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| **Complete Descriptive Statistics in the National Cancer Database; Frequency Tables**  |
| **Variable (Number Observed)** | **Value(N, %)\*** |
| **Age in years (180,150)**  | 64.83 ± 11.17 |
| **Sex (180,150)** |   |
| Male | 92,747 (51) |
| Female | 87,403 (49) |
| **Race (180,150)** |   |
| American Indian or Eskimo | 572 (0.3) |
| Asian | 5,210 (2.9) |
| Black | 20,895 (11.6) |
| Other | 1,301 (0.7) |
| Pacific Islander | 361 (0.2) |
| Unknown | 1,362 (0.8) |
| White | 150,458 (84) |
| **Spanish or Hispanic Origin (180,150)** |   |
| No | 168,001 (93) |
| Unknown | 4,999 (2.8) |
| Yes | 7,140 (3.9) |
| **Median Income in $ adjusted for 2016 inflation (180,150)** |   |
| Less $30,000 | 35,206 (20) |
| $30,000 to 34,999 | 39,200 (22) |
| $35,000 to 45,999 | 38,911 (22) |
| Above $46,000 | 51,040 (28) |
| **No high school degree % against 2016 (180,150)** |   |
| Less 6.3% | 34,020 (19) |
| 6.3% to 10.8% | 46,036 (26) |
| 10.9% to 17.6% | 46,857 (26) |
| Above 17.6% | 37,784 (21) |
| **Urban or rural area (180,150)**  |   |
| Metro | 143,965 (80) |
| Urban | 27,683 (15) |
| Rural | 3,763 (2) |
| **Year of Diagnosis (180,150)** | (2010-2018) |
| **Facility Type (180,150)** |   |
|  Academic | 59,579 (33) |
|  Community Cancer Program | 12,998 (7) |
|  Comprehensive Community Cancer Program | 68,849 (38) |
|  Integrated Cancer Program | 35,478 (20) |
| **Facility Location (180,150)** |   |
| East North Central | 32,525 (18) |
| East South Central | 14,524 (8) |
| Middle Atlantic | 22,226 (15) |
| Mountain | 7,025 (3.9) |
| New England | 10,696 (5.9) |
| Pacific | 18,980 (11) |
| South Atlantic | 38,818 (22) |
| West North Central | 13,761 (7.6) |
| West South Central | 14,549 (8.1) |
| **Great Circle Distance in miles (180,150)** | 29.13 ± 106.87 |
| **Total Charlson-Deyo Score (180,150)** |  |
| 0 | 116,058 (64) |
| 1 | 40,727 (23) |
| 2 | 14,759 (8.2) |
| 3 | 8,570 (4.8) |
| **Detailed Anatomic Site (180,150)** |   |
| Adrenal gland, NOD | 2 (0) |
| Anal canal | 24 (0) |
| Anus, NOS | 17 (0) |
| Appendix | 14 (0) |
| Autonomic NS, NOS | 6 (0) |
| Bile duct, extrahepatic | 58 (0) |
| Bile duct, intrahepatic | 108 (0.1) |
| Biliary, NOS | 43 (0) |
| Biliary, overlapping | 4 (0) |
| Bladder, anterior wall | 13 (0) |
| Bladder, dome | 22 (0) |
| Bladder, lateral wall | 62 (0) |
| Bladder, neck | 10 (0) |
| Bladder, NOS | 302 (0.2) |
| Bladder, overlapping | 65 (0) |
| Bladder, posterior wall | 24 (0) |
| Bladder, trigone | 17 (0) |
| Bone marrow | 18 (0) |
| Bone, NOS | 14 (0) |
| Bones, overlapping | 1 (0) |
| Bones, pelvis sacrum and coccyx | 17 (0) |
| Bones, skull, and face | 15 (0) |
| Breast, axillary tail | 57 (0) |
| Breast, central | 280 (0.2) |
| Breast, lower inner quadrant | 179 (0.1) |
| Breast, lower outer quadrant | 315 (0.2) |
| Breast, nipple | 32 (0) |
| Breast, NOS | 3137 (1.7) |
| Breast, overlapping | 1291 (0.7) |
| Breast, upper inner quadrant | 351 (0.2) |
| Breast, upper outer quadrant | 1437 (0.8) |
| Bronchus, main | 7178 (4) |
| Cardia, NOS | 521 (0.3) |
| Cecum | 382 (0.2) |
| Cervix uteri | 270 (0.1) |
| Cervix uteri, overlapping | 10 (0) |
| Ciliary body | 2 (0) |
| Cloacogenic zone | 1 (0) |
| Colon, ascending | 319 (0.2) |
| Colon, descending | 79 (0) |
| Colon, hepatic flexure | 89 (0) |
| Colon, NOS | 507 (0.3) |
| Colon, overlapping | 34 (0) |
| Colon, sigmoid | 427 (0.2) |
| Colon, splenic flexure | 37 (0) |
| Colon, transverse | 111 (0.1) |
| Conjunctiva | 2 (0) |
| Corpus uteri | 41 (0) |
| Corpus uteri, overlapping | 3 (0) |
| Digestive, overlapping | 28 (0) |
| Duodenum | 52 (0) |
| Ear, external | 41 (0) |
| Ear, middle | 6 (0) |
| Endocervix | 37 (0) |
| Endometrium | 603 (0.3) |
| Esophagus, abdominal | 9 (0) |
| Esophagus, cervical | 5 (0) |
| Esophagus, lower third | 1242 (0.7) |
| Esophagus, middle third | 198 (0.1) |
| Esophagus, NOS | 336 (0.2) |
| Esophagus, overlapping | 138 (0.1) |
| Esophagus, thoracic | 55 (0) |
| Esophagus, upper third | 45 (0) |
| Exocervix | 1 (0) |
| Eye, NOS | 3 (0) |
| Eyelid | 3 (0) |
| Fallopian tube | 7 (0) |
| Female genitals, NOS | 50 (0) |
| Female genitals, other | 2 (0) |
| Female genitals, overlapping | 6 (0) |
| Fundus uteri | 8 (0) |
| Gallbladder | 88 (0) |
| Gastric andrum | 43 (0) |
| Gastrointestinal, NOS | 357 (0.2) |
| Glottis | 5 (0) |
| Heart | 38 (0) |
| Heart mediastinum, overlapping | 1 (0) |
| Ileum | 18 (0) |
| Intestinal tract, NOS | 10 (0) |
| Isthmus uteri | 3 (0) |
| Jejunum | 18 (0) |
| Kidney, NOS | 5011 (2.8) |
| Lacrimal gland | 1 (0) |
| Langerhans, islets | 2 (0) |
| Larynx, NOS | 19 (0) |
| Limb bone, NOS | 5 (0) |
| Lip, NOS | 8 (0) |
| Liver | 507 (0.3) |
| Long bones and lower limb | 22 (0) |
| Long bones and upper limb, scapula | 6 (0) |
| Lung, lower lobe | 34356 (19.1) |
| Lung, middle lobe | 5600 (3.1) |
| Lung, NOS | 24601 (13.7) |
| Lung, overlapping | 2075 (1.2) |
| Lung, upper lobe | 73889 (41) |
| Lymph nodes, axilla, and arm | 11 (0) |
| Lymph nodes, head face and neck | 24 (0) |
| Lymph nodes, inguinal | 7 (0) |
| Lymph nodes, intraabdominal | 36 (0) |
| Lymph nodes, intrathoracic | 7 (0) |
| Lymph nodes, multiple | 179 (0.1) |
| Lymph nodes, NOS | 233 (0.1) |
| Lymph nodes, pelvis | 9 (0) |
| Mandible | 3 (0) |
| Mediastinum, anterior | 17 (0) |
| Mediastinum, NOS | 39 (0) |
| Mediastinum, posterior | 3 (0) |
| Myometrium | 7 (0) |
| Nasal cavity | 65 (0) |
| Nasopharynx, NOS | 4 (0) |
| Nasopharynx, overlapping | 1 (0) |
| Orbit, NOS | 8 (0) |
| Oropharynx, overlapping | 1 (0) |
| Ovary | 259 (0.1) |
| Pancreas, body | 144 (0.1) |
| Pancreas, head | 352 (0.2) |
| Pancreas, NOS | 368 (0.2) |
| Pancreas, other | 15 (0) |
| Pancreas, overlapping | 89 (0) |
| Pancreas, tail | 208 (0.1) |
| Pancreatic duct | 1 (0) |
| Parotid gland | 1 (0) |
| Pelvis, NOS | 1 (0) |
| Peripheral and autonomic NS, thorax | 3 (0) |
| Peripheral and autonomic NS, trunk NOS | 1 (0) |
| Peritoneum, NOS | 1 (0) |
| Placenta | 23 (0) |
| Pleura, NOS | 1 (0) |
| Prostate gland | 720 (0.4) |
| Pylorus | 5 (0) |
| Rectosigmoid junction | 230 (0.1) |
| Rectum anus and anal canal, overlapping | 22 (0) |
| Rectum, NOS | 581 (0.3) |
| Renal pelvis | 101 (0.1) |
| Respiratory and intrathoracic, overlapping | 2 (0) |
| Respiratory, illdefined | 1 (0) |
| Retroperitoneum | 4 (0) |
| Rib sternum and clavicle | 4 (0) |
| Sinus, ethmoid | 18 (0) |
| Sinus, frontal | 5 (0) |
| Sinus, maxillary | 34 (0) |
| Sinus, NOS | 16 (0) |
| Sinus, overlapping | 4 (0) |
| Sinus, sphenoid | 10 (0) |
| Skin, face other | 134 (0.1) |
| Skin, lower limb | 241 (0.1) |
| Skin, NOS | 5259 (2.9) |
| Skin, overlapping | 11 (0) |
| Skin, scalp, and neck | 236 (0.1) |
| Skin, trunk | 719 (0.4) |
| Skin, upper limb | 315 (0.2) |
| Small intestine, NOS | 54 (0) |
| Soft tissues, abdomen | 32 (0) |
| Soft tissues, head face and neck | 57 (0) |
| Soft tissues, lower limb | 106 (0.1) |
| Soft tissues, NOS | 111 (0.1) |
| Soft tissues, overlapping | 2 (0) |
| Soft tissues, pelvis | 50 (0) |
| Soft tissues, thorax | 83 (0) |
| Soft tissues, trunk NOS | 16 (0) |
| Soft tissues, upper limb | 23 (0) |
| Spleen | 5 (0) |
| Stomach, body | 61 (0) |
| Stomach, fundus | 35 (0) |
| Stomach, greater curvature NOS | 28 (0) |
| Stomach, lesser curvature NOS | 23 (0) |
| Stomach, NOS | 197 (0.1) |
| Stomach, overlapping | 48 (0) |
| Subglottis | 1 (0) |
| Supraglottis | 32 (0) |
| Testis, descended | 139 (0.1) |
| Testis, NOS | 400 (0.2) |
| Testis, undescended | 13 (0) |
| Thorax, NOS | 1 (0) |
| Thyroid gland | 3 (0) |
| Tongue, base NOS | 1 (0) |
| Tonsil, NOS | 3 (0) |
| Tonsillar pillar | 1 (0) |
| Trachea | 12 (0) |
| Unknown | 21 (0) |
| Urachus | 3 (0) |
| Ureter | 43 (0) |
| Ureteric orifice | 2 (0) |
| Urethra | 12 (0) |
| Urinary, NOS | 47 (0) |
| Urinary, overlapping | 1 (0) |
| Uterine adnexa | 1 (0) |
| Uterus, NOS | 162 (0.1) |
| Vater, ampulla | 12 (0) |
| Vertebral column | 10 (0) |
| **Laterality (180,150)** |   |
| Not paired | 24,812 (14) |
| Paired, bilateral | 3,313 (1.8) |
| Paired, left | 61,437 (34) |
| Paired, midline | 120 (0.1) |
| Paired, not specified | 8,884 (4.9) |
| Paired, right | 81,165 (45) |
| Right or left, not specified | 419 (0.2) |
| **ICD-O Morphology/Histology (180,150)** |   |
| Acinar cell carcinoma | 482 (0.3) |
| Acinar cell cystadenocarcinoma | 98 (0.1) |
| Adenocarcinomas, other | 79073 (43.9) |
| Adenosquamous carcinoma | 1456 (0.8) |
| Adnexal and skin appendage neoplasms | 26 (0) |
| Atypical carcinoid tumor | 108 (0.1) |
| Basal cell carcinomas, other | 1 (0) |
| Basaloid squamous cell carcinoma | 104 (0.1) |
| Blood vessel tumors, other | 13 (0) |
| Carcinoid tumor, NOS | 182 (0.1) |
| Carcinoma, other | 8146 (4.5) |
| Carcinoma, undifferentiated, NOS | 97 (0.1) |
| Carcinosarcoma, NOS | 111 (0.1) |
| Cholangiocarcinoma | 168 (0.1) |
| Choriocarcinoma, NOS | 46 (0) |
| Clear cell adenocarcinoma, NOS | 2097 (1.2) |
| CNS embryonal tumor, NOS | 3 (0) |
| Combined small cell carcinoma | 477 (0.3) |
| Complex epithelial neoplasms | 45 (0) |
| Complex mixed and stromal neoplasms | 60 (0) |
| Cystic, mucinous and serous carcinomas | 41 (0) |
| Ductal and lobular carcinomas, other | 57 (0) |
| Endometrioid adenocarcinoma, NOS | 276 (0.2) |
| Ewing sarcoma | 39 (0) |
| Fibroepithelial neoplasms | 6 (0) |
| Fibromatous neoplasms | 34 (0) |
| Germ cell neoplasms | 11 (0) |
| Giant cell tumors | 2 (0) |
| Granular cell tumors and alveolar soft part sarcomas | 22 (0) |
| Hemangiosarcoma | 105 (0.1) |
| Hepatocellular carcinoma, all types | 439 (0.2) |
| Hepatoid adenocarcinoma | 41 (0) |
| Infiltrating duct and lobular carcinoma | 181 (0.1) |
| Infiltrating duct carcinoma, NOS | 4526 (2.5) |
