



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

**Oncology Centre
Research Unit**

TUMOR REGISTRY

Annual Report

2010





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Oncology Centre
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TUMOR REGISTRY

ANNUAL REPORT

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

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

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

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

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

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INTRODUCTION

We are pleased to present the 2010 Tumor Registry Annual Report of the Oncology Centre at King Faisal Specialist Hospital & Research Centre, Riyadh. During 2010, the Tumor Registry abstracted 2,469 new cancer cases. Two thousand two hundred and eight cases were analytic and 261 were non analytic, with the highest incidence of Leukemia, NHL, Colorectal cancer among males and carcinomas of Breast, Thyroid, and Leukemia among females. The Tumor Registry database includes over 73,000 cases and reports to the Saudi Cancer Registry (SCR). Our cases constitute about 20% of the total cancer cases reported to SCR by all the hospitals in the Kingdom.

Oncology Centre continues to be the center of excellence for comprehensive cancer treatment, education & training and clinical research. We continue to run a robust clinical trials program and remain a member of Southwest Oncology Group (SWOG), Radiation Therapy Oncology Group (RTOG) and Canadian Blood & Marrow Transplantation Group (CBMTG). KFSH&RC has spearheaded the regional research consortiums, notably, Gulf Oncology Regional Group (GORG) and Eastern Mediterranean Blood and Marrow transplantation (EMBMT) Group.

Our radiation oncology section offers most advanced radiation therapy technologies; conventional radiation therapy and stereotactic radiosurgery, offering patients non-invasive, highly precise, and effective treatment options. It offers IMRT, IGRT, Tomotherapy, Robotic Cyberknife and 4-D CT Simulator, and has embarked on Proton and Carbon-Ion Therapy, which are the latest modalities for cancer treatment.

As we look to the future of cancer care in the Kingdom of Saudi Arabia, Oncology Centre will continue to expand cancer treatment based upon cutting edge clinical and translational research.

This message would not be complete without thanking the dedicated staff of the Tumor Registry for their hard work and commitment throughout the year. Special thanks are due to the superb staff of Medical Records, a key component of the Registry's continued success. This report can also be accessed online via Oncology Centre's website at <http://www.kfshrc.edu.sa>

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

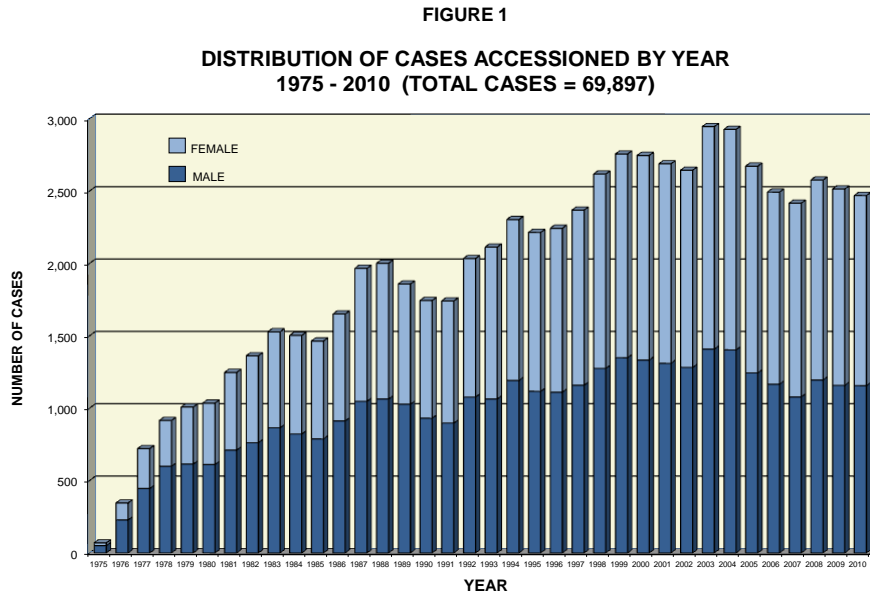
The Registry was established to meet one of the requirements for an Approved Cancer Program of the American College of Surgeons (ACoS). The database now includes 69,897 malignant cases seen at KFSH&RC from June 1975 through December 31, 2010, as well as cases seen at the Children's Cancer Centre since its opening in March 1997.

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 was the Cansur 3.0 designed by the ACoS, for cases seen from 1975 to 2007. Starting with 2008 cases, the software being used is CNExT, developed by C/NET Solutions which is part of the U.S. Public Health Institute. Information on each diagnosed cancer case is entered and stored in the software.

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 2010, the Tumor Registry supported 22 data requests (see Appendix for a listing of requests for Tumor Registry data). It also identified and reported to the Saudi Cancer Registry 2,467 new cases seen in 2010 that were diagnosed on or after 01 January 1994.

II. KFSH&RC CANCER PATIENT POPULATION

A total of 2,469 cases were accessioned in 2010, with 1,156 males and 1,313 females or a male/female ratio of 0.8:1. This represents a 1.8% decrease from 2009.



From the opening of the hospital (mid 1975) until December 2010, 69,897 cancer cases were registered (35,458 males and 34,439 females) with a male/female ratio of 1.02:1. There were 9,251 (13.2%) pediatric cases (0 to 14 years of age) and 60,646 (86.8%) adults (15 years old and above). In 2010, the proportions were 13.0% (321) for pediatrics and 87.0% (2,148) for adults.

TABLE 1
CASES SEEN AT KFSH&RC (MALE/FEMALE & PEDIATRICS/ADULTS) BY 5-YEAR PERIOD
1975 - 2010

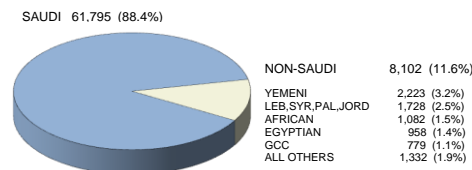
	1975-1976*	1977-1981	1982-1986	1987-1991	1992-1996	1997-2001	2002 - 2006	2007-2010***	TOTAL
MALE	280	2,981	4,150	4,969	5,561	6,426	6,504	4,587	35,458
FEMALE	135	1,945	3,358	4,341	5,346	6,750	7,176	5,388	34,439
TOTAL	415	4,926	7,508	9,310	10,907	13,176	13,680	9,975	69,897
M/F RATIO	2.1:1	1.5:1	1.2:1	1.1:1	1.0:1	1.0:1	0.9:1	0.8:1	1.0:1
PEDIATRICS**	55	593	985	1,163	1,396	1,891	1,887	1,281	9,251
(%)	13.2%	12.0%	13.1%	12.5%	12.8%	14.3%	13.6%	12.9%	13.2%
ADULTS	360	4,333	6,523	8,147	9,511	11,285	11,793	8,694	60,646
(%)	86.8%	88.0%	86.9%	87.5%	87.2%	85.7%	86.4%	87.1%	86.8%
TOTAL	415	4,926	7,508	9,310	10,907	13,176	13,680	9,975	69,897

* First two years of KFSH&RC partial operation.

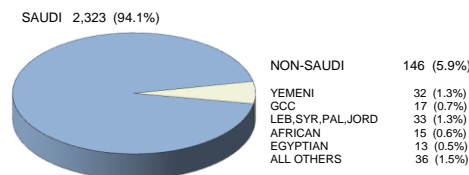
** Pediatrics = 0 to 14 years of age; Adults = 15 years and above.

*** Four Years Only

FIGURE 2
DISTRIBUTION OF CASES BY NATIONALITY
1975 - 2010 (TOTAL CASES = 69,897)



2010 (TOTAL CASES = 2,469)

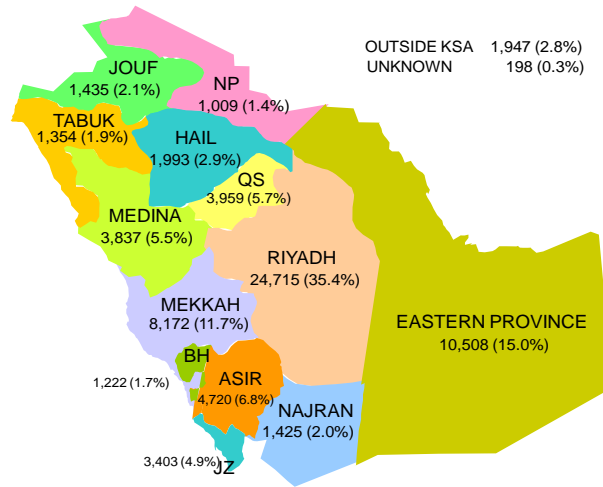


Saudi nationals totaled 2,323 (94.1%) in 2010 and the non-Saudi, 146 (5.9%). During the period 1975 to 2010, the former accounted for 88.4% (61,795) while the latter, 11.6% (8,102).

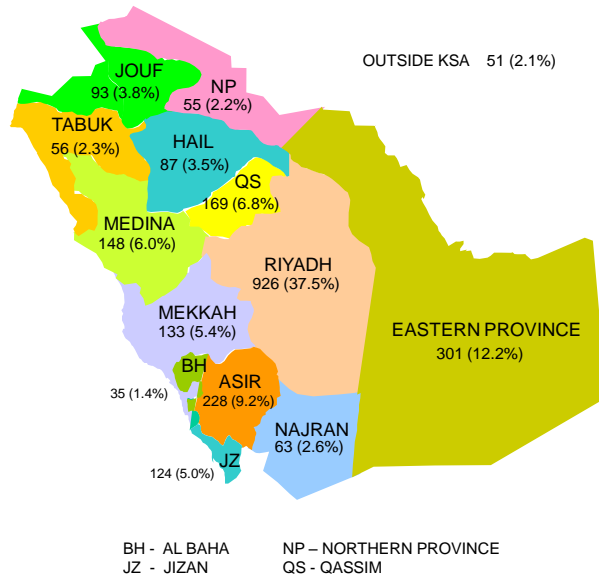
Geographically, the referral pattern in 2010 was mainly from the Riyadh region with 37.5% of all cases, followed by the Eastern Province and the Asir region with 12.2% and 9.2%, respectively. During the 36 years in review, 35.4% were referred from Riyadh, 15.0% from the Eastern Province and 11.7% from 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 - 2010 (TOTAL CASES = 69,897)



2010 (TOTAL CASES = 2,469)



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 2010 with 11.5%, followed by leukemia (8.6%), non-hodgkin's lymphoma (7.7%), thyroid (6.6%) and colon, rectum (4.8%).

FIGURE 4
DISTRIBUTION OF 20 MOST COMMON MALIGNANCIES
1975 - 2010 (TOTAL CASES = 69,897)

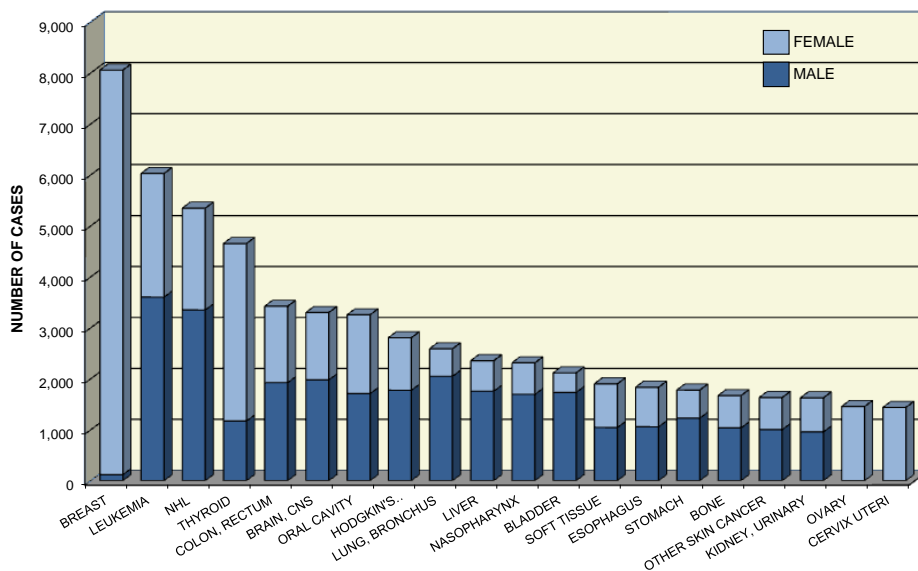
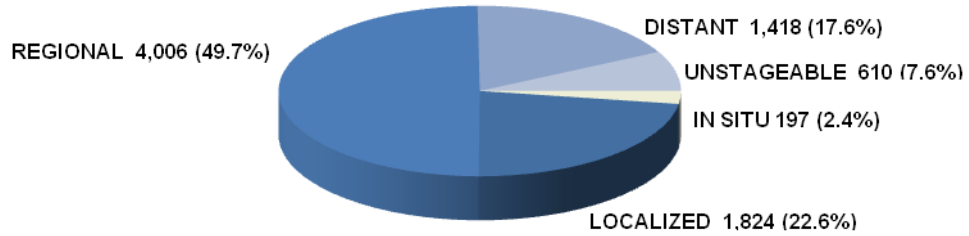
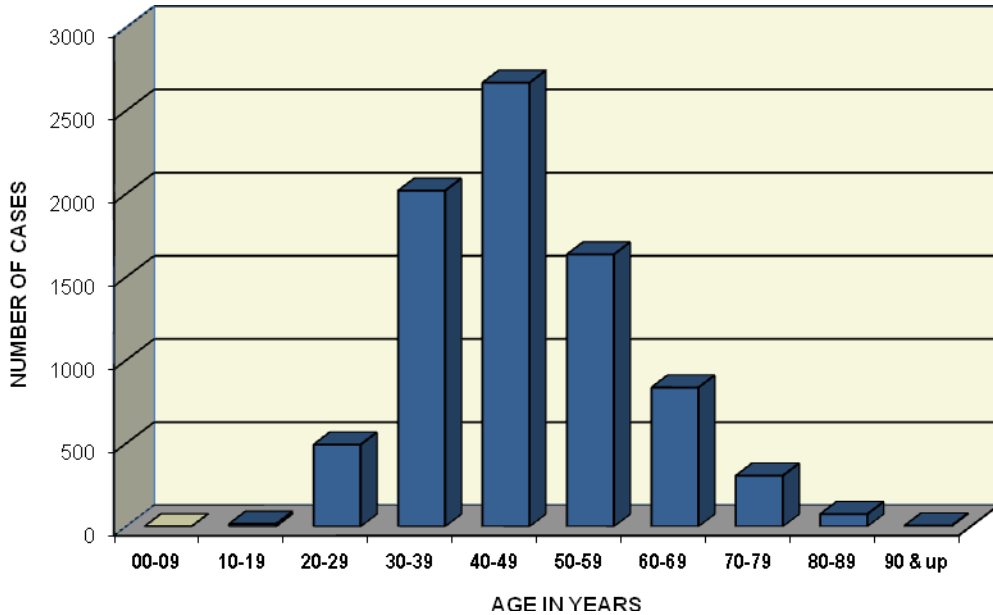


