Research Unit
King Faisal Cancer Centre
King Faisal Specialist Hospital
and Research Centre

# 2004
# TUMOR REGISTRY
## ANNUAL REPORT

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# TUMOR REGISTRY

# ANNUAL REPORT

Annual Report Prepared by the Staff of the Tumor Registry
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## ACKNOWLEDGEMENTS

The Cancer Program is a combined effort of many individuals. It is not possible to enumerate all the nurses, technicians, therapists, pharmacists, dentists, physicians, scientists, social workers and others whose work is primarily on behalf of the patients with cancer. In addition, nearly everyone associated with the hospital comes in contact with the cancer patients from time to time, frequently contributing significantly to their care. The staff of the Tumor Registry recognizes this hospital-wide involvement in the care of cancer patients. The information in this report is provided to assist all health care professionals to better understand the problems faced in treating patients with cancer.

The following Departments have assisted throughout the year and without their invaluable support this report would not be possible. The Tumor Registry staff acknowledges these Departments:

Department of Pathology and Laboratory Medicine
Information Technology Affairs
Medical Records Services
Department of Radiation Therapy
Home Health Care
King Faisal Cancer Centre

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## INTRODUCTION

The King Faisal Cancer Centre is proud to present the Tumor Registry's 19th Annual Report since its establishment in 1982. It contains information/data on new cancer cases seen in 2004 at the King Faisal Specialist Hospital and Research Centre (KFSH&RC) .

A historical data shows the trend of cancer cases treated and/or managed from 1975 to 2004, the total number and by primary site. The leading cancers, referral patterns, site/histology table and staging of selected primary sites, among others, are shown in this Report.

Breast cancer, non-hodgkin's lymphoma, thyroid, leukemia and colorectal cancer remain the top five (5) cases seen at KFSH&RC. A referral bias does exist at KFSH&RC, but similar data from the National Cancer Registry (NCR) indicates that the Tumor Registry data reflects the current trends in the Kingdom of Saudi Arabia.

The Tumor Registry reports all KFSH&RC cancer cases diagnosed on or after 01 January 1994 to the NCR and it is interesting to note that these cases comprise about 40% of the total cases reported to the NCR by all the hospitals in the Kingdom.

We thank the staff of the Tumor Registry for their hard work in publishing this Annual Report in spite the fact that the Registry has been short-staffed. We look forward to using CNExT, a cutting edge cancer/tumor registry software which we will be getting soon, that will not only allow more data collection and ensure more accurate and reliable information, but will also make the preparation of the Annual Report much easier .

This Report can also be accessed at the King Faisal Cancer Centre website.

Any comments or suggestions regarding this Annual Report can be sent to chaudhri@kfshrc.edu.sa or ofelia@kfshrc.edu.sa.

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## 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 KFSH&RC Tumor Registry is a hospital-wide data system designed for the collection, management and analysis of data on patients with the diagnosis of a malignant neoplasm (cancer). 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 54,574 malignant cases seen at KFSH&RC from June 1975 through December 31, 2004, as well as cases seen at the Children's Cancer Centre since its opening in March 1997. More than 2,600 new cases are added annually.

The Registry is primarily staffed with certified 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 is the Cansur 3.0 designed by the ACoS in which the details of each diagnosed cancer case are entered and stored. (Please refer to Appendix A-1 to A-4 for a sample data set.)

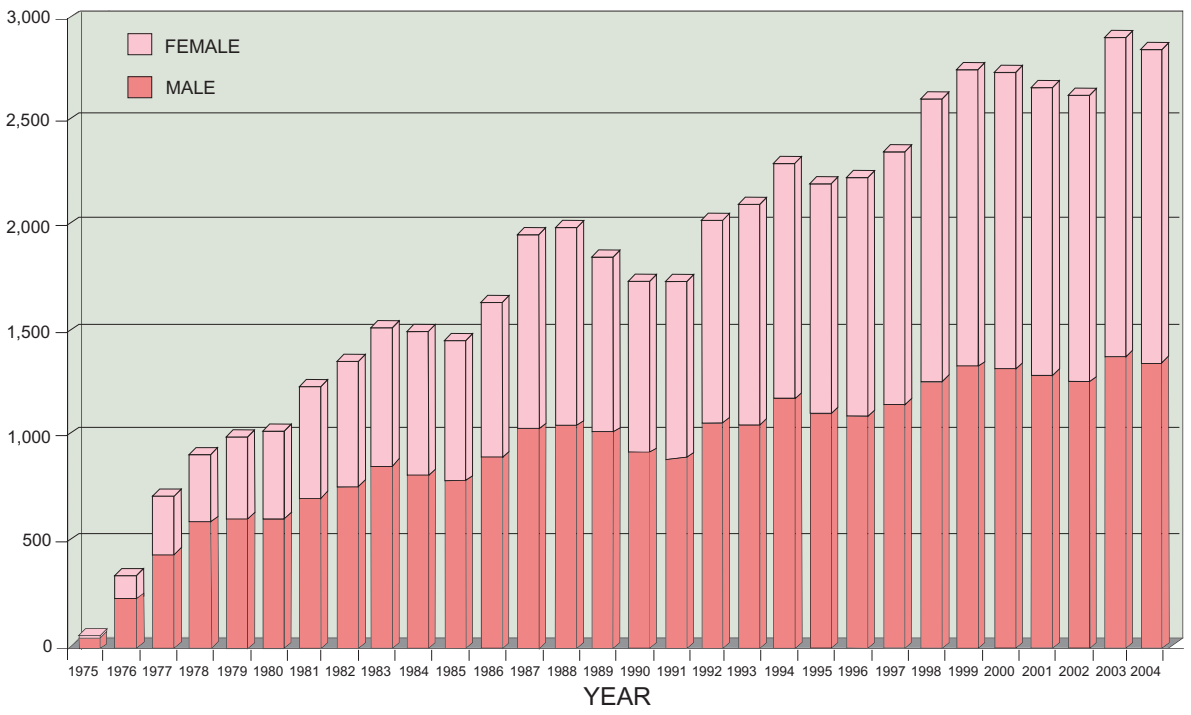
The data maintained in the Tumor Registry provides the statistics for the publication of the KFSH&RC Annual Report which summarizes the hospital's cancer experience. The data also supports a wide variety of reports at the request of physicians, researchers and ancillary personnel. These reports support patient management and outcome, basic and clinical research investigations, educational publications and presentations, and resource utilization. In 2004, the Tumor Registry supported 14 data requests (see Appendix B for a listing of requests for Tumor Registry data). It also identified and reported to the National Cancer Registry 2,842 new cases seen in 2004 that were diagnosed on or after 01 January 1994.

## II. KFSH&RC CANCER PATIENT POPULATION

A total of 2,850 cases were accessioned in 2004, with 1,355 males and 1,495 females or a male/female ratio of 0.9:1. This represents a 1.9% decrease from 2003.

**FIGURE 1**

**DISTRIBUTION OF CASES ACCESSIONED BY YEAR**
**1975 - 2004 (TOTAL CASES = 54,574)**




From the opening of the hospital (mid 1975) until December 2004, 54,574 cancer cases were registered (28,347 males and 26,227 females) with a male/female ratio of 1.1:1. There were 7,203 (13.2%) pediatric cases (0 to 14 years of age) and 47,371 (86.8%) adults (15 years old and above). The same proportion was noted in 2004, 13.2% (376) for pediatrics and 86.8% (2,474) for adults.

**TABLE 1**

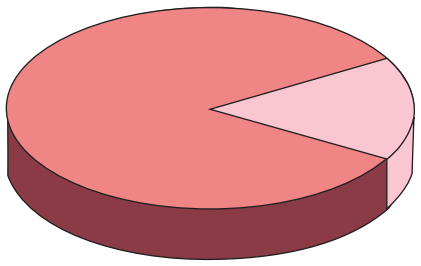
## CASES SEEN AT KFSH&RC (MALE/FEMALE & PEDIATRICS/ADULTS) BY 5-YEAR PERIOD 1975 - 2004

| | 1975-1976* | 1977-1981 | 1982-1986 | 1987-1991 | 1992-1996 | 1997-2001 | 2002-2004** | TOTAL |
|---|---|---|---|---|---|---|---|---|
| MALE | 280 | 2,981 | 4,149 | 4,970 | 5,559 | 6,399 | 4,009 | 28,347 |
| FEMALE | 135 | 1,945 | 3,359 | 4,342 | 5,344 | 6,734 | 4,368 | 26,227 |
| **TOTAL** | **415** | **4,926** | **7,508** | **9,312** | **10,903** | **13,133** | **8,377** | **54,574** |
| **M / F RATIO** | **2.1:1** | **1.5:1** | **1.2:1** | **1.1:1** | **1.0:1** | **1.0:1** | **0.9:1** | **1.1:1** |
| PEDIATRICS*** | 5.5 | 593 | 984 | 1,163 | 1,396 | 1,884 | 1,128 | 7,203 |
| (%) | 13.2% | 12.0% | 13.1% | 12.5% | 12.8% | 14.3% | 13.5% | 13.2% |
| ADULTS | 360 | 4,333 | 6,524 | 8,149 | 9,507 | 11,249 | 7,249 | 47,371 |
| (%) | 86.8% | 88.0% | 86.9% | 87.5% | 87.2% | 85.7% | 86.5% | 86.8% |
| **TOTAL** | **415** | **4,926** | **7,508** | **9,312** | **10,903** | **13,133** | **8,377** | **54,574** |

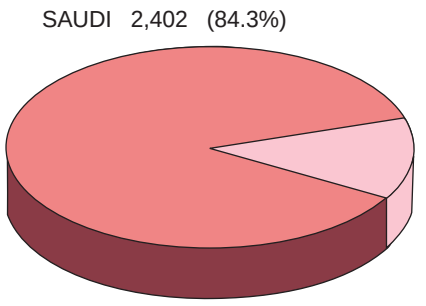
* First two years of KFSH&RC partial operation.
** Three years data only.
*** Pediatrics = 0 to 14 years of age ; Adults = 15 years and above.

**FIGURE 2**

## DISTRIBUTION OF CASES BY NATIONALITY 1975 - 2004 (TOTAL CASES = 54,574)




**2004 (TOTAL CASES = 2,850)**



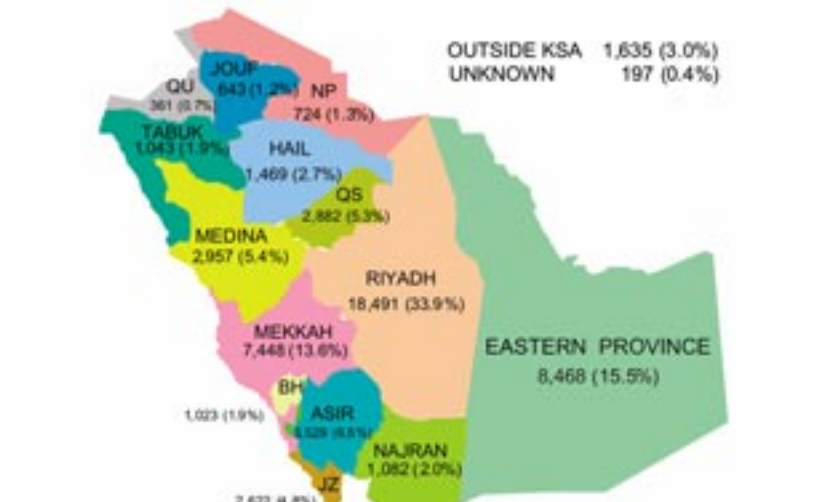

Saudi nationals totaled 2,402 (84.3%) in 2004 and the non-Saudi, 448 (15.7%). During the period 1975 to 2004, the former accounted for 86.8% (47,391) while the latter, 13.2% (7,183).

Geographically, the referral pattern in 2004 was mainly from the Riyadh Region with 38.1% of all cases, followed by the Eastern Province and the Asir Region with 18.4% and 6.8%, respectively. During the 30 years in review, 33.9% were referred from Riyadh, 15.5% from the Eastern Province and 13.6% from Mekkah.

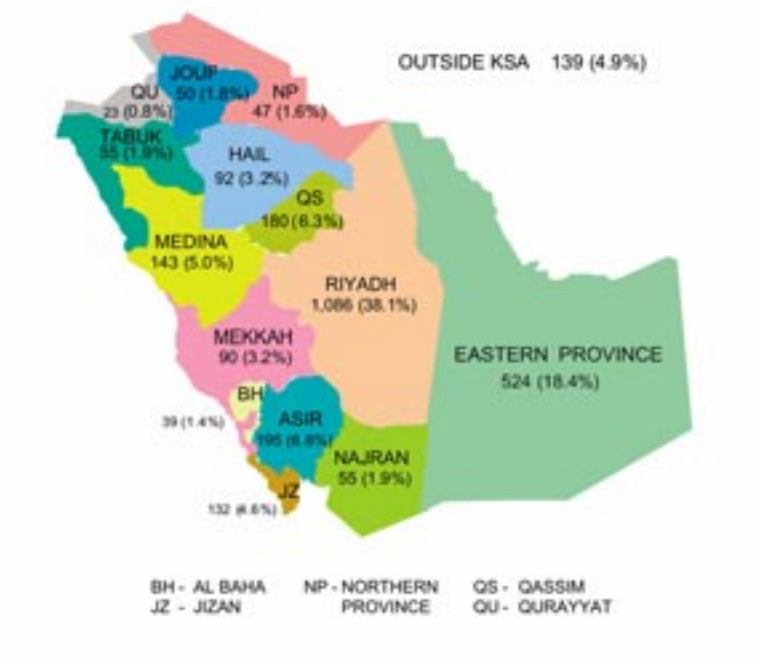
These percentages reflect the KFSH&RC actual experience rather than adjusted to reflect the population of those regions.

**FIGURE 3**

**DISTRIBUTION OF CASES BY REGION**
**(Based on Given Address at Time of Diagnosis)**
**1975 - 2004 (TOTAL CASES = 54,574)**



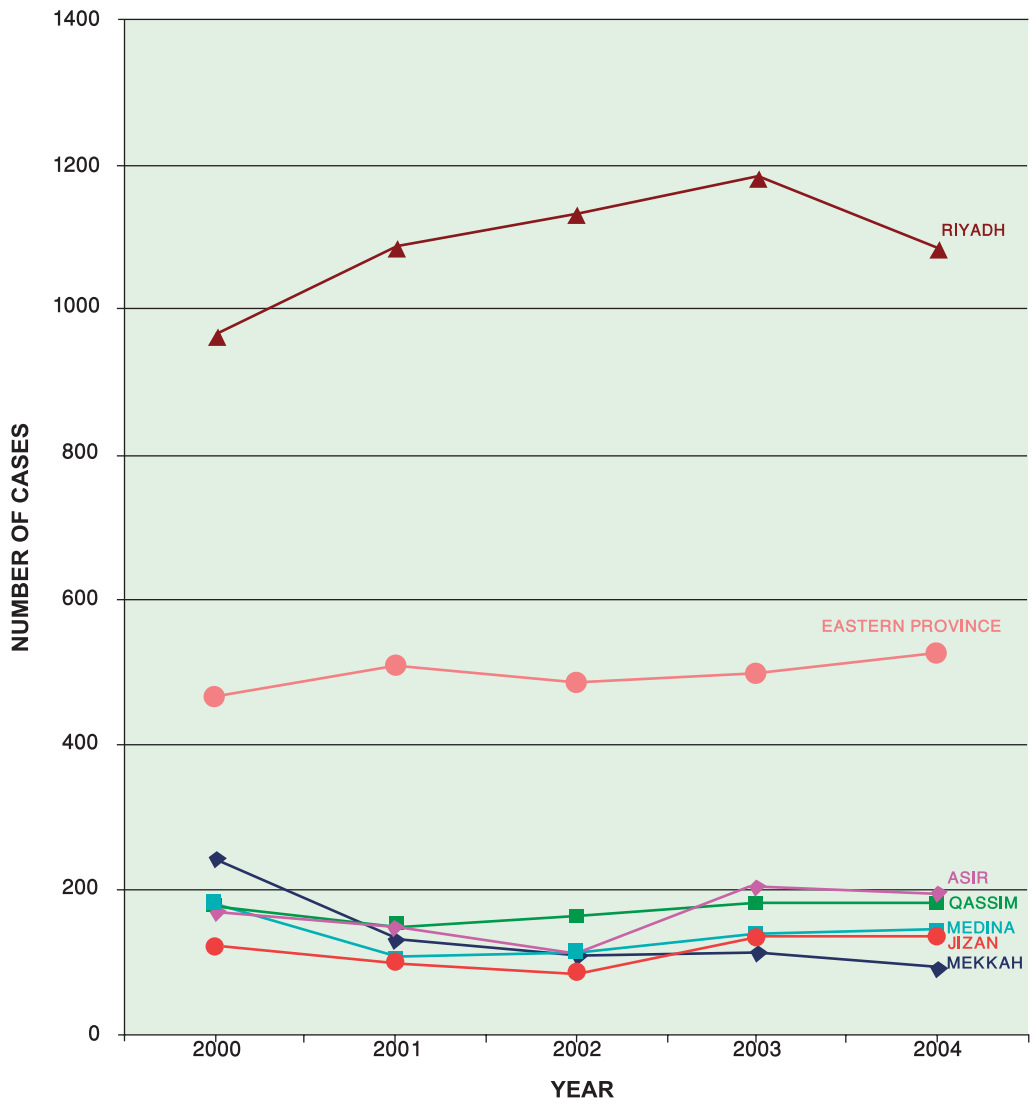

**2004 (TOTAL CASES = 2,850)**



The Riyadh Region has the most number of referrals to KFSH&RC, showing a steady increase from 2000 to 2003, but dropping down in 2004. On the other hand, a consistent decrease was evident in the Mekkah Region. Referrals from the Medina Region showed a marked decrease in 2001, but started to increase from 2002, until 2004. Cases from Asir and Jizan decreased in 2001 and 2002, but peaked up in 2003. The Eastern province referrals were down in 2002, but were up again in 2003 and 2004 .

**FIGURE 4**

**PATTERN OF REFERRAL IN THE LAST 5 YEARS**
**2000 - 2004**




All the Other Regions ( Al BAHA, HAIL, AL JOUF, NAJRAN, NORTHERN PROVINCE, QURAYYAT and TABUK ) have less than 100 referrals per year and have maintained almost the same referral patterns in the last 5 years.

