



مستشفى الملك فيصل التخصصي ومركز الأبحاث  
King Faisal Specialist Hospital & Research Centre  
Gen. Org. مؤسسة عامة

**Oncology Centre  
Research Unit**

# **TUMOR REGISTRY**

## Annual Report

# **2016**





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مؤسسة عامة. Gen. Org.

**Oncology Centre  
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# **TUMOR REGISTRY ANNUAL REPORT 2016**

Annual Report Prepared by the Staff of the Tumor Registry  
Research Unit, Oncology Centre  
King Faisal Specialist Hospital and Research Centre  
P.O. Box 3354, Riyadh 11211  
Kingdom of Saudi Arabia  
464-7272 ext. 80778  
ORU@kfshrc.edu.sa

**Tumor Registry Staff:**

Salma Aljared, Tumor Registrar  
Mohamed Alammari, Tumor Registrar  
Abdul Rasim Thurakkal, Tumor Registrar  
Yara AlKurdi, Tumor Registrar  
Rehab Alsawi, Tumor Registrar

**Doha Fatani, RPh, CCRP**

Supervisor - Research Unit

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## INTRODUCTION

We are pleased to present 2016 Annual Tumor Registry Report for the King Faisal Specialist Hospital & Research Centre's Oncology Centre in Riyadh. The Cancer Registry maintains a complete database of information on all cancer cases diagnosed and/or treated at KFSH&RC. This database is an important patient care and quality assessment tool used by medical staff and administration for special studies, medical planning, resource allocation and utilization, education and research for comparing quality of care, monitoring patient care and continuous quality improvement. This report highlights the statistical overview of newly diagnosed cancer cases by site, gender, and AJCC Staging for both analytic and non-analytic cases. During 2016, the Tumor Registry abstracted 3000 new cancer cases. 2326 cases were analytic and 674 were non analytic; the highest incidence of cancer among males by site was leukemia, NHL and Brain carcinomas and among females was carcinomas of Breast, Thyroid, and leukemia. The Tumor Registry database includes over 86,993 cases and reports to the Saudi Cancer Registry (SCR).

Oncology Centre continues to provide comprehensive multidisciplinary care to our cancer patients. The Centre provides latest advances in radiation therapy, chemotherapy, hematopoietic stem cell transplantation, palliative and rehabilitation care to our patients. We also continue to be a center of excellence in cancer clinical research. Involvement in clinical trials allows our physicians and researchers to play an active role in advancing new cancer treatments and in providing the newest and most promising treatment options for our cancer patients. We have maintained our international cooperative group affiliations as the member of Southwest Oncology Group (SWOG), Radiation Therapy Oncology Group (RTOG/ NRG) and Canadian Blood & Marrow Transplantation Group (CBMTG). KFSH&RC has spearheaded the local and regional research consortiums as well, notably, Gulf Oncology Regional Group (GORG) and Eastern Mediterranean Blood and Marrow Transplantation (EMBMT) Group. Research unit work load has mounted exponentially to keep pace with this exorbitant expansion of world class clinical research.

The Oncology Center is committed to serve as the pinnacle of excellence in the entire region. As we look to the future of cancer care in the Kingdom of Saudi Arabia, Oncology Centre will continue to deliver evidence based care centered upon the state-of-the art clinical and translational research.

We are extremely grateful to the dedicated staff of the Tumor Registry for their hard work and commitment throughout the year. Special thanks are due to the superb staff of Medical Records, a key component of the Registry's continued success. Hats off to our physicians, patient caregivers and support staff; it is their commitment and dedication that is the foundation for our success.

This report can be accessed online via Oncology Centre's website at <http://www.kfshrc.edu.sa>  
Your comments and suggestions are welcome to improve our future reports and can be sent to [dfatani@kfshrc.edu.sa](mailto:dfatani@kfshrc.edu.sa) or [f1515605@kfshrc.edu.sa](mailto:f1515605@kfshrc.edu.sa)

**Doha Fatani, RPh, CCRP**  
Supervisor, Research Unit  
Oncology Centre

**Ali Alsharqeti, MD**  
Director  
Oncology Centre

## **I. KING FAISAL SPECIALIST HOSPITAL & RESEARCH CENTRE TUMOR REGISTRY**

The King Faisal Specialist Hospital and Research Centre (KFSH&RC) opened in June 1975 to provide specialized medical treatment to the people of Saudi Arabia and to promote the prevention of disease through research and education. It is a national and international tertiary care hospital for Oncology and the principal center for cancer therapy in Saudi Arabia.

The mission of the Tumor Registry, a hospital-wide data system, is to describe the burden of cancer in KFSH&RC by collecting complete and high quality cancer data and compiling timely statistics so that data-driven, evidence-based cancer prevention and control programs can be implemented to reduce cancer morbidity and mortality.

The Registry was established to meet one of the requirements for an Approved Cancer Program of the American College of Surgeons (ACoS). The database now includes 86,993 malignant cases seen at KFSH&RC from June 1975 through December 31, 2016.

The Registry is primarily staffed with tumor registrars who support the database in case ascertainment, abstracting, follow up and statistical analyses. The basic source document is the patient's medical record from which pertinent information is abstracted for use in the Registry. The electronic data system used was the Cansur 3.0 designed by the ACoS, for cases seen from 1975 to 2007. Starting with 2008 cases, the software being used is CNEXT, developed by C/NET Solutions which is part of the U.S. Public Health Institute.

The data maintained in the Tumor Registry provides the statistics for the publication of the KFSH&RC Annual Report which summarizes the hospital's cancer experience. The data also supports a wide variety of reports at the request of physicians, researchers and ancillary personnel. These reports support patient management and outcome, basic and clinical research investigations, educational publications and presentations, and resource utilization. In 2016, the Tumor Registry supported myriad of data requests. It also identified and reported to the Saudi Cancer Registry 3000 new cases seen in 2016.

## **II. ACKNOWLEDGEMENTS**

The cancer program is a combined effort of the extraordinary team of professionals at the King Faisal Specialist Hospital and Research Centre. It is not possible to enumerate all those involved in providing hope and healing to cancer patients and their families. The Tumor Registry staff greatly appreciates the tireless efforts of all the caring professionals from all disciplines for their dedication, commitment and collaboration to ensure highest standards in community outreach, clinical trials, staff education, patient care improvement, outcome analysis and tumor registry quality.

The clinical expertise and proficiency demonstrated by our team, coupled with an incredible dedication to patient care and service excellence, allows the Oncology Centre to achieve remarkable outcomes and to consistently exceed the needs and expectations of patients and their families.

The information in this report includes cancer incidence, site, and extent of disease at diagnosis, treatment, cancer trends, and outcomes to better understand the changing patterns of cancer.

The following departments have assisted throughout the year and without their support this report would not have been possible. The Tumor Registry staff takes pride in acknowledging these departments:

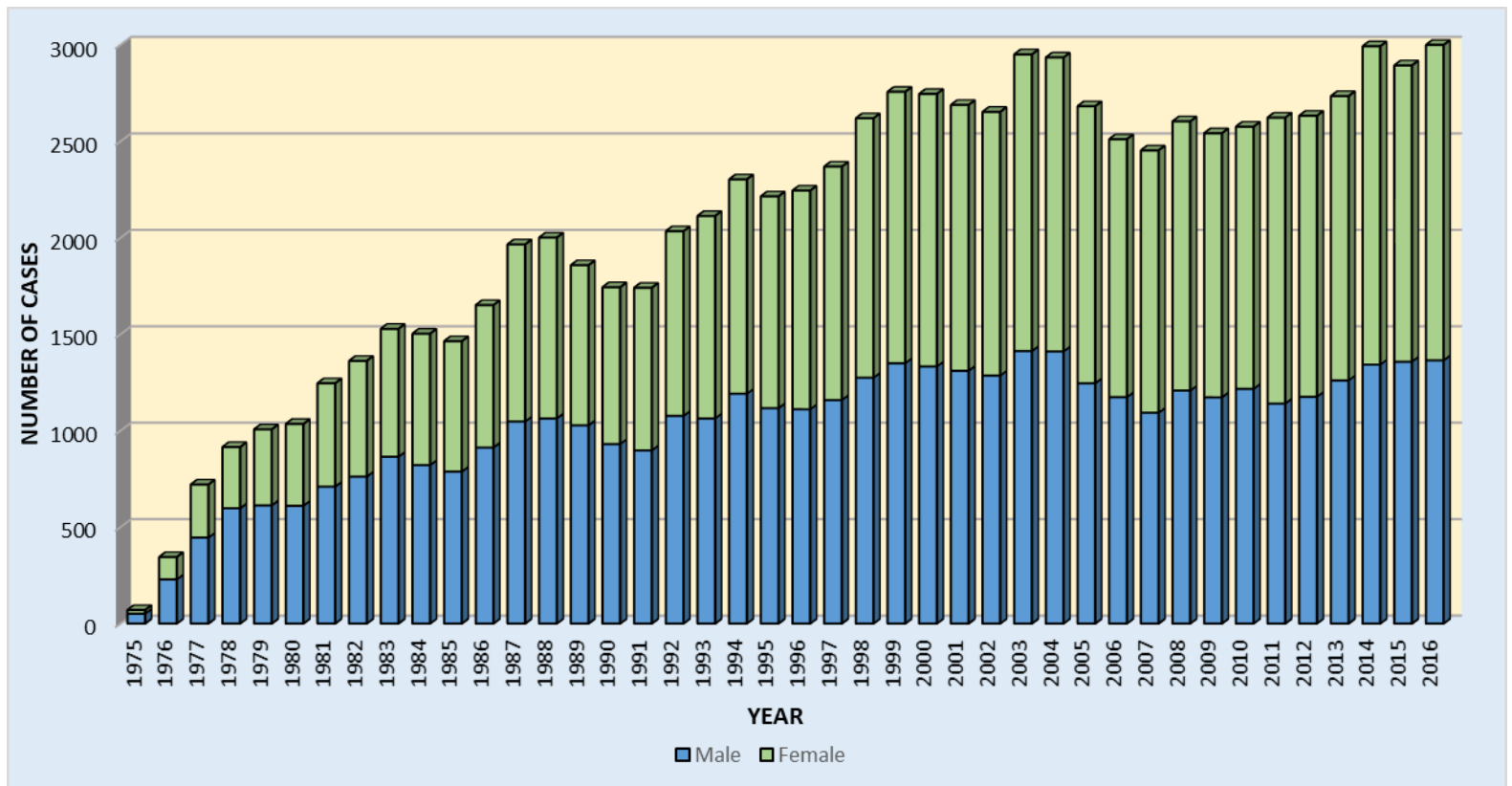
- Department of Pathology and Laboratory Medicine
- Medical Records Services
- Information Technology Affairs
- Department of Pediatric Hematology/Oncology
- Central Data Unit, Dept of Ped Hem/Onc
- Saudi Cancer Registry
- Home Health Care
- Oncology Centre



### III. KFSH&RC CANCER PATIENT POPULATION

A total of 3000 cases were accessioned in 2016, with 1,366 males and 1,634 females or a male/female ratio of 0.8:1.

**FIGURE 1**  
**DISTRIBUTION OF CASES ACCESSIONED BY YEAR**  
**1975-2016 (TOTAL CASES = 86,993 )**



From the opening of the hospital (mid 1975) until December 2016, 86,993 cancer cases were registered (43,215 males and 43,778 females) with a male/female ratio of 1.0:1.

There were 10,902 (12.5%) pediatric cases (0 to 14 years of age) and 76,091 (87.4%) adults (15 years old and above). In 2016, the proportions were 8.5% (256) for pediatrics and 91.4% (2,744) for adults.

**TABLE 1**  
**CASES SEEN AT KFSH&RC (MALE/FEMALE & PEDIATRICS/ADULTS) BY 5-YEAR PERIOD**  
**1975-2016**

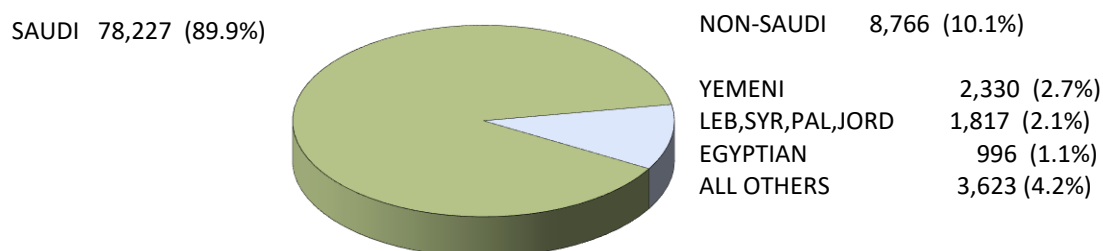
|                     | 1975-1976*   | 1977-1981    | 1982-1986    | 1987-1991    | 1992-1996     | 1997-2001     | 2002 - 2006   | 2007-2011     | 2012-2016     | TOTAL         |
|---------------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <b>MALE</b>         | 280          | 2,980        | 4,150        | 4,969        | 5,562         | 6,427         | 6,529         | 5,819         | 6,499         | 43,215        |
| <b>FEMALE</b>       | 135          | 1,945        | 3,358        | 4,341        | 5,347         | 6,753         | 7,199         | 6,952         | 7,748         | 43,778        |
| <b>TOTAL</b>        | <b>415</b>   | <b>4,925</b> | <b>7,508</b> | <b>9,310</b> | <b>10,909</b> | <b>13,180</b> | <b>13,728</b> | <b>12,771</b> | <b>14,247</b> | <b>86,993</b> |
| <b>M/F RATIO</b>    | <b>2.1:1</b> | <b>1.5:1</b> | <b>1.2:1</b> | <b>1.1:1</b> | <b>1.0:1</b>  | <b>1.0:1</b>  | <b>0.9:1</b>  | <b>0.8:1</b>  | <b>0.8:1</b>  | <b>1.0:1</b>  |
| <b>PEDIATRICS**</b> | 55           | 593          | 985          | 1164         | 1397          | 1892          | 1893          | 1566          | 1357          | 10,902        |
| <b>(%)</b>          | 13.3%        | 12.0%        | 13.1%        | 12.5%        | 12.8%         | 14.4%         | 13.8%         | 12.3%         | 9.5%          | 12.5%         |
| <b>ADULTS</b>       | 360          | 4,332        | 6,523        | 8,146        | 9,512         | 11,288        | 11,835        | 11,205        | 12,890        | 76,091        |
| <b>(%)</b>          | 86.7%        | 88.0%        | 86.9%        | 87.5%        | 87.2%         | 85.6%         | 86.2%         | 87.7%         | 90.5%         | 87.5%         |
| <b>TOTAL</b>        | <b>415</b>   | <b>4,925</b> | <b>7,508</b> | <b>9,310</b> | <b>10,909</b> | <b>13,180</b> | <b>13,728</b> | <b>12,771</b> | <b>14,247</b> | <b>86,993</b> |

\* First two years of KFSH&RC partial operation.

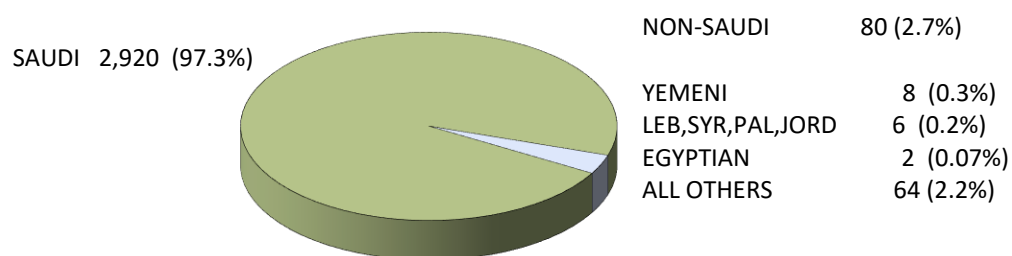
\*\* Pediatrics = 0 to 14 years of age; Adults = 15 years and above.

**FIGURE 2**

**DISTRIBUTION OF CASES BY NATIONALITY**  
**1975 - 2016 (TOTAL CASES = 86,993)**



**2016 (TOTAL CASES = 3000)**

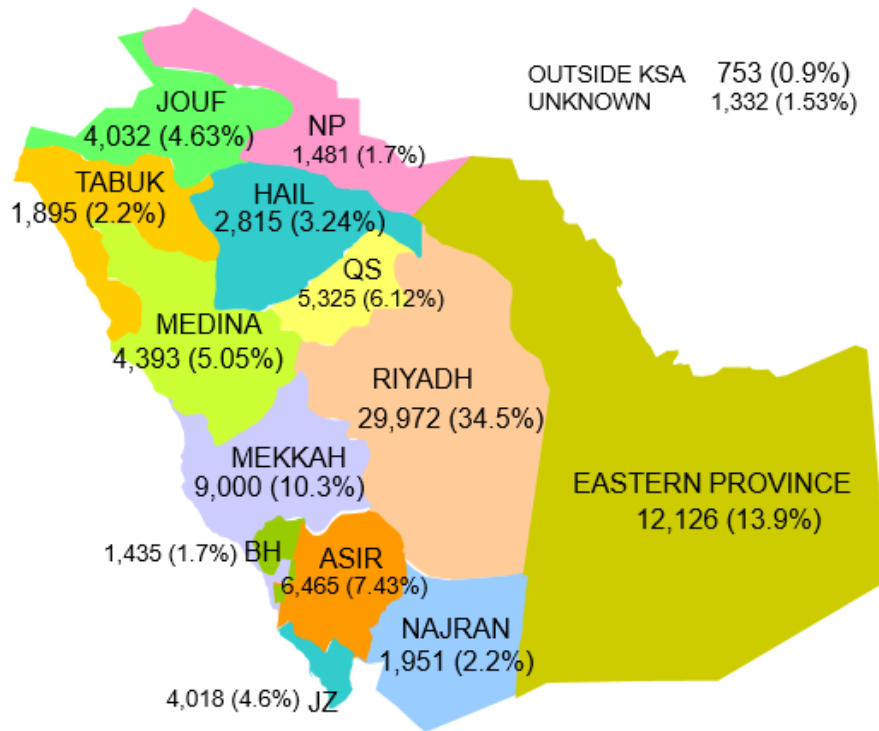


Saudi nationals totaled 2,920 (97.3%) in 2016 and the non-Saudi, 80 (2.7%). During the period 1975 to 2016, the former accounted for 89.9% (78,227) while the latter, 10.1% (8,766).

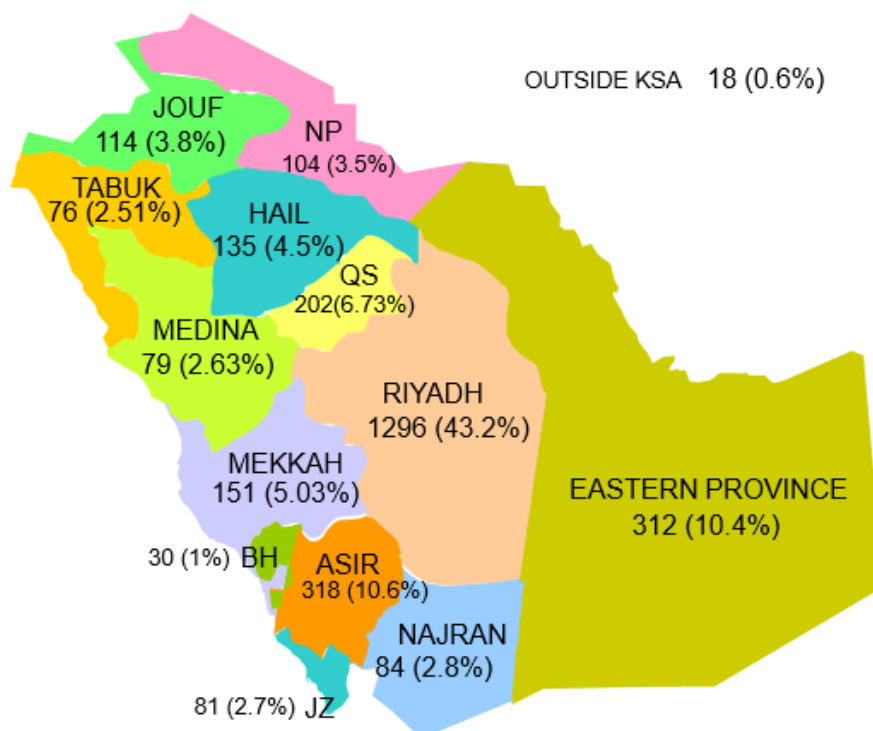
Geographically, the referral pattern in 2016 was mainly from the Riyadh region with 43.2% of all cases, followed by the Asir Region with 10.6% then Eastern Province with 10.4% respectively. During the 41 years in review, 34.5% were referred from Riyadh, 13.9% from the Eastern Province and 10.3% from Mekkah.

These percentages reflect the KFSH&RC actual experience rather than adjusted to reflect the population of those regions.

**FIGURE 3**  
**DISTRIBUTION OF CASES BY REGION**  
**(Based on Given Address at Time of Diagnosis)**  
**1975 - 2016 (TOTAL CASES = 86,993)**



**2016 (TOTAL CASES = 3000)**



## TRENDS IN RELATIVE FREQUENCY OF CANCER AT KFSH&RC

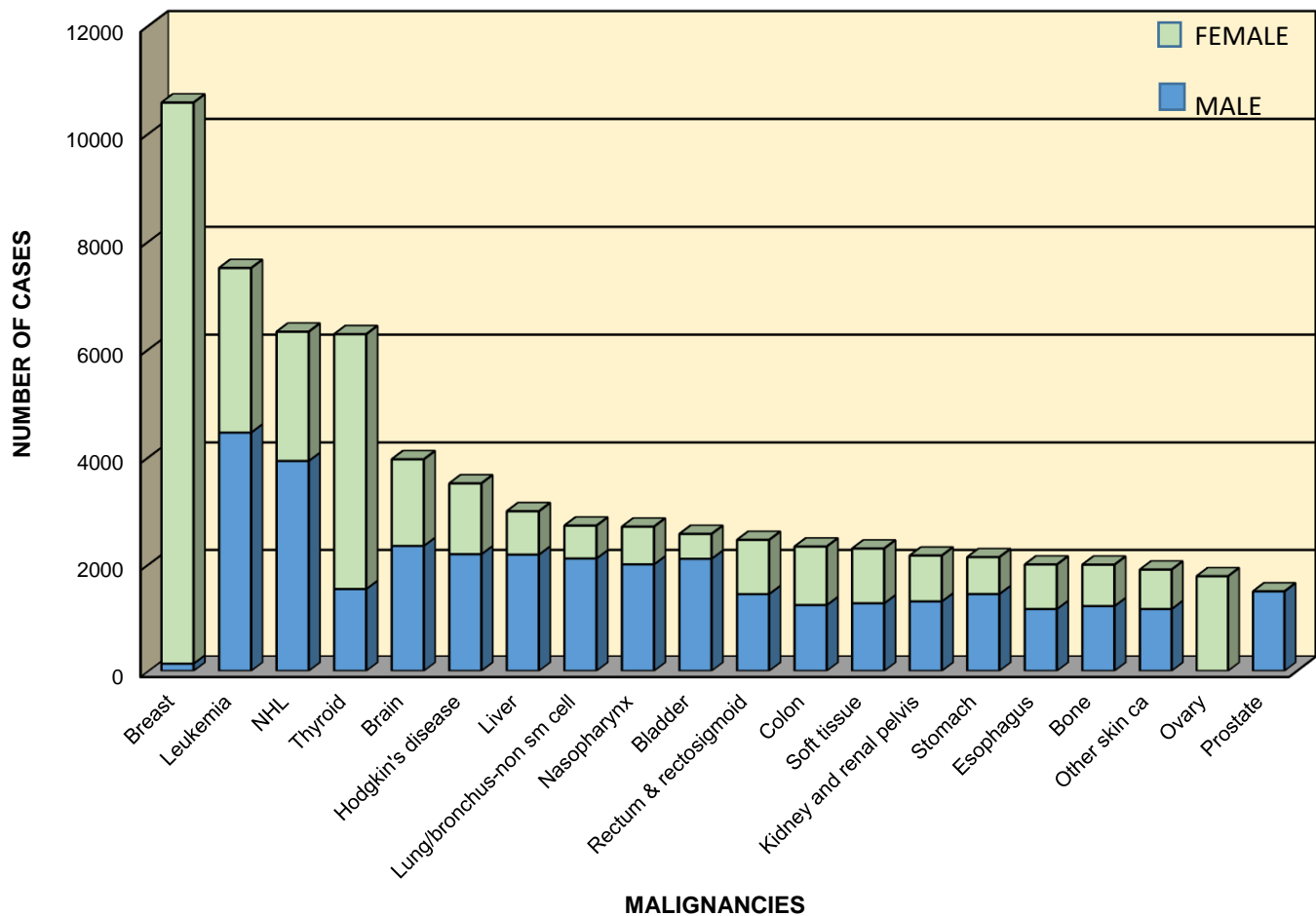
The crude relative frequency is the proportion of a given cancer in relation to all cases in a clinical or pathological series. Although such frequencies are subject to many biases, historically many elevated frequencies have been confirmed when complete cancer registration was introduced.

Acceptance of cases to KFSH&RC is based on eligibility criteria, considering the nature of disease and availability of services.

Breast cancer led the list of total cancer cases seen from 1975 to 2016 with 13.9%, followed by leukemia (9.8%), Non-Hodgkin’s lymphoma (8.3%), Thyroid (8.2%) and Brain (5.2%).

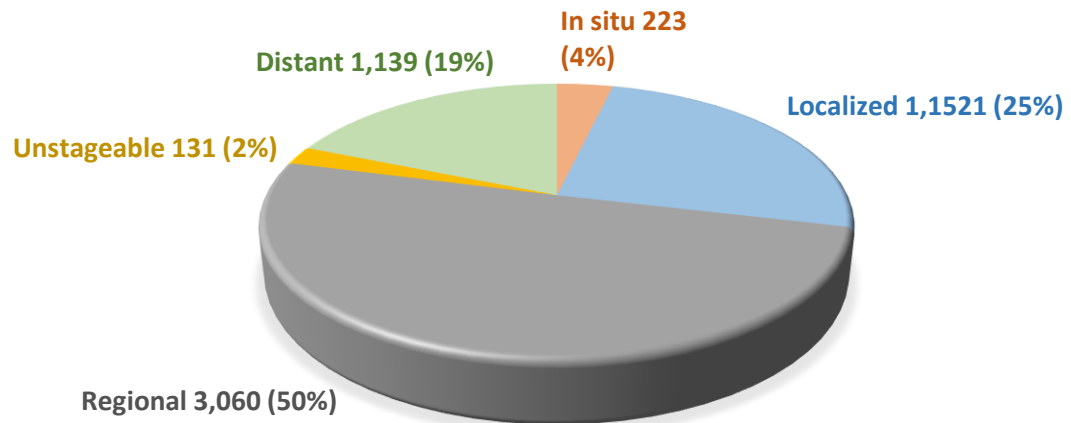
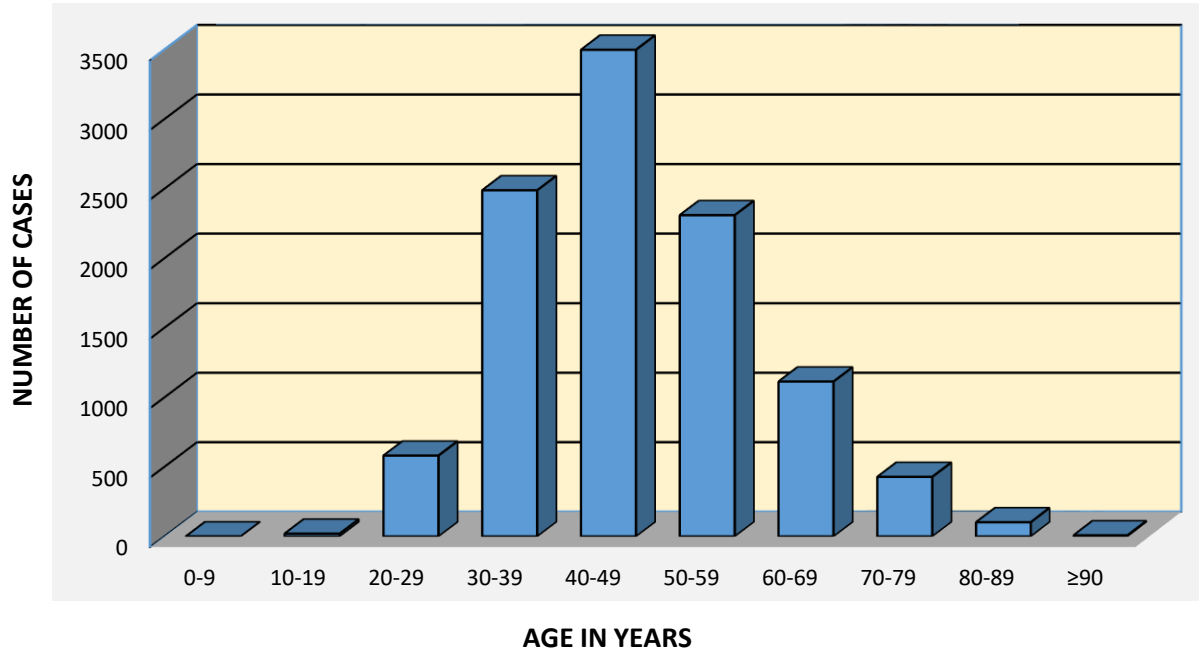
FIGURE 4

DISTRIBUTION OF 20 MOST COMMON MALIGNANCIES  
1975-2016 (TOTAL CASES = 86,993 )

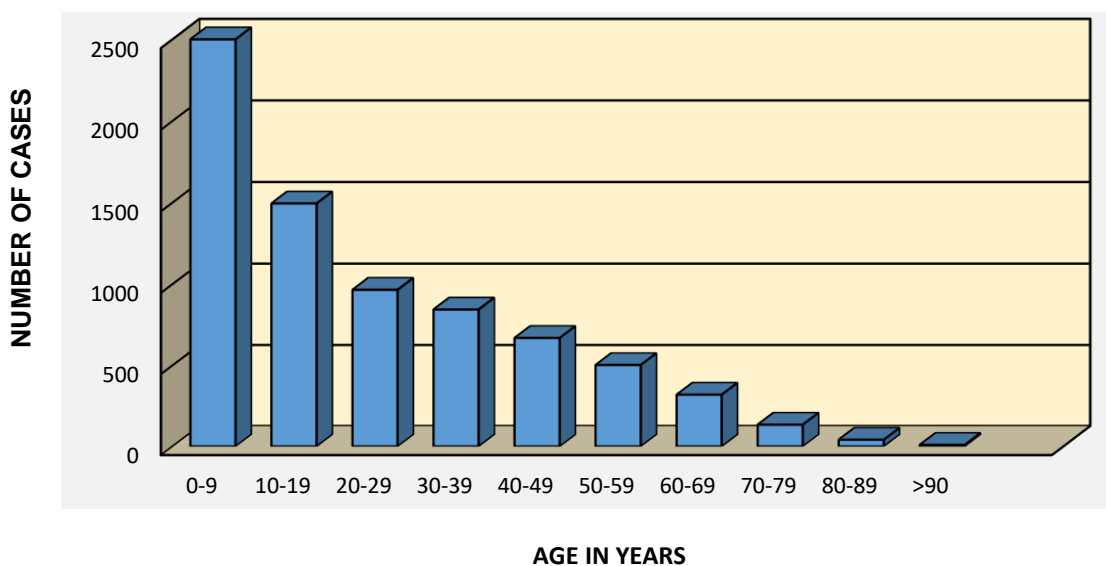


**FIGURE 5**  
**DISTRIBUTION OF 5 MOST COMMON MALIGNANCIES**  
**BY AGE AT DIAGNOSIS AND SEER SUMMARY STAGE**  
**(1975 – 2016)**