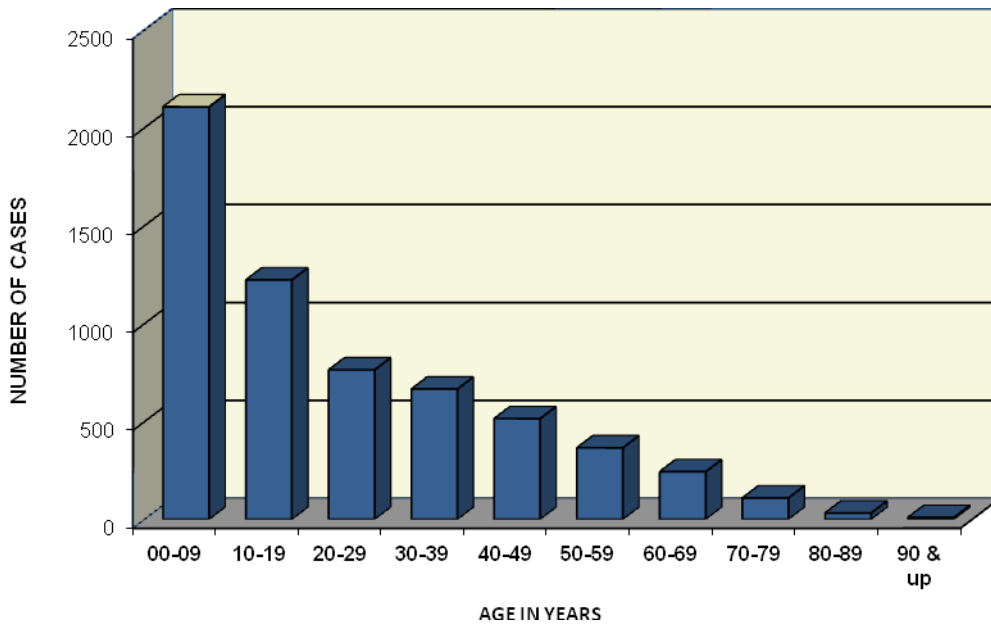
FIGURE 5

**DISTRIBUTION OF 5 MOST COMMON MALIGNANCIES
BY AGE AT DIAGNOSIS AND SEER SUMMARY STAGE
(1975 – 2010)**

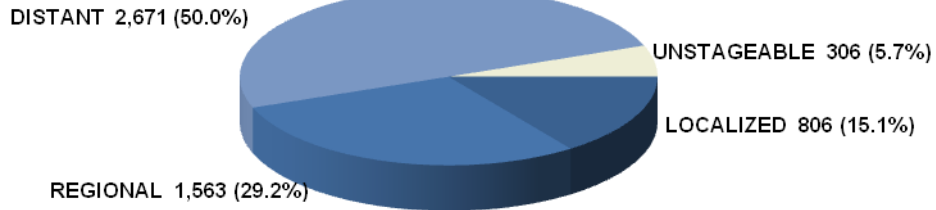
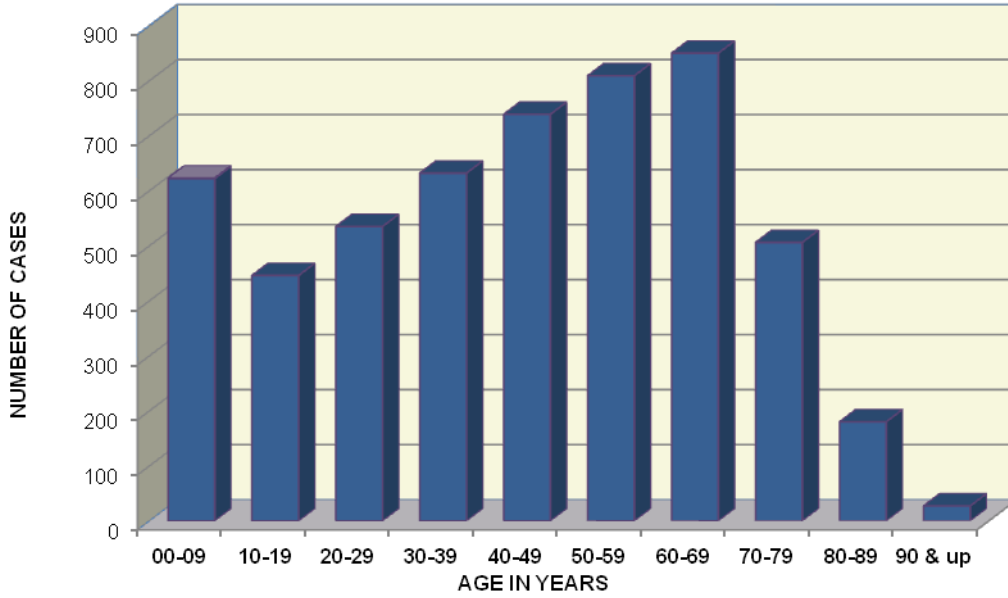
BREAST CANCER CASES



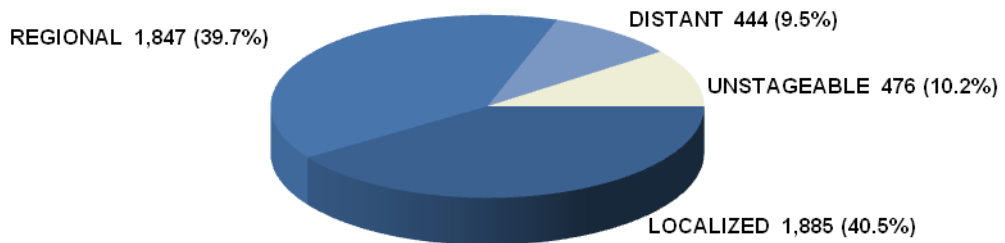
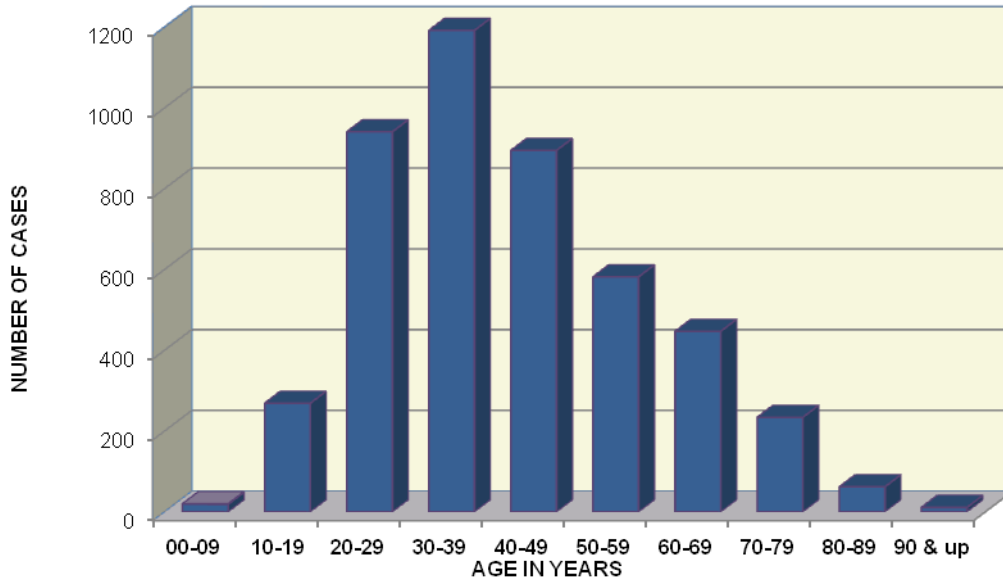
LEUKEMIA CASES



NON HODGKIN'S LYMPHOMA CASES



THYROID CANCER CASES



COLON, RECTUM CANCER CASES

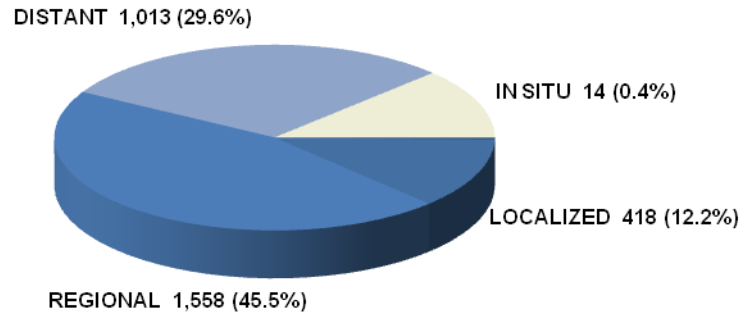
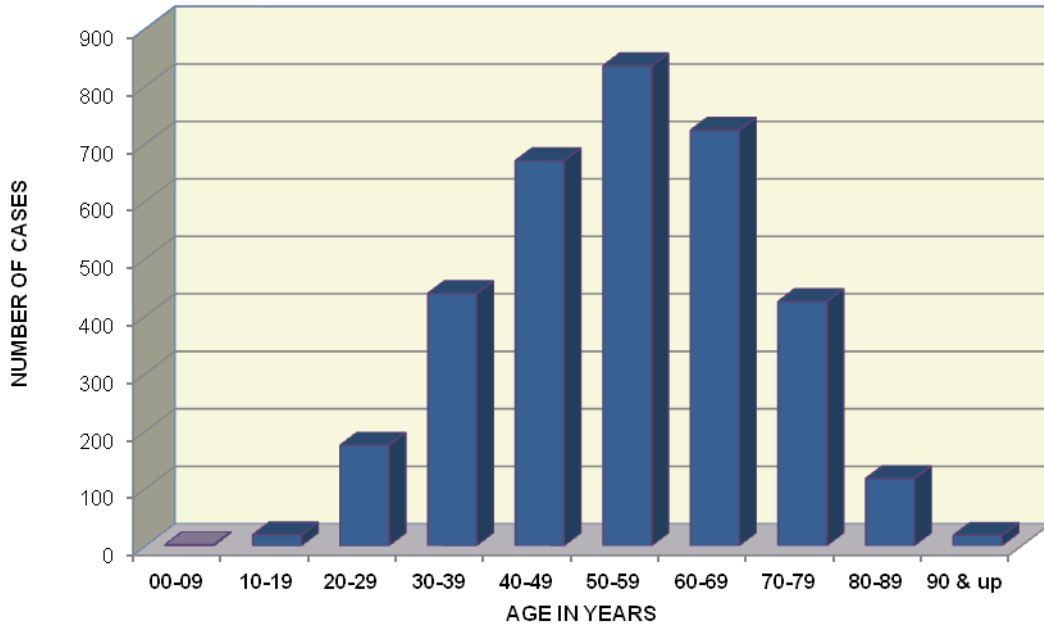


TABLE 2

**TEN MOST COMMON MALIGNANCIES BY AGE GROUP AT DIAGNOSIS
1975 - 2010**

SITE	AGE GROUP	No	%
BREAST	00 - 14	2	0.0
	15 - 39	2,526	31.4
	40 - 60	4,491	55.7
	>60	1,036	12.9

SITE	AGE GROUP	No	%
BRAIN, CNS	00 - 14	1,557	47.2
	15 - 39	866	26.3
	40 - 60	595	18.0
	>60	281	8.5

SITE	AGE GROUP	No	%
LEUKEMIA	00 - 14	2,696	44.7
	15 - 39	2,059	34.2
	40 - 60	945	15.7
	>60	327	5.4

SITE	AGE GROUP	No	%
ORAL CAVITY	00 - 14	39	1.2
	15 - 39	449	13.8
	40 - 60	1,370	42.1
	>60	1,396	42.9

SITE	AGE GROUP	No	%
NON-HODGKIN'S LYMPHOMA	00 - 14	824	15.4
	15 - 39	1,411	26.4
	40 - 60	1,728	32.3
	>60	1,383	25.9

SITE	AGE GROUP	No	%
HODGKIN'S LYMPHOMA	00 - 14	858	30.7
	15 - 39	1,451	51.7
	40 - 60	368	13.1
	>60	127	4.5

SITE	AGE GROUP	No	%
THYROID	00 - 14	98	2.1
	15 - 39	2,323	49.9
	40 - 60	1,566	33.7
	>60	665	14.3

SITE	AGE GROUP	No	%
LUNG	00 - 14	8	0.3
	15 - 39	161	6.2
	40 - 60	1,156	44.7
	>60	1,263	48.8

SITE	AGE GROUP	No	%
COLON, RECTUM	00 - 14	9	0.3
	15 - 39	625	18.3
	40 - 60	1,629	47.6
	>60	1,159	33.8

SITE	AGE GROUP	No	%
LIVER	00 - 14	66	2.8
	15 - 39	133	5.7
	40 - 60	1,029	43.7
	>60	1,126	47.8

Cancer among pediatrics (under the age of 15) accounted for 13.2% of all cases from 1975 to 2010. The five most common pediatric malignancies were leukemia (29.1%), brain/CNS (16.8%), hodgkin's lymphoma (9.3%), non-hodgkin's lymphoma (8.9%) and bone (6.8%).

FIGURE 6
DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES
 1975 - 2010 (TOTAL CASES = 9,251)

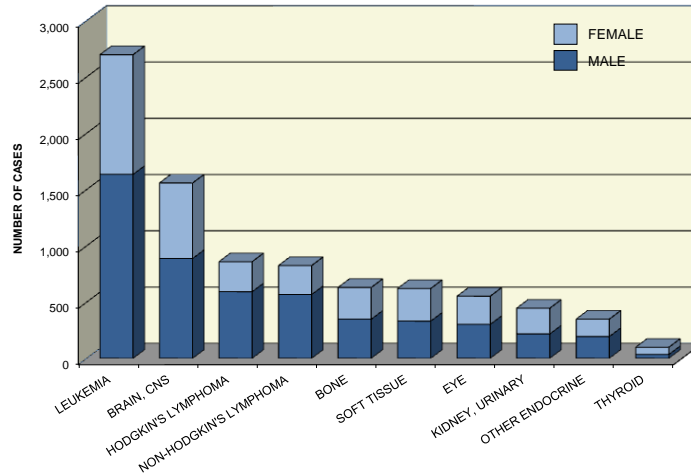
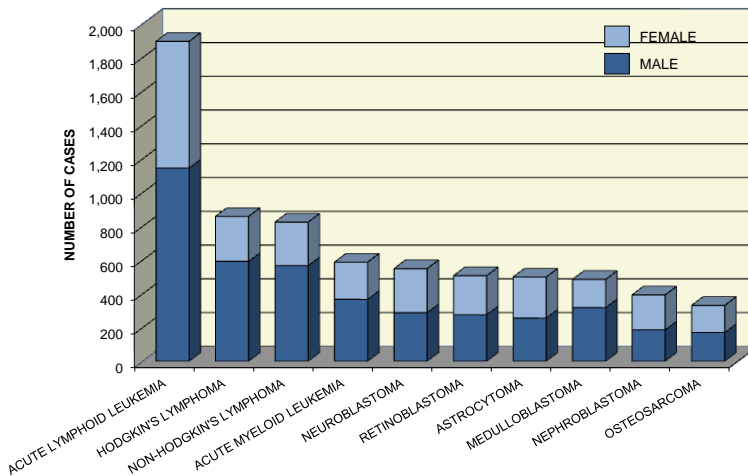


FIGURE 7
DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES BY HISTOLOGY
 1975 - 2010 (TOTAL CASES = 9,251)