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

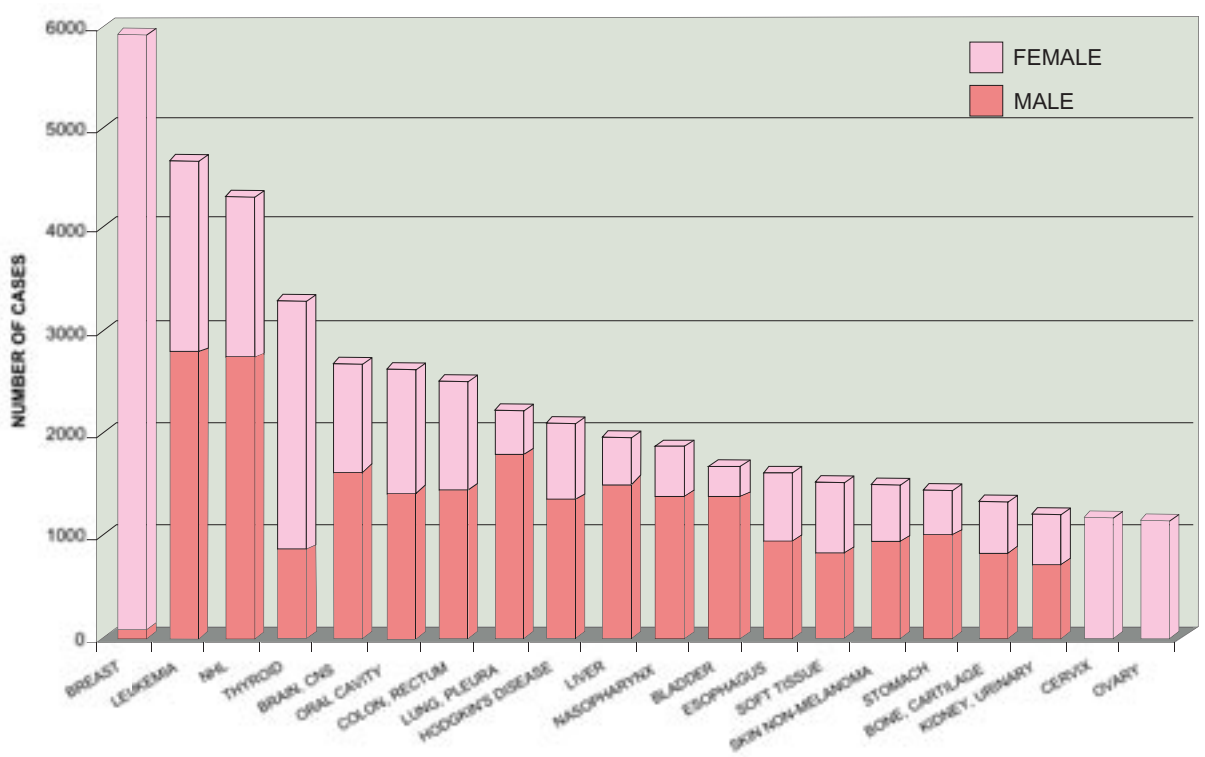
The crude relative frequency is the proportion of a given cancer in relation to all cases in a clinical or pathological series. Although such frequencies are subject to many biases, historically many elevated frequencies have been confirmed when complete cancer registration was introduced.

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 2004 with 10.9%, followed by Leukemia (8.6%), Non-Hodgkin's Lymphoma (7.9%), Thyroid (6.1%) and Brain/CNS (5.0%)

**FIGURE 5**

**DISTRIBUTION OF 20 MOST COMMON MALIGNANCIES**
**1975 - 2004 (TOTAL CASES = 54,574)**



## TABLE 2

## TEN MOST COMMON MALIGNANCIES BY AGE GROUP AT DIAGNOSIS
## 1975 - 2004

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| BREAST | 00 - 14 | 2 | 0.0% |
| | 15 - 39 | 1,934 | 32.6% |
| | 40 - 60 | 3,241 | 54.7% |
| | >60 | 749 | 12.7% |

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| ORAL CAVITY | 00 - 14 | 27 | 1.0% |
| | 15 - 39 | 373 | 14.1% |
| | 40 - 60 | 1,125 | 42.4% |
| | >60 | 1,129 | 42.5% |

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| LEUKEMIA | 00 - 14 | 2,031 | 43.4% |
| | 15 - 39 | 1,586 | 33.9% |
| | 40 - 60 | 765 | 16.3% |
| | >60 | 302 | 6.4% |

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| COLON, RECTUM | 00 - 14 | 9 | 0.4% |
| | 15 - 39 | 496 | 19.7% |
| | 40 - 60 | 1,166 | 46.3% |
| | >60 | 845 | 33.6% |

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| NON-HODGKIN'S LYMPHOMA | 00 - 14 | 691 | 16.0% |
| | 15 - 39 | 1,096 | 25.3% |
| | 40 - 60 | 1,398 | 32.3% |
| | >60 | 1,140 | 26.4% |

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| LUNG, PLEURA | 00 - 14 | 5 | 0.2% |
| | 15 - 39 | 136 | 6.1% |
| | 40 - 60 | 1,002 | 45.0% |
| | >60 | 1,086 | 48.7% |

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| THYROID | 00 - 14 | 74 | 2.2% |
| | 15 - 39 | 1,631 | 49.1% |
| | 40 - 60 | 1,104 | 33.2% |
| | >60 | 517 | 15.5% |

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| HODGKIN'S DISEASE | 00 - 14 | 648 | 30.7% |
| | 15 - 39 | 1,064 | 50.4% |
| | 40 - 60 | 297 | 14.0% |
| | >60 | 104 | 4.9% |

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| BRAIN, CNS | 00 - 14 | 1,256 | 46.4% |
| | 15 - 39 | 718 | 26.6% |
| | 40 - 60 | 500 | 18.5% |
| | >60 | 230 | 8.5% |

| SITE | AGE GROUP | No | % |
|---|---|---|---|
| LIVER | 00 - 14 | 46 | 2.3% |
| | 15 - 39 | 112 | 5.7% |
| | 40 - 60 | 885 | 44.8% |
| | >60 | 934 | 47.2% |

Cancer among pediatrics (under the age of 15) accounted for 13.2% of all cases from 1975 to 2004. The five most common pediatric malignancies were Leukemia (28.2%), Lymphoma (18.6%) [NHL 9.6% and HD 9.0%], Brain/CNS (17.4%), Soft Tissue (6.8%) and Bone (6.7%).

**FIGURE 6**

**DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES**
**1975 - 2004 (TOTAL CASES = 7,203)**

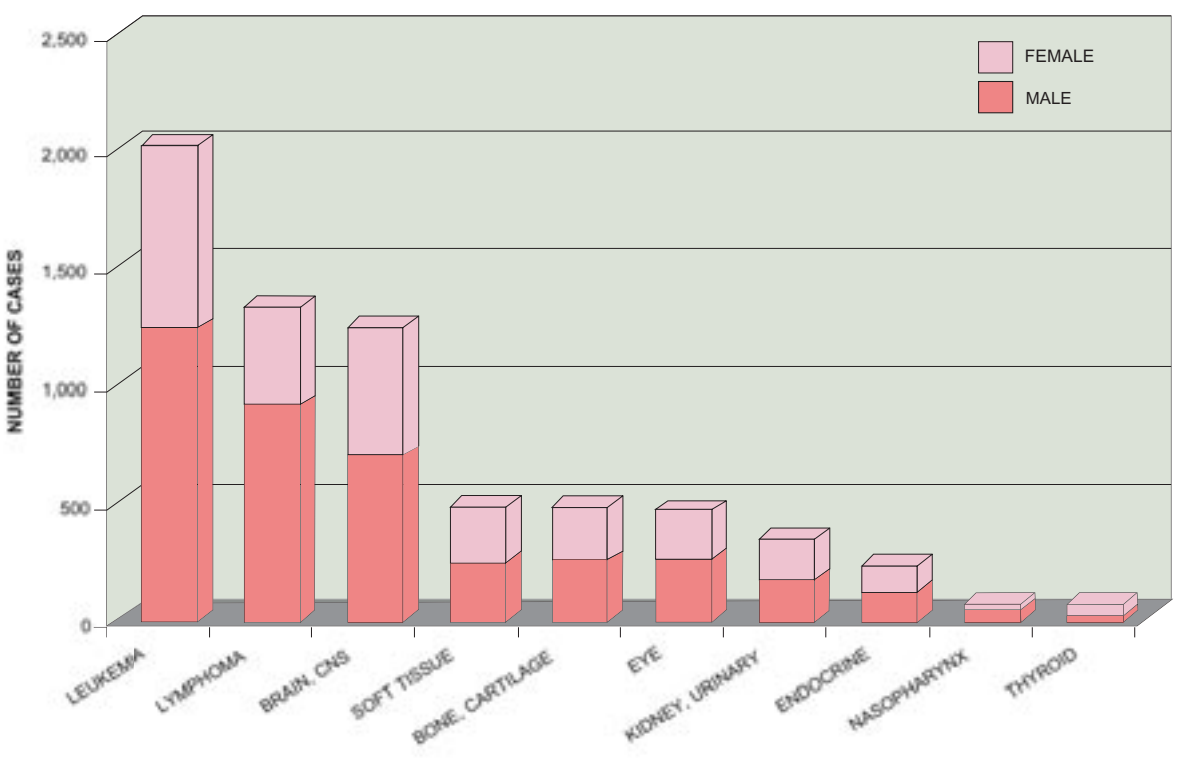
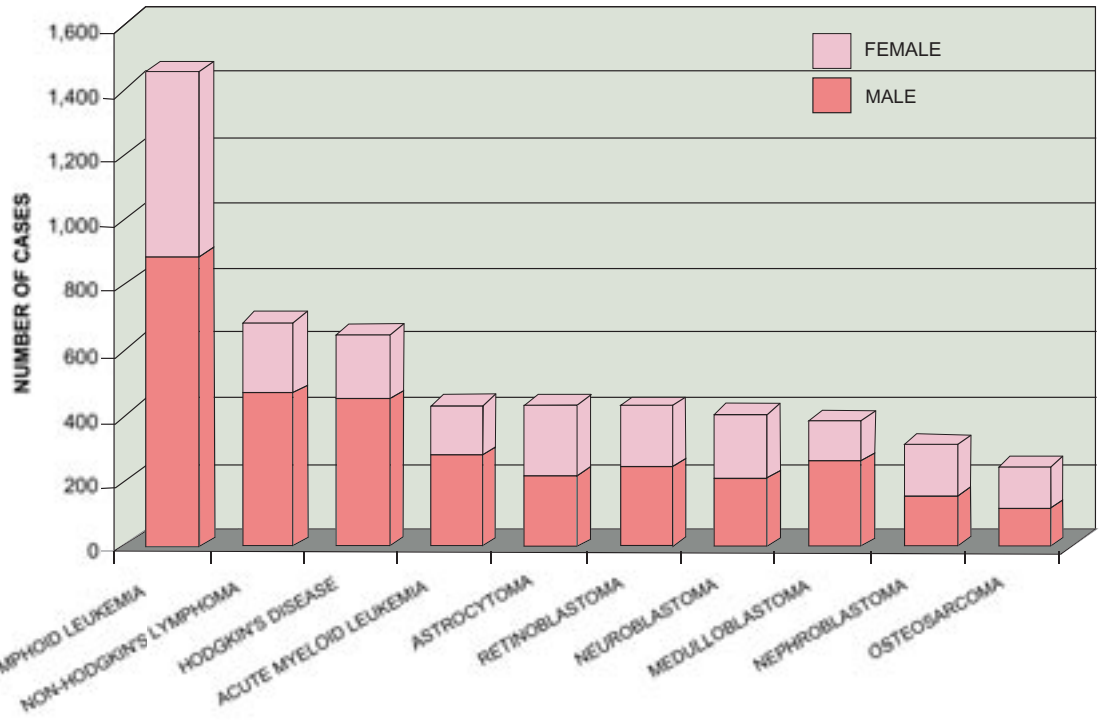


**FIGURE 7**

**DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES BY HISTOLOGY**
**1975 - 2004 (TOTAL CASES = 7,203)**



## TABLE 3

## ALL CASES SEEN AT KFSH&RC BY SITE* AND YEAR
## 1975 - 2004

| SITE | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oral Cavity | 1 | 14 | 33 | 79 | 69 | 71 | 58 | 80 | 101 | 76 | 104 | 76 | 96 | 129 | 104 | 103 | 103 | 112 | 98 | 97 | 121 | 106 | 112 | 87 | 108 | 117 | 98 | 87 | 116 | 98 | 2,654 |
| Nasopharynx | 3 | 11 | 38 | 34 | 37 | 35 | 48 | 46 | 65 | 46 | 45 | 49 | 80 | 65 | 62 | 62 | 62 | 53 | 59 | 58 | 62 | 86 | 90 | 108 | 102 | 84 | 119 | 72 | 101 | 96 | 1,878 |
| Esophagus | 1 | 15 | 51 | 62 | 67 | 67 | 57 | 62 | 77 | 78 | 56 | 69 | 76 | 66 | 68 | 72 | 66 | 69 | 47 | 50 | 50 | 52 | 51 | 62 | 34 | 52 | 37 | 41 | 43 | 37 | 1,635 |
| Stomach | 2 | 15 | 32 | 35 | 50 | 37 | 50 | 51 | 64 | 60 | 49 | 64 | 61 | 47 | 52 | 53 | 36 | 47 | 42 | 68 | 61 | 57 | 45 | 42 | 54 | 53 | 40 | 50 | 60 | 66 | 1,443 |
| Colon, Rectum | 1 | 13 | 22 | 24 | 31 | 38 | 51 | 39 | 43 | 59 | 45 | 51 | 70 | 82 | 61 | 64 | 80 | 88 | 83 | 95 | 90 | 94 | 101 | 122 | 146 | 154 | 155 | 206 | 216 | 192 | 2,516 |
| Liver | 7 | 15 | 33 | 44 | 49 | 33 | 41 | 54 | 53 | 64 | 57 | 84 | 78 | 71 | 68 | 55 | 66 | 76 | 82 | 103 | 102 | 103 | 96 | 84 | 89 | 85 | 90 | 72 | 70 | 53 | 1,977 |
| Pancreas | 1 | 5 | 7 | 11 | 15 | 14 | 20 | 22 | 14 | 20 | 16 | 28 | 20 | 16 | 27 | 12 | 13 | 27 | 21 | 22 | 25 | 21 | 24 | 34 | 18 | 38 | 26 | 31 | 30 | 33 | 611 |
| Other G. I. | 2 | 3 | 9 | 9 | 10 | 14 | 11 | 11 | 11 | 14 | 15 | 21 | 25 | 22 | 20 | 21 | 13 | 29 | 31 | 32 | 21 | 26 | 22 | 30 | 33 | 32 | 28 | 25 | 31 | 31 | 602 |
| Larynx | 1 | 5 | 12 | 12 | 12 | 14 | 20 | 13 | 23 | 22 | 25 | 16 | 23 | 33 | 21 | 26 | 34 | 27 | 31 | 35 | 38 | 36 | 31 | 30 | 35 | 33 | 33 | 26 | 47 | 40 | 754 |
| Lung, Pleura | 3 | 11 | 24 | 34 | 45 | 39 | 56 | 62 | 75 | 74 | 86 | 84 | 83 | 107 | 92 | 75 | 84 | 82 | 89 | 92 | 86 | 86 | 89 | 106 | 109 | 94 | 87 | 92 | 89 | 94 | 2,229 |
| Multiple Myeloma | 0 | 5 | 6 | 11 | 7 | 9 | 7 | 13 | 9 | 12 | 14 | 13 | 24 | 20 | 29 | 13 | 24 | 24 | 23 | 32 | 26 | 20 | 10 | 22 | 16 | 22 | 19 | 13 | 13 | 19 | 475 |
| Lymphoid Leukemia | 4 | 14 | 15 | 38 | 32 | 38 | 53 | 69 | 66 | 48 | 59 | 84 | 91 | 77 | 75 | 55 | 74 | 78 | 89 | 69 | 88 | 89 | 115 | 129 | 131 | 133 | 107 | 123 | 136 | 111 | 2,290 |
| Myeloid Leukemia | 3 | 13 | 23 | 47 | 54 | 42 | 65 | 55 | 44 | 75 | 59 | 73 | 91 | 73 | 76 | 73 | 74 | 61 | 97 | 90 | 117 | 75 | 112 | 102 | 120 | 119 | 128 | 121 | 95 | 81 | 2,258 |
| Other Leukemias | 0 | 1 | 2 | 2 | 4 | 3 | 3 | 1 | 7 | 4 | 3 | 2 | 3 | 7 | 5 | 4 | 10 | 5 | 6 | 10 | 4 | 3 | 1 | 3 | 5 | 4 | 4 | 7 | 11 | 12 | 136 |
| Reticuloendothelium | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 25 |
| Bone, Cartilage | 1 | 6 | 13 | 25 | 21 | 20 | 23 | 42 | 35 | 40 | 23 | 31 | 40 | 46 | 45 | 37 | 41 | 52 | 55 | 61 | 57 | 57 | 66 | 72 | 62 | 80 | 82 | 78 | 67 | 69 | 1,347 |
| Soft Tissue | 1 | 16 | 29 | 29 | 31 | 24 | 29 | 40 | 32 | 36 | 38 | 47 | 48 | 49 | 59 | 59 | 61 | 48 | 49 | 73 | 82 | 55 | 67 | 74 | 88 | 69 | 73 | 61 | 77 | 80 | 1,524 |
| Skin Melanoma | 0 | 4 | 4 | 8 | 8 | 6 | 7 | 4 | 11 | 12 | 7 | 7 | 11 | 12 | 6 | 5 | 9 | 15 | 8 | 7 | 7 | 9 | 5 | 5 | 6 | 5 | 5 | 6 | 4 | 8 | 211 |
| Skin Non-Melanoma | 2 | 14 | 27 | 32 | 48 | 39 | 50 | 56 | 55 | 56 | 67 | 70 | 48 | 51 | 58 | 45 | 52 | 60 | 53 | 64 | 50 | 66 | 57 | 42 | 65 | 56 | 68 | 44 | 62 | 53 | 1,510 |
| Breast | 3 | 24 | 53 | 46 | 57 | 65 | 101 | 111 | 111 | 153 | 131 | 127 | 174 | 194 | 137 | 168 | 169 | 188 | 251 | 241 | 232 | 280 | 290 | 334 | 340 | 382 | 357 | 374 | 408 | 425 | 5,926 |
| Uterus, Genital | 1 | 2 | 12 | 12 | 13 | 12 | 17 | 16 | 35 | 23 | 22 | 29 | 38 | 38 | 34 | 34 | 34 | 42 | 36 | 55 | 39 | 34 | 37 | 36 | 42 | 41 | 43 | 59 | 72 | 78 | 986 |
| Cervix | 0 | 10 | 18 | 18 | 25 | 18 | 26 | 25 | 33 | 33 | 41 | 55 | 51 | 50 | 33 | 44 | 35 | 52 | 50 | 52 | 49 | 48 | 46 | 62 | 57 | 42 | 68 | 53 | 55 | 47 | 1,196 |
| Ovary | 2 | 6 | 10 | 10 | 17 | 21 | 20 | 35 | 31 | 27 | 24 | 34 | 41 | 47 | 53 | 46 | 36 | 44 | 55 | 50 | 54 | 56 | 60 | 63 | 52 | 59 | 54 | 48 | 60 | 52 | 1,167 |
| Prostate | 0 | 7 | 5 | 4 | 5 | 10 | 11 | 18 | 28 | 19 | 19 | 17 | 22 | 27 | 27 | 24 | 16 | 41 | 27 | 45 | 37 | 49 | 43 | 44 | 63 | 47 | 47 | 47 | 56 | 54 | 859 |
| Testis, Genital | 0 | 4 | 10 | 8 | 13 | 11 | 18 | 13 | 11 | 16 | 17 | 14 | 20 | 19 | 13 | 19 | 16 | 22 | 28 | 25 | 14 | 15 | 20 | 18 | 20 | 21 | 19 | 32 | 21 | 22 | 499 |
| Bladder | 4 | 7 | 12 | 24 | 29 | 39 | 37 | 23 | 41 | 35 | 46 | 51 | 79 | 74 | 73 | 60 | 44 | 65 | 88 | 72 | 60 | 56 | 65 | 85 | 91 | 80 | 81 | 71 | 93 | 99 | 1,684 |
| Kidney, Urinary | 0 | 9 | 18 | 18 | 18 | 15 | 18 | 30 | 23 | 22 | 25 | 42 | 34 | 59 | 33 | 35 | 35 | 54 | 52 | 66 | 49 | 48 | 49 | 61 | 73 | 60 | 75 | 66 | 56 | 71 | 1,214 |
| Eye | 0 | 6 | 11 | 19 | 12 | 24 | 29 | 34 | 25 | 17 | 30 | 24 | 35 | 44 | 26 | 30 | 9 | 16 | 39 | 27 | 15 | 22 | 30 | 17 | 24 | 26 | 17 | 16 | 20 | 19 | 663 |
| Brain, CNS | 3 | 24 | 27 | 40 | 26 | 31 | 31 | 77 | 53 | 58 | 49 | 71 | 88 | 92 | 98 | 81 | 84 | 112 | 88 | 116 | 128 | 128 | 133 | 162 | 145 | 149 | 150 | 141 | 155 | 164 | 2,704 |
| Thyroid | 2 | 8 | 17 | 28 | 33 | 44 | 57 | 51 | 66 | 71 | 63 | 82 | 119 | 112 | 110 | 94 | 110 | 141 | 135 | 159 | 134 | 161 | 161 | 192 | 210 | 186 | 189 | 168 | 215 | 208 | 3,326 |
| Other Endocrine | 1 | 1 | 2 | 2 | 2 | 9 | 9 | 7 | 13 | 8 | 17 | 10 | 10 | 13 | 2 | 6 | 8 | 14 | 11 | 10 | 9 | 11 | 17 | 11 | 14 | 20 | 13 | 17 | 29 | 17 | 313 |
| NHL - Lymph Nodes | 4 | 19 | 62 | 69 | 97 | 92 | 95 | 91 | 116 | 98 | 88 | 85 | 95 | 99 | 93 | 92 | 71 | 89 | 80 | 80 | 69 | 83 | 93 | 99 | 97 | 97 | 106 | 106 | 89 | 123 | 2,577 |
| NHL - Extra-nodal | 0 | 4 | 11 | 6 | 7 | 20 | 34 | 25 | 56 | 41 | 36 | 57 | 62 | 54 | 73 | 62 | 52 | 61 | 74 | 80 | 91 | 74 | 100 | 108 | 109 | 106 | 68 | 79 | 110 | 88 | 1,748 |
| Hodgkin's Disease - LNs | 13 | 19 | 40 | 41 | 36 | 42 | 47 | 42 | 52 | 50 | 49 | 44 | 65 | 57 | 75 | 56 | 57 | 72 | 71 | 76 | 88 | 76 | 75 | 98 | 114 | 130 | 120 | 117 | 127 | 137 | 2,086 |
| HD - Extra-nodal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 3 | 2 | 2 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 2 | 4 | 5 | 27 |
| Primary Unknown | 3 | 11 | 23 | 24 | 20 | 27 | 34 | 30 | 33 | 26 | 25 | 25 | 37 | 32 | 42 | 39 | 40 | 51 | 42 | 62 | 36 | 41 | 35 | 50 | 49 | 45 | 49 | 53 | 47 | 48 | 1,079 |
| All Other Sites | 1 | 3 | 10 | 9 | 7 | 11 | 13 | 13 | 13 | 9 | 13 | 8 | 25 | 16 | 8 | 19 | 23 | 14 | 21 | 25 | 23 | 16 | 17 | 18 | 25 | 15 | 12 | 17 | 21 | 20 | 445 |
| **TOTAL** | **70** | **345** | **721** | **915** | **1,008** | **1,035** | **1,247** | **1,362** | **1,528** | **1,503** | **1,464** | **1,651** | **1,966** | **2,001** | **1,860** | **1,744** | **1,741** | **2,034** | **2,113** | **2,303** | **2,214** | **2,239** | **2,366** | **2,613** | **2,748** | **2,738** | **2,668** | **2,621** | **2,906** | **2,850** | **54,574** |

