**Supplementary Table 1. Frequency and Incidence Rate Ratiosa by Sex and Race in SEER Site Recode ICD-O-3/WHO 2008 Sites, 2001-2016, National Program of Cancer Registries and Surveillance, Epidemiology, and End Results SEER\*Stat Database: NPCR and SEER Incidence – U.S. Cancer Statistics Public Use Research Database, Nov 2018 Submission (2001-2016).**

|   | **White** | **Black** |
| --- | --- | --- |
|   | Male (n)  | Female (n)  | Male-to-Female IRR (95% CI)  |  p-value  | Male (n)  | Female (n) | Male-to-Female IRR (95% CI)  | p-value |
| **All Sites** | 5,525,715 |  6,630,370 |  0.955 (0.954-0.956)  |  <0.001  | 603,153 | 841,572 |  0.943 (0.939-0.946)  | <0.001 |
|  **Oral Cavity and Pharynx** |  280,102  |  112,551  |  2.763 (2.743-2.782)  |  <0.001  |  30,166  |  13,144  |  2.822 (2.763-2.882)  | <0.001 |
|  Lip |  18,731  |  6,477  |  3.538 (3.437-3.641)  |  <0.001  |  221  |  158  |  1.859 (1.498-2.310)  | <0.001 |
|  Tongue |  86,461  |  33,406  |  2.818 (2.782-2.854)  |  <0.001  |  6,588  |  2,669  |  3.026 (2.890-3.169)  | <0.001 |
|  Salivary Gland |  23,773  |  16,565  |  1.638 (1.605-1.672)  |  <0.001  |  2,284  |  2,527  |  1.148 (1.082-1.218)  | <0.001 |
|  Floor of Mouth |  15,050  |  6,428  |  2.603 (2.527-2.682)  |  <0.001  |  2,090  |  750  |  3.404 (3.125-3.712)  | <0.001 |
|  Gum and Other Mouth |  27,735  |  22,508  |  1.448 (1.423-1.475)  |  <0.001  |  3,641  |  2,740  |  1.658 (1.575-1.746)  | <0.001 |
|  Nasopharynx |  9,995  |  4,184  |  2.559 (2.467-2.655)  |  <0.001  |  2,455  |  1,038  |  2.804 (2.602-3.022)  | <0.001 |
|  Tonsil |  63,562  |  13,268  |  5.114 (5.018-5.213)  |  <0.001  |  5,961  |  1,533  |  4.695 (4.434-4.974)  | <0.001 |
|  Oropharynx |  12,460  |  3,723  |  3.702 (3.567-3.842)  |  <0.001  |  2,269  |  680  |  4.189 (3.836-4.578)  | <0.001 |
|  Hypopharynx |  16,558  |  4,142  |  4.510 (4.357-4.669)  |  <0.001  |  3,774  |  777  |  6.187 (5.717-6.702)  | <0.001 |
|  Other Oral Cavity and Pharynx |  5,777  |  1,850  |  3.519 (3.336-3.712)  |  <0.001  |  883  |  272  |  3.951 (3.435-4.557)  | <0.001 |
|  **Digestive System** |  1,475,595  |  1,202,876  |  1.464 (1.460-1.468)  |  <0.001  | 211,132  |  197,926  |  1.390 (1.381-1.399)  | <0.001 |
|  Esophagus |  135,451  |  32,886  |  4.923 (4.864-4.984)  |  <0.001  |  14,385  |  6,250  |  3.003 (2.913-3.097)  | <0.001 |
|  Stomach |  131,076  |  76,651  |  2.056 (2.038-2.075)  |  <0.001  |  24,459  |  18,952  |  1.760 (1.725-1.795)  | <0.001 |
|  Small Intestine |  36,222  |  32,263  |  1.295 (1.276-1.315)  |  <0.001  |  6,569  |  7,324  |  1.167 (1.127-1.208)  | <0.001 |
|  Colon and Rectum |  792,848  |  735,256  |  1.300 (1.296-1.304)  |  <0.001  | 105,331  |  114,585  |  1.219 (1.209-1.230)  | <0.001 |
|  *Colon excluding Rectum* |  532,239  |  548,613  |  1.193 (1.189-1.198)  |  <0.001  |  75,697  |  88,333  |  1.154 (1.142-1.166)  | <0.001 |
|  Cecum |  105,982  |  134,178  |  1.010 (1.002-1.018)  |  0.02  |  15,226  |  20,710  |  0.998 (0.977-1.021)  | 0.89 |
|  Appendix |  15,528  |  18,433  |  0.893 (0.874-0.913)  |  <0.001  |  1,615  |  2,208  |  0.915 (0.855-0.978)  | 0.009 |
|  Ascending Colon |  93,944  |  114,044  |  1.056 (1.047-1.065)  |  <0.001  |  13,898  |  17,611  |  1.072 (1.047-1.097)  | <0.001 |
|  Hepatic Flexure |  25,965  |  26,488  |  1.254 (1.232-1.276)  |  <0.001  |  3,463  |  3,787  |  1.258 (1.198-1.320)  | <0.001 |
|  Transverse Colon |  44,521  |  48,698  |  1.150 (1.135-1.165)  |  <0.001  |  6,624  |  7,840  |  1.150 (1.111-1.190)  | <0.001 |
|  Splenic Flexure |  17,136  |  14,749  |  1.415 (1.384-1.447)  |  <0.001  |  3,399  |  3,322  |  1.387 (1.319-1.458)  | <0.001 |
|  Descending Colon |  31,917  |  26,462  |  1.433 (1.409-1.457)  |  <0.001  |  6,040  |  6,372  |  1.272 (1.226-1.320)  | <0.001 |
|  Sigmoid Colon |  167,494  |  136,033  |  1.436 (1.426-1.447)  |  <0.001  |  20,097  |  20,651  |  1.295 (1.269-1.322)  | <0.001 |
|  Large Intestine, NOS |  29,752  |  29,528  |  1.268 (1.247-1.289)  |  <0.001  |  5,335  |  5,832  |  1.243 (1.195-1.292)  | <0.001 |
|  *Rectum and Rectosigmoid Junction* |  260,609  |  186,643  |  1.602 (1.592-1.611)  |  <0.001  |  29,634  |  26,252  |  1.446 (1.421-1.471)  | <0.001 |
|  Rectosigmoid Junction |  67,522  |  51,745  |  1.507 (1.490-1.525)  |  <0.001  |  7,082  |  6,576  |  1.383 (1.335-1.432)  | <0.001 |
|  Rectum |  193,087  |  134,898  |  1.637 (1.626-1.649)  |  <0.001  |  22,552  |  19,676  |  1.467 (1.438-1.497)  | <0.001 |
|  Anus, Anal Canal and Anorectum |  22,016  |  39,981  |  0.628 (0.617-0.638)  |  <0.001  |  3,866  |  4,163  |  1.107 (1.058-1.158)  | <0.001 |
|  Liver and Intrahepatic Bile Duct |  144,461  |  55,297  |  2.943 (2.913-2.972)  |  <0.001  |  28,801  |  10,351  |  3.330 (3.254-3.408)  | <0.001 |
|  Liver |  132,900  |  43,894  |  3.398 (3.361-3.435)  |  <0.001  |  27,590  |  9,009  |  3.662 (3.574-3.753)  | <0.001 |
|  Intrahepatic Bile Duct |  11,561  |  11,403  |  1.188 (1.158-1.220)  |  <0.001  |  1,211  |  1,342  |  1.179 (1.087-1.279)  | <0.001 |
|  Gallbladder |  10,789  |  25,308  |  0.538 (0.526-0.551)  |  <0.001  |  1,758  |  4,509  |  0.565 (0.533-0.599)  | <0.001 |
|  Other Biliary |  25,863  |  21,727  |  1.466 (1.440-1.493)  |  <0.001  |  2,497  |  2,762  |  1.228 (1.161-1.300)  | <0.001 |
|  Pancreas |  162,802  |  152,470  |  1.290 (1.280-1.299)  |  <0.001  |  21,628  |  25,520  |  1.101 (1.080-1.122)  | <0.001 |
|  Retroperitoneum |  6,359  |  6,396  |  1.093 (1.055-1.133)  |  <0.001  |  645  |  1,108  |  0.702 (0.633-0.777)  | <0.001 |
|  Peritoneum, Omentum and Mesentery |  1,411  |  18,278  |  0.092 (0.087-0.098)  |  <0.001  |  191  |  1,285  |  0.183 (0.154-0.215)  | <0.001 |
|  Other Digestive Organs |  6,297  |  6,363  |  1.202 (1.160-1.246)  |  <0.001  |  1,002  |  1,117  |  1.218 (1.113-1.332)  | <0.001 |
|  **Breast** | 19,511 | 2,391,325 | 0.009 (0.009-0.009) | <0.001 | 3,136 | 318,421 | 0.014 (0.013-0.014) | <0.001 |
|  **Respiratory System** |  1,111,210  |  907,621  |  1.456 (1.452-1.460)  |  <0.001  | 146,971  |  105,145  |  1.878 (1.862-1.893)  | <0.001 |