**TABLE 3
CASES SEEN AT KFSH&RC BY SITE AND YEAR
1975-2010**

SITE GROUP	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Oral Cavity	1	14	33	79	69	71	58	80	100	76	104	76	96	129	104	103	103	112	98	97	121
Nasopharynx	3	11	38	34	37	35	48	46	65	46	44	49	80	65	62	62	60	53	59	58	62
Esophagus	1	15	51	62	67	67	57	62	77	78	56	69	76	66	68	72	66	69	47	50	50
Stomach	2	15	32	35	50	37	50	51	64	60	49	64	61	47	52	53	36	48	42	68	61
Small Intestine	0	0	4	0	2	2	2	1	0	5	3	5	1	1	6	4	1	5	4	4	6
Colon	1	10	10	12	12	16	20	19	16	24	13	24	35	35	30	25	39	33	25	33	37
Rectum & Rectosigmoid	0	3	11	8	16	21	24	16	20	26	26	20	31	43	26	31	35	48	46	52	48
Anus,Anal Canal,Anorectum	0	0	1	4	3	1	7	4	7	9	6	7	4	4	5	8	6	7	12	10	5
Liver	7	15	33	44	49	33	41	54	53	64	57	84	78	71	68	55	66	76	82	103	102
Gallbladder	0	2	3	4	2	2	4	6	4	4	6	7	14	9	5	9	9	13	19	21	9
Bile Ducts	1	1	0	2	2	4	1	2	3	4	3	6	6	6	2	4	2	7	2	7	3
Pancreas	1	5	7	11	15	14	20	22	14	20	16	28	20	16	27	12	13	27	21	22	25
Retroperitoneum/Peritoneum	0	0	2	1	2	1	0	0	2	1	0	1	0	1	1	1	0	2	1	0	1
Other Digestive	0	0	0	2	2	5	4	1	1	0	3	1	4	3	6	2	1	2	4	0	3
Nasal Cavity,Sinus,Ear	1	3	9	7	5	7	9	10	10	5	7	5	16	14	7	13	12	8	9	11	10
Larynx	1	5	12	12	12	14	20	13	23	22	25	16	23	33	21	26	34	27	31	35	37
Lung/Bronchus	3	11	23	34	45	40	56	63	74	74	87	84	83	106	90	74	85	79	85	89	87
Pleura	0	0	1	0	0	0	0	0	1	1	0	1	0	1	2	2	0	3	4	3	1
Other Respir & Thoracic	0	0	0	1	1	1	3	1	1	0	4	0	6	1	1	2	7	3	7	8	4
Leukemia	7	28	40	87	90	83	121	125	117	127	121	159	185	157	155	132	158	145	192	169	209
Myeloma	1	5	6	11	9	11	8	13	13	12	19	13	29	22	33	15	28	26	25	40	30
Other Hematopoietic	0	1	0	1	2	2	2	2	3	1	2	9	5	3	2	2	0	1	0	2	2
Bone	1	6	13	25	20	20	22	42	31	40	19	31	35	44	41	37	40	52	54	56	56
Soft Tissue	1	16	29	29	31	23	29	40	32	35	38	47	48	49	59	59	61	47	50	72	81
Melanoma of Skin	0	4	4	8	8	6	7	4	11	12	7	8	11	12	6	5	9	15	9	7	7
Kaposi Sarcoma	0	1	1	0	6	4	2	2	5	4	5	9	5	9	5	4	5	14	2	3	6
Other Skin Cancer	2	13	26	32	41	35	48	54	51	52	62	60	43	43	53	41	47	47	51	61	44
Breast	3	24	53	46	57	65	101	111	111	153	131	127	174	194	137	168	169	188	251	241	232
Cervix Uteri	0	10	18	18	25	18	26	25	33	33	41	55	51	50	33	44	35	52	50	52	49
Corpus Uteri	1	1	2	5	6	4	8	8	11	14	10	10	16	21	21	18	13	27	20	26	22
Ovary	2	6	10	10	17	21	20	35	31	26	24	34	41	47	52	46	36	44	55	50	54
Vagina	0	0	5	2	0	1	2	0	2	2	3	1	2	1	2	3	3	2	0	5	5
Vulva	0	0	0	1	1	0	2	1	3	2	5	5	1	2	1	4	5	1	4	5	5
Other Female Genital	0	1	5	4	6	7	5	7	19	5	4	13	19	14	10	9	13	12	12	19	7
Prostate	0	7	5	4	5	10	11	18	28	19	19	17	22	27	27	24	16	41	27	45	37
Testis	0	3	9	8	10	11	15	11	7	12	14	14	17	17	9	14	14	21	25	21	14
Penis	0	1	1	0	1	0	2	2	3	4	0	0	0	2	2	5	2	0	1	3	0
Other Male Genital	0	0	0	0	2	0	1	0	1	0	3	0	3	0	2	0	0	0	1	1	0
Bladder	4	7	12	24	29	39	37	23	41	35	46	51	79	74	73	60	44	65	88	72	60
Kidney & Renal Pelvis	0	9	18	18	18	15	18	30	23	20	24	41	31	58	31	35	33	52	51	65	48
Ureter	0	0	0	0	0	0	0	0	0	1	1	0	3	1	1	0	1	1	1	1	1
Other Urinary	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	1	0	0	0
Eye	0	6	11	19	12	24	29	34	25	17	30	24	35	44	26	30	9	15	39	27	15
Brain	3	23	27	40	26	30	31	77	53	58	49	70	88	91	97	81	84	110	88	113	128
Other Nervous System	0	1	0	0	0	1	0	0	0	1	0	1	0	1	1	0	0	2	0	3	0
Thyroid	2	8	17	28	33	44	57	51	66	71	63	82	119	112	110	94	110	141	135	158	134
Other Endocrine	1	1	3	3	2	9	10	8	14	12	17	10	11	13	2	7	10	14	15	15	14
Hodgkin's Lymphoma	13	19	40	41	36	42	47	42	54	50	49	45	65	57	76	56	57	75	73	78	88
Non-Hodgkin's Lymphoma	4	23	73	75	104	112	128	116	172	139	124	142	157	153	165	154	123	150	154	160	158
Unknown or Ill-defined	3	11	23	24	20	27	34	30	33	26	25	25	37	32	42	39	40	51	42	62	36
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	1,858	1,744	1,741	2,034	2,113	2,303	2,214

TABLE 3 (cont'd)
CASESSEENATKFSH&RCBYSITEANDYEAR

SITE GROUP	1975-2010															TOTAL
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Oral Cavity	106	111	87	108	117	97	87	116	98	121	92	120	103	99	68	3,254
Nasopharynx	86	90	108	102	83	119	72	100	96	81	77	69	78	60	74	2,312
Esophagus	52	51	62	34	52	37	42	43	37	41	36	30	31	31	28	1,833
Stomach	57	45	42	54	53	40	50	60	68	57	58	47	49	64	57	1,778
Small Intestine	6	4	7	7	9	5	3	5	9	6	4	5	5	7	4	142
Colon	34	34	57	48	73	72	92	104	76	80	94	88	82	95	82	1,580
Rectum & Rectosigmoid	54	62	59	94	75	77	106	98	113	112	93	91	82	92	83	1,842
Anus,Anal Canal,Anorectum	6	6	7	4	7	7	8	14	5	5	3	5	5	1	4	197
Liver	103	96	84	89	85	91	72	70	59	37	67	47	70	83	66	2,354
Gallbladder	11	11	12	15	13	11	12	15	14	8	7	11	10	6	9	317
Bile Ducts	9	7	10	9	8	9	10	7	4	8	6	11	7	12	12	197
Pancreas	21	24	34	18	38	26	31	30	34	27	40	25	31	40	35	810
Retroperitoneum/Peritoneum	0	0	1	2	2	1	1	1	4	2	2	2	3	1	2	41
Other Digestive	0	0	0	0	0	2	0	2	4	2	1	0	4	1	1	61
Nasal Cavity,Sinus,Ear	9	4	8	14	10	9	11	10	9	13	11	12	7	7	4	316
Larynx	36	31	30	35	32	33	26	47	41	36	26	31	31	26	10	913
Lung/Bronchus	84	88	106	108	91	80	91	86	94	84	64	60	63	58	59	2,588
Pleura	2	1	1	2	3	8	1	4	3	3	1	3	2	4	1	59
Other Respir & Thoracic	4	8	8	8	2	1	5	2	4	3	3	1	4	7	7	118
Leukemia	166	228	235	258	259	239	258	258	225	204	225	201	226	219	219	6,027
Myeloma	21	14	23	16	28	20	19	20	23	23	22	31	18	39	35	721
Other Hematopoietic	2	1	2	4	9	10	9	7	2	5	10	5	17	12	20	157
Bone	56	63	71	62	75	83	73	62	67	69	66	52	74	59	52	1,669
Soft Tissue	54	67	74	87	69	73	59	78	79	71	53	82	56	53	69	1,900
Melanoma of Skin	9	5	5	6	5	5	6	5	8	5	8	5	8	6	7	253
Kaposi Sarcoma	11	6	8	8	4	7	9	9	6	8	9	7	7	7	10	208
Other Skin Cancer	57	52	35	58	52	62	38	52	48	55	66	30	41	42	37	1,631
Breast	280	291	335	341	383	362	377	410	430	377	326	348	354	335	370	8,055
Cervix Uteri	48	46	62	57	42	68	53	55	47	46	37	39	43	46	30	1,437
Corpus Uteri	19	26	29	33	33	35	46	59	62	48	59	67	64	74	55	973
Ovary	56	60	63	53	53	51	44	55	51	47	55	43	51	48	65	1,456
Vagina	2	2	1	2	1	0	1	1	2	1	0	0	0	2	0	56
Vulva	2	1	0	1	2	3	2	1	3	2	0	2	4	3	2	76
Other Female Genital	11	8	6	6	5	5	10	13	12	12	15	8	6	9	3	320
Prostate	49	43	44	63	47	49	48	59	58	75	46	39	56	43	44	1,172
Testis	14	17	16	19	20	18	28	19	20	17	11	15	27	26	27	560
Penis	1	3	0	0	2	0	1	1	0	2	0	0	0	1	0	40
Other Male Genital	0	0	1	0	0	1	2	1	2	1	2	0	0	0	0	24
Bladder	56	65	85	91	80	81	71	93	102	88	65	67	64	66	78	2,115
Kidney & Renal Pelvis	47	49	58	70	57	72	64	54	70	61	66	67	84	86	83	1,626
Ureter	1	0	3	1	2	3	2	2	1	2	0	1	0	2	2	34
Other Urinary	0	0	0	2	1	0	0	0	1	2	0	0	0	0	0	11
Eye	22	30	17	24	26	17	16	20	18	15	20	11	19	17	24	767
Brain	127	131	159	143	143	146	143	159	165	128	125	91	91	85	96	3,299
Other Nervous System	2	2	3	2	6	5	0	2	2	0	0	0	0	0	0	35
Thyroid	162	161	192	210	186	189	169	215	214	214	203	215	254	224	209	4,652
Other Endocrine	14	20	12	15	23	14	17	37	27	26	23	17	30	22	28	516
Hodgkin's Lymphoma	76	76	98	116	131	121	121	132	144	128	101	118	118	117	104	2,804
Non-Hodgkin's Lymphoma	157	193	208	207	204	175	185	206	216	182	167	178	172	146	164	5,346
Unknown or Ill-defined	41	35	50	50	45	49	53	46	49	32	28	19	25	31	30	1,245
TOTAL	2,243	2,368	2,618	2,756	2,746	2,688	2,644	2,945	2,926	2,672	2,493	2,416	2,576	2,514	2,469	69,897

**TABLE 4
CASES SEEN AT KFSH&RC BY SITE AND 5-YEAR PERIOD
1975-2010**

SITE GROUP	1975-1976*		1977-1981		1982-1986		1987-1991		1992-1996		1997-2001		2002-2006		2007-2010**		TOTAL	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Oral Cavity	15	3.6	310	6.3	436	5.8	535	5.7	534	4.9	520	3.9	514	3.8	390	3.9	3,254	4.7
Nasopharynx	14	3.4	192	3.9	250	3.3	329	3.5	318	2.9	502	3.8	426	3.1	281	2.8	2,312	3.3
Esophagus	16	3.9	304	6.2	342	4.6	348	3.7	268	2.5	236	1.8	199	1.5	120	1.2	1,833	2.6
Stomach	17	4.1	204	4.1	288	3.8	249	2.7	276	2.5	234	1.8	293	2.1	217	2.2	1,778	2.5
Small Intestine	0	0.0	10	0.2	14	0.2	13	0.1	25	0.2	32	0.2	27	0.2	21	0.2	142	0.2
Colon	11	2.7	70	1.4	96	1.3	164	1.8	162	1.5	284	2.2	446	3.3	347	3.5	1,580	2.3
Rectum & Rectosigmoid	3	0.7	80	1.6	108	1.4	166	1.8	248	2.3	367	2.8	522	3.8	348	3.5	1,842	2.6
Anus,Anal Canal,Anorectum	0	0.0	16	0.3	33	0.4	27	0.3	40	0.4	31	0.2	35	0.3	15	0.2	197	0.3
Liver	22	5.3	200	4.1	312	4.2	338	3.6	466	4.3	445	3.4	305	2.2	266	2.7	2,354	3.4
Gallbladder	2	0.5	15	0.3	27	0.4	46	0.5	73	0.7	62	0.5	56	0.4	36	0.4	317	0.5
Bile Ducts	2	0.5	9	0.2	18	0.2	20	0.2	28	0.3	43	0.3	35	0.3	42	0.4	197	0.3
Pancreas	6	1.4	67	1.4	100	1.3	88	0.9	116	1.1	140	1.1	162	1.2	131	1.3	810	1.2
Retroperitoneum/Peritoneum	0	0.0	6	0.1	4	0.1	3	0.0	4	0.0	6	0.0	10	0.1	8	0.1	41	0.1
Other Digestive	0	0.0	13	0.3	6	0.1	16	0.2	9	0.1	2	0.0	9	0.1	6	0.1	61	0.1
Nasal Cavity,Sinus,Ear	4	1.0	37	0.8	37	0.5	62	0.7	47	0.4	45	0.3	54	0.4	30	0.3	316	0.5
Larynx	6	1.4	70	1.4	99	1.3	137	1.5	166	1.5	161	1.2	176	1.3	98	1.0	913	1.3
Lung/Bronchus	14	3.4	198	4.0	382	5.1	438	4.7	424	3.9	473	3.6	419	3.1	240	2.4	2,588	3.7
Pleura	0	0.0	1	0.0	3	0.0	5	0.1	13	0.1	15	0.1	12	0.1	10	0.1	59	0.1
Other Respir & Thoracic	0	0.0	6	0.1	6	0.1	17	0.2	26	0.2	27	0.2	17	0.1	19	0.2	118	0.2
Leukemia	35	8.4	421	8.5	649	8.6	787	8.5	881	8.1	1219	9.3	1170	8.6	865	8.7	6,027	8.6
Myeloma	6	1.4	45	0.9	70	0.9	127	1.4	142	1.3	101	0.8	107	0.8	123	1.2	721	1.0
Other Hematopoietic	1	0.2	7	0.1	17	0.2	12	0.1	7	0.1	26	0.2	33	0.2	54	0.5	157	0.2
Bone	7	1.7	100	2.0	163	2.2	197	2.1	274	2.5	354	2.7	337	2.5	237	2.4	1,669	2.4
Soft Tissue	17	4.1	141	2.9	192	2.6	276	3.0	304	2.8	370	2.8	340	2.5	260	2.6	1,900	2.7
Melanoma of Skin	4	1.0	33	0.7	42	0.6	43	0.5	47	0.4	26	0.2	32	0.2	26	0.3	253	0.4
Kaposi Sarcoma	1	0.2	13	0.3	25	0.3	28	0.3	36	0.3	33	0.3	41	0.3	31	0.3	208	0.3
Other Skin Cancer	15	3.6	182	3.7	279	3.7	227	2.4	260	2.4	259	2.0	259	1.9	150	1.5	1,631	2.3
Breast	27	6.5	322	6.5	633	8.4	842	9.0	1192	10.9	1712	13.0	1920	14.0	1407	14.1	8,055	11.5
Cervix Uteri	10	2.4	105	2.1	187	2.5	213	2.3	251	2.3	275	2.1	238	1.7	158	1.6	1,437	2.1
Corpus Uteri	2	0.5	25	0.5	53	0.7	89	1.0	114	1.0	156	1.2	274	2.0	260	2.6	973	1.4
Ovary	8	1.9	78	1.6	150	2.0	222	2.4	259	2.4	280	2.1	252	1.8	207	2.1	1,456	2.1
Vagina	0	0.0	10	0.2	8	0.1	11	0.1	14	0.1	6	0.0	5	0.0	2	0.0	56	0.1
Vulva	0	0.0	4	0.1	16	0.2	13	0.1	17	0.2	7	0.1	8	0.1	11	0.1	76	0.1
Other Female Genital	1	0.2	27	0.5	48	0.6	65	0.7	61	0.6	30	0.2	62	0.5	26	0.3	320	0.5
Prostate	7	1.7	35	0.7	101	1.3	116	1.2	199	1.8	246	1.9	286	2.1	182	1.8	1,172	1.7
Testis	3	0.7	53	1.1	58	0.8	71	0.8	95	0.9	90	0.7	95	0.7	95	1.0	560	0.8
Other Male Genital	0	0.0	3	0.1	4	0.1	5	0.1	2	0.0	2	0.0	8	0.1	0	0.0	24	0.0
Penis	1	0.2	4	0.1	9	0.1	11	0.1	5	0.0	5	0.0	4	0.0	1	0.0	40	0.1
Bladder	11	2.7	141	2.9	196	2.6	330	3.5	341	3.1	402	3.1	419	3.1	275	2.8	2,115	3.0
Kidney & Renal Pelvis	9	2.2	87	1.8	138	1.8	188	2.0	263	2.4	306	2.3	315	2.3	320	3.2	1,626	2.3
Ureter	0	0.0	0	0.0	2	0.0	6	0.1	5	0.0	9	0.1	7	0.1	5	0.1	34	0.0
Other Urinary	0	0.0	0	0.0	2	0.0	2	0.0	1	0.0	3	0.0	3	0.0	0	0.0	11	0.0
Eye	6	1.4	95	1.9	130	1.7	144	1.5	118	1.1	114	0.9	89	0.7	71	0.7	767	1.1
Brain	26	6.3	154	3.1	307	4.1	441	4.7	566	5.2	722	5.5	720	5.3	363	3.6	3,299	4.7
Other Nervous System	1	0.2	1	0.0	2	0.0	2	0.0	7	0.1	18	0.1	4	0.0	0	0.0	35	0.1
Thyroid	10	2.4	179	3.6	333	4.4	545	5.9	730	6.7	938	7.1	1015	7.4	902	9.0	4,652	6.7
Other Endocrine	2	0.5	27	0.5	61	0.8	43	0.5	72	0.7	84	0.6	130	1.0	97	1.0	516	0.7
Hodgkin's Lymphoma	32	7.7	206	4.2	240	3.2	311	3.3	390	3.6	542	4.1	626	4.6	457	4.6	2,804	4.0
Non-Hodgkin's Lymphoma	27	6.5	492	10.0	693	9.2	752	8.1	779	7.1	987	7.5	956	7.0	660	6.6	5,346	7.6
Unknown or Ill-defined	14	3.4	128	2.6	139	1.9	190	2.0	232	2.1	229	1.7	208	1.5	105	1.1	1,245	1.8
TOTAL	415	100.0	4,926	100.0	7,508	100.0	9,310	100.0	10,907	100.0	13,176	100.0	13,680	100.0	9,975	100.0	69,897	100.0