| Infiltrating duct mixed with other types of carcinoma | 84 (0) |
| Inflammatory carcinoma | 122 (0.1) |
| Large cell carcinoma, NOS | 1101 (0.6) |
| Large cell neuroendocrine carcinoma | 1820 (1) |
| Leiomyosarcoma, NOS | 108 (0.1) |
| Lepidic adenocarcinoma | 249 (0.1) |
| Leukemias, other | 19 (0) |
| Lipomatous sarcomas | 23 (0) |
| Lobular carcinoma, NOS | 439 (0.2) |
| Lymphoid leukemias | 6 (0) |
| Malignant lymphoma, diffuse | 15 (0) |
| Malignant lymphoma, large B-cell, diffuse, NOS | 440 (0.2) |
| Malignant lymphoma, non-Hodgkin, NOS | 55 (0) |
| Malignant melanoma, NOS | 6350 (3.5) |
| Malignant peripheral nerve sheath tumor | 18 (0) |
| Malignant tumor, NOS | 25 (0) |
| Mature B-cell lymphomas, other | 114 (0.1) |
| Mature T- and NK-cell lymphomas | 35 (0) |
| Melanoma, other | 243 (0.1) |
| Miscellaneous tumors, other | 3 (0) |
| Mixed cell adenocarcinoma | 72 (0) |
| Mucin-producing adenocarcinoma | 251 (0.1) |
| Mucinous adenocarcinoma | 966 (0.5) |
| Mucoepidermoid carcinoma | 15 (0) |
| Mullerian mixed tumor | 37 (0) |
| Myomatous neoplasms, other | 36 (0) |
| Myxomatous neoplasms | 2 (0) |
| Neoplasm, malignant | 5459 (3) |
| Neuroendocrine carcinoma, NOS | 2988 (1.7) |
| Neuroepitheliomatous neoplasms | 16 (0) |
| Nodular melanoma | 367 (0.2) |
| Non-small cell carcinoma | 12511 (6.9) |
| Oat cell carcinoma | 102 (0.1) |
| Osseous and chondromatous neoplasms | 46 (0) |
| Papillary adenocarcinoma, NOS | 737 (0.4) |
| Papillary carcinoma, NOS | 65 (0) |
| Papillary transitional cell carcinoma | 114 (0.1) |
| Paragangliomas and glomus tumors | 2 (0) |
| Plasma cell tumors | 5 (0) |
| Pleomorphic carcinoma | 148 (0.1) |
| Pseudosarcomatous carcinoma | 532 (0.3) |
| Renal cell carcinoma, NOS | 2257 (1.3) |
| Renal cell carcinoma, other | 25 (0) |
| Renal cell carcinoma, sarcomatoid | 195 (0.1) |
| Serous carcinoma, NOS | 75 (0) |
| Signet ring cell carcinoma | 460 (0.3) |
| Small cell carcinoma, intermediate cell | 37 (0) |
| Small cell carcinoma, NOS | 25974 (14.4) |
| Soft tissue sarcomas, NOS | 262 (0.1) |
| Solid carcinoma, NOS | 156 (0.1) |
| Specialized gonadal neoplasms | 2 (0) |
| Spindle cell carcinoma, NOS | 100 (0.1) |
| Spindle cell melanoma, NOS | 58 (0) |
| Spindle cell sarcoma | 50 (0) |
| Squamous cell carcinoma, keratinizing, NOS | 543 (0.3) |
| Squamous cell carcinoma, large cell, nonkeratinizing, NOS | 287 (0.2) |
| Squamous cell carcinoma, NOS | 14161 (7.9) |
| Squamous cell carcinoma, spindle cell | 41 (0) |
| Squamous cell neoplasms, other | 37 (0) |
| Struma ovarii, malignant | 603 (0.3) |
| Synovial sarcomas | 25 (0) |
| Thymic epithelial neoplasms | 1 (0) |
| Transitional cell carcinomas, other | 482 (0.3) |
| Trophoblastic neoplasms, other | 6 (0) |
| **Grade (155,759)** |   |
| Well differentiated; differentiated, NOS | 1,996 (1.3) |
| Moderately differentiated; moderately well differentiated; intermediate differentiation | 12,145 (7.8) |
| Poorly differentiated | 35,445 (23) |
| Undifferentiated; anaplastic | 4,899 (3.1) |
| T cell; T-precursor | 29 (0) |
| B cell; pre-B; B-precursor | 438 (0.3) |
| NK (natural killer) cell | 2 (0) |
| Cell type not determined | 100,795 (65) |
| **Diagnostic Confirmation (180,150)** |   |
| Positive Histology | 149,469 (83) |
| Positive Cytology | 20,589 (12) |
| Positive Histology PLUS positive immunophenotyping and/or positive genetic studies | 205 (0.1) |
| Positive microscopic confirmation; method not specified | 101 (0.1) |
| Positive laboratory test/marker study | 86 (0) |
| Direct visualization without microscopic confirmation | 68 (0) |
| Radiography and other imaging techniques without microscopic confirmation | 8,187 (4.5) |
| Clinical diagnosis only | 734 (0.4) |
| Unknown whether microscopically confirmed | 711 (0.4) |
| **Tumor Size in mm (179,977)** | 300.82 ± 419.06 |
| **Regional Nodes Examined (180,150)** | NA |
| **Regional Nodes Positive (180,150)** | NA |
| **Diagnostic and Staging Procedure (180,150)** |   |
| No surgical diagnostic or staging procedure was performed. | 50,040 (28) |
| A biopsy (incisional, needle, or aspiration) was done to a site other than the primary. No exploratory procedure was done. | 43,059 (24) |
| A biopsy (incisional, needle, or aspiration) was done to the primary site. | 84,808 (47) |
| A surgical exploration only. The patient was not biopsied or treated. | 91 (0.1) |
| A surgical procedure with a bypass was performed, but no biopsy was done | 81 (0) |
| An exploratory procedure was performed, and a biopsy of either the primary site or another site was done. | 1,561 (0.9) |
| A bypass procedure was performed, and a biopsy of either the primary site or another site was done. | 107 (0.1) |
| A procedure was done, but the type of procedure is unknown. | 280 (0.2) |
| No information of whether a diagnostic or staging procedure was performed | 123 (0.1) |
| **TNM Staging (T) (180,150)** |   |
| Not applicable | 2,365 (1.3) |
| cT0 |  3,451 (1.9) |
| cT1 |  4,331 (2.4) |
| cT1a |  7,180 (4) |
| cT1b |  9,918 (5.5) |
| cT1b1 |  5 (0) |
| cT1b2 |  12 (0) |
| cT1c |  2,088 (1.2) |
| cT1c3 |  1 (0) |
| cT1mi |  6 (0) |
| CT1Mic |  1 (0) |
| cT2 |  12,462 (6.9) |
| cT2a |  17,932 (10) |
| cT2a1 |  4 (0) |
| cT2a2 |  11 (0) |
| cT2b |  11,325 (6.3) |
| cT2c |  39 (0) |
| cT3 |  26,962 (15) |
| cT3a |  723 (0.4) |
| cT3b |  383 (0.2) |
| cT3c |  72 (0) |
| cT4 |  39,822 (22.1) |
| cT4a |  389 (0.2) |
| cT4b |  1,414 (0.8) |
| cT4c |  148 (0.1) |
| cT4d |  419 (0.2) |
| cTis |  6 (0) |
| cTX |  31,845 (17.7) |
| pTa |  3 (0) |
| pTis |  8 (0) |
| Blank |  6,825 (3.8) |
| **TNM Staging (N) (180,150)** |   |
| Not applicable |  2,376 (1.3) |
| cN0 |  40,258 (22.3) |
| cN1 |  20,206 (11.2) |
| cN1a |  66 (0) |
| cN1b |  145 (0.1) |
| cN1c |  14 (0) |
| cN1mi |  1 (0) |
| cN2 |  61,819 (34.3) |
| cN2a |  312 (0.2) |
| cN2b |  176 (0.1) |
| cN2c |  57 (0) |
| cN3 |  28,467 (15.8) |
| cN3a |  85 (0) |
| cN3b |  134 (0.1) |
| cN3c |  416 (0.2) |
| cNx |  19,864 (11) |
| Blank |  5,754 (3.2) |
| **TNM Staging (M) (180,150)** |   |
| Not applicable | 2,365 (1.3) |
| cM0 | 1,433 (0.8) |
| cM0(i+) | 1 (0) |
| cM1 | 46,508 (25.8) |
| cM1a | 2,688 (1.5) |
| cM1b | 91,475 (50.8) |
| cM1c | 11,276 (6.3) |
| cM1d | 372 (0.2) |
| pM1 | 2,951 (1.6) |
| pM1a | 413 (0.2) |
| pM1b | 11,644 (6.5) |
| pM1c | 4,698 (2.6) |
| pM1d | 319 (0.2) |
| Blank | 4,007 (2.2) |
| **TNM Clinical Staging Group (180,150)** |   |
| 0 | 143 (0.1) |
| 1 |  92 (0.1) |
| 2 |  44 (0) |
| 3 |  99 (0.1) |
| 4 |  152,438 (84.6) |
| Not applicable |  1,881 (1) |
| Unknown |  2,401 (1.3) |
| 1A |  109 (0.1) |
| 1A1 |  5 (0) |
| 1A2 |  4 (0) |
| 1A3 |  7 (0) |
| 1B |  124 (0.1) |
| 1E |  6 (0) |
| 2A |  130 (0.1) |
| 2B |  81 (0) |
| 2C |  10 (0) |
| 2E |  1 (0) |
| 3A |  267 (0.1) |
| 3B |  184 (0.1) |
| 3C |  30 (0) |
| 3C1 |  3 (0) |
| 4A |  5,973 (3.3) |
| 4B |  14,588 (8.1) |
| 4C |  146 (0.1) |
| OC |  11 (0) |
| Blank |  1,373 (0.8) |
| **Clinical Pathology (T) (180,150)** |   |
| Not applicable |  2,294 (1.3) |
| pT0 |  638 (0.4) |
| pT1 |  374 (0.2) |
| pT1a |  532 (0.3) |
| pT1a1 |  1 (0) |
| pT1b |  678 (0.4) |
| pT1b1 |  3 (0) |
| pT1b2 |  1 (0) |
| pT1c |  229 (0.1) |
| pT2 |  997 (0.6) |
| pT2a |  1,165 (0.6) |
| pT2a1 |  2 (0) |
| pT2a2 |  2 (0) |
| pT2b |  629 (0.3) |
| pT2c |  10 (0) |
| pT3 |  1,684 (0.9) |
| pT3a |  708 (0.4) |
| pT3b |  166 (0.1) |
| pT3c |  37 (0) |
| pT4 |  1,696 (0.9) |
| pT4a |  255 (0.1) |
| pT4b |  553 (0.3) |
| pT4c |  19 (0) |
| pT4d |  38 (0) |
| pTa |  1 (0) |
| pTis |  12 (0) |
| pTX |  62,377 (34.6) |
| Blank |  105,049 (58.3) |
| **Clinical Pathology (N) (180,150)** |   |
| Not applicable |  2,303 (1.3) |
| cN0 |  357 (0.2) |
| pN0 |  4,216 (2.3) |
| pN0I- |  15 (0) |
| pN0I+ |  6 (0) |
| pN1 |  1,871 (1) |
| pN1a |  241 (0.1) |
| pN1b |  160 (0.1) |
| pN1c |  18 (0) |
| pN1mi |  10 (0) |
| pN2 |  3,102 (1.7) |
| pN2a |  203 (0.1) |
| pN2b |  212 (0.1) |
| pN2c |  19 (0) |
| pN3 |  1,664 (0.9) |
| pN3a |  99 (0.1) |
| pN3b |  15 (0) |
| pN3c |  35 (0) |
| pNX |  60,868 (33.8) |
| Blank |  104,736 (58.1) |
| **Clinical Pathology (M) (180,150)** |   |
| Not applicable | 2,233 (1.2) |
| cM0 |  575 (0.3) |
| cM1 |  2,329 (1.3) |
| cM1a |  185 (0.1) |
| cM1b |  4,167 (2.3) |
| cM1c |  1,310 (0.7) |
| cM1d |  80 (0) |
| pM0 |  1 (0) |
| pM1 |  12,777 (7.1) |
| pM1a |  1,523 (0.8) |
| pM1b |  22,977 (12.8) |
| pM1c |  4,949 (2.7) |
| pM1d |  395 (0.2) |
| pMX |  1 (0) |
| Blank |  126,648 (70.3) |
| **TNM Pathology Staging Group (180,150)** |   |
| 0 | 135 (0.1) |
| 1 |  50 (0) |
| 2 |  30 (0) |
| 3 |  119 (0.1) |
| 4 |  49,227 (27.3) |
| 88 |  1,866 (1) |
| 99 |  95,580 (53.1) |
| 0A |  1 (0) |
| 1A |  82 (0) |
| 1A1 |  3 (0) |
| 1A2 |  1 (0) |
| 1B |  112 (0.1) |
| 1C |  2 (0) |
| 1E |  3 (0) |
| 1S |  1 (0) |
| 2A |  112 (0.1) |
| 2B |  82 (0) |
| 2C |  14 (0) |
| 3A |  190 (0.1) |
| 3B |  139 (0.1) |
| 3C |  329 (0.2) |
| 3C1 |  1 (0) |
| 3C2 |  4 (0) |
| 3D |  1 (0) |
| 4A |  2,216 (1.2) |
| 4B |  5,358 (3) |
| 4C |  52 (0) |
| OC |  131 (0.1) |
| Blank |  24,309 (13.5) |
| **Analytic Staging Group (180,150)** |   |
| Stage 0 | 223 (0.1) |
| Stage I | 412 (0.2) |
| Stage II | 330 (0.2) |
| Stage III | 1,343 (0.7) |
| Stage IV | 174,506 (97) |
| Occult (lung only) | 6 (0) |
| AJCC staging NA | 1,881 (1) |
| AJCC stage group unknown | 1,449 (0.8) |
| **Metastasis from Bone (180,150)** |   |
| No | 118,645 (66) |
| Not Applicable | 47 (0) |
| Unknown | 2,350 (1.3) |
| Yes | 59,180 (33) |
| **Metastasis from Liver (180,150)** |   |
| No | 138,122 (77) |
| Not Applicable | 50 (0) |
| Unknown | 3,197 (1.8) |
| Yes | 38,781 (22) |
| **Metastasis from Lung (180,150)** |   |
| No | 129,068 (72) |
| Not Applicable | 468 (0.3) |