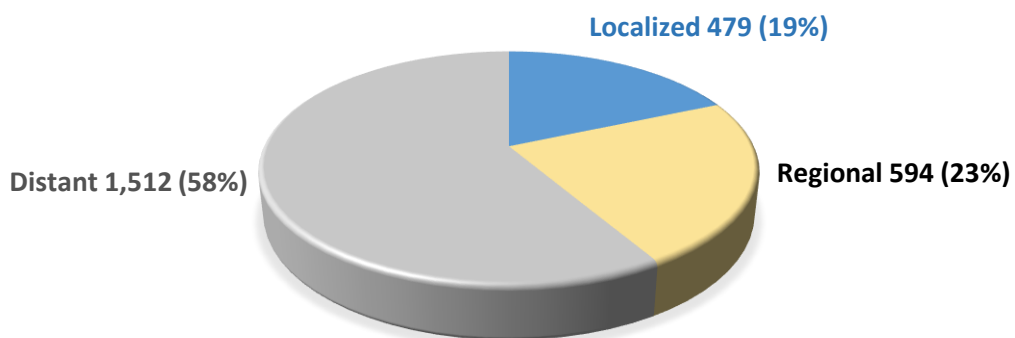
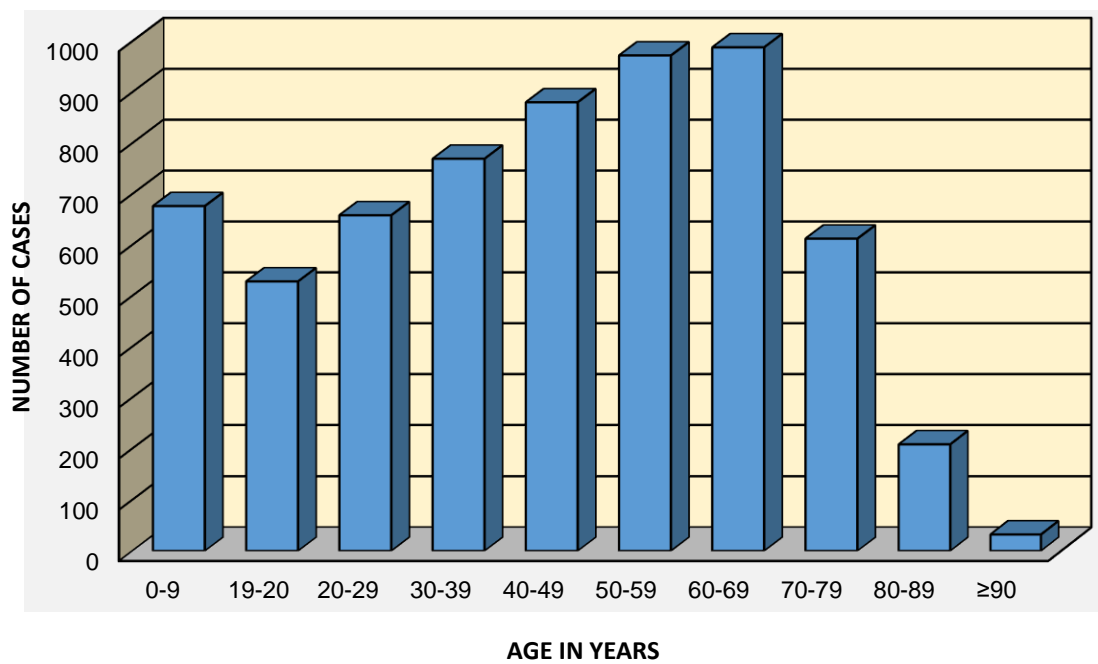
**BREAST CANCER CASES**



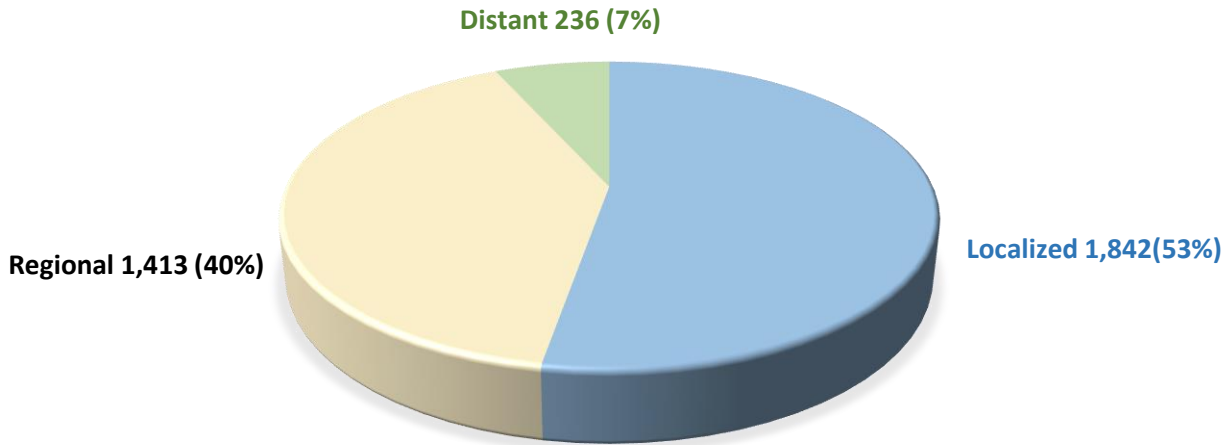
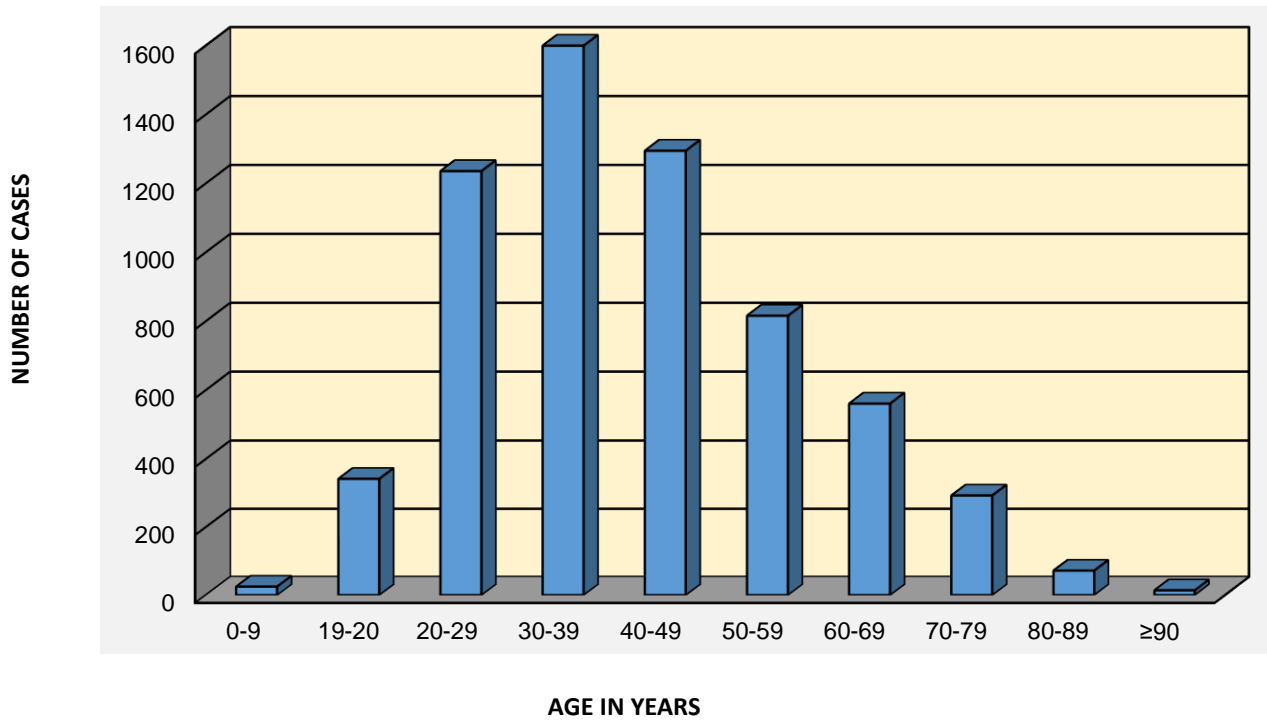
### LEUKEMIA CASES



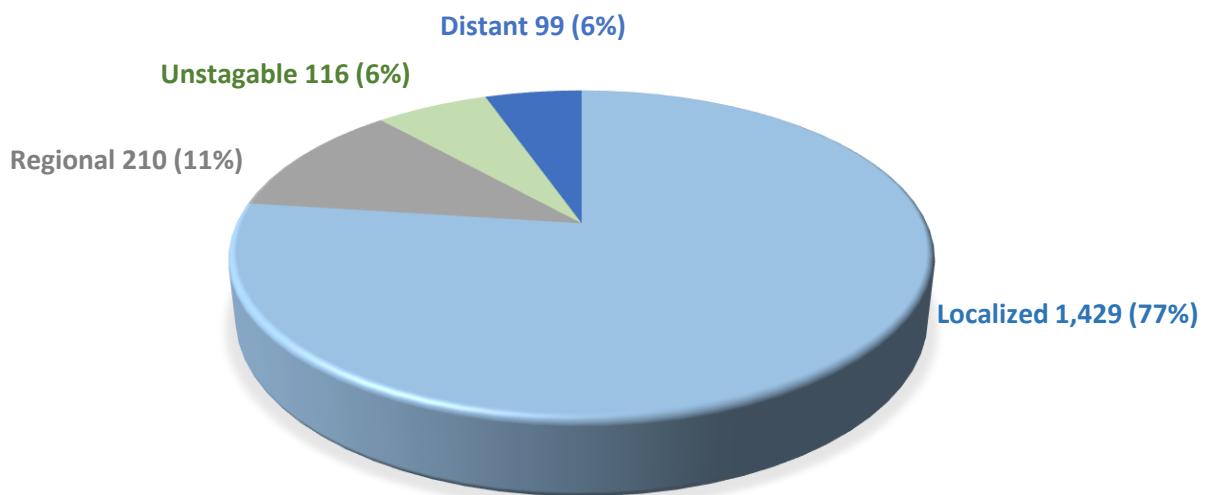
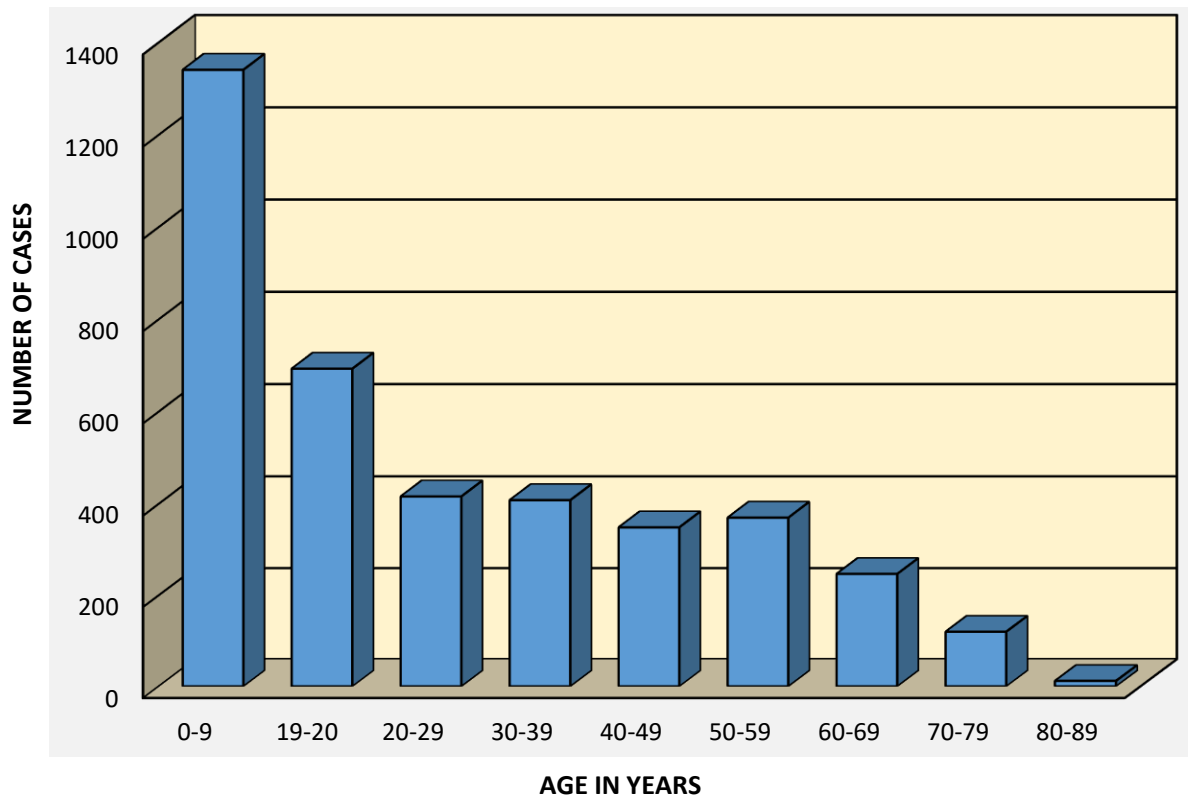
### NON-HODGKIN'S LYMPHOMA CASES



### THYROID CANCER CASES



### BRAIN CANCER CASES





**TABLE 2**

**TEN MOST COMMON MALIGNANCIES BY AGE GROUP AT DIAGNOSIS 1975-2016**

| SITE   | AGE GROUP | No    | %    |
|--------|-----------|-------|------|
| BREAST | 00 - 14   | 2     | 0.0  |
|        | 15 - 39   | 3,090 | 29.2 |
|        | 40 - 60   | 5,828 | 55.1 |
|        | >60       | 1,652 | 15.6 |

| SITE            | AGE GROUP | No    | %    |
|-----------------|-----------|-------|------|
| HODGKIN DISEASE | 00 - 14   | 1,588 | 45.2 |
|                 | 15 - 39   | 1,313 | 37.4 |
|                 | 40 - 60   | 431   | 12.3 |
|                 | >60       | 178   | 5.1  |

| SITE     | AGE GROUP | No    | %    |
|----------|-----------|-------|------|
| LEUKEMIA | 00 - 14   | 3,244 | 43.2 |
|          | 15 - 39   | 2,586 | 34.4 |
|          | 40 - 60   | 1,171 | 15.6 |
|          | >60       | 503   | 6.7  |

| SITE  | AGE GROUP | No    | %    |
|-------|-----------|-------|------|
| LIVER | 00 - 14   | 114   | 3.8  |
|       | 15 - 39   | 164   | 5.5  |
|       | 40 - 60   | 1,089 | 36.4 |
|       | >60       | 1,627 | 54.3 |

| SITE                   | AGE GROUP | No    | %    |
|------------------------|-----------|-------|------|
| NON-HODGKIN'S LYMPHOMA | 00 - 14   | 911   | 14.4 |
|                        | 15 - 39   | 1,720 | 27.2 |
|                        | 40 - 60   | 1,852 | 29.3 |
|                        | >60       | 1,840 | 29.1 |

| SITE | AGE GROUP | No    | %    |
|------|-----------|-------|------|
| LUNG | 00 - 14   | 14    | 0.5  |
|      | 15 - 39   | 191   | 7.0  |
|      | 40 - 60   | 1,030 | 37.8 |
|      | >60       | 1,490 | 54.7 |

| SITE    | AGE GROUP | No    | %    |
|---------|-----------|-------|------|
| THYROID | 00 - 14   | 123   | 2.0  |
|         | 15 - 39   | 3,103 | 49.4 |
|         | 40 - 60   | 2,111 | 33.6 |
|         | >60       | 940   | 15.0 |

| SITE        | AGE GROUP | No    | %    |
|-------------|-----------|-------|------|
| NASOPHARYNX | 00 - 14   | 106   | 3.9  |
|             | 15 - 39   | 801   | 29.6 |
|             | 40 - 60   | 1,246 | 46.0 |
|             | >60       | 553   | 20.4 |

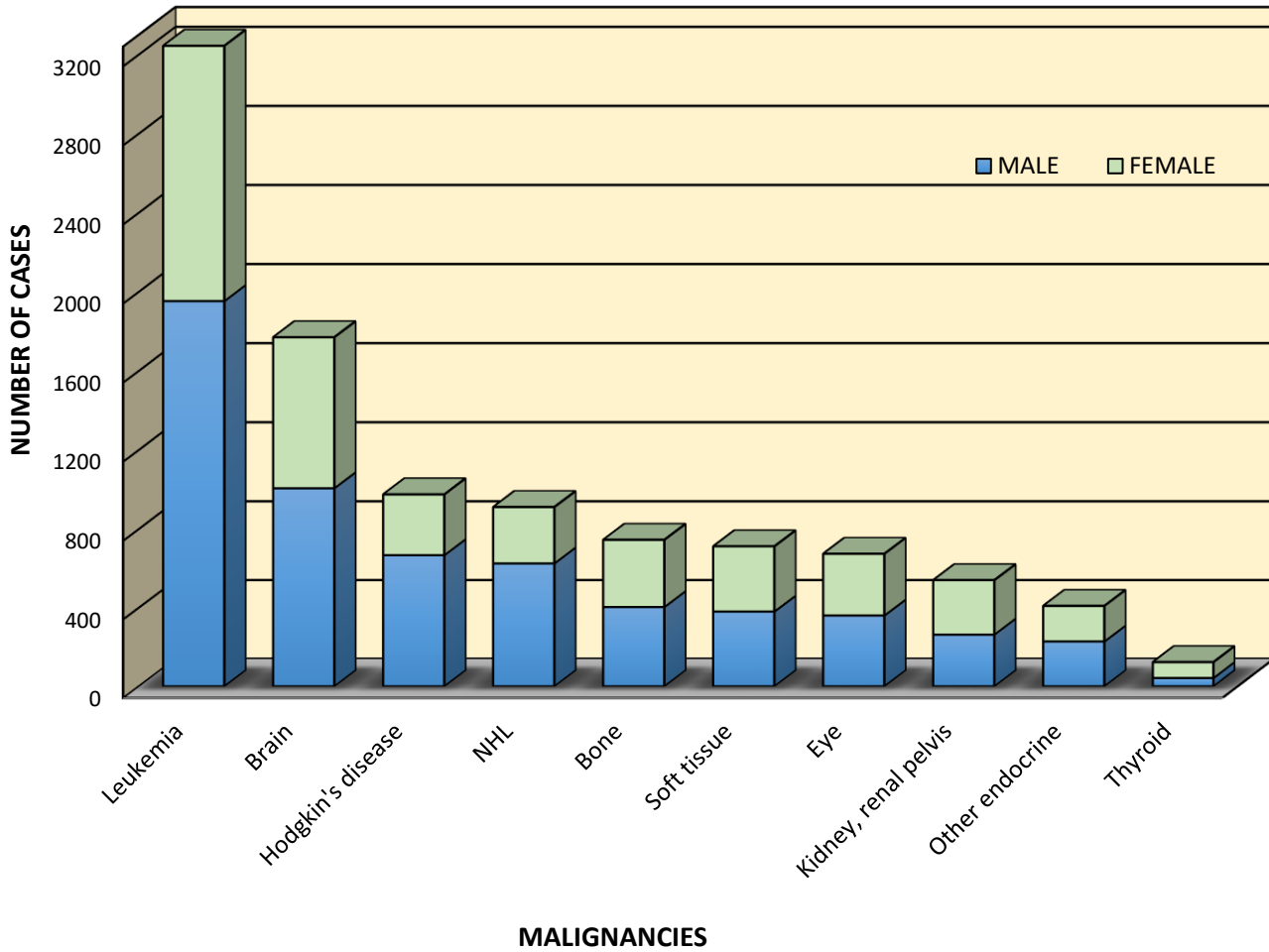
| SITE  | AGE GROUP | No    | %    |
|-------|-----------|-------|------|
| BRAIN | 00 - 14   | 1,770 | 44.7 |
|       | 15 - 39   | 1,088 | 27.5 |
|       | 40 - 60   | 719   | 18.2 |
|       | >60       | 380   | 9.6  |

| SITE    | AGE GROUP | No    | %    |
|---------|-----------|-------|------|
| BLADDER | 00 - 14   | 39    | 1.5  |
|         | 15 - 39   | 252   | 9.8  |
|         | 40 - 60   | 884   | 34.4 |
|         | >60       | 1,395 | 54.3 |

Cancer among pediatrics (under the age of 15) accounted for 12.6% of all cases from 1975 to 2016. The five most common pediatric malignancies were Hemeretic (30%), brain (16.4%), Hodgkin's disease (9%), Non-Hodgkin's Lymphoma (8.4%), Bone (6.9%).

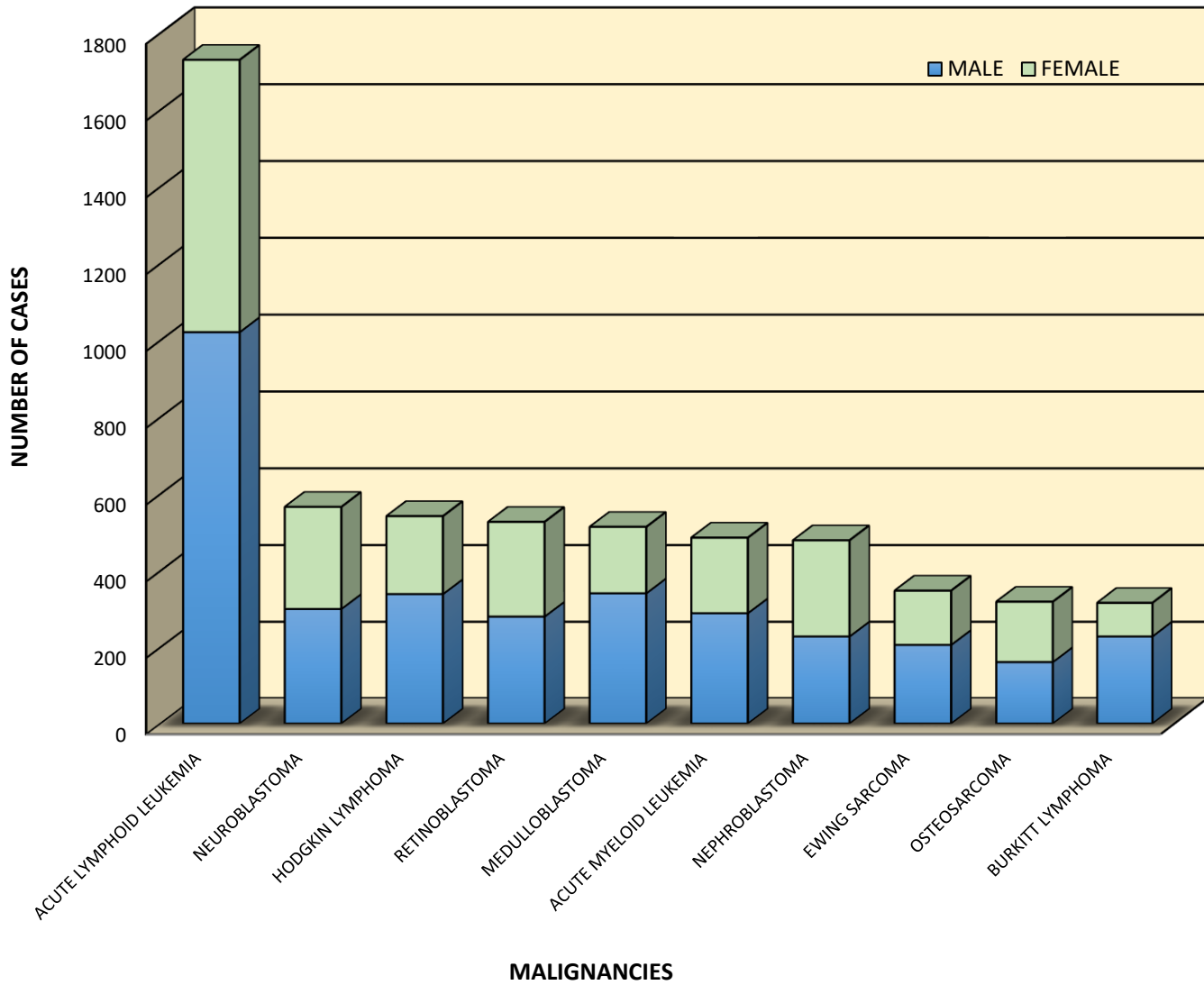
**FIGURE 6**

**DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES  
1975-2016 (TOTAL CASES = 10,902)**



**FIGURE 7**

**DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES BY HISTOLOGY  
1975-2016 (TOTAL CASES = 10,902)**



**TABLE 3**  
**CASES SEEN AT KFSH&RC BY SITE AND YEAR**  
**1975-2016**

| Site Group                   | 1975      | 1976       | 1977       | 1978       | 1979        | 1980        | 1981        | 1982        | 1983        | 1984        | 1985        | 1986        | 1987        | 1988        | 1989        |
|------------------------------|-----------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Oral Cavity                  | 1         | 9          | 23         | 62         | 52          | 56          | 46          | 61          | 81          | 53          | 85          | 57          | 77          | 98          | 86          |
| Nasopharynx                  | 3         | 16         | 48         | 51         | 54          | 50          | 60          | 65          | 84          | 69          | 63          | 68          | 99          | 96          | 80          |
| Esophagus                    | 1         | 15         | 51         | 62         | 67          | 67          | 57          | 62          | 77          | 78          | 56          | 69          | 76          | 66          | 68          |
| Stomach                      | 2         | 15         | 32         | 35         | 50          | 37          | 49          | 51          | 64          | 60          | 49          | 64          | 61          | 47          | 52          |
| Small intestine              | 0         | 0          | 4          | 0          | 2           | 2           | 2           | 1           | 0           | 5           | 3           | 5           | 1           | 1           | 6           |
| Colon                        | 1         | 10         | 10         | 12         | 12          | 16          | 20          | 19          | 16          | 24          | 13          | 24          | 35          | 35          | 30          |
| Rectum & rectosigmoid        | 0         | 3          | 11         | 8          | 16          | 21          | 24          | 16          | 20          | 26          | 26          | 20          | 31          | 43          | 26          |
| Anus,anal canal,anorectum    | 0         | 0          | 1          | 4          | 3           | 1           | 7           | 4           | 7           | 9           | 6           | 7           | 4           | 4           | 5           |
| Liver                        | 7         | 15         | 33         | 44         | 49          | 33          | 41          | 54          | 53          | 64          | 57          | 84          | 78          | 71          | 68          |
| Gallbladder                  | 0         | 2          | 3          | 4          | 2           | 2           | 4           | 6           | 4           | 4           | 6           | 7           | 14          | 9           | 5           |
| Bile ducts                   | 1         | 1          | 0          | 2          | 2           | 4           | 1           | 2           | 3           | 4           | 3           | 6           | 6           | 6           | 2           |
| Pancreas                     | 1         | 5          | 7          | 11         | 15          | 14          | 20          | 22          | 14          | 20          | 16          | 28          | 20          | 16          | 27          |
| Retroperitoneum , Peritoneum | 0         | 0          | 2          | 1          | 2           | 1           | 0           | 0           | 2           | 1           | 0           | 1           | 0           | 1           | 1           |
| Other digestive              | 0         | 0          | 0          | 2          | 2           | 5           | 4           | 1           | 1           | 0           | 3           | 1           | 4           | 3           | 6           |
| Nasal cavity,sinus,ear       | 1         | 3          | 9          | 7          | 5           | 7           | 9           | 10          | 10          | 5           | 7           | 5           | 16          | 14          | 7           |
| Larynx                       | 1         | 5          | 12         | 12         | 12          | 14          | 20          | 13          | 23          | 22          | 25          | 16          | 23          | 33          | 21          |
| Lung/Bronchus                | 3         | 11         | 23         | 34         | 45          | 40          | 56          | 63          | 74          | 74          | 87          | 84          | 83          | 106         | 90          |
| Pleura                       | 0         | 0          | 1          | 0          | 0           | 0           | 0           | 0           | 1           | 1           | 0           | 1           | 0           | 1           | 2           |
| Other respir & thoracic      | 0         | 0          | 0          | 1          | 1           | 1           | 3           | 1           | 1           | 0           | 4           | 0           | 6           | 1           | 1           |
| Leukemia                     | 7         | 28         | 40         | 87         | 90          | 83          | 121         | 125         | 117         | 127         | 121         | 159         | 185         | 157         | 155         |
| Myeloma                      | 1         | 5          | 6          | 11         | 9           | 11          | 8           | 13          | 13          | 12          | 19          | 13          | 29          | 22          | 33          |
| Other hematopoietic          | 0         | 1          | 0          | 1          | 2           | 2           | 2           | 2           | 3           | 1           | 2           | 9           | 5           | 3           | 2           |
| Bone                         | 1         | 6          | 13         | 25         | 20          | 20          | 22          | 42          | 31          | 40          | 19          | 31          | 35          | 44          | 41          |
| Soft tissue                  | 1         | 16         | 29         | 29         | 31          | 23          | 29          | 40          | 32          | 35          | 38          | 47          | 48          | 49          | 59          |
| Melanoma of skin             | 0         | 4          | 4          | 8          | 8           | 6           | 7           | 4           | 11          | 12          | 7           | 8           | 11          | 12          | 6           |
| Kaposi sarcoma               | 0         | 1          | 1          | 0          | 6           | 4           | 2           | 2           | 5           | 4           | 5           | 9           | 5           | 9           | 5           |
| Other skin cancers           | 2         | 13         | 26         | 32         | 41          | 35          | 48          | 54          | 51          | 52          | 62          | 60          | 43          | 43          | 53          |
| Breast                       | 3         | 24         | 53         | 46         | 57          | 65          | 101         | 111         | 111         | 153         | 131         | 127         | 174         | 194         | 137         |
| Cervix uteri                 | 0         | 10         | 18         | 18         | 25          | 18          | 26          | 25          | 33          | 33          | 41          | 55          | 51          | 50          | 33          |
| Corpus uteri                 | 1         | 1          | 2          | 5          | 6           | 4           | 8           | 8           | 11          | 14          | 10          | 10          | 16          | 21          | 21          |
| Ovary                        | 2         | 6          | 10         | 10         | 17          | 21          | 20          | 35          | 31          | 26          | 24          | 34          | 41          | 47          | 52          |
| Vagina                       | 0         | 0          | 5          | 2          | 0           | 1           | 2           | 0           | 2           | 2           | 3           | 1           | 2           | 1           | 2           |
| Vulva                        | 0         | 0          | 0          | 1          | 1           | 0           | 2           | 1           | 3           | 2           | 5           | 5           | 1           | 2           | 1           |
| Other female genital         | 0         | 1          | 5          | 4          | 6           | 7           | 5           | 7           | 19          | 5           | 4           | 13          | 19          | 14          | 10          |
| Prostate                     | 0         | 7          | 5          | 4          | 5           | 10          | 11          | 18          | 28          | 19          | 19          | 17          | 22          | 27          | 27          |
| Testis                       | 0         | 3          | 9          | 8          | 10          | 11          | 15          | 11          | 7           | 12          | 14          | 14          | 17          | 17          | 9           |
| Penis                        | 0         | 1          | 1          | 0          | 1           | 0           | 2           | 2           | 3           | 4           | 0           | 0           | 0           | 2           | 2           |
| Other male genital           | 0         | 0          | 0          | 0          | 2           | 0           | 1           | 0           | 1           | 0           | 3           | 0           | 3           | 0           | 2           |
| Bladder                      | 4         | 7          | 12         | 24         | 29          | 39          | 37          | 23          | 41          | 35          | 46          | 51          | 79          | 74          | 73          |
| Kidney and renal pelvis      | 0         | 9          | 18         | 18         | 18          | 15          | 18          | 30          | 23          | 20          | 24          | 41          | 31          | 58          | 31          |
| Ureter                       | 0         | 0          | 0          | 0          | 0           | 0           | 0           | 0           | 0           | 1           | 1           | 0           | 3           | 1           | 1           |
| Other urinary                | 0         | 0          | 0          | 0          | 0           | 0           | 0           | 0           | 0           | 1           | 0           | 1           | 0           | 0           | 1           |
| Eye                          | 0         | 6          | 11         | 19         | 12          | 24          | 29          | 34          | 25          | 17          | 30          | 24          | 35          | 44          | 26          |
| Brain,CNS                    | 3         | 24         | 27         | 40         | 26          | 31          | 31          | 77          | 53          | 59          | 49          | 71          | 88          | 92          | 98          |
| Thyroid                      | 2         | 8          | 17         | 28         | 33          | 44          | 57          | 51          | 66          | 71          | 63          | 82          | 119         | 112         | 110         |
| Other endocrine              | 1         | 1          | 3          | 3          | 2           | 9           | 10          | 8           | 14          | 12          | 17          | 10          | 11          | 13          | 2           |
| Hodgkin's disease            | 13        | 19         | 40         | 41         | 36          | 42          | 47          | 42          | 54          | 50          | 49          | 45          | 65          | 57          | 76          |
| Non-hodgkin's lymphoma       | 4         | 23         | 73         | 75         | 103         | 112         | 128         | 116         | 172         | 139         | 124         | 142         | 157         | 153         | 165         |
| Unknown or ill-defined       | 3         | 11         | 23         | 24         | 20          | 27          | 34          | 30          | 33          | 26          | 25          | 25          | 37          | 32          | 42          |
| <b>TOTAL</b>                 | <b>70</b> | <b>345</b> | <b>721</b> | <b>915</b> | <b>1007</b> | <b>1035</b> | <b>1246</b> | <b>1362</b> | <b>1528</b> | <b>1503</b> | <b>1464</b> | <b>1651</b> | <b>1966</b> | <b>2001</b> | <b>1858</b> |