*First Two Years of KFSH&RC Partial Operation

** Four Years Only

The largest number of cases in 2010 was noted in the 5th and 6th decades of life in males and in the 4th and 5th in females. The mean age was 43.7, the median was 46.0 and the mode was at 47. Pediatric malignancies were most common among children at one year of age and at two years of age.

FIGURE 8
DISTRIBUTION OF CASES BY AGE AT DIAGNOSIS
2010 (TOTAL CASES = 2,469)

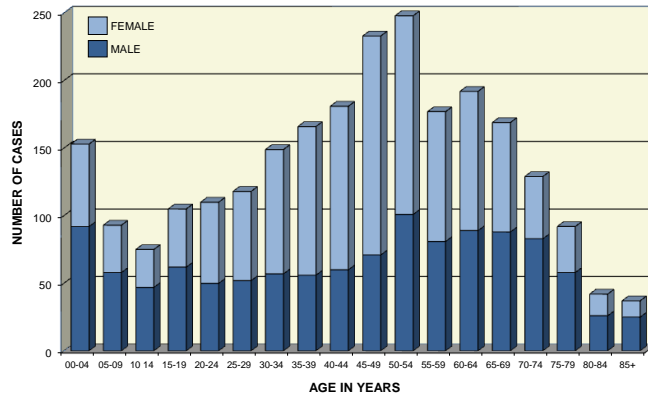
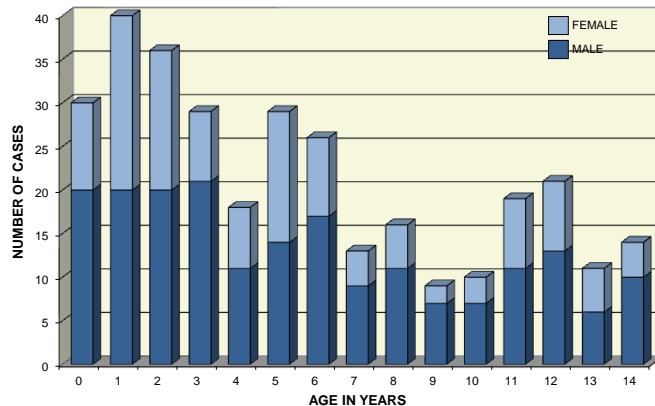


FIGURE 9
DISTRIBUTION OF PEDIATRIC CASES BY AGE AT DIAGNOSIS
2010 (TOTAL CASES = 321)



Of the 2,469 cases in 2010, 2,208 (89.4%) 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 261 cases (10.6%) were non-analytic (defined as cases diagnosed elsewhere and received all of their first course of treatment elsewhere). Out of the 2,208 analytic cases, pediatric cases totaled 283, with 177 males and 106 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 SEER SUMMARY STAGE
2010

SITE GROUP	TOTAL		GENDER		CLASS OF CASE		ANALYTIC CASES SEER GERNERAL SUMMARY STAGE				
	Number	%	Male	Female	Analytic	Non Analytic	In Situ	Localized	Regional	Distant	Unstageable
Oral Cavity	68	2.8	36	32	64	4	1	14	32	15	2
Nasopharynx	74	3.0	56	18	71	3	0	2	47	22	0
Esophagus	28	1.1	18	10	25	3	1	5	9	4	6
Stomach	57	2.3	35	22	54	3	0	6	18	26	4
Small Intestine	4	0.2	3	1	3	1	0	1	2	0	0
Colon	82	3.3	38	44	70	12	0	8	21	39	2
Rectum & Rectosigmoid	83	3.4	49	34	75	8	0	6	41	25	3
Anus,Anal Canal,Anorectum	4	0.2	3	1	4	0	0	3	0	1	0
Liver	66	2.7	48	18	63	3	0	39	8	14	2
Gallbladder	9	0.4	1	8	8	1	0	2	0	6	0
Bile Ducts	12	0.5	3	9	12	0	0	4	4	3	1
Pancreas	35	1.4	19	16	33	2	0	2	9	21	1
Peritoneum,Omentum,Mesent	2	0.1	0	2	1	1	0	0	0	1	0
Other Digestive	1	0.0	1	0	1	0	0	0	0	1	0
Nasal Cavity,Sinus,Ear	4	0.2	2	2	4	0	0	0	2	2	0
Larynx	10	0.4	10	0	10	0	0	6	2	2	0
Lung/Bronchus	59	2.4	43	16	57	2	0	4	9	44	0
Pleura	1	0.0	0	1	0	1	0	0	0	0	0
Other Respir & Thoracic	7	0.3	3	4	7	0	0	0	4	2	1
Leukemia	219	8.9	126	93	174	45	0	0	0	174	0
Myeloma	35	1.4	20	15	31	4	0	1	2	28	0
Other Hematopoietic	20	0.8	18	2	19	1	0	0	0	19	0
Bone	52	2.1	35	17	52	0	0	13	19	19	1
Soft Tissue	69	2.8	40	29	60	9	0	23	14	22	1
Melanoma Of Skin	7	0.3	4	3	6	1	0	2	3	1	0
Kaposi Sarcoma	10	0.4	10	0	9	1	0	6	2	1	0
Other Skin Cancer	37	1.5	20	17	30	7	1	21	7	0	1
Breast	370	15.0	2	368	346	24	13	90	167	70	6
Cervix Uteri	30	1.2	0	30	26	4	3	3	13	7	0
Corpus Uteri	55	2.2	0	55	52	3	0	26	7	17	2
Ovary	65	2.6	0	65	58	7	1	16	7	34	0
Vulva	2	0.1	0	2	1	1	1	0	0	0	0
Other Female Genital	3	0.1	0	3	3	0	0	0	0	3	0
Prostate	44	1.8	44	0	39	5	0	22	4	11	2
Testis	27	1.1	27	0	22	5	0	10	3	9	0
Bladder	78	3.2	63	15	69	9	8	24	21	12	4
Kidney & Renal Pelvis	83	3.4	51	32	76	7	0	43	8	25	0
Ureter	2	0.1	1	1	2	0	0	1	1	0	0
Eye	24	1.0	12	12	22	2	0	12	9	1	0
Brain	96	3.9	56	40	87	9	0	74	6	5	2
Thyroid	209	8.5	58	151	194	15	0	94	78	21	1
Other Endocrine	28	1.1	17	11	23	5	0	2	2	17	2
Hodgkin's Lymphoma	104	4.2	65	39	83	21	0	5	32	45	1
Non-Hodgkin's Lymphoma	164	6.6	101	63	134	30	0	25	36	72	1
Unknown or Ill-Defined	30	1.2	18	12	28	2	0	0	0	0	28
TOTAL	2,469	100.0	1,156	1,313	2,208	261	29	615	649	841	74

TABLE 6
ANALYTIC CASES SEEN AT KFSH&RC BY SITE AND AGE

2010

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	2	0	1	0	2	1	1	6	7	4	7	5	6	7	12	2	0	1	64
Nasopharynx	1	1	1	8	3	4	5	10	5	9	7	2	5	5	2	1	2	0	71
Esophagus	0	0	0	0	0	0	0	0	3	1	2	3	1	3	3	4	1	4	25
Stomach	0	0	0	0	0	1	1	3	2	8	10	4	7	3	5	3	5	2	54
Small Intestine	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	3
Colon	0	0	0	0	2	3	3	3	7	9	10	7	9	7	6	2	1	1	70
Rectum & Rectosigmoid	0	0	0	0	0	0	2	3	5	10	15	4	6	5	10	11	3	1	75
Anus,Anal Canal,Anorectum	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	4
Liver	3	1	0	1	0	3	0	1	0	3	10	4	13	7	9	4	2	2	63
Gallbladder	0	0	0	0	0	0	0	0	1	1	0	0	2	3	0	0	1	0	8
Bile Ducts	0	0	0	0	0	0	0	0	1	0	1	3	2	2	0	0	1	2	12
Pancreas	0	1	0	0	0	1	1	0	5	0	3	2	3	7	6	2	0	2	33
Retroperitoneum/Peritoneum	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Other Digestive	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Nasal Cavity,Sinus,Ear	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	4
Larynx	0	0	0	0	0	0	0	0	0	0	1	2	0	2	4	0	0	1	10
Lung/Bronchus	0	0	0	0	0	0	1	3	1	10	4	9	11	5	6	5	1	1	57
Other Respir & Thoracic	4	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	7
Leukemia	36	28	17	24	12	10	12	3	6	7	12	3	4	0	0	0	0	0	174
Myeloma	0	0	0	1	0	0	0	3	1	7	7	4	2	5	0	0	0	1	31
Other Hematopoietic	3	0	0	2	2	0	0	0	0	2	0	4	1	1	1	3	0	0	19
Bone	1	4	13	14	8	3	3	1	1	1	0	1	0	2	0	0	0	0	52
Soft Tissue	17	2	3	1	4	8	4	4	3	3	4	3	1	1	1	1	0	0	60
Melanoma of Skin	0	0	0	1	1	0	0	1	0	0	0	0	0	2	0	1	0	0	6
Kaposi Sarcoma	0	0	0	0	0	1	0	0	0	0	1	1	0	1	3	0	1	1	9
Other Skin Cancer	0	0	0	1	1	1	2	1	1	1	2	2	1	3	4	4	4	2	30
Breast	0	0	0	0	3	12	29	42	51	63	51	28	33	15	5	8	5	1	346
Cervix Uteri	0	0	0	0	0	1	3	2	3	6	1	3	3	4	0	0	0	0	26
Corpus Uteri	0	0	0	0	0	0	0	4	1	6	8	9	8	9	4	1	0	2	52
Ovary	0	0	2	4	1	3	4	1	7	6	9	5	8	4	1	2	0	1	58
Vulva	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Other Female Genital	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	3
Prostate	1	0	0	0	0	0	0	0	0	1	1	8	3	8	6	7	3	1	39
Testis	2	0	2	4	3	3	7	0	0	1	0	0	0	0	0	0	0	0	22
Bladder	0	0	0	1	0	2	0	3	1	2	12	10	10	3	6	10	4	5	69
Kidney & Renal Pelvis	9	1	0	0	1	2	3	2	5	6	17	7	5	9	8	1	0	0	76
Ureter	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Eye	16	2	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	22
Brain	14	17	9	4	5	6	3	3	5	6	0	3	4	3	3	1	1	0	87
Thyroid	0	0	5	2	26	15	31	28	21	23	10	7	5	12	6	2	1	0	194
Other Endocrine	13	2	3	0	0	2	0	2	0	0	1	0	0	0	0	0	0	0	23
Hodgkin's Lymphoma	5	14	9	19	11	10	3	2	2	2	2	0	1	0	0	2	0	1	83
Non-Hodgkin's Lymphoma	6	7	4	3	4	6	12	11	8	12	10	10	12	9	9	8	0	3	134
Unknown or ill-Defined	0	0	0	0	0	1	2	1	3	1	7	1	5	2	2	0	3	0	28
TOTAL	133	81	69	91	90	99	134	145	157	213	230	155	174	151	123	87	39	37	2,208

TABLE 7
ANALYTIC MALE CASES SEEN AT KFSH&RC BY SITE AND AGE
2010

SITE GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	TOTAL
Oral Cavity	1	0	0	0	1	0	1	1	5	3	5	1	4	6	7	0	0	0	35
Nasopharynx	1	1	1	4	1	4	5	7	5	5	7	2	5	3	1	1	1	0	54
Esophagus	0	0	0	0	0	0	0	0	2	0	1	1	0	2	3	3	1	3	16
Stomach	0	0	0	0	0	1	0	1	1	5	4	1	6	2	4	2	4	2	33
Small Intestine	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	3
Colon	0	0	0	0	0	2	1	1	5	4	5	4	3	3	0	1	1	1	31
Rectum & Rectosigmoid	0	0	0	0	0	0	1	2	4	2	6	4	3	3	9	7	2	0	43
Anus,Anal Canal,Anorectum	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	3
Liver	2	1	0	1	0	1	0	1	0	2	5	4	11	6	5	3	1	2	45
Bile Ducts	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	3
Pancreas	0	0	0	0	0	0	1	0	3	0	2	2	3	4	1	1	0	1	18
Other Digestive	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Nasal Cavity,Sinus,Ear	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Larynx	0	0	0	0	0	0	0	0	0	0	1	2	0	2	4	0	0	1	10
Lung/Bronchus	0	0	0	0	0	0	1	1	0	8	2	8	8	2	6	3	1	1	41
Other Respir & Thoracic	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
Leukemia	19	19	12	15	11	4	7	1	2	3	6	1	2	0	0	0	0	0	102
Myeloma	0	0	0	0	0	0	0	2	1	2	6	2	1	3	0	0	0	0	17
Other Hematopoietic	3	0	0	1	1	0	0	0	0	2	0	4	1	1	1	3	0	0	17
Bone	0	4	7	12	5	2	1	1	1	0	0	0	0	2	0	0	0	0	35
Soft Tissue	13	1	2	0	3	3	3	4	0	2	1	1	0	1	1	0	0	0	35
Melanoma of Skin	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	3
Kaposi's Sarcoma	0	0	0	0	0	1	0	0	0	0	1	1	0	1	3	0	1	1	9
Other Skin Cancer	0	0	0	1	1	0	0	1	0	1	0	0	0	2	2	4	3	1	16
Breast	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Prostate	1	0	0	0	0	0	0	0	0	1	1	8	3	8	6	7	3	1	39
Testis	2	0	2	4	3	3	7	0	0	1	0	0	0	0	0	0	0	0	22
Bladder	0	0	0	1	0	1	0	2	1	1	10	8	9	3	4	6	3	5	54
Kidney & Renal Pelvis	2	0	0	0	1	2	2	1	3	5	9	5	4	5	6	1	0	0	46
Ureter	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Eye	8	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	11
Brain	9	9	8	2	2	5	2	0	3	4	0	0	3	2	3	1	1	0	54
Thyroid	0	0	1	0	5	3	8	6	7	3	3	6	1	6	2	1	0	0	52
Other Endocrine	9	1	2	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	15
Hodgkin's Lymphoma	3	13	6	12	5	3	2	1	1	1	2	0	0	0	0	2	0	1	52
Non-Hodgkin's Lymphoma	5	3	4	2	3	4	7	9	2	9	7	7	4	5	7	6	0	3	87
Unknown or ill-Defined	0	0	0	0	0	0	0	1	2	1	5	0	2	1	2	0	2	0	16
TOTAL	80	52	45	56	42	41	51	45	49	67	91	73	77	76	77	55	24	25	1,026