| Unknown | 4,315 (2.4) |
| Yes | 46,298 (28) |
| **Lymph or Vascular Invasion (180,150)** |   |
| Lymph-vascular invasion is not present (absent) or not identified | 15,106 (8.4) |
| Lymph-vascular invasion is present or identified | 5,502 (2.8) |
| Not applicable | 839 (0.5) |
| Unknown if lymph-vascular invasion is present, or indeterminant | 159,153 (88) |
| **Summary of the treatment status (180,150)** |   |
| Active Surveillance | 229 (0.01) |
| No Treatment Given | 23,919 (13) |
| Treatment Given | 153,242 (85) |
| Unknown | 2,759 (1.5) |
| **Treatment started, days from diagnosis (180,150)** | 19.65 ± 28.24 |
| **First surgical procedure, days from diagnosis (180,150)** | 16.51 ± 42.15 |
| **Definitive surgical procedure, days from diagnosis (180,150)** | 47.07 ± 72.2 |
| **Surgical procedure for primary site (180,150)** |   |
| No surgery | 170,771 (95) |
| Surgery, non-specific | 469 (0.03) |
| Special site-specific surgery | 51 (0) |
| Tumor destruction | 371 (0.2) |
| Tumor resection | 8,199 (4.6) |
| Unknown | 289 (0.2) |
| **Type of surgery at the facillity for primary site (180,150)** |   |
| Minimally invasive | 1,783 (1) |
| Minimally invasive converted to open | 148 (0.1) |
| No surgery | 173,262 (96) |
| Open or unspecified | 4,440 (2.5) |
| Robotic assisted | 432 (0.2) |
| Robotic converted to open | 28 (0) |
| Unknown | 57 (0) |
| **Summary of surgical margins (180,150)** |   |
| Macroscopic residual tumor | 191 (0.1) |
| Margins not evaluable | 733 (0.4) |
| Microscopic residual tumor | 598 (0.3) |
| No primary site surgery | 170,822 (95) |
| No residual tumor | 5,580 (3.1) |
| Residual tumor, nonspecific | 911 (0.5) |
| Unknown | 1,315 (0.7) |
| **Scope of regional lymph node surgery (180,150)** | NA |
| **Scope of regional lymph node surgery in 2012 (146,543)** | NA |
| **Surgery on other sites (180,150)** |   |
| Combination surgery | 119 (0) |
| Non-primary surgery | 1,913 (1) |
| Non-primary surgery, distant lymph nodes | 495 (0.3) |
| Non-primary surgery, distant site | 24,394 (14) |
| Non-primary surgery, regional | 672 (0.4) |
| None | 152,307 (85) |
| Unknown | 250 (0.1) |
| **Readmission within 30-day discharge from surgery (180,150)** |   |
| No surgical procedure of the primary site was performed, or the patient was not readmitted to the same hospital within 30 days of discharge | 175,886 (98) |
| A patient was surgically treated and was readmitted to the same hospital within 30 days of being discharged. This readmission was unplanned | 2,370 (1.3) |
| A patient was surgically treated and was then readmitted to the same hospital within 30 days of being discharged. This readmission was planned | 710 (0.4) |
| A patient was surgically treated and, within 30 days of being discharged, the patient had both a planned and an unplanned readmission to the same hospital | 127 (0.1) |
| It is unknown whether surgery of the primary site was recommended or performed. It is unknown whether the patient was readmitted to the same hospital within 30 days of discharge | 1,057 (0.6) |
| **Reason for no surgery (180,150)** |   |
| Surgery of the primary site was performed | 9,039 (5) |
| Not part of the planned first course treatment | 162,407 (90) |
| Contraindicated due to patient risk factors | 5,752 (3.2) |
| Patient died prior to planned or recommended surgery | 427 (0.2) |
| No reason for not performing recommended surgery was noted in patient record | 415 (0.2) |
| Treatment was refused by the patient, the patient’s family member, or the patient’s guardian | 1,044 (0.6) |
| Unknown if performed | 184 (0.1) |
| Unknown if surgery was recommended or performed | 882 (0.5) |
| **Radiation, days from diagnosis (180,150)** | 35.2 ± 45.32 |
| **Radiation surgery sequence (180,150)** |   |
| No radiation therapy and/or surgical procedures | 151,096 (84) |
| Radiation therapy before surgery | 1,892 (1.1) |
| Radiation therapy after surgery | 22,450 (12.5) |
| Radiation therapy both before and after surgery | 347 (0.2) |
| Intraoperative radiation therapy | 56 (0) |
| Intraoperative radiation therapy with other therapy administered before or after surgery | 15 (0) |
| Sequence unknown | 4,294 (2.4) |
| **Phase I radiation therapy**  |   |
| Volume (179,928) | 16.72 ± 22.91 |
| Lymph nodes (179,197) |   |
| Modality (179,926) | 2.76 ± 12.12 |
| Beam tech (179,925) | 3.73 ± 12.6 |
| Dose fraction (179,198) | 61,873.14 ± 48,502.79 |
| Number fraction (179,278) | 49.91 ± 202.33 |
| Total dose (178,924) | 67,098.6 ± 243,876.76 |
| **Phase II radiation therapy**  |   |
| Volume (94,557) | 4.99 ± 17.39 |
| Lymph nodes (74,561) | 7.57 ± 26.22 |
| Modality (175,120) | 5.67 ± 22.74 |
| Beam tech (175,120) | 5.8 ± 22.77 |
| Dose fraction (74,898) | 9,822.55 ± 29,677.51 |
| Number fraction (74,846) | 78.47 ± 267.54 |
| Total dose (169,525) | 86,857.37 ± 280,543.75 |
| **Phase III radiation therapy**  |   |
| Volume (42,972) | 3.93 ± 17.66 |
| Lymph nodes (31,760) | 1.19 ± 10.66 |
| Modality (31,780) | 0.95 ± 8.94 |
| Beam tech (31,764) | 1.11 ± 8.95 |
| Dose fraction (31,903) | 2,972.24 ± 16,871.61 |
| Number fraction (31,904) | 10.4 ± 99.11 |
| Total dose (31,905) | 9,134.54 ± 94,160.65 |
| **Number of Phases of Radiation Treatment to this Volume (47,709)** | - |
| **Radiation Treatment Discontinued early (39,976)** | - |
| **Total dose of radiation (54,445)** | 48,649.9 ± 209,847.7 |
| **Reason for no radiation (180,150)** |   |
| Administered | 125,382 (70) |
| Contraindicated | 1,930 (1.1) |
| Not administered | 5,648 (3.1) |
| Not administered, patient died | 700 (0.4) |
| Not part of first course | 40,718 (23) |
| Unknown | 5,772 (3.2) |
| **Systemic therapy, days from diagnosis (180,150)** | 44.08 ± 36.35 |
| **Chemotherapy started, days from diagnosis (180,150)** | 44.41 ± 36.74 |
| **Summary of chemotherapy (180,150)** |   |
| Administered | 92,504 (51) |
| Contraindicated | 7,953 (4.4) |
| Not administered | 10,896 (6) |
| Not administered, patient died | 5,920 (3.3) |
| Not part of first course | 58,205 (32) |
| Unknown | 4,672 (2.6) |
| **Hormone therapy started, days from diagnosis (180,150)** | 41.66 ± 64.93 |
| **Summary of hormone therapy (180,150)** |   |
| Administered | 5,548 (3.1) |
| Contraindicated | 1,504 (0.8) |
| Not administered | 4,921 (2.7) |
| Not administered, patient died | 197 (0.1) |
| Not part of first course | 165,729 (92) |
| Unknown | 2,251 (1.2) |
| **Immunotherapy started, days from diagnosis (180,150)** | 64.96 ± 60.23 |
| **Summary of Immunotherapy (180,150)** |   |
| Administered | 18,794 (10) |
| Contraindicated | 539 (0.3) |
| Not administered | 563 (0.3) |
| Not administered, patient died | 552 (0.3) |
| Not part of first course | 159,080 (88) |
| Unknown | 622 (0.3) |
| **Sequencing of systemic treatment and surgery (180,150)** |   |
| No systemic therapy was given; and/or no surgical procedure of primary site | 157,399 (87) |
| Systemic therapy was given before surgical procedure | 1,299 (0.7) |
| Systemic therapy was given after surgical procedure of primary site | 18,273 (10) |
| At least two courses of systemic therapy were given before and at least two more after a surgical procedure of primary site | 492 (0.3) |
| Intraoperative systemic therapy was given | 31 (0) |
| Intraoperative systemic therapy was given during surgical procedure of primary site with other systemic therapy administered before or after surgical procedure  | 16 (0) |
| Both surgery and systemic therapy were provided, but the sequence is unknown | 2,640 (1.5) |
| **Other treatment, days from diagnosis (180,150)** | 47.03 ± 65.6 |
| **Summary of other treatment (180,150)** |   |
| None | 178.818 (99) |
| Nonspecific | 990 (0.5) |
| Experimental | 231 (0.1) |
| Clinical trial | 34 (0) |
| Unproven | 42 (0) |
| Refusal of treatment | 31 (0) |
| Reccomended but unknown is administered | 3 (0) |
| Unknown | 1 (0) |
| **Palliative care (180,150)** |   |
| No palliative care provided. Diagnosed at autopsy. | 123,061 (68) |
| Surgery (which may involve a bypass procedure) to alleviate symptoms, but no attempt to diagnose, stage, or treat the primary tumor is made. | 1,067 (0.6) |
| Radiation therapy to alleviate symptoms, but no attempt to diagnose, stage, or treat the primary tumor is made. | 29,880 (17) |
| Chemotherapy, hormone therapy, or other systemic drugs to alleviate symptoms, but no attempt to diagnose, stage, or treat the primary tumor is made. | 10,468 (5.8) |
| Patient received or was referred for pain management therapy with no other palliative care. | 2,586 (1.4) |
| Any combination of above except pain management | 6,390 (3.5) |
| Any combination of above with pain management | 4,195 (2.3) |
| Palliative care was performed or referred, but no information on the type of procedure is available | 2,468 (1.4) |
| Unknown | 35 (0) |
| **30-day mortality (16,999)** |   |
| Patient alive, or died more than 30 days after surgery performed | 7,187 (42) |
| Patient died 30 or fewer days after surgery performed | 422 (2.5) |
| Patient alive with fewer than 30 days of follow-up, surgery date missing, or last contact date missing | 9,390 (55) |
| **90-day mortality (16,999)** |   |
| Patient alive, or died more than 90 days after surgery performed | 6,122 (36) |
| Patient died 90 or fewer days after surgery performed | 1452 (8.5) |
| Patient alive with fewer than 90 days of follow-up, surgery date missing, or last contact date missing | 9,425 (55) |
| **Last contact or death, months from diagnosis (155,733)** | 11.09 ± 15.45 |
| **Vital status at the day of last contact or death (155,733)** | (0,1) |

\*Values represent number of patients and percentages (%) for categorical and mean (SD) for numeric variables.