**TABLE 3 (cont 'd)**  
**CASES SEEN AT KFSH&RC BY SITE AND YEAR**  
**1975-2016**

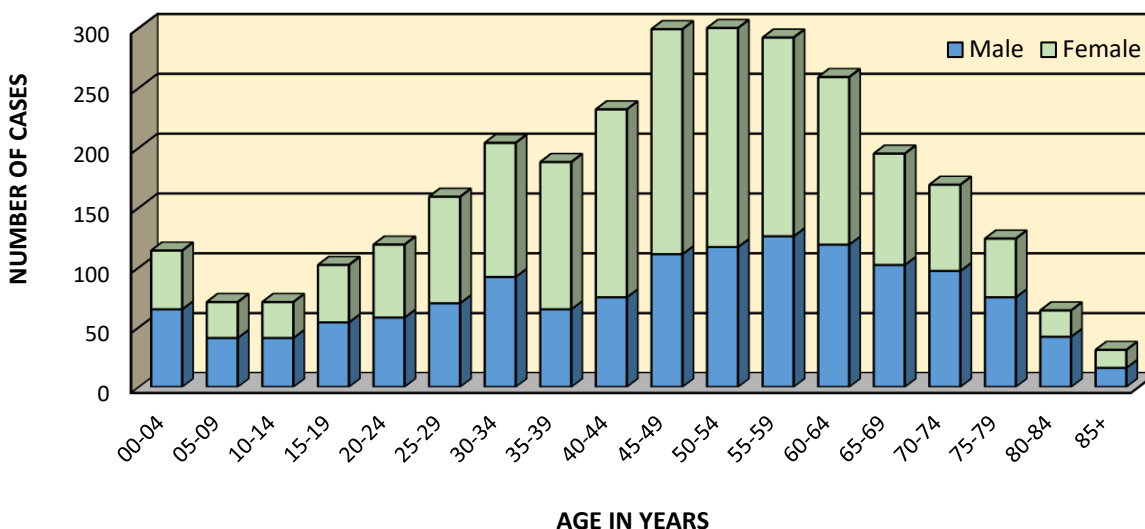
| Site Group                   | 1990        | 1991        | 1992        | 1993        | 1994        | 1995        | 1996        | 1997        | 1998        | 1999        | 2000        | 2001        | 2002        | 2003        | 2004        |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Oral Cavity                  | 81          | 87          | 85          | 72          | 77          | 99          | 82          | 94          | 71          | 92          | 102         | 75          | 74          | 107         | 78          |
| Nasopharynx                  | 84          | 76          | 80          | 85          | 78          | 84          | 111         | 107         | 124         | 118         | 98          | 141         | 86          | 111         | 116         |
| Esophagus                    | 72          | 66          | 69          | 47          | 50          | 50          | 52          | 51          | 62          | 34          | 52          | 37          | 42          | 43          | 37          |
| Stomach                      | 53          | 36          | 48          | 42          | 68          | 61          | 57          | 45          | 42          | 54          | 53          | 40          | 50          | 60          | 68          |
| Small intestine              | 4           | 1           | 5           | 4           | 4           | 6           | 6           | 4           | 7           | 7           | 9           | 5           | 3           | 5           | 9           |
| Colon                        | 25          | 39          | 33          | 25          | 33          | 37          | 34          | 34          | 57          | 48          | 73          | 72          | 92          | 104         | 76          |
| Rectum & rectosigmoid        | 31          | 35          | 48          | 46          | 52          | 48          | 54          | 62          | 59          | 94          | 75          | 77          | 106         | 99          | 113         |
| Anus,anal canal,anorectum    | 8           | 6           | 7           | 12          | 10          | 5           | 6           | 6           | 7           | 4           | 7           | 7           | 8           | 14          | 5           |
| Liver                        | 55          | 66          | 76          | 82          | 103         | 102         | 103         | 96          | 84          | 89          | 85          | 91          | 73          | 70          | 60          |
| Gallbladder                  | 9           | 9           | 13          | 19          | 21          | 9           | 11          | 11          | 12          | 15          | 13          | 11          | 12          | 15          | 14          |
| Bile ducts                   | 4           | 2           | 7           | 2           | 7           | 3           | 9           | 7           | 10          | 9           | 8           | 9           | 10          | 7           | 4           |
| Pancreas                     | 12          | 13          | 27          | 21          | 22          | 25          | 21          | 24          | 34          | 18          | 38          | 26          | 31          | 30          | 34          |
| Retroperitoneum , Peritoneum | 1           | 0           | 2           | 1           | 0           | 1           | 0           | 0           | 1           | 2           | 2           | 1           | 1           | 1           | 4           |
| Other digestive              | 2           | 1           | 2           | 4           | 0           | 3           | 0           | 0           | 0           | 0           | 0           | 2           | 0           | 2           | 4           |
| Nasal cavity,sinus,ear       | 13          | 12          | 8           | 9           | 11          | 10          | 9           | 4           | 8           | 14          | 10          | 9           | 11          | 10          | 9           |
| Larynx                       | 26          | 34          | 27          | 31          | 35          | 37          | 36          | 31          | 30          | 35          | 32          | 33          | 26          | 47          | 41          |
| Lung/Bronchus                | 74          | 85          | 79          | 85          | 89          | 87          | 84          | 88          | 106         | 108         | 91          | 80          | 91          | 86          | 94          |
| Pleura                       | 2           | 0           | 3           | 4           | 3           | 1           | 2           | 1           | 1           | 2           | 3           | 8           | 1           | 4           | 3           |
| Other respir & thoracic      | 2           | 7           | 3           | 7           | 8           | 4           | 4           | 8           | 8           | 8           | 2           | 1           | 5           | 2           | 4           |
| Leukemia                     | 132         | 158         | 145         | 192         | 169         | 209         | 166         | 228         | 235         | 258         | 259         | 239         | 259         | 258         | 227         |
| Myeloma                      | 15          | 28          | 26          | 25          | 40          | 30          | 21          | 14          | 23          | 16          | 28          | 20          | 19          | 20          | 23          |
| Other hematopoietic          | 2           | 0           | 1           | 0           | 2           | 2           | 2           | 1           | 3           | 4           | 9           | 11          | 10          | 9           | 2           |
| Bone                         | 37          | 40          | 52          | 54          | 56          | 56          | 56          | 63          | 71          | 63          | 75          | 83          | 74          | 62          | 68          |
| Soft tissue                  | 59          | 61          | 47          | 50          | 72          | 81          | 54          | 67          | 74          | 87          | 69          | 73          | 59          | 78          | 79          |
| Melanoma of skin             | 5           | 9           | 15          | 9           | 7           | 7           | 9           | 5           | 5           | 6           | 5           | 5           | 6           | 5           | 8           |
| Kaposi sarcoma               | 4           | 5           | 14          | 2           | 3           | 6           | 11          | 6           | 8           | 8           | 4           | 7           | 9           | 9           | 6           |
| Other skin cancers           | 41          | 47          | 47          | 51          | 61          | 44          | 57          | 52          | 35          | 58          | 52          | 62          | 38          | 52          | 49          |
| Breast                       | 168         | 169         | 188         | 251         | 241         | 232         | 281         | 292         | 336         | 341         | 383         | 362         | 377         | 409         | 431         |
| Cervix uteri                 | 44          | 35          | 52          | 50          | 52          | 49          | 48          | 46          | 62          | 57          | 42          | 68          | 53          | 55          | 47          |
| Corpus uteri                 | 18          | 13          | 27          | 20          | 26          | 22          | 19          | 26          | 29          | 33          | 33          | 35          | 47          | 59          | 62          |
| Ovary                        | 46          | 36          | 44          | 55          | 50          | 55          | 56          | 60          | 63          | 53          | 53          | 51          | 44          | 55          | 51          |
| Vagina                       | 3           | 3           | 2           | 0           | 5           | 5           | 2           | 2           | 1           | 2           | 1           | 0           | 1           | 1           | 2           |
| Vulva                        | 4           | 5           | 1           | 4           | 5           | 5           | 2           | 1           | 0           | 1           | 2           | 3           | 2           | 2           | 3           |
| Other female genital         | 9           | 13          | 12          | 12          | 19          | 7           | 11          | 8           | 6           | 6           | 5           | 5           | 10          | 13          | 12          |
| Prostate                     | 24          | 16          | 41          | 27          | 45          | 37          | 49          | 43          | 44          | 63          | 47          | 49          | 49          | 59          | 59          |
| Testis                       | 14          | 14          | 21          | 25          | 21          | 14          | 14          | 17          | 16          | 19          | 20          | 18          | 28          | 19          | 20          |
| Penis                        | 5           | 2           | 0           | 1           | 3           | 0           | 1           | 3           | 0           | 0           | 2           | 0           | 1           | 1           | 0           |
| Other male genital           | 0           | 0           | 0           | 1           | 1           | 0           | 0           | 0           | 1           | 0           | 0           | 1           | 2           | 1           | 2           |
| Bladder                      | 60          | 44          | 65          | 88          | 72          | 60          | 56          | 65          | 85          | 91          | 80          | 81          | 71          | 93          | 102         |
| Kidney and renal pelvis      | 35          | 33          | 52          | 51          | 65          | 48          | 47          | 49          | 58          | 70          | 57          | 72          | 64          | 55          | 70          |
| Ureter                       | 0           | 1           | 1           | 1           | 1           | 1           | 1           | 0           | 3           | 1           | 2           | 3           | 2           | 2           | 1           |
| Other urinary                | 0           | 1           | 1           | 0           | 0           | 0           | 0           | 0           | 0           | 2           | 1           | 0           | 0           | 0           | 1           |
| Eye                          | 30          | 9           | 15          | 39          | 27          | 15          | 22          | 30          | 17          | 24          | 26          | 17          | 16          | 20          | 18          |
| Brain,CNS                    | 81          | 84          | 112         | 88          | 116         | 128         | 129         | 133         | 162         | 145         | 149         | 151         | 143         | 161         | 167         |
| Thyroid                      | 94          | 110         | 141         | 135         | 158         | 134         | 162         | 161         | 192         | 210         | 186         | 189         | 169         | 215         | 214         |
| Other endocrine              | 7           | 10          | 14          | 15          | 15          | 14          | 14          | 20          | 12          | 15          | 23          | 14          | 18          | 38          | 27          |
| Hodgkin's disease            | 56          | 57          | 75          | 73          | 78          | 88          | 76          | 76          | 98          | 116         | 131         | 121         | 121         | 132         | 144         |
| Non-hodgkin's lymphoma       | 154         | 123         | 150         | 154         | 160         | 158         | 157         | 193         | 208         | 207         | 204         | 175         | 186         | 206         | 218         |
| Unknown or ill-defined       | 39          | 40          | 51          | 42          | 62          | 36          | 41          | 35          | 50          | 50          | 45          | 49          | 53          | 45          | 49          |
| <b>TOTAL</b>                 | <b>1744</b> | <b>1741</b> | <b>2034</b> | <b>2113</b> | <b>2303</b> | <b>2215</b> | <b>2245</b> | <b>2369</b> | <b>2620</b> | <b>2757</b> | <b>2746</b> | <b>2689</b> | <b>2653</b> | <b>2951</b> | <b>2935</b> |

**TABLE 3 (cont 'd)**  
**CASES SEEN AT KFSH&RC BY SITE AND YEAR**  
**1975-2016**

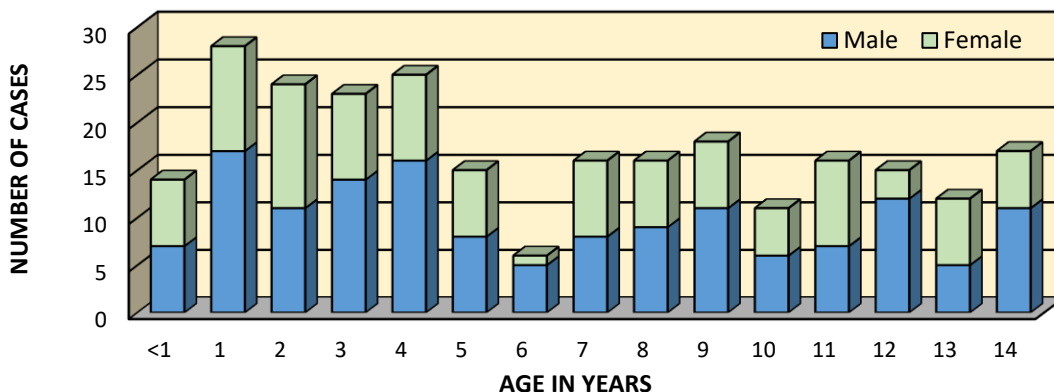
| Site Group                   | 2005        | 2006        | 2007        | 2008        | 2009        | 2010        | 2011        | 2012        | 2013        | 2014        | 2015        | 2016        | TOTAL        |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Oral Cavity                  | 106         | 83          | 109         | 94          | 92          | 61          | 90          | 76          | 82          | 89          | 90          | 96          | 3191         |
| Nasopharynx                  | 97          | 91          | 83          | 88          | 67          | 85          | 86          | 69          | 80          | 68          | 67          | 76          | 3362         |
| Esophagus                    | 41          | 36          | 30          | 31          | 31          | 28          | 31          | 30          | 21          | 30          | 25          | 26          | 1996         |
| Stomach                      | 57          | 59          | 48          | 49          | 64          | 59          | 56          | 60          | 62          | 76          | 56          | 43          | 2134         |
| Small intestine              | 6           | 4           | 5           | 5           | 7           | 4           | 6           | 8           | 11          | 20          | 6           | 9           | 202          |
| Colon                        | 80          | 95          | 88          | 83          | 96          | 84          | 103         | 101         | 119         | 131         | 155         | 139         | 2333         |
| Rectum & rectosigmoid        | 112         | 93          | 92          | 82          | 92          | 83          | 93          | 99          | 92          | 100         | 115         | 115         | 2458         |
| Anus,anal canal,anorectum    | 5           | 3           | 5           | 5           | 1           | 4           | 2           | 3           | 5           | 7           | 4           | 10          | 228          |
| Liver                        | 37          | 68          | 50          | 72          | 89          | 97          | 112         | 103         | 103         | 88          | 91          | 98          | 2994         |
| Gallbladder                  | 8           | 8           | 11          | 10          | 6           | 9           | 11          | 5           | 11          | 22          | 17          | 12          | 396          |
| Bile ducts                   | 8           | 6           | 11          | 7           | 12          | 13          | 8           | 10          | 9           | 12          | 17          | 16          | 270          |
| Pancreas                     | 27          | 41          | 26          | 32          | 40          | 36          | 31          | 46          | 61          | 61          | 50          | 50          | 1113         |
| Retroperitoneum , Peritoneum | 2           | 2           | 2           | 3           | 1           | 3           | 2           | 5           | 8           | 5           | 5           | 15          | 82           |
| Other digestive              | 2           | 1           | 1           | 4           | 1           | 2           | 0           | 0           | 0           | 0           | 3           | 1           | 67           |
| Nasal cavity,sinus,ear       | 13          | 11          | 12          | 8           | 8           | 5           | 4           | 7           | 4           | 4           | 11          | 9           | 358          |
| Larynx                       | 36          | 26          | 32          | 31          | 26          | 10          | 17          | 19          | 21          | 18          | 23          | 20          | 1032         |
| Lung/Bronchus                | 84          | 64          | 60          | 63          | 61          | 63          | 73          | 72          | 81          | 91          | 63          | 81          | 3056         |
| Pleura                       | 3           | 1           | 3           | 2           | 4           | 1           | 0           | 3           | 3           | 0           | 4           | 1           | 70           |
| Other respir & thoracic      | 3           | 3           | 1           | 4           | 7           | 7           | 6           | 5           | 5           | 2           | 3           | 6           | 145          |
| Leukemia                     | 205         | 225         | 205         | 227         | 219         | 233         | 205         | 288         | 259         | 242         | 226         | 234         | 7504         |
| Myeloma                      | 23          | 22          | 31          | 18          | 39          | 36          | 28          | 15          | 30          | 26          | 25          | 28          | 874          |
| Other hematopoietic          | 8           | 11          | 7           | 22          | 14          | 27          | 23          | 3           | 1           | 7           | 21          | 41          | 278          |
| Bone                         | 69          | 66          | 52          | 74          | 59          | 55          | 62          | 54          | 49          | 64          | 39          | 50          | 1993         |
| Soft tissue                  | 70          | 54          | 83          | 56          | 54          | 72          | 67          | 73          | 72          | 61          | 64          | 54          | 2296         |
| Melanoma of skin             | 5           | 8           | 5           | 8           | 6           | 7           | 5           | 7           | 4           | 4           | 8           | 6           | 287          |
| Kaposi sarcoma               | 8           | 9           | 7           | 7           | 7           | 10          | 5           | 3           | 5           | 12          | 10          | 3           | 246          |
| Other skin cancers           | 56          | 66          | 30          | 41          | 41          | 39          | 42          | 36          | 49          | 44          | 47          | 49          | 1901         |
| Breast                       | 378         | 326         | 349         | 357         | 338         | 375         | 411         | 373         | 431         | 483         | 397         | 406         | 10572        |
| Cervix uteri                 | 46          | 38          | 39          | 43          | 46          | 32          | 34          | 42          | 35          | 43          | 33          | 29          | 1656         |
| Corpus uteri                 | 48          | 59          | 68          | 64          | 74          | 56          | 73          | 72          | 63          | 93          | 91          | 90          | 1458         |
| Ovary                        | 48          | 55          | 44          | 54          | 49          | 69          | 51          | 47          | 49          | 50          | 51          | 56          | 1771         |
| Vagina                       | 1           | 0           | 0           | 0           | 2           | 0           | 2           | 1           | 0           | 1           | 5           | 2           | 67           |
| Vulva                        | 2           | 0           | 2           | 4           | 3           | 2           | 5           | 4           | 2           | 2           | 1           | 2           | 93           |
| Other female genital         | 12          | 15          | 8           | 6           | 10          | 3           | 4           | 2           | 4           | 4           | 5           | 2           | 342          |
| Prostate                     | 75          | 46          | 39          | 60          | 45          | 47          | 37          | 37          | 45          | 60          | 64          | 59          | 1485         |
| Testis                       | 17          | 11          | 15          | 28          | 26          | 27          | 23          | 14          | 27          | 33          | 37          | 26          | 721          |
| Penis                        | 2           | 0           | 0           | 0           | 1           | 0           | 0           | 2           | 0           | 0           | 0           | 1           | 43           |
| Other male genital           | 1           | 2           | 0           | 0           | 0           | 0           | 1           | 1           | 0           | 0           | 2           | 3           | 31           |
| Bladder                      | 88          | 66          | 69          | 65          | 66          | 82          | 66          | 61          | 78          | 75          | 75          | 93          | 2571         |
| Kidney and renal pelvis      | 61          | 67          | 67          | 85          | 86          | 85          | 86          | 82          | 78          | 90          | 92          | 98          | 2157         |
| Ureter                       | 2           | 0           | 1           | 0           | 2           | 2           | 2           | 0           | 0           | 0           | 1           | 1           | 38           |
| Other urinary                | 2           | 0           | 0           | 0           | 0           | 0           | 0           | 3           | 1           | 1           | 2           | 1           | 19           |
| Eye                          | 15          | 20          | 11          | 19          | 17          | 24          | 32          | 27          | 22          | 22          | 20          | 18          | 908          |
| Brain,CNS                    | 128         | 126         | 91          | 94          | 85          | 101         | 107         | 100         | 88          | 93          | 116         | 173         | 4020         |
| Thyroid                      | 216         | 205         | 229         | 254         | 225         | 212         | 245         | 247         | 245         | 280         | 291         | 291         | 6273         |
| Other endocrine              | 26          | 23          | 17          | 30          | 22          | 28          | 17          | 24          | 14          | 19          | 22          | 22          | 636          |
| Hodgkin's disease            | 130         | 101         | 118         | 118         | 122         | 104         | 96          | 117         | 107         | 142         | 113         | 121         | 3507         |
| Non-hodgkin's lymphoma       | 181         | 167         | 178         | 172         | 148         | 163         | 139         | 154         | 160         | 156         | 197         | 169         | 6323         |
| Unknown or ill-defined       | 32          | 28          | 19          | 25          | 31          | 31          | 24          | 22          | 39          | 30          | 27          | 49          | 1436         |
| <b>TOTAL</b>                 | <b>2682</b> | <b>2511</b> | <b>2453</b> | <b>2604</b> | <b>2542</b> | <b>2576</b> | <b>2623</b> | <b>2632</b> | <b>2735</b> | <b>2961</b> | <b>2887</b> | <b>3000</b> | <b>86993</b> |

The largest number of cases in 2016 was noted in the 5th and 6th decades of life in males and in the 4th and 5th in females. The mean age was 46, the median was 48 and the mode was at 52. Pediatric malignancies were most common among children at one year of age and at less than one year of age.

**FIGURE 8**  
**DISTRIBUTION OF ALL CASES BY AGE AT DIAGNOSIS**  
**2016 (TOTAL CASES = 3000)**



**FIGURE 9**  
**DISTRIBUTION OF PEDIATRIC CASES BY AGE AT DIAGNOSIS**  
**2016 (TOTAL CASES = 256)**



Of the 3,000 cases in 2016, 2,580 (86%) were analytic (defined as cases which were first diagnosed and/or received all or part of their first course of treatment at KFSH&RC). The remaining 420 cases (14%) were non-analytic (defined as cases diagnosed elsewhere and received all of their first course of treatment elsewhere). Out of the 2,580 analytic cases, pediatric cases totaled 256, with 147 males and 109 females.

See Table 4 for the distribution of cases by site, sex, class of case, and stage at diagnosis.

**(TABLE 4)**  
**CASES SEEN AT KFSH&RC BY SITE, SEX, CLASS OF CASE, AND SUMMARY STAGE**  
**2016**

| SITE GROUPS                  | Total       | Class       |            | Sex         |             | Stage     |            |            |            |            |             |
|------------------------------|-------------|-------------|------------|-------------|-------------|-----------|------------|------------|------------|------------|-------------|
|                              | Cases       | Analytic    | NonAn      | M           | F           | In Situ   | Local      | REGIONAL   | Distant    | Reg NOS    | UNSTAGEABLE |
| Oral Cavity                  | 95          | 80          | 15         | 54          | 41          | 0         | 16         | 50         | 5          | 1          | 8           |
| Nasopharynx                  | 77          | 63          | 14         | 57          | 20          | 0         | 8          | 44         | 10         | 0          | 1           |
| Esophagus                    | 26          | 21          | 5          | 19          | 7           | 0         | 4          | 13         | 4          | 0          | 0           |
| Stomach                      | 43          | 38          | 5          | 31          | 12          | 0         | 8          | 10         | 11         | 1          | 8           |
| Small Intestine              | 9           | 9           | 0          | 6           | 3           | 0         | 0          | 6          | 2          | 0          | 1           |
| Colon                        | 139         | 116         | 23         | 70          | 69          | 3         | 15         | 45         | 47         | 3          | 3           |
| Rectum & Rectosigmoid        | 115         | 97          | 18         | 62          | 53          | 2         | 14         | 41         | 34         | 3          | 3           |
| Anus, Canal, Anorectum       | 10          | 10          | 0          | 8           | 2           | 0         | 1          | 7          | 2          | 0          | 0           |
| Liver                        | 98          | 89          | 9          | 62          | 36          | 0         | 40         | 12         | 17         | 0          | 20          |
| Gallbladder                  | 12          | 9           | 3          | 6           | 6           | 1         | 1          | 4          | 3          | 0          | 0           |
| Bile Duct                    | 16          | 15          | 1          | 8           | 8           | 0         | 4          | 6          | 5          | 0          | 0           |
| Pancreas                     | 50          | 47          | 3          | 26          | 24          | 0         | 6          | 9          | 27         | 0          | 5           |
| Retroperitoneum              | 5           | 3           | 2          | 4           | 1           | 0         | 2          | 0          | 1          | 0          | 0           |
| Peritoneum, Omentum, Mesent  | 9           | 7           | 2          | 3           | 6           | 0         | 0          | 0          | 6          | 0          | 1           |
| Other Digestive Organs       | 1           | 0           | 1          | 1           | 0           | 0         | 0          | 0          | 0          | 0          | 0           |
| Nose, Nasal, Middle Ear      | 9           | 8           | 1          | 5           | 4           | 0         | 1          | 5          | 0          | 1          | 1           |
| Larynx                       | 20          | 17          | 3          | 18          | 2           | 1         | 10         | 5          | 0          | 0          | 1           |
| Lung and Bronchus            | 79          | 71          | 8          | 50          | 29          | 0         | 11         | 17         | 39         | 0          | 4           |
| Pleura                       | 1           | 1           | 0          | 1           | 0           | 0         | 1          | 0          | 0          | 0          | 0           |
| Other Respiratory & Thoracic | 7           | 6           | 1          | 6           | 1           | 0         | 0          | 3          | 2          | 0          | 1           |
| Bones & Joints               | 50          | 48          | 2          | 32          | 18          | 0         | 19         | 10         | 11         | 0          | 8           |
| Soft Tissue                  | 54          | 47          | 7          | 29          | 25          | 0         | 20         | 12         | 3          | 0          | 12          |
| Melanoma - Skin              | 6           | 6           | 0          | 2           | 4           | 0         | 2          | 1          | 3          | 0          | 0           |
| Other Skin Cancers           | 18          | 17          | 1          | 12          | 6           | 0         | 6          | 2          | 5          | 0          | 4           |
| Breast                       | 405         | 347         | 58         | 3           | 402         | 18        | 106        | 161        | 50         | 1          | 11          |
| Cervix Uteri                 | 29          | 28          | 1          | 0           | 29          | 8         | 4          | 11         | 4          | 0          | 1           |
| Corpus Uteri                 | 90          | 77          | 13         | 0           | 90          | 1         | 44         | 14         | 15         | 0          | 3           |
| Ovary                        | 55          | 43          | 12         | 0           | 55          | 0         | 9          | 3          | 22         | 1          | 8           |
| Vagina                       | 2           | 2           | 0          | 0           | 2           | 1         | 0          | 0          | 1          | 0          | 0           |
| Vulva                        | 2           | 2           | 0          | 0           | 2           | 0         | 1          | 1          | 0          | 0          | 0           |
| Other Female Genital         | 2           | 2           | 0          | 0           | 2           | 0         | 0          | 0          | 1          | 0          | 1           |
| Prostate                     | 59          | 51          | 8          | 59          | 0           | 1         | 18         | 12         | 17         | 1          | 2           |
| Testis                       | 26          | 20          | 6          | 26          | 0           | 0         | 12         | 4          | 3          | 0          | 1           |
| Penis                        | 1           | 1           | 0          | 1           | 0           | 0         | 0          | 1          | 0          | 0          | 0           |
| Other Male Genital           | 3           | 3           | 0          | 3           | 0           | 0         | 1          | 1          | 1          | 0          | 0           |
| Bladder                      | 93          | 75          | 18         | 78          | 15          | 24        | 32         | 11         | 4          | 0          | 4           |
| Kidney, Renal Pelvis         | 98          | 87          | 11         | 64          | 34          | 0         | 48         | 22         | 11         | 0          | 6           |
| Ureter                       | 1           | 1           | 0          | 1           | 0           | 0         | 0          | 0          | 1          | 0          | 0           |
| Other Urinary Organs         | 1           | 1           | 0          | 1           | 0           | 0         | 1          | 0          | 0          | 0          | 0           |
| Eye & Orbit                  | 18          | 16          | 2          | 11          | 7           | 0         | 4          | 6          | 0          | 1          | 5           |
| Brain ,CNS                   | 173         | 155         | 18         | 85          | 88          | 3         | 65         | 3          | 1          | 57         | 26          |
| Thyroid                      | 291         | 253         | 38         | 72          | 219         | 4         | 116        | 87         | 8          | 1          | 37          |
| Other Endocrine              | 22          | 20          | 2          | 13          | 9           | 1         | 4          | 4          | 5          | 0          | 6           |
| Hodgkin Lymphoma             | 121         | 93          | 28         | 66          | 55          | 0         | 18         | 1          | 43         | 23         | 8           |
| Non-Hodgkin Lymphoma         | 175         | 149         | 26         | 103         | 72          | 0         | 27         | 9          | 72         | 20         | 21          |
| Multiple Myeloma             | 28          | 24          | 4          | 18          | 10          | 0         | 2          | 0          | 21         | 0          | 1           |
| Leukemia                     | 223         | 191         | 32         | 122         | 101         | 0         | 0          | 1          | 188        | 0          | 2           |
| Mesothelioma                 | 3           | 1           | 2          | 2           | 1           | 0         | 0          | 0          | 1          | 0          | 0           |
| Kaposi Sarcoma               | 3           | 3           | 0          | 1           | 2           | 0         | 1          | 1          | 0          | 0          | 1           |
| Miscellaneous                | 96          | 82          | 14         | 50          | 46          | 0         | 7          | 4          | 56         | 0          | 15          |
| Unknown or ill-Defined       | 31          | 28          | 3          | 15          | 16          | 2         | 11         | 9          | 2          | 0          | 4           |
| <b>Total</b>                 | <b>3000</b> | <b>2580</b> | <b>420</b> | <b>1366</b> | <b>1634</b> | <b>70</b> | <b>720</b> | <b>668</b> | <b>764</b> | <b>114</b> | <b>244</b>  |



