhispanic | 0.753 | 0.757 | 0.761 |
| race\_ethnhapi | 0.638 | 0.644 | 0.650 |  | race\_ethnhapi | 0.636 | 0.642 | 0.648 |
| race\_ethnhblack | 0.688 | 0.694 | 0.700 |  | race\_ethnhblack | 0.691 | 0.697 | 0.703 |
| race\_ethother | 0.991 | 1.022 | 1.054 |  | race\_ethother | 0.989 | 1.020 | 1.052 |
| sexcatmale | 1.611 | 1.619 | 1.626 |  | sexcatmale | 1.611 | 1.618 | 1.625 |
| insurancepublic | 1.450 | 1.459 | 1.467 |  | insurancepublic | 1.451 | 1.459 | 1.467 |
| insuranceuninsured | 1.510 | 1.524 | 1.538 |  | insuranceuninsured | 1.511 | 1.525 | 1.539 |
| agec18-34 | 1.518 | 1.529 | 1.540 |  | agec18-34 | 1.517 | 1.529 | 1.540 |
| agec35-64 | 1.765 | 1.777 | 1.789 |  | agec35-64 | 1.764 | 1.776 | 1.788 |
| pollutionQ2 | 1.005 | 1.035 | 1.067 |  | pollutionQ2 | 1.005 | 1.035 | 1.066 |
| pollutionQ3 | 1.010 | 1.046 | 1.083 |  | pollutionQ3 | 1.006 | 1.042 | 1.079 |
| pollutionQ4 | 0.998 | 1.045 | 1.094 |  | pollutionQ4 | 0.992 | 1.038 | 1.087 |
| **Full Model** | | | |  | **Full Model** | | | |
| povertyQ2 | 0.996 | 1.026 | 1.056 |  | povertyQ2 | 0.999 | 1.028 | 1.059 |
| povertyQ3 | 1.011 | 1.047 | 1.084 |  | povertyQ3 | 1.015 | 1.051 | 1.088 |
| povertyQ4 | 1.021 | 1.063 | 1.108 |  | povertyQ4 | 1.030 | 1.073 | 1.118 |
| race\_ethhispanic | 0.753 | 0.757 | 0.761 |  | race\_ethhispanic | 0.753 | 0.757 | 0.761 |
| race\_ethnhapi | 0.638 | 0.644 | 0.650 |  | race\_ethnhapi | 0.636 | 0.642 | 0.648 |
| race\_ethnhblack | 0.688 | 0.694 | 0.700 |  | race\_ethnhblack | 0.691 | 0.697 | 0.703 |
| race\_ethother | 0.990 | 1.022 | 1.054 |  | race\_ethother | 0.989 | 1.020 | 1.052 |
| sexcatmale | 1.611 | 1.619 | 1.626 |  | sexcatmale | 1.611 | 1.618 | 1.625 |
| insurancepublic | 1.450 | 1.459 | 1.467 |  | insurancepublic | 1.451 | 1.459 | 1.467 |
| insuranceuninsured | 1.510 | 1.524 | 1.538 |  | insuranceuninsured | 1.511 | 1.525 | 1.539 |
| agec18-34 | 1.518 | 1.529 | 1.540 |  | agec18-34 | 1.518 | 1.529 | 1.540 |
| agec35-64 | 1.765 | 1.777 | 1.789 |  | agec35-64 | 1.764 | 1.776 | 1.788 |
| hcsa | 1.006 | 1.032 | 1.060 |  | hcsa | 1.006 | 1.032 | 1.060 |
| prison | 0.932 | 0.968 | 1.006 |  | prison | 0.929 | 0.965 | 1.002 |
| pollutionQ2 | 1.003 | 1.033 | 1.064 |  | pollutionQ2 | 1.003 | 1.033 | 1.064 |
| pollutionQ3 | 1.004 | 1.040 | 1.077 |  | pollutionQ3 | 1.000 | 1.035 | 1.072 |
| pollutionQ4 | 0.984 | 1.031 | 1.080 |  | pollutionQ4 | 0.978 | 1.024 | 1.073 |

Supplemental B3: Comparison of model outputs for sample where cases are defined as all ICD-10 SSTI codes most likely caused by CA-MRSA and where cases are defined as ICD-10 code for abscess only (ORs and 95% CrIs)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | **Variable** | **All CA-MRSA ICD-10 Codes** | | | **Abscess Only ICD-10 Code** | | |
| **OR** | **Lower** | **Upper** | **OR** | **Lower** | **Upper** |