|  |
| --- |
| **Exact Kaplan-Meier Survival Estimates for ICD-O Topography, Morphology, and Detailed Anatomic Site in the National Cancer Database** |
| **Variable** | **N** | **Deaths** | **Median Survival in months(95% CI)** |
| **Topography** |   |   |   |
| Testis | 472 | 268 | 17.94 (15.18, 26.91) |
| Anus | 51 | 41 | 6.28 (5.6, 13.21) |
| Biliary | 187 | 175 | 2.99 (2.2, 3.71) |
| Bone/joint | 79 | 63 | 7.16 (5.19, 11.33) |
| Breast | 6195 | 4913 | 10.71 (10.22, 11.5) |
| Cervix | 283 | 252 | 3.84 (2.99, 4.76) |
| Colon | 2474 | 2210 | 4.8 (4.4, 5.29) |
| Digestive, other | 337 | 289 | 2.53 (2.2, 2.96) |
| Esophagus | 1745 | 1601 | 4.3 (4, 4.7) |
| Female genitals/placenta | 81 | 53 | 6.01 (2.1, 17.58) |
| Gallbladder | 77 | 68 | 3.335 (2.3, 4.5) |
| Kidney | 4402 | 3742 | 5.88 (5.59, 6.24) |
| Liver | 433 | 390 | 2.56 (2.1, 3.06) |
| Lung, non-small cell | 95423 | 83037 | 5.5 (5.45, 5.59) |
| Lung, other | 9774 | 8969 | 1.8 (1.74, 1.84) |
| Lung, small cell | 22571 | 20687 | 6.24 (6.14, 6.37) |
| Melanoma | 5845 | 4683 | 6.24 (5.98, 6.57) |
| Nasal | 133 | 103 | 7.49 (6.44, 11.83) |
| NHL, extranodal | 127 | 63 | 41 (14.39, \*) |
| NHL, nodal | 349 | 191 | 13.6 (10.61, 20.3) |
| Ovary | 227 | 194 | 4.73 (3.65, 7.4) |
| Pancreas | 1032 | 957 | 2.33 (2.2, 2.6) |
| Prostate | 581 | 419 | 15.84 (12.71, 18.27) |
| Skin, other | 52 | 44 | 4.98 (2.63, 11.5) |
| Small Intestine | 124 | 107 | 4.37 (3.38, 8.64) |
| Soft Tissues | 466 | 420 | 4.83 (4.14, 5.55) |
| Stomach | 873 | 793 | 3.71 (3.25, 4.27) |
| Trachea/Larynx/Mediastinum | 115 | 102 | 7.03 (4.96, 9.2) |
| Urinary tracts | 84 | 78 | 2.37 (1.87, 3.3) |
| Urinary Bladder | 420 | 382 | 3.7 (3.38, 4.34) |
| Uterus | 721 | 622 | 3.84 (3.38, 4.4) |
| **Morphology** |   |   |   |
| Acinar cell carcinoma | 482 | 348 | 16.3 (12.58, 18.63) |
| Acinar cell cystadenocarcinoma | 1 | 1 | 12.88 (\*,\*) |
| Adenocarcinomas, other | 67,551 | 57,694 | 6.37 (6.28, 6.47) |
| Adenosquamous carcinoma | 1,316 | 1,182 | 4.57 (4.14, 4.93) |
| Adnexal and skin appendage neoplasms | 25 | 21 | 3.91 (2.14, 23.23) |
| Atypical carcinoid tumor | 90 | 73 | 5.49 (4.73, 12.85) |
| Basal cell carcinomas, other | 1 | 1 | 0.82 (\*,\*) |
| Basaloid squamous cell carcinoma | 91 | 80 | 5.42 (4.01, 7.95) |
| Blood vessel tumors, other | 12 | 9 | 8.64 (3.35, \*) |
| Carcinoid tumor, NOS | 140 | 110 | 11.43 (8.64, 15.44) |
| Carcinoma, other | 6822 | 6122 | 2.4 (2.3, 2.53) |
| Carcinoma, undifferentiated, NOS | 89 | 77 | 2.96 (2, 4.6) |
| Carcinosarcoma, NOS | 101 | 93 | 2.86 (2.27, 4.01) |
| Cholangiocarcinoma | 139 | 131 | 3.19 (2.3, 3.84) |
| Choriocarcinoma, NOS | 36 | 13 |  (16.3, \*) |
| Clear cell adenocarcinoma, NOS | 1800 | 1460 | 8.64 (7.79, 9.4) |
| CNS embryonal tumor, NOS | 2 | 2 | 2.51 (1.31, \*) |
| Combined small cell carcinoma | 385 | 344 | 5.39 (4.7, 7) |
| Complex epithelial neoplasms | 42 | 35 | 6.735 (4.7, 11.3) |
| Complex mixed and stromal neoplasms | 53 | 52 | 3.94 (2.5, 6.7) |
| Cystic, mucinous, and serous carcinomas | 36 | 29 | 11.6 (6.47, 23.43) |
| Ductal and lobular carcinomas, other | 53 | 43 | 10.28 (4.6, 17.87) |
| Endometrioid adenocarcinoma, NOS | 235 | 202 | 4.34 (3.38, 5.59) |
| Ewing sarcoma | 34 | 27 | 11.33 (9.72, 22.67) |
| Fibroepithelial neoplasms | 5 | 4 | 3.88 (3.25, \*) |
| Fibromatous neoplasms | 32 | 29 | 4.67 (2.89, 6.83) |
| Germ cell neoplasms | 9 | 8 | 2.07 (1.38, \*) |
| Giant cell tumors | 2 | 2 | 3.45 (3.29, \*) |
| Granular cell tumors and alveolar soft part sarcomas | 20 | 12 | 35.88 (24.41, \*) |
| Hemangiosarcoma | 93 | 86 | 3.42 (2.5, 4.67) |
| Hepatocellular carcinoma, all types | 374 | 337 | 2.69 (2.14, 3.19) |
| Hepatoid adenocarcinoma | 36 | 33 | 4.11 (3.71, 7.85) |
| Infiltrating duct and lobular carcinoma | 167 | 129 | 18.4 (13.17, 25.36) |
| Infiltrating duct carcinoma, NOS | 3921 | 3118 | 11.53 (10.68, 12.19) |
| Infiltrating duct mixed with other types of carcinoma | 83 | 69 | 12.22 (8, 20.9) |
| Inflammatory carcinoma | 112 | 81 | 14.65 (9.66, 18.69) |
| Large cell carcinoma, NOS | 1020 | 946 | 4.07 (3.71, 4.44) |
| Large cell neuroendocrine carcinoma | 1550 | 1368 | 5.55 (5.09, 6.18) |
| Leiomyosarcoma, NOS | 95 | 83 | 6.8 (4.01, 11.01) |
| Lepidic adenocarcinoma | 221 | 197 | 7.82 (5.88, 10.22) |
| Leukemias, other | 15 | 6 |  9.6 (\*,\*) |
| Lipomatous sarcomas | 21 | 19 | 5.39 (2.76, 17.45) |
| Lobular carcinoma, NOS | 378 | 307 | 12.81 (10.09, 16.36) |
| Lymphoid leukemias | 6 | 4 | 9.265 (3.02, \*) |
| Malignant lymphoma, diffuse | 15 | 10 | 8.275 (4.44, \*) |
| Malignant lymphoma, large B-cell, diffuse, NOS | 287 | 159 | 13.6 (9.72, 20.37) |
| Malignant lymphoma, non-Hodgkin, NOS | 42 | 21 | 16.23 (9, \*) |
| Malignant melanoma, NOS | 5381 | 4317 | 6.1 (5.82, 6.4) |
| Malignant peripheral nerve sheath tumor | 18 | 18 | 4.945 (3.09, 11.4) |
| Malignant tumor, NOS | 25 | 21 | 6.01 (3.48, 12.32) |
| Mature B-cell lymphomas, other | 83 | 32 | 83.94 (28.98, \*) |
| Mature T- and NK-cell lymphomas | 25 | 20 | 6.9 (2.96, 17.81) |
| Melanoma, other | 204 | 157 | 8.71 (7.26, 12.29) |
| Miscellaneous tumors, other | 2 | 2 | 15.065 (4.7, \*) |
| Mixed cell adenocarcinoma | 67 | 51 | 6.31 (4.86, 13.17) |
| Mucin-producing adenocarcinoma | 231 | 196 | 5.65 (4.6, 8.41) |
| Mucinous adenocarcinoma | 933 | 802 | 6.01 (5.16, 6.8) |
| Mucoepidermoid carcinoma | 14 | 14 | 3.6 (1.35, 39.85) |
| Mullerian mixed tumor | 31 | 30 | 4.8 (1.91, 7.56) |
| Myomatous neoplasms, other | 36 | 31 | 5.49 (3.81, 7.82) |
| Myxomatous neoplasms | 2 | 1 | 11.14 (\*,\*) |
| Neoplasm, malignant | 4745 | 4376 | 1.31 (1.25, 1.38) |
| Neuroendocrine carcinoma, NOS | 2657 | 2400 | 5.6 (5.26, 5.98) |
| Neuroepitheliomatous neoplasms | 11 | 6 | 44.65 (27.4, \*) |
| Nodular melanoma | 309 | 251 | 7.82 (7.13, 9.07) |
| Non-small cell carcinoma | 11807 | 10716 | 3.98 (3.88, 4.11) |
| Oat cell carcinoma | 98 | 94 | 6.64 (4.5, 8.48) |
| Osseous and chondromatous neoplasms | 43 | 37 | 6.83 (4.67, 10.18) |
| Papillary adenocarcinoma, NOS | 666 | 541 | 11.43 (9.92, 13.67) |
| Papillary carcinoma, NOS | 62 | 52 | 6.11 (3.32, 11.73) |
| Papillary transitional cell carcinoma | 90 | 88 | 5.225 (3.65, 6.83) |
| Paragangliomas and glomus tumors | 2 | 1 | 30.52 (\*,\*) |
| Plasma cell tumors | 3 | 2 | 12 (7.29, \*) |
| Pleomorphic carcinoma | 120 | 100 | 3.5 (2.96, 5.19) |
| Pseudosarcomatous carcinoma | 458 | 423 | 3.06 (2.76, 3.42) |
| Renal cell carcinoma, NOS | 1939 | 1691 | 4.93 (4.57, 5.32) |
| Renal cell carcinoma, other | 21 | 16 | 7.2 (3.09, 12.25) |
| Renal cell carcinoma, sarcomatoid | 171 | 156 | 4.01 (3.42, 4.93) |
| Serous carcinoma, NOS | 66 | 50 | 6.095 (4.17, 15.93) |
| Signet ring cell carcinoma | 438 | 392 | 3.94 (3.42, 4.9) |
| Small cell carcinoma, intermediate cell | 34 | 31 | 4.17 (2.07, 11.93) |
| Small cell carcinoma, NOS | 22231 | 20375 | 6.28 (6.14, 6.4) |
| Soft tissue sarcomas, NOS | 238 | 221 | 3.81 (3.25, 5.03) |
| Solid carcinoma, NOS | 115 | 81 | 12.88 (10.22, 22.54) |
| Specialized gonadal neoplasms | 2 | 2 | 11.55 (1.05, \*) |
| Spindle cell carcinoma, NOS | 79 | 75 | 2.46 (2.1, 3.61) |
| Spindle cell melanoma, NOS | 54 | 40 | 6.08 (4.34, 11.2) |
| Spindle cell sarcoma | 42 | 35 | 3.45 (2.43, 4.44) |
| Squamous cell carcinoma, keratinizing, NOS | 469 | 432 | 3.78 (3.25, 4.7) |
| Squamous cell carcinoma, large cell, nonkeratinizing, NOS | 253 | 234 | 4.11 (3.5, 4.86) |
| Squamous cell carcinoma, NOS | 12370 | 11341 | 3.81 (3.71, 3.91) |
| Squamous cell carcinoma, spindle cell | 39 | 36 | 2.89 (2.3, 4.86) |
| Squamous cell neoplasms, other | 37 | 33 | 3.91 (1.84, 6.8) |
| Struma ovarii, malignant | 533 | 320 | 15.18 (13.73, 19.35) |
| Synovial sarcomas | 18 | 18 | 3.67 (2.56, 12.91) |
| Thymic epithelial neoplasms | 1 | 1 | 1.22 (\*,\*) |
| Transitional cell carcinomas, other | 414 | 376 | 3.52 (3.12, 4.07) |
| Trophoblastic neoplasms, other | 6 | 4 | 24.33 (3.42, \*) |
| **Most Common Anatomic Sites** |   |   |   |
| Appendix | 11 | 10 | 12 (3.81, \*) |
| Breast, axillary tail | 53 | 43 | 8.84 (5.95, 25.63) |
| Breast, central | 238 | 181 | 12.16 (9.56, 17.12) |
| Breast, lower inner quadrant | 157 | 131 | 8.77 (7.03, 13.6) |