|  Nose, Nasal Cavity and Middle Ear |  14,197  |  9,375  |  1.733 (1.687-1.780)  |  <0.001  |  1,674  |  1,194  |  1.723 (1.595-1.862)  | <0.001 |
|  Larynx |  104,966  |  26,542  |  4.443 (4.383-4.504)  |  <0.001  |  18,067  |  4,648  |  5.123 (4.957-5.296)  | <0.001 |
|  Lung and Bronchus |  987,500  |  869,585  |  1.357 (1.353-1.361)  |  <0.001  |  126,737  |  98,980  |  1.735 (1.720-1.750)  | <0.001 |
|  Pleura |  521  |  332  |  1.912 (1.658-2.206)  |  <0.001  |  43  |  39  |  1.477 (0.918-2.370)  | 0.11 |
|  Trachea, Mediastinum and Other Respiratory Organs |  4,026  |  1,787  |  2.449 (2.313-2.593)  |  <0.001  |  450  |  284  |  1.835 (1.572-2.145)  | <0.001 |
|  **Bones and Joints** |  18,278  |  14,089  |  1.332 (1.303-1.363)  |  <0.001  |  2,247  |  2,060  |  1.175 (1.105-1.250)  | <0.001 |
|  **Soft Tissue including Heart** |  59,390  |  46,676  |  1.401 (1.384-1.418)  |  <0.001  |  7,706  |  8,297  |  1.117 (1.082-1.154)  | <0.001 |
|  **Skin excluding Basal and Squamous** |  454,634  |  351,943  |  1.396 (1.389-1.402)  |  <0.001  |  4,086  |  4,902  |  1.059 (1.014-1.106)  | 0.01 |
|  Melanoma of the Skin |  423,164  |  330,049  |  1.374 (1.368-1.380)  |  <0.001  |  1,793  |  2,355  |  1.026 (0.961-1.094)  | 0.45 |
|  Other Non-Epithelial Skin |  31,470  |  21,894  |  1.747 (1.716-1.778)  |  <0.001  |  2,293  |  2,547  |  1.091 (1.029-1.157)  | 0.004 |
|  **Urinary System** |  906,565  |  390,774  |  2.771 (2.761-2.782)  |  <0.001  |  68,512  |  44,993  |  2.005 (1.981-2.030)  | <0.001 |
|  Urinary Bladder |  563,304  |  181,112  |  3.907 (3.886-3.928)  |  <0.001  |  26,845  |  14,781  |  2.551 (2.499-2.605)  | <0.001 |
|  Kidney and Renal Pelvis |  330,122  |  201,205  |  1.844 (1.834-1.855)  |  <0.001  |  40,814  |  29,168  |  1.737 (1.710-1.764)  | <0.001 |
|  Ureter |  9,197  |  6,275  |  1.877 (1.817-1.939)  |  <0.001  |  333  |  327  |  1.449 (1.233-1.701)  | <0.001 |
|  Other Urinary Organs |  3,942  |  2,182  |  2.284 (2.165-2.409)  |  <0.001  |  520  |  717  |  1.032 (0.915-1.163)  | 0.62 |
|  **Eye and Orbit** |  13,504  |  10,928  |  1.361 (1.326-1.396)  |  <0.001  |  660  |  609  |  1.221 (1.087-1.372)  | <0.001 |
|  **Brain and Other Nervous System** |  140,715  |  111,615  |  1.361 (1.350-1.372)  |  <0.001  |  10,954  |  9,916  |  1.292 (1.256-1.329)  | <0.001 |
|  Brain |  133,364  |  103,571  |  1.395 (1.383-1.406)  |  <0.001  |  10,049  |  8,799  |  1.341 (1.302-1.381)  | <0.001 |
|  Cranial Nerves and Other Nervous System |  7,351  |  8,044  |  0.954 (0.924-0.986)  |  0.004  |  905  |  1,117  |  0.909 (0.829-0.996)  | 0.04 |
|  **Endocrine System** |  119,002  |  347,471  |  0.343 (0.341-0.346)  |  <0.001  |  9,184  |  35,469  |  0.311 (0.304-0.319)  | <0.001 |
|  Thyroid |  106,278  |  336,431  |  0.315 (0.313-0.318)  |  <0.001  |  6,884  |  33,006  |  0.254 (0.248-0.261)  | <0.001 |
|  Other Endocrine including Thymus |  12,724  |  11,040  |  1.218 (1.187-1.250)  |  <0.001  |  2,300  |  2,463  |  1.076 (1.014-1.142)  | 0.02 |
|  **Lymphoma** |  416,214  |  354,529  |  1.360 (1.354-1.366)  |  <0.001  |  42,007  |  37,577  |  1.347 (1.328-1.367)  | <0.001 |
|  Hodgkin Lymphoma |  55,590  |  45,609  |  1.234 (1.219-1.250)  |  <0.001  |  8,318  |  7,080  |  1.329 (1.286-1.373)  | <0.001 |
|  Nodal |  54,209  |  44,371  |  1.236 (1.220-1.251)  |  <0.001  |  8,084  |  6,897  |  1.325 (1.282-1.369)  | <0.001 |
|  Extranodal |  1,381  |  1,238  |  1.175 (1.086-1.271)  |  <0.001  |  234  |  183  |  1.468 (1.199-1.800)  | <0.001 |
|  Non-Hodgkin Lymphoma |  360,624  |  308,920  |  1.382 (1.376-1.389)  |  <0.001  |  33,689  |  30,497  |  1.351 (1.330-1.373)  | <0.001 |
|  Nodal |  248,846  |  209,739  |  1.401 (1.392-1.409)  |  <0.001  |  22,381  |  18,799  |  1.449 (1.420-1.478)  | <0.001 |
|  Extranodal |  111,778  |  99,181  |  1.344 (1.332-1.356)  |  <0.001  |  11,308  |  11,698  |  1.193 (1.161-1.225)  | <0.001 |
|  **Myeloma** |  103,289  |  80,143  |  1.546 (1.531-1.560)  |  <0.001  |  23,220  |  25,249  |  1.224 (1.201-1.247)  | <0.001 |
|  **Leukemia** |  239,066  |  169,993  |  1.611 (1.600-1.621)  |  <0.001  |  21,419  |  18,625  |  1.454 (1.424-1.484)  | <0.001 |
|  Lymphocytic Leukemia |  129,751  |  84,887  |  1.733 (1.718-1.749)  |  <0.001  |  10,051  |  7,409  |  1.696 (1.643-1.750)  | <0.001 |
|  Acute Lymphocytic Leukemia |  32,100  |  24,180  |  1.313 (1.291-1.336)  |  <0.001  |  3,231  |  2,412  |  1.382 (1.309-1.459)  | <0.001 |
|  Chronic Lymphocytic Leukemia |  86,625  |  56,878  |  1.864 (1.844-1.884)  |  <0.001  |  6,251  |  4,719  |  1.779 (1.710-1.850)  | <0.001 |
|  Other Lymphocytic Leukemia |  11,026  |  3,829  |  3.265 (3.144-3.390)  |  <0.001  |  569  |  278  |  2.615 (2.252-3.043)  | <0.001 |
|  Myeloid and Monocytic Leukemia |  102,087  |  79,252  |  1.485 (1.471-1.499)  |  <0.001  |  10,252  |  10,156  |  1.289 (1.253-1.327)  | <0.001 |
|  Acute Myeloid Leukemia |  63,580  |  50,984  |  1.437 (1.420-1.454)  |  <0.001  |  6,054  |  6,397  |  1.221 (1.176-1.267)  | <0.001 |
|  Acute Monocytic Leukemia |  4,306  |  3,520  |  1.371 (1.310-1.435)  |  <0.001  |  320  |  327  |  1.283 (1.088-1.512)  | 0.003 |
|  Chronic Myeloid Leukemia |  31,436  |  22,619  |  1.604 (1.576-1.632)  |  <0.001  |  3,603  |  3,201  |  1.409 (1.341-1.481)  | <0.001 |
|  Other Myeloid/Monocytic Leukemia |  2,765  |  2,129  |  1.558 (1.471-1.651)  |  <0.001  |  275  |  231  |  1.534 (1.273-1.848)  | <0.001 |
|  Other Leukemia |  7,228  |  5,854  |  1.518 (1.465-1.572)  |  <0.001  |  1,116  |  1,060  |  1.335 (1.221-1.459)  | <0.001 |
|  Other Acute Leukemia |  3,463  |  2,673  |  1.591 (1.511-1.675)  |  <0.001  |  408  |  359  |  1.407 (1.209-1.637)  | <0.001 |
|  Aleukemic, Subleukemic and NOS |  3,765  |  3,181  |  1.455 (1.387-1.527)  |  <0.001  |  708  |  701  |  1.297 (1.161-1.447)  | <0.001 |
|  **Mesothelioma** |  25,077  |  7,614  |  4.081 (3.976-4.189)  |  <0.001  |  1,205  |  475  |  3.826 (3.428-4.276)  | <0.001 |
|  **Kaposi Sarcoma** |  9,606  |  1,298  |  10.098 (9.514-10.723)  |  <0.001  |  4,284  |  472  |  9.820 (8.918-10.834)  | <0.001 |
|  **Miscellaneous** |  133,957  |  128,924  |  1.306 (1.296-1.317)  |  <0.001  |  16,264  |  18,292  |  1.196 (1.170-1.223)  | <0.001 |