* Includes Multiple Primary Neoplasms.

## TABLE 4

## ALL CASES SEEN AT KFSH&RC BY SITE* AND 5-YEAR PERIOD
## 1975 - 2004

| SITE | 1975-1976** | | 1977-1981 | | 1982-1986 | | 1987-1991 | | 1992-1996 | | 1997-2001 | | 2002-2004*** | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | No | % | No | % | No | % | No | % | No | % |
| Oral Cavity | 15 | 3.6% | 310 | 6.3% | 437 | 5.8% | 535 | 5.7% | 534 | 4.9% | 522 | 4.0% | 301 | 3.6% | 2,654 | 4.9% |
| Nasopharynx | 14 | 3.4% | 192 | 3.9% | 251 | 3.3% | 331 | 3.6% | 318 | 2.9% | 503 | 3.8% | 269 | 3.2% | 1,878 | 3.4% |
| Esophagus | 16 | 3.9% | 304 | 6.2% | 342 | 4.6% | 348 | 3.7% | 268 | 2.5% | 236 | 1.8% | 121 | 1.4% | 1,635 | 3.0% |
| Stomach | 17 | 4.1% | 204 | 4.1% | 288 | 3.8% | 249 | 2.7% | 275 | 2.5% | 234 | 1.8% | 176 | 2.1% | 1,443 | 2.6% |
| Colon, Rectum | 14 | 3.4% | 166 | 3.4% | 237 | 3.2% | 357 | 3.8% | 450 | 4.1% | 678 | 5.2% | 614 | 7.3% | 2,516 | 4.6% |
| Liver | 22 | 5.3% | 200 | 4.1% | 312 | 4.2% | 338 | 3.6% | 466 | 4.3% | 444 | 3.4% | 195 | 2.3% | 1,977 | 3.6% |
| Pancreas | 6 | 1.4% | 67 | 1.4% | 100 | 1.3% | 88 | 0.9% | 116 | 1.1% | 140 | 1.1% | 94 | 1.1% | 611 | 1.1% |
| Other G. I. | 5 | 1.2% | 53 | 1.1% | 72 | 1.0% | 101 | 1.1% | 139 | 1.3% | 145 | 1.1% | 87 | 1.0% | 602 | 1.1% |
| Larynx | 6 | 1.4% | 70 | 1.4% | 99 | 1.3% | 137 | 1.5% | 167 | 1.5% | 162 | 1.2% | 113 | 1.3% | 754 | 1.4% |
| Lung, Pleura | 14 | 3.4% | 198 | 4.0% | 381 | 5.1% | 441 | 4.7% | 435 | 4.0% | 485 | 3.7% | 275 | 3.3% | 2,229 | 4.1% |
| Multiple Myeloma | 5 | 1.2% | 40 | 0.8% | 61 | 0.8% | 110 | 1.2% | 125 | 1.1% | 89 | 0.7% | 45 | 0.5% | 475 | 0.9% |
| Lymphoid Leukemia | 18 | 4.3% | 176 | 3.6% | 326 | 4.3% | 372 | 4.0% | 413 | 3.8% | 615 | 4.7% | 370 | 4.4% | 2,290 | 4.2% |
| Myeloid Leukemia | 16 | 3.9% | 231 | 4.7% | 306 | 4.1% | 387 | 4.2% | 440 | 4.0% | 581 | 4.4% | 297 | 3.5% | 2,258 | 4.1% |
| Other Leukemias | 1 | 0.2% | 14 | 0.3% | 17 | 0.2% | 29 | 0.3% | 28 | 0.3% | 17 | 0.1% | 30 | 0.4% | 136 | 0.2% |
| Reticuloendothelium | 1 | 0.2% | 4 | 0.1% | 10 | 0.1% | 6 | 0.1% | 2 | 0.0% | 2 | 0.0% | 0 | 0.0% | 25 | 0.0% |
| Bone, Cartilage | 7 | 1.7% | 102 | 2.1% | 171 | 2.3% | 209 | 2.2% | 282 | 2.6% | 362 | 2.8% | 214 | 2.6% | 1,347 | 2.5% |
| Soft Tissue | 17 | 4.1% | 142 | 2.9% | 193 | 2.6% | 276 | 3.0% | 307 | 2.8% | 371 | 2.8% | 218 | 2.6% | 1,524 | 2.8% |
| Skin Melanoma | 4 | 1.0% | 33 | 0.7% | 41 | 0.5% | 43 | 0.5% | 46 | 0.4% | 26 | 0.2% | 18 | 0.2% | 211 | 0.4% |
| Skin Non-Melanoma | 16 | 3.9% | 196 | 4.0% | 304 | 4.0% | 254 | 2.7% | 293 | 2.7% | 288 | 2.2% | 159 | 1.9% | 1,510 | 2.8% |
| Breast | 27 | 6.5% | 322 | 6.5% | 633 | 8.4% | 842 | 9.0% | 1,192 | 10.9% | 1,703 | 13.0% | 1,207 | 14.4% | 5,926 | 10.9% |
| Uterus, Genital | 3 | 0.7% | 66 | 1.3% | 125 | 1.7% | 178 | 1.9% | 206 | 1.9% | 199 | 1.5% | 209 | 2.5% | 986 | 1.8% |
| Cervix | 10 | 2.4% | 105 | 2.1% | 187 | 2.5% | 213 | 2.3% | 251 | 2.3% | 275 | 2.1% | 155 | 1.9% | 1,196 | 2.2% |
| Ovary | 8 | 1.9% | 78 | 1.6% | 151 | 2.0% | 223 | 2.4% | 259 | 2.4% | 288 | 2.2% | 160 | 1.9% | 1,167 | 2.1% |
| Prostate | 7 | 1.7% | 35 | 0.7% | 101 | 1.3% | 116 | 1.2% | 199 | 1.8% | 244 | 1.9% | 157 | 1.9% | 859 | 1.6% |
| Testis, Genital | 4 | 1.0% | 60 | 1.2% | 71 | 0.9% | 87 | 0.9% | 104 | 1.0% | 98 | 0.7% | 75 | 0.9% | 499 | 0.9% |
| Bladder | 11 | 2.7% | 141 | 2.9% | 196 | 2.6% | 330 | 3.5% | 341 | 3.1% | 402 | 3.1% | 263 | 3.1% | 1,684 | 3.1% |
| Kidney, Urinary | 9 | 2.2% | 87 | 1.8% | 142 | 1.9% | 196 | 2.1% | 269 | 2.5% | 318 | 2.4% | 193 | 2.3% | 1,214 | 2.2% |
| Eye | 6 | 1.4% | 95 | 1.9% | 130 | 1.7% | 144 | 1.5% | 119 | 1.1% | 114 | 0.9% | 55 | 0.7% | 663 | 1.2% |
| Brain, CNS | 27 | 6.5% | 155 | 3.1% | 308 | 4.1% | 443 | 4.8% | 572 | 5.2% | 739 | 5.6% | 460 | 5.5% | 2,704 | 5.0% |
| Thyroid | 10 | 2.4% | 179 | 3.6% | 333 | 4.4% | 545 | 5.9% | 730 | 6.7% | 938 | 7.1% | 591 | 7.1% | 3,326 | 6.1% |
| Other Endocrine | 2 | 0.5% | 24 | 0.5% | 55 | 0.7% | 39 | 0.4% | 55 | 0.5% | 75 | 0.6% | 63 | 0.8% | 313 | 0.6% |
| NHL - Lymph Nodes | 23 | 5.5% | 415 | 8.4% | 478 | 6.4% | 450 | 4.8% | 401 | 3.7% | 492 | 3.7% | 318 | 3.8% | 2,577 | 4.7% |
| NHL - Extra-nodal | 4 | 1.0% | 78 | 1.6% | 215 | 2.9% | 303 | 3.3% | 380 | 3.5% | 491 | 3.7% | 277 | 3.3% | 1,748 | 3.2% |
| Hodgkin's Disease - LNs | 32 | 7.7% | 206 | 4.2% | 237 | 3.2% | 310 | 3.3% | 383 | 3.5% | 537 | 4.1% | 381 | 4.5% | 2,086 | 3.8% |
| HD - Extra-nodal | 0 | 0.0% | 0 | 0.0% | 3 | 0.0% | 1 | 0.0% | 7 | 0.1% | 5 | 0.0% | 11 | 0.1% | 27 | 0.0% |
| Primary Unknown | 14 | 3.4% | 128 | 2.6% | 139 | 1.9% | 190 | 2.0% | 232 | 2.1% | 228 | 1.7% | 148 | 1.8% | 1,079 | 2.0% |
| All Other Sites | 4 | 1.0% | 50 | 1.0% | 56 | 0.7% | 91 | 1.0% | 99 | 0.9% | 87 | 0.7% | 58 | 0.7% | 445 | 0.8% |
| **TOTAL** | **415** | **100.0%** | **4,926** | **100.0%** | **7,508** | **100.0%** | **9,312** | **100.0%** | **10,903** | **100.0%** | **13,133** | **100.0%** | **8,377** | **100.0%** | **54,574** | **100.0%** |

* Includes Multiple Primary Neoplasms.

** First Two Years of KFSH&RC Partial Operation.

*** Three Years Data Only.

The largest number of cases in 2004 was noted in the 5th and 6th decades of life in males and in the 4th and 5th in females. The mean age was 43.4, the median was 45.7 and the mode was at 60. Pediatric malignancies are most common among children four years of age.

**FIGURE 8**

**DISTRIBUTION OF CASES BY AGE AT DIAGNOSIS**
**2004 ( TOTAL CASES = 2,850)**

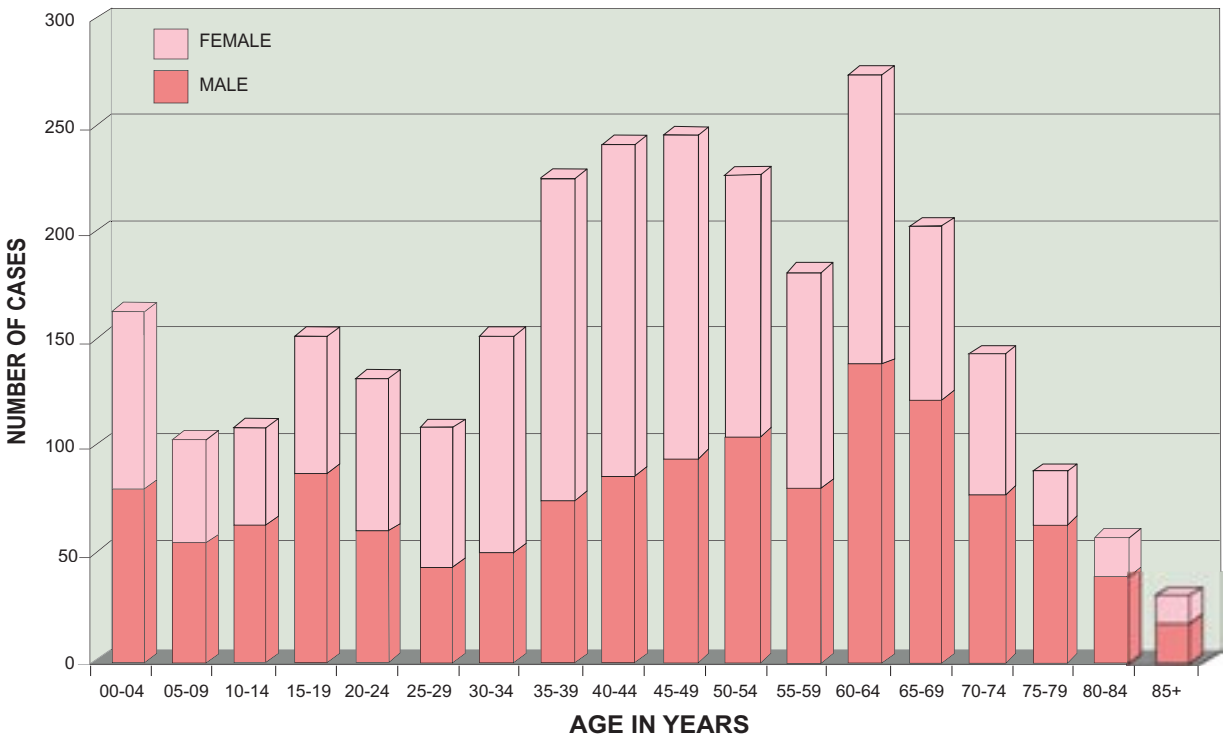
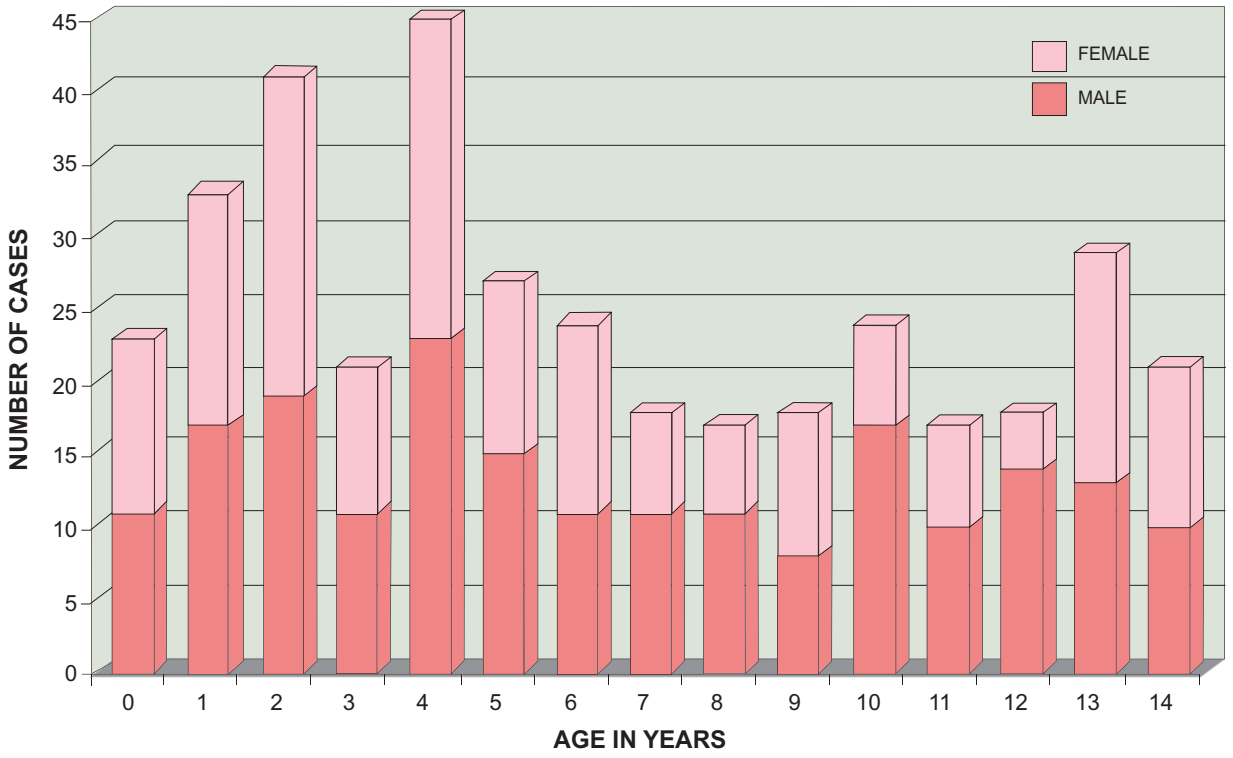


**FIGURE 9**

**DISTRIBUTION OF PEDIATRIC CASES BY AGE AT DIAGNOSIS**
**2004 ( TOTAL CASES = 376)**




Of the 2,850 cases in 2004, 2,530 (88.8%) 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 320 cases (11.2%) were **non-analytic** (defined as cases diagnosed elsewhere and received all of their first course of treatment elsewhere). Out of the 2,530 analytic cases, pediatric cases totaled 346, with 187 males and 159 females.

See Table 5 for the distribution of cases by site, sex, class of case, and stage at diagnosis and Tables 6, 7 and 8 for the distributions of analytic cases by site, sex and age at diagnosis.