**(TABLE 5)**  
**ANALYTIC CASES SEEN AT KFSH&RC BY SITE AND AGE**  
**2016**

| <b>Site Group</b>          | <b>0-4</b> | <b>5-9</b> | <b>10-14</b> | <b>15-19</b> | <b>20-24</b> | <b>25-29</b> | <b>30-34</b> | <b>35-39</b> | <b>40-44</b> | <b>45-49</b> | <b>50-54</b> | <b>55-59</b> | <b>60-64</b> | <b>65-69</b> | <b>70-74</b> | <b>75-79</b> | <b>80-84</b> | <b>85+</b> | <b>TOTAL</b> |
|----------------------------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|--------------|
| Oral Cavity                | 0          | 0          | 1            | 1            | 4            | 2            | 6            | 2            | 6            | 5            | 10           | 10           | 8            | 10           | 12           | 9            | 5            | 4          | 95           |
| Nasopharynx                | 0          | 0          | 2            | 0            | 2            | 2            | 9            | 6            | 6            | 14           | 11           | 10           | 8            | 0            | 4            | 2            | 0            | 1          | 77           |
| Esophagus                  | 0          | 0          | 0            | 0            | 0            | 1            | 1            | 0            | 1            | 1            | 5            | 2            | 4            | 1            | 5            | 1            | 1            | 3          | 26           |
| Stomach                    | 0          | 0          | 0            | 1            | 1            | 2            | 1            | 2            | 3            | 2            | 4            | 5            | 8            | 3            | 3            | 5            | 3            | 0          | 43           |
| Small intestine            | 0          | 0          | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 1            | 2            | 0            | 1            | 2            | 1            | 2            | 0            | 0          | 9            |
| Colon                      | 0          | 0          | 0            | 1            | 0            | 3            | 1            | 10           | 6            | 20           | 24           | 18           | 23           | 10           | 7            | 10           | 5            | 1          | 139          |
| Rectum & rectosigmoid      | 0          | 0          | 0            | 0            | 0            | 2            | 5            | 8            | 9            | 14           | 14           | 14           | 13           | 14           | 8            | 9            | 3            | 2          | 115          |
| Anus,anal canal,anorectum  | 0          | 0          | 0            | 0            | 0            | 1            | 0            | 0            | 2            | 1            | 1            | 0            | 1            | 2            | 1            | 1            | 0            | 0          | 10           |
| Liver                      | 1          | 2          | 0            | 1            | 1            | 1            | 1            | 2            | 6            | 2            | 9            | 18           | 17           | 10           | 13           | 5            | 8            | 1          | 98           |
| Gallbladder                | 0          | 0          | 0            | 1            | 0            | 0            | 0            | 0            | 1            | 2            | 2            | 1            | 1            | 2            | 2            | 0            | 0            | 0          | 12           |
| Bile ducts                 | 0          | 0          | 0            | 0            | 1            | 0            | 0            | 1            | 1            | 1            | 1            | 3            | 3            | 0            | 3            | 1            | 1            | 0          | 16           |
| Pancreas                   | 0          | 0          | 0            | 0            | 0            | 2            | 1            | 1            | 5            | 4            | 5            | 5            | 10           | 5            | 8            | 2            | 2            | 0          | 50           |
| Retroperitoneum,Peritoneum | 0          | 0          | 0            | 0            | 1            | 1            | 1            | 0            | 0            | 2            | 0            | 4            | 2            | 1            | 1            | 1            | 0            | 0          | 14           |
| Other digestive            | 0          | 0          | 0            | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0          | 1            |
| Nasal cavity,sinus,ear     | 1          | 0          | 0            | 2            | 0            | 0            | 0            | 0            | 3            | 0            | 0            | 0            | 1            | 0            | 2            | 0            | 0            | 0          | 9            |
| Larynx                     | 0          | 0          | 0            | 0            | 0            | 1            | 0            | 0            | 1            | 2            | 2            | 7            | 1            | 2            | 2            | 0            | 1            | 1          | 20           |
| Lung , Bronchus            | 1          | 0          | 0            | 0            | 0            | 6            | 3            | 5            | 4            | 2            | 13           | 10           | 8            | 12           | 11           | 4            | 2            | 0          | 81           |
| Pleura                     | 0          | 0          | 0            | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0          | 1            |
| Other respir & thoracic    | 0          | 0          | 0            | 1            | 1            | 2            | 0            | 0            | 0            | 0            | 3            | 0            | 0            | 0            | 0            | 0            | 0            | 0          | 7            |
| Leukemia                   | 40         | 18         | 20           | 17           | 10           | 10           | 20           | 13           | 9            | 24           | 12           | 8            | 6            | 9            | 2            | 2            | 3            | 0          | 223          |
| Myeloma                    | 0          | 0          | 0            | 0            | 1            | 0            | 1            | 2            | 2            | 2            | 3            | 7            | 4            | 2            | 1            | 1            | 2            | 0          | 28           |
| Other hematopoietic        | 3          | 1          | 5            | 3            | 1            | 5            | 3            | 4            | 4            | 2            | 2            | 4            | 2            | 2            | 0            | 0            | 0            | 0          | 41           |
| Bone                       | 2          | 9          | 8            | 6            | 7            | 7            | 2            | 3            | 0            | 1            | 1            | 0            | 1            | 0            | 2            | 1            | 0            | 0          | 50           |
| Soft tissue                | 2          | 1          | 6            | 4            | 4            | 6            | 6            | 6            | 4            | 4            | 3            | 1            | 3            | 2            | 2            | 0            | 0            | 0          | 54           |
| Melanoma of skin           | 0          | 0          | 0            | 1            | 0            | 0            | 0            | 2            | 0            | 0            | 0            | 0            | 0            | 1            | 1            | 1            | 0            | 0          | 6            |
| Kaposi sarcoma             | 0          | 0          | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 1            | 0            | 0            | 1            | 0            | 2            | 0            | 0            | 0          | 4            |
| Other skin ca              | 1          | 2          | 0            | 2            | 0            | 5            | 7            | 2            | 3            | 2            | 2            | 1            | 2            | 4            | 6            | 5            | 3            | 2          | 49           |
| Breast                     | 0          | 0          | 0            | 3            | 2            | 10           | 21           | 34           | 67           | 75           | 79           | 42           | 29           | 16           | 12           | 6            | 5            | 4          | 405          |
| Cervix Uteri               | 0          | 0          | 0            | 0            | 2            | 0            | 0            | 5            | 4            | 1            | 7            | 2            | 1            | 3            | 1            | 2            | 1            | 0          | 29           |
| Corpus uteri               | 0          | 0          | 0            | 0            | 0            | 3            | 1            | 2            | 10           | 7            | 6            | 16           | 22           | 8            | 6            | 5            | 2            | 2          | 90           |
| Uterus nos                 | 0          | 0          | 0            | 0            | 0            | 0            | 1            | 2            | 1            | 1            | 2            | 1            | 1            | 1            | 0            | 0            | 0            | 0          | 10           |
| Ovary                      | 0          | 0          | 1            | 5            | 3            | 5            | 6            | 1            | 5            | 7            | 3            | 8            | 2            | 5            | 3            | 1            | 1            | 0          | 56           |
| Vagina                     | 0          | 0          | 0            | 0            | 0            | 0            | 0            | 1            | 0            | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0          | 2            |
| Vulva                      | 0          | 0          | 0            | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 1            | 0            | 0          | 2            |
| Other female genital       | 0          | 0          | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 2            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0          | 2            |
| Prostate                   | 0          | 0          | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 2            | 3            | 7            | 13           | 10           | 10           | 9            | 3            | 2          | 59           |
| Testis                     | 1          | 0          | 0            | 6            | 3            | 5            | 8            | 0            | 1            | 1            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0          | 26           |
| Penis                      | 0          | 0          | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0          | 1            |
| Other male genital         | 0          | 0          | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 1            | 1            | 0            | 0            | 0            | 0          | 3            |
| Bladder                    | 3          | 0          | 0            | 0            | 0            | 0            | 2            | 2            | 3            | 15           | 9            | 11           | 12           | 12           | 8            | 11           | 3            | 2          | 93           |
| Kidney and renal pelvis    | 9          | 3          | 1            | 0            | 0            | 1            | 8            | 2            | 8            | 9            | 12           | 12           | 15           | 9            | 4            | 3            | 1            | 1          | 98           |
| Ureter                     | 0          | 0          | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 1            | 0          | 1            |
| Other urinary              | 0          | 0          | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 1            | 0            | 0            | 0            | 0          | 1            |
| Eye                        | 15         | 1          | 0            | 0            | 1            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 0            | 1            | 0            | 0            | 0            | 0          | 18           |
| Brain,CNS                  | 16         | 14         | 7            | 11           | 10           | 13           | 15           | 12           | 16           | 16           | 7            | 10           | 7            | 7            | 8            | 4            | 0            | 0          | 173          |
| Thyroid                    | 0          | 3          | 3            | 6            | 19           | 29           | 38           | 34           | 28           | 35           | 28           | 27           | 17           | 9            | 6            | 7            | 2            | 0          | 291          |
| Other endocrine            | 6          | 1          | 1            | 0            | 2            | 0            | 0            | 2            | 1            | 1            | 3            | 1            | 2            | 1            | 0            | 1            | 0            | 0          | 22           |
| Hodgkin's disease          | 2          | 7          | 10           | 16           | 21           | 20           | 18           | 9            | 3            | 4            | 2            | 3            | 1            | 1            | 1            | 1            | 2            | 0          | 121          |
| Non-hodgkin's lymphoma     | 4          | 5          | 7            | 7            | 15           | 12           | 10           | 12           | 13           | 11           | 14           | 23           | 9            | 11           | 7            | 10           | 2            | 3          | 175          |
| Unknown or ill-defined     | 5          | 4          | 0            | 6            | 5            | 1            | 3            | 1            | 1            | 4            | 1            | 4            | 5            | 4            | 3            | 1            | 1            | 0          | 44           |
| <b>TOTAL</b>               | <b>112</b> | <b>71</b>  | <b>72</b>    | <b>102</b>   | <b>120</b>   | <b>158</b>   | <b>199</b>   | <b>188</b>   | <b>237</b>   | <b>300</b>   | <b>308</b>   | <b>295</b>   | <b>265</b>   | <b>194</b>   | <b>168</b>   | <b>124</b>   | <b>63</b>    | <b>29</b>  | <b>3000</b>  |

**(TABLE 6)**  
**ANALYTIC MALE CASES SEEN AT KFSH&RC BY SITE AND AGE**  
**2016**

| Site Group                | 0-4       | 5-9       | 10-14     | 15-19     | 20-24     | 25-29     | 30-34     | 35-39     | 40-44     | 45-49      | 50-54      | 55-59      | 60-64      | 65-69      | 70-74     | 75-79     | 80-84     | 85+       | TOTAL       |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-------------|
| Oral cavity               | 0         | 0         | 1         | 0         | 2         | 1         | 4         | 2         | 2         | 1          | 7          | 6          | 3          | 5          | 7         | 6         | 4         | 2         | 53          |
| Nasopharynx               | 0         | 0         | 3         | 0         | 1         | 1         | 7         | 4         | 5         | 12         | 8          | 7          | 6          | 0          | 2         | 1         | 0         | 1         | 58          |
| Esophagus                 | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 1         | 1          | 4          | 2          | 2          | 1          | 4         | 1         | 1         | 2         | 19          |
| Stomach                   | 0         | 0         | 0         | 1         | 1         | 1         | 1         | 1         | 2         | 2          | 2          | 4          | 4          | 3          | 3         | 3         | 3         | 0         | 31          |
| Small intestine           | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 1          | 1          | 0          | 1          | 1          | 0         | 2         | 0         | 0         | 6           |
| Colon                     | 0         | 0         | 0         | 0         | 0         | 2         | 0         | 3         | 4         | 9          | 9          | 14         | 11         | 6          | 2         | 5         | 4         | 1         | 70          |
| Rectum & rectosigmoid     | 0         | 0         | 0         | 0         | 0         | 0         | 3         | 4         | 7         | 7          | 8          | 7          | 7          | 6          | 6         | 7         | 0         | 0         | 62          |
| Anus,anal canal,anorectum | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 2         | 0          | 1          | 0          | 1          | 1          | 1         | 1         | 0         | 0         | 8           |
| Liver                     | 1         | 0         | 0         | 0         | 0         | 1         | 1         | 1         | 3         | 0          | 9          | 8          | 8          | 8          | 8         | 4         | 8         | 2         | 62          |
| Gallbladder               | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 1         | 0          | 0          | 0          | 0          | 2          | 2         | 0         | 0         | 0         | 6           |
| Bile ducts                | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 1         | 1         | 1          | 1          | 1          | 1          | 0          | 1         | 0         | 1         | 0         | 8           |
| Pancreas                  | 0         | 0         | 0         | 0         | 0         | 2         | 1         | 0         | 1         | 3          | 4          | 1          | 5          | 2          | 6         | 1         | 0         | 0         | 26          |
| Retroperitoneum/peritoneu | 0         | 0         | 0         | 0         | 1         | 0         | 1         | 0         | 0         | 2          | 0          | 2          | 1          | 0          | 0         | 1         | 0         | 0         | 8           |
| Other digestive           | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 0         | 0         | 0         | 1           |
| Nasal cavity,sinus,ear    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 3         | 0          | 0          | 0          | 0          | 0          | 2         | 0         | 0         | 0         | 5           |
| Larynx                    | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 1         | 2          | 1          | 6          | 1          | 2          | 2         | 0         | 1         | 1         | 18          |
| Lung / bronchus           | 0         | 0         | 0         | 0         | 0         | 3         | 2         | 2         | 1         | 1          | 8          | 7          | 4          | 8          | 9         | 4         | 1         | 0         | 50          |
| Pleura                    | 0         | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 0         | 0         | 0         | 1           |
| Other respir & thoracic   | 0         | 0         | 0         | 0         | 2         | 2         | 0         | 0         | 0         | 0          | 2          | 0          | 0          | 0          | 0         | 0         | 0         | 0         | 6           |
| leukemia                  | 21        | 10        | 9         | 13        | 4         | 7         | 12        | 9         | 4         | 13         | 5          | 4          | 4          | 2          | 2         | 1         | 2         | 0         | 122         |
| Myeloma                   | 0         | 0         | 0         | 0         | 1         | 0         | 1         | 0         | 2         | 2          | 1          | 4          | 3          | 2          | 0         | 1         | 1         | 0         | 18          |
| Other hematopoietic       | 2         | 0         | 2         | 1         | 0         | 3         | 2         | 2         | 3         | 1          | 1          | 1          | 1          | 0          | 0         | 0         | 0         | 0         | 19          |
| Bone                      | 1         | 5         | 4         | 4         | 5         | 6         | 1         | 1         | 0         | 1          | 1          | 0          | 0          | 0          | 2         | 1         | 0         | 0         | 32          |
| Soft tissue               | 0         | 0         | 4         | 2         | 3         | 3         | 3         | 3         | 3         | 1          | 1          | 1          | 2          | 2          | 1         | 0         | 0         | 0         | 29          |
| Melanoma of skin          | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 0          | 0          | 0          | 0          | 0          | 1         | 0         | 0         | 0         | 2           |
| Kaposi sarcoma            | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 1          | 0          | 0         | 0         | 0         | 0         | 1           |
| Other skin ca             | 1         | 1         | 0         | 0         | 0         | 4         | 2         | 1         | 2         | 1          | 0          | 1          | 1          | 2          | 3         | 4         | 3         | 1         | 27          |
| Breast                    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 1          | 1          | 1          | 0          | 0          | 0         | 0         | 0         | 0         | 4           |
| Prostate                  | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 3          | 3          | 6          | 13         | 10         | 10        | 9         | 3         | 2         | 59          |
| Testis                    | 1         | 0         | 0         | 6         | 3         | 5         | 8         | 0         | 1         | 1          | 1          | 0          | 0          | 0          | 0         | 0         | 0         | 0         | 26          |
| Penis                     | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 1          | 0          | 0          | 0          | 0         | 0         | 0         | 0         | 1           |
| Other male genital        | 0         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 1          | 1          | 0         | 0         | 0         | 0         | 3           |
| Bladder                   | 3         | 0         | 0         | 0         | 0         | 0         | 1         | 2         | 3         | 10         | 6          | 9          | 12         | 12         | 6         | 9         | 3         | 1         | 77          |
| Kidney and renal pelvis   | 6         | 1         | 1         | 0         | 0         | 0         | 4         | 2         | 6         | 7          | 7          | 6          | 11         | 8          | 2         | 1         | 1         | 1         | 64          |
| Ureter                    | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 0         | 1         | 0         | 1           |
| Other urinary             | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 1          | 0         | 0         | 0         | 0         | 1           |
| Eye                       | 8         | 1         | 0         | 0         | 1         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 1          | 0         | 0         | 0         | 0         | 11          |
| Brain,CNS                 | 11        | 10        | 5         | 5         | 5         | 6         | 7         | 4         | 6         | 6          | 4          | 5          | 3          | 2          | 4         | 2         | 0         | 0         | 85          |
| Thyroid                   | 0         | 1         | 1         | 1         | 3         | 5         | 9         | 10        | 3         | 9          | 8          | 6          | 5          | 3          | 2         | 4         | 2         | 0         | 72          |
| Other endocrine           | 3         | 1         | 1         | 0         | 1         | 0         | 0         | 1         | 1         | 0          | 2          | 1          | 1          | 1          | 0         | 0         | 0         | 0         | 13          |
| Hodgkin's disease         | 1         | 6         | 6         | 8         | 11        | 8         | 13        | 2         | 1         | 3          | 2          | 2          | 1          | 1          | 0         | 0         | 1         | 0         | 66          |
| Non-hodgkin's lymphoma    | 2         | 3         | 6         | 5         | 8         | 6         | 7         | 6         | 5         | 7          | 8          | 13         | 3          | 5          | 7         | 7         | 2         | 3         | 103         |
| Unknown or ill-defined    | 3         | 2         | 0         | 4         | 3         | 1         | 2         | 1         | 0         | 3          | 0          | 2          | 4          | 3          | 3         | 0         | 1         | 0         | 32          |
| <b>TOTAL</b>              | <b>64</b> | <b>41</b> | <b>43</b> | <b>52</b> | <b>57</b> | <b>69</b> | <b>92</b> | <b>64</b> | <b>74</b> | <b>111</b> | <b>117</b> | <b>127</b> | <b>121</b> | <b>101</b> | <b>98</b> | <b>75</b> | <b>43</b> | <b>17</b> | <b>1366</b> |

**(TABLE 7)**  
**ANALYTIC FEMALE CASES SEEN AT KFSH&RC BY SITE AND AGE**  
**2016**

| Site Group                 | 0-4       | 5-9       | 10-14     | 15-19     | 20-24     | 25-29     | 30-34      | 35-39      | 40-44      | 45-49      | 50-54      | 55-59      | 60-64      | 65-69     | 70-74     | 75-79     | 80-84     | 85+       | TOTAL       |
|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-------------|
| Oral Cavity                | 0         | 0         | 0         | 1         | 2         | 1         | 2          | 0          | 3          | 4          | 3          | 4          | 5          | 5         | 5         | 3         | 1         | 2         | 41          |
| Nasopharynx                | 0         | 0         | 0         | 0         | 1         | 1         | 1          | 1          | 1          | 1          | 3          | 2          | 2          | 0         | 2         | 0         | 0         | 0         | 15          |
| Hypopharynx                | 0         | 0         | 0         | 0         | 0         | 0         | 1          | 1          | 0          | 1          | 0          | 1          | 0          | 0         | 0         | 1         | 0         | 0         | 5           |
| Esophagus                  | 0         | 0         | 0         | 0         | 0         | 1         | 1          | 0          | 0          | 0          | 1          | 0          | 2          | 0         | 1         | 0         | 0         | 1         | 7           |
| Stomach                    | 0         | 0         | 0         | 0         | 0         | 1         | 0          | 1          | 1          | 0          | 2          | 1          | 4          | 0         | 0         | 2         | 0         | 0         | 12          |
| Small intestine            | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 1          | 0          | 0          | 1         | 1         | 0         | 0         | 0         | 3           |
| Colon                      | 0         | 0         | 0         | 1         | 0         | 1         | 1          | 7          | 2          | 11         | 15         | 4          | 12         | 4         | 5         | 5         | 1         | 0         | 69          |
| Rectum & rectosigmoid      | 0         | 0         | 0         | 0         | 0         | 2         | 2          | 4          | 2          | 7          | 6          | 7          | 6          | 8         | 2         | 2         | 3         | 2         | 53          |
| Anus,anal canal,anorectum  | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 1          | 0          | 0          | 0          | 1         | 0         | 0         | 0         | 0         | 2           |
| Liver                      | 0         | 2         | 0         | 1         | 1         | 0         | 0          | 1          | 3          | 2          | 0          | 8          | 9          | 2         | 5         | 1         | 0         | 1         | 36          |
| Gallbladder                | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 2          | 2          | 1          | 1          | 0         | 0         | 0         | 0         | 0         | 6           |
| Bile ducts                 | 0         | 0         | 0         | 0         | 1         | 0         | 0          | 0          | 0          | 0          | 0          | 2          | 2          | 0         | 2         | 1         | 0         | 0         | 8           |
| Pancreas                   | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 1          | 4          | 1          | 1          | 4          | 4          | 3         | 2         | 1         | 2         | 1         | 24          |
| Retroperitoneum,Peritoneum | 0         | 0         | 0         | 0         | 0         | 1         | 0          | 0          | 0          | 0          | 0          | 2          | 1          | 1         | 1         | 0         | 1         | 0         | 7           |
| Nasal cavity,sinus,ear     | 1         | 0         | 0         | 2         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0          | 1          | 0         | 0         | 0         | 0         | 0         | 4           |
| Larynx                     | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 1          | 1          | 0          | 0         | 0         | 0         | 0         | 0         | 2           |
| Lung/bronchus              | 1         | 0         | 0         | 0         | 0         | 2         | 1          | 2          | 3          | 1          | 5          | 3          | 4          | 4         | 2         | 0         | 1         | 0         | 29          |
| Other respir & thoracic    | 0         | 0         | 0         | 1         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | 0         | 0         | 0         | 0         | 1           |
| Leukemia                   | 20        | 8         | 11        | 3         | 4         | 5         | 14         | 4          | 5          | 11         | 7          | 4          | 2          | 7         | 0         | 1         | 1         | 0         | 107         |
| Myeloma                    | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 2          | 0          | 0          | 2          | 3          | 1          | 0         | 1         | 0         | 1         | 0         | 10          |
| Other hematopoietic        | 1         | 1         | 3         | 2         | 1         | 2         | 1          | 2          | 1          | 1          | 1          | 3          | 1          | 2         | 0         | 0         | 0         | 0         | 22          |
| Bone                       | 1         | 4         | 4         | 2         | 2         | 1         | 1          | 2          | 0          | 0          | 0          | 0          | 1          | 0         | 0         | 0         | 0         | 0         | 18          |
| Soft tissue                | 2         | 1         | 2         | 2         | 1         | 3         | 3          | 3          | 1          | 3          | 2          | 0          | 1          | 0         | 1         | 0         | 0         | 0         | 25          |
| Melanoma of skin           | 0         | 0         | 0         | 1         | 0         | 0         | 0          | 1          | 0          | 0          | 0          | 0          | 0          | 1         | 0         | 1         | 0         | 0         | 4           |
| Kaposi sarcoma             | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | 2         | 0         | 0         | 0         | 2           |
| Other skin ca              | 0         | 1         | 0         | 2         | 0         | 1         | 5          | 1          | 1          | 1          | 2          | 0          | 1          | 2         | 3         | 1         | 0         | 0         | 21          |
| Breast                     | 0         | 0         | 0         | 3         | 2         | 10        | 21         | 33         | 67         | 74         | 78         | 41         | 30         | 16        | 13        | 6         | 5         | 4         | 403         |
| Cervix Uteri               | 0         | 0         | 0         | 0         | 2         | 0         | 0          | 5          | 4          | 1          | 7          | 2          | 1          | 3         | 1         | 2         | 1         | 0         | 29          |
| Corpus uteri               | 0         | 0         | 0         | 0         | 0         | 3         | 1          | 2          | 5          | 7          | 6          | 16         | 17         | 8         | 6         | 5         | 2         | 2         | 80          |
| Uterus nos                 | 0         | 0         | 0         | 0         | 0         | 0         | 1          | 2          | 1          | 1          | 2          | 1          | 1          | 1         | 0         | 0         | 0         | 0         | 10          |
| Ovary                      | 0         | 0         | 1         | 5         | 3         | 5         | 6          | 1          | 5          | 7          | 3          | 8          | 2          | 5         | 3         | 1         | 1         | 0         | 56          |
| Vagina                     | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 1          | 0          | 0          | 1          | 0          | 0          | 0         | 0         | 0         | 0         | 0         | 2           |
| Vulva                      | 0         | 0         | 0         | 0         | 1         | 0         | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | 0         | 1         | 0         | 0         | 2           |
| Other female genital       | 0         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 2          | 0          | 0          | 0          | 0         | 0         | 0         | 0         | 0         | 2           |
| Bladder                    | 0         | 0         | 0         | 0         | 0         | 0         | 1          | 0          | 0          | 4          | 3          | 2          | 0          | 0         | 2         | 2         | 0         | 1         | 15          |
| Kidney and renal pelvis    | 3         | 2         | 0         | 0         | 0         | 1         | 4          | 0          | 2          | 2          | 5          | 6          | 4          | 1         | 2         | 2         | 0         | 0         | 34          |
| Eye                        | 7         | 0         | 0         | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0          | 0          | 0         | 0         | 0         | 0         | 0         | 7           |
| Brain,CNS                  | 5         | 4         | 2         | 6         | 5         | 7         | 8          | 8          | 10         | 10         | 3          | 5          | 4          | 5         | 4         | 2         | 0         | 0         | 88          |
| Thyroid                    | 0         | 2         | 2         | 5         | 16        | 24        | 29         | 24         | 25         | 26         | 20         | 21         | 12         | 6         | 4         | 3         | 0         | 0         | 219         |
| Other endocrine            | 3         | 0         | 0         | 0         | 1         | 0         | 0          | 1          | 0          | 1          | 1          | 0          | 1          | 0         | 0         | 1         | 0         | 0         | 9           |
| Hodgkin's disease          | 1         | 1         | 4         | 8         | 10        | 12        | 5          | 7          | 2          | 1          | 0          | 1          | 0          | 0         | 1         | 1         | 1         | 0         | 55          |
| Non-hodgkin's lymphoma     | 2         | 2         | 1         | 1         | 6         | 5         | 2          | 6          | 8          | 4          | 6          | 10         | 6          | 6         | 1         | 3         | 1         | 0         | 70          |
| Unknown or ill-defined     | 2         | 2         | 0         | 2         | 2         | 0         | 1          | 0          | 1          | 1          | 1          | 2          | 3          | 1         | 1         | 1         | 0         | 0         | 20          |
| <b>TOTAL</b>               | <b>49</b> | <b>30</b> | <b>30</b> | <b>48</b> | <b>61</b> | <b>89</b> | <b>112</b> | <b>123</b> | <b>157</b> | <b>188</b> | <b>190</b> | <b>165</b> | <b>141</b> | <b>93</b> | <b>73</b> | <b>49</b> | <b>22</b> | <b>14</b> | <b>1634</b> |

## TRENDS IN RELATIVE FREQUENCY OF CANCER AT KFSH&RC (cont'd)

The crude relative frequencies of primary cancers seen at KFSH&RC are very different from the Western world. Common tumors of the West (lung, colon, and prostate) are much less frequent here while leukemia, lymphoma and thyroid cancers are more common. The following 2016 analytic cases, which show a quite similar pattern with the data from the Saudi Cancer Registry (SCR), exhibit significant differences in trends from those of the U.S.A when compared to the data published in Cancer Facts & Figures - 2016, by the American Cancer Society:

**TABLE 8**  
**COMPARATIVE DATA - KFSH&RC vs SCR vs USA**  
**(% to TOTAL CANCER CASES)**

| SITE                   | KFSH&RC 2016<br>Analytics | SCR 2016<br>Saudis | USA 2016<br>Estimates |
|------------------------|---------------------------|--------------------|-----------------------|
| BREAST                 | 15.2%                     | 17.3%              | 14.7%                 |
| THYROID                | 10.9%                     | 8.2%               | 3.8%                  |
| LEUKEMIA               | 8.8%                      | 4.6%               | 3.5%                  |
| COLON, RECTUM          | 7.5%                      | 12.6%              | 7.9%                  |
| NON-HODGKIN'S LYMPHOMA | 6.3%                      | 6.4%               | 4.3%                  |
| LIVER                  | 3.7%                      | 3.2%               | 2.3%                  |
| HODGKIN'S LYMPHOMA     | 4.5%                      | 3.8%               | 0.5%                  |
| ORAL CAVITY            | 1.4%                      | 2.0%               | 2.8%                  |
| BRAIN                  | 6.0%                      | 3.7%               | 1.4%                  |
| KIDNEY & RENAL PELVIS  | 3.7%                      | 3.4%               | 3.7%                  |
| LUNG/BRONCHUS          | 2.9%                      | 3.4%               | 13.3%                 |

**Breast** - The most common malignancy seen at KFSH&RC is breast cancer, comprising 15.2% of all cases, as compared to 14.7% of all neoplasms diagnosed in the U.S.A. It affects mostly women under the age of 50, while in the U.S.A., those more than 50 years of age are most frequently affected. As in the Western countries, it is the number one cancer among women.