|   | **AIAN** | **API** |
| --- | --- | --- |
|   | Male (n)  | Female (n) | Male-to-Female IRR (95% CI)  | p-value | Male (n)  | Female (n)  | Male-to-Female IRR (95% CI)  | p-value  |
| **All Sites** |  35,264 | 44,247 |  0.939 (0.925-0.953)  | <0.001 | 182,398 | 255,008 | 0.924 (0.919-0.930) | <0.001 |
|  **Oral Cavity and Pharynx** |  1,891  | 772 |  2.637 (2.411-2.887)  | <0.001 | 9,948 |  5,344 | 2.192 (2.118-2.268) | <0.001 |
|  Lip |  84  | 32 |  3.039 (1.953-4.857)  | <0.001 | 91 |  74 | 1.237 (0.893-1.721) | 0.21 |
|  Tongue |  471  | 193 |  2.616 (2.187-3.140)  | <0.001 | 2,028 |  1,455  | 1.656 (1.544-1.776) | <0.001 |
|  Salivary Gland |  137  | 123 |  1.413 (1.073-1.857)  | 0.01 | 929 |  893  | 1.269 (1.152-1.396) | <0.001 |
|  Floor of Mouth |  132  | 57 |  2.397 (1.714-3.397)  | <0.001 | 220 |  124  | 2.000 (1.588-2.530) | <0.001 |
|  Gum and Other Mouth |  177  | 138 |  1.332 (1.041-1.707)  | 0.02 | 1,342 |  850  | 1.799 (1.646-1.968) | <0.001 |
|  Nasopharynx |  176  | 81 |  2.141 (1.613-2.869)  | <0.001 | 3,705 |  1,534  | 2.850 (2.682-3.030) | <0.001 |
|  Tonsil |  422  | 78 |  5.726 (4.449-7.465)  | <0.001 | 877 |  232  | 4.466 (3.849-5.199) | <0.001 |
|  Oropharynx |  81  | 21 |  4.493 (2.687-7.871)  | <0.001 | 177 |  52  | 4.113 (2.981-5.765) | <0.001 |
|  Hypopharynx |  161  | 35 |  5.371 (3.639-8.178)  | <0.001 | 480 |  97  | 6.589 (5.261-8.327) | <0.001 |
|  Other Oral Cavity and Pharynx |  50  | -- |  --  | -- | 99 |  33  | 3.717 (2.458-5.759) | <0.001 |
|  **Digestive System** |  11,794  | 9,534 |  1.383 (1.343-1.424)  | <0.001 | 74,341 |  58,010  | 1.568 (1.550-1.586) | <0.001 |
|  Esophagus |  830  | 237 |  3.909 (3.352-4.577)  | <0.001 | 2,936 |  956  | 3.733 (3.462-4.027) | <0.001 |
|  Stomach |  1,287  | 849 |  1.808 (1.645-1.988)  | <0.001 | 11,742 |  8,747  | 1.713 (1.665-1.763) | <0.001 |
|  Small Intestine |  209  | 194 |  1.153 (0.931-1.427)  | 0.20 | 1,074 |  855  | 1.532 (1.395-1.682) | <0.001 |
|  Colon and Rectum |  5,742  | 5,349 |  1.220 (1.171-1.270)  | <0.001 | 33,013 |  30,100  | 1.349 (1.328-1.371) | <0.001 |
|  *Colon excluding Rectum* |  3,584  | 3,740 |  1.110 (1.056-1.167)  | <0.001 | 19,964 |  20,476  | 1.220 (1.196-1.245) | <0.001 |
|  Cecum |  636  | 856 |  0.865 (0.772-0.968)  | 0.01 | 2,402 |  3,260  | 0.928 (0.878-0.980) | 0.008 |
|  Appendix |  107  | 106 |  1.184 (0.876-1.597)  | 0.28 | 393 |  586  | 0.822 (0.719-0.940) | 0.004 |
|  Ascending Colon |  523  | 637 |  0.966 (0.850-1.096)  | 0.60 | 3,015 |  3,418  | 1.112 (1.057-1.170) | <0.001 |
|  Hepatic Flexure |  173  | 163 |  1.240 (0.977-1.570)  | 0.08 | 917 |  926  | 1.215 (1.104-1.336) | <0.001 |
|  Transverse Colon |  279  | 323 |  0.999 (0.836-1.192)  | >0.99 | 1,580 |  1,586  | 1.234 (1.147-1.327) | <0.001 |
|  Splenic Flexure |  103  | 116 |  0.956 (0.710-1.285)  | 0.80 | 690 |  607  | 1.456 (1.299-1.632) | <0.001 |
|  Descending Colon |  174  | 179 |  1.177 (0.931-1.485)  | 0.18 | 1,651 |  1,488  | 1.405 (1.306-1.511) | <0.001 |
|  Sigmoid Colon |  1,285  | 1,092 |  1.387 (1.270-1.514)  | <0.001 | 8,389 |  7,669  | 1.380 (1.336-1.425) | <0.001 |
|  Large Intestine, NOS |  304  | 268 |  1.311 (1.093-1.573)  | 0.003 | 927 |  936  | 1.212 (1.102-1.333) | <0.001 |
|  *Rectum and Rectosigmoid Junction* |  2,158  | 1,609 |  1.500 (1.399-1.609)  | <0.001 | 13,049 |  9,624  | 1.639 (1.595-1.684) | <0.001 |
|  Rectosigmoid Junction |  497  | 423 |  1.362 (1.183-1.569)  | <0.001 | 3,369 |  2,734  | 1.525 (1.447-1.607) | <0.001 |
|  Rectum |  1,661  | 1,186 |  1.551 (1.431-1.682)  | <0.001 | 9,680 |  6,890  | 1.685 (1.632-1.740) | <0.001 |
|  Anus, Anal Canal and Anorectum |  159  | 236 |  0.721 (0.575-0.901)  | 0.004 | 348 |  545  | 0.774 (0.671-0.891) | <0.001 |
|  Liver and Intrahepatic Bile Duct |  2,046  | 870 |  2.391 (2.196-2.605)  | <0.001 | 16,247 |  6,572  | 2.824 (2.742-2.909) | <0.001 |
|  Liver |  1,942  | 773 |  2.534 (2.317-2.773)  | <0.001 | 15,338 |  5,754  | 3.030 (2.937-3.126) | <0.001 |
|  Intrahepatic Bile Duct |  104  | 97 |  1.238 (0.910-1.681)  | 0.18 | 909 |  818  | 1.360 (1.233-1.501) | <0.001 |
|  Gallbladder |  168  | 388 |  0.533 (0.434-0.649)  | <0.001 | 749 |  1,461  | 0.674 (0.614-0.739) | <0.001 |
|  Other Biliary |  214  | 185 |  1.319 (1.063-1.637)  | 0.01 | 1,880 |  1,595  | 1.487 (1.387-1.594) | <0.001 |
|  Pancreas |  1,012  | 982 |  1.170 (1.063-1.287)  | 0.001 | 5,677 |  5,848  | 1.205 (1.160-1.252) | <0.001 |
|  Retroperitoneum |  55  | 60 |  1.001 (0.657-1.515)  | >0.99 | 294 |  375  | 0.931 (0.793-1.092) | 0.39 |
|  Peritoneum, Omentum and Mesentery |  --  | 113 |  --  | -- | 37 |  616  | 0.068 (0.047-0.097) | <0.001 |
|  Other Digestive Organs |  60  | 71 |  0.882 (0.601-1.289)  | 0.55 | 344 |  340  | 1.317 (1.124-1.542) | <0.001 |
|  **Breast** | 64 | 15,054 | 0.005 (0.004-0.007) | <0.001 | 559 | 102,002 | 0.007 (0.007-0.008) | <0.001 |
|  **Respiratory System** |  6,846  | 5,956 |  1.373 (1.322-1.425)  | <0.001 | 31,405 |  22,777  | 1.778 (1.747-1.810) | <0.001 |
|  Nose, Nasal Cavity and Middle Ear |  89  | 76 |  1.199 (0.852-1.689)  | 0.31 | 644 |  428  | 1.804 (1.588-2.051) | <0.001 |
|  Larynx |  681  | 183 |  4.530 (3.809-5.414)  | <0.001 | 1,794 |  280  | 8.199 (7.203-9.363) | <0.001 |
|  Lung and Bronchus |  6,033  | 5,681 |  1.284 (1.235-1.336)  | <0.001 | 28,691 |  21,963  | 1.695 (1.665-1.726) | <0.001 |
|  Pleura |  --  | -- |  --  | -- | -- |  --  |  --  |  --  |
|  Trachea, Mediastinum and Other Respiratory Organs |  37  | -- |  --  | -- | 261 |  93  | 2.765 (2.163-3.564) | <0.001 |
|  **Bones and Joints** |  172  | 159 |  1.053 (0.830-1.337)  | 0.71 | 842 |  648  | 1.379 (1.241-1.533) | <0.001 |
|  **Soft Tissue including Heart** |  474  | 384 |  1.374 (1.182-1.597)  | <0.001 | 2,424 |  2,215  | 1.305 (1.229-1.385) | <0.001 |
|  **Skin excluding Basal and Squamous** |  1,141  | 1,099 |  1.297 (1.183-1.421)  | <0.001 | 1,962 |  2,019  | 1.241 (1.163-1.325) | <0.001 |
|  Melanoma of the Skin |  1,001  | 925 |  1.362 (1.234-1.503)  | <0.001 | 1,228 |  1,333  | 1.181 (1.088-1.280) | <0.001 |
|  Other Non-Epithelial Skin |  140  | 174 |  0.986 (0.764-1.265)  | 0.94 | 734 |  686  | 1.356 (1.215-1.513) | <0.001 |
|  **Urinary System** |  5,381  | 2,992 |  2.126 (2.025-2.231)  | <0.001 | 19,370 |  8,522  | 2.879 (2.804-2.956) | <0.001 |
|  Urinary Bladder |  1,879  | 633 |  3.607 (3.275-3.978)  | <0.001 | 10,185 |  3,278  | 4.033 (3.873-4.200) | <0.001 |
|  Kidney and Renal Pelvis |  3,459  | 2,313 |  1.670 (1.578-1.767)  | <0.001 | 8,743 |  4,860  | 2.145 (2.068-2.224) | <0.001 |
|  Ureter |  25  | 28 |  1.034 (0.548-1.913)  | 1.00 | 322 |  284  | 1.464 (1.238-1.730) | <0.001 |
|  Other Urinary Organs |  18  | 18 |  1.064 (0.502-2.237)  | 0.96 | 120 |  100  | 1.636 (1.235-2.168) | <0.001 |
|  **Eye and Orbit** |  72  | 46 |  1.927 (1.249-2.983)  | 0.003 | 284 |  260  | 1.203 (1.009-1.435) | 0.04 |
|  **Brain and Other Nervous System** |  849  | 671 |  1.318 (1.178-1.474)  | <0.001 | 4,301 |  3,556  | 1.377 (1.315-1.442) | <0.001 |
|  Brain |  786  | 610 |  1.340 (1.193-1.507)  | <0.001 | 3,996 |  3,215  | 1.415 (1.349-1.485) | <0.001 |
|  Cranial Nerves and Other Nervous System |  63  | 61 |  1.071 (0.707-1.612)  | 0.81 | 305 |  341  | 1.013 (0.861-1.191) | 0.91 |
|  **Endocrine System** |  728  | 2,546 |  0.307 (0.281-0.336)  | <0.001 | 7,102 |  24,683  | 0.341 (0.332-0.351) | <0.001 |
|  Thyroid |  625  | 2,459 |  0.278 (0.253-0.306)  | <0.001 | 6,096 |  23,839  | 0.303 (0.294-0.312) | <0.001 |
|  Other Endocrine including Thymus |  103  | 87 |  1.138 (0.829-1.570)  | 0.45 | 1,006 |  844  | 1.342 (1.221-1.475) | <0.001 |
|  **Lymphoma** |  2,346  | 2,097 |  1.212 (1.136-1.293)  | <0.001 | 14,273 |  12,343  | 1.408 (1.373-1.444) | <0.001 |
|  Hodgkin Lymphoma |  353  | 253 |  1.428 (1.196-1.709)  | <0.001 | 1,707 |  1,348  | 1.407 (1.307-1.516) | <0.001 |
|  Nodal |  344  | 249 |  1.397 (1.168-1.673)  | <0.001 | 1,656 |  1,317  | 1.399 (1.298-1.508) | <0.001 |
|  Extranodal |  --  | -- |  --  | -- | 51 |  31  | 1.784 (1.106-2.921) | 0.02 |
|  Non-Hodgkin Lymphoma |  1,993  | 1,844 |  1.190 (1.110-1.275)  | <0.001 | 12,566 |  10,995  | 1.408 (1.371-1.446) | <0.001 |
|  Nodal |  1,360  | 1,187 |  1.265 (1.161-1.378)  | <0.001 | 7,606 |  6,392  | 1.459 (1.409-1.510) | <0.001 |
|  Extranodal |  633  | 657 |  1.054 (0.933-1.189)  | 0.41 | 4,960 |  4,603  | 1.337 (1.283-1.395) | <0.001 |
|  **Myeloma** |  726  | 694 |  1.186 (1.059-1.329)  | 0.003 | 3,410 |  2,836  | 1.511 (1.434-1.591) | <0.001 |
|  **Leukemia** |  1,548  | 1,212 |  1.426 (1.311-1.551)  | <0.001 | 7,816 |  5,987  | 1.550 (1.497-1.605) | <0.001 |
|  Lymphocytic Leukemia |  781  | 520 |  1.688 (1.490-1.914)  | <0.001 | 3,126 |  2,224  | 1.585 (1.498-1.676) | <0.001 |
|  Acute Lymphocytic Leukemia |  391  | 301 |  1.241 (1.057-1.459)  | 0.008 | 1,794 |  1,442  | 1.273 (1.186-1.367) | <0.001 |
|  Chronic Lymphocytic Leukemia |  353  | 200 |  2.097 (1.735-2.539)  | <0.001 | 1,116 |  700  | 2.016 (1.827-2.225) | <0.001 |
|  Other Lymphocytic Leukemia |  37  | 19 |  1.812 (0.996-3.435)  | 0.05 | 216 |  82  | 3.034 (2.328-3.989) | <0.001 |
|  Myeloid and Monocytic Leukemia |  693  | 632 |  1.237 (1.097-1.395)  | <0.001 | 4,393 |  3,533  | 1.526 (1.457-1.598) | <0.001 |
|  Acute Myeloid Leukemia |  414  | 378 |  1.266 (1.082-1.480)  | 0.003 | 2,843 |  2,515  | 1.410 (1.333-1.491) | <0.001 |
|  Acute Monocytic Leukemia |  38  | 35 |  1.294 (0.753-2.207)  | 0.38 | 150 |  140  | 1.310 (1.024-1.674) | 0.03 |
|  Chronic Myeloid Leukemia |  227  | 204 |  1.180 (0.956-1.456)  | 0.13 | 1,322 |  811  | 1.928 (1.760-2.113) | <0.001 |
|  Other Myeloid/Monocytic Leukemia |  --  | -- |  --  | -- | 78 |  67  | 1.524 (1.072-2.166) | 0.02 |
|  Other Leukemia |  74  | 60 |  1.297 (0.883-1.911)  | 0.19 | 297 |  230  | 1.590 (1.325-1.909) | <0.001 |
|  Other Acute Leukemia |  31  | 23 |  1.349 (0.718-2.567)  | 0.39 | 139 |  109  | 1.515 (1.16-1.982) | 0.002 |
|  Aleukemic, Subleukemic and NOS |  43  | 37 |  1.267 (0.770-2.089)  | 0.38 | 158 |  121  | 1.657 (1.287-2.135) | <0.001 |
|  **Mesothelioma** |  100  | 49 |  2.715 (1.870-3.991)  | <0.001 | 352 |  137  | 3.581 (2.916-4.418) | <0.001 |
|  **Kaposi Sarcoma** |  97  | -- |  --  | -- | 337 |  29  | 10.973 (7.488-16.776) | <0.001 |
|  **Miscellaneous** |  1,035  | 972 |  1.184 (1.076-1.304)  | <0.001 | 3,672 |  3,640  | 1.286 (1.226-1.348) | <0.001 |