## TABLE 5

## CASES SEEN AT KFSH&RC BY SITE*, SEX, CLASS OF CASE AND SUMMARY STAGE
## 2004

| SITE | TOTAL | | SEX | | CLASS OF CASE** | | ANALYTIC CASES GENERAL SUMMARY STAGE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | % | Male | Female | Analytic | Non-Anal | In Situ | Localized | Regional | Distant | Unstageable |
| Breast | 425 | 14.9% | 2 | 423 | 371 | 54 | 13 | 88 | 200 | 65 | 5 |
| Non-Hodgkin's Lymphoma | 211 | 7.4% | 136 | 75 | 182 | 29 | 0 | 29 | 55 | 94 | 4 |
| Thyroid | 208 | 7.3% | 49 | 159 | 179 | 29 | 0 | 84 | 80 | 15 | 0 |
| Leukemia | 204 | 7.2% | 129 | 75 | 181 | 23 | 0 | 0 | 0 | 181 | 0 |
| Colon, Rectum | 192 | 6.7% | 107 | 85 | 168 | 24 | 0 | 25 | 66 | 70 | 7 |
| Brain, CNS | 164 | 5.8% | 95 | 69 | 156 | 8 | 0 | 125 | 13 | 8 | 10 |
| Hodgkin's Disease | 142 | 5.0% | 89 | 53 | 125 | 17 | 0 | 10 | 57 | 58 | 0 |
| Bladder | 99 | 3.5% | 83 | 16 | 85 | 14 | 8 | 36 | 23 | 17 | 1 |
| Oral Cavity | 98 | 3.4% | 51 | 47 | 95 | 3 | 0 | 19 | 50 | 26 | 0 |
| Nasopharynx | 96 | 3.4% | 64 | 32 | 90 | 6 | 0 | 3 | 51 | 36 | 0 |
| Lung, Pleura | 94 | 3.3% | 72 | 22 | 84 | 10 | 0 | 9 | 21 | 52 | 2 |
| Soft Tissue | 80 | 2.8% | 33 | 47 | 71 | 9 | 0 | 28 | 21 | 19 | 3 |
| Uterus, Genital | 78 | 2.7% | 0 | 78 | 67 | 11 | 0 | 35 | 16 | 15 | 1 |
| Kidney, Urinary | 71 | 2.5% | 42 | 29 | 65 | 6 | 0 | 33 | 10 | 22 | 0 |
| Bone, Cartilage | 69 | 2.4% | 44 | 25 | 69 | 0 | 0 | 17 | 32 | 18 | 2 |
| Stomach | 66 | 2.3% | 48 | 18 | 62 | 4 | 0 | 4 | 38 | 19 | 1 |
| Prostate | 54 | 1.9% | 54 | 0 | 42 | 12 | 0 | 15 | 6 | 19 | 2 |
| Liver | 53 | 1.9% | 38 | 15 | 49 | 4 | 0 | 30 | 4 | 8 | 7 |
| Skin Non-Melanoma | 53 | 1.9% | 33 | 20 | 45 | 8 | 0 | 27 | 8 | 7 | 3 |
| Ovary | 52 | 1.8% | 0 | 52 | 45 | 7 | 1 | 16 | 5 | 22 | 1 |
| Primary Unknown | 48 | 1.7% | 23 | 25 | 40 | 8 | 0 | 0 | 0 | 0 | 40 |
| Cervix | 47 | 1.6% | 0 | 47 | 41 | 6 | 3 | 7 | 21 | 9 | 1 |
| Larynx | 40 | 1.4% | 33 | 7 | 36 | 4 | 1 | 11 | 16 | 8 | 0 |
| Esophagus | 37 | 1.3% | 26 | 11 | 35 | 2 | 0 | 8 | 13 | 12 | 2 |
| Pancreas | 33 | 1.2% | 21 | 12 | 32 | 1 | 0 | 3 | 14 | 14 | 1 |
| Other G. I. | 31 | 1.1% | 17 | 14 | 27 | 4 | 0 | 4 | 9 | 11 | 3 |
| Testis, Genital | 22 | 0.8% | 22 | 0 | 18 | 4 | 0 | 11 | 3 | 3 | 1 |
| Multiple Myeloma | 19 | 0.7% | 11 | 8 | 15 | 4 | 0 | 0 | 0 | 15 | 0 |
| Eye | 19 | 0.7% | 8 | 11 | 13 | 6 | 0 | 9 | 3 | 0 | 1 |
| Other Endocrine | 17 | 0.6% | 8 | 9 | 16 | 1 | 0 | 5 | 2 | 8 | 1 |
| Skin Melanoma | 8 | 0.3% | 3 | 5 | 8 | 0 | 0 | 1 | 4 | 2 | 1 |
| All Other Sites | 20 | 0.7% | 14 | 6 | 18 | 2 | 0 | 5 | 7 | 4 | 2 |
| **TOTAL** | **2,850** | **100.0%** | **1,355** | **1,495** | **2,530** | **320** | **26** | **697** | **848** | **857** | **102** |

*Includes Multiple Primary Neoplasms.

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

Non-Analytic Cases - cases which were diagnosed elsewhere and received all of their first course of treatment elsewhere.

## TABLE 6

## ANALYTIC CASES SEEN AT KFSH&RC BY SITE* AND AGE
## 2004

| SITE | 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 | 3 | 0 | 2 | 6 | 2 | 4 | 8 | 12 | 10 | 17 | 8 | 11 | 5 | 4 | 2 | 95 |
| Nasopharynx | 0 | 0 | 2 | 6 | 2 | 2 | 5 | 4 | 14 | 11 | 15 | 5 | 10 | 9 | 3 | 1 | 1 | 0 | 90 |
| Esophagus | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 2 | 8 | 6 | 3 | 2 | 3 | 7 | 35 |
| Stomach | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 3 | 3 | 3 | 5 | 4 | 16 | 7 | 6 | 6 | 5 | 0 | 62 |
| Colon, Rectum | 0 | 0 | 1 | 0 | 2 | 4 | 8 | 16 | 14 | 26 | 18 | 15 | 20 | 16 | 13 | 9 | 5 | 1 | 168 |
| Liver | 3 | 0 | 1 | 0 | 1 | 1 | 2 | 2 | 3 | 1 | 7 | 2 | 8 | 8 | 5 | 0 | 2 | 3 | 49 |
| Pancreas | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 3 | 5 | 7 | 3 | 6 | 2 | 1 | 0 | 32 |
| Other G. I. | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 2 | 2 | 3 | 2 | 2 | 7 | 2 | 1 | 1 | 1 | 27 |
| Larynx | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 1 | 8 | 6 | 3 | 4 | 4 | 2 | 36 |
| Lung, Pleura | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 6 | 6 | 10 | 13 | 13 | 10 | 11 | 4 | 2 | 2 | 84 |
| Multiple Myeloma | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 4 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 15 |
| Lymphoid Leukemia | 38 | 19 | 10 | 15 | 4 | 3 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 94 |
| Myeloid Leukemia | 17 | 1 | 8 | 9 | 13 | 4 | 5 | 9 | 2 | 5 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 76 |
| Other Leukemias | 2 | 2 | 3 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| Bone, Cartilage | 0 | 11 | 12 | 20 | 12 | 3 | 3 | 1 | 0 | 3 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 69 |
| Soft Tissue | 11 | 4 | 4 | 8 | 5 | 7 | 5 | 7 | 3 | 4 | 6 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 71 |
| Skin Melanoma | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 8 |
| Skin Non-Melanoma | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 2 | 2 | 1 | 3 | 5 | 4 | 10 | 5 | 3 | 2 | 1 | 45 |
| Breast | 0 | 0 | 0 | 1 | 8 | 15 | 31 | 58 | 74 | 59 | 43 | 30 | 27 | 10 | 6 | 1 | 4 | 4 | 371 |
| Uterus, Genital | 1 | 0 | 0 | 2 | 3 | 3 | 0 | 2 | 7 | 5 | 4 | 5 | 8 | 10 | 9 | 4 | 3 | 1 | 67 |
| Cervix | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 8 | 6 | 7 | 4 | 2 | 2 | 2 | 0 | 0 | 0 | 41 |
| Ovary | 0 | 0 | 3 | 0 | 2 | 2 | 1 | 7 | 6 | 4 | 2 | 2 | 11 | 2 | 2 | 1 | 0 | 0 | 45 |
| Prostate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 2 | 8 | 9 | 10 | 4 | 4 | 0 | 42 |
| Testis, Genital | 0 | 0 | 2 | 1 | 2 | 3 | 2 | 2 | 0 | 2 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 18 |
| Bladder | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 4 | 8 | 10 | 9 | 14 | 13 | 7 | 7 | 5 | 2 | 85 |
| Kidney, Urinary | 13 | 5 | 0 | 0 | 1 | 3 | 0 | 2 | 2 | 4 | 6 | 6 | 6 | 9 | 3 | 3 | 0 | 2 | 65 |
| Eye | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Brain, CNS | 25 | 30 | 21 | 9 | 9 | 5 | 6 | 7 | 10 | 2 | 7 | 3 | 6 | 5 | 7 | 3 | 1 | 0 | 156 |
| Thyroid | 0 | 2 | 3 | 11 | 20 | 14 | 25 | 23 | 19 | 16 | 10 | 5 | 13 | 6 | 5 | 5 | 0 | 2 | 179 |
| Other Endocrine | 11 | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| NHL - Lymph Nodes | 5 | 6 | 6 | 10 | 9 | 7 | 5 | 9 | 5 | 9 | 2 | 3 | 14 | 5 | 4 | 4 | 1 | 0 | 104 |
| NHL - Extra-nodal | 4 | 5 | 2 | 5 | 4 | 5 | 3 | 7 | 3 | 5 | 6 | 1 | 11 | 6 | 4 | 4 | 3 | 0 | 78 |
| Hodgkin's Disease - LNs | 7 | 9 | 15 | 30 | 16 | 7 | 6 | 8 | 6 | 6 | 3 | 5 | 1 | 0 | 1 | 0 | 0 | 0 | 120 |
| HD - Extra-nodal | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Primary Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 2 | 6 | 5 | 3 | 5 | 5 | 4 | 1 | 2 | 1 | 40 |
| All Other Sites | 2 | 0 | 3 | 0 | 2 | 1 | 1 | 2 | 0 | 0 | 0 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 18 |
| **TOTAL** | **152** | **97** | **97** | **138** | **116** | **96** | **137** | **193** | **206** | **214** | **205** | **150** | **255** | **179** | **134** | **77** | **53** | **31** | **2,530** |

* Includes Multiple Primary Neoplasms.

## TABLE 7

### ANALYTIC MALE CASES SEEN AT KFSH&RC BY SITE* AND AGE
### 2004

| SITE | 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 | 2 | 0 | 1 | 4 | 1 | 1 | 5 | 6 | 5 | 6 | 2 | 6 | 4 | 2 | 2 | 48 |
| Nasopharynx | 0 | 0 | 1 | 5 | 2 | 0 | 1 | 3 | 10 | 9 | 10 | 2 | 7 | 7 | 2 | 1 | 1 | 0 | 61 |
| Esophagus | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 4 | 4 | 2 | 2 | 3 | 5 | 24 |
| Stomach | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 2 | 4 | 2 | 13 | 6 | 3 | 5 | 5 | 0 | 45 |
| Colon, Rectum | 0 | 0 | 1 | 0 | 1 | 2 | 4 | 6 | 5 | 13 | 13 | 11 | 12 | 9 | 9 | 6 | 2 | 1 | 95 |
| Liver | 3 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 3 | 1 | 4 | 2 | 5 | 6 | 3 | 0 | 2 | 3 | 36 |
| Pancreas | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 2 | 4 | 3 | 3 | 2 | 2 | 0 | 0 | 21 |
| Other G. I. | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 2 | 1 | 0 | 2 | 3 | 1 | 1 | 0 | 0 | 15 |
| Larynx | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 1 | 6 | 5 | 3 | 2 | 4 | 2 | 30 |
| Lung, Pleura | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 5 | 4 | 8 | 10 | 9 | 9 | 9 | 4 | 1 | 1 | 65 |
| Multiple Myeloma | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 8 |
| Lymphoid Leukemia | 19 | 11 | 7 | 12 | 3 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 59 |
| Myeloid Leukemia | 14 | 0 | 7 | 8 | 6 | 2 | 2 | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 48 |
| Other Leukemias | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Bone, Cartilage | 0 | 6 | 5 | 14 | 8 | 3 | 3 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 44 |
| Soft Tissue | 3 | 1 | 1 | 3 | 4 | 3 | 1 | 5 | 2 | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 29 |
| Skin Melanoma | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| Skin Non-Melanoma | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 1 | 2 | 1 | 1 | 7 | 5 | 2 | 2 | 1 | 27 |
| Breast | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Uterus, Genital | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cervix | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ovary | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Prostate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 2 | 8 | 9 | 10 | 4 | 4 | 0 | 42 |
| Testis, Genital | 0 | 0 | 2 | 1 | 2 | 3 | 2 | 2 | 0 | 2 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 18 |
| Bladder | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 7 | 9 | 6 | 11 | 12 | 3 | 7 | 4 | 1 | 69 |
| Kidney, Urinary | 2 | 1 | 0 | 0 | 1 | 3 | 0 | 2 | 2 | 4 | 5 | 5 | 2 | 4 | 2 | 3 | 0 | 2 | 38 |
| Eye | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Brain, CNS | 17 | 13 | 12 | 5 | 2 | 3 | 3 | 5 | 6 | 1 | 6 | 3 | 4 | 2 | 5 | 2 | 1 | 0 | 90 |
| Thyroid | 0 | 1 | 0 | 0 | 2 | 1 | 2 | 8 | 10 | 3 | 2 | 0 | 6 | 1 | 3 | 3 | 0 | 0 | 42 |
| Other Endocrine | 4 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| NHL - Lymph Nodes | 0 | 5 | 5 | 9 | 4 | 4 | 3 | 7 | 4 | 8 | 1 | 1 | 9 | 4 | 3 | 2 | 1 | 0 | 70 |
| NHL - Extra-nodal | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 5 | 2 | 2 | 4 | 1 | 6 | 2 | 2 | 2 | 1 | 0 | 45 |
| Hodgkin's Disease - LNs | 7 | 8 | 9 | 15 | 10 | 6 | 5 | 5 | 3 | 6 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 77 |
| HD - Extra-nodal | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Primary Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 3 | 3 | 0 | 3 | 4 | 1 | 1 | 1 | 0 | 20 |
| All Other Sites | 2 | 0 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 13 |
| **TOTAL** | **80** | **51** | **56** | **82** | **51** | **37** | **48** | **67** | **70** | **87** | **96** | **62** | **129** | **105** | **75** | **56** | **34** | **18** | **1,204** |

* Includes Multiple Primary Neoplasms.

## TABLE 8

## ANALYTIC FEMALE CASES SEEN AT KFSH&RC BY SITE* AND AGE
## 2004

| SITE | 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 | 0 | 1 | 2 | 1 | 3 | 3 | 6 | 5 | 11 | 6 | 5 | 1 | 2 | 0 | 47 |
| Nasopharynx | 0 | 0 | 1 | 1 | 0 | 2 | 4 | 1 | 4 | 2 | 5 | 3 | 3 | 2 | 1 | 0 | 0 | 0 | 29 |
| Esophagus | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 4 | 2 | 1 | 0 | 0 | 2 | 11 |
| Stomach | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 1 | 1 | 2 | 3 | 1 | 3 | 1 | 0 | 0 | 17 |
| Colon, Rectum | 0 | 0 | 0 | 0 | 1 | 2 | 4 | 10 | 9 | 13 | 5 | 4 | 8 | 7 | 4 | 3 | 3 | 0 | 73 |
| Liver | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 3 | 2 | 2 | 0 | 0 | 0 | 13 |
| Pancreas | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 0 | 4 | 0 | 1 | 0 | 11 |
| Other G. I. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 4 | 1 | 0 | 1 | 1 | 12 |
| Larynx | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 2 | 0 | 0 | 6 |
| Lung, Pleura | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 4 | 1 | 2 | 0 | 1 | 1 | 19 |
| Multiple Myeloma | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 7 |
| Lymphoid Leukemia | 19 | 8 | 3 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| Myeloid Leukemia | 3 | 1 | 1 | 1 | 7 | 2 | 3 | 4 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| Other Leukemias | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Bone, Cartilage | 0 | 5 | 7 | 6 | 4 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| Soft Tissue | 8 | 3 | 3 | 5 | 1 | 4 | 4 | 2 | 1 | 3 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 42 |
| Skin Melanoma | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| Skin Non-Melanoma | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 4 | 3 | 3 | 0 | 1 | 0 | 0 | 18 |
| Breast | 0 | 0 | 0 | 1 | 8 | 15 | 31 | 58 | 74 | 58 | 43 | 30 | 27 | 10 | 6 | 1 | 4 | 4 | 370 |
| Uterus, Genital | 1 | 0 | 0 | 2 | 3 | 3 | 0 | 2 | 7 | 5 | 4 | 5 | 8 | 10 | 9 | 4 | 3 | 1 | 67 |
| Cervix | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 6 | 8 | 6 | 7 | 4 | 2 | 2 | 2 | 0 | 0 | 0 | 41 |
| Ovary | 0 | 0 | 3 | 0 | 2 | 2 | 1 | 7 | 6 | 4 | 2 | 2 | 11 | 2 | 2 | 1 | 0 | 0 | 45 |
| Prostate | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Testis, Genital | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bladder | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 3 | 1 | 4 | 0 | 1 | 1 | 16 |
| Kidney, Urinary | 11 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 5 | 1 | 0 | 0 | 0 | 27 |
| Eye | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Brain, CNS | 8 | 17 | 9 | 4 | 7 | 2 | 3 | 2 | 4 | 1 | 1 | 0 | 2 | 3 | 2 | 1 | 0 | 0 | 66 |
| Thyroid | 0 | 1 | 3 | 11 | 18 | 13 | 23 | 15 | 9 | 13 | 8 | 5 | 7 | 5 | 2 | 2 | 0 | 2 | 137 |
| Other Endocrine | 7 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| NHL - Lymph Nodes | 5 | 1 | 1 | 1 | 5 | 3 | 2 | 2 | 1 | 1 | 1 | 2 | 5 | 1 | 1 | 2 | 0 | 0 | 34 |
| NHL - Extra-nodal | 1 | 2 | 0 | 2 | 1 | 3 | 1 | 2 | 1 | 3 | 2 | 0 | 5 | 4 | 2 | 2 | 2 | 0 | 33 |
| Hodgkin's Disease - LNs | 0 | 1 | 6 | 15 | 6 | 1 | 1 | 3 | 3 | 0 | 2 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 43 |
| HD - Extra-nodal | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Primary Unknown | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 3 | 2 | 3 | 2 | 1 | 3 | 0 | 1 | 1 | 20 |
| All Other Sites | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 5 |
| **TOTAL** | **72** | **46** | **41** | **56** | **65** | **59** | **89** | **126** | **136** | **127** | **109** | **88** | **126** | **74** | **59** | **21** | **19** | **13** | **1,326** |

* Includes Multiple Primary Neoplasms.

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

The 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 brain/CNS cancer are more common. The following 2004 analytic cases, which show a quite similar pattern with the data from the National Cancer Registry (NCR), exhibit significant differences in trends from those of the West when compared to the data published in *Cancer Facts & Figures - 2004*, by the American Cancer Society:

**TABLE 9**

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

| SITE | KFSH&RC 2004 Analytics | NCR 2001 Saudis | USA 2004 Estimates |
|---|---|---|---|
| BREAST | 14.7% | 9.9% | 15.9% |
| LEUKEMIA | 7.2% | 8.1% | 2.4% |
| NON-HODGKIN'S LYMPHOMA | 7.2% | 7.5% | 4.0% |
| THYROID | 7.1% | 5.8% | 1.7% |
| COLON, RECTUM | 6.6% | 7.8% | 11.0% |
| BRAIN, CNS | 6.2% | 3.5% | 1.3% |
| HODGKIN'S DISEASE | 4.9% | 3.8% | 0.6% |
| LUNG, PLEURA | 3.3% | 3.9% | 12.7% |
| SOFT TISSUE | 2.8% | 1.5% | 0.6% |
| BONE, CARTILAGE | 2.7% | 1.8% | 0.2% |
| LIVER | 1.9% | 5.8% | 1.4% |
| PROSTATE (% to MALES) | 3.5% | 5.4% | 32.9% |

**Breast -** The most common malignancy seen at KFSH&RC is breast cancer, comprising 14.7% of all cases, as compared to 15.9% 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.