**Thyroid** – 10.9% of all malignancies in KFSH&RC are thyroid cancer, much higher than in the West. It represents 13.4% of female malignant neoplasms, second to breast cancer. The male/female ratio is 0.3:1. Thyroid cancer accounts for only 3.8% of all cases in the U.S.A., and 5.8% of female malignancies.

**Leukemia** - The most striking feature is the high crude relative frequency of leukemia cases, constituting 8.8% of all cases seen at KFSH&RC, as compared to 3.5% of all neoplasms diagnosed in the U.S.A. The male/female ratio is 1.1:1. It is the most common malignancy seen in males and third most common malignancy in females. It is also the most common malignancy among pediatric cases.

**Colon, Rectum** - Less common than in the West, this disease represents only 7.5% of all cancer cases. In the U.S.A., it constitutes 7.9% of newly diagnosed cancer cases. Dietary factors, particularly lower animal fat intake, may play a role.

**Non-Hodgkin's Lymphoma** - Cases of non-Hodgkin's lymphoma account for 6.3% of all cases. In the U.S.A., NHL accounts for only 4.3% of all cancers.

**Liver** – The relative frequency of Liver cases at KFSH&RC is 3.7% as compared to the West recorded as 2.3%.

**Hodgkin’s Lymphoma** - The incidence of Hodgkin’s lymphoma is comparatively more frequent at KFSH&RC than in Western countries. In the U.S.A., it constitutes 0.5% of all cancers, compared to 4.5% at KFSH&RC.

**Oral cavity** – A crude relative frequency rate was also noted in cancer of Oral Cavity. In Western countries, oral cancer accounts 2.8% of all cancers, whereas at KFSH&RC represents 1.4% of the cases.

**Brain, CNS** - Primary malignant neoplasms of the brain and CNS account for 6% of all malignancies. This is much higher than in the U.S.A., with only 1.4% of all cases.

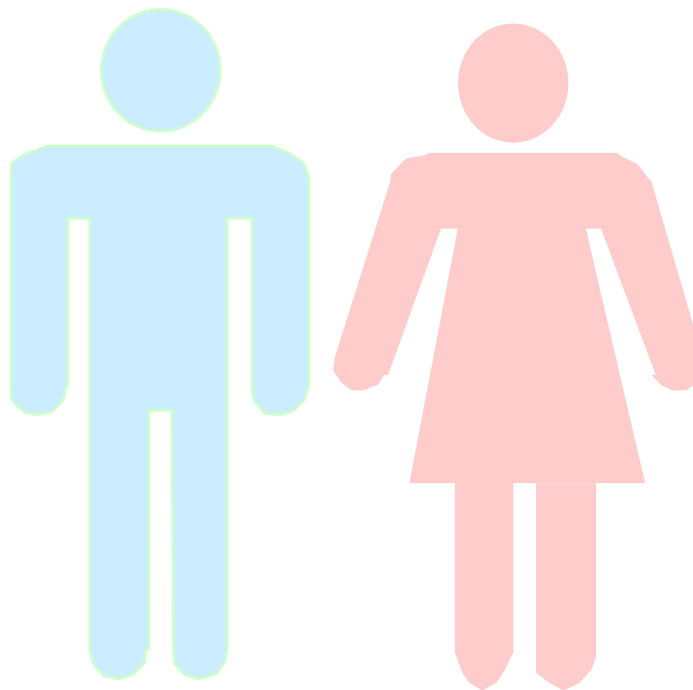
**Kidney & renal pelvis** – frequency of Kidney & Renal Pelvis malignancies in Western Countries is as same as in KFSH&RC, which is 3.7%.

**Lung** - Frequency of lung cancer at KFSH&RC is much lower than in Western countries, most likely reflecting the significantly lower levels of smoking and industrial pollution. In the U.S.A., primary lung cancer represents 13.3% of all cancer cases. At KFSH&RC, 2.9% of all cancer diagnoses are lung cancers.

**FIGURE 10**  
**DISTRIBUTION OF 20 MOST COMMON MALIGNANCIES**  
**2016 ANALYTIC CASES (TOTAL CASES = 2,580)**

**MALE**

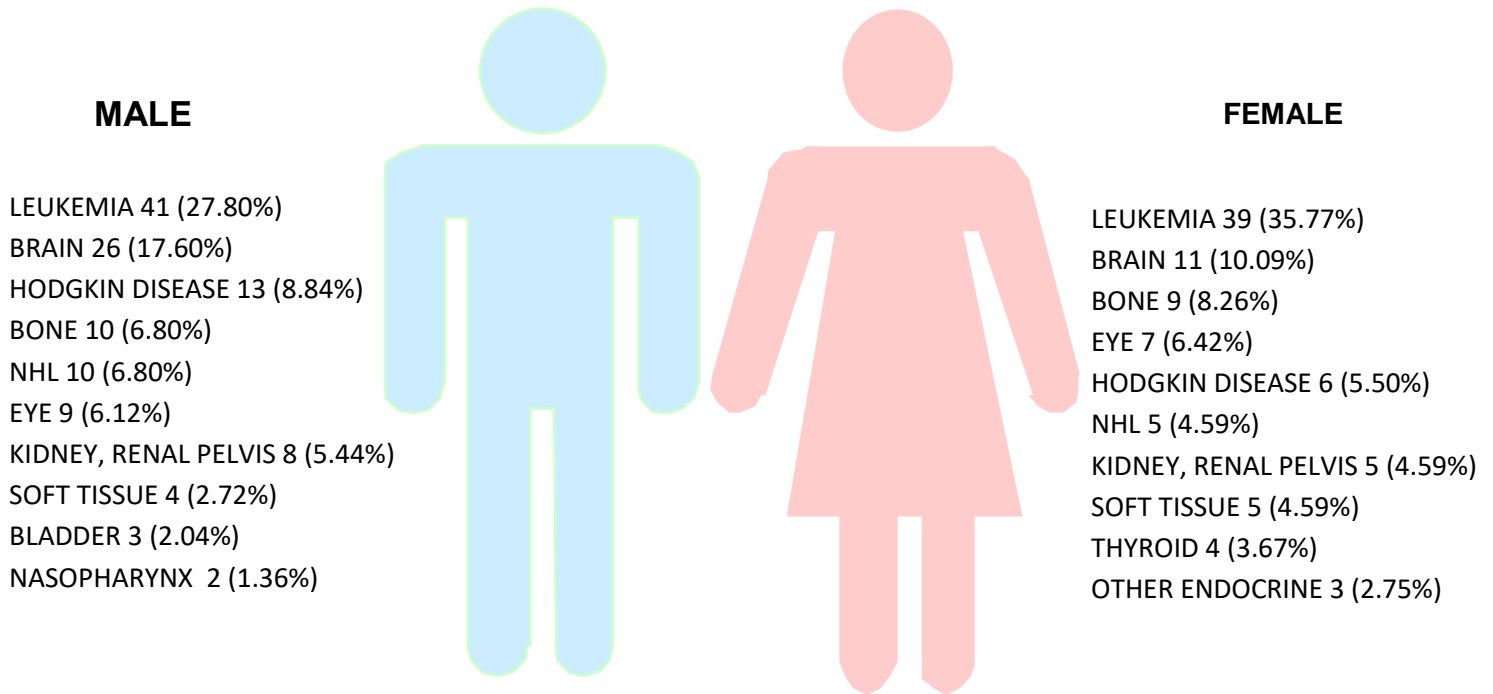
- LEUKEMIA 127 (9.30%)
- NHL 99 (7.25%)
- BRAIN 83 (6.06%)
- THYROID 72 (5.27%)
- COLON 70 (5.12 %)
- HODGKIN DISEASE 66 (4.83%)
- KIDNEY, RENAL PELVIS 64 (4.69%)
- RECTUM 62 (4.54%)
- LIVER 62 (4.54%)
- PROSTATE 59 (4.32%)
- NASOPHARYNX 55 (4.03%)
- LUNG / BRONCHUS 47 (3.44%)
- ORAL CAVITY 34 (2.49%)
- BONE 32 (2.34%)
- STOMACH 31 (2.27%)
- SOFT TISSUE 29 (2.12%)
- OTHER SKIN CA 27 (1.99%)
- PANCREAS 26 (1.90%)
- TESTIS 26 (1.90%)



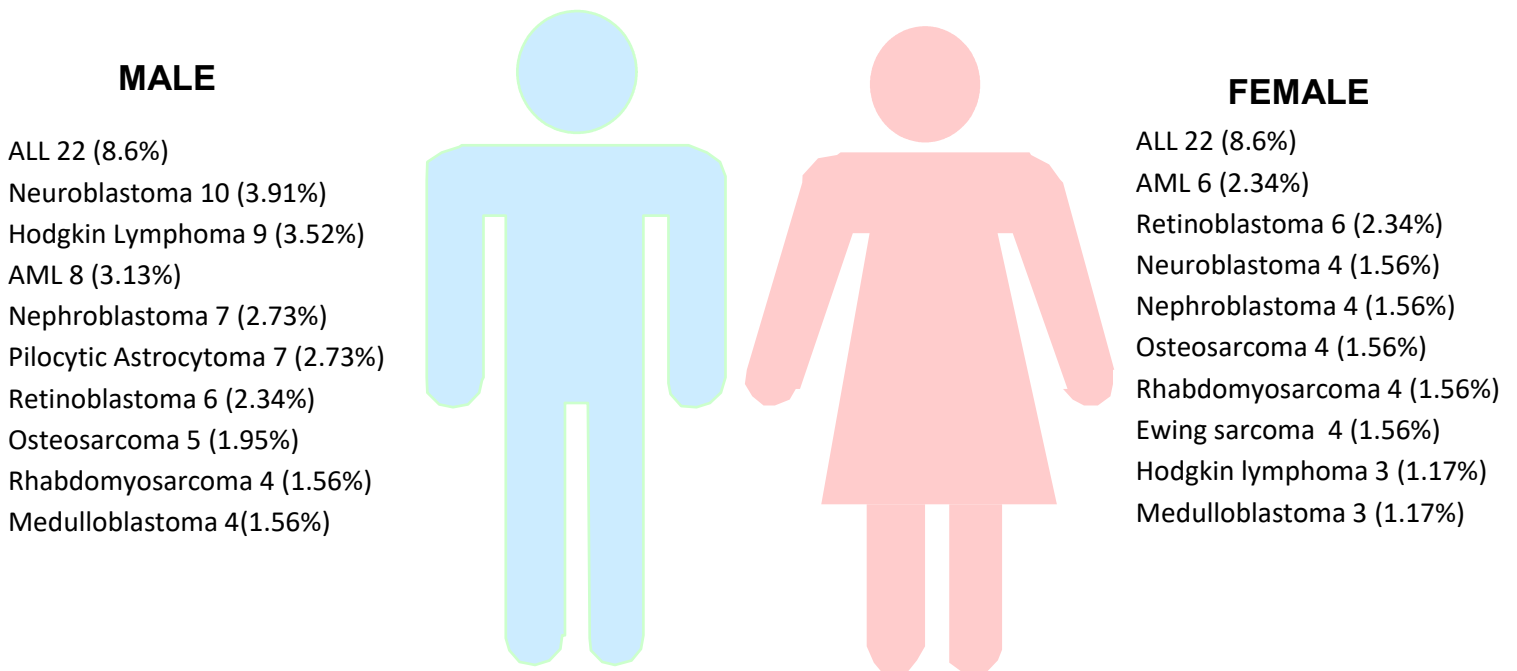
**FEMALE**

- BREAST 402 (24.60%)
- THYROID 219 (13.40%)
- LEUKEMIA 107 (6.55%)
- CORPUS UTERI 80 (4.90%)
- BRAIN 76 (4.65%)
- NHL 70 (4.28%)
- COLON 69 (4.22 %)
- OVARY 56 (3.43%)
- HODGKIN DISEASE 55 (3.37%)
- RECTUM 53 (3.24%)
- LIVER 36 (2.20%)
- KIDNEY, RENAL PELVIS 34 (2.09%)
- ORAL CAVITY 31 (1.90%)
- LUNG, BRONCHUS 29 (1.77%)
- SOFT TISSUE 25 (1.53%)
- PANCREAS 24 (1.47%)
- OTHER SKIN CA 22 (1.35%)
- CERVIX UTERI 22 (1.35%)
- BONE 18 (1.10%)
- BLADDER 15 (0.92%)

**FIGURE 11**  
**DISTRIBUTION OF MOST COMMON PEDIATRIC MALIGNANCIES**  
**2016 ANALYTIC CASES (TOTAL CASES= 256)**



**FIGURE 12**  
**DISTRIBUTION OF MOST COMMON PEDIATRIC MALIGNANCIES BY HISTOLOGY**  
**2016 ANALYTIC CASES (TOTAL CASES= 256)**



**TABLE 9**  
**PRIMARY SITE TABLE**  
**(INCLUDES MULTIPLE PRIMARIES)**  
**2016**

| SITE                          | HISTOLOGY<br>(NOS - Not Otherwise Specified) | ALL CASES    | ADULTS      |              | PEADIATRICS |            |
|-------------------------------|--|--------------|-------------|--------------|-------------|------------|
|                               |  |              | MALE        | FEMALE       | MALE        | FEMALE     |
|                               |  | <b>3,000</b> | <b>1219</b> | <b>1,525</b> | <b>147</b>  | <b>109</b> |
| <b>LIP</b>                    |  | <b>8</b>     | <b>5</b>    | <b>3</b>     | <b>0</b>    | <b>0</b>   |
|                               | Squamous Cell Carcinoma                      | 7            | 5           | 2            | 0           | 0          |
|                               | Malignant Melanoma                           | 1            | 0           | 1            | 0           | 0          |
| <b>TONGUE</b>                 |  | <b>28</b>    | <b>17</b>   | <b>11</b>    | <b>0</b>    | <b>0</b>   |
|                               | Carcinoma NOS                                | 1            | 1           | 0            | 0           | 0          |
|                               | Squamous Cell Carcinoma In Situ              | 1            | 0           | 1            | 0           | 0          |
|                               | Squamous Cell Carcinoma Keratinizing         | 2            | 0           | 2            | 0           | 0          |
|                               | Squamous Cell Carcinoma NOS                  | 24           | 16          | 8            | 0           | 0          |
| <b>GUM</b>                    |  | <b>4</b>     | <b>2</b>    | <b>2</b>     | <b>0</b>    | <b>0</b>   |
|                               | Squamous Cell Carcinoma                      | 4            | 2           | 2            | 0           | 0          |
| <b>FLOOR OF MOUTH</b>         |  | <b>5</b>     | <b>4</b>    | <b>1</b>     | <b>0</b>    | <b>0</b>   |
|                               | Adenoid Cystic Carcinoma                     | 1            | 0           | 1            | 0           | 0          |
|                               | Squamous Cell Carcinoma NOS                  | 4            | 4           | 0            | 0           | 0          |
| <b>OTHER PARTS OF MOUTH</b>   |  | <b>37</b>    | <b>16</b>   | <b>20</b>    | <b>1</b>    | <b>0</b>   |
|                               | Adenocarcinoma NOS                           | 2            | 1           | 1            | 0           | 0          |
|                               | Basal Cell Carcinoma                         | 1            | 1           | 0            | 0           | 0          |
|                               | Hibernoma                                    | 1            | 1           | 0            | 0           | 0          |
|                               | Invasive Carcinoma                           | 1            | 0           | 1            | 0           | 0          |
|                               | Mucoepidermoid Carcinoma                     | 1            | 0           | 1            | 0           | 0          |
|                               | Polymorphous Low Grade Adenocarcinoma        | 1            | 1           | 0            | 0           | 0          |
|                               | Squamous Cell Carcinoma In Situ              | 3            | 1           | 2            | 0           | 0          |
|                               | Squamous Cell Ca NOS                         | 27           | 11          | 15           | 1           | 0          |
| <b>SALIVARY GLANDS, MAJOR</b> |  | <b>13</b>    | <b>9</b>    | <b>4</b>     | <b>0</b>    | <b>0</b>   |
|                               | Acinar Cell Carcinoma                        | 1            | 0           | 1            | 0           | 0          |
|                               | Adenocarcinoma                               | 3            | 3           | 0            | 0           | 0          |
|                               | Carcinoma NOS                                | 1            | 1           | 0            | 0           | 0          |
|                               | Glomus Tumor NOS                             | 1            | 1           | 0            | 0           | 0          |
|                               | Leiomyosarcoma NOS                           | 1            | 1           | 0            | 0           | 0          |
|                               | Malignant Melanoma                           | 1            | 0           | 1            | 0           | 0          |
|                               | Mucoepidermoid Carcinoma                     | 3            | 2           | 1            | 0           | 0          |
|                               | Solitary Fibrous Tumor                       | 1            | 0           | 1            | 0           | 0          |
|                               | Squamous Cell Carcinoma Keratinizing         | 1            | 1           | 0            | 0           | 0          |
| <b>TONSIL</b>                 |  | <b>1</b>     | <b>1</b>    | <b>0</b>     | <b>0</b>    | <b>0</b>   |
|                               | Squamous Cell Carcinoma                      | 1            | 1           | 0            | 0           | 0          |
| <b>LARYNX</b>                 |  | <b>20</b>    | <b>18</b>   | <b>2</b>     | <b>0</b>    | <b>0</b>   |
|                               | Spindle Cell Carcinoma NOS                   | 2            | 2           | 0            | 0           | 0          |
|                               | Spindle Cell Sarcoma                         | 1            | 1           | 0            | 0           | 0          |
|                               | Spidle Cell Ca In Situ                       | 1            | 1           | 0            | 0           | 0          |
|                               | Squamous Cell Carcinoma NOS                  | 16           | 14          | 2            | 0           | 0          |

| SITE<br>(NOS - Not Otherwise Specified) | HISTOLOGY                              | ALL CASES  | ADULTS    |           | PEADIATRICS |          |
|---|--|------------|-----------|-----------|-------------|----------|
|   |  |            | MALE      | FEMALE    | MALE        | FEMALE   |
| <b>NASOPHARYNX</b>                      |  | <b>70</b>  | <b>53</b> | <b>15</b> | <b>2</b>    | <b>0</b> |
|   | Carcinoma Anaplastic                   | 3          | 3         | 0         | 0           | 0        |
|   | Carcinoma NOS                          | 22         | 17        | 4         | 1           | 0        |
|   | Carcinoma Undifferentiated             | 17         | 13        | 4         | 0           | 0        |
|   | Cystic Hypersecretory Carcinoma        | 1          | 1         | 0         | 0           | 0        |
|   | Mucoepidermoid Carcinoma               | 1          | 1         | 0         | 0           | 0        |
|   | Squamous Cell Carcinoma Large Nnkerat. | 10         | 6         | 4         | 0           | 0        |
|   | Squamous Cell Carcinoma                | 16         | 12        | 3         | 1           | 0        |
| <b>HYPOPHARYNX</b>                      |  | <b>5</b>   | <b>0</b>  | <b>5</b>  | <b>0</b>    | <b>0</b> |
|   | Squamous Cell Carcinoma                | 5          | 0         | 5         | 0           | 0        |
| <b>ESOPHAGUS</b>                        |  | <b>26</b>  | <b>19</b> | <b>7</b>  | <b>0</b>    | <b>0</b> |
|   | Adenocarcinoma                         | 8          | 7         | 1         | 0           | 0        |
|   | Adenoca With Neuroendocrine diff.      | 1          | 1         | 0         | 0           | 0        |
|   | Squamous Cell Carcinoma Keratinizing   | 1          | 1         | 0         | 0           | 0        |
|   | Squamous Cell Carcinoma NOS            | 16         | 10        | 6         | 0           | 0        |
| <b>STOMACH</b>                          |  | <b>43</b>  | <b>31</b> | <b>12</b> | <b>0</b>    | <b>0</b> |
|   | Adenocarcinoma Intestinal Type         | 1          | 1         | 0         | 0           | 0        |
|   | Adenocarcinoma NOS                     | 26         | 19        | 7         | 0           | 0        |
|   | Atypical Carcinoid Tumor               | 1          | 1         | 0         | 0           | 0        |
|   | Carcinoid Tumor                        | 1          | 1         | 0         | 0           | 0        |
|   | Carcinoma Anaplastic                   | 1          | 1         | 0         | 0           | 0        |
|   | Carcinoma Diffuse Type                 | 1          | 1         | 0         | 0           | 0        |
|   | Carcinoma NOS                          | 2          | 1         | 1         | 0           | 0        |
|   | Gastrointestinal Stromal Sarcoma       | 1          | 1         | 0         | 0           | 0        |
|   | Gastrointestinal Stromal Tumor         | 3          | 2         | 1         | 0           | 0        |
|   | Neoplasm Malignant                     | 1          | 1         | 0         | 0           | 0        |
|   | Neuroendocrine Carcinoma               | 1          | 1         | 0         | 0           | 0        |
|   | Neurofibroma                           | 1          | 0         | 1         | 0           | 0        |
|   | Signet Ring Cell Carcinoma             | 2          | 0         | 2         | 0           | 0        |
|   | Squamous Cell Carcinoma NOS            | 1          | 1         | 0         | 0           | 0        |
| <b>SMALL INTESTINE</b>                  |  | <b>9</b>   | <b>6</b>  | <b>3</b>  | <b>0</b>    | <b>0</b> |
|   | Adenocarcinoma NOS                     | 5          | 3         | 2         | 0           | 0        |
|   | Carcinoid Tumor                        | 2          | 2         | 0         | 0           | 0        |
|   | Neoplasm Malignant                     | 1          | 0         | 1         | 0           | 0        |
|   | Pleomorphic Carcinoma                  | 1          | 1         | 0         | 0           | 0        |
| <b>COLON</b>                            |  | <b>139</b> | <b>70</b> | <b>69</b> | <b>0</b>    | <b>2</b> |
|   | Adenocarcinoma In Situ                 | 2          | 1         | 1         | 0           | 1        |
|   | Adenocarcinoma NOS                     | 119        | 61        | 58        | 0           | 0        |
|   | Carcinoid Tumor NOS                    | 2          | 1         | 1         | 0           | 1        |
|   | Carcinoma In Situ                      | 1          | 1         | 0         | 0           | 0        |
|   | Carcinoma NOS                          | 2          | 1         | 1         | 0           | 0        |
|   | Mucinous Adenocarcinoma                | 6          | 3         | 3         | 0           | 0        |
|   | Neoplasm Malignant                     | 1          | 1         | 0         | 0           | 0        |
|   | Neuroendocrine Carcinoma               | 1          | 0         | 1         | 0           | 0        |
|   | Pseudomyxoma Peritonei                 | 1          | 0         | 1         | 0           | 0        |
|   | Signet Ring Cell Carcinoma             | 2          | 0         | 2         | 0           | 0        |
|   | Villous Adenoma NOS                    | 2          | 1         | 1         | 0           | 0        |



| SITE                                       | HISTOLOGY<br>(NOS - Not Otherwise Specified) | ALL CASES  | ADULTS    |           | PEADIATRICS |          |
|--|--|------------|-----------|-----------|-------------|----------|
|  |  |            | MALE      | FEMALE    | MALE        | FEMALE   |
| <b>RECTUM &amp; RECTOSIGMOID JUNCTION</b>  |  | <b>115</b> | <b>62</b> | <b>53</b> | <b>0</b>    | <b>0</b> |
|  | Adenocarcinoma In Situ Adenomatous Polyp     | 1          | 1         | 0         | 0           | 0        |
|  | Mucinous Adenocarcinoma In Situ              | 1          | 1         | 0         | 0           | 0        |
|  | Adenocarcinoma                               | 105        | 54        | 51        | 0           | 0        |
|  | Atypical Carcinoid Tumor                     | 2          | 1         | 1         | 0           | 0        |
|  | Carcinoid Tumor NOS                          | 1          | 1         | 0         | 0           | 0        |
|  | Carcinoma NOS                                | 2          | 1         | 1         | 0           | 0        |
|  | Mucinous Adenocarcinoma                      | 1          | 1         | 0         | 0           | 0        |
|  | Signet Ring Cell Ca                          | 1          | 1         | 0         | 0           | 0        |
|  | Squamous Cell Ca NOS                         | 1          | 1         | 0         | 0           | 0        |
| <b>ANUS, ANAL CANAL, ANORECTUM</b>         |  | <b>10</b>  | <b>8</b>  | <b>2</b>  | <b>0</b>    | <b>0</b> |
|  | Adenocarcinoma                               | 5          | 3         | 2         | 0           | 0        |
|  | Squamous Cell Carcinoma NOS                  | 5          | 5         | 0         | 0           | 0        |
| <b>LIVER, INTRAHEPATIC BILE DUCT</b>       |  | <b>95</b>  | <b>61</b> | <b>34</b> | <b>1</b>    | <b>2</b> |
|  | Adenocarcinoma NOS                           | 5          | 3         | 2         | 0           | 0        |
|  | Atypical Carcinoid Tumor                     | 1          | 0         | 1         | 0           | 0        |
|  | Carcinoid Tumor                              | 1          | 1         | 0         | 0           | 0        |
|  | Carcinoma NOS                                | 5          | 1         | 3         | 0           | 1        |
|  | Carcinoma Undifferentiated                   | 1          | 0         | 1         | 0           | 0        |
|  | Cholangiocarcinoma                           | 5          | 3         | 2         | 0           | 0        |
|  | Hemangiosarcoma                              | 1          | 1         | 0         | 0           | 0        |
|  | Hepatocellular Carcinoma                     | 70         | 49        | 20        | 0           | 1        |
|  | Hepatocellular Carcinoma Scirrhou            | 2          | 2         | 0         | 0           | 0        |
|  | Klastin Tumor                                | 1          | 0         | 1         | 0           | 0        |
|  | Neoplasm Malignant                           | 1          | 0         | 1         | 0           | 0        |
|  | Neuroendocrine Carcinoma                     | 2          | 0         | 2         | 0           | 0        |
|  | Pleomorphic Carcinoma                        | 1          | 1         | 0         | 0           | 0        |
|  | Spindle Cell Carcinoma NOS                   | 1          | 0         | 1         | 0           | 0        |
|  | Hepatoblastoma                               | 1          | 0         | 0         | 1           | 0        |
| <b>GALLBLADDER, EXTRAHEPATIC BILE DUCT</b> |  | <b>12</b>  | <b>6</b>  | <b>6</b>  | <b>0</b>    | <b>0</b> |
|  | Adenocarcinoma NOS                           | 9          | 3         | 6         | 0           | 0        |
|  | Adenosquamous Carcinoma                      | 1          | 1         | 0         | 0           | 0        |
|  | Intracystic Papillary Adenoma                | 1          | 1         | 0         | 0           | 0        |
|  | Invasive carcinoma                           | 1          | 1         | 0         | 0           | 0        |
| <b>PANCREAS</b>                            |  | <b>50</b>  | <b>26</b> | <b>24</b> | <b>0</b>    | <b>0</b> |
|  | Adenocarcinoma Intestinal Type               | 1          | 0         | 1         | 0           | 0        |
|  | Adenocarcinoma NOS                           | 28         | 18        | 10        | 0           | 0        |
|  | Adenocarcinoma With Mixed Sub Types          | 1          | 1         | 0         | 0           | 0        |
|  | Atypical Carcinoid Tumor                     | 3          | 1         | 2         | 0           | 0        |
|  | Carcinoid Tumor                              | 1          | 1         | 0         | 0           | 0        |
|  | Carcinoma                                    | 4          | 1         | 3         | 0           | 0        |
|  | Cholangiocarcinoma                           | 2          | 1         | 1         | 0           | 0        |
|  | Hepatocellular Carcinoma NOS                 | 1          | 0         | 1         | 0           | 0        |
|  | Invasive Carcinoma                           | 1          | 1         | 0         | 0           | 0        |
|  | Mucinous Adenocarcinoma                      | 1          | 0         | 1         | 0           | 0        |
|  | Neoplasm Malignant                           | 7          | 2         | 5         | 0           | 0        |