TABLE 8
ANALYTIC FEMALE CASES SEEN AT KFSH&RC BY SITE AND AGE
2010

SITE GROUP	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85 +	TOTAL
Oral Cavity	1	0	1	0	1	1	0	5	2	1	2	4	2	1	5	2	0	1	29
Nasopharynx	0	0	0	4	2	0	0	3	0	4	0	0	0	2	1	0	1	0	17
Esophagus	0	0	0	0	0	0	0	0	1	1	1	2	1	1	0	1	0	1	9
Stomach	0	0	0	0	0	0	1	2	1	3	6	3	1	1	1	1	1	0	21
Colon	0	0	0	0	2	1	2	2	2	5	5	3	6	4	6	1	0	0	39
Rectum & Rectosigmoid	0	0	0	0	0	0	1	1	1	8	9	0	3	2	1	4	1	1	32
Anus,Anal Canal,Anorectum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Liver	1	0	0	0	0	2	0	0	0	1	5	0	2	1	4	1	1	0	18
Gallbladder	0	0	0	0	0	0	0	0	1	1	0	0	2	3	0	0	1	0	8
Bile Ducts	0	0	0	0	0	0	0	0	1	0	0	2	2	2	0	0	1	1	9
Pancreas	0	1	0	0	0	1	0	0	2	0	1	0	0	3	5	1	0	1	15
Retroperitoneum/Peritoneu	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Nasal Cavity,Sinus,Ear	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Lung/Bronchus	0	0	0	0	0	0	0	2	1	2	2	1	3	3	0	2	0	0	16
Other Respir & Thoracic	2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
Leukemia	17	9	5	9	1	6	5	2	4	4	6	2	2	0	0	0	0	0	72
Myeloma	0	0	0	1	0	0	0	1	0	5	1	2	1	2	0	0	0	1	14
Other Hematopoietic	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Bone	1	0	6	2	3	1	2	0	0	1	0	1	0	0	0	0	0	0	17
Soft Tissue	4	1	1	1	1	5	1	0	3	1	3	2	1	0	0	1	0	0	25
Melanoma of Skin	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	3
Other Skin Cancer	0	0	0	0	0	1	2	0	1	0	2	2	1	1	2	0	1	1	14
Breast	0	0	0	0	3	12	29	42	51	63	51	28	31	15	5	8	5	1	344
Cervix Uteri	0	0	0	0	0	1	3	2	3	6	1	3	3	4	0	0	0	0	26
Corpus Uteri	0	0	0	0	0	0	0	4	1	6	8	9	8	9	4	1	0	2	52
Ovary	0	0	2	4	1	3	4	1	7	6	9	5	8	4	1	2	0	1	58
Vulva	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Other Female Genital	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	3
Bladder	0	0	0	0	0	1	0	1	0	1	2	2	1	0	2	4	1	0	15
Kidney & Renal Pelvis	7	1	0	0	0	0	1	1	2	1	8	2	1	4	2	0	0	0	30
Ureter	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Eye	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11
Brain	5	8	1	2	3	1	1	3	2	2	0	3	1	1	0	0	0	0	33
Thyroid	0	0	4	2	21	12	23	22	14	20	7	1	4	6	4	1	1	0	142
Other Endocrine	4	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	8
Hodgkin's Disease	2	1	3	7	6	7	1	1	1	1	0	0	1	0	0	0	0	0	31
Non-Hodgkin's Lymphoma	1	4	0	1	1	2	5	2	6	3	3	3	8	4	2	2	0	0	47
Unknown or ill-Defined	0	0	0	0	0	1	2	0	1	0	2	1	3	1	0	0	1	0	12
TOTAL	53	29	24	35	48	58	83	100	108	146	139	82	97	75	46	32	15	12	1,182

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

The crude relative frequencies of primary cancers seen at KFSH&RC are very different from the Western world. Common tumors of the West (lung, colon, and prostate) are much less frequent here while leukemia, lymphoma and thyroid cancer are more common. The following 2010 analytic cases, which show a quite similar pattern with the data from the Saudi Cancer Registry (SCR), exhibit significant differences in trends from those of the West when compared to the data published in Cancer Facts & Figures - 2010, by the American Cancer Society:

TABLE 9
COMPARATIVE DATA - KFSH&RC vs SCR vs USA
(% to TOTAL CANCER CASES)

SITE	KFSH&RC 2010 Analytics	SCR 2007 Saudis	USA 2010 Estimates
BREAST	15.7%	13.8%	13.7%
THYROID	8.8%	6.4%	2.9%
LEUKEMIA	7.9%	6.2%	2.8%
COLON, RECTUM	6.6%	9.9%	9.3%
NON-HODGKIN'S LYMPHOMA	6.1%	7.7%	4.3%
HODGKIN'S LYMPHOMA	3.8%	3.4%	0.6%
BRAIN, CNS	3.9%	2.8%	1.4%
LUNG, BRONCHUS	2.6%	4.5%	14.5%
BONE	2.4%	1.1%	0.2%
SKIN MELANOMA	0.3%	0.4%	4.5%
PROSTATE (% to MALES)	3.8%	6.0%	27.6%

Breast - The most common malignancy seen at KFSH&RC is breast cancer, comprising 15.7% of all cases, as compared to 13.7% of all neoplasms diagnosed in the U.S.A. It affects mostly women under the age of 50, while in the U.S.A., those more than 50 years of age are most frequently affected. As in the Western countries, it is the number one cancer among women.

Thyroid – 8.8% of all malignancies in KFSH&RC are thyroid cancer, much higher than in the West. It represents 12% of female malignant neoplasms, second to breast cancer. The male/female ratio is 0.3:1. Thyroid cancer accounts for only 2.9% of all cases in the U.S.A. and 4.6% of female malignancies.

Leukemia – The most striking feature is the high crude relative frequency of leukemia cases, constituting 7.9% of all cases seen at KFSH&RC, as compared to 2.8% of all neoplasms diagnosed in the U.S.A. The male/female ratio is 1.4:1. It is the most common type of malignancy seen in males and third in females. It is also the most common malignancy among pediatric cases.

Colon, Rectum - Less common than in the West, this disease represents only 6.6% of all cancer cases. In the U.S.A. it constitutes 9.3% of newly diagnosed cancer cases. Dietary factors, particularly lower animal fat intake, may play a role. The male/female ratio at KFSH&RC is 1.04:1.

Non-Hodgkin's Lymphoma - Cases of non-hodgkin's lymphoma account for 6.1% of all cases. The male/female ratio is 1.8:1. In the U.S.A., NHL accounts for only 4.3% of all cancers.

Hodgkin's Lymphoma - The incidence of Hodgkin's lymphoma is comparatively more frequent at KFSH&RC than in Western countries. In the U.S.A. it constitutes 0.6% of all cancers, compared to 3.8% at KFSH&RC. The male/female ratio is 1.6:1.

Brain,CNS - Primary malignant neoplasm of the brain and CNS accounts for 3.9% of all malignancies and ranks second among the most common pediatric malignancies. The male/female ratio is 1.6:1. This is much higher than in the West with only 1.4% of all cases.

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 14.5% of all cancer cases (14.7% in males, and 14.2% in females). At KFSH&RC, 2.6% of all diagnoses are lung cancer, 3.9% of male malignancies and 1.3% of females. The male/female ratio is 2.6:1, in the West, 1.1:1.

Skin Melanoma - The relative frequency of skin melanoma at KFSH&RC (0.3%) is much lower than that of the West (4.5%). The male/female ratio is 1:1 at KFSH&RC and 1.3:1 in the West.

Prostate - The observed rate of prostatic cancer in men is significantly lower than in the West, where it is the most common male cancer (constituting 27.6% of the male malignancies). This is in contrast to the KFSH&RC experience, where prostatic cancer makes up only 3.8% of the male cancer. This is probably due to the population age difference, screening and early detection. Prostate cancer is a disease predominantly of older men and the population of Saudi Arabia is, in general, very young.