a Rates are per 100,000 and age-adjusted to the 2000 US standard population.

-- Counts are not presented when fewer than 16 cases were reported for the specific site.

Abbreviations: SEER, Surveillance, Epidemiology, and End Results program; ICD-O-3/WHO 2008, International Classification of Diseases for Oncology, 3rd Edition, 2000. World Health Organization, Geneva, Switzerland; CI, confidence interval; NOS, not otherwise specified; AIAN, American Indian Alaskan Native; API, Asian Pacific Islander.

**Supplementary Table 2. Frequency and Incidence Rate Ratiosa by Sex and Age Groups in SEER Site Recode ICD-O-3/WHO 2008 Sites, 2001-2016, National Program of Cancer Registries and Surveillance, Epidemiology, and End Results SEER\*Stat Database: NPCR and SEER Incidence – U.S. Cancer Statistics Public Use Research Database, Nov 2018 Submission (2001-2016).**

|  | **0-14 Years** | **15-39 Years** |
| --- | --- | --- |
|   |  Male (n)  | Female (n)  | Male-to-Female IRR (95% CI)  | p-value |  Male (n)  | Female (n)  | Male-to-Female IRR (95% CI)  | p-value |
| **All Sites** |  78,225  | 66,604 |  1.125 (1.113-1.136)  | <0.001 |  321,649  | 547,526 |  0.811 (0.808-0.815)  | <0.001 |
|  **Oral Cavity and Pharynx** |  689  |  726  |  0.907 (0.816-1.008)  | 0.07 |  11,859  |  9,269  |  1.292 (1.257-1.327)  | <0.001 |
|  Lip |  --  |  --  |  --  |  --  |  720  |  239  |  3.051 (2.631-3.548)  | <0.001 |
|  Tongue |  37  |  32  |  1.107 (0.671-1.836)  | 0.76 |  3,337  |  2,407  |  1.391 (1.319-1.466)  | <0.001 |
|  Salivary Gland |  214  |  322  |  0.635 (0.532-0.757)  | <0.001 |  2,360  |  3,334  |  0.704 (0.668-0.743)  | <0.001 |
|  Floor of Mouth |  --  |  --  |  --  |  --  |  216  |  132  |  1.666 (1.336-2.086)  | <0.001 |
|  Gum and Other Mouth |  107  |  145  |  0.706 (0.544-0.912)  | 0.01 |  1,326  |  1,409  |  0.949 (0.879-1.024)  | 0.18 |
|  Nasopharynx |  273  |  188  |  1.387 (1.147-1.679)  | <0.001 |  2,174  |  1,057  |  2.034 (1.888-2.192)  | <0.001 |
|  Tonsil |  --  |  --  |  --  |  --  |  1,322  |  494  |  2.735 (2.465-3.040)  | <0.001 |
|  Oropharynx |  --  |  --  |  --  |  --  |  186  |  69  |  2.751 (2.077-3.682)  | <0.001 |
|  Hypopharynx |  --  |  --  |  --  |  --  |  113  |  70  |  1.588 (1.168-2.171)  | 0.003 |
|  Other Oral Cavity and Pharynx |  22  |  17  |  1.241 (0.629-2.490)  | 0.61 |  105  |  58  |  1.824 (1.311-2.561)  | <0.001 |
|  **Digestive System** |  3,026  |  2,590  |  1.116 (1.059-1.177)  | <0.001 |  47,359  |  43,510  |  1.087 (1.073-1.101)  | <0.001 |
|  Esophagus |  --  |  --  |  --  |  --  |  1,748  |  415  |  4.264 (3.829-4.759)  | <0.001 |
|  Stomach |  33  |  52  |  0.604 (0.378-0.953)  | 0.03 |  5,230  |  4,881  |  1.072 (1.031-1.115)  | <0.001 |
|  Small Intestine |  27  |  20  |  1.288 (0.696-2.422)  | 0.48 |  1,960  |  1,855  |  1.058 (0.992-1.128)  | 0.09 |
|  Colon and Rectum |  266  |  337  |  0.755 (0.640-0.889)  | <0.001 |  28,741  |  27,862  |  1.028 (1.011-1.045)  | 0.001 |
|  *Colon excluding Rectum* |  251  |  326  |  0.736 (0.622-0.871)  | <0.001 |  17,868  |  18,279  |  0.973 (0.953-0.993)  | 0.01 |
|  Cecum |  --  |  --  |  --  |  --  |  2,387  |  1,963  |  1.213 (1.142-1.289)  | <0.001 |
|  Appendix |  196  |  287  |  0.653 (0.542-0.786)  | <0.001 |  3,057  |  4,173  |  0.722 (0.689-0.757)  | <0.001 |
|  Ascending Colon |  --  |  --  |  --  |  --  |  2,145  |  1,650  |  1.285 (1.205-1.372)  | <0.001 |
|  Hepatic Flexure |  --  |  --  |  --  |  --  |  744  |  507  |  1.454 (1.297-1.632)  | <0.001 |
|  Transverse Colon |  --  |  --  |  --  |  --  |  1,451  |  1,258  |  1.152 (1.067-1.244)  | <0.001 |
|  Splenic Flexure |  --  |  --  |  --  |  --  |  680  |  574  |  1.171 (1.046-1.312)  | 0.006 |
|  Descending Colon |  --  |  --  |  --  |  --  |  1,229  |  1,331  |  0.916 (0.847-0.991)  | 0.03 |
|  Sigmoid Colon |  --  |  --  |  --  |  --  |  5,050  |  5,788  |  0.869 (0.836-0.903)  | <0.001 |
|  Large Intestine, NOS |  --  |  --  |  --  |  --  |  1,125  |  1,035  |  1.076 (0.987-1.172)  | 0.10 |
|  *Rectum and Rectosigmoid Junction* |  --  |  --  |  --  |  --  |  10,873  |  9,583  |  1.133 (1.102-1.164)  | <0.001 |
|  Rectosigmoid Junction |  --  |  --  |  --  |  --  |  2,436  |  2,246  |  1.081 (1.020-1.145)  | 0.009 |
|  Rectum |  --  |  --  |  --  |  --  |  8,437  |  7,337  |  1.149 (1.113-1.185)  | <0.001 |
|  Anus, Anal Canal and Anorectum |  --  |  --  |  --  |  --  |  1,580  |  1,168  |  1.340 (1.242-1.447)  | <0.001 |
|  Liver and Intrahepatic Bile Duct |  1,740  |  1,179  |  1.410 (1.309-1.520)  | <0.001 |  3,281  |  2,015  |  1.634 (1.545-1.728)  | <0.001 |
|  Liver |  1,736  |  1,172  |  1.416 (1.314-1.526)  | <0.001 |  2,907  |  1,622  |  1.805 (1.697-1.919)  | <0.001 |
|  Intrahepatic Bile Duct |  --  |  --  |  --  |  --  |  374  |  393  |  0.951 (0.823-1.099)  | 0.51 |
|  Gallbladder |  --  |  --  |  --  |  --  |  206  |  410  |  0.492 (0.414-0.583)  | <0.001 |
|  Other Biliary |  21  |  --  |  --  |  --  |  572  |  450  |  1.277 (1.127-1.449)  | <0.001 |
|  Pancreas |  66  |  110  |  0.574 (0.417-0.786)  | <0.001 |  2,891  |  3,111  |  0.944 (0.897-0.993)  | 0.03 |
|  Retroperitoneum |  789  |  805  |  0.937 (0.848-1.035)  | 0.20 |  730  |  645  |  1.090 (0.979-1.214)  | 0.12 |
|  Peritoneum, Omentum and Mesentery |  68  |  46  |  1.416 (0.960-2.106)  | 0.08 |  188  |  482  |  0.367 (0.308-0.436)  | <0.001 |
|  Other Digestive Organs |  --  |  22  |  --  |  --  |  232  |  216  |  1.073 (0.887-1.298)  | 0.49 |
|  **Breast** | -- | 49 |  -- |  -- | 562 | 153,850 | 0.004 (0.003-0.004) | <.0001 |
|  **Respiratory System** |  1,058  |  959  |  1.055 (0.966-1.152)  | 0.24 |  12,257  |  10,200  |  1.180 (1.149-1.212)  | <0.001 |