| SITE                                    | HISTOLOGY<br>(NOS - Not Otherwise Specified) | ALL       | ADULTS    |           | PEADIATRICS |          |
|---|--|-----------|-----------|-----------|-------------|----------|
|   |  |           | MALE      | FEMALE    | MALE        | FEMALE   |
| <b>BILE DUCTS</b>                       |  | <b>16</b> | <b>8</b>  | <b>8</b>  | <b>0</b>    | <b>0</b> |
|   | Adenocarcinoma                               | 11        | 6         | 5         | 0           | 0        |
|   | Cholangiocarcinoma                           | 4         | 1         | 3         | 0           | 0        |
|   | Neroendocrine Carcinoma NOS                  | 1         | 1         | 0         | 0           | 0        |
| <b>NASAL CAVITY, MIDDLE EAR</b>         |  | <b>8</b>  | <b>4</b>  | <b>4</b>  | <b>0</b>    | <b>0</b> |
|   | Osteosarcoma NOS                             | 1         | 0         | 1         | 0           | 0        |
|   | Odontogenic Tumor Malignant                  | 1         | 0         | 1         | 0           | 0        |
|   | Neopasm Malignant                            | 1         | 1         | 0         | 0           | 0        |
|   | Malignant Melanoma NOS                       | 1         | 0         | 1         | 0           | 0        |
|   | Carcinoma NOS                                | 1         | 1         | 0         | 0           | 0        |
|   | Signet Ring Cell Carcinoma                   | 1         | 0         | 1         | 0           | 0        |
|   | Adenocarcinoma                               | 1         | 1         | 0         | 0           | 0        |
|   | Squamous Cell Carcinoma                      | 1         | 1         | 0         | 0           | 0        |
| <b>LARYNX</b>                           |  | <b>20</b> | <b>18</b> | <b>2</b>  | <b>0</b>    | <b>0</b> |
|   | Squamous Cell Carcinoma NOS                  | 16        | 14        | 2         | 0           | 0        |
|   | Squamous Cell Carcinoma In Situ NOS          | 1         | 1         | 0         | 0           | 0        |
|   | Spindle Cell Carcinoma NOS                   | 2         | 2         | 0         | 0           | 0        |
|   | Spindle Cell Sarcoma                         | 1         | 1         | 0         | 0           | 0        |
| <b>LUNG, BRONCHUS</b>                   |  | <b>81</b> | <b>52</b> | <b>28</b> | <b>1</b>    | <b>0</b> |
|   | Adenocarcinoma NOS                           | 33        | 15        | 18        | 0           | 0        |
|   | Squamous Cell Carcinoma NOS                  | 13        | 10        | 3         | 0           | 0        |
|   | Small Cell Carcinoma                         | 5         | 5         | 0         | 0           | 0        |
|   | Non-Samll Cell Carcinoma                     | 6         | 5         | 1         | 0           | 0        |
|   | Carcinoma NOS                                | 3         | 3         | 0         | 0           | 0        |
|   | Carcinoid                                    | 3         | 2         | 1         | 0           | 0        |
|   | Neoplasm Malignant                           | 2         | 1         | 1         | 0           | 0        |
|   | Mucinous Adenocarcinoma                      | 1         | 1         | 0         | 0           | 0        |
|   | Large Cell Neuroendocrine Carcinoma          | 1         | 0         | 1         | 0           | 0        |
|   | Synovial Sarcoma NOS                         | 2         | 1         | 1         | 0           | 0        |
|   | Squamous Cell Carcinoma Keratinizing NOS     | 1         | 1         | 0         | 0           | 0        |
|   | Renal Cell Carcinoma NOS                     | 1         | 1         | 0         | 0           | 0        |
|   | Pseudosarcomatous Carcinoma                  | 1         | 1         | 0         | 0           | 0        |
|   | Primitive Neuroectodermal Tumor NOS          | 1         | 0         | 1         | 0           | 0        |
|   | Pleomorphic Carcinoma                        | 1         | 1         | 0         | 0           | 0        |
|   | Neuroendocrine Carcinoma NOS                 | 4         | 3         | 1         | 0           | 0        |
|   | Epithelioid Sarcoma                          | 2         | 1         | 0         | 1           | 0        |
|   | Mesothelioma Malignant                       | 1         | 1         | 0         | 0           | 0        |
| <b>OTHER RESPIRATORY &amp; THORACIC</b> |  | <b>5</b>  | <b>5</b>  | <b>0</b>  | <b>0</b>    | <b>0</b> |
|   | Adenocarcinoma NOS                           | 3         | 3         | 0         | 0           | 0        |
|   | Neuroblastoma NOS                            | 1         | 1         | 0         | 0           | 0        |
|   | Sarcoma                                      | 1         | 1         | 0         | 0           | 0        |
| <b>PLEURA</b>                           |  | <b>1</b>  | <b>1</b>  | <b>0</b>  | <b>0</b>    | <b>0</b> |
|   | Chondroblastic Osteosarcoma                  | 1         | 1         | 0         | 0           | 0        |
| <b>BONE, JOINTS, CARTILAGE</b>          |  | <b>54</b> | <b>22</b> | <b>12</b> | <b>11</b>   | <b>9</b> |
|   | Osteosarcoma                                 | 18        | 6         | 3         | 5           | 4        |
|   | Ewing Sarcoma                                | 6         | 2         | 0         | 2           | 2        |
|   | Chondrosarcoma NOS                           | 2         | 2         | 0         | 0           | 0        |
|   | Chondroblastic Osteosarcoma                  | 4         | 0         | 0         | 2           | 2        |
|   | Spindle Cell Sarcoma                         | 1         | 0         | 1         | 0           | 0        |
|   | Chordoma                                     | 3         | 2         | 1         | 0           | 0        |
|   | Giant Cell Tumor of Bone Malignant           | 5         | 3         | 1         | 0           | 1        |
|   | Giant Cell Tumor of Bone NOS                 | 1         | 0         | 1         | 0           | 0        |
|   | Liposarcoma NOS                              | 1         | 1         | 0         | 0           | 0        |
|   | Adamantinoma of Long Bone                    | 1         | 0         | 1         | 0           | 0        |
|   | Squamous Cell Carcinoma NOS                  | 3         | 3         | 0         | 0           | 0        |
|   | Synovial Sarcoma NOS                         | 1         | 1         | 0         | 0           | 0        |
|   | Pleomorphic Carcinoma                        | 1         | 1         | 0         | 0           | 0        |
|   | Adenoid Cystic Carcinoma                     | 1         | 0         | 1         | 0           | 0        |
|   | Myxopapillary Ependymoma                     | 2         | 0         | 1         | 1           | 0        |
|   | Small Cell Carcinoma NOS                     | 1         | 0         | 0         | 1           | 0        |
|   | Kaposi Sarcoma                               | 3         | 1         | 2         | 0           | 0        |

| SITE                       | HISTOLOGY<br>(NOS - Not Otherwise Specified)               | ALL        | ADULTS    |           | PEADIATRICS |           |
|----------------------------|--|------------|-----------|-----------|-------------|-----------|
|                            |  |            | MALE      | FEMALE    | MALE        | FEMALE    |
| <b>BONE MARROW</b>         |  | <b>248</b> | <b>99</b> | <b>68</b> | <b>41</b>   | <b>40</b> |
|                            | B Lymphoblastic Leukemia/Lymphoma                          | 26         | 5         | 1         | 9           | 11        |
|                            | Acute Myeloid Leukemia                                     | 65         | 25        | 26        | 8           | 6         |
|                            | Precursor Cell Lymphoblastic Leukemia NOS                  | 43         | 13        | 3         | 14          | 13        |
|                            | Chronic Myeloid Leukemia                                   | 21         | 7         | 13        | 0           | 1         |
|                            | B-Cell Chronic Lymphocytic Leukemia/Small                  | 11         | 8         | 3         | 0           | 0         |
|                            | Acute Monocytic Leukemia                                   | 2          | 2         | 0         | 0           | 0         |
|                            | Chronic Myelomonocytic Leukemia NOS                        | 1          | 0         | 1         | 0           | 0         |
|                            | Acute Promyelocytic Leukemia                               | 4          | 2         | 1         | 0           | 1         |
|                            | Acute Myeloid Leukemia with Maturation                     | 1          | 0         | 1         | 0           | 0         |
|                            | Acute Leukemia NOS   | 17         | 7         | 6         | 3           | 1         |
|                            | Acute Myeloid Leukemia Minimal Differentiation             | 3          | 2         | 1         | 0           | 0         |
|                            | Acute Myeloid Leukemia T-cell                              | 1          | 1         | 0         | 0           | 0         |
|                            | Therapy-Related Acute Myeloid Leukemia NOS                 | 1          | 1         | 0         | 0           | 0         |
|                            | Burkitt Cell Leukemia                                      | 10         | 3         | 2         | 4           | 1         |
|                            | Plasma Cell Leukemia                                       | 16         | 13        | 3         | 0           | 0         |
|                            | Myeloid Sarcoma  | 1          | 1         | 0         | 0           | 0         |
|                            | Essential Thrombocythemia                                  | 1          | 1         | 0         | 0           | 0         |
|                            | Lymphoid Leukemia NOS                                      | 3          | 1         | 1         | 0           | 1         |
|                            | Myelodysplastic/Myeloproliferative Neoplasm Unclassifiable | 4          | 2         | 2         | 0           | 0         |
|                            | Myelodysplastic Syndrome NOS                               | 3          | 1         | 1         | 0           | 1         |
|                            | Leukemia NOS   | 4          | 0         | 2         | 1           | 1         |
|                            | Hairy Cell Leukemia  | 4          | 3         | 1         | 0           | 0         |
|                            | Hypereosinophilic Syndrome                                 | 2          | 1         | 0         | 0           | 1         |
|                            | Acute Megakaryoblastic Leukemia                            | 1          | 0         | 0         | 1           | 0         |
|                            | Juvenile Myelomonocytic Leukemia                           | 1          | 0         | 0         | 0           | 1         |
|                            | Precursor B-Cell Lymphoblastic Leukemia                    | 2          | 0         | 0         | 1           | 1         |
| <b>MULTIPLE MYELOMA</b>    |  | <b>28</b>  | <b>18</b> | <b>10</b> | <b>0</b>    | <b>0</b>  |
|                            | Multiple Myeloma   | 26         | 17        | 9         | 0           | 0         |
|                            | Plasmacytoma Extramedullary                                | 1          | 1         | 0         | 0           | 0         |
|                            | Plasmacytoma   | 1          | 0         | 1         | 0           | 0         |
| <b>OTHER HEMATOPOIETIC</b> |  | <b>41</b>  | <b>15</b> | <b>17</b> | <b>4</b>    | <b>5</b>  |
|                            | Adenocarcinoma   | 2          | 2         | 0         | 0           | 0         |
|                            | Essential Thrombocytosis                                   | 7          | 3         | 2         | 1           | 1         |
|                            | Langerhans Cell Histocytosis                               | 3          | 2         | 1         | 0           | 0         |
|                            | Myelodysplastic Syndrome                                   | 12         | 3         | 6         | 2           | 1         |
|                            | Myelodysplastic/Myeloproliferative Neoplasm                | 3          | 2         | 1         | 0           | 0         |
|                            | Myeloproliferative Disease                                 | 8          | 1         | 5         | 0           | 2         |
|                            | Neuroblastoma NOS  | 1          | 0         | 0         | 1           | 0         |
|                            | Polycythemia Vera  | 3          | 1         | 2         | 0           | 0         |
|                            | Rhabdomyosarcoma NOS                                       | 1          | 0         | 0         | 0           | 1         |
|                            | Synovial Sarcoma Spindle Cell                              | 1          | 1         | 0         | 0           | 0         |
| <b>SKIN (MELANOMA)</b>     |  | <b>6</b>   | <b>2</b>  | <b>4</b>  | <b>0</b>    | <b>0</b>  |
|                            | Acral Lentiginous Melanoma Malignant                       | 1          | 0         | 1         | 0           | 0         |
|                            | Malignant Melanoma   | 5          | 2         | 3         | 0           | 0         |
| <b>SKIN (NON MELANOMA)</b> |  | <b>49</b>  | <b>25</b> | <b>21</b> | <b>2</b>    | <b>1</b>  |
|                            | Adenoid Cystic Carcinoma                                   | 1          | 0         | 1         | 0           | 0         |
|                            | Basal Cell adenocarcinoma                                  | 6          | 4         | 2         | 0           | 0         |
|                            | Basal Cell Caecinoma In Situ                               | 1          | 1         | 0         | 0           | 0         |
|                            | Basal Cell Carcinoma Nodular                               | 10         | 5         | 5         | 0           | 0         |
|                            | Basal Cell Carcinoma NOS                                   | 9          | 3         | 6         | 0           | 0         |
|                            | Carcinoma NOS  | 1          | 1         | 0         | 0           | 0         |
|                            | Dermatofibrosarcoma  | 4          | 3         | 1         | 0           | 0         |
|                            | Ewing Sarcoma  | 1          | 1         | 0         | 0           | 0         |
|                            | Hemangiosarcoma  | 1          | 1         | 0         | 0           | 0         |
|                            | Leiomyosarcoma NOS   | 1          | 0         | 0         | 0           | 1         |
|                            | Rhabdomyosarcoma NOS                                       | 1          | 0         | 0         | 1           | 0         |
|                            | Sebaceous Adenocarcinoma                                   | 2          | 1         | 1         | 0           | 0         |
|                            | Spindle Cell Sarcoma                                       | 1          | 0         | 0         | 1           | 0         |
|                            | Squamous Cell Carcinoma                                    | 10         | 5         | 5         | 0           | 0         |

| SITE                | HISTOLOGY<br>(NOS - Not Otherwise Specified)            | ALL        | ADULTS   |            | PEADIATRICS |          |
|---------------------|---|------------|----------|------------|-------------|----------|
|                     |   |            | MALE     | FEMALE     | MALE        | FEMALE   |
| <b>BREAST</b>       |   | <b>406</b> | <b>3</b> | <b>403</b> | <b>0</b>    | <b>0</b> |
|                     | Invasive Duct Carcinoma                                 | 321        | 3        | 318        | 0           | 0        |
|                     | Lobular Carcinoma                                       | 31         | 0        | 31         | 0           | 0        |
|                     | Comedocarcinoma Noninfiltrating                         | 2          | 0        | 2          | 0           | 0        |
|                     | Papillary Carcinoma NOS                                 | 2          | 0        | 2          | 0           | 0        |
|                     | Papillary Microcarcinoma                                | 1          | 0        | 1          | 0           | 0        |
|                     | Neoplasm Malignant                                      | 3          | 0        | 3          | 0           | 0        |
|                     | Cribiform Carcinoma NOS                                 | 1          | 0        | 1          | 0           | 0        |
|                     | Carcinoma NOS   | 12         | 0        | 12         | 0           | 0        |
|                     | Intraductal Carcinoma Noninfiltrating NOS               | 13         | 0        | 13         | 0           | 0        |
|                     | Invasive Ductal Ca Mixed With Other Types               | 2          | 0        | 2          | 0           | 0        |
|                     | Metaplastic Carcinoma                                   | 1          | 0        | 1          | 0           | 0        |
|                     | Phyllodes Tumor Borderline                              | 1          | 0        | 1          | 0           | 0        |
|                     | Phyllodes Tumor Malignant                               | 2          | 0        | 2          | 0           | 0        |
|                     | Spindle Cell Carcinoma NOS                              | 1          | 0        | 1          | 0           | 0        |
|                     | Adenocarcinoma  | 2          | 0        | 2          | 0           | 0        |
|                     | Lobular Carcinoma In Situ                               | 4          | 0        | 4          | 0           | 0        |
|                     | Mucinous Adenocarcinoma                                 | 3          | 0        | 3          | 0           | 0        |
|                     | Spindle Cell Sarcoma                                    | 1          | 0        | 1          | 0           | 0        |
|                     | Sarcoma NOS   | 2          | 0        | 2          | 0           | 0        |
|                     | Granular Cell Tumor Malignant                           | 1          | 0        | 1          | 0           | 0        |
| <b>CERVIX UTERI</b> |   | <b>39</b>  | <b>0</b> | <b>39</b>  | <b>0</b>    | <b>0</b> |
|                     | Adenocarcinoma Endocervical Type                        | 1          | 0        | 1          | 0           | 0        |
|                     | Adenocarcinoma  | 5          | 0        | 5          | 0           | 0        |
|                     | Carcinoma   | 1          | 0        | 1          | 0           | 0        |
|                     | Choriocarcinoma NOS                                     | 2          | 0        | 2          | 0           | 0        |
|                     | Endometrioid Adenocarcinoma NOS                         | 3          | 0        | 3          | 0           | 0        |
|                     | Leiomyosarcoma NOS                                      | 3          | 0        | 3          | 0           | 0        |
|                     | Mullerian Mixed Tumor                                   | 1          | 0        | 1          | 0           | 0        |
|                     | Neoplasm Malignant                                      | 1          | 0        | 1          | 0           | 0        |
|                     | Papillary Serous Cystadenocarcinoma                     | 1          | 0        | 1          | 0           | 0        |
|                     | Signet Ring Cell Carcinoma                              | 1          | 0        | 1          | 0           | 0        |
|                     | Small Cell Carcinoma                                    | 1          | 0        | 1          | 0           | 0        |
|                     | Squamous Cell Carcinoma Large Nonkeratinizing NOS       | 4          | 0        | 4          | 0           | 0        |
|                     | Squamous Cell Carcinoma NOS                             | 8          | 0        | 8          | 0           | 0        |
|                     | Squamous Cell Carcinoma In Situ NOS                     | 1          | 0        | 1          | 0           | 0        |
|                     | Squamous Intraepithelial Neoplasia Grade III            | 6          | 0        | 6          | 0           | 0        |
| <b>CORPUS UTERI</b> |   | <b>80</b>  | <b>0</b> | <b>80</b>  | <b>0</b>    | <b>0</b> |
|                     | Adenocarcinoma NOS                                      | 24         | 0        | 24         | 0           | 0        |
|                     | Carcinoma Anaplastic NOS                                | 1          | 0        | 1          | 0           | 0        |
|                     | Carcinoma NOS   | 1          | 0        | 1          | 0           | 0        |
|                     | Endometrial Stromal Sarcoma Low Grade                   | 1          | 0        | 1          | 0           | 0        |
|                     | Endometrioid Adenocarcinoma NOS                         | 40         | 0        | 40         | 0           | 0        |
|                     | Endometrioid Adenofibroma NOS                           | 1          | 0        | 1          | 0           | 0        |
|                     | Leiomyosarcoma NOS                                      | 1          | 0        | 1          | 0           | 0        |
|                     | Mullerian Mixed Tumor                                   | 2          | 0        | 2          | 0           | 0        |
|                     | Neoplasm Malignant                                      | 1          | 0        | 1          | 0           | 0        |
|                     | Placental Site Trophoblastic Tumor                      | 1          | 0        | 1          | 0           | 0        |
|                     | Serous Cystadenocarcinoma NOS                           | 3          | 0        | 3          | 0           | 0        |
|                     | Squamous Cell Carcinoma NOS                             | 2          | 0        | 2          | 0           | 0        |
|                     | Squamous Intraepithelial Neoplasia Grade III            | 1          | 0        | 1          | 0           | 0        |
|                     | Stromal Sarcoma NOS                                     | 1          | 0        | 1          | 0           | 0        |
| <b>OVARY</b>        |   | <b>56</b>  | <b>0</b> | <b>56</b>  | <b>0</b>    | <b>0</b> |
|                     | Adenocarcinoma  | 9          | 0        | 9          | 0           | 0        |
|                     | Adenofibroma NOS  | 1          | 0        | 1          | 0           | 0        |
|                     | Carcinoid Tumor NOS                                     | 1          | 0        | 1          | 0           | 0        |
|                     | Carcinoma   | 2          | 0        | 2          | 0           | 0        |
|                     | Carcinoma Undifferentiated NOS                          | 1          | 0        | 1          | 0           | 0        |
|                     | Fibrosarcoma NOS  | 1          | 0        | 1          | 0           | 0        |
|                     | Granulosa Cell Tumor Malignant                          | 2          | 0        | 2          | 0           | 0        |
|                     | Lipid Cell Tumor of Ovary                               | 1          | 0        | 1          | 0           | 0        |
|                     | Malignant Serous Tumor                                  | 1          | 0        | 1          | 0           | 0        |
|                     | Malignant Teratoma Undifferentiated                     | 1          | 0        | 1          | 0           | 0        |
|                     | Mesothelioma Malignant                                  | 1          | 0        | 1          | 0           | 0        |
|                     | Mixed Germ Cell Tumor                                   | 1          | 0        | 1          | 0           | 0        |
|                     | Mucinous Adenocarcinoma                                 | 3          | 0        | 3          | 0           | 0        |
|                     | Mucinous Cystadenoma NOS                                | 1          | 0        | 1          | 0           | 0        |
|                     | Mucinous Cystic Tumor of Borderline Malignancy          | 1          | 0        | 1          | 0           | 0        |
|                     | Mullerian Mixed Tumor                                   | 1          | 0        | 1          | 0           | 0        |
|                     | Neoplasm Malignant                                      | 3          | 0        | 3          | 0           | 0        |
|                     | Papillary Serous Cystadenocarcinoma                     | 1          | 0        | 1          | 0           | 0        |
|                     | Serous Cystadenocarcinoma                               | 15         | 0        | 15         | 0           | 0        |
|                     | Serous Papillary Cystic Tumor of Borderline Malignancy  | 1          | 0        | 1          | 0           | 0        |
|                     | Serous Surface Papillary Carcinoma                      | 1          | 0        | 1          | 0           | 0        |
|                     | Serous Surface Papillary Tumor of Borderline Malignancy | 1          | 0        | 1          | 0           | 0        |
|                     | Sex Cord-Gonadal Stromal Tumor NOS                      | 1          | 0        | 1          | 0           | 0        |
|                     | Teratoma Malignant NOS                                  | 1          | 0        | 1          | 0           | 0        |
|                     | Yolk Sac Tumor  | 4          | 0        | 4          | 0           | 0        |

| SITE   | HISTOLOGY<br>(NOS - Not Otherwise Specified) | ALL       | ADULTS    |           | PEADIATRICS |          |
|--|--|-----------|-----------|-----------|-------------|----------|
|  |  |           | MALE      | FEMALE    | MALE        | FEMALE   |
| <b>RETROPERITONEUM, PERITONEUM</b>             |  | <b>15</b> | <b>8</b>  | <b>7</b>  | <b>0</b>    | <b>0</b> |
|  | Adenocarcinoma NOS                           | 4         | 1         | 3         | 0           | 0        |
|  | Choriocarcinoma NOS                          | 1         | 1         | 0         | 0           | 0        |
|  | Dysgerminoma                                 | 1         | 0         | 1         | 0           | 0        |
|  | Liposarcoma NOS                              | 2         | 2         | 0         | 0           | 0        |
|  | Liposarcoma Well Differentiated              | 1         | 1         | 0         | 0           | 0        |
|  | Mesothelioma Malignant                       | 1         | 1         | 0         | 0           | 0        |
|  | Paraganglioma Malignant                      | 1         | 1         | 0         | 0           | 0        |
|  | Pseudomyxoma Peritonei                       | 1         | 1         | 0         | 0           | 0        |
|  | Serous Cystadenocarcinoma NOS                | 3         | 0         | 3         | 0           | 0        |
| <b>EYE</b>                                     |  | <b>19</b> | <b>2</b>  | <b>0</b>  | <b>9</b>    | <b>8</b> |
|  | Retinoblastoma                               | 12        | 0         | 0         | 6           | 6        |
|  | Retinoblastoma Differentiated                | 1         | 0         | 0         | 0           | 1        |
|  | Retinoblastoma Undifferentiated              | 1         | 0         | 0         | 1           | 0        |
|  | Adenoid Cystic Carcinoma                     | 1         | 1         | 0         | 0           | 0        |
|  | Carcinoma NOS                                | 1         | 1         | 0         | 0           | 0        |
|  | Rhabdomyosarcoma NOS                         | 3         | 0         | 0         | 2           | 1        |
| <b>CONNECTIVE, SUBCUTEANEOUS, SOFT TISSUES</b> |  | <b>45</b> | <b>25</b> | <b>20</b> | <b>0</b>    | <b>0</b> |
|  | Chondrosarcoma NOS                           | 1         | 0         | 1         | 0           | 0        |
|  | Clear Cell Sarcoma NOS                       | 1         | 1         | 0         | 0           | 0        |
|  | Dermatofibrosarcoma NOS                      | 4         | 2         | 2         | 0           | 0        |
|  | Epithelioid Hemangioendothelioma NOS         | 1         | 1         | 0         | 0           | 0        |
|  | Epithelioma Malignant                        | 1         | 0         | 1         | 0           | 0        |
|  | Ewing Sarcoma                                | 4         | 2         | 2         | 0           | 0        |
|  | Fibroblastic Liposarcoma                     | 1         | 1         | 0         | 0           | 0        |
|  | Fibrosarcoma NOS                             | 1         | 1         | 0         | 0           | 0        |
|  | Giant Cell Tumor of Soft Parts               | 1         | 0         | 1         | 0           | 0        |
|  | Leiomyosarcoma                               | 2         | 1         | 1         | 0           | 0        |
|  | Liposarcoma NOS                              | 1         | 1         | 0         | 0           | 0        |
|  | Malignant Myoepithelioma                     | 1         | 0         | 1         | 0           | 0        |
|  | Mucinous Adenocarcinoma                      | 1         | 0         | 1         | 0           | 0        |
|  | Myofibroblastic Sarcoma                      | 1         | 1         | 0         | 0           | 0        |
|  | Myxoid Chondrosarcoma                        | 3         | 3         | 0         | 0           | 0        |
|  | Myxoid Liposarcoma                           | 2         | 2         | 0         | 0           | 0        |
|  | Myxosarcoma                                  | 1         | 1         | 0         | 0           | 0        |
|  | Neoplasm Malignant                           | 1         | 0         | 1         | 0           | 0        |
|  | Periosteal Osteosarcoma                      | 1         | 1         | 0         | 0           | 0        |
|  | Primitive Neuroectodermal Tumor NOS          | 1         | 0         | 1         | 0           | 0        |
|  | Sarcoma NOS                                  | 5         | 3         | 2         | 0           | 0        |
|  | Spindle Cell Carcinoma NOS                   | 4         | 2         | 2         | 0           | 0        |
|  | Spindle Cell Sarcoma                         | 3         | 1         | 2         | 0           | 0        |
|  | Squamous Cell Carcinoma                      | 2         | 0         | 2         | 0           | 0        |
|  | Synovial Sarcoma                             | 1         | 1         | 0         | 0           | 0        |
| <b>VULVA</b>                                   |  | <b>4</b>  | <b>0</b>  | <b>4</b>  | <b>0</b>    | <b>0</b> |
|  | Squamous Cell Carcinoma NOS                  | 2         | 0         | 2         | 0           | 0        |
|  | Adenocarcinoma NOS                           | 1         | 0         | 1         | 0           | 0        |
|  | Squamous Intraepithelial Neoplasia Grade III | 1         | 0         | 1         | 0           | 0        |
| <b>TESTIS</b>                                  |  | <b>27</b> | <b>26</b> | <b>0</b>  | <b>1</b>    | <b>0</b> |
|  | Seminoma                                     | 7         | 7         | 0         | 0           | 0        |
|  | Embryonal Carcinoma NOS                      | 2         | 2         | 0         | 0           | 0        |
|  | Germinoma                                    | 4         | 4         | 0         | 0           | 0        |
|  | Mixed Germ Cell Tumor                        | 10        | 9         | 0         | 1           | 0        |
|  | Squamous Cell Carcinoma NOS                  | 1         | 1         | 0         | 0           | 0        |
|  | Teratoma Malignant                           | 3         | 3         | 0         | 0           | 0        |
| <b>OTHER MALE/FEMALE GENITAL CANCERS</b>       |  | <b>5</b>  | <b>3</b>  | <b>2</b>  | <b>0</b>    | <b>0</b> |
|  | Carcinoma NOS                                | 1         | 0         | 1         | 0           | 0        |
|  | Embryonal Rhabdomyosarcoma NOS               | 1         | 1         | 0         | 0           | 0        |
|  | Sarcoma NOS                                  | 1         | 1         | 0         | 0           | 0        |
|  | Squamous Cell Carcinoma NOS                  | 1         | 1         | 0         | 0           | 0        |
|  | Trophoblastic Placenta Malignant             | 1         | 0         | 1         | 0           | 0        |

| SITE                       | HISTOLOGY<br>(NOS - Not Otherwise Specified)             | ALL        | ADULTS     |            | PEADIATRICS |           |
|----------------------------|--|------------|------------|------------|-------------|-----------|
|                            |  |            | MALE       | FEMALE     | MALE        | FEMALE    |
| <b>PROSTATE</b>            |  | <b>59</b>  | <b>59</b>  | <b>0</b>   | <b>0</b>    | <b>0</b>  |
|                            | Adenocarcinoma NOS                                       | 58         | 58         | 0          | 0           | 0         |
|                            | Carcinoma NOS  | 1          | 1          | 0          | 0           | 0         |
| <b>KIDNEY</b>              |  | <b>97</b>  | <b>56</b>  | <b>28</b>  | <b>8</b>    | <b>5</b>  |
|                            | Clear Cell Adenocarcinoma                                | 13         | 9          | 4          | 0           | 0         |
|                            | Renal Cell Carcinoma Chromophobe Type                    | 10         | 5          | 5          | 0           | 0         |
|                            | Papillary Adenocarcinoma                                 | 1          | 1          | 0          | 0           | 0         |
|                            | Transitional Cell Carcinoma                              | 2          | 2          | 0          | 0           | 0         |
|                            | Carcinoma NOS  | 2          | 0          | 2          | 0           | 0         |
|                            | Nephroblastoma   | 11         | 0          | 0          | 7           | 4         |
|                            | Malignant Rhabdoid Tumor                                 | 1          | 0          | 0          | 0           | 1         |
|                            | Renal Cell Carcinoma NOS                                 | 55         | 38         | 16         | 1           | 0         |
|                            | Liposarcoma NOS  | 1          | 0          | 1          | 0           | 0         |
|                            | Pseudosarcomatous Carcinoma                              | 1          | 1          | 0          | 0           | 0         |
| <b>URINARY BLADDER</b>     |  | <b>92</b>  | <b>75</b>  | <b>14</b>  | <b>3</b>    | <b>0</b>  |
|                            | Adenocarcinoma NOS                                       | 1          | 1          | 0          | 0           | 0         |
|                            | Carcinoma NOS  | 2          | 2          | 0          | 0           | 0         |
|                            | Desmoplastic Small Round Cell Tumo                       | 1          | 0          | 0          | 1           | 0         |
|                            | Epithelioma Malignant                                    | 1          | 0          | 1          | 0           | 0         |
|                            | Embryonal Rhabdomyosarcoma Nos                           | 2          | 0          | 0          | 2           | 0         |
|                            | Invasive Micropapillary Carcinoma                        | 1          | 1          | 0          | 0           | 0         |
|                            | Neoplasm Malignant                                       | 1          | 1          | 0          | 0           | 0         |
|                            | Papillary Transitional Cell Carcinoma                    | 33         | 30         | 3          | 0           | 0         |
|                            | Papillary Trans. Cell Neoplasm Of Low Malignant Potentia | 1          | 1          | 0          | 0           | 0         |
|                            | Pseudosarcomatous Carcinoma                              | 1          | 1          | 0          | 0           | 0         |
|                            | Squamous Cell Carcinoma                                  | 1          | 1          | 0          | 0           | 0         |
|                            | Transitional Cell Carcinoma In SITU                      | 5          | 5          | 0          | 0           | 0         |
|                            | Transitional Cell Carcinoma NOS                          | 42         | 32         | 10         | 0           | 0         |
| <b>OTHER URINARY ORGAN</b> |  | <b>1</b>   | <b>1</b>   | <b>0</b>   | <b>0</b>    | <b>0</b>  |
|                            | Squamous Cell Carcinoma NOS                              | 1          | 1          | 0          | 0           | 0         |
| <b>BRAIN</b>               |  | <b>463</b> | <b>125</b> | <b>292</b> | <b>29</b>   | <b>17</b> |
|                            | Adenocarcinoma NOS                                       | 1          | 1          | 0          | 0           | 0         |
|                            | Astrocytoma  | 6          | 3          | 0          | 1           | 2         |
|                            | Astrocytoma Anaplastic                                   | 1          | 1          | 0          | 0           | 0         |
|                            | Atypical Meningioma                                      | 7          | 0          | 7          | 0           | 0         |
|                            | Cavernous Hemangioma                                     | 1          | 0          | 1          | 0           | 0         |
|                            | Chordoma NOS   | 2          | 0          | 1          | 1           | 0         |
|                            | Choroid Plexus Carcinoma                                 | 1          | 1          | 0          | 0           | 0         |
|                            | Craniopharyngioma  | 3          | 0          | 1          | 0           | 2         |
|                            | Dysembryoplastic Neuroepithelial Tumor                   | 4          | 2          | 1          | 1           | 0         |
|                            | Ependymoma   | 2          | 0          | 0          | 2           | 0         |
|                            | Ependymoma Anaplastic                                    | 1          | 0          | 0          | 1           | 0         |
|                            | Ewing Sarcoma  | 1          | 1          | 0          | 0           | 0         |
|                            | Ganglioglioma NOS  | 4          | 0          | 0          | 3           | 1         |
|                            | Ganglioglioma Anaplastic                                 | 4          | 0          | 1          | 1           | 2         |
|                            | Giant Cell Astrocytoma Malignant                         | 1          | 0          | 0          | 1           | 0         |
|                            | Giant Cell Tumor Of Bone Malignant                       | 1          | 0          | 1          | 0           | 0         |
|                            | Glioblastoma   | 19         | 11         | 6          | 1           | 1         |
|                            | Glioma Benign  | 1          | 1          | 0          | 0           | 0         |
|                            | Glioma Malignant   | 13         | 6          | 5          | 2           | 0         |
|                            | Gliosarcoma  | 1          | 0          | 1          | 0           | 0         |
|                            | Hemangioblastoma   | 1          | 1          | 0          | 0           | 0         |
|                            | Medulloblastoma  | 8          | 1          | 0          | 4           | 3         |
|                            | Meningioma Malignant                                     | 7          | 2          | 5          | 0           | 0         |
|                            | Meningioma NOS   | 40         | 11         | 29         | 0           | 0         |
|                            | Meningiomatosis NOS                                      | 1          | 1          | 0          | 0           | 0         |
|                            | Mixed Glioma   | 3          | 3          | 0          | 0           | 0         |
|                            | Neoplasm Uncertain Whether Benign Or Malignant           | 1          | 1          | 0          | 0           | 0         |
|                            | Neuroepithelioma NOS                                     | 2          | 0          | 0          | 2           | 0         |
|                            | Neurilemoma NOS  | 10         | 2          | 8          | 0           | 0         |
|                            | Oligodendroglioma  | 5          | 3          | 2          | 0           | 0         |
|                            | Oligodendroglioma Anaplastic                             | 4          | 1          | 3          | 0           | 0         |
|                            | Medullary Carcinoma                                      | 9          | 2          | 5          | 0           | 2         |
|                            | Neoplasm Malignant                                       | 2          | 0          | 2          | 0           | 0         |
|                            | Osteosarcoma NOS   | 1          | 0          | 1          | 0           | 0         |
|                            | Oxyphilic Adenocarcinoma                                 | 3          | 0          | 3          | 0           | 0         |
|                            | Papillary Adenocarcinoma                                 | 171        | 43         | 124        | 2           | 2         |
|                            | Papillary Carcinoma Columnar Cell                        | 2          | 0          | 2          | 0           | 0         |
|                            | Papillary Carcinoma Follicular Variant                   | 19         | 3          | 16         | 0           | 0         |
|                            | Papillary Carcinoma NOS                                  | 35         | 9          | 26         | 0           | 0         |
|                            | Papillary Microcarcinoma                                 | 19         | 5          | 14         | 0           | 0         |