FIGURE 10

**DISTRIBUTION OF 20 MOST COMMON MALIGNANCIES
2010 ANALYTIC CASES (TOTAL CASES = 2,208)**

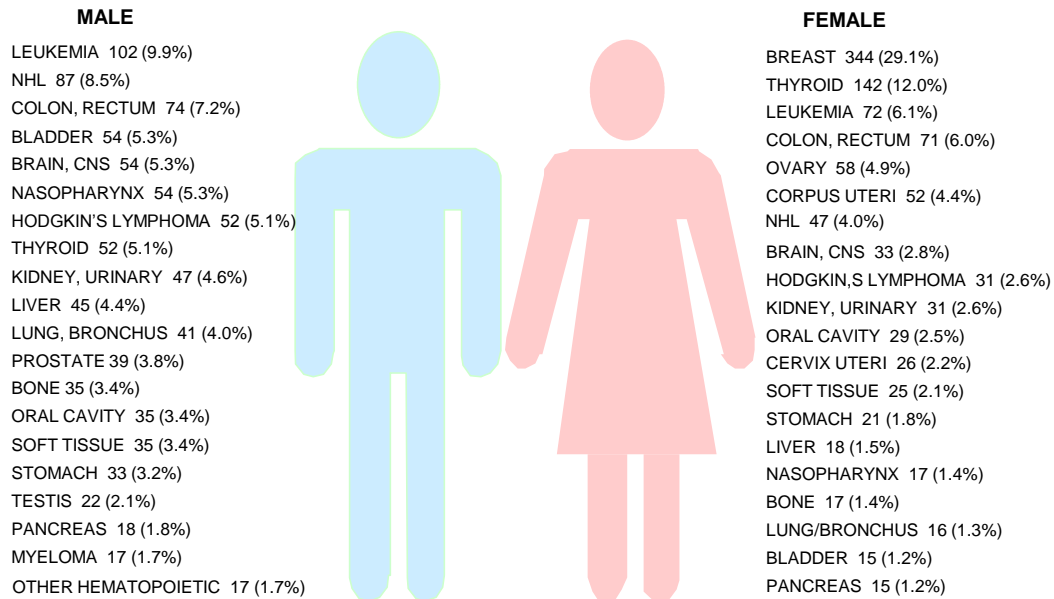


FIGURE 11

**DISTRIBUTION OF PEDIATRIC MALIGNANCIES
2010 ANALYTIC CASES (TOTAL CASES = 283)**

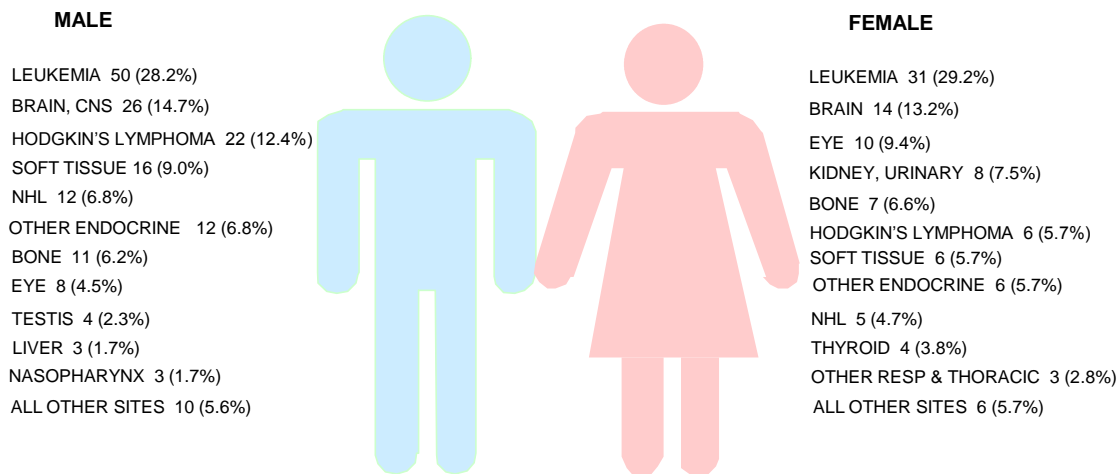


FIGURE 12

**DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES BY HISTOLOGY
2010 ANALYTIC CASES (TOTAL CASES = 283)**

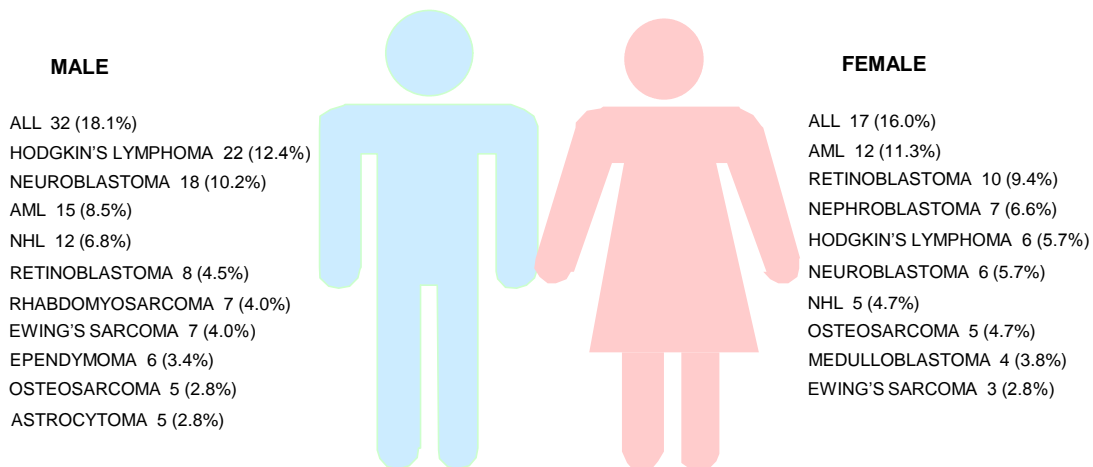


TABLE 10
PRIMARY SITE TABLE
(INCLUDES MULTIPLE PRIMARIES)
2010

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADS	
			MALE	FEMALE	MALE	FEMALE
		2,469	959	1,189	197	124
LIP		2	2	0	0	0
	Squamous Cell Carcinoma	1	1	0	0	0
	Verrucous Carcinoma	1	1	0	0	0
TONGUE		22	15	7	0	0
	Squamous Cell Carcinoma	20	14	6	0	0
	Mucoepidermoid Carcinoma	2	1	1	0	0
GUM		10	4	5	0	1
	Squamous Cell Carcinoma	7	3	4	0	0
	Pseudosarcomatous Carcinoma	1	1	0	0	0
	Synovial Sarcoma	1	0	1	0	0
	Sarcoma NOS	1	0	0	0	1
FLOOR OF MOUTH		3	1	0	1	1
	Squamous Cell Carcinoma	1	1	0	0	0
	Alveolar Rhabdomyosarcoma	1	0	0	0	1
	Ewing Sarcoma	1	0	0	1	0
PALATE		1	0	1	0	0
	Spindle Cell Melanoma	1	0	1	0	0
OTHER PART OF MOUTH		10	6	4	0	0
	Squamous Cell Carcinoma	8	6	2	0	0
	Adenoid Cystic Carcinoma	1	0	1	0	0
	Mucoepidermoid Carcinoma	1	0	1	0	0
SALIVARY GLANDS, MAJOR		10	3	6	0	1
	Mucoepidermoid Carcinoma	4	2	1	0	1
	Adenoid Cystic Carcinoma	3	0	3	0	0
	Acinar Cell Carcinoma	1	0	1	0	0
	Adenocarcinoma NOS	1	1	0	0	0
	Marginal Zone B-Cell Lymphoma	1	0	1	0	0
TONSIL		9	5	3	0	1
	Non-Hodgkin's Lymphoma	7	5	1	0	1
	Hodgkin's Lymphoma	1	0	1	0	0
	Plasmacytoma	1	0	1	0	0
NASOPHARYNX		75	53	18	3	1
	Squamous Cell Carcinoma	52	43	8	1	0
	Carcinoma Undifferentiated	16	9	7	0	0
	Rhabdomyosarcoma	3	0	0	2	1
	Carcinoma NOS	1	1	0	0	0
	Lymphoepithelial Carcinoma	1	0	1	0	0
	Non-Hodgkin's Lymphoma	1	0	1	0	0
	Polymorphous Low Grade Adenocarcinoma	1	0	1	0	0
PYRIFORM SINUS		2	1	1	0	0
	Squamous Cell Carcinoma	2	1	1	0	0
HYPOPHARYNX		9	3	6	0	0
	Squamous Cell Carcinoma	9	3	6	0	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADS	
			MALE	FEMALE	MALE	FEMALE
OTHER SITES IN LIP, ORAL CAVITY, PHARYNX		2	1	1	0	0
	Non-Hodgkin's Lymphoma	2	1	1	0	0
ESOPHAGUS		29	19	10	0	0
	Squamous Cell Carcinoma	21	11	10	0	0
	Adenocarcinoma NOS	7	7	0	0	0
	Kaposi Sarcoma	1	1	0	0	0
STOMACH		67	40	26	1	0
	Adenocarcinoma NOS	21	15	6	0	0
	Signet Ring Cell Carcinoma	18	9	9	0	0
	Non-Hodgkin's Lymphoma	10	5	4	1	0
	Adenocarcinoma Intestinal Type	4	3	1	0	0
	Adenocarcinoma with Mixed Subtypes	3	1	2	0	0
	Carcinoma Diffuse Type	3	3	0	0	0
	Gastrointestinal Stromal Sarcoma	3	2	1	0	0
	Neuroendocrine Carcinoma	2	1	1	0	0
	Adenocarcinoma with Neuroendocrine Differentiation	1	0	1	0	0
	Carcinoma NOS	1	1	0	0	0
	Mucinous Adenocarcinoma	1	0	1	0	0
SMALL INTESTINE		9	4	4	1	0
	Non-Hodgkin's Lymphoma	5	1	3	1	0
	Adenocarcinoma NOS	3	3	0	0	0
	Gastrointestinal Stromal Sarcoma	1	0	1	0	0
COLON		85	39	44	2	0
	Adenocarcinoma NOS	62	28	34	0	0
	Mucinous Adenocarcinoma	17	9	8	0	0
	Non-Hodgkin's Lymphoma	3	1	0	2	0
	Gastrointestinal Stromal Sarcoma	1	0	1	0	0
	Neoplasm Malignant	1	0	1	0	0
	Signet Ring Cell Carcinoma	1	1	0	0	0
RECTOSIGMOID JUNCTION		14	7	7	0	0
	Adenocarcinoma NOS	13	6	7	0	0
	Neoplasm Malignant	1	1	0	0	0
RECTUM		69	42	27	0	0
	Adenocarcinoma NOS	63	39	24	0	0
	Mucinous Adenocarcinoma	3	2	1	0	0
	Adenocarcinoma In Villous Adenoma	2	1	1	0	0
	Signet Ring Cell Carcinoma	1	0	1	0	0
ANUS, ANAL CANAL, ANORECTUM		4	3	1	0	0
	Squamous Cell Carcinoma	3	3	0	0	0
	Signet Ring Cell Carcinoma	1	0	1	0	0
LIVER, INTRAHEPATIC BILE DUCT		67	45	18	3	1
	Hepatocellular Carcinoma	58	41	16	1	0
	Cholangiocarcinoma	5	4	1	0	0
	Hepatoblastoma	3	0	0	2	1
	Non-Hodgkin's Lymphoma	1	0	1	0	0
GALLBLADDER, EXTRAHEPATIC BILE DUCT		21	4	17	0	0
	Adenocarcinoma NOS	7	2	5	0	0
	Cholangiocarcinoma	6	0	6	0	0
	Neoplasm Malignant	2	1	1	0	0
	Adenocarcinoma In Villous Adenoma	1	0	1	0	0
	Adenocarcinoma Intestinal Type	1	0	1	0	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADS	
			MALE	FEMALE	MALE	FEMALE
	Carcinoma NOS	1	0	1	0	0
	Clear Cell Adenocarcinoma	1	0	1	0	0
	Neuroendocrine Carcinoma	1	1	0	0	0
	Klatskin Tumor	1	0	1	0	0
	PANCREAS	35	19	15	0	1
	Adenocarcinoma NOS	17	9	8	0	0
	Neoplasm Malignant	8	5	3	0	0
	Carcinoma NOS	4	4	0	0	0
	Neuroendocrine Carcinoma	2	0	2	0	0
	Carcinoma Undifferentiated	1	1	0	0	0
	Infiltrating Duct Carcinoma	1	0	1	0	0
	Squamous Cell Carcinoma	1	0	1	0	0
	Pancreatoblastoma	1	0	0	0	1
	OTHER DIGESTIVE ORGANS	1	1	0	0	0
	Carcinoma NOS	1	1	0	0	0
	NASAL CAVITY, MIDDLE EAR	6	3	3	0	0
	Non-Hodgkin's Lymphoma	3	2	1	0	0
	Clear Cell Adenocarcinoma	1	0	1	0	0
	Neuroendocrine Carcinoma	1	0	1	0	0
	Plasmacytoma	1	1	0	0	0
	ACCESSORY SINUSES	5	4	0	1	0
	Non-Hodgkin's Lymphoma	3	2	0	1	0
	Sarcoma NOS	1	1	0	0	0
	Squamous Cell Carcinoma	1	1	0	0	0
	LARYNX	11	11	0	0	0
	Squamous Cell Carcinoma	10	10	0	0	0
	Non-Hodgkin's Lymphoma	1	1	0	0	0
	LUNG, BRONCHUS	63	43	20	0	0
	Adenocarcinoma NOS	27	18	9	0	0
	Non-Small Cell Carcinoma	8	7	1	0	0
	Squamous Cell Carcinoma	8	5	3	0	0
	Carcinoma NOS	5	3	2	0	0
	Small Cell Carcinoma	5	4	1	0	0
	Neuroendocrine Carcinoma	3	2	1	0	0
	Non-Hodgkin's Lymphoma	3	1	2	0	0
	Carcinoid	1	0	1	0	0
	Mucin-Producing Adenocarcinoma	1	1	0	0	0
	Papillary Adenocarcinoma	1	1	0	0	0
	Pseudosarcomatous Carcinoma	1	1	0	0	0
	THYMUS	2	2	0	0	0
	Thymoma Malignant	2	2	0	0	0
	HEART	1	0	1	0	0
	Ewing Sarcoma	1	0	1	0	0
	MEDIASTINUM	8	3	0	2	3
	Neuroblastoma	3	0	0	2	1
	Non-Hodgkin's Lymphoma	2	2	0	0	0
	Ganglioneuroblastoma	2	0	0	0	2
	Yolk Sac Tumor	1	1	0	0	0
	PLEURA	1	0	1	0	0
	Mesothelioma Malignant	1	0	1	0	0
	BONES, JOINTS, CARTILAGE	59	28	13	11	7

