**Supplementary Table 1. External Validity: Cancer Diagnoses By County (N=41,165)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Any Site | Lung/Bronchus | Colon/Rectum | Female Breast | Prostate |
| **County** | **Cancers diagnosed** | **% in EHR Pop.** | **Cancers diagnosed** | **% in EHR Pop.** | **Cancers diagnosed** | **% in EHR Pop.** | **Cancers diagnosed** | **% in EHR Pop.** | **Cancers diagnosed** | **% in EHR Pop.** |
| All Counties | 41,165 | 25.89 | 7,743 | 25.74 | 6,781 | 23.64 | 15,953 | 29.66 | 10,688 | 21.82 |
| Alameda | 5,319 | 21.70 | 851 | 19.62 | 1,477 | 17.47 | 941 | 23.59 | 2,050 | 24.73 |
| Amador | 209 | 62.20 | 27 | 51.85 | 54 | 48.15 | 56 | 58.93 | 72 | 79.17 |
| Contra Costa | 4,136 | 11.05 | 672 | 11.16 | 1,205 | 9.63 | 713 | 9.68 | 1,546 | 12.74 |
| Del Norte | 74 | 45.95 | 10 | 60.00 | 16 | 12.50 | 18 | 27.78 | 30 | 70.00 |
| El Dorado | 760 | 15.26 | 121 | 10.74 | 198 | 9.60 | 142 | 12.68 | 299 | 22.07 |
| Lake | 270 | 22.96 | 41 | 34.15 | 64 | 17.19 | 93 | 19.35 | 72 | 26.39 |
| Marin | 1,082 | 14.70 | 170 | 7.06 | 313 | 7.03 | 162 | 8.64 | 437 | 25.40 |
| Merced | 623 | 14.29 | 124 | 12.10 | 141 | 12.06 | 144 | 15.97 | 214 | 15.89 |
| Napa | 566 | 5.30 | 87 | 6.90 | 151 | 4.64 | 96 | 5.21 | 232 | 5.17 |
| Nevada | 450 | 26.89 | 68 | 25.00 | 143 | 27.27 | 83 | 21.69 | 156 | 30.13 |
| Placer | 1,560 | 48.33 | 211 | 57.35 | 454 | 41.41 | 289 | 48.44 | 606 | 50.33 |
| Sacramento | 5,148 | 23.76 | 853 | 21.92 | 1,163 | 19.09 | 1,081 | 24.61 | 2,051 | 26.72 |
| San Francisco | 2,991 | 22.73 | 554 | 15.70 | 701 | 13.41 | 635 | 21.57 | 1,101 | 32.88 |
| San Joaquin | 2,168 | 28.41 | 402 | 23.88 | 544 | 28.13 | 465 | 28.39 | 757 | 31.04 |
| San Mateo | 2,876 | 37.41 | 427 | 32.08 | 740 | 30.41 | 474 | 32.91 | 1,235 | 45.18 |
| Santa Clara | 5,895 | 22.04 | 988 | 21.05 | 1,588 | 20.91 | 973 | 18.29 | 2,346 | 24.77 |
| Santa Cruz | 916 | 62.55 | 118 | 51.69 | 265 | 68.30 | 136 | 63.97 | 397 | 61.46 |
| Solano | 1,681 | 22.19 | 265 | 20.75 | 475 | 18.74 | 366 | 26.23 | 575 | 23.13 |
| Sonoma | 1,888 | 27.33 | 337 | 27.30 | 433 | 21.25 | 350 | 27.71 | 768 | 30.60 |
| Stanislaus | 1,451 | 43.49 | 269 | 46.10 | 330 | 38.48 | 296 | 52.36 | 556 | 40.47 |
| Sutter | 310 | 73.87 | 47 | 80.85 | 61 | 68.85 | 80 | 66.25 | 122 | 78.69 |
| Yolo | 589 | 35.14 | 99 | 41.41 | 131 | 29.01 | 93 | 39.78 | 266 | 34.21 |
| Yuba | 203 | 64.04 | 40 | 42.50 | 41 | 78.05 | 57 | 59.65 | 65 | 72.31 |