**Leukemia -** The most striking feature is the unusually high crude relative frequency of leukemia cases, constituting 7.2% of all cases seen at KFSH&RC, as compared to 2.4% of all neoplasms diagnosed in the U.S.A. The male/female ratio is 1.6:1. It is the second most common type of malignancy seen in males and fourth in females. It is also the most common malignancy among pediatric cases.

**Non-Hodgkin's Lymphoma -** Cases of non-Hodgkin's lymphoma account for 7.2% of all cases. The male/female ratio is 1.7:1. In the U.S.A., NHL accounts for only 4.0% of all cancer.

**Thyroid -** 7.1% of all malignancies in KFSH&RC are thyroid tumors. However, they represent 10.3% of female malignant neoplasms, second to breast cancer. The male/female ratio is 0.3:1. Thyroid cancer accounts for only 1.7% of all cases in the U.S.A. and 2.6% of female malignancies.

**Colo-Rectal -** Markedly less common than in the West, this disease represents only 6.6% of all tumors. In the U.S.A. it constitutes 11.0% of newly diagnosed cancer cases. Dietary factors, particularly lower animal fat intake, may play a role. The male/female ratio at KFSH&RC is 1.3:1.

**Brain/CNS -** Primary malignant neoplasm of the brain and CNS accounts for 6.2% of all malignancies and ranks second among the most common pediatric malignancies. The male/female ratio is 1.4:1. This is comparatively higher than in the West with only 1.3% of all cases.

**Hodgkin's Disease -** The incidence of Hodgkin's lymphoma is comparatively more frequent at KFSH&RC than in Western countries. In the U.S.A. it constitutes 0.6% of all cancers, compared to 4.9% at KFSH&RC. The male/female ratio is 1.8:1.

**Lung -** Frequency of lung cancer is much lower than in Western countries, most likely reflecting the much lower levels of smoking and industrial pollution. In the U.S.A., primary lung cancer represents 12.7% of all cancer cases (13.3% in males, and 12.1% in females). At KFSH&RC, 3.3% of all diagnoses are lung cancer; in males it is the seventh most common tumor, constituting 5.4% of male malignancies and in females, 1.4%. The male/female ratio is 3.4:1, in the West, 1.2:1.

**Soft Tissue -** KFSH&RC cases show a higher rate of soft tissue malignancies than the U.S.A., with 2.8% against the latter's 0.6% of all cases. The male/female ratio is 0.7:1 at KFSH&RC and 1.2:1 in the West.

**Bone -** A higher crude relative frequency rate is seen in bone cancer. It constitutes 0.2% of all the cancers in the West, but is 2.7% of the cases at KFSH&RC. The male/female ratio at KFSH&RC is 1.8:1.

**Liver -** The relative frequency of liver cancer at KFSH&RC (1.9%) is a little higher than that of the West (1.4%). The male/female ratio is 2.8:1 at KFSH&RC and 2:1 in the West.

**Prostate -** The observed rate of prostatic cancer in men is much lower than in the West, where it is one of the most common male cancers (constituting 32.9% of the male malignancies). This is in contrast to the KFSH&RC experience, where prostatic cancer makes up only 3.5% of the male cancer. This is probably due to the population age difference. Prostate cancer is a disease chiefly of old men and the population of Saudi Arabia is, in general, very young.

**FIGURE 10**

**DISTRIBUTION OF 20 MOST COMMON MALIGNANCIES**
**2004 ANALYTIC CASES (TOTAL CASES = 2,530)**

**MALE**

NHL 115 (9.6%)
LEUKEMIA 112 (9.3%)
COLON, RECTUM 95 (7.9%)
BRAIN, CNS 90 (7.5%)
HODGKIN'S DISEASE 80 (6.6%)
BLADDER 69 (5.7%)
LUNG, PLEURA 65 (5.4%)
NASOPHARYNX 61 (5.1%)
ORAL CAVITY 48 (4.0%)
STOMACH 45 (3.7%)
BONE, CARTILAGE 44 (3.7%)
PROSTATE 42 (3.5%)
THYROID 42 (3.5%)
KIDNEY, URINARY 38 (3.2%)
LIVER 36 (3.0%)
LARYNX 30 (2.5%)
SOFT TISSUE 29 (2.4%)
SKIN NON-MELANOMA 27 (2.2%)
ESOPHAGUS 24 (2.0%)
PANCREAS 21 (1.7%)



**FEMALE**

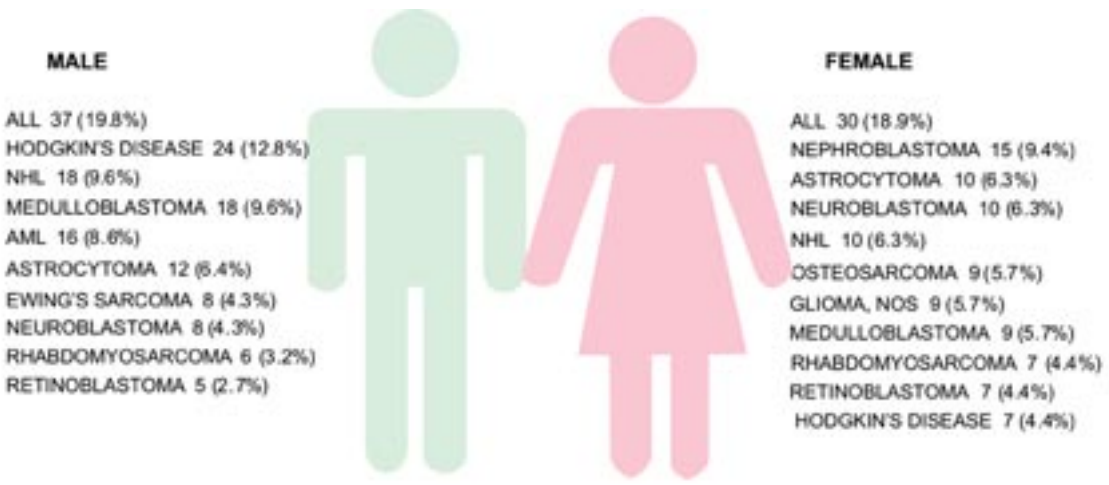
BREAST 370 (27.9%)
THYROID 137 (10.3%)
COLON, RECTUM 73 (5.5%)
LEUKEMIA 69 (5.2%)
UTERUS, GENITAL 67 (5.1%)
NHL 67 (5.1%)
BRAIN, CNS 66 (5.0%)
ORAL CAVITY 47 (3.5%)
OVARY 45 (3.4%)
HODGKIN'S DISEASE 45 (3.4%)
SOFT TISSUE 42 (3.2%)
CERVIX 41 (3.1%)
NASOPHARYNX 29 (2.2%)
KIDNEY, URINARY 27 (2.0%)
BONE, CARTILAGE 25 (1.9%)
LUNG, PLEURA 19 (1.4%)
SKIN NON-MELANOMA 18 (1.4%)
STOMACH 17 (1.3%)
BLADDER 16 (1.2%)
LIVER 13 (1.0%)

**FIGURE 11**

**DISTRIBUTION OF PEDIATRIC MALIGNANCIES**
**2004 ANALYTIC CASES (TOTAL CASES = 346)**


**FIGURE 12**

**DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES BY HISTOLOGY**
**2004 ANALYTIC CASES (TOTAL CASES = 346)**



## TABLE 10

## PRIMARY SITE TABLE
## (INCLUDES MULTIPLE PRIMARIES)
## 2 0 0 4

| SITE / HISTOLOGY (NOS-Not Otherwise Specified) | ALL CASES | ADULTS | | PEDIATRICS | |
|---|---|---|---|---|---|
| | | MALE | FEMALE | MALE | FEMALE |
| | **2,850** | **1,154** | **1,320** | **201** | **175** |
| **LIP** | **4** | **1** | **3** | **0** | **0** |
| Squamous Cell Carcinoma | 3 | 1 | 2 | 0 | 0 |
| Verrucous Carcinoma | 1 | 0 | 1 | 0 | 0 |
| **TONGUE** | **35** | **20** | **15** | **0** | **0** |
| Squamous Cell Carcinoma | 33 | 19 | 14 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 2 | 1 | 1 | 0 | 0 |
| **MAJOR SALIVARY GLANDS** | **12** | **6** | **4** | **2** | **0** |
| Non-Hodgkin's Lymphoma | 3 | 1 | 1 | 1 | 0 |
| Carcinoma, NOS | 2 | 2 | 0 | 0 | 0 |
| Mucoepidermoid Carcinoma | 1 | 0 | 0 | 1 | 0 |
| Acinar Cell Carcinoma | 1 | 1 | 0 | 0 | 0 |
| Carcinosarcoma | 1 | 0 | 1 | 0 | 0 |
| Hodgkin's Disease | 1 | 1 | 0 | 0 | 0 |
| Squamous Cell Carcinoma | 1 | 0 | 1 | 0 | 0 |
| Carcinoma, Undifferentiated | 1 | 0 | 1 | 0 | 0 |
| Adenocarcinoma, NOS | 1 | 1 | 0 | 0 | 0 |
| **GUM** | **16** | **7** | **8** | **1** | **0** |
| Squamous Cell Carcinoma | 13 | 7 | 6 | 0 | 0 |
| Adenoid Cystic Carcinoma | 1 | 0 | 1 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 1 | 0 | 0 | 1 | 0 |
| Adenocarcinoma, NOS | 1 | 0 | 1 | 0 | 0 |
| **FLOOR OF MOUTH** | **3** | **3** | **0** | **0** | **0** |
| Squamous Cell Carcinoma | | | | | |
| **OTHER PARTS OF MOUTH** | **14** | **9** | **5** | **0** | **0** |
| Squamous Cell Carcinoma | 13 | 8 | 5 | 0 | 0 |
| Kaposi's Sarcoma | 1 | 1 | 0 | 0 | 0 |
| **OROPHARYNX** | **17** | **7** | **8** | **2** | **0** |
| Non-Hodgkin's Lymphoma | 15 | 7 | 6 | 2 | 0 |
| Hodgkin's Disease | 1 | 0 | 1 | 0 | 0 |
| Squamous Cell Carcinoma | 1 | 0 | 1 | 0 | 0 |
| **NASOPHARYNX** | **99** | **66** | **31** | **1** | **1** |
| Carcinoma, Undifferentiated | 59 | 41 | 17 | 1 | 0 |
| Carcinoma, NOS | 29 | 19 | 9 | 0 | 1 |
| Squamous Cell Carcinoma | 8 | 3 | 5 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 2 | 2 | 0 | 0 | 0 |
| Hodgkin's Disease | 1 | 1 | 0 | 0 | 0 |

| SITE / HISTOLOGY (NOS-Not Otherwise Specified) | ALL CASES | ADULTS | | PEDIATRICS | |
|---|---|---|---|---|---|
| | | MALE | FEMALE | MALE | FEMALE |
| **HYPOPHARYNX** | **20** | **7** | **13** | **0** | **0** |
| Squamous Cell Carcinoma | 19 | 6 | 13 | 0 | 0 |
| Carcinoma, NOS | 1 | 1 | 0 | 0 | 0 |
| **ESOPHAGUS** | **37** | **26** | **11** | **0** | **0** |
| Squamous Cell Carcinoma | 22 | 14 | 8 | 0 | 0 |
| Adenocarcinoma, NOS | 10 | 8 | 2 | 0 | 0 |
| Signet Ring Cell Carcinoma | 3 | 3 | 0 | 0 | 0 |
| Carcinoma, NOS | 2 | 1 | 1 | 0 | 0 |
| **STOMACH** | **81** | **59** | **22** | **0** | **0** |
| Adenocarcinoma, NOS | 29 | 22 | 7 | 0 | 0 |
| Signet Ring Cell Carcinoma | 19 | 10 | 9 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 15 | 11 | 4 | 0 | 0 |
| Intestinal Adenocarcinoma | 8 | 7 | 1 | 0 | 0 |
| Gatrointestinal Stromal Tumor, Malig | 2 | 2 | 0 | 0 | 0 |
| Mucinous Adenocarcinoma | 2 | 2 | 0 | 0 | 0 |
| Carcinoma, NOS | 2 | 2 | 0 | 0 | 0 |
| Tubular Adenocarcinoma | 1 | 1 | 0 | 0 | 0 |
| Carcinoid Tumor | 1 | 1 | 0 | 0 | 0 |
| Carcinoma, Diffuse Type | 1 | 0 | 1 | 0 | 0 |
| Squamous Cell Carcinoma | 1 | 1 | 0 | 0 | 0 |
| **SMALL INTESTINE** | **9** | **7** | **1** | **1** | **0** |
| Adenocarcinoma, NOS | 5 | 5 | 0 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 2 | 0 | 1 | 1 | 0 |
| Adenocarcinoma in Villous Adenoma | 1 | 1 | 0 | 0 | 0 |
| Spindle Cell Sarcoma | 1 | 1 | 0 | 0 | 0 |
| **COLON** | **76** | **43** | **31** | **1** | **1** |
| Adenocarcinoma, NOS | 54 | 31 | 23 | 0 | 0 |
| Mucinous Adenocarcinoma | 15 | 9 | 6 | 0 | 0 |
| Signet Ring Cell Carcinoma | 2 | 2 | 0 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 2 | 0 | 0 | 1 | 1 |
| Carcinoma, NOS | 2 | 0 | 2 | 0 | 0 |
| Adenocarcinoma in Villous  Adenoma | 1 | 1 | 0 | 0 | 0 |
| **RECTUM/RECTOSIGMOID JUNCTION/ANUS** | **118** | **63** | **54** | **1** | **0** |
| Adenocarcinoma, NOS | 93 | 48 | 45 | 0 | 0 |
| Mucinous Adenocarcinoma | 9 | 4 | 5 | 0 | 0 |
| Squamous Cell Carcinoma | 6 | 4 | 2 | 0 | 0 |
| Signet Ring Cell Carcinoma | 2 | 1 | 0 | 1 | 0 |
| Adenoca in Tubulovillous Adenoma | 2 | 2 | 0 | 0 | 0 |
| Adenocarcinoma in Villous Adenoma | 1 | 1 | 0 | 0 | 0 |
| Carcinoid Tumor | 1 | 0 | 1 | 0 | 0 |
| Adenocarcinoid Tumor | 1 | 0 | 1 | 0 | 0 |
| Papillary Adenocarcinoma | 1 | 1 | 0 | 0 | 0 |
| Carcinoma, NOS | 1 | 1 | 0 | 0 | 0 |
| Malignant Neoplasm, NOS | 1 | 1 | 0 | 0 | 0 |

| SITE / HISTOLOGY (NOS-Not Otherwise Specified) | ALL CASES | ADULTS | | PEDIATRICS | |
|---|---|---|---|---|---|
| | | MALE | FEMALE | MALE | FEMALE |
| **LIVER/INTRAHEPATIC BILE DUCTS** | **55** | **35** | **15** | **3** | **2** |
| Hepatocellular Carcinoma | 41 | 29 | 11 | 0 | 1 |
| Cholangiocarcinoma | 7 | 5 | 2 | 0 | 0 |
| Hepatoblastoma | 3 | 0 | 0 | 3 | 0 |
| Non-Hodgkin's Lymphoma | 2 | 0 | 1 | 0 | 1 |
| Klatskin Tumor | 1 | 1 | 0 | 0 | 0 |
| Malignant Neoplasm, NOS | 1 | 0 | 1 | 0 | 0 |
| **GALLBLADDER/EXTRAHEPATIC BILE DUCTS** | **17** | **6** | **11** | **0** | **0** |
| Adenocarcinoma, NOS | 11 | 4 | 7 | 0 | 0 |
| Carcinoma, NOS | 3 | 1 | 2 | 0 | 0 |
| Malignant Neoplasm, NOS | 3 | 1 | 2 | 0 | 0 |
| **PANCREAS** | **35** | **21** | **14** | **0** | **0** |
| Adenocarcinoma, NOS | 17 | 8 | 9 | 0 | 0 |
| Malignant Neoplasm, NOS | 6 | 5 | 1 | 0 | 0 |
| Carcinoma, NOS | 5 | 4 | 1 | 0 | 0 |
| Neuroendocrine Carcinoma | 3 | 3 | 0 | 0 | 0 |
| Mucinous Adenocarcinoma | 2 | 1 | 1 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 2 | 0 | 2 | 0 | 0 |
| **OTHER G.I. SITES** | **7** | **4** | 3 | **0** | **0** |
| Malignant Neoplasm, NOS | 3 | 2 | 1 | 0 | 0 |
| Gastrointestinal Stromal Tumor, Malig | 2 | 1 | 1 | 0 | 0 |
| Mucinous Adenocarcinoma | 1 | 1 | 0 | 0 | 0 |
| Serous Cystadenocarcinoma | 1 | 0 | 1 | 0 | 0 |
| **NASAL CAVITIES/ACCESSORY SINUSES** | **14** | **11** | **0** | **1** | **2** |
| Non-Hodgkin's Lymphoma | 5 | 5 | 0 | 0 | 0 |
| Squamous Cell Carcinoma | 4 | 4 | 0 | 0 | 0 |
| Rhabdomyosarcoma | 3 | 0 | 0 | 1 | 2 |
| Adenoid Cystic Carcinoma | 1 | 1 | 0 | 0 | 0 |
| Adenocarcinoma, NOS | 1 | 1 | 0 | 0 | 0 |
| **LARYNX** | **40** | **33** | **7** | **0** | **0** |
| Squamous Cell Carcinoma | 39 | 32 | 7 | 0 | 0 |
| Verrucous Carcinoma | 1 | 1 | 0 | 0 | 0 |
| **BRONCHUS/LUNG** | **95** | **71** | **23** | **1** | **0** |
| Adenocarcinoma, NOS | 27 | 21 | 6 | 0 | 0 |
| Squamous Cell Carcinoma | 19 | 18 | 1 | 0 | 0 |
| Non-Small Cell Carcinoma | 14 | 11 | 3 | 0 | 0 |
| Small Cell Carcinoma | 11 | 8 | 3 | 0 | 0 |
| Carcinoma, NOS | 8 | 3 | 5 | 0 | 0 |
| Mucinous Adenocarcinoma | 3 | 2 | 1 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 3 | 2 | 1 | 0 | 0 |
| Bronchiolo-Alveolar Adenocarcinoma | 2 | 2 | 0 | 0 | 0 |
| Carcinoid Tumor | 2 | 1 | 1 | 0 | 0 |
| Malignant Neoplasm, NOS | 2 | 1 | 1 | 0 | 0 |
| Large Cell Carcinoma | 1 | 1 | 0 | 0 | 0 |
| Synovial Sarcoma | 1 | 1 | 0 | 0 | 0 |
| Rhabdomyosarcoma | 1 | 0 | 0 | 1 | 0 |
| Plasmacytoma | 1 | 0 | 1 | 0 | 0 |