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADS	
			MALE	FEMALE	MALE	FEMALE
	Ewing Sarcoma	17	7	3	5	2
	Osteosarcoma	16	11	1	2	2
	Chondroblastic Osteosarcoma	8	2	2	3	1
	Non-Hodgkin's Lymphoma	6	4	2	0	0
	Chondrosarcoma	3	2	1	0	0
	Parosteal Osteosarcoma	2	1	0	0	1
	Chordoma	1	0	1	0	0
	Fibroblastic Osteosarcoma	1	1	0	0	0
	Myofibroblastic Sarcoma	1	0	1	0	0
	Plasmacytoma	1	0	1	0	0
	Sarcoma NOS	1	0	1	0	0
	Periosteal Osteosarcoma	1	0	0	0	1
	Primitive Neuroectodermal Tumor	1	0	0	1	0
BONE MARROW		239	80	59	64	36
	Precursor B-Cell Lymphoblastic Leukemia	80	15	13	32	20
	Acute Myeloid Leukemia	50	14	15	14	7
	Chronic Myeloid Leukemia	24	8	14	2	0
	Precursor T-Cell Lymphoblastic Leukemia	18	11	1	5	1
	Myelodysplastic Syndrome	10	6	2	2	0
	B-Cell Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma	10	3	7	0	0
	Acute Myelomonocytic Leukemia	9	5	0	1	3
	Acute Promyelocytic Leukemia	8	2	3	3	0
	Refractory Anemia with Excess Blasts	5	5	0	0	0
	Acute Monocytic Leukemia	5	1	2	0	2
	Acute Biphenotypic Leukemia	4	3	0	0	1
	Acute Leukemia	3	2	1	0	0
	Polycythemia Vera	2	2	0	0	0
	Juvenile Myelomonocytic Leukemia	2	0	0	1	1
	Precursor Cell Lymphoblastic Leukemia	2	0	0	2	0
	Chronic Myelomonocytic Leukemia	1	0	1	0	0
	Essential Thrombocythemia	1	1	0	0	0
	Plasma Cell Leukemia	1	1	0	0	0
	Refractory Anemia with Sideroblasts	1	1	0	0	0
	Acute Panmyelosis with Myelofibrosis	1	0	0	1	0
	Langerhans Cell Histiocytosis	1	0	0	1	0
	Acute Megakaryoblastic Leukemia	1	0	0	0	1
MULTIPLE MYELOMA		32	19	13	0	0
	Multiple Myeloma	32	19	13	0	0
SPLEEN		1	1	0	0	0
	Non-Hodgkin's Lymphoma	1	1	0	0	0
SKIN (MELANOMA)		7	4	3	0	0
	Nodular Melanoma	3	2	1	0	0
	Malignant Melanoma NOS	2	1	1	0	0
	Lentigo Maligna Melanoma	1	1	0	0	0
	Spindle Cell Melanoma	1	0	1	0	0
SKIN (NON MELANOMA)		62	33	28	0	1
	Mycosis Fungoides	16	5	10	0	1
	Basal Cell Carcinoma	15	11	4	0	0
	Squamous Cell Carcinoma	11	7	4	0	0
	Dermatofibrosarcoma	9	2	7	0	0
	Kaposi Sarcoma	8	8	0	0	0
	Bowen Disease	1	0	1	0	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADS	
			MALE	FEMALE	MALE	FEMALE
	Non-Hodgkin's Lymphoma	1	0	1	0	0
	Sebaceous Adenocarcinoma	1	0	1	0	0
	RETROPERITONEUM, PERITONEUM	2	0	2	0	0
	Signet Ring Cell Carcinoma	1	0	1	0	0
	Epithelioid Mesothelioma Malignant	1	0	1	0	0
	CONNECTIVE, SUBCUTANEOUS, SOFT TISSUES	80	28	25	20	7
	Non-Hodgkin's Lymphoma	9	3	1	4	1
	Neuroblastoma	6	0	0	5	1
	Leiomyosarcoma	6	2	4	0	0
	Ewing Sarcoma	5	3	0	1	1
	Synovial Sarcoma	5	1	3	0	1
	Malignant Peripheral Nerve Sheath Tumor	4	3	1	0	0
	Primitive Neuroectodermal Tumor	4	0	2	2	0
	Myxoid Liposarcoma	4	2	2	0	0
	Rhabdomyosarcoma	3	0	0	2	1
	Epithelioid Sarcoma	2	1	0	1	0
	Fibromyxosarcoma	2	1	1	0	0
	Malignant Fibrous Histiocytoma	2	1	1	0	0
	Pleomorphic Rhabdomyosarcoma Adult	2	2	0	0	0
	Spindle Cell Sarcoma	2	1	1	0	0
	Ganglioneuroblastoma	2	0	0	2	0
	Liposarcoma Well Differentiated	2	0	2	0	0
	Synovial Sarcoma Biphasic	2	1	1	0	0
	Synovial Sarcoma Spindle Cell	2	2	0	0	0
	Alveolar Soft Part Sarcoma	1	0	1	0	0
	Chondrosarcoma	1	1	0	0	0
	Hodgkin's Lymphoma	1	0	1	0	0
	Kaposi Sarcoma	1	1	0	0	0
	Liposarcoma NOS	1	1	0	0	0
	Mesenchymal Chondrosarcoma	1	1	0	0	0
	Sarcoma NOS	1	0	1	0	0
	Solitary Fibrous Tumor Malignant	1	0	1	0	0
	Undifferentiated Sarcoma	1	0	1	0	0
	Embryonal Rhabdomyosarcoma	1	0	0	1	0
	Infantile Fibrosarcoma	1	0	0	1	0
	Malignant Rhabdoid Tumor	1	0	0	1	0
	Small Cell Sarcoma	1	0	0	0	1
	Fibrosarcoma NOS	1	0	1	0	0
	Mixed Liposarcoma	1	1	0	0	0
	Yolk Sac Tumor	1	0	0	0	1
	BREAST	370	2	368	0	0
	Infiltrating Duct Carcinoma	298	1	297	0	0
	Lobular Carcinoma	22	0	22	0	0
	Intraductal Carcinoma Noninfiltrating	12	0	12	0	0
	Infiltrating Duct Mixed with Other Types of Carcinoma	11	0	11	0	0
	Duct and Lobular Carcinoma	5	0	5	0	0
	Carcinosarcoma	4	0	4	0	0
	Mucinous Adenocarcinoma	4	0	4	0	0
	Carcinoma NOS	3	0	3	0	0
	Adenocarcinoma NOS	2	1	1	0	0
	Metaplastic Carcinoma	2	0	2	0	0
	Neoplasm Malignant	2	0	2	0	0
	Phyllodes Tumor Malignant	2	0	2	0	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADS	
			MALE	FEMALE	MALE	FEMALE
	Hemangiosarcoma	1	0	1	0	0
	Intraductal Micropapillary Carcinoma	1	0	1	0	0
	Paget Disease and Duct Carcinoma	1	0	1	0	0
VULVA		2	0	2	0	0
	Squamous Cell Carcinoma	2	0	2	0	0
CERVIX UTERI		30	0	30	0	0
	Squamous Cell Carcinoma	22	0	22	0	0
	Adenocarcinoma NOS	5	0	5	0	0
	Carcinoma NOS	2	0	2	0	0
	Small Cell Carcinoma	1	0	1	0	0
CORPUS UTERI		50	0	50	0	0
	Endometrioid Adenocarcinoma	29	0	29	0	0
	Carcinosarcoma	8	0	8	0	0
	Serous Cystadenocarcinoma	4	0	4	0	0
	Clear Cell Adenocarcinoma	2	0	2	0	0
	Endometrial Stromal Sarcoma Low Grade	2	0	2	0	0
	Adenocarcinoma NOS	1	0	1	0	0
	Adenocarcinoma with Mixed Subtypes	1	0	1	0	0
	Carcinoma NOS	1	0	1	0	0
	Leiomyosarcoma	1	0	1	0	0
	Serous Surface Papillary Carcinoma	1	0	1	0	0
UTERUS, NOS		5	0	5	0	0
	Leiomyosarcoma	3	0	3	0	0
	Carcinosarcoma	1	0	1	0	0
	Sarcoma NOS	1	0	1	0	0
OVARY		67	0	64	0	3
	Serous Cystadenocarcinoma	26	0	26	0	0
	Mucinous Adenocarcinoma	8	0	8	0	0
	Papillary Serous Cystadenocarcinoma	7	0	7	0	0
	Adenocarcinoma NOS	4	0	4	0	0
	Mucinous Cystadenocarcinoma	4	0	4	0	0
	Carcinoma NOS	2	0	2	0	0
	Endometrioid Adenocarcinoma	2	0	2	0	0
	Mixed Germ Cell Tumor	2	0	1	0	1
	Non-Hodgkin's Lymphoma	2	0	1	0	1
	Yolk Sac Tumor	2	0	1	0	1
	Dysgerminoma	1	0	1	0	0
	Granulosa Cell Tumor Malignant	1	0	1	0	0
	Malignant Serous Tumor	1	0	1	0	0
	Mullerian Mixed Tumor	1	0	1	0	0
	Neoplasm Malignant	1	0	1	0	0
	Sertoli-Leydig Cell Tumor Poorly Differentiated	1	0	1	0	0
	Teratoma Malignant	1	0	1	0	0
	Transitional Cell Carcinoma	1	0	1	0	0
PLACENTA		3	0	3	0	0
	Trophoblastic Placenta Malignant	2	0	2	0	0
	Choriocarcinoma	1	0	1	0	0
PROSTATE		44	43	0	1	0
	Adenocarcinoma NOS	41	41	0	0	0
	Neoplasm Malignant	1	1	0	0	0
	Carcinoma NOS	1	1	0	0	0
	Embryonal Rhabdomyosarcoma	1	0	0	1	0
TESTIS		27	23	0	4	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADS	
			MALE	FEMALE	MALE	FEMALE
	Mixed Germ Cell Tumor	11	10	0	1	0
	Seminoma	8	8	0	0	0
	Yolk Sac Tumor	5	3	0	2	0
	Embryonal Carcinoma	1	1	0	0	0
	Teratoma Malignant	1	1	0	0	0
	Embryonal Rhabdomyosarcoma	1	0	0	1	0
KIDNEY		81	45	23	4	9
	Renal Cell Carcinoma	41	25	16	0	0
	Renal Cell Carcinoma Chromophobe Type	11	8	3	0	0
	Nephroblastoma	11	0	0	3	8
	Papillary Adenocarcinoma	9	8	1	0	0
	Clear Cell Adenocarcinoma	3	2	1	0	0
	Neoplasm Malignant	2	0	2	0	0
	Renal Cell Carcinoma Sarcomatoid	1	1	0	0	0
	Transitional Cell Carcinoma	1	1	0	0	0
	Clear Cell Sarcoma	1	0	0	0	1
	Malignant Rhabdoid Tumor	1	0	0	1	0
RENAL PELVIS		2	2	0	0	0
	Papillary Transitional Cell Carcinoma	2	2	0	0	0
URETER		2	1	1	0	0
	Papillary Transitional Cell Carcinoma	2	1	1	0	0
URINARY BLADDER		78	63	15	0	0
	Papillary Transitional Cell Carcinoma	41	35	6	0	0
	Transitional Cell Carcinoma	22	19	3	0	0
	Squamous Cell Carcinoma	7	2	5	0	0
	Transitional Cell Carcinoma Micropapillary	2	2	0	0	0
	Carcinoma NOS	1	1	0	0	0
	Carcinosarcoma	1	1	0	0	0
	Embryonal Rhabdomyosarcoma	1	1	0	0	0
	Mucinous Adenocarcinoma	1	0	1	0	0
	Neoplasm Malignant	1	1	0	0	0
	Adenocarcinoma NOS	1	1	0	0	0
EYE, ADNEXA		25	4	1	9	11
	Retinoblastoma	20	0	0	9	11
	Squamous Cell Carcinoma	3	2	1	0	0
	Neuroendocrine Carcinoma	1	1	0	0	0
	Non-Hodgkin's Lymphoma	1	1	0	0	0
BRAIN		87	28	16	25	18
	Glioblastoma	20	16	3	1	0
	Medulloblastoma	11	1	1	3	6
	Glioma Malignant	6	1	1	1	3
	Pilocytic Astrocytoma	6	0	1	4	1
	Mixed Glioma	5	3	2	0	0
	Ependymoma	5	0	0	5	0
	Ependymoma Anaplastic	5	1	0	1	3
	Oligodendroglioma	4	2	2	0	0
	Astrocytoma	3	1	1	0	1
	Ganglioglioma Anaplastic	3	0	1	2	0
	Desmoplastic Nodular Medulloblastoma	3	0	0	2	1
	Germinoma	2	1	0	0	1
	Oligodendroblastoma Anaplastic	2	0	1	1	0
	Gliosarcoma	2	0	2	0	0
	Oligodendroblastoma	1	0	1	0	0
	Gemistocytic Astrocytoma	1	1	0	0	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADS	
			MALE	FEMALE	MALE	FEMALE
	Gliomatosis Cerebri	1	1	0	0	0
	Astrocytoma Anaplastic	1	0	0	1	0
	Atypical Teratoid/Rhabdoid Tumor	1	0	0	0	1
	Gliomatosis Cerebri	1	0	0	1	0
	Large Cell Medulloblastoma	1	0	0	1	0
	Malignant Rhabdoid Tumor	1	0	0	1	0
	Medulloepithelioma	1	0	0	1	0
	Primitive Neuroectodermal Tumor	1	0	0	0	1
	OTHER NERVOUS SYSTEM	10	1	7	2	0
	Ependymoma	5	0	4	1	0
	Pilocytic Astrocytoma	2	0	2	0	0
	Glioblastoma	1	1	0	0	0
	Non-Hodgkin's Lymphoma	1	0	1	0	0
	Glioma Malignant	1	0	0	1	0
	THYROID	211	57	149	1	4
	Papillary Adenocarcinoma	111	33	74	1	3
	Papillary Carcinoma Follicular Variant	32	4	27	0	1
	Papillary Microcarcinoma	18	3	15	0	0
	Papillary Carcinoma Columnar Cell	16	4	12	0	0
	Medullary Carcinoma	7	5	2	0	0
	Papillary Carcinoma Encapsulated	6	1	5	0	0
	Oxyphilic Adenocarcinoma	5	2	3	0	0
	Follicular Carcinoma Minimally Invasive	5	0	5	0	0
	Carcinoma Anaplastic	3	2	1	0	0
	Follicular Adenocarcinoma	3	1	2	0	0
	Non-Hodgkin's Lymphoma	2	0	2	0	0
	Mixed Medullary-Papillary Carcinoma	1	1	0	0	0
	Papillary Carcinoma Oxyphilic Cell	1	1	0	0	0
	Carcinoma NOS	1	0	1	0	0
	ADRENAL GLAND	25	2	1	13	9
	Neuroblastoma	19	0	0	13	6
	Adrenal Cortical Carcinoma	3	1	1	0	1
	Hodgkin's Lymphoma	1	1	0	0	0
	Carcinoma NOS	1	0	0	0	1
	Ganglioneuroblastoma	1	0	0	0	1
	OTHER ENDOCRINE GLANDS	2	0	1	1	0
	Paraganglioma Malignant	1	0	1	0	0
	Pineoblastoma	1	0	0	1	0
	LYMPH NODES (NON HODGKIN'S LYMPHOMA)	82	55	23	3	1
	Large B-Cell Diffuse	49	35	14	0	0
	Follicular	11	6	5	0	0
	Burkitt	6	2	1	2	1
	Non Hodgkin's Lymphoma NOS	4	2	2	0	0
	Small B Lymphocytic	4	3	1	0	0
	Anaplastic Large Cell T Cell and Null Cell Type	3	3	0	0	0
	Mantle Cell Lymphoma	2	2	0	0	0
	Precursor T-Cell Lymphoblastic	2	1	0	1	0
	Mature T-Cell	1	1	0	0	0
	LYMPH NODES (HODGKIN'S LYMPHOMA)	101	39	29	25	8
	Nodular Sclerosis	67	24	22	16	5
	Hodgkin's Lymphoma NOS	14	7	5	0	2
	Mixed Cellularity	9	3	2	3	1
	Lymphocyte-Rich	7	3	0	4	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADS	
			MALE	FEMALE	MALE	FEMALE
	Nodular Lymphocyte Predominance	4	2	0	2	0
	PRIMARY UNKNOWN	30	18	12	0	0
	Adenocarcinoma NOS	9	5	4	0	0
	Carcinoma NOS	9	3	6	0	0
	Mucinous Adenocarcinoma	3	2	1	0	0
	Neuroendocrine Carcinoma	3	2	1	0	0
	Carcinoma Anaplastic	1	1	0	0	0
	Neoplasm Malignant	1	1	0	0	0
	Pseudosarcomatous Carcinoma	1	1	0	0	0
	Squamous Cell Carcinoma	1	1	0	0	0
	Carcinoma Undifferentiated	1	1	0	0	0
	Neoplasm Malignant	1	1	0	0	0

TABLE 11
MULTIPLE PRIMARY SITES TABLE
2010

PRIMARY SITE	HISTOLOGY	OTHER PRIMARIES	ALL		
2010	(NOS - Not Otherwise Specified)	(PREVIOUS OR CONCURRENT)	CASES	MALE	FEMALE
			101	46	55
TONGUE			2	1	1
	Squamous Cell Carcinoma	Orbit - NHL	1	1	0
	Squamous Cell Carcinoma	Buccal Mucosa - Sq Cell Carcinoma	1	0	1
GUM			3	2	1
	Squamous Cell Carcinoma	Lip - Sq Cell Carcinoma	1	0	1
	Squamous Cell Carcinoma*	Submandibular Gland-Sq Cell Carcinoma	1	1	0
		Skin - Basal Cell Carcinoma			
	Sarcomatoid Sarcoma	Thyroid - Papillary Carcinoma	1	1	0
PALATE			1	0	1
	Spindle Cell Melanoma	Kidney - Malignant Neoplasm	1	0	1
SUBMANDIBULAR GLAND			1	1	0
	Adenocarcinoma, NOS	Lymph Nodes - NHL	1	1	0
NASOPHARYNX			1	1	0
	Carcinoma, NOS	Thyroid - Papillary Carcinoma	1	1	0
ESOPHAGUS			1	1	0
	Squamous Cell Carcinoma*	Prostate - Adenocarcinoma, NOS	1	1	0
		Colon - Carcinoma, NOS			
STOMACH			2	1	1
	Signet Ring Cell Carcinoma	Kidney - Renal Cell Carcinoma	1	0	1
	Gastrointestinal Stromal Tumor	Thyroid - Papillary Carcinoma	1	1	0
COLON			3	2	1
	Adenocarcinoma, NOS	Sigmoid Colon - Papillary Adenoca	1	1	0
	Adenocarcinoma, NOS	Breast - Ductal Carcinoma	1	0	1
	Adenocarcinoma, NOS	Skin - Kaposi Sarcoma	1	1	0
ANUS, ANAL CANAL			2	1	1
	Squamous Cell Carcinoma	Skin - Kaposi Sarcoma	1	1	0
	Signet Ring Cell Carcinoma	Cervix - Sq Cell Carcinoma	1	0	1
LIVER			3	2	1
	Hepatocellular Carcinoma	Lymph Nodes - NHL	1	1	0
	Hepatocellular Carcinoma	Stomach - NHL	1	1	0
	Cholangiocarcinoma	Tonsil - NHL	1	0	1
PANCREAS			1	0	1
	Squamous Cell Carcinoma	Lymph Nodes - NHL	1	0	1
NASAL CAVITY			2	0	2
	Neuroendocrine Tumor	Nasal Cavity - Olfactory Neuroblastoma	1	0	1

PRIMARY SITE 2010	HISTOLOGY (NOS - Not Otherwise Specified)	OTHER PRIMARIES (PREVIOUS OR CONCURRENT)	ALL CASES	MALE	FEMALE
	Hyalinizing Clear Cell Ca	Nasopharynx - Mucoepidermoid Ca	1	0	1
ACCESSORY SINUSES			1	1	0
	Sarcoma	Nasopharynx - Undiff Carcinoma	1	1	0
LARYNX			1	1	0
	Squamous Cell Carcinoma	Thyroid - Papillary Carcinoma	1	1	0
LUNG			2	1	1
	Squamous Cell Carcinoma	Larynx - Sq Cell Carcinoma	1	1	0
	Adenocarcinoma, NOS	Endometrium - Endometrioid Adenoca	1	0	1
MEDIASTINUM			1	1	0
	Yolk Sac Tumor	GEJ - Adenocarcinoma, NOS	1	1	0
BONE			1	0	1
	Osteosarcoma	Abdomen - Rhabdomyosarcoma	1	0	1
BONE MARROW			7	5	2
	Multiple Myeloma	Lymph Nodes - Hodgkin Lymphoma	1	0	1
	Multiple Myeloma	Lymph Nodes - NHL	1	1	0
	Multiple Myeloma	Ileum - NHL	1	1	0
	Acute Myeloid Leukemia	Soft Tissue - Rhabdomyosarcoma	1	1	0
	Acute Myeloid Leukemia	Breast - Ductal Carcinoma	1	0	1
	Chronic Myeloid Leukemia	Lymph Nodes - Hodgkin Lymphoma	1	1	0
	Acute Lymphoid Leukemia	Chronic Myeloid Leukemia	1	1	0
SKIN			4	3	1
	Basal Cell Carcinoma	Lip - Sq Cell Carcinoma	1	1	0
	Squamous Cell Carcinoma	Bladder - Papillary Transitional Ca	1	1	0
	Basosquamous Carcinoma	Skin Nose - Sq Cell Carcinoma	1	1	0
	Mycosis Fungoides	Breast - Lobular Carcinoma	1	0	1
BREAST			25	0	25
	Ductal Carcinoma	Contra Breast - Ductal Carcinoma	12	0	12
	Ductal Carcinoma*	Contra Breast - Ductal Carcinoma	1	0	1
		Endometrium - Endometrioid Adenoca	1	0	1
	Ductal Carcinoma*	Contra Breast - Ductal Carcinoma	1	0	1
		Thyroid - Papillary Carcinoma	1	0	1
	Ductal Carcinoma	Spinal Cord - Ependymoma	1	0	1
	Ductal Carcinoma	Small Intestine - NHL	1	0	1
	Ductal Carcinoma	Thyroid - Papillary Carcinoma	1	0	1
	Ductal Carcinoma	Ovary - Serous Carcinoma	1	0	1
	Ductal Carcinoma	Placental Site Trophoblastic Tumor	1	0	1
	Ductal Carcinoma	Lymph Nodes - NHL	1	0	1
	Lobular Carcinoma	Contra Breast - Lobular Carcinoma	2	0	2
	Angiosarcoma	Breast - Ductal Carcinoma	1	0	1
CORPUS UTERI			1	0	1
	Carcinosarcoma	Ovary - Serous Adenocarcinoma	1	0	1
UTERUS, NOS			1	0	1