|  Nose, Nasal Cavity and Middle Ear |  212  |  181  |  1.120 (0.914-1.373)  | 0.29 |  1,307  |  938  |  1.377 (1.264-1.499)  | <0.001 |
|  Larynx |  --  |  --  |  --  |  --  |  1,244  |  723  |  1.757 (1.601-1.929)  | <0.001 |
|  Lung and Bronchus |  221  |  204  |  1.033 (0.850-1.256)  | 0.77 |  7,804  |  8,264  |  0.939 (0.911-0.969)  | <0.001 |
|  Pleura |  20  |  23  |  0.832 (0.434-1.586)  | 0.66 |  51  |  26  |  1.936 (1.184-3.239)  | 0.007 |
|  Trachea, Mediastinum and Other Respiratory Organs |  593  |  545  | 1.041 (0.925-1.172) | 0.52 |  1,851  |  249  |  7.051 (6.171-8.085)  | <0.001 |
|  **Bones and Joints** |  3,546  |  3,222  |  1.052 (1.002-1.103)  | 0.04 |  8,132  |  5,542  |  1.417 (1.369-1.466)  | <0.001 |
|  **Soft Tissue including Heart** |  4,886  |  4,784  |  0.977 (0.939-1.017)  | 0.27 |  12,943  |  10,767  |  1.181 (1.151-1.212)  | <0.001 |
|  **Skin excluding Basal and Squamous** |  1,260  |  1,260  |  0.955 (0.883-1.034)  | 0.26 |  42,199  |  71,201  |  0.595 (0.588-0.603)  | <0.001 |
|  Melanoma of the Skin |  922  |  966  |  0.912 (0.832-0.999)  | 0.05 |  38,754  |  67,305  |  0.579 (0.572-0.586)  | <0.001 |
|  Other Non-Epithelial Skin |  338  |  294  |  1.098 (0.936-1.288)  | 0.26 |  3,445  |  3,896  |  0.875 (0.836-0.917)  | <0.001 |
|  **Urinary System** |  4,269  |  4,613  |  0.884 (0.848-0.922)  | <0.001 |  23,832  |  15,442  |  1.552 (1.520-1.584)  | <0.001 |
|  Urinary Bladder |  189  |  107  |  1.692 (1.328-2.165)  | <0.001 |  6,969  |  2,958  |  2.354 (2.254-2.458)  | <0.001 |
|  Kidney and Renal Pelvis |  4,073  |  4,503  |  0.864 (0.828-0.902)  | <0.001 |  16,745  |  12,413  |  1.360 (1.329-1.393)  | <0.001 |
|  Ureter |  --  |  --  |  --  |  --  |  51  |  29  |  1.767 (1.100-2.890)  | 0.02 |
|  Other Urinary Organs |  --  |  --  |  --  |  --  |  67  |  42  |  1.591 (1.066-2.399)  | 0.02 |
|  **Eye and Orbit** |  2,068  |  1,961  |  1.010 (0.949-1.074)  | 0.78 |  1,011  |  890  |  1.138 (1.038-1.247)  | 0.006 |
|  **Brain and Other Nervous System** |  17,767  |  15,438  |  1.101 (1.078-1.125)  | <0.001 |  26,810  |  20,447  |  1.290 (1.267-1.314)  | <0.001 |
|  Brain |  15,455  |  13,109  |  1.128 (1.102-1.155)  | <0.001 |  24,943  |  18,687  |  1.314 (1.289-1.339)  | <0.001 |
|  Cranial Nerves and Other Nervous System |  2,312  |  2,329  |  0.950 (0.896-1.006)  | 0.08 |  1,867  |  1,760  |  1.040 (0.974-1.111)  | 0.25 |
|  **Endocrine System** |  4,509  |  4,771  |  0.903 (0.867-0.941)  | <0.001 |  28,374  |  127,515  |  0.221 (0.218-0.224)  | <0.001 |
|  Thyroid |  684  |  1,982  |  0.331 (0.303-0.361)  | <0.001 |  25,635  |  125,521  |  0.204 (0.201-0.206)  | <0.001 |
|  Other Endocrine including Thymus |  3,825  |  2,789  |  1.313 (1.250-1.379)  | <0.001 |  2,739  |  1,994  |  1.329 (1.253-1.409)  | <0.001 |
|  **Lymphoma** |  9,304  |  4,904  |  1.819 (1.757-1.883)  | <0.001 |  67,452  |  53,498  |  1.247 (1.233-1.261)  | <0.001 |
|  Hodgkin Lymphoma |  3,345  |  2,109  |  1.522 (1.441-1.608)  | <0.001 |  31,793  |  29,841  |  1.048 (1.031-1.065)  | <0.001 |
|  Hodgkin - Nodal |  3,287  |  2,077  |  1.519 (1.437-1.605)  | <0.001 |  31,149  |  29,200  |  1.049 (1.032-1.066)  | <0.001 |
|  Hodgkin - Extranodal |  58  |  32  |  1.728 (1.104-2.750)  | 0.02 |  644  |  641  |  0.990 (0.886-1.107)  | 0.88 |
|  Non-Hodgkin Lymphoma |  5,959  |  2,795  |  2.041 (1.951-2.136)  | <0.001 |  35,659  |  23,657  |  1.488 (1.463-1.512)  | <0.001 |
|  NHL - Nodal |  3,960  |  1,804  |  2.101 (1.987-2.223)  | <0.001 |  23,279  |  14,704  |  1.560 (1.528-1.593)  | <0.001 |
|  NHL - Extranodal |  1,999  |  991  |  1.933 (1.790-2.088)  | <0.001 |  12,380  |  8,953  |  1.367 (1.330-1.405)  | <0.001 |
|  **Myeloma** |  --  |  --  |  --  |  --  |  2,395  |  1,600  |  1.491 (1.398-1.589)  | <0.001 |
|  **Leukemia** |  24,936  |  20,561  |  1.160 (1.139-1.182)  | <0.001 |  27,436  |  19,605  |  1.367 (1.342-1.393)  | <0.001 |
|  Lymphocytic Leukemia |  20,144  |  16,391  |  1.176 (1.152-1.201)  | <0.001 |  11,049  |  5,618  |  1.911 (1.851-1.974)  | <0.001 |
|  Acute Lymphocytic Leukemia |  20,038  |  16,295  |  1.177 (1.153-1.201)  | <0.001 |  9,213  |  4,792  |  1.852 (1.788-1.919)  | <0.001 |
|  Chronic Lymphocytic Leukemia |  25  |  24  |  1.001 (0.549-1.830)  | >0.99 |  944  |  535  |  1.771 (1.591-1.973)  | <0.001 |
|  Other Lymphocytic Leukemia |  81  |  72  |  1.073 (0.772-1.496)  | 0.72 |  892  |  291  |  3.082 (2.697-3.532)  | <0.001 |
|  Myeloid and Monocytic Leukemia |  4,278  |  3,766  |  1.086 (1.039-1.135)  | <0.001 |  15,374  |  13,280  |  1.138 (1.111-1.164)  | <0.001 |
|  Acute Myeloid Leukemia |  3,176  |  2,879  |  1.055 (1.003-1.110)  | 0.04 |  8,594  |  8,613  |  0.979 (0.950-1.009)  | 0.17 |
|  Acute Monocytic Leukemia |  347  |  351  |  0.945 (0.813-1.100)  | 0.48 |  587  |  572  |  1.008 (0.896-1.133)  | 0.92 |
|  Chronic Myeloid Leukemia |  646  |  449  |  1.372 (1.214-1.551)  | <0.001 |  5,803  |  3,807  |  1.496 (1.436-1.559)  | <0.001 |
|  Other Myeloid/Monocytic Leukemia |  109  |  87  |  1.204 (0.900-1.614)  | 0.22 |  390  |  288  |  1.331 (1.140-1.557)  | <0.001 |
|  Other Leukemia |  514  |  404  |  1.216 (1.066-1.389)  | 0.004 |  1,013  |  707  |  1.387 (1.258-1.529)  | <0.001 |
|  Other Acute Leukemia |  365  |  292  |  1.195 (1.022-1.399)  | 0.03 |  488  |  319  |  1.478 (1.281-1.709)  | <0.001 |
|  Aleukemic, Subleukemic and NOS |  149  |  112  |  1.272 (0.989-1.640)  | 0.06 |  525  |  388  |  1.313 (1.149-1.502)  | <0.001 |
|  **Mesothelioma** |  --  |  --  |  --  |  --  |  299  |  374  |  0.801 (0.685-0.935)  | 0.005 |
|  **Kaposi Sarcoma** |  --  |  --  |  --  |  --  |  5,617  |  242  |  22.935 (20.156-26.206)  | <0.001 |
|  **Miscellaneous** |  875  |  741  |  1.131 (1.024-1.249)  | 0.02 |  3,674  |  3,574  |  1.017 (0.970-1.065)  | 0.49 |