| SITE | HISTOLOGY<br>(NOS - Not Otherwise Specified)     | ALL        | ADULTS    |           | PEADIATRICS |          |
|------|--|------------|-----------|-----------|-------------|----------|
|      |  |            | MALE      | FEMALE    | MALE        | FEMALE   |
|      | Peripheral Neuroectodermal Tumor                 | 1          | 0         | 1         | 0           | 0        |
|      | Pilocytic Astrocytoma                            | 11         | 3         | 1         | 6           | 1        |
|      | Pleomorphic Xanthoastrocytoma                    | 3          | 0         | 2         | 0           | 1        |
|      | Psammomatous Meningioma                          | 2          | 0         | 2         | 0           | 0        |
|      | Subependymal Giant Cell Astrocytoma              | 1          | 0         | 0         | 1           | 0        |
|      | Follicular Adenocarcinoma                        | 11         | 2         | 9         | 0           | 0        |
|      | Follicular Carcinoma Minimally Invasive          | 11         | 3         | 8         | 0           | 0        |
|      | Follicular Thyroid Carcinoma (Ftc), Encapsulated | 2          | 1         | 1         | 0           | 0        |
|      | Invasive Encapsulated Follicular Variant Of PTC  | 4          | 1         | 3         | 0           | 0        |
|      | <b>OTHER ENDOCRINE GLANDS</b>                    | <b>22</b>  | <b>8</b>  | <b>6</b>  | <b>5</b>    | <b>3</b> |
|      | Adenoma NOS                                      | 1          | 0         | 1         | 0           | 0        |
|      | Adrenal Cortical Carcinoma                       | 5          | 4         | 1         | 0           | 0        |
|      | Endocrine Tumor, Functioning, NOS, Malignant     | 1          | 0         | 1         | 0           | 0        |
|      | Epithelioid Hemangioendothelio Ma                | 1          | 0         | 1         | 0           | 0        |
|      | Malignant Rhabdoid Tumor                         | 1          | 0         | 0         | 0           | 1        |
|      | Meningothelial Meningioma                        | 1          | 0         | 1         | 0           | 0        |
|      | Neuroblastoma NOS                                | 7          | 0         | 0         | 5           | 2        |
|      | Pituitary Carcinoma NOS                          | 1          | 1         | 0         | 0           | 0        |
|      | Thymoma NOS                                      | 1          | 1         | 0         | 0           | 0        |
|      | Thymoma Type B2 Malignant                        | 1          | 1         | 0         | 0           | 0        |
|      | Thymoma Type B3 Malignant                        | 2          | 1         | 1         | 0           | 0        |
|      | <b>LYMPH NODES (HODGKIN'S LYMPHOMA)</b>          | <b>121</b> | <b>53</b> | <b>49</b> | <b>13</b>   | <b>6</b> |
|      | Nodular Sclerosis                                | 48         | 17        | 19        | 9           | 3        |
|      | Nodular Sclerosis Cellular Phase                 | 2          | 0         | 2         | 0           | 0        |
|      | Nodular Lymphocyte Predominance                  | 6          | 4         | 2         | 0           | 0        |
|      | Lymphocyte Rich                                  | 2          | 2         | 0         | 0           | 0        |
|      | Lymphocyte Depletion                             | 1          | 1         | 0         | 0           | 0        |
|      | Hodgkin's Lymphoma NOS                           | 56         | 26        | 24        | 3           | 3        |
|      | Mixed Cellularity                                | 6          | 3         | 2         | 1           | 0        |
|      | <b>LYMPH NODES (NON HODGKIN'S LYMPHOMA)</b>      | <b>168</b> | <b>90</b> | <b>67</b> | <b>7</b>    | <b>4</b> |
|      | Anaplastic Large Cell Lymphoma T Cell            | 3          | 0         | 2         | 1           | 0        |
|      | Burkitt Lymphoma                                 | 8          | 3         | 1         | 3           | 1        |
|      | CUTANEOUS T-CELL LYMPHOMA NOS                    | 2          | 1         | 1         | 0           | 0        |
|      | Follicular Lymphoma Grade 1                      | 1          | 0         | 1         | 0           | 0        |
|      | Follicular Lymphoma Grade 2                      | 4          | 2         | 2         | 0           | 0        |
|      | Follicular Lymphoma Grade3                       | 1          | 1         | 0         | 0           | 0        |
|      | Follicular lymphoma NOS                          | 5          | 4         | 1         | 0           | 0        |
|      | Large B-Cell Diffuse                             | 66         | 41        | 21        | 1           | 3        |
|      | Malignant Lymphoma Non-Hodgkin NOS               | 34         | 21        | 13        | 0           | 0        |
|      | Malignant Lymphoma NOS                           | 11         | 3         | 7         | 1           | 0        |
|      | Malignant Lymphoma Small B                       | 1          | 0         | 1         | 0           | 0        |
|      | Marginal Zone B-Cell Lymphoma NOS                | 4          | 1         | 3         | 0           | 0        |
|      | Mature T-Cell Lymphoma                           | 4          | 1         | 3         | 0           | 0        |
|      | Mycosis Fungoides                                | 19         | 8         | 11        | 0           | 0        |
|      | NK/T-Cell Lymphoma Nasal and Nasal Type          | 3          | 3         | 0         | 0           | 0        |
|      | PRECURSOR CELL LYMPHOBLASTIC LYMPHOMA            | 1          | 0         | 0         | 1           | 0        |
|      | Sezary Syndrome                                  | 1          | 1         | 0         | 0           | 0        |
|      | <b>UNKNOWN OR ILL-DEFINED</b>                    | <b>49</b>  | <b>24</b> | <b>16</b> | <b>5</b>    | <b>4</b> |
|      | Alveolar Rhabdomyosarcoma                        | 1          | 0         | 0         | 1           | 0        |
|      | Adenocarcinoma NOS                               | 4          | 2         | 2         | 0           | 0        |
|      | Alk Positive Large Bcell Lymphoma                | 1          | 1         | 0         | 0           | 0        |
|      | Angiomatoid Fibrous Histiocyt Malignant          | 1          | 0         | 1         | 0           | 0        |
|      | Basosquamous Carcinoma                           | 1          | 1         | 0         | 0           | 0        |
|      | Carcinoma NOS                                    | 4          | 1         | 3         | 0           | 0        |
|      | Dedifferentiated Liposarcoma                     | 1          | 1         | 0         | 0           | 0        |
|      | Ewing Sarcoma                                    | 2          | 2         | 0         | 0           | 0        |
|      | Glomangioma                                      | 1          | 0         | 1         | 0           | 0        |
|      | Hemangiosarcoma                                  | 1          | 1         | 0         | 0           | 0        |
|      | Large Cell Neuroendocrine Carcinoma              | 1          | 1         | 0         | 0           | 0        |
|      | Leiomyosarcoma NOS                               | 1          | 0         | 1         | 0           | 0        |
|      | Malignant Fibrous Histiocytoma                   | 1          | 1         | 0         | 0           | 0        |
|      | Neuroblastoma NOS                                | 6          | 0         | 0         | 4           | 2        |
|      | Neoplasm Malignant                               | 2          | 1         | 1         | 0           | 0        |
|      | Neuroendocrine Carcinoma                         | 1          | 0         | 1         | 0           | 0        |
|      | Nodular Hidradenoma Malignant                    | 1          | 1         | 0         | 0           | 0        |
|      | Osteosarcoma NOS                                 | 1          | 1         | 0         | 0           | 0        |
|      | Paraganglioma Malignant                          | 1          | 1         | 0         | 0           | 0        |
|      | Plasmablastic Lymphoma (2010)                    | 1          | 1         | 0         | 0           | 0        |
|      | Primitive Neuroectodermal Tumor No               | 2          | 0         | 2         | 0           | 0        |
|      | Rhabdomyosarcoma NOS                             | 1          | 1         | 0         | 0           | 0        |
|      | Sarcoma NOS                                      | 2          | 2         | 0         | 0           | 0        |
|      | Sertoli Cell Tumor NOS                           | 1          | 0         | 0         | 0           | 1        |
|      | Small Cell Carcinoma NOS                         | 3          | 1         | 1         | 0           | 1        |
|      | Serous Cystadenocarcinoma                        | 1          | 1         | 0         | 0           | 0        |
|      | Squamous Cell Carcinoma                          | 1          | 1         | 0         | 0           | 0        |
|      | Spindle Cell Sarcoma                             | 5          | 2         | 3         | 0           | 0        |



**TABLE 10**  
**MULTIPLE PRIMARY SITE TABLE**  
**2016**

| <b>PRIMARY SITE</b>                  | <b>HISTOLOGY</b>                | <b>OTHER PRIMARIES</b>                  | <b>ALL</b>   | <b>MALE</b> | <b>FEMALE</b> |
|--------------------------------------|---------------------------------|---|--------------|-------------|---------------|
| <b>2016</b>                          | (NOS - Not Otherwise Specified) | (PREVIOUS OR CONCURRENT)                | <b>CASES</b> |             |               |
|                                      |                                 |   | <b>169</b>   | <b>72</b>   | <b>97</b>     |
| <b>LIP</b>                           |                                 |   | <b>1</b>     | <b>0</b>    | <b>1</b>      |
|                                      | Squamous Cell Carcinoma         | Tongue - Sq Cell Carcinoma              | 1            | 0           | 1             |
| <b>TONGUE</b>                        |                                 |   | <b>2</b>     | <b>2</b>    | <b>0</b>      |
|                                      | Squamous Cell Carcinoma         | Nasopharynx - Carcinoma                 | 1            | 1           | 0             |
|                                      | Squamous Cell Carcinoma         | Liver - Hepatocellular Carcinoma        | 1            | 1           | 0             |
| <b>MOUTH</b>                         |                                 |   | <b>4</b>     | <b>2</b>    | <b>2</b>      |
|                                      | Adenocarcinoma                  | Stomach- Sq Cell Carcinoma              | 1            | 1           | 0             |
|                                      |                                 | Colon - Adenocarcinoma                  |              |             |               |
|                                      | Squamous Cell Carcinoma         | Hard Palat - Sq Cell Carcinoma          | 1            | 0           | 1             |
|                                      | Mucoepidermoid Carcinoma        | Thyroid - Papillary Adenocarcinoma      | 1            | 0           | 1             |
|                                      | Squamous Cell Carcinoma         | Pyiform Sinus - Sq Cell Ca              | 1            | 1           | 0             |
| <b>EYE</b>                           |                                 |   | <b>1</b>     | <b>1</b>    | <b>0</b>      |
|                                      | Carcinoma                       | Salivary Glands - Adenocarcinoma        | 1            | 1           | 0             |
| <b>GALLBLADDER</b>                   |                                 |   | <b>1</b>     | <b>0</b>    | <b>1</b>      |
|                                      | Adenocarcinoma                  | Large B-Cell Lymphoma                   | 1            | 0           | 1             |
| <b>ESOPHAGUS</b>                     |                                 |   | <b>1</b>     | <b>1</b>    | <b>0</b>      |
|                                      | Adenocarcinoma                  | Lung - Sq Cell Carcinoma                | 1            | 1           | 0             |
| <b>STOMACH</b>                       |                                 |   | <b>2</b>     | <b>2</b>    | <b>0</b>      |
|                                      | Carcinoid Tumor                 | Thyroid - Papillary Adenocarcinoma      | 1            | 1           | 0             |
|                                      | Carcinoma Diffuse Type          | Bladder - Papillary Urothelial Ca       | 1            | 1           | 0             |
| <b>SMALL INTESTINE</b>               |                                 |   | <b>1</b>     | <b>0</b>    | <b>1</b>      |
|                                      | Adenocarcinoma                  | Rectum - Adenocarcinoma                 | 1            | 0           | 1             |
| <b>COLON</b>                         |                                 |   | <b>8</b>     | <b>4</b>    | <b>4</b>      |
|                                      | Adenocarcinoma                  | Skin - Basal Cell Carcinoma             | 1            | 1           | 0             |
|                                      | Adenocarcinoma                  | Kidney - Renal Cell Carcinoma           | 1            | 0           | 1             |
|                                      | Adenocarcinoma                  | Lung - Adenocarcinoma                   | 1            | 1           | 0             |
|                                      | Adenocarcinoma                  | Colon - Sq Intraepithelial Neoplasia    | 1            | 0           | 1             |
|                                      | Adenocarcinoma                  | Prostate - Adenocarcinoma               | 1            | 1           | 0             |
|                                      | Adenocarcinoma                  | Lung - Carcinoid Tumor                  | 1            | 1           | 0             |
|                                      | Neuroendocrine Carcinoma        | Nasopharynx - Carcinoma                 | 1            | 0           | 1             |
|                                      | Villous Adenoma                 | Breast - Invasive Ductal Ca             | 1            | 0           | 1             |
| <b>RECTUM, RECTOSIGMOID JUNCTION</b> |                                 |   | <b>8</b>     | <b>3</b>    | <b>5</b>      |
|                                      | Adenocarcinoma In Situ          | Kidney - Renal Cell Ca                  | 1            | 1           | 0             |
|                                      | Adenocarcinoma                  | Ovary - Serous Papillary Carcinoma      | 1            | 0           | 1             |
|                                      |                                 | Brain - Meningioma                      |              |             |               |
|                                      | Adenocarcinoma                  | Thyroid - Papillary Adenocarcinoma      | 1            | 0           | 1             |
|                                      | Adenocarcinoma                  | Cervix Uteri - Sq Cell Carcinoma        | 1            | 0           | 1             |
|                                      | Adenocarcinoma                  | Chronic Lymphocytic leukemia            | 1            | 0           | 1             |
|                                      | Adenocarcinoma                  | Bladder - Papillary Urothelial Carcinom | 1            | 1           | 0             |
|                                      | Adenocarcinoma                  | Thyroid - Papillary Adenocarcinoma      | 1            | 0           | 1             |
|                                      | Adenocarcinoma                  | Thyroid - Papillary Adenocarcinoma      | 1            | 1           | 0             |



| PRIMARY SITE                         | HISTOLOGY                            | OTHER PRIMARIES          | ALL       | MALE      | FEMALE   |
|--------------------------------------|--------------------------------------|--------------------------|-----------|-----------|----------|
| 2016                                 | (NOS - Not Otherwise Specified)      | (PREVIOUS OR CONCURRENT) | CASES     |           |          |
| <b>CERVIX UTERI</b>                  |                                      |                          | <b>4</b>  | <b>0</b>  | <b>4</b> |
| Malignant Neoplasm                   | Ovary - Papillary Serous Cystadenoma |                          | 1         | 0         | 1        |
|                                      | Hodgkin's Lymphoma                   |                          |           |           |          |
| Adenocarcinoma                       | Breast - Invasive Ductal Carcinoma   |                          | 1         | 0         | 1        |
| Squamous Cell Carcinoma              | Breast - Lobular Carcinoma           |                          | 1         | 0         | 1        |
| Serous Cystadenoma                   | Breast - Invasive Ductal Carcinoma   |                          | 1         | 0         | 1        |
| <b>LIVER, INTRAHEPATIC BILE DUCT</b> |                                      |                          | <b>6</b>  | <b>3</b>  | <b>3</b> |
| Hepatocellular Carcinoma             | Rectum - Adenocarcinoma              |                          | 1         | 0         | 1        |
| Hepatocellular Carcinoma             | Tonsil - Large B-Cell Lymphoma       |                          | 1         | 0         | 1        |
| Hepatocellular Carcinoma             | Thyroid - Papillary Carcinoma        |                          | 1         | 1         | 0        |
| Hepatocellular Carcinoma             | Colon - Adenocarcinoma               |                          | 1         | 1         | 0        |
|                                      | Thyroid - Papillary Carcinoma        |                          |           |           |          |
| Hepatocellular Carcinoma             | Prostate - Adenocarcinoma            |                          | 1         | 1         | 0        |
| Neoplasm Malignant                   | Ovary - Adenocarcinoma               |                          | 1         | 0         | 1        |
| <b>PANCREAS</b>                      |                                      |                          | <b>2</b>  | <b>1</b>  | <b>1</b> |
| Adenocarcinoma                       | Breat - Invasive Ductal Carcinoma    |                          | 1         | 0         | 1        |
| Adenocarcinoma                       | Prostate - Adenocarcinoma            |                          | 1         | 1         | 0        |
| <b>NASOPHARYNX</b>                   |                                      |                          | <b>4</b>  | <b>3</b>  | <b>1</b> |
| Squamous Cell Carcinoma              | Thyroid - Papillary Adenocarcinoma   |                          | 1         | 1         | 0        |
| Squamous Cell Carcinoma              | Hypopharynx - Sq Cell Ca             |                          | 1         | 0         | 1        |
| Squamous Cell Carcinoma              | Rectum - Mucinous Adenocarcinoma     |                          | 1         | 1         | 0        |
| Squamous Cell Carcinoma              | Thyroid - Papillary Adenocarcinoma   |                          | 1         | 1         | 0        |
| <b>LUNG</b>                          |                                      |                          | <b>5</b>  | <b>2</b>  | <b>3</b> |
| Adenocarcinoma                       | Breast - Invasive Ductal Carcinoma   |                          | 1         | 0         | 1        |
| Adenocarcinoma                       | Large B-Cell Lymphoma                |                          | 1         | 0         | 1        |
| Carcinoid Tumor                      | Colon - Adenocarcinoma               |                          | 1         | 1         | 0        |
| Squamous Cell Carcinoma              | Skin - Sebaceous Adenocarcinoma      |                          | 1         | 0         | 1        |
| Small Cell Carcinoma                 | Prostate - Adenocarcinoma            |                          | 1         | 1         | 0        |
| <b>BONE</b>                          |                                      |                          | <b>3</b>  | <b>1</b>  | <b>2</b> |
| Osteosarcoma                         | Eye Retinoblastoma                   |                          | 1         | 0         | 1        |
| Osteosarcoma                         | Bone Marrow - AML                    |                          | 1         | 1         | 0        |
| Adenoid Cystic Carcinoma             | Thyroid - Papillary Adenocarcinoma   |                          | 1         | 0         | 1        |
| <b>BONE MARROW</b>                   |                                      |                          | <b>15</b> | <b>11</b> | <b>4</b> |
| Acute Myeloid Leukemia               | Myeloproliferative Disorder          |                          | 1         | 1         | 0        |
| Acute Myeloid Leukemia               | Thyroid - Papillary Adenocarcinoma   |                          | 1         | 1         | 0        |
| Acute Myeloid Leukemia               | Bone Marrow - Polycythemia Vera      |                          | 1         | 0         | 1        |
| Acute Myeloid Leukemia               | Liver - Hepatoblastoma               |                          | 1         | 1         | 0        |
| Acute Myeloid Leukemia               | Bone Marrow - Multiple Myeloma       |                          | 1         | 1         | 0        |
| Acute Myeloid Leukemia               | Myelodysplastic Syndrome             |                          | 1         | 1         | 0        |
| Acute Myeloid Leukemia               | Bone - Myeloid Sarcoma               |                          | 1         | 1         | 0        |
| Acute Myeloid Leukemia               | Thoracic - Sarcoma                   |                          | 1         | 1         | 0        |
| Acute Myeloid Leukemia               | Thyroid - Papillary Adenocarcinoma   |                          | 1         | 1         | 0        |
| B-cell CLL                           | Liver - Hepatocellular Carcinoma     |                          | 1         | 1         | 0        |
| Leukemia                             | Brain - Choroid Plexus Carcinoma     |                          | 1         | 0         | 1        |
| Acute leukemia                       | B-cell Lymphoblastic Leukemia        |                          | 1         | 1         | 0        |
| Hairy Cell Leukemia                  | Breast - Invasive Ductal Carcinoma   |                          | 1         | 0         | 1        |
| Chronic Myeloid Leukemia             | Breast - Invasive Ductal Carcinoma   |                          | 1         | 0         | 1        |
| Chronic Myeloid Leukemia             | Bone - Myeloid Sarcoma               |                          | 1         | 1         | 0        |
| <b>SOFT TISSUE</b>                   |                                      |                          | <b>2</b>  | <b>1</b>  | <b>1</b> |
| Squamous Cell Carcinoma              | Bone Marrow - CML                    |                          | 1         | 0         | 1        |
| Myxoid Chondrosarcoma                | Thyroid - Papillary Adenocarcinoma   |                          | 1         | 1         | 0        |

| PRIMARY SITE              | HISTOLOGY                       | OTHER PRIMARIES                             | ALL       |          |           |
|---------------------------|---------------------------------|---|-----------|----------|-----------|
| 2016                      | (NOS - Not Otherwise Specified) | (PREVIOUS OR CONCURRENT)                    | CASES     | MALE     | FEMALE    |
| <b>SKIN</b>               |                                 |   | <b>9</b>  | <b>4</b> | <b>5</b>  |
| Basal Cell Ca Nodular     |                                 | Skin Hip - Basal Cell Ca                    | 1         | 1        | 0         |
| Basal Cell Ca Nodular     |                                 | Face - Basal Cell Ca Nodular                | 1         | 0        | 1         |
|                           |                                 | Eyelid - Basal Cell Ca                      |           |          |           |
| Basal Cell Ca Nodular     |                                 | Malignant Lymphoma                          | 1         | 1        | 0         |
| Basal Cell Carcinoma      |                                 | Face - Basal Cell Ca                        | 1         | 0        | 1         |
| Basal Cell Carcinoma      |                                 | Nasopharynx - Sq Cell Ca                    | 1         | 0        | 1         |
| Basal Adenocarcinoma      |                                 | Colon - Mucinous Adenocarcinoma             | 1         | 1        | 0         |
| Basal Adenocarcinoma      |                                 | Skin - Malignant Melanoma                   | 1         | 0        | 1         |
| Dermatofibrosarcoma       |                                 | Thyroid - Papillary Adenocarcinoma          | 1         | 1        | 0         |
| Sebaceous Adenocarcinoma  |                                 | Lung - Sq Cell Ca                           | 1         | 0        | 1         |
| <b>BREAST</b>             |                                 |   | <b>32</b> | <b>0</b> | <b>32</b> |
| Invasive Ductal Carcinoma |                                 | Skin - Basal Cell Ca                        | 1         | 0        | 1         |
| Granular Cell Tumor       |                                 | Nasopharynx - Undifferentiated Ca           | 1         | 0        | 1         |
| Intraductal Carcinoma     |                                 | Thyroid - Papillary Adenocarcinoma          | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Other Breast - Invasive Ductal Ca           | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Other Breast - Invasive Ductal Ca           | 1         | 0        | 1         |
| Lobular Carcinoma         |                                 | Lobular Ca In Situ                          | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Other Breast - Invasive Ductal Ca           | 1         | 0        | 1         |
| Intraductal Carcinoma     |                                 | DCIS  | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Thyroid - Papillary Adenocarcinoma          | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Thyroid - Papillary Adenocarcinoma          | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Ovary - Serous Cystadenoma                  | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Other Breast - Invasive Ductal Ca           | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Other Breast - Lobular Ca                   | 1         | 0        | 1         |
| Spindle Cell Carcinoma    |                                 | Sarcoma                                     | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Thyroid - Papillary Microcarcinoma          | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Liver - Hepatocellular Carcinoma            | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Hodgkin's Lymphoma                          | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Intestine - Adenocarcinoma                  | 1         | 0        | 1         |
| Papillary Microcarcinoma  |                                 | Cervix Uteri - Sq Intraepithelial Neoplasia | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Endometrium - Endometrioid AdenoCa          | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Thyroid - Follicular Carcinoma              | 1         | 0        | 1         |
| Carcinoma                 |                                 | Kidney - Renal Cell Ca                      | 1         | 0        | 1         |
| Carcinoma                 |                                 | Other Breast - Carcinoma                    | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Rectum - Adenocarcinoma                     | 1         | 0        | 1         |
|                           |                                 | Thyroid - Papillary Adenocarcinoma          |           |          |           |
| Lobular Carcinoma         |                                 | Other Breast - Lobular Carcinoma            | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Thyroid - Papillary Adenocarcinoma          | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Other Breast - Invasive Ductal Ca           | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Other Breast - Invasive Ductal Ca           | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Thyroid - Papillary Adenocarcinoma          | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Breast - Papillary Carcinoma                | 1         | 0        | 1         |
| Invasive Ductal Carcinoma |                                 | Other Breast - Invasive Ductal Ca           | 1         | 0        | 1         |
| Lobular Carcinoma         |                                 | Other Breast - Lobular Carcinoma            | 1         | 0        | 1         |

| PRIMARY SITE                | HISTOLOGY | OTHER PRIMARIES<br>(PREVIOUS OR CONCURRENT) | ALL       |                                 |                          |
|-----------------------------|-----------|---|-----------|---------------------------------|--------------------------|
|                             |           |   | 2016      | (NOS - Not Otherwise Specified) | (PREVIOUS OR CONCURRENT) |
| <b>CORPUS UTERI</b>         |           |   | <b>5</b>  | <b>0</b>                        | <b>5</b>                 |
| Adenocarcinoma              |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |
| Adenocarcinoma              |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |
| Adenocarcinoma              |           | Colon - Adenocarcinoma                      | 1         | 0                               | 1                        |
| Endometrioid Adenocarcinoma |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |
| Stromal Sarcoma             |           | Breast - Carcinoma                          | 1         | 0                               | 1                        |
| <b>OVARY</b>                |           |   | <b>3</b>  | <b>0</b>                        | <b>3</b>                 |
| Serous Cystadenocarcinoma   |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |
| Mucinous Adenocarcinoma     |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |
| Malignant Serous Tumor      |           | Othre Ovary - Malignant Serous Tumo         | 1         | 0                               | 1                        |
| <b>PROSTATE GLAND</b>       |           |   | <b>5</b>  | <b>5</b>                        | <b>0</b>                 |
| Adenocarcinoma              |           | Glottis - Sq Cell Carcinoma                 | 1         | 1                               | 0                        |
| Adenocarcinoma              |           | Rectum - Adenocarcinoma                     | 1         | 1                               | 0                        |
|                             |           | Colon - Adenocarcinoma                      |           |                                 |                          |
| Adenocarcinoma              |           | Liver - Hepatocellularcarcinoma             | 1         | 1                               | 0                        |
| Adenocarcinoma              |           | Colon - Adenocarcinoma                      | 1         | 1                               | 0                        |
| Adenocarcinoma              |           | Liver - Hepatocellularcarcinoma             | 1         | 1                               | 0                        |
| <b>KIDNEY</b>               |           |   | <b>6</b>  | <b>3</b>                        | <b>3</b>                 |
| Renal Cell Carcinoma        |           | Non-Hodgkin's Lymphoma                      | 1         | 1                               | 0                        |
| Clear Cell Sarcoma          |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |
| Clear Cell Adenocarcinoma   |           | Chromophobe Renal Cell Ca                   | 1         | 1                               | 0                        |
| Renal Cell Carcinoma        |           | Neuroectodermal Tumor                       | 1         | 0                               | 1                        |
| Clear Cell Adenocarcinoma   |           | Female Genital - Placenta Malignancy        | 1         | 0                               | 1                        |
| Renal Cell Carcinoma        |           | Non-Hodgkin's Lymphoma                      | 1         | 1                               | 0                        |
| <b>URINARY BLADDER</b>      |           |   | <b>3</b>  | <b>3</b>                        | <b>0</b>                 |
| Invasive Micropapillary Ca  |           | Bladder-Non-Inv Papillary Trans. Cell C     | 1         | 1                               | 0                        |
| Papillary Trans. Cell Ca    |           | Kidney - Clear Cell Ca                      | 1         | 1                               | 0                        |
| Carcinoma                   |           | Lung - Sq Cell Ca                           | 1         | 1                               | 0                        |
| <b>THYROID</b>              |           |   | <b>27</b> | <b>11</b>                       | <b>16</b>                |
| Papillary Adenocarcinoma    |           | Esophagus - Adenocarcinoma                  | 1         | 1                               | 0                        |
| Papillary Microcarcinoma    |           | Cervix - Sq Cell Ca                         | 1         | 0                               | 1                        |
| Papillary Carcinoma         |           | Pancreas- Neuroendocrine Carcinoma          | 1         | 0                               | 1                        |
| Papillary Carcinoma         |           | Ovary - Endometrioid Adenocarcinoma         | 1         | 0                               | 1                        |
| Papillary Carcinoma         |           | Liver - Hepatocellular Ca                   | 1         | 1                               | 0                        |
| Papillary Carcinoma         |           | Maxillary Sinus - Neuroectodermal Tun       | 1         | 1                               | 0                        |
| Medullary Carcinoma         |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |
| Papillary Carcinoma         |           | T-Cell Lymphoblastic Lymphoma               | 1         | 0                               | 1                        |
| Papillary Carcinoma         |           | Ovary - Micropapillary Serous Ca            | 1         | 0                               | 1                        |
| Papillary Carcinoma         |           | Kidney - Renal Cell Ca                      | 1         | 1                               | 0                        |
| Follicular Carcinoma        |           | Anal Canal - Sq Cell Ca                     | 1         | 0                               | 1                        |
| Follicular Carcinoma        |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |
| Papillary Microcarcinoma    |           | Glottis - Sq Cell Ca                        | 1         | 1                               | 0                        |
| Papillary Adenocarcinoma    |           | Rectum - Adenocarcinoma                     | 1         | 0                               | 1                        |
|                             |           | Breast - Invasive Ductal Ca                 |           |                                 |                          |
| Papillary Adenocarcinoma    |           | Brain - Malignant Lymphoma                  | 1         | 0                               | 1                        |
| Papillary Adenocarcinoma    |           | Adrenal Gland - Cortical Carcinoma          | 1         | 1                               | 0                        |
| Papillary Adenocarcinoma    |           | Large B-Cell Lymphoma                       | 1         | 0                               | 1                        |
| Follicular Carcinoma        |           | Langerhans Cell Histiocytosis               | 1         | 1                               | 0                        |
| Papillary Adenocarcinoma    |           | Leukemia                                    | 1         | 0                               | 1                        |
| Papillary Carcinoma         |           | Bone Marrow- AML                            | 1         | 1                               | 0                        |
| Papillary Adenocarcinoma    |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |
| Papillary Adenocarcinoma    |           | Oral Cavity - Mucoepidermoid Ca             | 1         | 0                               | 1                        |
| Papillary Adenocarcinoma    |           | Pancreas- Neuroendocrine Carcinoma          | 1         | 0                               | 1                        |
| Papillary Adenocarcinoma    |           | Soft Tissue - Myxoid Chondrosarcoma         | 1         | 1                               | 0                        |
| Papillary Adenocarcinoma    |           | Stomach - Diffuse Carcinoma                 | 1         | 1                               | 0                        |
| Papillary Adenocarcinoma    |           | Larynx - Sq Cell Ca                         | 1         | 1                               | 0                        |
| Papillary Adenocarcinoma    |           | Breast - Invasive Ductal Ca                 | 1         | 0                               | 1                        |