PRIMARY SITE	HISTOLOGY	OTHER PRIMARIES	ALL		
2010	(NOS - Not Otherwise Specified)	(PREVIOUS OR CONCURRENT)	CASES	MALE	FEMALE
	Carcinosarcoma	Lip - Carcinoma, NOS	1	0	1
OVARY			2	0	2
	Serous Carcinoma	Breast - Ductal Carcinoma	1	0	1
	Adenocarcinoma, NOS	Breast - Ductal Carcinoma	1	0	1
PROSTATE			1	1	0
	Adenocarcinoma, NOS	Skin - NHL	1	1	0
TESTIS			1	1	0
	Seminoma	Contra Testis - Seminoma	1	1	0
KIDNEY			5	3	2
	Renal Cell Carcinoma	Contra Kidney - Renal Cell Carcinoma	1	0	1
	Renal Cell Carcinoma	Lung - Mucin Producing Adenoca	1	1	0
	Renal Cell Carcinoma	Colon - Adenocarcinoma, NOS	1	1	0
	Renal Cell Carcinoma	Skin, Labia - Sq Cell Carcinoma	1	0	1
	Papillary Renal Cell Ca	Contra Kidney - Renal Cell Carcinoma	1	1	0
RENAL PELVIS			1	1	0
	Papillary Transitional Ca	Bladder - Urothelial Carcinoma	1	1	0
URINARY BLADDER			7	7	0
	Urothelial Carcinoma	Prostate - Adenocarcinoma	2	2	0
	Urothelial Carcinoma	Skin - Kaposi Sarcoma	1	1	0
	Urothelial Carcinoma	Carcinoma, NOS	1	1	0
	Papillary Urothelial Ca	Prostate - Adenocarcinoma	1	1	0
	Papillary Urothelial Ca	Bladder - Pap Urothelial Ca Non-Invasive	1	1	0
	Papillary Urothelial Ca	Lip - Sq Cell Carcinoma	1	1	0
BRAIN			2	1	1
	Astrocytoma	Acute Lymphoid Leukemia	1	0	1
	Oligodendroglioma	Acute Lymphoid Leukemia	1	1	0
THYROID			12	5	7
	Papillary Carcinoma	Lymph Nodes - NHL	3	1	2
	Papillary Carcinoma	Thyroid - Papillary Microcarcinoma	2	1	1
	Papillary Carcinoma	Kidney - Papillary Renal Cell Carcinoma	1	1	0
	Papillary Carcinoma	Nasopharynx - Carcinoma, NOS	1	1	0
	Papillary Carcinoma	Skin - NHL	1	0	1
	Papillary Microcarcinoma	Nasopharynx - Carcinoma, NOS	1	0	1
	Papillary Microcarcinoma	Stomach - Adenocarcinoma, NOS	1	0	1
	Papillary Follicular Carcinoma	Colon - Adenocarcinoma, NOS	1	1	0
	Non-Hodgkin Lymphoma	Colon - Adenocarcinoma, NOS	1	0	1
LYMPH NODES			4	3	1
	Hodgkin Lymphoma	Lymph Nodes - NHL	2	2	0
	Hodgkin Lymphoma	Skin - Kaposi Sarcoma	1	1	0
	Non-Hodgkin Lymphoma	Thyroid - Papillary Carcinoma	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, noninvasive, noninfiltrating
- LOCALIZED : Within organ
 - a. Invasive cancer confined to the organ of origin
 - b. Intraluminal extension where specified
- REGIONAL : Beyond the organ of origin
 - a. By direct extension to adjacent organs/tissues
 - b. To regional lymph nodes
 - c. Both (a) and (b)
- DISTANT : Direct extension or metastasis
 - a. Direct continuity to organs other than above
 - b. Discontinuous metastasis
 - c. To distant lymph nodes

Systemic diseases, i.e., leukemia and multiple myeloma and cases of unstageable unknown primary were disregarded in graphically illustrating the stages for all analytic cases seen at KFSH&RC in 2010 (Figure 13). The 28 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, or those with not enough information from the referring hospitals to stage the disease. Please refer also to Table 5 for the distribution of the 2010 analytic cases by site and stage at diagnosis.

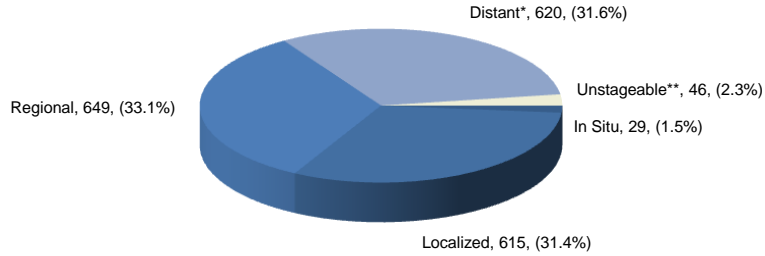
In addition to the SEER Summary Staging, the cases were also staged according to the American Joint Committee on Cancer (AJCC) TNM system. This scheme is based on the premise that cancers of similar histology or site of origin share similar patterns of growth and extension. This system is based on the 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 lymphoma are presented in Table 12 with their clinical group stages and yearly comparative figures from 2006 to 2010. The pathologic group stages of stomach and colon, rectum are also presented in the same table.

FIGURE 13

**DISTRIBUTION OF ANALYTIC CASES
BY STAGE (SEER) AT DIAGNOSIS
2010 (TOTAL CASES = 1,959)**



*Excludes Hematopoietic Primaries (221 cases)

**Excludes Unstageable Unknown Primaries (28 cases)

FIGURE 14

**DISTRIBUTION OF ANALYTIC CASES BY
FIRST COURSE OF TREATMENT MODALITY
2010 (TOTAL CASES = 2, 208)**

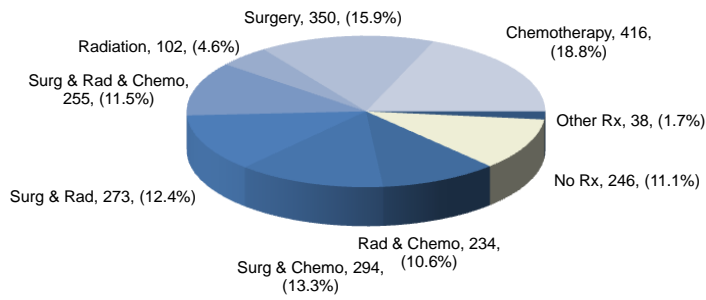


TABLE 12

**AJCC CLINICAL TNM GROUP STAGE OF ANALYTIC CASES OF MAJOR SITES* BY YEAR
2006 - 2010**

BREAST

Stage	2006		2007		2008		2009		2010		TOTAL	
	No	%	No	%	No	%	No	%	No	%	No	%
0	5	1.6	8	2.4	11	3.3	10	3.3	6	1.7	40	2.5
1	23	7.5	24	7.3	32	9.5	34	11.1	-	-	113	6.9
1A	-	-	-	-	-	-	-	-	37	10.7	37	2.3
1B	-	-	-	-	-	-	-	-	0	0.0	0	0.0
2A	56	18.2	57	17.2	61	18.1	42	13.7	61	17.6	277	17.0
2B	54	17.6	70	21.1	59	17.5	40	13.1	51	14.7	274	16.8
3A	27	8.8	15	4.5	17	5.0	17	5.6	16	4.6	92	5.7
3B	47	15.3	38	11.5	34	10.1	36	11.8	34	9.8	189	11.6
3C	7	2.3	3	0.9	1	0.3	5	1.6	5	1.4	21	1.3
4	50	16.3	63	19.0	70	20.8	70	22.9	69	19.9	322	19.8
Unstageable	38	12.4	53	16.0	52	15.4	52	17.0	67	19.4	262	16.1
Total	307	100.0	331	100.0	337	100.0	306	100.0	346	100.0	1,627	100.0

LUNG

Stage	2006		2007		2008		2009		2010		TOTAL	
	No	%	No	%	No	%	No	%	No	%	No	%
0	1	1.8	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4
1A	1	1.8	3	5.1	3	5.1	3	5.7	4	7.0	14	4.9
1B	2	3.5	1	1.7	3	5.1	6	11.3	0	0.0	12	4.2
2A	1	1.8	1	1.7	0	0.0	0	0.0	0	0.0	2	0.7
2B	5	8.8	0	0.0	1	1.7	1	1.9	3	5.3	10	3.5
3A	6	10.5	3	5.1	7	11.9	3	5.7	7	12.3	26	9.1
3B	6	10.5	10	16.9	4	6.8	9	17.0	2	3.5	31	10.9
4	29	50.9	29	49.2	35	59.3	28	52.8	41	71.9	162	56.8
Unstageable	6	10.5	12	20.3	6	10.2	3	5.7	0	0.0	27	9.5
Total	57	100.0	59	100.0	59	100.0	53	100.0	57	100.0	285	100.0

NASOPHARYNX

Stage	2006		2007		2008		2009		2010		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	0	0.0	0	0.0	1	1.8	2	2.8	5	1.5
2	-	-	-	-	-	-	-	-	6	8.5	6	1.7
2A	1	1.3	1	1.5	1	1.3	1	1.8	-	-	4	1.2
2B	5	6.6	2	3.0	2	2.6	2	3.6	-	-	11	3.2
3	10	13.2	17	25.8	18	23.7	21	38.2	19	26.8	85	24.7
4A	22	28.9	18	27.3	19	25.0	9	16.4	14	19.7	82	23.8
4B	17	22.4	14	21.2	12	15.8	13	23.6	21	29.6	77	22.4
4C	18	23.7	12	18.2	21	27.6	7	12.7	8	11.3	66	19.2
Unstageable	1	1.3	2	3.0	3	3.9	1	1.8	1	1.4	8	2.3
Total	76	100.0	66	100.0	76	100.0	55	100.0	71	100.0	344	100.0

* Excludes Lymphoma Cases

**AJCC CLINICAL TNM GROUP STAGE OF ANALYTIC CASES OF MAJOR SITES BY YEAR
2006 - 2010**

HODGKIN'S LYMPHOMA

Stage	2006		2007		2008		2009		2010		TOTAL	
	No	%	No	%	No	%	No	%	No	%	No	%
1A	4	5.0	4	4.1	2	2.3	2	2.2	4	4.8	16	3.6
1B	0	0.0	0	0.0	0	0.0	2	2.2	1	1.2	3	0.7
2A	27	33.8	37	37.8	30	34.5	22	24.2	22	26.5	138	31.4
2B	5	6.3	7	7.1	4	4.6	9	9.9	10	12.0	35	8.0
3A	13	16.3	9	9.2	14	16.1	19	20.9	8	9.6	63	14.4
3B	8	10.0	9	9.2	10	11.5	9	9.9	11	13.3	47	10.7
4A	9	11.3	12	12.2	10	11.5	10	11.0	2	2.4	43	9.8
4B	14	17.5	20	20.4	17	19.5	17	18.7	24	28.9	92	21.0
Unstageable	0	0.0	0	0.0	0	0.0	1	1.1	1	1.2	2	0.5
Total	80	100.0	98	100.0	87	100.0	91	100.0	83	100.0	439	100.0

**AJCC PATHOLOGIC TNM GROUP STAGE OF ANALYTIC CASES OF MAJOR SITES* BY YEAR
2006 - 2010**

STOMACH

Stage	2006		2007		2008		2009		2010		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	2	3.5	1	2.2	2	4.3	0	0.0	0	0.0	5	1.9
1B	6	10.5	2	4.4	2	4.3	3	5.2	4	7.4	17	6.5
2	2	3.5	0	0.0	2	4.3	5	8.6	-	-	9	3.5
2A	-	-	-	-	-	-	-	-	2	3.7	2	0.8
2B	-	-	-	-	-	-	-	-	1	1.9	1	0.4
3A	4	7.0	3	6.7	5	10.9	1	1.7	3	5.6	16	6.2
3B	3	5.3	0	0.0	1	2.2	4	6.9	4	7.4	12	4.6
3C	-	-	-	-	-	-	-	-	3	5.6	3	1.2
4	5	8.8	7	15.6	9	19.6	8	13.8	4	7.4	33	12.7
Unstageable	35	61.4	32	71.1	25	54.3	37	63.8	33	61.1	162	62.3
Total	57	100.0	45	100.0	46	100.0	58	100.0	54	100.0	260	100.0

COLON, RECTUM

Stage	2006		2007		2008		2009		2010		TOTAL	
	No	%	No	%	No	%	No	%	No	%	No	%
0	1	0.6	0	0.0	2	1.3	0	0.0	0	0.0	3	0.4
1	7	4.0	7	4.2	5	3.3	10	6.1	6	4.1	35	4.4
2A	25	14.3	18	10.9	21	13.8	18	11.0	12	8.3	94	11.8
2B	6	3.4	2	1.2	0	0.0	1	0.6	1	0.7	10	1.3
2C	-	-	-	-	-	-	-	-	2	1.4	2	0.3
3A	4	2.3	5	3.0	1	0.7	2	1.2	2	1.4	14	1.8
3B	16	9.1	18	10.9	16	10.5	14	8.6	7	4.8	71	8.9
3C	14	8.0	8	4.8	8	5.3	4	2.5	4	2.8	38	4.8
4	20	11.4	23	13.9	17	11.2	17	10.4	-	-	77	9.6
4A	-	-	-	-	-	-	-	-	10	6.9	10	1.3
4B	-	-	-	-	-	-	-	-	11	7.6	11	1.4
Unstageable	82	46.9	84	50.9	82	53.9	97	59.5	90	62.1	435	54.4
Total	175	100.0	165	100.0	152	100.0	163	100.0	145	100.0	800	100.0

* Excludes Lymphoma Cases

COLORECTAL STUDY

APPENDIX

REQUESTS FOR TUMOR REGISTRY DATA 2010

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

February

Male Breast Cases (1994-2004) Laterality, Site, AJCC stage, Treatment, Vital Status	Dr. A. Al-Sayed
Patients who have final diagnosis of Medullary Thyroid Cancer (Live Patients MR Numbers as far back as possible)	Dr. A. Al-Mahfouz

March

MOH - 2009 Cancer Cases (Total VS Peads)	MOH
Total number of Recurrence Cases, Top 10 Site By Year (2003-2009)	Dr. A. Ezzat
Pediatric Hematological Malignancies Cases by Gender (1990-2009)	Dr. A. Belgaumi
Pediatric Cancer Cases by Year (2000-2008)	Dr. A. Belgaumi

April

Pheochromocytoma and Carcinoid Tumors MRN (1975-2008)	Dr. H. Raef
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May

Pediatric Cancer Cases 2008 (MR number, Name, Sex, Diagnosis Date, Site and Histology)	Dr. A. Belgaumi
Bone Lymphoma Cases (Age 14 Years and above) (MR Numbers) (1975-present)	Dr. I. Maghfoor
Colorectal Cancer Cases with CHEMO except Adjuvant (2006-2009)	Dr. S. Bazarbashi

June

Adult DLBCL (2007) Cases (MR Number, Site)	Dr. H. Soudy
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August

Diffuse Large Cell NHL and all other NHL Cases (Age 14 Years or Above) (Rectal, Anal, Intestinal, Cecum) (MR Number, Stage and Diagnosis type)(1985-2008)	Dr. S. Akhtar
Hodgkin's Lymphoma- Nodular Lymphocyte Predominance (9659/3)In Patients 14 years and above (Stage and MR Numbers)(1985 till present)	Dr. S. Akhtar
Primary Malignant Cases of the Spine (1975-2008) and Mets Bone Cases (Number of cases by histology and other information)	Dr. D. Ajarim
Pediatric AML, CML, JMML, MDS and CMD Cases (MR Number, Name and Date of Diagnosis) (2000-2009)	Dr. A. Belgaumi

September

AJCC Clinical TNM Stage of GU Sites by Year 2004-2008	Dr. M. Abomelha
AJCC Clinical TNM Stage of GU Sites by Year 1999-2003 and SEER Stage 1999-2008	Dr. M. Abomelha
Pediatric Cases by Site (14-18 Years old)(2004-2008)	Dr. A. Belgaumi

October

Merkel Cell Ca. Skin, Small Cell Ca, Neuroendocrine Ca and Trabecular Ca Cases (Stage, Sex, Age and Any Treatment)(1980-present)	Dr. R. Mahmood
GU Cancer Sites by Histology (1999-2008)	Dr. M. Abomelha
Adult Ovarian Dysgerminoma Cases by Treatment & Site (1975-2008)	Dr. H. A Husaini
Lymphoma Cases Update by Histology All cases VS Adults (2004 – 2008)	Dr. S. Akhtar

V. GLOSSARY OF TERMS

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

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

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

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

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

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

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

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

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

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

Local: Tumor is confined to organ of origin.

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

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

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

T+N+M = Stage

T: Extent of primary tumor

N: Extent of regional lymph node involvement

M: Distant Metastasis

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

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

the same 2 SPONSORS