|  | **40-64 Years** | **65+ Years** |
| --- | --- | --- |
|  |  Male (n)  | Female (n)  | Male-to-Female IRR (95% CI)  | p-value |  Male (n)  | Female (n)  | Male-to-Female IRR (95% CI)  | p-value |
| **All Sites** | 2,770,182 |  3,458,764  | 0.819 (0.817-0.82) | <.0001 | 3,252,450 | 3,785,834 | 1.155 (1.154-1.157) | <.0001 |
|  **Oral Cavity and Pharynx** | 199691 |  61,636  | 3.367 (3.337-3.398) | <.0001 | 113,333 | 61,881 | 2.404 (2.38-2.428) | <.0001 |
|  Lip | 8183 |  2,247  | 3.816 (3.64-4.003) | <.0001 | 10786 | 4462 | 3.385 (3.268-3.508) | <.0001 |
|  Tongue | 61039 |  18,966  | 3.326 (3.271-3.381) | <.0001 | 32,044 | 16,762 | 2.456 (2.41-2.503) | <.0001 |
|  Salivary Gland | 10978 |  8,404  | 1.337 (1.299-1.377) | <.0001 | 13,898 | 8,352 | 2.315 (2.252-2.379) | <.0001 |
|  Floor of Mouth | 11500 |  3,710  | 3.254 (3.135-3.379) | <.0001 | 5926 | 3595 | 2.101 (2.015-2.191) | <.0001 |
|  Gum and Other Mouth | 17116 |  9,174  | 1.946 (1.897-1.997) | <.0001 | 14,857 | 15,914 | 1.271 (1.243-1.300) | <.0001 |
|  Nasopharynx | 10243 |  3,610  | 2.949 (2.837-3.065) | <.0001 | 3,838 | 2,068 | 2.364 (2.239-2.496) | <.0001 |
|  Tonsil | 54644 |  9,495  | 6.054 (5.922-6.19) | <.0001 | 15,405 | 5219 | 3.606 (3.493-3.722) | <.0001 |
|  Oropharynx | 9930 |  2,424  | 4.323 (4.133-4.523) | <.0001 | 4951 | 2004 | 3.11 (2.951-3.278) | <.0001 |
|  Hypopharynx | 12009 |  2,627  | 4.784 (4.584-4.994) | <.0001 | 8944 | 2374 | 4.836 (4.621-5.064) | <.0001 |
|  Other Oral Cavity and Pharynx | 4049 |  979  | 4.372 (4.073-4.696) | <.0001 | 2684 | 1131 | 3.065 (2.857-3.29) | <.0001 |
|  **Digestive System** | 819,472 |  532,570  | 1.603 (1.597-1.609) | <.0001 | 918,681 | 901,940 | 1.389 (1.385-1.394) | <.0001 |
|  Esophagus | 72177 |  13,968  | 5.455 (5.356-5.556) | <.0001 | 80,407 | 26190 | 4.118 (4.06-4.176) | <.0001 |
|  Stomach | 70280 |  35,941  | 2.012 (1.986-2.038) | <.0001 | 94,617 | 65,504 | 2 (1.98-2.02) | <.0001 |
|  Small Intestine | 22238 |  18,480  | 1.26 (1.235-1.285) | <.0001 | 20,325 | 20,687 | 1.304 (1.279-1.33) | <.0001 |
|  Colon and Rectum | 418144 |  316,661  | 1.375 (1.369-1.381) | <.0001 | 499,173 | 548,381 | 1.253 (1.249-1.258) | <.0001 |
|  *Colon excluding Rectum* | 255640 |  211,640  | 1.26 (1.253-1.268) | <.0001 | 363,482 | 436,046 | 1.158 (1.153-1.163) | <.0001 |
|  Cecum | 44264 |  40,293  | 1.164 (1.149-1.18) | <.0001 | 78,281 | 117,553 | 0.941 (0.933-0.95) | <.0001 |
|  Appendix | 9535 |  11,096  | 0.891 (0.867-0.916) | <.0001 | 5,067 | 6,049 | 1.087 (1.047-1.129) | <.0001 |
|  Ascending Colon | 37619 |  33,367  | 1.195 (1.177-1.213) | <.0001 | 72,419 | 101,498 | 1.003 (0.994-1.013) | 0.51 |
|  Hepatic Flexure | 10398 |  7,796  | 1.412 (1.371-1.455) | <.0001 | 19590 | 23250 | 1.186 (1.164-1.209) | <.0001 |
|  Transverse Colon | 19672 |  16,092  | 1.283 (1.256-1.31) | <.0001 | 32,254 | 41,475 | 1.089 (1.073-1.105) | <.0001 |
|  Splenic Flexure | 9004 |  6,733  | 1.393 (1.349-1.438) | <.0001 | 11793 | 11604 | 1.406 (1.37-1.443) | <.0001 |
|  Descending Colon | 17581 |  13,807  | 1.311 (1.282-1.341) | <.0001 | 21,398 | 19,653 | 1.484 (1.455-1.513) | <.0001 |
|  Sigmoid Colon | 92759 |  71,448  | 1.335 (1.322-1.348) | <.0001 | 101,772 | 89,955 | 1.526 (1.513-1.54) | <.0001 |
|  Large Intestine, NOS | 14808 |  11,008  | 1.409 (1.375-1.445) | <.0001 | 20,908 | 25,009 | 1.191 (1.169-1.213) | <.0001 |
|  *Rectum and Rectosigmoid Junction* | 162504 |  105,021  | 1.602 (1.59-1.615) | <.0001 | 135,691 | 112,335 | 1.62 (1.607-1.633) | <.0001 |
|  Rectosigmoid Junction | 39480 |  26,989  | 1.515 (1.491-1.539) | <.0001 | 37,309 | 32,753 | 1.526 (1.503-1.549) | <.0001 |
|  Rectum | 123024 |  78,032  | 1.632 (1.617-1.647) | <.0001 | 98,382 | 79,582 | 1.659 (1.644-1.675) | <.0001 |
|  Anus, Anal Canal and Anorectum | 16507 |  26,127  | 0.68 (0.666-0.693) | <.0001 | 8,549 | 17,954 | 0.629 (0.613-0.645) | <.0001 |
|  Liver and Intrahepatic Bile Duct | 114,326 |  29,637  | 4.065 (4.013-4.118) | <.0001 | 73,954 | 40,905 | 2.35 (2.322-2.379) | <.0001 |
|  Liver | 108,076 |  24,386  | 4.68 (4.615-4.746) | <.0001 | 66,706 | 32,801 | 2.638 (2.603-2.673) | <.0001 |
|  Intrahepatic Bile Duct | 6250 |  5,251  | 1.25 (1.205-1.298) | <.0001 | 7248 | 8104 | 1.184 (1.146-1.222) | <.0001 |
|  Gallbladder | 4380 |  10,038  | 0.46 (0.444-0.477) | <.0001 | 8997 | 21456 | 0.582 (0.568-0.597) | <.0001 |
|  Other Biliary | 11593 |  8,291  | 1.473 (1.431-1.515) | <.0001 | 18480 | 17692 | 1.437 (1.407-1.467) | <.0001 |
|  Pancreas | 82707 |  59,267  | 1.476 (1.46-1.492) | <.0001 | 106,471 | 123,223 | 1.17 (1.16-1.18) | <.0001 |
|  Retroperitoneum | 3219 |  3,559  | 0.938 (0.893-0.984) | 0.009 | 2690 | 2989 | 1.174 (1.113-1.237) | <.0001 |
|  Peritoneum, Omentum and Mesentery | 721 |  7,860  | 0.101 (0.093-0.109) | <.0001 | 686 | 11989 | 0.076 (0.07-0.082) | <.0001 |
|  Other Digestive Organs | 3180 |  2,741  | 1.214 (1.152-1.279) | <.0001 | 4332 | 4970 | 1.205 (1.156-1.256) | <.0001 |
|  **Breast** | 10339 |  1,553,879  | 0.007 (0.007-0.007) | <.0001 | 12602 | 1,144,114 | 0.015 (0.015-0.015) | <.0001 |
|  **Respiratory System** | 507,665 |  371,326  | 1.437 (1.431-1.443) | <.0001 | 780,921 | 662,659 | 1.549 (1.544-1.554) | <.0001 |
|  Nose, Nasal Cavity and Middle Ear | 8406 |  4,430  | 1.975 (1.903-2.049) | <.0001 | 6,868 | 5664 | 1.632 (1.575-1.692) | <.0001 |