| SITE / HISTOLOGY (NOS-Not Otherwise Specified) | ALL CASES | ADULTS | | PEDIATRICS | |
|---|---|---|---|---|---|
| | | MALE | FEMALE | MALE | FEMALE |
| **PLEURA** | **2** | **2** | **0** | **0** | **0** |
| Mesothelioma | | | | | |
| **MEDIASTINUM** | **11** | **5** | **4** | **2** | 0 |
| Malignant Thymoma | 5 | 2 | 3 | 0 | 0 |
| Neuroblastoma | 2 | 0 | 0 | 2 | 0 |
| Rhabdoid Sarcoma | 1 | 1 | 0 | 0 | 0 |
| Endodermal Sinus Tumor | 1 | 1 | 0 | 0 | 0 |
| Adenocarcinoma, NOS | 1 | 0 | 1 | 0 | 0 |
| Carcinoma, NOS | 1 | 1 | 0 | 0 | 0 |
| **MULTIPLE MYELOMA** | **19** | **11** | **8** | **0** | **0** |
| **BONE MARROW** | **204** | **64** | **30** | **65** | **45** |
| Acute Lymphoid Leukemia | 106 | 25 | 6 | 41 | 34 |
| Acute Myeloid Leukemia | 46 | 17 | 8 | 17 | 4 |
| Chronic Myeloid Leukemia | 26 | 11 | 12 | 2 | 1 |
| Acute Biphenotypic Leukemia | 8 | 1 | 1 | 2 | 4 |
| Chronic Lymphoid Leukemia | 4 | 4 | 0 | 0 | 0 |
| Acute Promyelocytic Leukemia | 4 | 1 | 3 | 0 | 0 |
| Chronic Myelomonocytic Leukemia | 2 | 0 | 0 | 2 | 0 |
| Myeloid Leukemia, NOS | 2 | 0 | 0 | 1 | 1 |
| Acute Leukemia, NOS | 2 | 2 | 0 | 0 | 0 |
| Acute Monocytic Leukemia | 1 | 1 | 0 | 0 | 0 |
| Prolymphocytic Leukemia | 1 | 1 | 0 | 0 | 0 |
| Hairy Cell Leukemia | 1 | 1 | 0 | 0 | 0 |
| Acute Myelofibrosis | 1 | 0 | 0 | 0 | 1 |
| **BONE/CARTILAGE** | **73** | **34** | **15** | **12** | **12** |
| Osteosarcoma, NOS | 26 | 12 | 4 | 2 | 8 |
| Ewing's Sarcoma | 24 | 9 | 4 | 8 | 3 |
| Chondroblastic Osteosarcoma | 7 | 5 | 1 | 0 | 1 |
| Chondrosarcoma, NOS | 4 | 1 | 3 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 4 | 1 | 2 | 1 | 0 |
| Plasmacytoma | 3 | 3 | 0 | 0 | 0 |
| Chordoma | 3 | 2 | 1 | 0 | 0 |
| Telangiectatic Osteosarcoma | 1 | 0 | 0 | 1 | 0 |
| Myxoid Chondrosarcoma | 1 | 1 | 0 | 0 | 0 |
| **CONNECTIVE/SUBCUTANEOUS/SOFT TISSUE** | **88** | **34** | **33** | **6** | **15** |
| Synovial Sarcoma | 11 | 1 | 7 | 0 | 3 |
| Rhabdomyosarcoma | 9 | 3 | 0 | 2 | 4 |
| Liposarcoma | 7 | 3 | 4 | 0 | 0 |
| Neuroblastoma | 7 | 0 | 0 | 2 | 5 |
| Sarcoma, NOS | 7 | 3 | 4 | 0 | 0 |
| Peripheral Neuroectodermal Tumor | 6 | 4 | 2 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 6 | 5 | 0 | 1 | 0 |
| Neurofibrosarcoma | 5 | 2 | 3 | 0 | 0 |
| Spindle Cell Sarcoma | 4 | 2 | 1 | 1 | 0 |
| Malignant Fibrous Histiocytoma | 3 | 3 | 0 | 0 | 0 |
| Chondrosarcoma, NOS | 3 | 0 | 3 | 0 | 0 |
| Leiomyosarcoma | 3 | 1 | 2 | 0 | 0 |
| Fibrosarcoma | 2 | 1 | 0 | 0 | 1 |
| Hemangiosarcoma | 2 | 0 | 2 | 0 | 0 |
| Rhabdoid Sarcoma | 2 | 0 | 0 | 0 | 2 |
| Ewing's Sarcoma | 2 | 1 | 1 | 0 | 0 |
| Hodgkin's Disease | 2 | 1 | 1 | 0 | 0 |
| Giant Cell Sarcoma | 1 | 0 | 1 | 0 | 0 |

| SITE — HISTOLOGY (NOS-Not Otherwise Specified) | ALL CASES | ADULTS | | PEDIATRICS | |
|---|---|---|---|---|---|
| | | MALE | FEMALE | MALE | FEMALE |
| Clear Cell Sarcoma of Tendon | 1 | 1 | 0 | 0 | 0 |
| Epithelioid Cell Sarcoma | 1 | 0 | 1 | 0 | 0 |
| Fibroblastic Osteosarcoma | 1 | 0 | 1 | 0 | 0 |
| Malignant Neurilemmoma | 1 | 1 | 0 | 0 | 0 |
| Gastrointestinal Stromal Tumor, Malig | 1 | 1 | 0 | 0 | 0 |
| Mixed Germ Cell Tumor | 1 | 1 | 0 | 0 | 0 |
| **SKIN (MELANOMA)** | **8** | **3** | **5** | **0** | **0** |
| **SKIN (NON-MELANOMA)** | **65** | **39** | **26** | **0** | **0** |
| Basal Cell Carcinoma | 23 | 15 | 8 | 0 | 0 |
| Squamous Cell Carcinoma | 16 | 10 | 6 | 0 | 0 |
| Mycosis Fungoides | 8 | 4 | 4 | 0 | 0 |
| Kaposi's Sarcoma | 5 | 4 | 1 | 0 | 0 |
| Sebaceous Adenocarcinoma | 5 | 3 | 2 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 4 | 2 | 2 | 0 | 0 |
| Dermatofibrosarcoma | 3 | 1 | 2 | 0 | 0 |
| Skin Appendage Carcinoma | 1 | 0 | 1 | 0 | 0 |
| **BREAST, FEMALE** | **423** | **0** | **423** | **0** | **0** |
| Duct Cell Carcinoma | 376 | 0 | 376 | 0 | 0 |
| Lobular Carcinoma | 10 | 0 | 10 | 0 | 0 |
| Ductal and Lobular Carcinoma | 9 | 0 | 9 | 0 | 0 |
| Paget's Disease & Duct Cell Ca | 6 | 0 | 6 | 0 | 0 |
| Carcinoma, NOS | 5 | 0 | 5 | 0 | 0 |
| Papillary Carcinoma | 4 | 0 | 4 | 0 | 0 |
| Medullary Carcinoma | 3 | 0 | 3 | 0 | 0 |
| Cystosarcoma Phyllodes | 3 | 0 | 3 | 0 | 0 |
| Inflammatory Carcinoma | 1 | 0 | 1 | 0 | 0 |
| Metaplastic Carcinoma | 1 | 0 | 1 | 0 | 0 |
| Intracystic Carcinoma | 1 | 0 | 1 | 0 | 0 |
| Carcinosarcoma | 1 | 0 | 1 | 0 | 0 |
| Spindle Cell Sarcoma | 1 | 0 | 1 | 0 | 0 |
| Hemangiosarcoma | 1 | 0 | 1 | 0 | 0 |
| Neuroendocrine Carcinoma | 1 | 0 | 1 | 0 | 0 |
| **BREAST, MALE** | **2** | **2** | **0** | **0** | **0** |
| Duct Cell Carcinoma | 1 | 1 | 0 | 0 | 0 |
| Paget's Disease & Duct Cell Ca | 1 | 1 | 0 | 0 | 0 |
| **CERVIX UTERI** | **47** | **0** | **47** | **0** | **0** |
| Squamous Cell Carcinoma | 39 | 0 | 39 | 0 | 0 |
| Adenocarcinoma, NOS | 5 | 0 | 5 | 0 | 0 |
| Carcinoma, NOS | 2 | 0 | 2 | 0 | 0 |
| Mucinous Adenocarcinoma | 1 | 0 | 1 | 0 | 0 |
| **PLACENTA** | **10** | **0** | **10** | **0** | **0** |
| Placental Site Trophoblastic Tumor | 8 | 0 | 8 | 0 | 0 |
| Choriocarcinoma | 2 | 0 | 2 | 0 | 0 |

| SITE / HISTOLOGY (NOS-Not Otherwise Specified) | ALL CASES | ADULTS | | PEDIATRICS | |
|---|---|---|---|---|---|
| | | MALE | FEMALE | MALE | FEMALE |
| **CORPUS UTERI** | **62** | **0** | **62** | **0** | **0** |
| Endometrioid Carcinoma | 31 | 0 | 31 | 0 | 0 |
| Adenocarcinoma, NOS | 11 | 0 | 11 | 0 | 0 |
| Mullerian Mixed Tumor | 4 | 0 | 4 | 0 | 0 |
| Papillary Serous Cystadenocarcinoma | 2 | 0 | 2 | 0 | 0 |
| Endometrial Stromal Sarcoma | 2 | 0 | 2 | 0 | 0 |
| Carcinosarcoma | 2 | 0 | 2 | 0 | 0 |
| Clear Cell Adenocarcinoma | 2 | 0 | 2 | 0 | 0 |
| Adenosarcoma | 2 | 0 | 2 | 0 | 0 |
| Carcinoma, NOS | 2 | 0 | 2 | 0 | 0 |
| Mesodermal Mixed Tumor | 1 | 0 | 1 | 0 | 0 |
| Leiomyosarcoma | 1 | 0 | 1 | 0 | 0 |
| Spindle Cell Sarcoma | 1 | 0 | 1 | 0 | 0 |
| Papillary Adenocarcinoma | 1 | 0 | 1 | 0 | 0 |
| **OVARY** | **53** | **0** | **53** | **0** | **3** |
| Papillary Serous Cystadenocarcinoma | 19 | 0 | 19 | 0 | 0 |
| Carcinoma, NOS | 7 | 0 | 7 | 0 | 0 |
| Serous Cystadenocarcinoma | 6 | 0 | 6 | 0 | 0 |
| Endometrioid Carcinoma | 4 | 0 | 4 | 0 | 0 |
| Mucinous Cystadenocarcinoma | 4 | 0 | 4 | 0 | 0 |
| Adenocarcinoma, NOS | 4 | 0 | 4 | 0 | 0 |
| Endodermal Sinus Tumor | 3 | 0 | 1 | 0 | 2 |
| Dysgerminoma | 1 | 0 | 0 | 0 | 1 |
| Malignant Teratoma | 1 | 0 | 1 | 0 | 0 |
| Carcinosarcoma | 1 | 0 | 1 | 0 | 0 |
| Peripheral Neuroectodermal Tumor | 1 | 0 | 1 | 0 | 0 |
| Fibrosarcoma | 1 | 0 | 1 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 1 | 0 | 1 | 0 | 0 |
| **OTHER FEMALE GENITAL ORGANS** | **6** | **0** | **5** | **0** | **1** |
| Squamous Cell Carcinoma | 2 | 0 | 2 | 0 | 0 |
| Verrucous Carcinoma | 1 | 0 | 1 | 0 | 0 |
| Epithelioid Cell Sarcoma | 1 | 0 | 1 | 0 | 0 |
| Embryonal Rhabdomyosarcoma | 1 | 0 | 0 | 0 | 1 |
| Carcinoma, NOS | 1 | 0 | 1 | 0 | 0 |
| **PROSTATE** | **54** | **54** | **0** | **0** | **0** |
| Adenocarcinoma, NOS | 51 | 51 | 0 | 0 | 0 |
| Carcinoma, NOS | 3 | 3 | 0 | 0 | 0 |
| **TESTIS** | **20** | **18** | **0** | **2** | **0** |
| Seminoma | 11 | 10 | 0 | 1 | 0 |
| Mixed Germ Cell Tumor | 6 | 6 | 0 | 0 | 0 |
| Embryonal Rhabdomyosarcoma | 1 | 0 | 0 | 1 | 0 |
| Endodermal Sinus Tumor | 1 | 1 | 0 | 0 | 0 |
| Malig Fibrous Histiocytoma | 1 | 1 | 0 | 0 | 0 |
| **OTHER MALE GENITAL ORGANS** | **2** | **2** | **0** | **0** | **0** |
| Squamous Cell Carcinoma | | | | | |
| **URINARY BLADDER** | **99** | **82** | **16** | **1** | **0** |
| Transitional Cell Carcinoma | 56 | 49 | 7 | 0 | 0 |
| Papillary Transitional Cell Ca | 29 | 27 | 2 | 0 | 0 |
| Squamous Cell Carcinoma | 7 | 6 | 1 | 0 | 0 |
| Carcinosarcoma, NOS | 4 | 0 | 4 | 0 | 0 |
| Rhabdomyosarcoma | 2 | 0 | 1 | 1 | 0 |
| Carcinosarcoma | 1 | 0 | 1 | 0 | 0 |

| SITE / HISTOLOGY (NOS-Not Otherwise Specified) | ALL CASES | ADULTS | | PEDIATRICS | |
|---|---|---|---|---|---|
| | | MALE | FEMALE | MALE | FEMALE |
| **KIDNEY/URETER/URETHRA** | **72** | **39** | **13** | **3** | **17** |
| Renal Cell Carcinoma | 40 | 29 | 11 | 0 | 0 |
| Nephroblastoma | 19 | 0 | 0 | 3 | 16 |
| Transitional Cell Carcinoma | 4 | 4 | 0 | 0 | 0 |
| Papillary Transitional Carcinoma | 2 | 2 | 0 | 0 | 0 |
| Clear Cell Carcinoma | 2 | 1 | 1 | 0 | 0 |
| Malignant Mixed Tumor | 1 | 1 | 0 | 0 | 0 |
| Spindle Cell Sarcoma | 1 | 1 | 0 | 0 | 0 |
| Squamous Cell Carcinoma | 1 | 1 | 0 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 1 | 0 | 0 | 0 | 1 |
| Malignant Neoplasm, NOS | 1 | 0 | 1 | 0 | 0 |
| **EYE/LACRIMAL GLAND** | **19** | **2** | **0** | **6** | **11** |
| Retinoblastoma | 17 | 0 | 0 | 6 | 11 |
| Adenoid Cystic Carcinoma | 1 | 1 | 0 | 0 | 0 |
| Sarcoma, NOS | 1 | 1 | 0 | 0 | 0 |
| **BRAIN** | **161** | **51** | **37** | **42** | **31** |
| Medulloblastoma | 36 | 5 | 3 | 19 | 9 |
| Glioblastoma | 32 | 19 | 12 | 0 | 1 |
| Pilocytic Astrocytoma | 20 | 4 | 3 | 9 | 4 |
| Malignant Glioma, NOS | 20 | 6 | 6 | 3 | 5 |
| Oligodendroglioma, NOS | 15 | 7 | 5 | 3 | 0 |
| Astrocytoma, NOS | 13 | 6 | 1 | 2 | 4 |
| Ependymoma | 7 | 0 | 1 | 2 | 4 |
| Non-Hodgkin's Lymphoma | 5 | 1 | 4 | 0 | 0 |
| Pleomorphic Xanthoastrocytoma | 4 | 1 | 2 | 0 | 1 |
| Anaplastic Ganglioglioma | 4 | 1 | 0 | 1 | 2 |
| Gliomatosis Cerebri | 1 | 0 | 0 | 0 | 1 |
| Choroid Plexus Carcinoma | 1 | 0 | 0 | 1 | 0 |
| Primitive Neuroectodermal Tumor | 1 | 0 | 0 | 1 | 0 |
| Hemangiosarcoma | 1 | 0 | 0 | 1 | 0 |
| Malignant Neoplasm, NOS | 1 | 1 | 0 | 0 | 0 |
| **OTHER NERVOUS SYSTEM** | **8** | **1** | **0** | **2** | **5** |
| Pilocytic Astrocytoma | 4 | 0 | 0 | 2 | 2 |
| Malignant Glioma, NOS | 3 | 0 | 0 | 0 | 3 |
| Malignant Meningioma | 1 | 1 | 0 | 0 | 0 |
| **THYROID** | **213** | **50** | **157** | **1** | **5** |
| Papillary Carcinoma | 170 | 40 | 124 | 1 | 5 |
| Papillary & Follicular Adenoca | 22 | 4 | 18 | 0 | 0 |
| Follicular Adenocarcinoma | 6 | 2 | 4 | 0 | 0 |
| Medullary Carcinoma | 5 | 0 | 5 | 0 | 0 |
| Non-Hodgkin's Lymphoma | 5 | 2 | 3 | 0 | 0 |
| Anaplastic Carcinoma | 2 | 1 | 1 | 0 | 0 |
| Oxyphilic Adenocarcinoma | 1 | 0 | 1 | 0 | 0 |
| Hemangiosarcoma | 1 | 0 | 1 | 0 | 0 |
| Carcinoma, NOS | 1 | 1 | 0 | 0 | 0 |

| SITE / HISTOLOGY (NOS-Not Otherwise Specified) | ALL CASES | ADULTS | | PEDIATRICS | |
|---|---|---|---|---|---|
| | | MALE | FEMALE | MALE | FEMALE |
| **OTHER ENDOCRINE GLANDS** | **17** | **3** | **1** | **5** | **8** |
| Neuroblastoma | 10 | 0 | 0 | 4 | 6 |
| Carcinoma, NOS | 2 | 1 | 1 | 0 | 0 |
| Pineoblastoma | 1 | 0 | 0 | 0 | 1 |
| Mixed Germ Cell Tumor | 1 | 1 | 0 | 0 | 0 |
| Malignant Teratoma | 1 | 0 | 0 | 1 | 0 |
| Adrenal Cortical Carcinoma | 1 | 0 | 0 | 0 | 1 |
| Primitive Neuroectodermal Tumor | 1 | 1 | 0 | 0 | 0 |
| **LYMPH NODES, NON-HODGKIN'S LYMPHOMA (Excluding Extra-Nodal Lymphoma)** | **123** | **71** | **31** | **13** | **8** |
| Large Cell, Diffuse | 51 | 32 | 16 | 2 | 1 |
| Burkitt's | 14 | 6 | 1 | 5 | 2 |
| Follicular, NOS | 13 | 9 | 4 | 0 | 0 |
| Lymphoblastic | 12 | 3 | 2 | 4 | 3 |
| Small Lymphocytic | 7 | 6 | 1 | 0 | 0 |
| Non-Hodgkin's Lymphoma, NOS | 5 | 4 | 1 | 0 | 0 |
| T-Cell Lymphoma | 5 | 2 | 2 | 1 | 0 |
| Lymphoma, NOS | 5 | 2 | 1 | 1 | 1 |
| T-Cell Rich B-Cell | 3 | 2 | 1 | 0 | 0 |
| Marginal Zone | 3 | 2 | 1 | 0 | 0 |
| Ki-1 (Anaplastic Large Cell) | 2 | 1 | 0 | 0 | 1 |
| Immunoblastic | 1 | 0 | 1 | 0 | 0 |
| Small Cleaved Cell | 1 | 1 | 0 | 0 | 0 |
| NK/T-Cell Lymphoma | 1 | 1 | 0 | 0 | 0 |
| **LYMPH NODES, HODGKIN'S DISEASE** | **137** | **59** | **43** | **27** | **8** |
| Nodular Sclerosis | 85 | 36 | 34 | 11 | 4 |
| Lymphocytic Predominance | 20 | 10 | 3 | 5 | 2 |
| Hodgkin's Disease, NOS | 17 | 7 | 4 | 5 | 1 |
| Mixed Cellularity | 15 | 6 | 2 | 6 | 1 |
| **PRIMARY UNKNOWN** | **48** | **23** | **25** | **0** | **0** |
| Adenocarcinoma, NOS | 24 | 10 | 14 | 0 | 0 |
| Carcinoma, NOS | 8 | 5 | 3 | 0 | 0 |
| Malignant Neoplasm, NOS | 7 | 4 | 3 | 0 | 0 |
| Mucinous Adenocarcinoma | 3 | 2 | 1 | 0 | 0 |
| Neuroendocrine Carcinoma | 2 | 1 | 1 | 0 | 0 |
| Squamous Cell Carcinoma | 1 | 0 | 1 | 0 | 0 |
| Signet Ring Cell Carcinoma | 1 | 0 | 1 | 0 | 0 |
| Small Cell Carcinoma | 1 | 0 | 1 | 0 | 0 |
| Malignant Paraganglioma | 1 | 1 | 0 | 0 | 0 |