| Breast, lower outer quadrant | 276 | 215 | 9.76 (7.79, 15.51) |
| Breast, nipple | 27 | 19 | 14.93 (6.41, \*) |
| Breast, NOS | 2746 | 2196 | 9.53 (8.44, 10.28) |
| Breast, overlapping | 1140 | 924 | 11.24 (9.72, 12.58) |
| Breast, upper inner quadrant | 303 | 228 | 13.17 (10.38, 17.94) |
| Breast, upper outer quadrant | 1255 | 976 | 13.73 (12.02, 15.74) |
| Bronchus, main | 6226 | 5686 | 4.44 (4.21, 4.67) |
| Cardia, NOS | 481 | 431 | 5.42 (4.67, 6.5) |
| Cecum | 336 | 305 | 4.17 (3.55, 5.13) |
| Colon, ascending | 285 | 260 | 4.3 (3.52, 5.5) |
| Colon, descending | 67 | 59 | 4.8 (2.99, 9.26) |
| Colon, hepatic flexure | 85 | 79 | 3.35 (2.92, 5.75) |
| Colon, NOS | 459 | 404 | 3.06 (2.6, 3.84) |
| Colon, overlapping | 31 | 31 | 2.73 (1.68, 8.54) |
| Colon, sigmoid | 362 | 320 | 6.31 (4.96, 8.57) |
| Colon, splenic flexure | 33 | 31 | 3.84 (2.69, 11.24) |
| Colon, transverse | 86 | 74 | 3.25 (2.53, 5.49) |
| Corpus uteri | 34 | 28 | 3.075 (2.2, 11.33) |
| Corpus uteri, overlapping | 3 | 2 | 1.9 (1.15, \*) |
| Ear, external | 36 | 29 | 6.57 (3.5, 18) |
| Endometrium | 524 | 460 | 3.98 (3.45, 4.7) |
| Esophagus, abdominal | 8 | 7 | 2.775 (1.38, \*) |
| Esophagus, cervical | 4 | 4 | 6.965 (0.43, \*) |
| Esophagus, lower third | 1070 | 989 | 4.57 (4.24, 5.09) |
| Esophagus, middle third | 173 | 159 | 4.3 (3.55, 5.75) |
| Esophagus, NOS | 284 | 251 | 3.48 (2.86, 4.6) |
| Esophagus, overlapping | 118 | 111 | 4.53 (3.78, 5.88) |
| Esophagus, thoracic | 49 | 44 | 3.94 (2.5, 9) |
| Esophagus, upper third | 39 | 36 | 2.46 (1.58, 3.84) |
| Eyelid | 1 | 1 | 4.14 (\*,\*) |
| Fundus uteri | 8 | 7 | 3.71 (2.76, \*) |
| Gastric andrum | 41 | 40 | 2.37 (1.5, 4.63) |
| Intestinal tract, NOS | 7 | 7 | 1.94 (1.15, \*) |
| Isthmus uteri | 3 | 3 | 2.69 (0.9, \*) |
| Kidney, NOS | 4313 | 3662 | 5.91 (5.62, 6.31) |
| Langerhans, islets | 2 | 2 | 10.025 (0.76, \*) |
| Lip, NOS | 5 | 3 | 6.74 (6.6, \*) |
| Lung, lower lobe | 29612 | 26111 | 5.19 (5.09, 5.29) |
| Lung, middle lobe | 4854 | 4307 | 5.65 (5.32, 6) |
| Lung, NOS | 21395 | 18923 | 4.27 (4.17, 4.4) |
| Lung, overlapping | 1783 | 1589 | 4.63 (4.2, 5.13) |
| Lung, upper lobe | 63898 | 56077 | 5.62 (5.55, 5.72) |
| Myometrium | 7 | 7 | 4.4 (3.4, \*) |
| Pancreas, body | 122 | 111 | 2.83 (2.37, 4.2) |
| Pancreas, head | 300 | 277 | 2.53 (2.04, 3.22) |
| Pancreas, NOS | 326 | 311 | 2.14 (1.87, 2.33) |
| Pancreas, other | 14 | 12 | 1.77 (0.99, \*) |
| Pancreas, overlapping | 80 | 70 | 2.5 (1.71, 3.25) |
| Pancreas, tail | 187 | 173 | 2.5 (2.14, 3.12) |
| Pancreatic duct | 1 | 1 | 6.77 (\*,\*) |
| Prostate gland | 581 | 419 | 15.84 (12.71, 18.27) |
| Pylorus | 4 | 4 | 2.105 (0.2, \*) |
| Rectosigmoid junction | 202 | 182 | 6.11 (4.53, 8.8) |
| Rectum, NOS | 510 | 448 | 7.79 (6.74, 9.49) |
| Rel pelvis | 89 | 80 | 4.01 (3.29, 6.11) |
| Skin, face other | 111 | 89 | 7.95 (6.47, 9.4) |
| Skin, lower limb | 188 | 146 | 8.54 (6.8, 11.56) |
| Skin, NOS | 4457 | 3576 | 5.95 (5.65, 6.28) |
| Skin, overlapping | 10 | 9 | 2.305 (0.8, \*) |
| Skin, scalp, and neck | 192 | 140 | 8.48 (6.77, 12.94) |
| Skin, trunk | 588 | 485 | 6.41 (5.75, 7.39) |
| Skin, upper limb | 257 | 205 | 6.9 (5.32, 8.94) |
| Stomach, body | 51 | 49 | 2.69 (1.45, 3.91) |
| Stomach, fundus | 33 | 31 | 2.43 (1.31, 3.38) |
| Stomach, greater curvature NOS | 25 | 21 | 2.83 (1.84, 10.22) |
| Stomach, lesser curvature NOS | 21 | 19 | 6.18 (1.77, 15.34) |
| Stomach, NOS | 176 | 157 | 2.63 (2.3, 3.25) |
| Stomach, overlapping | 41 | 41 | 1.64 (1.15, 2.63) |
| Uterus, NOS | 142 | 115 | 3.6 (2.76, 5.32) |
| **Least Common Anatomic Sites** |   |   |   |
| Adrenal gland, NOD | 1 | 0 | NA |
| Anal canal | 19 | 15 | 9.36 (4.73, \*) |
| Anus, NOS | 14 | 11 | 6.28 (5.22, \*) |
| Autonomic NS, NOS | 6 | 6 | 6.21 (3.84, \*) |
| Bile duct, extrahepatic | 55 | 50 | 2.23 (1.81, 5.36) |
| Bile duct, intrahepatic | 82 | 79 | 3.675 (2.73, 4.9) |
| Biliary, NOS | 36 | 33 | 2.365 (1.31, 4.07) |
| Biliary, overlapping | 4 | 4 | 0.825 (0.26, \*) |
| Bladder, anterior wall | 12 | 12 | 4.945 (2.14, \*) |
| Bladder, dome | 17 | 14 | 5.49 (3.45, 35.09) |
| Bladder, lateral wall | 51 | 45 | 4.24 (3.38, 6.97) |
| Bladder, neck | 8 | 7 | 4.09 (2.96, \*) |
| Bladder, NOS | 246 | 225 | 3.45 (2.83, 4.11) |
| Bladder, overlapping | 49 | 46 | 3.91 (2.86, 6.21) |
| Bladder, posterior wall | 19 | 17 | 3.48 (2.3, 10.41) |
| Bladder, trigone | 14 | 12 | 3.98 (1.97, \*) |
| Bone marrow | 16 | 13 | 4.73 (2.5, \*) |
| Bone, NOS | 11 | 5 |  (3.19, \*) |
| Bones, overlapping | 1 | 1 | 14.65 (\*,\*) |
| Bones, pelvis sacrum and coccyx | 16 | 15 | 5.24 (2.73, 15.38) |
| Bones, skull and face | 13 | 10 | 11.2 (3.75, \*) |
| Breast, NOS | 1 | 0 | NA |
| Breast, upper outer quadrant | 1 | 0 | NA |
| Cardia, NOS | 1 | 1 | 0.43 (\*,\*) |
| Cervix uteri | 242 | 218 | 3.84 (2.86, 4.83) |
| Cervix uteri, overlapping | 8 | 7 | 3.38 (1.15, \*) |
| Ciliary body | 2 | 1 | 6.5 (6.5, \*) |
| Cloacogenic zone | 1 | 1 | 5.95 (\*,\*) |
| Colon, transverse | 1 | 0 | NA |
| Conjunctiva | 2 | 0 | NA |
| Digestive, overlapping | 27 | 23 | 1.87 (1.45, 4.8) |
| Duodenum | 47 | 44 | 3.635 (2.4, 7.6) |
| Ear, external | 2 | 2 | 10.595 (1.71, \*) |
| Ear, middle | 6 | 3 | 13.9 (1.81, \*) |
| Endocervix | 33 | 27 | 5.29 (2.7, 11.27) |
| Esophagus, lower third | 1 | 0 | NA |
| Exocervix | 1 | 1 | 1.25 (\*,\*) |
| Eye, NOS | 2 | 0 | NA |
| Eyelid | 1 | 1 | 9.72 (\*,\*) |
| Fallopian tube | 6 | 4 | 22.37 (4.34, \*) |
| Female genitals, NOS | 47 | 40 | 1.66 (1.2, 11.2) |
| Female genitals, other | 2 | 1 | 2.1 (2.1, \*) |
| Female genitals, overlapping | 6 | 6 | 1.66 (0.62, \*) |
| Gallbladder | 78 | 68 | 3.35 (2.3, 4.5) |
| Gastric andrum | 1 | 0 | NA |
| Gastrointestinal, NOS | 310 | 266 | 2.53 (2.23, 3.22) |
| Glottis | 4 | 4 | 10.89 (7.1, \*) |
| Heart | 35 | 34 | 6.37 (3.48, 10.22) |
| Heart mediastinum, overlapping | 1 | 0 | NA |
| Ileum | 15 | 12 | 8.8 (3.45, \*) |
| Jejunum | 14 | 11 | 9.465 (6.54, \*) |
| Kidney, NOS | 3 | 2 | 2 (0.23, \*) |
| Lacrimal gland | 1 | 0 | NA |
| Larynx, NOS | 17 | 17 | 4.73 (2.6, 10.74) |
| Limb bone, NOS | 4 | 2 | 38.14 (3.58, \*) |
| Lip, NOS | 1 | 1 | 6.8 (\*,\*) |
| Liver | 434 | 390 | 2.6 (2.1, 3.06) |
| Long bones and lower limb | 21 | 18 | 8.1 (4.7, 28.06) |
| Long bones and upper limb, scapula | 5 | 4 | 6.83 (6.47, \*) |
| Lung, middle lobe | 1 | 1 | 2.5 (\*,\*) |
| Lung, NOS | 2 | 1 | 2.04 (2.04,\*) |
| Lymph nodes, axilla, and arm | 8 | 3 |  (13.6, \*) |
| Lymph nodes, head face and neck | 16 | 7 | 38.6 (8.1, \*) |
| Lymph nodes, inguinal | 3 | 1 |  (1.35, \*) |
| Lymph nodes, intraabdominal | 27 | 15 | 9.69 (6.64, \*) |
| Lymph nodes, intrathoracic | 3 | 2 | 2.73 (1.77, \*) |
| Lymph nodes, multiple | 129 | 72 | 11.27 (8.54, \*) |
| Lymph nodes, NOS | 153 | 85 | 14.6 (10.84, 30.49) |
| Lymph nodes, pelvis | 5 | 3 | 9.72 (3.91, \*) |
| Mandible | 2 | 1 | 0.62 (\*,\*) |
| Mediastinum, anterior | 15 | 13 | 8.08 (4.73, 34.27) |
| Mediastinum, NOS | 34 | 29 | 7.605 (4.57, 10.41) |
| Mediastinum, posterior | 3 | 2 | 7.095 (4.93, \*) |
| Nasal cavity | 54 | 38 | 11.07 (7.1, 26.45) |
| Nasopharynx, NOS | 4 | 2 | 11 (1.58, \*) |
| Nasopharynx, overlapping | 1 | 1 | 2.96 (\*,\*) |
| Orbit, NOS | 7 | 4 | 78.32 (49.45, \*) |
| Oropharynx, overlapping | 1 | 0 | NA |
| Ovary | 227 | 194 | 4.73 (3.65, 7.4) |
| Pancreas, head | 1 | 1 | 1.05 (\*,\*) |
| Pelvis, NOS | 1 | 0 | NA |
| Peripheral and autonomic NS, thorax | 3 | 3 | 3.06 (2.3, \*) |
| Peripheral and autonomic NS, trunk NOS | 1 | 1 | 4.76 (\*,\*) |
| Peritoneum, NOS | 1 | 1 | 9 (\*,\*) |
| Placenta | 19 | 1 | NA |
| Pleura, NOS | 1 | 0 | NA |
| Rectosigmoid junction | 1 | 0 | NA |
| Rectum anus and anal canal, overlapping | 17 | 14 | 6.18 (4.37, \*) |
| Rectum, NOS | 1 | 1 | 15.8 (\*,\*) |
| Respiratory and intrathoracic, overlapping | 2 | 1 | 0.62 (0.62, \*) |
| Respiratory, ill defined | 1 | 1 | 64.82 (\*,\*) |
| Retroperitoneum | 3 | 2 | 8.41 (7.62, \*) |
| Rib sternum and clavicle | 4 | 3 | 20.585 (3.32, \*) |
| Sinus, ethmoid | 18 | 14 | 9.315 (4.01, \*) |
| Sinus, frontal | 3 | 1 |  (1.25, \*) |
| Sinus, maxillary | 31 | 23 | 7.29 (3.65, 34.33) |
| Sinus, NOS | 15 | 14 | 8.61 (1.94, 20.57) |