|  Larynx | 66863 |  17,054  | 4.078 (4.009-4.148) | <.0001 | 58,292 | 14043 | 5.336 (5.238-5.437) | <.0001 |
|  Lung and Bronchus | 430716 |  349,033  | 1.295 (1.29-1.301) | <.0001 | 714,531 | 642,008 | 1.465 (1.46-1.47) | <.0001 |
|  Pleura | 172 |  123  | 1.462 (1.15-1.865) | 0.002 | 345 | 218 | 2.252 (1.892-2.684) | <.0001 |
|  Trachea, Mediastinum and Other Respiratory Organs | 1508 |  686  | 2.37 (2.161-2.601) | <.0001 | 885 | 726 | 1.621 (1.466-1.792) | <.0001 |
|  **Bones and Joints** | 6,566 |  5,187  | 1.308 (1.261-1.358) | <.0001 | 3,624 | 3,305 | 1.469 (1.4-1.541) | <.0001 |
|  **Soft Tissue including Heart** | 28,707 |  22,453  | 1.33 (1.307-1.354) | <.0001 | 24,588 | 20,390 | 1.656 (1.626-1.688) | <.0001 |
|  **Skin excluding Basal and Squamous** | 221,869 |  177,965  | 1.255 (1.247-1.263) | <.0001 | 215,701 | 127,528 | 2.304 (2.288-2.32) | <.0001 |
|  Melanoma of the Skin | 210494 |  169,655  | 1.248 (1.24-1.256) | <.0001 | 194,901 | 113,675 | 2.319 (2.302-2.336) | <.0001 |
|  Other Non-Epithelial Skin | 11375 |  8,310  | 1.403 (1.364-1.444) | <.0001 | 20,800 | 13,853 | 2.181 (2.134-2.229) | <.0001 |
|  **Urinary System** | 399,088 |  167,397  | 2.488 (2.474-2.502) | <.0001 | 584,337 | 264,784 | 3.006 (2.992-3.02) | <.0001 |
|  Urinary Bladder | 189675 |  57,327  | 3.474 (3.441-3.507) | <.0001 | 413,415 | 142,234 | 4.049 (4.025-4.074) | <.0001 |
|  Kidney and Renal Pelvis | 205,286 |  107,714  | 1.998 (1.983-2.013) | <.0001 | 160,563 | 114,983 | 1.815 (1.801-1.828) | <.0001 |
|  Ureter | 2563 |  1,299  | 2.103 (1.965-2.25) | <.0001 | 7314 | 5623 | 1.799 (1.737-1.864) | <.0001 |
|  Other Urinary Organs | 1564 |  1,057  | 1.541 (1.423-1.669) | <.0001 | 3045 | 1944 | 2.205 (2.082-2.337) | <.0001 |
|  **Eye and Orbit** | 6,283 |  4,546  | 1.44 (1.385-1.497) | <.0001 | 5,556 | 4712 | 1.578 (1.517-1.642) | <.0001 |
|  **Brain and Other Nervous System** | 67,045 |  46,984  | 1.499 (1.481-1.517) | <.0001 | 46,781 | 44,102 | 1.391 (1.373-1.409) | <.0001 |
|  Brain | 63,959 |  43,537  | 1.545 (1.526-1.564) | <.0001 | 45,244 | 41,887 | 1.416 (1.397-1.435) | <.0001 |
|  Cranial Nerves and Other Nervous System | 3,086 |  3,447  | 0.933 (0.888-0.981) | 0.006 | 1,537 | 2,215 | 0.919 (0.86-0.982) | 0.012 |
|  **Endocrine System** | 74,935 |  220,060  | 0.345 (0.342-0.348) | <.0001 | 30,363 | 65,300 | 0.586 (0.578-0.594) | <.0001 |
|  Thyroid | 68653 |  214,213  | 0.325 (0.322-0.327) | <.0001 | 26,851 | 61,340 | 0.551 (0.543-0.559) | <.0001 |
|  Other Endocrine including Thymus | 6,282 |  5,847  | 1.118 (1.079-1.16) | <.0001 | 3,512 | 3,960 | 1.136 (1.085-1.19) | <.0001 |
|  **Lymphoma** | 201,019 |  145,917  | 1.458 (1.448-1.468) | <.0001 | 203,781 | 208,014 | 1.326 (1.318-1.334) | <.0001 |
|  Hodgkin Lymphoma | 22,608 |  14,417  | 1.625 (1.591-1.66) | <.0001 | 9,187 | 8,701 | 1.383 (1.342-1.424) | <.0001 |
|  Hodgkin - Nodal | 21,951 |  13,963  | 1.629 (1.594-1.664) | <.0001 | 8,849 | 8,343 | 1.387 (1.345-1.429) | <.0001 |
|  Hodgkin - Extranodal | 657 |  454  | 1.523 (1.347-1.723) | <.0001 | 338 | 358 | 1.294 (1.111-1.508) | 0.001 |
|  Non-Hodgkin Lymphoma | 178,411 |  131,500  | 1.438 (1.428-1.448) | <.0001 | 194,594 | 199,313 | 1.323 (1.315-1.332) | <.0001 |
|  NHL - Nodal | 124,346 |  88,608  | 1.488 (1.475-1.501) | <.0001 | 131,714 | 133,656 | 1.331 (1.321-1.342) | <.0001 |
|  NHL - Extranodal | 54,065 |  42,892  | 1.335 (1.318-1.352) | <.0001 | 62,880 | 65,657 | 1.307 (1.292-1.321) | <.0001 |
|  **Myeloma** | 56446 |  41,511  | 1.436 (1.418-1.455) | <.0001 | 73,094 | 66,887 | 1.455 (1.44-1.471) | <.0001 |
|  **Leukemia** | 97,105 |  61,669  | 1.639 (1.622-1.656) | <.0001 | 125,467 | 97,524 | 1.769 (1.754-1.784) | <.0001 |
|  Lymphocytic Leukemia | 51,409 |  26,913  | 2.014 (1.984-2.044) | <.0001 | 64,676 | 48,456 | 1.819 (1.797-1.841) | <.0001 |
|  Acute Lymphocytic Leukemia | 5,921 |  4,742  | 1.314 (1.264-1.366) | <.0001 | 3,005 | 3,007 | 1.311 (1.245-1.38) | <.0001 |
|  Chronic Lymphocytic Leukemia | 38776 |  20,371  | 2.016 (1.982-2.051) | <.0001 | 57205 | 43314 | 1.804 (1.781-1.827) | <.0001 |
|  Other Lymphocytic Leukemia | 6712 |  1,800  | 3.844 (3.647-4.055) | <.0001 | 4466 | 2135 | 2.857 (2.712-3.011) | <.0001 |
|  Myeloid and Monocytic Leukemia | 43,009 |  32,803  | 1.358 (1.338-1.377) | <.0001 | 56,157 | 44,823 | 1.733 (1.711-1.755) | <.0001 |
|  Acute Myeloid Leukemia | 25,404 |  19,943  | 1.314 (1.289-1.339) | <.0001 | 36,286 | 29,319 | 1.711 (1.685-1.738) | <.0001 |
|  Acute Monocytic Leukemia | 1769 |  1,435  | 1.263 (1.176-1.356) | <.0001 | 2131 | 1693 | 1.74 (1.631-1.857) | <.0001 |
|  Chronic Myeloid Leukemia | 14819 |  10,731  | 1.44 (1.404-1.477) | <.0001 | 16,072 | 12,396 | 1.789 (1.747-1.832) | <.0001 |
|  Other Myeloid/Monocytic Leukemia | 1017 |  694  | 1.521 (1.378-1.68) | <.0001 | 1668 | 1415 | 1.675 (1.558-1.8) | <.0001 |
|  Other Leukemia | 2687 |  1,953  | 1.438 (1.355-1.526) | <.0001 | 4,634 | 4245 | 1.578 (1.513-1.646) | <.0001 |
|  Other Acute Leukemia | 1093 |  702  | 1.623 (1.473-1.789) | <.0001 | 2142 | 1886 | 1.665 (1.564-1.774) | <.0001 |
|  Aleukemic, Subleukemic and NOS | 1594 |  1,251  | 1.334 (1.237-1.439) | <.0001 | 2492 | 2359 | 1.509 (1.425-1.598) | <.0001 |
|  **Mesothelioma** | 6504 |  2,573  | 2.558 (2.442-2.68) | <.0001 | 20031 | 5361 | 5.16 (5.005-5.32) | <.0001 |
|  **Kaposi Sarcoma** | 6742 |  387  | 18.58 (16.747-20.669) | <.0001 | 2,585 | 1263 | 3.048 (2.846-3.265) | <.0001 |