## TABLE 11

## MULTIPLE PRIMARY SITES TABLE
## 2 0 0 4

| PRIMARY SITE 2004 | HISTOLOGY (NOS-Not Otherwise Specified) | OTHER PRIMARIES (Previous or Concurrent) | ALL PATIENTS | MALE | FEMALE |
|---|---|---|---|---|---|
| | | | **70** | **27** | **43** |
| **TONGUE** | | | **3** | **2** | **1** |
| | Squamous Cell Carcinoma | Palate - Mucoepidermoid Ca | 1 | 1 | 0 |
| | Squamous Cell Carcinoma | Breast - Duct Cell Ca | 1 | 0 | 1 |
| | Squamous Cell Carcinoma | LNs - NHL | 1 | 1 | 0 |
| **ESOPHAGUS** | | | **2** | **2** | **0** |
| | Squamous Cell Carcinoma | Vocal Cord - Sq Cell Ca | 1 | 1 | 0 |
| | Squamous Cell Carcinoma | Hypopharynx - Sq Cell Ca | 1 | 1 | 0 |
| **STOMACH** | | | **3** | 2 | **1** |
| | Gastrointestinal Stromal Tumor, Malignant | Skin - NHL | 1 | 1 | 0 |
| | Marginal Zone Lymphoma | Nasopharynx - Carcinoma | 1 | 1 | 0 |
| | Signet Ring Carcinoma* | Rt Breast - Duct Cell Ca<br>Lt Breast - Duct Cell Ca | 1 | 0 | 1 |
| **SMALL INTESTINE** | | | **1** | **1** | **0** |
| | Adenocarcinoma | Ascending Colon - Adenoca | | | |
| **COLON, RECTUM** | | | **4** | **1** | **3** |
| | Adenocarcinoma, NOS | Stomach - Adenocarcinoma | 1 | 0 | 1 |
| | Adenocarcinoma, NOS | Mediastinum - Extragonadal Seminoma | 1 | 1 | 0 |
| | Adenocarcinoma, NOS | Breast - Duct Cell Ca | 1 | 0 | 1 |
| | Carcinoma, NOS | Thyroid - Papillary Ca | 1 | 0 | 1 |
| **PANCREAS** | | | **2** | **2** | **0** |
| | Mucinous Adenocarcinoma | LNs - NHL | 1 | 1 | 0 |
| | Adenocarcinoma, NOS | Nasopharynx - Carcinoma | 1 | 1 | 0 |
| **BONE MARROW** | | | **2** | **1** | **1** |
| | Acute Myeloid Leukemia | Bladder - Pap Trans Cell Ca | 1 | 1 | 0 |
| | Chronic Myeloid Leukemia | Breast - Duct Cell Ca | 1 | 0 | 1 |
| **BONE** | | | **2** | **0** | **2** |
| | Osteosarcoma | Retinoblastoma | | | |
| **CONNECTIVE/ SOFT TISSUE** | | | **1** | **1** | **0** |
| | Gastrointestinal Stromal Tumor, Malignant | Prostate - Adenocarcinoma | | | |
| **SKIN** | | | **5** | **3** | **2** |
| | Basal Cell Carcinoma | Chronic Myeloid Leukemia | 1 | 1 | 0 |
| | Basal Cell Carcinoma | Prostate - Adenocarcinoma | 1 | 1 | 0 |
| | Kaposi's Sarcoma | LNs - NHL | 1 | 0 | 1 |
| | Kaposi's Sarcoma | Pancreas - Adenocarcinoma | 1 | 1 | 0 |
| | Melanoma | Endometrium - Adenocarcinoma | 1 | 0 | 1 |

| PRIMARY SITE 2004 | HISTOLOGY (NOS-Not Otherwise Specified) | OTHER PRIMARIES (Previous or Concurrent) | ALL PATIENTS | MALE | FEMALE |
|---|---|---|---|---|---|
| **BREAST** | | | **23** | **0** | **23** |
| Duct Cell Carcinoma | | Contra Breast - Duct Cell Ca | 16 | 0 | 16 |
| Duct Cell Carcinoma | | Contra Breast - Medullary Ca | 1 | 0 | 1 |
| Duct Cell Carcinoma | | Contra Breast - Lobular Ca | 1 | 0 | 1 |
| Duct Cell Carcinoma | | Contra Breast - Ductal and Lobular Ca | 1 | 0 | 1 |
| Duct Cell Carcinoma | | Cervix - Carcinoma In Situ | 2 | **0** | **2** |
| Duct Cell Carcinoma | | Soft Tissue - Leiomyosarcoma | 1 | 0 | 1 |
| Duct Cell Carcinoma | | Stomach - Gastrointestinal Stromal Tumor, Malignant | 1 | 0 | 1 |
| **CORPUS UTERI** | | | **3** | **0** | **3** |
| Endometrioid Carcinoma | | Breast - Duct Cell Ca | 2 | 0 | 2 |
| Adenocarcinoma, NOS | | Breast - Duct Cell Ca | 1 | 0 | 1 |
| **OVARY** | | | **4** | **0** | **4** |
| Serous Cystadenocarcinoma | | Contra Ovary-Carcinoma | 1 | 0 | 1 |
| Malignant Teratoma | | Contra Ovary-Teratoma w/ PNET | 1 | 0 | 1 |
| Carcinoma In Situ | | Contra Ovary-Malig Neoplasm | 1 | 0 | 1 |
| Carcinosarcoma | | Breast - Duct Cell Ca | 1 | 0 | 1 |
| **PROSTATE** | | | **2** | **2** | **0** |
| Adenocarcinoma, NOS | | Bladder - Trans Cell Ca | 1 | 1 | 0 |
| Adenocarcinoma, NOS | | LNs - NHL | 1 | 1 | 0 |
| **URINARY BLADDER** | | | **4** | **4** | **0** |
| Pap Transitional Cell Ca | | Prostate - Adenocarcinoma | 1 | 1 | 0 |
| Pap Transitional Cell Ca | | Kidney - Trans Cell Ca | 1 | 1 | 0 |
| Pap Transitional Cell Ca | | Kidney - Pap Trans Cell Ca | 1 | 1 | 0 |
| Transitional Cell Ca | | Kidney - Pap Trans Cell Ca | 1 | 1 | 0 |
| **KIDNEY** | | | **1** | **1** | **0** |
| Renal Cell Carcinoma | | Contra Kidney-Renal Cell Ca | | | |
| **THYROID** | | | **3** | **2** | **1** |
| Papillary Carcinoma | | Tongue - Sq Cell Ca | 1 | 1 | 0 |
| Papillary Carcinoma | | Lung - Adenocarcinoma | 1 | 1 | 0 |
| Hurtle Cell Carcinoma | | Thyroid - Papillary Ca | 1 | 0 | 1 |
| **LYMPH NODES** | | | **5** | **3** | **2** |
| Non-Hodgkin's Lymphoma | | Acute Lymphoid Leukemia | 1 | 1 | 0 |
| Non-Hodgkin's Lymphoma | | Femur - Osteosarcoma | 1 | 1 | 0 |
| Non-Hodgkin's Lymphoma | | Rectum - Adenocarcinoma | 1 | 0 | 1 |
| Non-Hodgkin's Lymphoma | | Nasopharynx - Undiff Ca | 1 | 1 | 0 |
| Non-Hodgkin's Lymphoma | | Vocal Cord - Sq Cell Ca | 1 | 0 | 1 |

***Patient has three primary malignancies.**

## 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, non-invasive, non-infiltrating |
| 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 unknown primary were disregarded in graphically illustrating the stages for all analytic cases seen at KFSH&RC in 2004 (Figure 13). The 61 cases unstageable at diagnosis were those patients who refused further diagnostic workup or further workup was not possible due to the patients' state of health, e.g., terminal cases or those with co-morbid conditions. Please refer also to Table 5 for the distribution of the 2004 analytic cases by site and stage at diagnosis.

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

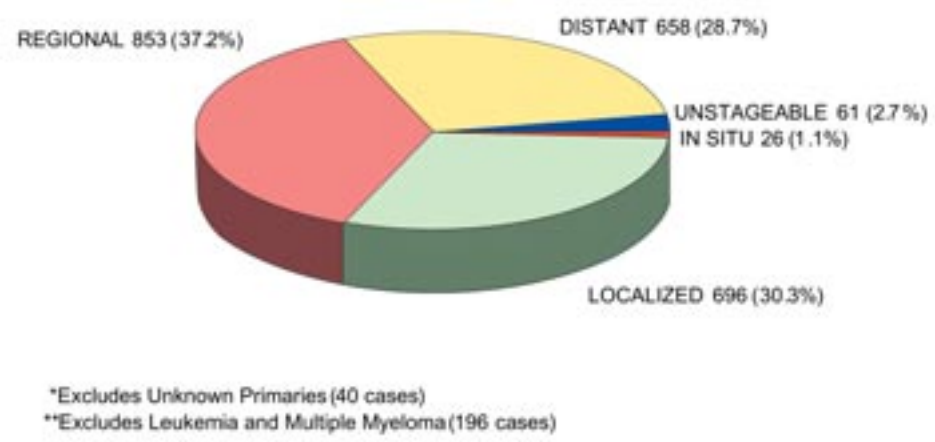
N: Absence or presence and extent of regional lymph node involvement

M: Absence or presence of distant metastasis

Analytic cases of four major sites, i.e., breast, lung, nasopharynx and Hodgkin’s Disease are presented in Table 12 with their clinical group stages and yearly comparative figures from 2000 to 2004. The pathologic group stages of stomach and colorectum are also presented in the same table.

**FIGURE 13**

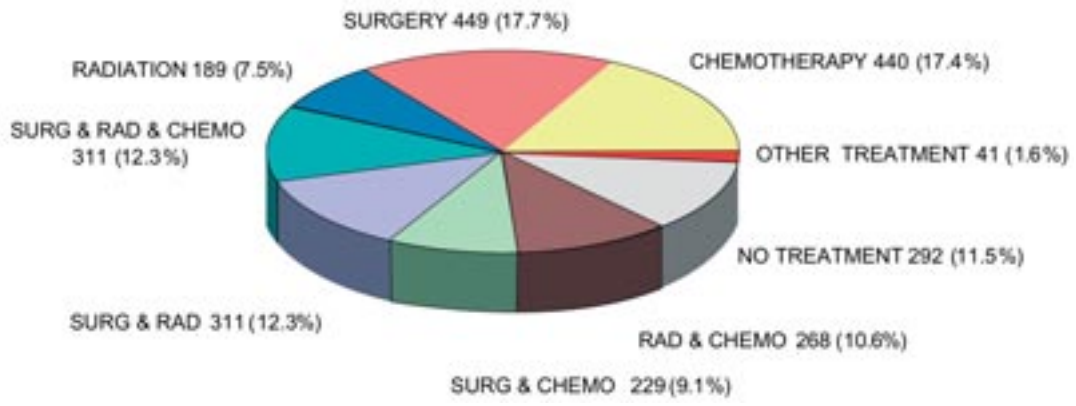
**DISTRIBUTION OF ANALYTIC CASES**
**BY STAGE (SEER) AT DIAGNOSIS**
**2004 (TOTAL CASES = 2,294)**




*Excludes Unknown Primaries (40 cases)
**Excludes Leukemia and Multiple Myeloma (196 cases)

**FIGURE 14**

**DISTRIBUTION OF ANALYTIC CASES**
**BY FIRST TREATMENT MODALITY**
**2004 (TOTAL CASES = 2,530)**



## TABLE 12

## AJCC CLINICAL TNM GROUP STAGE OF ANALYTIC CASES OF MAJOR SITES* BY YEAR 2000 - 2004

### BREAST

| Stage | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | No | % | No | % | No | % |
| 0 | 3 | 0.9 | 7 | 2.2 | 11 | 3.2 | 3 | 0.9 | 12 | 3.2 | 36 | 2.1 |
| 1 | 20 | 6.2 | 20 | 6.4 | 16 | 4.7 | 24 | 6.9 | 32 | 8.6 | 112 | 6.6 |
| 2A | 53 | 16.5 | 55 | 17.7 | 62 | 18.2 | 38 | 10.9 | 59 | 15.9 | 267 | 15.8 |
| 2B | 51 | 15.9 | 57 | 18.3 | 64 | 18.8 | 64 | 18.3 | 49 | 13.2 | 285 | 16.8 |
| 3A | 24 | 7.5 | 30 | 9.7 | 35 | 10.3 | 35 | 10.0 | 29 | 7.8 | 153 | 9.1 |
| 3B | 58 | 18.1 | 30 | 9.7 | 40 | 11.7 | 55 | 15.8 | 51 | 13.8 | 234 | 13.8 |
| 3C | - | | - | - | - | | - | | 10 | 2.7 | 10 | 0.6 |
| 4 | 60 | 18.7 | 61 | 19.6 | 57 | 16.7 | 64 | 18.3 | 59 | 15.9 | 301 | 17.8 |
| Unstageable | 52 | 16.2 | 51 | 16.4 | 56 | 16.4 | 66 | 18.9 | 70 | 18.9 | 295 | 17.4 |
| **Total** | **321** | **100.0** | **311** | **100.0** | **341** | **100.0** | **349** | **100.0** | **371** | **100.0** | **1.693** | **100.0** |

### LUNG

| Stage | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | No | % | No | % | No | % |
| 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 1A | 3 | 3.8 | 1 | 1.3 | 1 | 1.1 | 2 | 2.6 | 2 | 2.5 | 9 | 2.2 |
| 1B | 3 | 3.8 | 6 | 8.0 | 4 | 4.5 | 2 | 2.6 | 4 | 4.9 | 19 | 4.8 |
| 2A | 0 | 0.0 | 0 | 0.0 | 1 | 1.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 |
| 2B | 3 | 3.8 | 4 | 5.4 | 4 | 4.5 | 2 | 2.5 | 4 | 4.9 | 17 | 4.2 |
| 3A | 6 | 7.6 | 6 | 8.0 | 7 | 8.0 | 6 | 7.7 | 3 | 3.7 | 28 | 7.0 |
| 3B | 17 | 21.5 | 9 | 12.0 | 14 | 15.9 | 17 | 21.8 | 10 | 12.4 | 67 | 16.7 |
| 4 | 30 | 38.0 | 39 | 52.0 | 43 | 48.9 | 29 | 37.2 | 44 | 54.3 | 185 | 46.1 |
| Unstageable | 17 | 21.5 | 10 | 13.3 | 14 | 15.9 | 20 | 25.6 | 14 | 17.3 | 75 | 18.7 |
| **Total** | **79** | **100.0** | **75** | **100.0** | **88** | **100.0** | **78** | **100.0** | **81** | **100.0** | **401** | **100.0** |

### NASOPHARYNX

| Stage | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | No | % | No | % | No | % |
| 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 1 | 2 | 2.6 | 4 | 3.5 | 3 | 4.9 | 1 | 1.1 | 3 | 3.3 | 13 | 3.0 |
| 2A | 2 | 2.6 | 3 | 2.6 | 1 | 1.6 | 1 | 1.1 | 4 | 4.4 | 11 | 2.5 |
| 2B | 7 | 8.9 | 14 | 12.3 | 13 | 21.3 | 19 | 20.6 | 7 | 7.8 | 60 | 13.8 |
| 3 | 14 | 17.9 | 25 | 21.9 | 10 | 16.4 | 17 | 18.5 | 21 | 23.3 | 87 | 20.0 |
| 4A | 28 | 35.9 | 16 | 14.0 | 12 | 19.7 | 22 | 23.9 | 24 | 26.7 | 102 | 23.5 |
| 4B | 16 | 20.5 | 35 | 30.7 | 10 | 16.4 | 17 | 18.5 | 16 | 17.8 | 94 | 21.6 |
| 4C | 7 | 9.0 | 11 | 9.7 | 10 | 16.4 | 14 | 15.2 | 13 | 14.5 | 55 | 12.6 |
| Unstageable | 2 | 2.6 | 6 | 5.3 | 2 | 3.3 | 1 | 1.1 | 2 | 2.2 | 13 | 3.0 |
| **Total** | **78** | **100.0** | **114** | **100.0** | **61** | **100.0** | **92** | **100.0** | **90** | **100.0** | **435** | **100.0** |

* Excludes Lymphoma Cases.

## AJCC CLINICAL GROUP STAGE OF ANALYTIC CASES OF A MAJOR SITE BY YEAR 2000 - 2004

### HODGKIN'S DISEASE

| Stage | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | No | % | No | % | No | % |
| 1A | 9 | 8.1 | 14 | 13.0 | 9 | 8.8 | 10 | 9.8 | 10 | 8.0 | 52 | 9.5 |
| 1B | 1 | 0.9 | 2 | 1.8 | 1 | 1.0 | 0 | 0.0 | 1 | 0.8 | 5 | 0.9 |
| 2A | 39 | 35.2 | 34 | 31.5 | 31 | 30.4 | 40 | 39.2 | 45 | 36.0 | 189 | 34.5 |
| 2B | 9 | 8.1 | 9 | 8.3 | 10 | 9.8 | 15 | 14.7 | 11 | 8.8 | 54 | 9.8 |
| 3A | 16 | 14.4 | 10 | 9.3 | 10 | 9.8 | 11 | 10.8 | 18 | 14.4 | 65 | 11.9 |
| 3B | 16 | 14.4 | 15 | 13.9 | 18 | 17.7 | 8 | 7.8 | 14 | 11.2 | 71 | 13.0 |
| 4A | 1 | 0.9 | 6 | 5.5 | 5 | 4.9 | 7 | 6.9 | 7 | 5.6 | 26 | 4.7 |
| 4B | 19 | 17.1 | 18 | 16.7 | 18 | 17.6 | 10 | 9.8 | 19 | 15.2 | 84 | 15.3 |
| Unstageable | 1 | 0.9 | 0 | 0.0 | 0 | 0.0 | 1 | 1.0 | 0 | 0.0 | 2 | 0.4 |
| **Total** | **111** | **100.0** | **108** | **100.0** | **102** | **100.0** | **102** | **100.0** | **125** | **100.0** | **548** | **100.0** |

## AJCC PATHOLOGIC TNM GROUP STAGE OF ANALYTIC CASES OF MAJOR SITES* BY YEAR 2000 - 2004

### STOMACH

| Stage | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | No | % | No | % | No | % |
| 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 1.9 | 0 | 0.0 | 1 | 0.4 |
| 1A | 1 | 2.5 | 0 | 0.0 | 0 | 0.0 | 1 | 1.9 | 0 | 0.0 | 2 | 0.8 |
| 1B | 1 | 2.5 | 2 | 5.4 | 3 | 6.4 | 2 | 3.8 | 3 | 4.8 | 11 | 4.6 |
| 2 | 3 | 7.5 | 5 | 13.5 | 4 | 8.5 | 7 | 13.2 | 4 | 6.5 | 23 | 9.6 |
| 3A | 8 | 20.0 | 4 | 10.8 | 5 | 10.6 | 6 | 11.3 | 8 | 12.9 | 31 | 13.0 |
| 3B | 1 | 2.5 | 1 | 2.7 | 5 | 10.6 | 4 | 7.6 | 2 | 3.2 | 13 | 5.5 |
| 4 | 8 | 20.0 | 6 | 16.2 | 7 | 14.9 | 5 | 9.4 | 11 | 17.8 | 37 | 15.5 |
| Unstageable | 18 | 45.0 | 19 | 51.4 | 23 | 49.0 | 27 | 50.9 | 34 | 54.8 | 121 | 50.6 |
| **Total** | **40** | **100.0** | **37** | **100.0** | **47** | **100.0** | **53** | **100.0** | **62** | **100.0** | **239** | **100.0** |

### COLON, RECTUM

| Stage | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | No | % | No | % | No | % |
| 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.6 | 0 | 0.0 | 1 | 0.1 |
| 1 | 6 | 5.0 | 9 | 6.9 | 8 | 4.4 | 7 | 3.9 | 6 | 3.6 | 36 | 4.6 |
| 2 | 34 | 28.6 | 20 | 15.4 | 21 | 11.7 | 30 | 16.9 | - | | 105 | 13.6 |
| 2A | - | | - | | - | | - | - | 16 | 9.5 | 16 | 2.1 |
| 2B | - | | - | | - | | - | - | 1 | 0.6 | 1 | 0.1 |
| 3 | 12 | 10.1 | 27 | 20.8 | 39 | 21.7 | 36 | 20.2 | - | | 114 | 14.7 |
| 3A | - | | - | | - | | - | - | 3 | 1.8 | 3 | 0.4 |
| 3B | - | | - | | - | | - | - | 14 | 8.3 | 14 | 1.8 |
| 3C | - | | - | | - | | - | - | 5 | 3.0 | 5 | 0.7 |
| 4 | 10 | 8.4 | 17 | 13.1 | 17 | 9.4 | 10 | 5.6 | 19 | 11.3 | 73 | 9.4 |
| Unstageable | 57 | 47.9 | 57 | 43.8 | 95 | 52.8 | 94 | 52.8 | 104 | 61.9 | 407 | 52.5 |
| **Total** | **119** | **100.0** | **130** | **100.0** | **180** | **100.0** | **178** | **100.0** | **168** | **100.0** | **775** | **100.0** |

* Excludes Lymphoma Cases.