| Model 1 | Poverty Q2 | 1.06 | 1.02 | 1.10 | 1.07 | 1.01 | 1.14 |
| Model 1 | Poverty Q3 | 1.11 | 1.07 | 1.15 | 1.13 | 1.06 | 1.20 |
| Model 1 | Poverty Q4 | 1.12 | 1.08 | 1.16 | 1.19 | 1.11 | 1.27 |
| Model 3 | Poverty Q2 | 1.04 | 1.01 | 1.07 | 1.07 | 1.01 | 1.14 |
| Model 3 | Poverty Q3 | 1.06 | 1.03 | 1.09 | 1.13 | 1.05 | 1.20 |
| Model 3 | Poverty Q4 | 1.07 | 1.04 | 1.11 | 1.18 | 1.10 | 1.27 |
| Model 3 | HCSA | 1.03 | 1.01 | 1.06 | 1.01 | 0.95 | 1.06 |
| Model 4 | Poverty Q2 | 1.04 | 1.01 | 1.07 | 1.07 | 1.01 | 1.14 |
| Model 4 | Poverty Q3 | 1.07 | 1.04 | 1.10 | 1.13 | 1.06 | 1.20 |
| Model 4 | Poverty Q4 | 1.09 | 1.06 | 1.13 | 1.19 | 1.11 | 1.27 |
| Model 4 | CF | 0.97 | 0.93 | 1.00 | 0.94 | 0.86 | 1.03 |
| Model 5 | Poverty Q2 | 1.03 | 1.00 | 1.06 | 1.04 | 0.97 | 1.12 |
| Model 5 | Poverty Q3 | 1.05 | 1.01 | 1.09 | 1.08 | 1.00 | 1.17 |
| Model 5 | Poverty Q4 | 1.07 | 1.02 | 1.11 | 1.12 | 1.03 | 1.23 |
| Model 5 | Pollution Q2 | 1.04 | 1.00 | 1.07 | 1.05 | 0.97 | 1.13 |
| Model 5 | Pollution Q3 | 1.05 | 1.01 | 1.08 | 1.07 | 0.98 | 1.16 |
| Model 5 | Pollution Q4 | 1.04 | 1.00 | 1.09 | 1.11 | 1.00 | 1.23 |
| Model 6 | Poverty Q2 | 1.03 | 1.00 | 1.06 | 1.05 | 0.98 | 1.12 |
| Model 6 | Poverty Q3 | 1.05 | 1.01 | 1.08 | 1.08 | 1.00 | 1.17 |
| Model 6 | Poverty Q4 | 1.06 | 1.02 | 1.11 | 1.13 | 1.03 | 1.23 |
| Model 6 | HCSA | 1.03 | 1.01 | 1.06 | 1.00 | 0.95 | 1.06 |
| Model 6 | CF | 0.97 | 0.93 | 1.01 | 0.94 | 0.86 | 1.03 |
| Model 6 | Pollution Q2 | 1.03 | 1.00 | 1.06 | 1.05 | 0.97 | 1.13 |
| Model 6 | Pollution Q3 | 1.04 | 1.00 | 1.08 | 1.06 | 0.98 | 1.16 |
| Model 6 | Pollution Q4 | 1.03 | 0.98 | 1.08 | 1.11 | 1.00 | 1.23 |

**Supplemental D:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **OR** | **Prevalence in Poverty Q4** | **Prevalence in Poverty Q1** | **Bias Factor** | **Corrected OR** | **Lower CI** | **Upper CI** |
| 2.5 | 30% | 70% | 0.71 | 1.58 | 1.53 | 1.65 |
| 2.0 | 30% | 70% | 0.76 | 1.46 | 1.41 | 1.53 |
| 1.5 | 30% | 70% | 0.85 | 1.31 | 1.27 | 1.37 |
| 2.5 | 40% | 60% | 0.84 | 1.33 | 1.28 | 1.39 |
| 2.0 | 40% | 60% | 0.88 | 1.28 | 1.23 | 1.34 |
| 1.5 | 40% | 60% | 0.92 | 1.21 | 1.17 | 1.27 |
| 2.5 | 60% | 40% | 1.19 | 0.94 | 0.91 | 0.99 |
| 2.0 | 60% | 40% | 1.14 | 0.98 | 0.95 | 1.02 |
| 1.5 | 60% | 40% | 1.08 | 1.03 | 1.00 | 1.08 |
| 2.5 | 70% | 30% | 1.41 | 0.79 | 0.76 | 0.83 |
| 2.0 | 70% | 30% | 1.31 | 0.86 | 0.83 | 0.89 |
| 1.5 | 70% | 30% | 1.17 | 0.95 | 0.92 | 1.00 |
|  |  |  |  |  |  |  |
|  | Injection Drug Use Estimation | | | | | |
| 4.6 | 70% | 30% | 1.69 | 0.66 | 0.64 | 0.69 |
| 4.6 | 60% | 40% | 1.30 | 0.86 | 0.83 | 0.90 |
| 4.6 | 50% | 50% | 1.00 | 1.12 | 1.08 | 1.17 |
| 4.6 | 40% | 60% | 0.77 | 1.45 | 1.40 | 1.52 |
| 4.6 | 30% | 70% | 0.59 | 1.90 | 1.83 | 1.98 |
| 4.6 | 20% | 80% | 0.44 | 2.53 | 2.44 | 2.64 |
| 4.6 | 10% | 90% | 0.32 | 3.49 | 3.37 | 3.65 |