| Sinus, overlapping | 3 | 2 | 9.36 (1.45, \*) |
| Sinus, sphenoid | 10 | 9 | 2.875 (1.2, \*) |
| Skin, face other | 9 | 5 | 18.33 (4.67, \*) |
| Skin, lower limb | 4 | 4 | 17.15 (1.81, \*) |
| Skin, NOS | 12 | 9 | 4.155 (2.63, \*) |
| Skin, scalp, and neck | 11 | 10 | 2.14 (1.45, \*) |
| Skin, trunk | 15 | 13 | 7.98 (2.14, 21.68) |
| Skin, upper limb | 5 | 5 | 3.91 (1.68, \*) |
| Small intestine, NOS | 50 | 41 | 3.65 (2.99, 10.22) |
| Soft tissues, abdomen | 29 | 28 | 2.89 (1.51, 15.51) |
| Soft tissues, head face and neck | 50 | 39 | 7.82 (6.01, 12) |
| Soft tissues, lower limb | 94 | 83 | 6.54 (5.36, 13.11) |
| Soft tissues, NOS | 100 | 92 | 3.42 (2.53, 4.53) |
| Soft tissues, overlapping | 2 | 2 | 20.255 (6.7, \*) |

|  |
| --- |
| **Unadjusted Cox Regression for ICD-O Topography, Morphology, and Detailed Anatomic Site** |
| **Variable (Total Number / No. of Events)** | **Unadjusted HR(95% CI)** | ***p-value*** |
| **Topography (155,733 / 135,916)** |  |  |
| Anus | 1.46 (1.059, 2.012) | *0.021* |
| Biliary | 2.857 (2.395, 3.408) | *<0.001* |
| Bone/joint | 1.341 (1.029, 1.748) | *0.03* |
| Breast | 1.206 (1.091, 1.332) | *<0.001* |
| Cervix | 2.37 (2.028, 2.771) | *<0.001* |
| Colon | 1.878 (1.692, 2.085) | *<0.001* |
| Digestive, other | 2.693 (2.319, 3.129) | *<0.001* |
| Esophagus | 2.229 (2.001, 2.482) | *<0.001* |
| Female genitals/placenta | 1.155 (0.868, 1.537) | *0.323* |
| Gallbladder | 2.559 (1.98, 3.306) | *<0.001* |
| Kidney | 1.627 (1.471, 1.8) | *<0.001* |
| Liver | 3.1 (2.701, 3.559) | *<0.001* |
| Lung, non-small cell | 1.758 (1.597, 1.935) | *<0.001* |
| Lung, other | 3.64 (3.3, 4.014) | *<0.001* |
| Lung, small cell | 2.033 (1.845, 2.239) | *<0.001* |
| Melanoma | 1.465 (1.326, 1.62) | *<0.001* |
| Nasal | 1.345 (1.084, 1.669) | *0.007* |
| NHL, extra-nodal | 0.678 (0.52, 0.883) | *0.004* |
| NHL, nodal | 0.855 (0.72, 1.014) | *0.073* |
| Ovary | 1.679 (1.417, 1.991) | *<0.001* |
| Pancreas | 3.225 (2.875, 3.617) | *0.001* |
| Skin, other | 1.739 (1.275, 2.373) | *<0.001* |
| Small Intestine | 1.818 (1.47, 2.247) | *<0.001* |
| Soft Tissues | 2.002 (1.749, 2.293) | *<0.001* |
| Stomach | 2.255 (2.004, 2.539) | *<0.001* |
| Testis | 0.692 (0.594, 0.807) | *<0.001* |
| Trachea/Larynx/Mediastinum | 1.731 (1.394, 2.15) | *<0.001* |
| Urinary tracts | 3.086 (2.424, 3.93) | *<0.001* |
| Urinary Bladder | 2.481 (2.16, 2.85) | *<0.001* |
| Uterus | 2.057 (1.817, 2.328) | *<0.001* |
| **Morphology (155,733 / 135,916)** |   |  |
| Acinar cell carcinoma | 2.539 (1.46, 4.417) | *<0.001* |
| Acinar cell cystadenocarcinoma | 3.734 (0.489, 28.547) | *0.204* |
| Adenocarcinomas, other | 4.247 (2.466, 7.315) | *<0.001* |
| Adenosquamous carcinoma | 5.296 (3.066, 9.147) | *<0.001* |
| Adnexal and skin appendage neoplasms | 4.101 (2.053, 8.19) | *<0.001* |
| Atypical carcinoid tumor | 3.83 (2.123, 6.91) | *<0.001* |
| Basal cell carcinomas, other | 57.296 (7.5, 437.729) | *<0.001* |
| Basaloid squamous cell carcinoma | 4.807 (2.675, 8.638) | *<0.001* |
| Blood vessel tumors, other | 3.049 (1.303, 7.133) | *0.01* |
| Carcinoid tumor, NOS | 3.166 (1.782, 5.626) | *<0.001* |
| Carcinoma, other | 7.255 (4.21, 12.501) | *<0.001* |
| Carcinoma, undifferentiated, NOS | 6.313 (3.508, 11.363) | *<0.001* |
| Carcinosarcoma, NOS | 7.031 (3.935, 12.562) | *<0.001* |
| Cholangiocarcinoma | 7.553 (4.272, 13.355) | *<0.001* |
| Clear cell adenocarcinoma, NOS | 3.404 (1.972, 5.877) | *<0.001* |
| CNS embryonal tumor, NOS | 14.365 (3.242, 63.66) | *<0.001* |
| Combined small cell carcinoma | 5.185 (2.98, 9.021) | *<0.001* |
| Complex epithelial neoplasms | 4.07 (2.153, 7.692) | *<0.001* |
| Complex mixed and stromal neoplasms | 6.523 (3.552, 11.978) | *<0.001* |
| Cystic, mucinous, and serous carcinomas | 3.128 (1.626, 6.018) | *<0.001* |
| Ductal and lobular carcinomas, other | 3.44 (1.85, 6.398) | *<0.001* |
| Endometrioid adenocarcinoma, NOS | 4.928 (2.813, 8.635) | *<0.001* |
| Ewing sarcoma | 2.98 (1.538, 5.775) | *0.001* |
| Fibroepithelial neoplasms | 7.054 (2.3, 21.635) | *<0.001* |
| Fibromatous neoplasms | 5.747 (2.988, 11.056) | *<0.001* |
| Germ cell neoplasms | 5.851 (2.425, 14.116) | *<0.001* |
| Giant cell tumors | 10.096 (2.278, 44.739) | *0.002* |
| Granular cell tumors and alveolar soft part sarcomas | 1.576 (0.719, 3.453) | *0.256* |
| Hemangiosarcoma | 6.908 (3.855, 12.378) | *<0.001* |
| Hepatocellular carcinoma | 8.209 (4.717, 14.285) | *<0.001* |
| Hepatoid adenocarcinoma | 5.533 (2.912, 10.513) | *<0.001* |
| Infiltrating duct and lobular carcinoma | 2.536 (1.434, 4.486) | *0.001* |
| Infiltrating duct carcinoma, NOS | 3.072 (1.782, 5.297) | *<0.001* |
| Infiltrating duct mixed with other types of carcinoma | 2.954 (1.633, 5.342) | *<0.001* |
| Inflammatory carcinoma | 2.643 (1.472, 4.748) | *0.001* |
| Large cell carcinoma, NOS | 5.996 (3.469, 10.364) | *<0.001* |
| Large cell neuroendocrine carcinoma | 4.987 (2.888, 8.611) | *<0.001* |
| Leiomyosarcoma, NOS | 4.378 (2.44, 7.856) | *<0.001* |
| Lepidic adenocarcinoma | 3.874 (2.21, 6.791) | *<0.001* |
| Leukemias, other | 1.483 (0.564, 3.902) | *0.424* |
| Lipomatous sarcomas | 4.981 (2.46, 10.086) | *<0.001* |
| Lobular carcinoma, NOS | 3.126 (1.794, 5.445) | *<0.001* |
| Lymphoid leukemias | 2.769 (0.903, 8.492) | 0.075 |
| Malignant lymphoma, diffuse | 2.804 (1.229, 6.394) | *0.014* |
| Malignant lymphoma, large B-cell, diffuse, NOS | 2.255 (1.281, 3.97) | *0.005* |
| Malignant lymphoma, non-Hodgkin, NOS | 2.001 (1.002, 3.997) | *0.05* |
| Malignant melanoma, NOS | 3.905 (2.265, 6.73) | *<0.001* |
| Malignant peripheral nerve sheath tumor | 6.265 (3.07, 12.787) | *<0.001* |
| Malignant tumor, NOS | 4.938 (2.473, 9.862) | *<0.001* |
| Mature B-cell lymphomas, other | 1.301 (0.683, 2.478) | *0.424* |
| Mature T- and NK-cell lymphomas | 3.948 (1.964, 7.937) | *<0.001* |
| Melanoma, other | 3.153 (1.791, 5.551) | *<0.001* |
| Miscellaneous tumors, other | 3.8 (0.858, 16.839) | *0.079* |
| Mixed cell adenocarcinoma | 3.505 (1.907, 6.444) | *<0.001* |
| Mucin-producing adenocarcinoma | 4.167 (2.377, 7.305) | *<0.001* |
| Mucinous adenocarcinoma | 4.442 (2.568, 7.685) | *<0.001* |
| Mucoepidermoid carcinoma | 6.122 (2.878, 13.024) | *<0.001* |
| Mullerian mixed tumor | 7.327 (3.822, 14.046) | *<0.001* |
| Myomatous neoplasms, other | 5.197 (2.72, 9.932) | *<0.001* |
| Myxomatous neoplasms | 2.26 (0.296, 17.276) | *0.432* |
| Neoplasm, malignant | 12.453 (7.225, 21.464) | *<0.001* |
| Neuroendocrine carcinoma, NOS | 5.272 (3.057, 9.093) | *<0.001* |
| Neuroepitheliomatous neoplasms | 1.466 (0.557, 3.858) | *0.438* |
| Nodular melanoma | 3.512 (2.011, 6.132) | *<0.001* |
| Non-small cell carcinoma | 5.771 (3.35, 9.942) | *<0.001* |
| Oat cell carcinoma | 5.496 (3.077, 9.815) | *<0.001* |
| Osseous and chondromatous neoplasms | 4.566 (2.427, 8.59) | *<0.001* |
| Papillary adenocarcinoma, NOS | 3.174 (1.831, 5.501) | *<0.001* |
| Papillary carcinoma, NOS | 4.348 (2.368, 7.984) | *<0.001* |
| Papillary transitional cell carcinoma | 6.11 (3.413, 10.939) | *<0.001* |
| Paragangliomas and glomus tumors | 1.181 (0.155, 9.026) | *0.873* |
| Plasma cell tumors | 2.714 (0.612, 12.025) | *0.189* |
| Pleomorphic carcinoma | 5.104 (2.864, 9.097) | *<0.001* |
| Pseudosarcomatous carcinoma | 7.654 (4.407, 13.291) | *<0.001* |
| Renal cell carcinoma, NOS | 4.898 (2.838, 8.453) | *<0.001* |
| Renal cell carcinoma, other | 4.141 (1.992, 8.608) | *<0.001* |
| Renal cell carcinoma, sarcomatoid | 5.705 (3.24, 10.045) | *<0.001* |
| Serous carcinoma, NOS | 3.373 (1.832, 6.209) | *<0.001* |
| Signet ring cell carcinoma | 5.396 (3.105, 9.377) | *<0.001* |
| Small cell carcinoma, intermediate cell | 5.239 (2.741, 10.011) | *<0.001* |
| Small cell carcinoma, NOS | 5.361 (3.112, 9.234) | *<0.001* |
| Soft tissue sarcomas, NOS | 6.354 (3.632, 11.117) | *<0.001* |
| Solid carcinoma, NOS | 2.515 (1.4, 4.517) | *0.002* |
| Specialized gonadal neoplasms | 5.072 (1.145, 22.477) | *0.033* |
| Spindle cell carcinoma, NOS | 9.211 (5.112, 16.598) | *<0.001* |
| Spindle cell melanoma, NOS | 3.595 (1.923, 6.721) | *<0.001* |
| Spindle cell sarcoma | 6.792 (3.594, 12.837) | *<0.001* |