| <b>PRIMARY SITE</b>           | <b>HISTOLOGY</b>                | <b>OTHER PRIMARIES</b>             | <b>ALL</b>   |             |               |
|-------------------------------|---------------------------------|------------------------------------|--------------|-------------|---------------|
| <b>2016</b>                   | (NOS - Not Otherwise Specified) | (PREVIOUS OR CONCURRENT)           | <b>CASES</b> | <b>MALE</b> | <b>FEMALE</b> |
| <b>BRAIN, CNS</b>             |                                 |                                    | <b>6</b>     | <b>3</b>    | <b>3</b>      |
| Atypical Meningioma           |                                 | Breast - Invasive Ductal Ca        | 1            | 0           | 1             |
|                               |                                 | Thyroid - Follicular Carcinoma     |              |             |               |
| Glioma Malignant              |                                 | Large B- Cell Lymphoma             | 1            | 0           | 1             |
| Glioblastoma                  |                                 | Brain- Ependymoma                  | 1            | 1           | 0             |
| Pilocytic Astrocytoma         |                                 | Brain - Glioma Malignant           | 1            | 1           | 0             |
| Meningioma                    |                                 | Thyroid - Papillary Adenocarcinoma | 1            | 0           | 1             |
|                               |                                 | Lung - Adenocarcinoma              |              |             |               |
| Glioblastoma                  |                                 | Brain - Oligodendroglioma          | 1            | 1           | 0             |
| <b>HODGKIN'S DISEASE</b>      |                                 |                                    | <b>2</b>     | <b>2</b>    | <b>0</b>      |
| Hodgkin's Lymphoma            |                                 | Hodgkin's Lymphoma                 | 1            | 1           | 0             |
| Hodgkin's Lymphoma            |                                 | Small Lymphocytic Lymphoma         | 1            | 1           | 0             |
| <b>NON-HODGKIN'S LYMPHOMA</b> |                                 |                                    | <b>10</b>    | <b>4</b>    | <b>6</b>      |
| Diffuse Large B-Cell Lymphoma |                                 | Liver - Hepatocellular Ca          | 1            | 0           | 1             |
| Non-Hodgkin's Lymphoma        |                                 | Mouth - Non-Hodgkin's Lymphoma     | 1            | 0           | 1             |
| Follicular Lymphoma           |                                 | Kidney - Renal Cell Carcinoma      | 1            | 1           | 0             |
| Marginal B-Cell Lymphoma      |                                 | Breast - Invasive Ductal Carcinoma | 1            | 0           | 1             |
| Large B-Cell Lymphoma         |                                 | Hodgkin's Lymphoma                 | 1            | 0           | 1             |
| Non-Hodgkin's Lymphoma        |                                 | Kidney - Renal Cell Carcinoma      | 1            | 1           | 0             |
| Non-Hodgkin's Lymphoma        |                                 | Thyroid - Papillary Adenocarcinoma | 1            | 0           | 1             |
| Large B-Cell Lymphoma         |                                 | Kidney - Renal Cell Carcinoma      | 1            | 1           | 0             |
| Large B-Cell Lymphoma         |                                 | Thyroid - Papillary Adenocarcinoma | 1            | 0           | 1             |
| Non-Hodgkin's Lymphoma        |                                 | Liver - Hepatocellular Ca          | 1            | 1           | 0             |
| <b>MYELOMA</b>                |                                 |                                    | <b>3</b>     | <b>2</b>    | <b>1</b>      |
| Multiple Myeloma              |                                 | Skin - Mature T-Cell Lymphoma      | 1            | 1           | 0             |
| Multiple Myeloma              |                                 | Thyroid - Large B-Cell Lymphoma    | 1            | 1           | 0             |
| Multiple Myeloma              |                                 | Plasmacytoma                       | 1            | 0           | 1             |
| <b>OTHER MALE GENITAL</b>     |                                 |                                    | <b>2</b>     | <b>2</b>    | <b>0</b>      |
| Squamous Cell Carcinoma       |                                 | Hodgkin's Lymphoma                 | 1            | 1           | 0             |
| Sarcoma                       |                                 | Follicular Lymphoma                | 1            | 1           | 0             |
| <b>OTHER HEMATOPOIETIC</b>    |                                 |                                    | <b>1</b>     | <b>1</b>    | <b>0</b>      |
| Myelodysplastic Syndrome      |                                 | Hodgkin's Lymphoma                 | 1            | 1           | 0             |
| <b>OTHER ENDOCRINE</b>        |                                 |                                    | <b>1</b>     | <b>1</b>    | <b>0</b>      |
| Adrenal Cortical Carcinoma    |                                 | Thyroid - Papillary Adenocarcinoma | 1            | 1           | 0             |
| <b>UNKNOWN PRIMARY</b>        |                                 |                                    | <b>2</b>     | <b>1</b>    | <b>1</b>      |
| Basosquamous Carcinoma        |                                 | Glottis - Sq Cell Ca               | 1            | 1           | 0             |
| Primitive Neuroectodermal Ca  |                                 | Kidney - Renal Cell Ca             | 1            | 0           | 1             |

## STAGE OF DISEASE AT DIAGNOSIS

Stage in any malignant process may be defined as the particular step, phase, or extent in a tumor's development, which is one of the predictors for outcome and treatment selection assigned at the time of initial diagnosis. The microscopic appearance, extent, and biological behavior of a tumor, as well as host factors, play a part in prognosis and are therefore important in staging.

The SEER (Surveillance, Epidemiology and End Results) Summary Staging Guide was utilized for all stageable cases. This system summarizes the disease categories into four general staging groups (i.e., in situ, localized, regional and distant). Stage categories are based on a combination of clinical observations and operative-pathological evaluation.

### Summary Staging Definitions:

IN SITU: Intraepithelial, noninvasive, noninfiltrating

LOCALIZED: Within organ

- a. Invasive cancer confined to the organ of origin
- b. Intraluminal extension where specified

REGIONAL : Beyond the organ of origin

- a. By direct extension to adjacent organs/tissues
- b. To regional lymph nodes
- c. Both (a) and (b)

DISTANT : Direct extension or metastasis

- a. Direct continuity to organs other than above
- b. Discontinuous metastasis
- c. To distant lymph nodes

Systemic diseases, i.e., leukemia and multiple myeloma and cases of unstageable unknown primary were disregarded in graphically illustrating the stages for all analytic cases seen at KFSH&RC in 2016 (Figure 13).

In addition to the SEER Summary Staging, the cases were also staged according to the American Joint Committee on Cancer (AJCC) TNM system. This scheme is based on the premise that cancers of similar histology or site of origin share similar patterns of growth and extension. This system is based on the assessment of three components:

T: Extent of the primary tumor

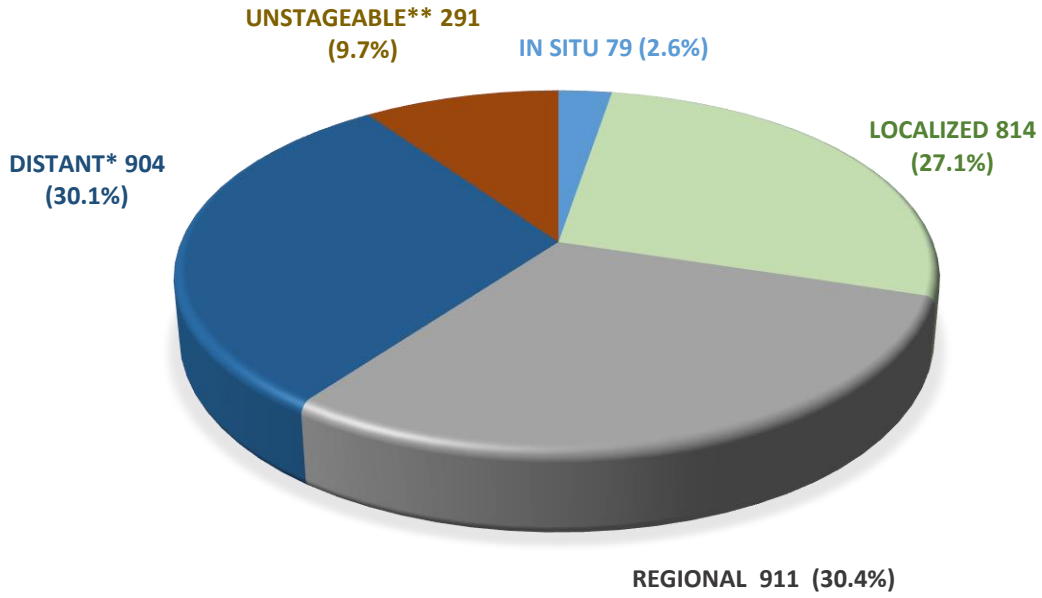
N: Absence or presence and extent of regional lymph node involvement

M: Absence or presence of distant metastasis

Analytic cases of five major sites, i.e., breast, Non-Hodgkin's lymphoma, Nasopharynx, Thyroid, Hodgkin's lymphoma and Liver are presented in Table 12 with their clinical group stages and yearly comparative figures from 2011 to 2016.

**FIGURE 13**

**DISTRIBUTION OF ANALYTIC CASES  
BY (SEER) STAGE AT DIAGNOSIS  
2016 ( TOTAL CASES=3000)**



\*Excludes Hematopoietic Primaries (234 cases)

\*\*Excludes Unstageable Unknown Primaries (49 cases)

TABLE 12

**AJCC CLINICAL TNM STAGE GROUP OF 2011-2016 CASES OF MAJOR SITES \*BY YEAR  
2011-2016**

| <b>BREAST</b>      |             |             |             |             |             |             |              |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| <b>STAGE</b>       | <b>2011</b> | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>TOTAL</b> |
| <b>0</b>           | 12          | 14          | 13          | 8           | 6           | 4           | <b>57</b>    |
| <b>0A</b>          | 0           | 0           | 0           | 0           | 0           | 2           | <b>2</b>     |
| <b>0IS</b>         | 0           | 0           | 0           | 0           | 1           | 1           | <b>2</b>     |
| <b>1</b>           | 0           | 0           | 7           | 12          | 3           | 11          | <b>33</b>    |
| <b>1A</b>          | 39          | 37          | 27          | 14          | 19          | 11          | <b>147</b>   |
| <b>1B</b>          | 0           | 0           | 2           | 0           | 0           | 1           | <b>3</b>     |
| <b>2</b>           | 0           | 0           | 1           | 1           | 0           | 1           | <b>3</b>     |
| <b>2A</b>          | 67          | 72          | 84          | 50          | 41          | 29          | <b>343</b>   |
| <b>2B</b>          | 61          | 34          | 61          | 62          | 51          | 23          | <b>292</b>   |
| <b>3</b>           | 0           | 0           | 0           | 1           | 1           | 2           | <b>4</b>     |
| <b>3A</b>          | 30          | 31          | 47          | 43          | 50          | 18          | <b>219</b>   |
| <b>3B</b>          | 46          | 39          | 50          | 48          | 37          | 11          | <b>231</b>   |
| <b>3C</b>          | 3           | 8           | 2           | 9           | 10          | 6           | <b>38</b>    |
| <b>4</b>           | 70          | 71          | 70          | 52          | 66          | 21          | <b>350</b>   |
| <b>4B</b>          | 0           | 0           | 0           | 1           | 1           | 1           | <b>3</b>     |
| <b>UNSTAGEABLE</b> | 0           | 0           | 1           | 0           | 0           | 0           | <b>1</b>     |
| <b>UNK</b>         | 82          | 66          | 66          | 30          | 24          | 8           | <b>276</b>   |
| <b>TOTAL</b>       | <b>410</b>  | <b>372</b>  | <b>431</b>  | <b>331</b>  | <b>310</b>  | <b>150</b>  | <b>2004</b>  |

| <b>NHL</b>         |             |             |             |             |             |             |              |
|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|
| <b>STAGE</b>       | <b>2011</b> | <b>2012</b> | <b>2013</b> | <b>2014</b> | <b>2015</b> | <b>2016</b> | <b>TOTAL</b> |
| <b>1</b>           | 1           | 4           | 6           | 5           | 2           | 1           | <b>19</b>    |
| <b>1A</b>          | 22          | 27          | 17          | 11          | 11          | 1           | <b>89</b>    |
| <b>1B</b>          | 1           | 3           | 7           | 7           | 9           | 1           | <b>28</b>    |
| <b>2</b>           | 0           | 3           | 2           | 3           | 2           | 1           | <b>11</b>    |
| <b>2A</b>          | 15          | 16          | 14          | 17          | 15          | 1           | <b>78</b>    |
| <b>2B</b>          | 9           | 5           | 10          | 5           | 10          | 0           | <b>39</b>    |
| <b>3</b>           | 3           | 5           | 2           | 8           | 6           | 1           | <b>25</b>    |
| <b>3A</b>          | 9           | 10          | 13          | 4           | 11          | 1           | <b>48</b>    |
| <b>3B</b>          | 6           | 9           | 16          | 5           | 7           | 0           | <b>43</b>    |
| <b>3C</b>          | 0           | 0           | 0           | 0           | 1           | 0           | <b>1</b>     |
| <b>4</b>           | 5           | 8           | 5           | 12          | 15          | 3           | <b>48</b>    |
| <b>4A</b>          | 26          | 24          | 17          | 11          | 14          | 0           | <b>92</b>    |
| <b>4B</b>          | 31          | 31          | 46          | 30          | 25          | 4           | <b>167</b>   |
| <b>UNSTAGEABLE</b> | 1           | 2           | 1           | 1           | 5           | 0           | <b>10</b>    |
| <b>UNK</b>         | 10          | 6           | 3           | 6           | 5           | 26          | <b>56</b>    |
| <b>TOTAL</b>       | <b>139</b>  | <b>153</b>  | <b>159</b>  | <b>125</b>  | <b>138</b>  | <b>40</b>   | <b>754</b>   |

| THYROID      |            |            |            |            |            |           |             |
|--------------|------------|------------|------------|------------|------------|-----------|-------------|
| STAGE        | 2011       | 2012       | 2013       | 2014       | 2015       | 2016      | TOTAL       |
| 1            | 158        | 167        | 166        | 64         | 84         | 37        | 676         |
| 1A           | 0          | 0          | 0          | 0          | 0          | 1         | 1           |
| 2            | 11         | 12         | 15         | 8          | 16         | 9         | 71          |
| 3            | 12         | 12         | 8          | 8          | 11         | 11        | 62          |
| 4            | 1          | 2          | 0          | 4          | 3          | 1         | 11          |
| 4A           | 1          | 1          | 6          | 0          | 4          | 1         | 13          |
| 4B           | 1          | 0          | 0          | 0          | 0          | 2         | 3           |
| 4C           | 17         | 3          | 8          | 0          | 8          | 0         | 36          |
| UNSTAGEABLE  | 0          | 1          | 0          | 0          | 1          | 0         | 2           |
| UNK          | 44         | 48         | 40         | 19         | 48         | 17        | 216         |
| <b>TOTAL</b> | <b>245</b> | <b>246</b> | <b>243</b> | <b>103</b> | <b>175</b> | <b>79</b> | <b>1091</b> |

| HODGKINS DISEASE |           |            |            |            |            |           |            |
|------------------|-----------|------------|------------|------------|------------|-----------|------------|
| STAGE            | 2011      | 2012       | 2013       | 2014       | 2015       | 2016      | TOTAL      |
| 1                | 0         | 1          | 0          | 1          | 1          | 0         | 3          |
| 1A               | 4         | 9          | 8          | 14         | 10         | 0         | 45         |
| 1B               | 0         | 0          | 1          | 1          | 0          | 0         | 2          |
| 2                | 0         | 1          | 0          | 3          | 1          | 1         | 6          |
| 2A               | 21        | 24         | 17         | 27         | 26         | 0         | 115        |
| 2B               | 10        | 13         | 13         | 17         | 7          | 1         | 61         |
| 3                | 0         | 0          | 3          | 6          | 3          | 1         | 13         |
| 3A               | 13        | 17         | 14         | 17         | 12         | 0         | 73         |
| 3B               | 17        | 11         | 17         | 13         | 7          | 5         | 70         |
| 4                | 0         | 1          | 5          | 5          | 10         | 1         | 22         |
| 4A               | 6         | 11         | 3          | 3          | 5          | 0         | 28         |
| 4B               | 24        | 28         | 25         | 34         | 19         | 1         | 131        |
| 88               | 0         | 0          | 0          | 0          | 0          | 2         | 2          |
| 99               | 1         | 1          | 1          | 0          | 2          | 22        | 27         |
| <b>TOTAL</b>     | <b>96</b> | <b>117</b> | <b>107</b> | <b>141</b> | <b>103</b> | <b>34</b> | <b>598</b> |

| LIVER        |            |            |           |           |           |           |            |
|--------------|------------|------------|-----------|-----------|-----------|-----------|------------|
| STAGE        | 2011       | 2012       | 2013      | 2014      | 2015      | 2016      | TOTAL      |
| 1            | 20         | 25         | 18        | 2         | 16        | 9         | 90         |
| 2            | 16         | 11         | 10        | 6         | 4         | 1         | 48         |
| 2B           | 0          | 0          | 0         | 0         | 0         | 1         | 1          |
| 3            | 0          | 0          | 0         | 0         | 1         | 0         | 1          |
| 3A           | 7          | 3          | 6         | 2         | 2         | 2         | 22         |
| 3B           | 2          | 1          | 2         | 1         | 4         | 1         | 11         |
| 3C           | 0          | 2          | 0         | 0         | 0         | 1         | 3          |
| 4            | 2          | 4          | 0         | 4         | 5         | 4         | 19         |
| 4A           | 3          | 1          | 0         | 0         | 1         | 3         | 8          |
| 4B           | 15         | 6          | 10        | 2         | 5         | 1         | 39         |
| 88           | 13         | 7          | 13        | 3         | 3         | 0         | 39         |
| 99           | 32         | 41         | 39        | 5         | 7         | 1         | 125        |
| <b>TOTAL</b> | <b>110</b> | <b>101</b> | <b>98</b> | <b>25</b> | <b>48</b> | <b>24</b> | <b>406</b> |



#### IV. With permission from Saudi Cancer Registry (SCR) Annual Report, 2016:

##### Cancer incidence in Saudi Arabia, 2016.

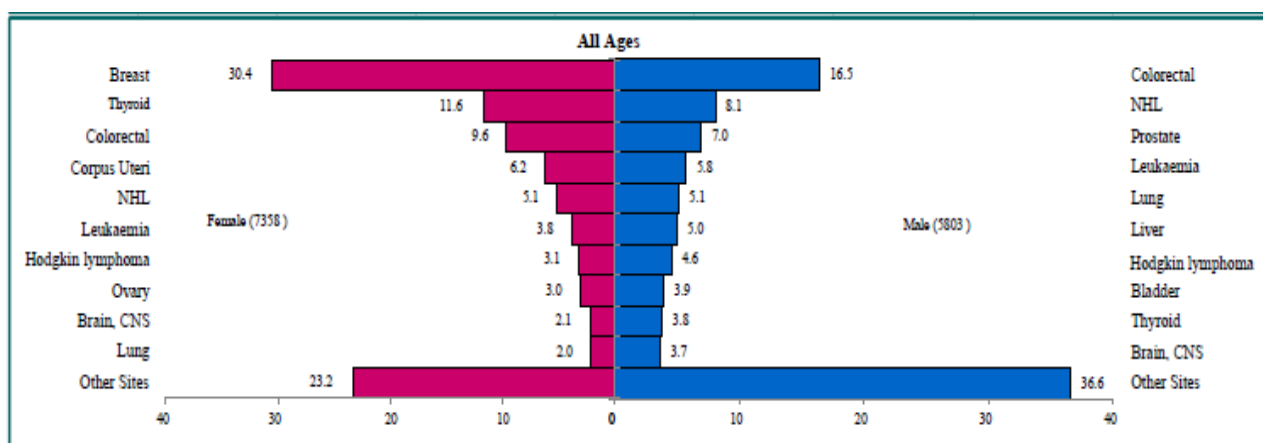
Between January 01 and December 31, 2016, the total number of newly diagnosed cancer cases reported to the Saudi Cancer Registry (SCR) was 17,602. Overall cancer was more among women than men; it affected 8,044 (45.7%) males and 9,558 (54.3%) females. Total of 13,562 cases were reported among Saudi nationals, 3,834 among non-Saudi, and 206 of unknown nationality. Total of 16,859 cases were analyzed, of which 13,161 (78.1%) were Saudi nationals and 3,698 (21.9%) were Non-Saudi.

Among Saudis 5,803 (44.1%) were males and 7,358 (55.9%) were females with a male to female ratio of 100 to 126. The crude incidence rates (CIR) of all cancers were 56.6/100,000 in males and 74.5 / 100,000 in females.

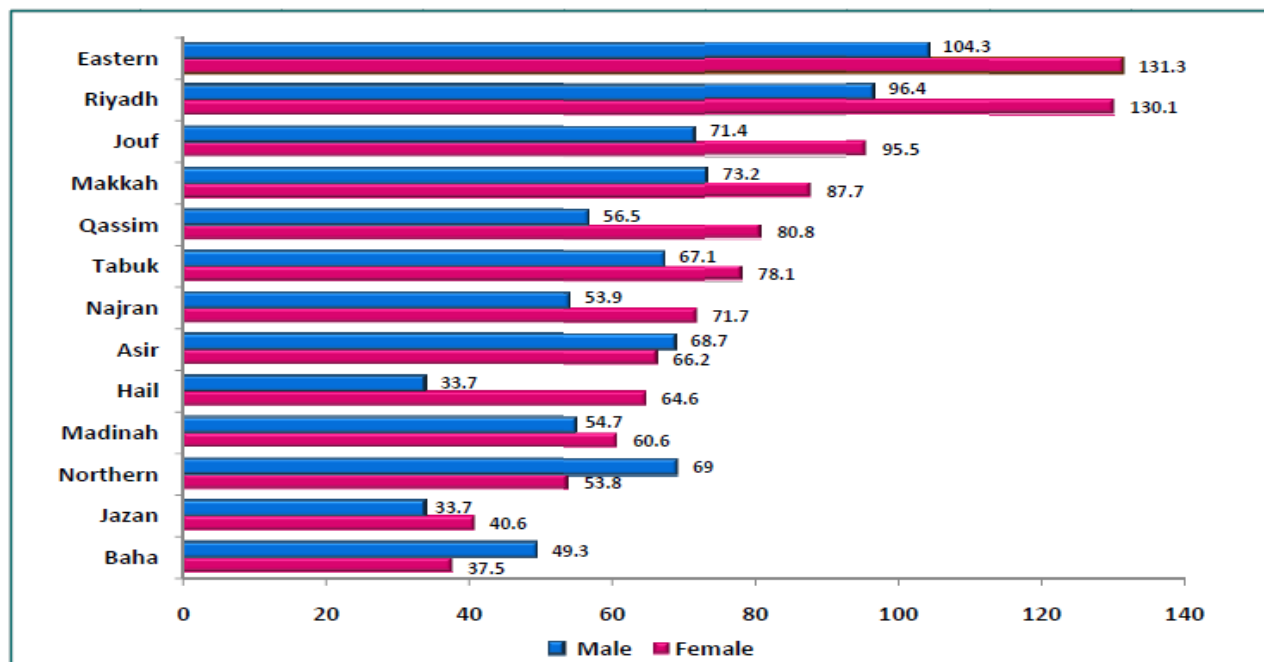
The overall age-standardized incidence rate (ASR) was 74.7/100,000 in males and 91.3/100,000 in females.

Eastern region reported the highest ASR among males and females (104.3/100,000 and 131.3 /100,000 for males and females respectively), whereas, Jazan region reported the lowest ASR among males and females (33.7/100,000 and 40.6/100,000 for males and females respectively)

**Most common Cancers among Saudi Nationals in 2016 of all ages**



**Age Standardizes Rate (ASR of all cancer sites among Saudi nationals , 2016**



## V. APPENDIX

### REQUESTS FOR TUMOR REGISTRY DATA 2016

#### February

Year (1990-2016) Cardiac Sarcoma patients including great vessels. Dr. M. Alshabanah  
Patients MRN, year of diagnosis, Tumor size, site, histology and grade.  
If patient underwent, Surgery, Chemo, Cycle and Radiation.  
Last date of follow up

Testis malignant cases by histology by year 1975-2013. Dr. M. Abomelha  
SEER summary stage of testis malignant cases by year 1975-2013.  
Total cases data of nationality, age, region 1975-2013.  
Pediatric testis malignant cases by histology by year 1975-2013.

Diffuse large B cell lymphoma/NHL-NOS with Gastric involvement. Dr. S. Akhtar  
Gastric DLBLL

#### May

MRN's of patients with metastatic Renal Cell Carcinoma from 2007-2014 Dr. S. Bazarbashi

#### June

All patients diagnosed with Gastric Cancer and GES from 2009- 2013 Dr. N. Agha  
including all stages.

#### Oct

Acute Promyelocytic Leukemia 1975-2014 Dr. A. Hanbali  
Total #, MRN. Gender and Histology

Breast Cancer Statistic, Pathology, Number of cases 5 years. Dr. A. Alsayed  
Staging male regions in Kingdom.

Number of Lymphoma patients from 1975-date. Dr. S. Akhtar  
Total number of cancer patient's same year.  
Breakdown of lymphoma patients according to diagnosis NHL-VS HL  
Sex, Age, (>60+<60)

Hodgkin lymphoma and baseline variables for registry data. Dr. M. Rauf

#### Nov

For Database of Sarcoma 1997-2016 Ewing Sarcoma 14 years and above Dr. Memon

MRN of Giant cell tumors from 2002-2016 Dr. M. Elshenawy

#### Dec

Epithelial Ovarian cancer. Age: 50 years old or less from 2008-2016 Dr. H. Alhusaini

All patient's population diagnosed as Desmoids Tumor or Fibromatosis in Dr. A. Alsuhaibani  
KFSHRC from 2001-2016

## VI. GLOSSARY OF TERMS

**Accessioned:** Cases are entered into the Tumor Registry by the year in which they were first seen at KFSH&RC for each primary cancer.

**Age of Patient:** Recorded in completed years at the time of diagnosis.

**Analytic Cases:** Cases which were first diagnosed and/or received all or part of their first course of treatment at KFSH&RC.

**Non-Analytic Cases:** Cases diagnosed elsewhere and received all of their first course of treatment elsewhere.

**Case:** A diagnosis or finished abstract. A patient who has more than one primary is reported as multiple cases.

**Crude Relative Frequency:** The proportion of a given cancer in relation to all cases in a clinical or pathological series.

**First Course of Treatment:** The initial tumor-directed treatment or series of treatments, usually initiated within four months after diagnosis.

**Stage of Disease:** Extent of disease process determined at first course of treatment.

### **SEER (Surveillance, Epidemiology and End Results) Summary Staging:**

**In Situ:** Tumor meets all microscopic criteria for malignancy except invasion.

**Local:** Tumor is confined to organ of origin.

**Regional:** Tumor has spread by direct extension to immediately adjacent organs and/or lymph nodes and appears to have spread no further.

**Distant:** Tumor has spread beyond immediately adjacent organs or tissues by direct extension and/or has either developed secondary or metastatic tumors, metastasized to distant lymph nodes or has been determined to be systemic in origin.

**AJCC (American Joint Committee on Cancer) TNM Staging:** A classification scheme based on the premise that cancers of similar histology or site or origin share similar patterns of growth and extension.

### **T+N+M = Stage**

**T:** Extent of primary tumor

**N:** Extent of regional lymph node involvement

**M:** Distant Metastasis

**Clinical Stage:** Classification based on the evidence acquired before treatment. Such evidence arises from physical examination, imaging, endoscopy, biopsy, surgical exploration and other relevant findings.

**Pathologic Stage:** Classification based on the evidence acquired before treatment, supplemented or modified by the additional evidence acquired from surgery and from pathologic examination of the resected specimen.