PATIENT NAMEPLATE

KING FAISAL SPECIALIST HOSPITAL
AND RESEARCH CENTRE

## CANCER REGISTRY WORKSHEET
## (CanSur 3.0)

**PF 10** **TACS - ACCESSON FILE MAINTEMANCE**

ACCESSION NUMBER (ACSN) : 9 0 0 1 2 3

TUMOR SEQUENCE (SEQ) : 0 0

| Malignant/In sltu tumors | Benign humors |
|---|---|
| 00-One primary only | XX - One primary only |
| 01-First of two or more | AA - First of two or more |
| **** | **** |
| 98-98th or later primary | HH - 8th or later primary |
| 99-Unspecified sequence | II - Unspecified sequence |

**THIS CANCER ACCESSION YEAR :** 9 0

MEDICAL RECORD NO. : 1 2 3 4 5 6

CASE STATUS :
0 - Suspense
1 - Incomplete
3 - Completed per Release 3

PATIENT NAME

Last :
First :
Second :
Third :

ADDRESS AT DIAGNOSIS

P. O. BOX

Riyadh
City

R Y Prov. ZIP Code : – 

**PF 11** **TPAT - PATIENT IDENTIFICATION**

SAUDI ID : 1 0 0 0 8 5 7 1 4

BIRTH DATE: 0 7 / 0 1 / 1 9 6 8

AGE AT DX : 2 2

SEX : 0
1 - Male 2 - Female 9 - Unknown

NATIONALITY : 0 0

| | | |
|---|---|---|
| 00 - Saudi | 04 - Yemeni | 08 - |
| 01 - Amer, Can, Brit | 05 - Other Arab | 09 -Other |
| 02 - Egyptian | 06 - Ind, Pak | |
| 03 - Leb, Syr. Pal | 07 - African | |

MARTAL STATUS AT DX : 2

| | | |
|---|---|---|
| 1 - Single | 3 - Separated | 5 - Widowed |
| 2 - Married | 4 - Divorced | 9 - Unknown |

RELIGION : 0 1

| | | |
|---|---|---|
| 01 - Muslim | 03 - Hindu | 06 - Other |
| 02 - Christian | 04 - Buddhist | 99 - Unknown |

ALCOHOL USAGE : 3

| | |
|---|---|
| 1 - Current alcohol usage | 3 - Never used alcohol |
| 2 - Past history of alcohol usage | 9 - Unknown |

FAMILY HISTORY OF CANCER : 1

| | |
|---|---|
| 1 - Family history of cancer | 9 - Unknown |
| 2 - No family history of cancer | |

SMOKING/CHEWING HISTORY 3

| | |
|---|---|
| 1 - Current smoker cig. | 5 - Shamma |
| 2 - Past smoker | 6 - Shisha |
| 3 - Patient never smoked | 7 - Combo |
| 4 - Ghat | 8 - Other |
| | 9 - Unknown |

TOTAL PACK YEARS :

INDUSTRY :

OCCUPATION: Teacher

DATE ADMITTED: (mm/dd/yyyy) 0 1 / 2 0 / 1 9 9 0

DATE DISCHARGED: (mm/dd/yyyy) 0 2 / 1 5 / 1 9 9 0

REPORTING SOURCE : 1

| | | |
|---|---|---|
| 1 - Inpatient | 4 - Physician's office | 7 - Death Cert. |
| 2 - Clinic/outpatient | 5 - Nursing home | 9 - Unknown |
| 3 - Laboratory | 6 - Autopsy | |

HOSPITAL REFERRED FROM : 0 0 0 0 1 0 1

Riyadh Medical Complex

HOSPITAL REFERRED TO :

Form 980-13 (Rev. 9-10)

# APPENDIX A-2

PF 12 **TTXT - MISCELLANEOUS TEXT**

PHYSICAL EXAM : 6-mo hx of 2 cm mass rt breast UOQ, mobile, no skin changes. 3x4 cm rt axillary LN. Lt breast NED.

X-RAYS / SCANS : 01/20/90 Bilat Mammogram - 2x2x 2.5 cm mass rt breast UOQ. CXR, Bone Scan, U/S Abd - NED

SCOPES / LAB : 01/25/90 ER (+); PR (+)

OPERATIVE FINDINGS : 01/25/90 Rt Mod Rad Mastecto- my - no description of tumor

PATHOLOGY / AUTOPSY : 90SP3286R 01/25/90 Duct Cell Ca, gr 3. 11/19 LNs. (tumor size 2.2x2x1 cm.) Nipple & overlying skin NED. Margins free

PF 13 **TCAN - CANCER IDENTIFICATION**

DATE OF INITIAL DIAGNOSIS : (mm/dd/yyyy) 01 / 25 / 1990

CLASS OF CASE : 1

0 - Dx here, rx elsewhere
1 - Dx & rx here
2 - Rx here
3 - Rx elsewhere
4 - Rx here prior
5 - Dx at autopsy
9 - Unknown

PRIMARY SITE - TEXT : Breast, Right UOQ

CODE : 1744

HISTOLOGY - TEXT : Duct Cell Carcimoma, gr 3

CODE : 8500 / 3

**TCAN - Cancer Identification (Continued)**

GRADE : 3

1 - Well differentiated (I)
2 - Mod well differentiated (II)
3 - Poorly differentiated (III)
4 - Undifferentiated (IV)
5 - T-cell
6 - B-cell
7 - Null cell
9 - Not stated, unknown

LATERALITY : 1

0 - Not paired organ
1 - Right
2 - Left
3 - Rt or lt unspecified
4 - Both, simultaneous
9 - Unknown laterality

DX CONFIRMATION : 1

1 - Positive histology
2 - Cytology
4 - Pos. micro, confirm, NOS
5 - Laboratory test/marker
6 - Direct visualization
7 - Radiography
8 - Clinical
9 - Unknown

REGIONAL NODES EXAMINED : 19

00 - No nodes examined
01 - One node examined
* * * *
97 - 97 + nodes, examined
98 - Nodes examined, number unknown
99 - Unknown if nodes examined

REGIONAL NODES POSITIVE: 11

00 - No nodes positive
01 - One node positive
***
96 - 96 + nodes positive
97 - Positive nodes, number unknown
98 - No nodes examined
99 - Unknown if any nodes +/-

TUMOR SIZE (cm) 02 2

eg., 000 - No Mass, 002 - 0.2 cm, 055 - 5.5 cm, 999 - Unknown

RESIDUAL TUMOR : 0

0 - None
1 - Microscopic
2 - Macroscopic
8 - No resection, NA
9 - Unknown

DISTANT METS : 1 : 2 : 3 :

0 - Bone Mar.
1 - Peritoneum
2 - Lung
3 - Pleura
4 - Liver
5 - Bone
6 - CNS
7 - Skin
8 - Lymph node (distant)
9 - Unknown/other

GENERAL SUMMARY STAGE : 3

0 - In situ
1 - Localized
2 - Regional, direct extension
3 - Regional, nodes
4 - Regional, both 2 & 3
5 - Regional, NOS
7 - Distant
9 - Unknown/unstageable

AJCC STAGE :

CLINICAL T 2 * N 1 * M 0 * STAGE GROUP 2B **

PATHOLOGICAL T 2 * N 1B * M 0 * STAGE GROUP 2B **

OTHER *** T * N * M * STAGE GROUP **

*TNM Codes - (use alpha codes as appropriate; eg, T2A-2A, T2-2, NIB-1B, M0-0, IS-In situ, X-Unknown)

**AJCC Stage Group - use alpha codes as appropriate; eg, 3A-Stage IIIA,1-Stage 1

0 - Insitu
1 - Stage 1
2 - Stage II
3 - Stage III
4 - Stage IV
9 - Unknown

***Other Basis : (S-Surgical). A-Autopsy, R-Refreatment

PF 14 **TRX1 - 1ST COURSE TREATMENT (SURGERY, RADIATION)**

SURGERY

REASON : [0]

0 - Can-directed surg performed
1 - Not recommended
2 - Contraindicated, other
6 - Reason unknown, no surg
7 - Patient/guardian refused
8 - Recommended, unk if done
9 - unknown

SUMMARY : (Entire 1st course)* [5][0]

ATTHIS HOSPITAL : * [5][0]

* Refer to Appendix A in CanSur User Manual for site-specific codes.

STARTED : (mm/dd/yyyy) [0][1] / [2][5] / [1][9][9][0]

TEXT : Rt Mod Rad Mastectomy w/ Rt Axillary Dissection

RADIATION

SUMMARY :

AT THIS HOSPITAL [1]

0 - No Radiation therapy
1 - Beam irradiation
2 - Radioactive implants
3 - Radioisotopes
4 - Comb 1 + 2 or 3
5 - Radiation therapy, NOS
7 - Patient/guardian refused
8 - Recommended, unk if done
9 - Unknown

[1]

STARTED : (mm/dd/yyyy) [0][8] / [2][9] / [1][9][9][0]

TO BRAIN & CNS : (Lung & leukemia cases only) [9]

0 - None to CNS
1 - Radiation therapy
7 - Patient/guardian refused
8 - Recommended, unk if done
9 - Unknown/not applicable

RADIATION/SURGERY SEQ: [3]

0 - Not applicable
2 - Radiation before surgery
3 - Radiation after surgery
4 - Before & after surgery
5 - Intraoperative radiation
6 - Intraoperative plus 2, 3 or 4
9 -Sequence unknown

TEXT : Chest Wall 6000 cGy

PF 18 **TFU2 - SUB. THERAPY**

| | Started mm/dd/yyyy | Course | Type | Code | Desc. |
|---|---|---|---|---|---|
| 1. | __/__/____ | | | | |
| 2. | __/__/____ | | | | |
| 3. | __/__/____ | | | | |

PF 16 **TRX3 - 1st COURSE TREATMENT (CHEMO, HORMONES, BRM, OTHER)**

CHEMOTHERAPY

SUMMARY : [3]

AT THIS HOSPITAL : [3]

0 - No chemotherapy
1 - Chemotherapy, NOS
2 - Chemotherapy, single agent
3 - Chemotherapy, multi-agent combination
7 - Patient/guardian refused
8 - Recommended, unk if done
9 - Unknown

STARTED : (mm/dd/yyyy) [0][2] / [1][3] / [1][9][9][0]

TEXT : Adria, Ctx x 4

HORMONE/STEROIDS

SUMMARY : [1]

AT THIS HOSPITAL : [1]

0 - No hormonal therapy
1 - Hormonal therapy
2 - Endocrine surg/radiation
3 - Hormones + endcr surg/rad
7 - Patient/guardian refused
8 - Recommended, unk if done
9 - Unknown

STARTED : (mm/dd/yyyy) [0][2] / [0][9] / [1][9][9][0]

TEXT : Tamoxifen

BIO-RESPONSE MODIFIER (BRM)

SUMMARY : [0]

AT THIS HOSPITAL : [0]

0 - No BRM
1 - BRM
2 - Allo BMT
3 - Auto BMT
7 - Patient/guardian refused
8 - Recommended, unk if done
9 - Unknown

STARTED : (mm/dd/yyyy) __/__/____

TEXT :

OTHER RX

SUMMARY : [0]

AT THIS HOSPITAL : [0]

0 - No other ca-directed rx
1 - Other ca-directed rx
2 - Experimental ca rx
3 - Double-blind study
6 - Unproven therapy
7 - Patient/guardian refused
8 - Recommended, unk if done
9 - Unknown

STARTED : (mm/dd/yyyy) __/__/____

TEXT :

# APPENDIX A-4

PF 17 **TFU1 - FOLLOW-UP INFORMATION**

LAST CONTACT/DEATH : (mm/dd/yyyy) 10 / 27 / 1999

CAUSE OF DEATH-ICD CODE :

CURRENT VITAL STATUS: 1 - Alive 2 - Dead [1]

CURRENT CANCER STATUS: [2]

1 - No evidence of cancer 2 - Evidence of cancer 9 - Unknown

QUALITY OF SURVIVAL: [9]

0 - Normal 3 - Amb< 50% 8 - NA, dead

1 - Sym & amb 4 - Bedridden 9 - Unknown

2 - Amb> 50%

LETTER FLAGS -

PATIENT: (letter or asterisk, eg., *, A, B, 1)

CONTACT: (eg, 0 - first contact, 3 - third contact)

CURRENTLY FOREIGN RESIDENT:

Y - Yes, foreign resident, leave blank for all others)

CONTACT FREQUENCY: months

(eg., 01 - One month, 03 - 3 months, 12 - Annual follow-up)

UNUSUAL CONDITIONS:

PLACE OF DEATH : (State of country - Geocode)

RECURRENCE INFORMATION

DATE : (mm/dd/yyyy) 09 / 10 / 1999

TYPE : [3]

0 - No recurrence 3 - Distant recurrence

1 - Local recurrence 4 - Never free

2 - Regional recurrence 9 - Unknown

DISTANT METS : [4]

0 - BM 4 - Liver 8 - Lymph node (distant) [5]

1 - Peritoneum 5 - Bone 9 - Unknown/Other

2 - Lung 6 - CNS

3 - Pleura 7 - Skin

| | FU LETTER FLAGS | PHYSICIAN CODE | NAME |
|---|---|---|---|
| 1. ATTENDING PHYSICIAN : | | 1234 | Oncologist |
| 2. OTHER PHYSICIAN : | | 5678 | Surgeon |
| 3. OTHER PHYSICIAN : | | 9075 | Rad Onc |
| 4. OTHER PHYSICIAN : | | | |
| 5. OTHER PHYSICIAN : | | | |
| 6. OTHER PHYSICIAN : | | | |

LAST SOURCE FU HOSP :

NEXT HOSP FOR FU :

DEATH CERTIFICATE FILE NO :

PF 20 **TREM - REMARKS / SPECIAL DATA ITEMS**

FREE FORMAT AREA:

REMARKS : Mother died of breast cancer

OVERRIDE FIELDS (Y - Bypass edit, leave blank if edit not bypassed)

SITE/HIST :

AGE / SITE / HIST :

SEQNO/SITE/HIST :

SPECIAL FIELDS :

# 1 : Hepatitis

# 2 : Bilharzia

# 3 : Burn Scar

# 4 : Consanguinity

# 5 : Predisposing Factors

# 6 : Pregnancy during dx/tx

# 7 : Renal Transplant

# 8 : Immunodeficiency Disorder

# 9 :

# 10:

PF - 21 **TADR - PATIENT NAME ADDRESS FILE**

MAILING NAME :

SALUTATION :

ADDRESS 1 : Riyadh

ADDRESS 2 :

CITY : Riyadh

PROV. RY ZIP CODE: –

TELEPHONE : 001 465–6785 EXT:

COMMENT :

PATIENT/GUARDIAN CODE; P - Patient G - Guardian [P]

PF - 22 **TCON - CONTACT NAME/ADDRESS FILE MAINTENANCE**

CONTACT NUMBER : (0 - First contact, 1 - Second, ... 9 - Tenth)

MAILING NAME : Riyadh Medical Complex

SALUTATION :

ADDRESS 1 : Riyadh

ADDRESS 2 :

CITY Riyadh

PROV. RY ZIP CODE: –

TELEPHONE : ( ) –

EXT:

COMMENT :

REFER HOSP. MRN : 89856

## REQUESTS FOR TUMOR REGISTRY DATA
## 2004

*Publication **KFSH&RC Presentation ***Outside KFSH&RC Presentation

| | |
|---|---|
| **January** | |
| Cancer Cases by Site and Sex (Pediatrics vs Total Cases) (2002) | Ministry of Health |
| Hodgkin's Lymphoma and Non-Hodgkin's Lymphoma Cases by Specific Histology and Year (2001-2003) | Dr. S. Akhtar |
| **April** | |
| Renal Cancer Cases with Radical Nephrectomy (1975-2003) (MR Numbers)* | Dr. K. Al-Othman |
| Hodgkin's Lymphoma and Non-Hodgkin's Lymphoma Cases (2002) (MR Numbers) | Dr. I. Maghfoor |
| **May** | |
| Breast Cancer Cases with Conservative Surgery and Radiation (1984-1999) (MR Numbers)* | Dr. G. El Husseiny |
| Cancer Cases Diagnosed During Pregnancy (2002-2003) (MR Numbers) (Update of Previous Request) | Dr. I. Maghfoor |
| **June** | |
| Last 100 Lymphoma Cases Abstracted in 2003 (MR Numbers) | Quality Resource Management Dept |
| Cancer Cases Referred from the Eastern Province by Site and Year (1984-2003) | Dr. M. Al-Shabanah |
| Cancer Cases by Site and Year (Pediatrics vs Total Cases) (1999-2003) | Ministry of Health |
| **August** | |
| Pediatric Hodgkin's Lymphoma Cases with Date of Diagnosis, Histology, Stage & Vital Status as of Last Contact Date (1975-2003) (MR Numbers)* | Dr. A. Belgaumi |
| **September** | |
| Bladder Cancer Cases by First Course of Treatment (TURBT, Cystectomy, Radiation) (1975-2004)*** | Dr. A. Mokhtar |
| **December** | |
| Ewing's Sarcoma Cases, Non-Metastatic (1990-2003) (MR Numbers) | Dr. M. Memon |
| Breast Sarcoma Cases (1975-2003) (MR Numbers) | Dr. M. Memon |

## IV. GLOSSARY OF TERMS

**Accessioned:** Patients 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:** Determined at the time of the 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.

The King Faisal Cancer Centre would like to thank

NOVARTIS

Roche

Bristol-Myers Squibb
Saudi Arabia

for their support in publishing this Annual Report

and

Group
sanofi aventis
Because health matters

for its assistance to the Tumor Registry and support of the CNExT software

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