a Rates are per 100,000 and age-adjusted to the 2000 US standard population.

-- Counts are not presented when fewer than 16 cases were reported for the specific site.

Abbreviations: SEER, Surveillance, Epidemiology, and End Results program; ICD-O-3/WHO 2008, International Classification of Diseases for Oncology, 3rd Edition, 2000. World Health Organization, Geneva, Switzerland; CI, confidence interval; NOS, not otherwise specified.

**Supplementary Table 3. Age-Adjusted Hazard Ratios (HRs) by Sex (Males:Females) by Site with 95% Confidence Intervals, 2001-2016, SEER\*Stat Database: Incidence – SEER 18 Registries + Hurricane Katrina Impacted Louisiana Cases, Nov 2018 Submission (1973-2016 varying).**

|  |  |  |
| --- | --- | --- |
| **Cancer Site** | **Male-to-female HR (95% CI)** | **p-value** |
| **All Sites** | **1.568 (1.564-1.573)** | **<0.001** |
|  **Oral Cavity and Pharynx** | **1.176 (1.154-1.199)** | **<0.001** |
|  Lip | 1.311 (1.199-1.433) | <0.001 |
|  Tongue | 1.044 (1.008-1.082) | 0.02 |
|  Salivary Gland | 1.610 (1.515-1.712) | <0.001 |
|  Floor of Mouth | 1.351 (1.254-1.456) | <0.001 |
|  Gum and Other Mouth | 1.323 (1.264-1.385) | <0.001 |
|  Nasopharynx | 1.182 (1.096-1.274) | <0.001 |
|  Tonsil | 0.963 (0.909-1.021) | 0.21 |
|  Oropharynx | 0.878 (0.800-0.964) | 0.01 |
|  Hypopharynx | 1.056 (0.980-1.137) | 0.15 |
|  Other Oral Cavity and Pharynx | 0.877 (0.770-1.000) | 0.05 |
|  **Digestive System** | **1.201 (1.195-1.208)** | **<0.001** |
|  Esophagus | 1.032 (1.006-1.058) | 0.01 |
|  Stomach | 1.143 (1.124-1.163) | <0.001 |
|  Small Intestine | 1.111 (1.067-1.157) | <0.001 |
|  Colon and Rectum | 1.124 (1.115-1.134) | <0.001 |
|  *Colon excluding Rectum* | 1.112 (1.102-1.123) | <0.001 |
|  Cecum | 1.138 (1.116-1.161) | <0.001 |
|  Appendix | 1.040 (0.970-1.114) | 0.27 |
|  Ascending Colon | 1.147 (1.121-1.173) | <0.001 |
|  Hepatic Flexure | 1.138 (1.091-1.187) | <0.001 |
|  Transverse Colon | 1.094 (1.059-1.130) | <0.001 |
|  Splenic Flexure | 1.118 (1.061-1.179) | <0.001 |
|  Descending Colon | 1.037 (0.996-1.080) | 0.08 |
|  Sigmoid Colon | 1.116 (1.096-1.137) | <0.001 |
|  Large Intestine, NOS | 1.026 (0.988-1.066) | 0.18 |
|  *Rectum and Rectosigmoid Junction* | 1.163 (1.144-1.181) | <0.001 |
|  Rectosigmoid Junction | 1.136 (1.103-1.170) | <0.001 |
|  Rectum | 1.174 (1.152-1.196) | <0.001 |
|  Anus, Anal Canal and Anorectum | 1.488 (1.421-1.558) | <0.001 |
|  Liver and Intrahepatic Bile Duct | 1.100 (1.080-1.120) | <0.001 |
|  Liver | 1.129 (1.107-1.152) | <0.001 |
|  Intrahepatic Bile Duct | 1.159 (1.102-1.218) | <0.001 |
|  Gallbladder | 1.066 (1.021-1.113) | 0.004 |
|  Other Biliary | 0.968 (0.935-1.003) | 0.08 |
|  Pancreas | 1.074 (1.060-1.089) | <0.001 |
|  Retroperitoneum | 1.216 (1.119-1.322) | <0.001 |
|  Peritoneum, Omentum and Mesentery | 0.972 (0.853-1.107) | 0.66 |
|  Other Digestive Organs | 1.149 (1.084-1.217) | <0.001 |
| **Cancer Site** | **Male-to-female HR (95% CI)** | **p-value** |
|  **Breast** | **1.540 (1.474-1.610)** | **<.0001** |
|  **Respiratory System** | **1.145 (1.138-1.152)** | **<0.001** |
|  Nose, Nasal Cavity and Middle Ear | 1.110 (1.040-1.184) | 0.002 |
|  Larynx | 0.926 (0.894-0.960) | <0.001 |
|  Lung and Bronchus | 1.255 (1.248-1.263) | <0.001 |
|  Pleura | 0.992 (0.744-1.322) | 0.95 |
|  Trachea, Mediastinum and Other Respiratory Organs | 1.062 (0.916-1.230) | 0.43 |
|  **Bones and Joints** | **1.254 (1.175-1.339)** | **<0.001** |
|  **Soft Tissue including Heart** | **1.099 (1.063-1.136)** | **<0.001** |
|  **Skin excluding Basal and Squamous** | **1.398 (1.373-1.423)** | **<0.001** |
|  Melanoma of the Skin | 1.410 (1.383-1.437) | <0.001 |
|  Other Non-Epithelial Skin | 1.387 (1.318-1.460) | <0.001 |
|  **Urinary System** | **1.035 (1.023-1.046)** | **<0.001** |
|  Urinary Bladder | 1.014 (0.998-1.029) | 0.09 |
|  Kidney and Renal Pelvis | 1.170 (1.151-1.190) | <0.001 |
|  Ureter | 1.029 (0.948-1.116) | 0.50 |
|  Other Urinary Organs | 0.894 (0.796-1.004) | 0.06 |
|  **Eye and Orbit** | **1.144 (1.052-1.243)** | **0.002** |
|  **Brain and Other Nervous System** | **1.126 (1.106-1.147)** | **<0.001** |
|  Brain | 1.078 (1.059-1.098) | <0.001 |
|  Cranial Nerves Other Nervous System | 1.434 (1.285-1.600) | <0.001 |
|  **Endocrine System** | **1.980 (1.915-2.047)** | **<0.001** |
|  Thyroid | 1.774 (1.707-1.845) | <0.001 |
|  Other Endocrine including Thymus | 1.012 (0.946-1.083) | 0.73 |
|  **Lymphoma** | **1.271 (1.255-1.288)** | **<0.001** |
|  Hodgkin Lymphoma | 1.300 (1.237-1.367) | <0.001 |
|  Hodgkin - Nodal | 1.304 (1.239-1.372) | <0.001 |
|  Hodgkin - Extranodal | 1.199 (0.915-1.572) | 0.19 |
|  Non-Hodgkin Lymphoma | 1.264 (1.247-1.281) | <0.001 |
|  NHL - Nodal | 1.261 (1.241-1.282) | <0.001 |
|  NHL - Extranodal | 1.266 (1.235-1.297) | <0.001 |
|  **Myeloma** | **1.085 (1.063-1.108)** | **<0.001** |
|  **Leukemia** | **1.038 (1.021-1.054)** | **<0.001** |
|  Lymphocytic Leukemia | 1.108 (1.080-1.136) | <0.001 |
|  Acute Lymphocytic Leukemia | 1.144 (1.088-1.202) | <0.001 |
|  Chronic Lymphocytic Leukemia | 1.389 (1.346-1.433) | <0.001 |
|  Other Lymphocytic Leukemia | 0.812 (0.721-0.914) | <0.001 |
|  Myeloid and Monocytic Leukemia | 1.052 (1.030-1.075) | <0.001 |
|  Acute Myeloid Leukemia | 1.051 (1.025-1.077) | <0.001 |
|  Acute Monocytic Leukemia | 1.052 (0.961-1.152) | 0.27 |
|  Chronic Myeloid Leukemia | 1.231 (1.175-1.291) | <0.001 |
|  Other Myeloid/Monocytic Leukemia | 1.074 (0.941-1.227) | 0.29 |
|  Other Leukemia | 1.076 (1.000-1.158) | 0.05 |
|  Other Acute Leukemia | 1.030 (0.929-1.143) | 0.57 |
|  Aleukemic, Subleukemic and NOS | 1.084 (0.977-1.203) | 0.13 |
| **Cancer Site** | **Male-to-female HR (95% CI)** | **p-value** |
|  **Mesothelioma** | **1.251 (1.186-1.319)** | **<0.001** |
|  **Kaposi Sarcoma** | **0.728 (0.634-0.835)** | **<0.001** |

Abbreviations: SEER, Surveillance, Epidemiology, and End Results program; ICD-O-3/WHO 2008, International Classification of Diseases for Oncology, 3rd Edition, 2000. World Health Organization, Geneva, Switzerland; NOS, not otherwise specified; CI, confidence interval.

**Supplementary Table 4. Frequency and Incidence Rate Ratiosa by Sex and Brain Histology 2001-2016, National Program of Cancer Registries and Surveillance, Epidemiology, and End Results SEER\*Stat Database: NPCR and SEER Incidence – U.S. Cancer Statistics Public Use Research Database, Nov 2018 Submission (2001-2016).**

|  |  |  |
| --- | --- | --- |
| **Brain Histology** | **Male-to-female HR (95% CI)** | **p-value** |
| Pilocytic Astrocytoma | 1.042 (1.009-1.075) | 0.011 |
| Diffuse Astrocytoma | 1.329 (1.295-1.363) | <0.001 |
| Anaplastic Astrocytoma | 1.373 (1.332-1.415) | <0.001 |
| Unique Astrocytoma Variants | 1.175 (1.073-1.288) | <0.001 |
| Glioblastoma | 1.554 (1.537-1.57) | <0.001 |
| Oligodendroglioma | 1.292 (1.246-1.339) | <0.001 |
| Anaplastic Oligodendroglioma | 1.312 (1.242-1.386) | <0.001 |
| Oligoastrocytic Tumors | 1.405 (1.343-1.47) | <0.001 |
| Ependymal Tumors | 1.113 (1.073-1.156) | <0.001 |
| Glioma Malignant, NOS | 1.079 (1.049-1.111) | <0.001 |
| Choroid Plexus Tumors | 1.126 (0.92-1.38) | 0.259 |
| Other Neuroepithelial Tumors | 0.425 (0.304-0.587) | <0.001 |
| Neuronal and Mixed Neuronal Glial Tumors | 1.492 (1.374-1.622) | <0.001 |
| Tumors of the Pineal Region | 1.002 (0.888-1.132) | 0.995 |
| Embryonal Tumors | 1.415 (1.362-1.471) | <0.001 |
| Nerve Sheath Tumors | 1.072 (0.92-1.25) | 0.384 |
| Meningioma | 0.731 (0.687-0.777) | <0.001 |
| Mesenchymal Tumors | 1.188 (1.072-1.318) | 0.001 |
| Primary Melanocytic Lesions | 1.099 (0.987-1.224) | 0.086 |
| Other Neoplasms Related to the Meninges | 1.316 (1.144-1.514) | <0.001 |
| Lymphoma | 1.293 (1.258-1.329) | <0.001 |
| Other Hematopoietic Neoplasms | 1.842 (1.54-2.206) | <0.001 |
| Germ Cell Tumors, Cysts and Heterotopias | 3.03 (2.798-3.284) | <0.001 |
| Tumors of the Pituitary | 1.442 (1.277-1.629) | <0.001 |
| Hemangioma | 1.42 (0.876-2.309) | 0.165 |

a Rates are per 100,000 and age-adjusted to the 2000 US standard population.

-- Counts are not presented when fewer than 16 cases were reported for the specific site.

Abbreviations: SEER, Surveillance, Epidemiology, and End Results program; ICD-O-3/WHO 2008, International Classification of Diseases for Oncology, 3rd Edition, 2000. World Health Organization, Geneva, Switzerland; CI, confidence interval; NOS, not otherwise specified.

**Supplementary Table 5. Age-Adjusted Hazard Ratios (HRs) by Sex (Males:Females) by Brain Histology with 95% Confidence Intervals, 2001-2016, SEER\*Stat Database: Incidence – SEER 18 Registries + Hurricane Katrina Impacted Louisiana Cases, Nov 2018 Submission (1973-2016 varying).**

|  |  |  |
| --- | --- | --- |
| **Brain Histology** | **Male-to-female HR (95% CI)** | **p-value** |
| Pilocytic Astrocytoma | 1.007 (0.798-1.269) | 0.956 |
| Diffuse Astrocytoma | 1.126 (1.051-1.206) | <0.001 |
| Anaplastic Astrocytoma | 1.044 (0.971-1.121) | 0.243 |
| Unique Astrocytoma Variants | 0.958 (0.732-1.255) | 0.757 |
| Glioblastoma | 1.036 (1.013-1.059) | 0.002 |
| Oligodendroglioma | 1.201 (1.059-1.362) | 0.004 |
| Anaplastic Oligodendroglioma | 1.057 (0.909-1.23) | 0.471 |
| Oligoastrocytic Tumors | 1.064 (0.937-1.207) | 0.338 |
| Ependymal Tumors | 1.302 (1.111-1.526) | 0.001 |
| Glioma Malignant, NOS | 1.006 (0.93-1.089) | 0.881 |
| Choroid Plexus Tumors | 1.256 (0.668-2.359) | 0.479 |
| Other Neuroepithelial Tumors | 1.688 (0.641-4.446) | 0.289 |
| Neuronal and Mixed Neuronal Glial Tumors | 1.457 (1.075-1.975) | 0.015 |
| Tumors of the Pineal Region | 1.212 (0.821-1.789) | 0.333 |
| Embryonal Tumors | 0.969 (0.863-1.089) | 0.599 |
| Nerve Sheath Tumors | 2.739 (1.589-4.72) | <0.001 |
| Meningioma | 1.488 (1.26-1.757) | <0.001 |
| Mesenchymal Tumors | 1.271 (0.941-1.717) | 0.118 |
| Primary Melanocytic Lesions | 1.081 (0.853-1.37) | 0.519 |
| Other Neoplasms Related to the Meninges | 1.859 (1.072-3.223) | 0.027 |
| Lymphoma | 1.148 (1.076-1.225) | <0.001 |
| Other Hematopoietic Neoplasms | 1.47 (0.842-2.565) | 0.175 |
| Germ Cell Tumors, Cysts and Heterotopias | 0.72 (0.526-0.985) | 0.04 |
| Tumors of the Pituitary | 1.454 (0.968-2.185) | 0.072 |
| Hemangioma | 0.958 (0.732-1.255) | 0.757 |

Abbreviations: SEER, Surveillance, Epidemiology, and End Results program; ICD-O-3/WHO 2008, International Classification of Diseases for Oncology, 3rd Edition, 2000. World Health Organization, Geneva, Switzerland; NOS, not otherwise specified; CI, confidence interval.