**Supplementary Table 2. External Validity: Comparison of Demographic and Tumor Characteristics, by Tumor Site (N=41,165)**

|  |  |  |  |
| --- | --- | --- | --- |
| Patient Characteristic | EHR PopulationN (%) | Non-EHR PopulationN (%) | Proportion Ratioa EHR : Non-EHR (95% CIb) |
| **Lung/Bronchus****(N=7,743)** | **Colon/Rectum****(N=6,781)** | **Female Breast****(N=15,953)** | **Prostate (N=10,688)** |
| **Sex** |  |  |  |  |  |  |
|  Male | 3,995 (37.48) | 13,882 (45.51) | 0.89 (0.76-1.04) | 0.94 (0.81-1.10) | N/A | 1.00 (0.84-1.19) |
|  Female | 6,664 (62.52) | 16,624 (54.49) | 1.11 (0.95-1.30) | 1.06 (0.91-1.24) | 1.00 (0.84-1.19) | N/A |
| **Age Group** |  |  |  |  |  |  |
|  18-54 years | 2,642 (24.79) | 6,722 (22.04) | 1.11 (1.08-1.15) | 1.02 (0.91-1.15) | 1.07 (0.93-1.23) | 0.88 (0.88-0.89) |
|  55-64 years | 2,728 (25.59) | 8,586 (28.15) | 0.92 (0.83-1.02) | 0.83 (0.74-0.93) | 0.96 (0.85-1.08) | 0.91 (0.80-1.05) |
|  65-74 years | 2,941 (27.59) | 8,819 (28.91) | 1.03 (0.90-1.17) | 0.98 (0.88-1.09) | 0.94 (0.84-1.05) | 1.00 (0.87-1.16) |
|  75-84 years | 1,671 (15.68) | 4,590 (15.05) | 0.96 (0.85-1.09) | 1.07 (0.99-1.16) | 1.05 (1.04-1.06) | 1.27 (1.22-1.31) |
|  85 years and older | 677 (6.35) | 1,789 (5.86) | 1.07 (1.07-1.07) | 1.32 (1.29-1.35) | 0.88 (0.64-1.21) | 1.26 (0.84-1.91) |
| **Race/Ethnicity** |  |  |  |  |  |  |
|  Non-Hispanic white | 7,149 (67.07) | 17,759 (58.21) | 1.11 (0.94-1.31) | 1.20 (1.02- 1.41) | 1.15 (0.98- 1.36) | 1.16 (0.99-1.37) |
|  Non-Hispanic black | 692 (6.49) | 2,530 (8.29) | 1.08 (1.02-1.14) | 0.84 (0.78- 0.91) | 0.80 (0.72- 0.89) | 0.63 (0.63-0.63) |
|  Hispanic | 993 (9.32) | 3,817 (12.51) | 0.82 (0.79-0.86) | 0.79 (0.75- 0.83) | 0.69 (0.66- 0.73) | 0.75 (0.73-0.77) |
|  Asian/Pacific Islander | 1,533 (14.38) | 5,595 (18.34) | 0.69 (0.63-0.76) | 0.66 (0.60- 0.73) | 0.83 (0.75- 0.92) | 0.77 (0.75-0.80) |
|  Native American | 56 (0.53) | 143 (0.47) | 1.15 (0.05-27.28) | 0.69 (0.02-29.55) | 1.14 (0.03-51.32) | Low1 |
|  Unknown | 236 (2.21) | 662 (2.17) | 1.04 (0.01-96.23) | 1.64 (0.43- 6.19) | 1.25 (0.25- 6.35) | 1.02 (0.85-1.23) |
| **Stage** |  |  |  |  |  |  |
|  In situ | 1,025 (9.62) | 2,412 (7.91) | Low1 | 0.82 (0.58-1.17) | 1.05 (0.95- 1.15) | N/A |
|  Localized | 5,157 (48.38) | 15,585 (51.09) | 1.04 (0.97-1.11) | 0.95 (0.83-1.10) | 1.00 (0.86- 1.17) | 0.93 (0.78-1.10) |