| Squamous cell carcinoma, keratinizing, NOS | 6.479 (3.731, 11.248) | *<0.001* |
| Squamous cell carcinoma, large cell, nonkeratinizing, NOS | 6.202 (3.548, 10.842) | *<0.001* |
| Squamous cell carcinoma, NOS | 6.352 (3.687, 10.943) | *<0.001* |
| Squamous cell carcinoma, spindle cell | 7.789 (4.131, 14.687) | *<0.001* |
| Squamous cell neoplasms, other | 5.54 (2.916, 10.525) | *<0.001* |
| Struma ovarii, malignant | 2.014 (1.157, 3.507) | *0.013* |
| Synovial sarcomas | 6.761 (3.313, 13.799) | *<0.001* |
| Thymic epithelial neoplasms | 33.28 (4.353, 254.414) | *<0.001* |
| Transitional cell carcinomas, other | 6.789 (3.906, 11.802) | *<0.001* |
| Trophoblastic neoplasms, other | 2.376 (0.775, 7.286) | *0.13* |
| **Detailed Anatomic Site (151,636 / 132,633)**  |   |   |
| Appendix | 1.358 (0.725, 2.542) | 0.34 |
| Breast, axillary tail | 1.225 (0.895, 1.677) | 0.205 |
| Breast, central | 1.05 (0.882, 1.25) | 0.586 |
| Breast, lower inner quadrant | 1.355 (1.114, 1.649) | 0.002 |
| Breast, lower outer quadrant | 1.177 (0.998, 1.387) | 0.053 |
| Breast, nipple | 0.896 (0.566, 1.419) | 0.64 |
| Breast, NOS | 1.312 (1.181, 1.456) | *<0.001* |
| Breast, overlapping | 1.207 (1.075, 1.354) | 0.001 |
| Breast, upper inner quadrant | 1.037 (0.882, 1.218) | 0.663 |
| Breast, upper outer quadrant | 1.076 (0.96, 1.207) | 0.209 |
| Bronchus, main | 2.199 (1.991, 2.429) | *<0.001* |
| Cardia, NOS | 1.862 (1.628, 2.13) | *<0.001* |
| Cecum | 2.102 (1.813, 2.436) | *<0.001* |
| Colon, ascending | 2.011 (1.723, 2.347) | *<0.001* |
| Colon, descending | 1.881 (1.432, 2.47) | *<0.001* |
| Colon, hepatic flexure | 2.322 (1.826, 2.953) | *<0.001* |
| Colon, NOS | 2.33 (2.033, 2.672) | *<0.001* |
| Colon, overlapping | 2.833 (1.967, 4.081) | *<0.001* |
| Colon, sigmoid | 1.639 (1.417, 1.896) | *<0.001* |
| Colon, splenic flexure | 2.182 (1.515, 3.143) | *<0.001* |
| Colon, transverse | 2.319 (1.811, 2.97) | *<0.001* |
| Corpus uteri | 1.683 (1.148, 2.467) | 0.008 |
| Corpus uteri, overlapping | 5.49 (1.368, 22.025) | 0.017 |
| Ear, external | 1.44 (0.988, 2.098) | 0.578 |
| Endometrium | 2.072 (1.815, 2.366) | *<0.001* |
| Esophagus, abdominal | 2.519 (1.194, 5.317) | 0.015 |
| Esophagus, cervical | 2.001 (0.748, 5.357) | 0.167 |
| Esophagus, lower third | 2.156 (1.923, 2.416) | *<0.001* |
| Esophagus, middle third | 2.221 (1.851, 2.666) | *<0.001* |
| Esophagus, NOS | 2.295 (1.962, 2.683) | *<0.001* |
| Esophagus, overlapping | 2.581 (2.094, 3.182) | *<0.001* |
| Esophagus, thoracic | 2.124 (1.557, 2.897) | *<0.001* |
| Esophagus, upper third | 3.233 (2.3, 4.544) | *<0.001* |
| Eyelid | 3.225 (0.453, 22.948) | 0.242 |
| Fundus uteri | 3.073 (1.456, 6.486) | 0.003 |
| Gastric andrum | 3.758 (2.717, 5.197) | *<0.001* |
| Intestinal tract, NOS | 3.846 (1.822, 8.118) | *<0.001* |
| Isthmus uteri | 5.368 (1.724, 16.712) | 0.004 |
| Kidney, NOS | 1.617 (1.461, 1.789) | *<0.001* |
| Langerhans, islets | 2.119 (0.528, 8.501) | 0.289 |
| Lip, NOS | 0.776 (0.249, 2.414) | 0.661 |
| Lung, lower lobe | 1.867 (1.695, 2.056) | *<0.001* |
| Lung, middle lobe | 1.818 (1.645, 2.01) | *<0.001* |
| Lung, NOS | 2.072 (1.881, 2.282) | *<0.001* |
| Lung, overlapping | 2.044 (1.835, 2.276) | *<0.001* |
| Lung, upper lobe | 1.804 (1.639, 1.986) | *<0.001* |
| Myometrium | 2.321 (1.1, 4.898) | 0.027 |
| Pancreas, body | 2.771 (2.248, 3.416) | *<0.001* |
| Pancreas, head | 3.033 (2.606, 3.53) | *<0.001* |
| Pancreas, NOS | 3.769 (3.255, 4.365) | *<0.001* |
| Pancreas, other | 2.661 (1.499, 4.723) | *<0.001* |
| Pancreas, overlapping | 3.288 (2.553, 4.235) | *<0.001* |
| Pancreas, tail | 3.071 (2.573, 3.666) | *<0.001* |
| Pancreatic duct | 2.225 (0.313, 15.831) | 0.425 |
| Pylorus | 2.578 (0.963, 6.901) | 0.059 |
| Rectosigmoid junction | 1.694 (1.423, 2.016) | *<0.001* |
| Rectum, NOS | 1.516 (1.327, 1.732) | *<0.001* |
| Renal pelvis | 2.157 (1.698, 2.74) | *<0.001* |
| Skin, face other | 1.367 (1.087, 1.718) | 0.007 |
| Skin, lower limb | 1.257 (1.041, 1.517) | 0.017 |
| Skin, NOS | 1.485 (1.342, 1.643) | *<0.001* |
| Skin, overlapping | 3.934 (2.032, 7.613) | *<0.001* |
| Skin, scalp, and neck | 1.143 (0.944, 1.384) | *0.171* |
| Skin, trunk | 1.532 (1.344, 1.746) | *<0.001* |
| Skin, upper limb | 1.439 (1.218, 1.701) | *<0.001* |
| Stomach, body | 3.409 (2.536, 4.583) | *<0.001* |
| Stomach, fundus | 4.117 (2.858, 5.929) | *<0.001* |
| Stomach, greater curvature NOS | 2.157 (1.392, 3.344) | *<0.001* |
| Stomach, lesser curvature NOS | 1.896 (1.197, 3.003) | 0.006 |
| Stomach, NOS | 2.691 (2.24, 3.233) | *<0.001* |
| Stomach, overlapping | 4.853 (3.521, 6.688) | *<0.001* |
| Uterus, NOS | 1.979 (1.61, 2.433) | *<0.001* |

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| **Multivariate Cox Regression Using the 17 Important Predictors from Feature Selection****(Total Number = 145,429; No. of Events = 127,956)** |
| **Variable** | **Adjusted HR(95% CI)** | ***p-value*** |
| **Topography** |  |  |
| Anus | 2.304 (1.638, 3.241) | *<0.001* |
| Biliary | 2.57 (1.976, 3.343) | *<0.001* |
| Bone/joint | 1.568 (1.022, 2.405) | *0.04* |
| Breast | 1.72 (1.526, 1.939) | *<0.001* |
| Cervix | 3.599 (3.054, 4.242) | *<0.001* |
| Colon | 2.398 (2.143, 2.684) | *<0.001* |
| Digestive, other | 2.479 (2.115, 2.905) | *<0.001* |
| Esophagus | 2.705 (2.41, 3.036) | *<0.001* |
| Female genitals/placenta | 2.02 (1.451, 2.812) | *<0.001* |
| Gallbladder | 2.992 (2.286, 3.916) | *<0.001* |
| Kidney | 2.501 (2.18, 2.87) | *<0.001* |
| Liver | 2.927 (2.218, 3.864) | *<0.001* |
| Lung, non-small cell | 2.306 (2.077, 2.561) | *<0.001* |
| Lung, other | 2.668 (2.374, 2.999) | *<0.001* |
| Lung, small cell | 2.146 (1.787, 2.578) | *<0.001* |
| Melanoma | 2.482 (1.925, 3.202) | *<0.001* |
| Nasal | 1.663 (1.318, 2.098) | *<0.001* |
| NHL, extranodal | 4.353 (0.951, 19.917) | *0.058* |
| NHL, nodal | 4.939 (1.093, 22.316) | *0.038* |
| Ovary | 2.653 (2.18, 3.228) | *<0.001* |
| Pancreas | 3.153 (2.789, 3.565) | *<0.001* |
| Skin, other | 1.763 (1.207, 2.575) | *0.003* |
| Small Intestine | 2.209 (1.773, 2.751) | *<0.001* |
| Soft Tissues | 2.213 (1.803, 2.715) | *<0.001* |
| Stomach | 2.668 (2.349, 3.03) | *<0.001* |
| Testis | 1.406 (0.929, 2.128) | *0.107* |
| Trachea/Larynx/Mediastinum | 1.935 (1.43, 2.618) | *<0.001* |
| Urinary tracts | 3.012 (2.269, 3.999) | *<0.001* |
| Urinary Bladder | 2.838 (2.354, 3.422) | *<0.001* |
| Uterus | 3.071 (2.64, 3.571) | *<0.001* |
| **Age** | 1.012 (1.011, 1.012) | *<0.001* |
| **Sex—Male** | 1.125 (1.113, 1.138) | *<0.001* |
| **Race** |   |  |
|  American Indian | 1.088 (0.984, 1.204) | *0.1* |
|  Asian | 0.798 (0.767, 0.83) | *<0.001* |
|  Other | 0.82 (0.761, 0.883) | *<0.001* |
| Pacific Islander | 0.897 (0.787, 1.023) | *0.104* |
| Unknown | 0.837 (0.782, 0.896) | *<0.001* |
| White | 1.078 (1.058, 1.098) | *<0.001* |
| **Median Income adjusted in 2016** |   |  |
| Below $30,000 | 1.073 (0.951, 1.211) | *0.251* |
| $30,000 to $34,999  | 1.032 (0.914, 1.164) | *0.611* |
| $35,000 to $45,999 | 0.997 (0.884, 1.125) | *0.964* |
| Above $46,000 | 0.905 (0.802, 1.022) | *0.107* |
| **High school degree against 2016** |   |  |
| Less 6.3% | 1.058 (0.926, 1.208) | *0.41* |
| 6.3% to 10.8% | 1.062 (0.929, 1.213) | *0.378* |
| 10.9% to 17.6% | 1.031 (0.902, 1.178) | *0.654* |
| Above 17.6% | 0.949 (0.83, 1.084) | *0.437* |
| **Urban or Rural area (2013)** |   |  |
| Metro | 1.056 (1.018, 1.095) | *0.003* |
| Urban | 1.097 (1.041, 1.156) | *<0.001* |
| Rural | 1.101 (1.06, 1.144) | *<0.001* |
| **Facility Type**  |   |  |
| Academic Cancer Program | 0.896 (0.85, 0.946) | *<0.001* |
|  Community Cancer Program | 1.051 (0.993, 1.112) | *0.088* |
|  Comprehensive Community Cancer Program | 1.03 (0.976, 1.086) | *0.288* |
|  Integrated Cancer Program | 1.02 (0.966, 1.077) | *0.471* |
| **Morphology** |   |  |
| Acinar cell carcinoma | 1.947 (1.081, 3.507) | *0.026* |
| Acinar cell cystadenocarcinoma | 5.357 (0.693, 41.438) | *0.108* |
| Adenocarcinomas, other | 2.609 (1.464, 4.649) | *0.001* |
| Adenosquamous carcinoma | 3.153 (1.764, 5.636) | *<0.001* |
| Adnexal and skin appendage neoplasms | 3.118 (1.44, 6.753) | *0.006* |
| Atypical carcinoid tumor | 1.869 (0.999, 3.498) | *0.05* |