|  Regional | 2,385 (22.38) | 6,334 (20.76) | 1.09 (0.99-1.20) | 1.06 (0.92-1.21) | 0.98 (0.88- 1.10) | 1.27 (1.26-1.28) |
|  Remote | 1,864 (17.49) | 5,567 (18.25) | 0.98 (0.83-1.16) | 1.03 (0.93-1.13) | 0.80 (0.60- 1.07) | 1.19 (1.05-1.35) |
|  Unknown  | 228 (2.14) | 608 (1.99) | 0.68 (0.45-1.03) | 1.00 (0.63-1.58) | 1.19 (0.04-32.21) | 1.95 (0.94-4.06) |
| **Neighborhood SES (Quintiles)** |  |  |  |  |  |  |
|  Highest SES | 3,552 (33.32) | 8,703 (28.53) | 1.11 (1.00-1.23) | 1.16 (1.03-1.30) | 1.22 (1.07-1.39) | 1.13 (0.99-1.29) |
|  Higher-middle SES | 2,547 (23.9) | 7,719 (25.3) | 0.86 (0.77-0.96) | 0.97 (0.87-1.09) | 0.95 (0.85-1.08) | 0.96 (0.85-1.08) |
|  Middle SES | 2,092 (19.63) | 6,471 (21.21) | 1.01 (0.91-1.13) | 0.99 (0.90-1.10) | 0.87 (0.78-0.96) | 0.90 (0.82-0.98) |
|  Lower-middle SES | 1,513 (14.19) | 4,689 (15.37) | 1.02 (0.94-1.10) | 0.88 (0.82-0.95) | 0.89 (0.84-0.94) | 0.93 (0.89-0.97) |
|  Lowest SES | 955 (8.96) | 2,924 (9.58) | 1.03 (0.99-1.08) | 0.89 (0.87-0.91) | 0.88 (0.84-0.93) | 0.97 (0.90-1.05) |
| **Payer (Insurance Type)** |  |  |  |  |  |  |
|  Private Insurance | 4,930 (46.25) | 19,078 (62.54) | 0.61 (0.53-0.71) | 0.74 (0.63-0.87) | 0.80 (0.68- 0.95) | 0.67 (0.57-0.79) |
|  Medicare | 4,149 (38.92) | 7,682 (25.18) | 1.44 (1.25-1.67) | 1.61 (1.42-1.82) | 1.57 (1.44- 1.71) | 1.76 (1.57-1.97) |
|  Any public, Medicaid, military | 683 (6.41) | 2746 (9) | 0.76 (0.75-0.78) | 0.69 (0.68-0.70) | 0.67 (0.66- 0.67) | 0.66 (0.52-0.84) |
|  Not insured | 73 (0.68) | 216 (0.71) | 0.88 (0.22-3.56) | 0.79 (0.12-5.13) | 1.28 (0.02-77.33) | 0.90 (0.01-86.51) |
|  Unknown | 824 (7.73) | 784 (2.57) | 2.46 (1.42-4.24) | 2.33 (0.71-7.66) | 3.95 (2.03- 7.69) | 2.55 (1.77-3.66) |
| **Marital Status** |  |  |  |  |  |  |
|  Married/Registered | 6,273 (58.85) | 16,626 (54.5) | 1.02 (0.88-1.19) | 1.03 (0.88-1.21) | 1.09 (0.93-1.27) | 1.15 (0.98-1.36) |
|  Single/Divorced/Widowed | 3,895 (36.54) | 10,165 (33.32) | 1.10 (0.95-1.28) | 1.15 (0.99-1.32) | 1.02 (0.89-1.18) | 1.07 (0.97-1.17) |
|  Unknown | 491 (4.61) | 3,715 (12.18) | 0.26 (0.23-0.29) | 0.34 (0.33-0.34) | 0.37 (0.36-0.39) | * 1. 0.45-0.54)
 |

a. Proportion Ratio calculated as $\hat{θ}=\frac{^{x\_{1}}/\_{n\_{1}}}{^{x\_{2}}/\_{n\_{2}}}$ where $x\_{1}$ and $x\_{2}$ are the successes in the two groups out of totals $n\_{1}$ and $n\_{2}.$

b. 95% confidence interval (CI) calculated as $\hat{θ}exp\left[\pm 1.96\sqrt{^{1}/\_{x\_{1}}-^{1}/\_{n\_{1}}+^{1}/\_{x\_{2}}-^{1}/\_{n\_{2}}}\right]$