| Basal cell carcinomas, other | 17.233 (2.234, 132.915) | *0.006* |
| Basaloid squamous cell carcinoma | 2.811 (1.513, 5.222) | *0.001* |
| Blood vessel tumors, other | 1.43 (0.579, 3.531) | *0.438* |
| Carcinoid tumor, NOS | 1.414 (0.769, 2.601) | *0.265* |
| Carcinoma, other | 3.057 (1.716, 5.447) | *<0.001* |
| Carcinoma, undifferentiated, NOS | 3.736 (2.005, 6.959) | *<0.001* |
| Carcinosarcoma, NOS | 3.489 (1.893, 6.43) | *<0.001* |
| Cholangiocarcinoma | 2.934 (1.546, 5.566) | *<0.001* |
| Clear cell adenocarcinoma, NOS | 2.178 (1.213, 3.912) | *0.009* |
| CNS embryonal tumor, NOS | 11.237 (2.5, 50.496) | *0.002* |
| Combined small cell carcinoma | 3.092 (1.687, 5.665) | *<0.001* |
| Complex epithelial neoplasms | 3.889 (1.962, 7.708) | *<0.001* |
| Complex mixed and stromal neoplasms | 3.589 (1.889, 6.818) | *<0.001* |
| Cystic, mucinous, and serous carcinomas | 1.787 (0.887, 3.601) | *0.104* |
| Ductal and lobular carcinomas, other | 3.569 (1.851, 6.881) | *<0.001* |
| Endometrioid adenocarcinoma, NOS | 2.826 (1.551, 5.149) | *<0.001* |
| Ewing sarcoma | 4.611 (2.186, 9.725) | *<0.001* |
| Fibroepithelial neoplasms | 8.422 (2.695, 26.314) | *<0.001* |
| Fibromatous neoplasms | 3.131 (1.559, 6.29) | *0.001* |
| Germ cell neoplasms | 4.527 (1.828, 11.21) | *0.001* |
| Giant cell tumors | 9.102 (1.918, 43.201) | *0.005* |
| Granular cell tumors and alveolar soft part sarcomas | 1.706 (0.748, 3.892) | *0.204* |
| Hemangiosarcoma | 4.28 (2.28, 8.032) | *<0.001* |
| Hepatocellular carcinoma | 2.955 (1.558, 5.604) | *<0.001* |
| Hepatoid adenocarcinoma | 3.151 (1.597, 6.217) | *<0.001* |
| Infiltrating duct and lobular carcinoma | 2.572 (1.402, 4.716) | *0.006* |
| Infiltrating duct carcinoma, NOS | 3.048 (1.705, 5.449) | *<0.001* |
| Infiltrating duct mixed with other types of carcinoma | 2.421 (1.292, 4.538) | *0.006* |
| Inflammatory carcinoma | 3.679 (1.98, 6.839) | *<0.001* |
| Large cell carcinoma, NOS | 3.37 (1.884, 6.028) | *<0.001* |
| Large cell neuroendocrine carcinoma | 2.952 (1.652, 5.275) | *<0.001* |
| Leiomyosarcoma, NOS | 2.592 (1.385, 4.849) | *0.003* |
| Lepidic adenocarcinoma | 2.273 (1.254, 4.121) | *0.007* |
| Leukemias, other | 0.344 (0.067, 1.778) | *0.203* |
| Lipomatous sarcomas | 3.94 (1.801, 8.621) | *<0.001* |
| Lobular carcinoma, NOS | 3.066 (1.697, 5.537) | *<0.001* |
| Lymphoid leukemias | 1.537 (0.281, 8.421) | *0.62* |
| Malignant lymphoma, diffuse | 0.746 (0.161, 3.456) | *0.708* |
| Malignant lymphoma, large B-cell, diffuse, NOS | 1.09 (0.269, 4.407) | *0.904* |
| Malignant lymphoma, non-Hodgkin, NOS | 0.636 (0.147, 2.754) | *0.545* |
| Malignant melanoma, NOS | 1.98 (1.064, 3.686) | *0.031* |
| Malignant peripheral nerve sheath tumor | 4.39 (2.068, 9.321) | *<0.001* |
| Malignant tumor, NOS | 2.774 (1.325, 5.808) | *0.007* |
| Mature B-cell lymphomas, other | 0.496 (0.118, 2.084) | *0.339* |
| Mature T- and NK-cell lymphomas | 1.383 (0.323, 5.921) | *0.662* |
| Melanoma, other | 2.04 (1.073, 3.88) | *0.03* |
| Miscellaneous tumors, other | 2.043 (0.436, 9.576) | *0.364* |
| Mixed cell adenocarcinoma | 2.19 (1.148, 4.176) | *0.017* |
| Mucin-producing adenocarcinoma | 2.495 (1.375, 4.528) | *0.003* |
| Mucinous adenocarcinoma | 2.763 (1.544, 4.945) | *<0.001* |
| Mucoepidermoid carcinoma | 2.996 (1.373, 6.536) | *0.006* |
| Mullerian mixed tumor | 2.931 (1.467, 5.856) | *0.002* |
| Myomatous neoplasms, other | 5.054 (2.528, 10.106) | *<0.001* |
| Myxomatous neoplasms | 0.52 (0.067, 4.045) | *0.532* |
| Neoplasm, malignant | 3.733 (2.094, 6.655) | *<0.001* |
| Neuroendocrine carcinoma, NOS | 2.754 (1.543, 4.914) | *<0.001* |
| Neuroepitheliomatous neoplasms | 1.681 (0.613, 4.606) | *0.313* |
| Nodular melanoma | 2.878 (1.524, 5.434) | *0.001* |
| Non-small cell carcinoma | 3.204 (1.797, 5.713) | *<0.001* |
| Oat cell carcinoma | 3.442 (1.83, 6.476) | *<0.001* |
| Osseous and chondromatous neoplasms | 4.395 (2.084, 9.266) | *<0.001* |
| Papillary adenocarcinoma, NOS | 2.022 (1.127, 3.626) | *0.018* |
| Papillary carcinoma, NOS | 2.601 (1.361, 4.968) | *0.004* |
| Papillary transitional cell carcinoma | 2.603 (1.385, 4.893) | *0.003* |
| Paragangliomas and glomus tumors | 0.559 (0.072, 4.34) | *0.578* |
| Plasma cell tumors | Na | *NA* |
| Pleomorphic carcinoma | 3.104 (1.683, 5.727) | *<0.001* |
| Pseudosarcomatous carcinoma | 3.857 (2.147, 6.929) | *<0.001* |
| Renal cell carcinoma, NOS | 2.475 (1.378, 4.446) | *0.002* |
| Renal cell carcinoma, other | 2.739 (1.265, 5.933) | *0.011* |
| Renal cell carcinoma, sarcomatoid | 4.176 (2.276, 7.659) | *<0.001* |
| Serous carcinoma, NOS | 2.597 (1.371, 4.918) | *0.003* |
| Signet ring cell carcinoma | 3.258 (1.812, 5.858) | *<0.001* |
| Small cell carcinoma, intermediate cell | 2.851 (1.412, 5.753) | *0.006* |
| Small cell carcinoma, NOS | 3.328 (1.833, 6.042) | *<0.001* |
| Soft tissue sarcomas, NOS | 3.549 (1.942, 6.486) | *<0.001* |
| Solid carcinoma, NOS | 2.112 (1.131, 3.946) | *0.019* |
| Specialized gonadal neoplasms | 28.818 (3.707, 224.049) | *0.001* |
| Spindle cell carcinoma, NOS | 5.589 (2.992, 10.438) | *<0.001* |
| Spindle cell melanoma, NOS | 1.727 (0.857, 3.479) | *0.127* |
| Spindle cell sarcoma | 5.01 (2.532, 9.912) | *<0.001* |
| Squamous cell carcinoma, keratinizing, NOS | 3.387 (1.885, 6.085) | *<0.001* |
| Squamous cell carcinoma, large cell, nonkeratinizing, NOS | 3.057 (1.691, 5.527) | *<0.001* |
| Squamous cell carcinoma, NOS | 3.285 (1.843, 5.856) | *<0.001* |
| Squamous cell carcinoma, spindle cell | 3.744 (1.919, 7.306) | *<0.001* |
| Squamous cell neoplasms, other | 3.694 (1.872, 7.29) | *<0.001* |
| Struma ovarii, malignant | 3.808 (1.936, 7.49) | *<0.001* |
| Synovial sarcomas | 6.35 (2.992, 13.479) | *<0.001* |
| Thymic epithelial neoplasms | 12.014 (1.557, 92.724) | *0.017* |
| Transitional cell carcinomas, other | 3.172 (1.746, 5.762) | *<0.001* |
| Trophoblastic neoplasms, other | 1.927 (0.545, 6.816) | *0.309* |
| **Great circle distance in miles** | 1 (1, 1) | *<0.001* |
| **Total Charlson-Deyo Score** |   |  |
| 1  | 1.138 (1.123, 1.153) | *<0.001* |
| 2  | 1.204 (1.18, 1.229) | *<0.001* |
| 3  | 1.306 (1.272, 1.342) | *<0.001* |
| **Coexisting Liver Metastases** |   |  |
| Not applicable | 1.108 (0.818, 1.502) | *0.66* |
| Unknown | 1.088 (1.044, 1.134) | *<0.001* |
| Yes | 1.536 (1.515, 1.557) | *<0.001* |
| **Summary of Surgical Margins (surgery at primary site)** |   |  |
| Margins not evaluable | 0.939 (0.777, 1.134) | *0.513* |
| Microscopic residual | 0.798 (0.657, 0.969) | *0.022* |
| No primary site surgery | 1.112 (0.939, 1.316) | *0.218* |
| No residual margins | 0.565 (0.476, 0.671) | *<0.001* |
| Residual, NOS | 0.89 (0.74, 1.071) | *0.217* |
| Unknown | 0.736 (0.613, 0.883) | *<0.001* |
| **Summary of Chemotherapy** |   |  |
| Contraindicated | 2.772 (2.696, 2.849) | *<0.001* |
| Not administered | 2.067 (2.016, 2.119) | *<0.001* |
| Not administered, patient died | 5.736 (5.559, 5.919) | *<0.001* |
| Not a part of the first course of treatment | 2.014 (1.986, 2.042) | *<0.001* |
| Unknown | 1.261 (1.214, 1.309) | *<0.001* |
| **Summary of Hormone Therapy** |   |  |
| Contraindicated | 1.736 (1.623, 1.856) | *<0.001* |
| Not administered | 1.721 (1.639, 1.808) | *<0.001* |
| Not administered, patient died | 3.003 (2.534, 3.559) | *<0.001* |
| Not a part of the first course of treatment | 1.363 (1.309, 1.419) | *<0.001* |
| Unknown | 1.697 (1.598, 1.801) | *<0.001* |
| **Summary of Immunotherapy** |   |  |
| Contraindicated | 1.777 (1.577, 2.002) | *<0.001* |
| Not administered | 1.616 (1.435, 1.819) | *<0.001* |
| Not administered, patient died | 2.711 (2.364, 3.109) | *<0.001* |
| Not a part of the first course of treatment | 1.85 (1.805, 1.897) | *<0.001* |
| Unknown | 1.162 (1.03, 1.311) | *<0.001* |
| **Summary of Radiation Therapy** |   |  |
| Contraindicated | 1.574 (1.491, 1.662) | *<0.001* |
| Not administered | 1.217 (1.177, 1.26) | *<0.001* |
| Not administered, patient died | 1.854 (1.606, 2.14) | *<0.001* |
| Not a part of the first course of treatment | 1.183 (1.166, 1.2) | *<0.001* |
| Unknown | 1.159 (1.122, 1.198) | *<0.001* |













