



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

**Oncology Centre
Research Unit**

TUMOR REGISTRY

Annual Report

2015





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**Oncology Centre
Research Unit**

TUMOR REGISTRY ANNUAL REPORT 2015

Annual Report Prepared by the Staff of the Tumor Registry
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INTRODUCTION

We are pleased to present 2015 Annual Tumor Registry Report for the King Faisal Specialist Hospital & Research Centre's Oncology Centre in Riyadh. The Cancer Registry maintains a complete database of information on all cancer cases diagnosed and/or treated at KFSH&RC. This database is an important patient care and quality assessment tool used by medical staff and administration for special studies, medical planning, resource allocation and utilization, education and research for comparing quality of care, monitoring patient care and continuous quality improvement. This report highlights the statistical overview of newly diagnosed cancer cases by site, gender, and AJCC Staging for both analytic and non-analytic cases. During 2015, the Tumor Registry abstracted 2,894 new cancer cases. 2,368 cases were analytic and 526 were non-analytic; the highest incidence of cancer among males by site was Leukemia, NHL and Colon carcinomas and among females was carcinomas of Breast, Thyroid, and Leukemia. The Tumor Registry database includes over 84,030 cases and reports to the Saudi Cancer Registry (SCR).

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

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

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

This report can be accessed online via Oncology Centre's website at <http://www.kfshrc.edu.sa>
Your comments and suggestions are welcome to improve our future reports and can be sent to dfatani@kfshrc.edu.sa or f1515605@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 84,030 malignant cases seen at KFSH&RC from June 1975 through December 31, 2015.

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

The data maintained in the Tumor Registry provides the statistics for the publication of the KFSH&RC Annual Report which summarizes the hospital's cancer experience. The data also supports a wide variety of reports at the request of physicians, researchers and ancillary personnel. These reports support patient management and outcome, basic and clinical research investigations, educational publications and presentations, and resource utilization. In 2015, the Tumor Registry supported myriad of data requests. It also identified and reported to the Saudi Cancer Registry 2,894 new cases seen in 2015.

II. ACKNOWLEDGEMENTS

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

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

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

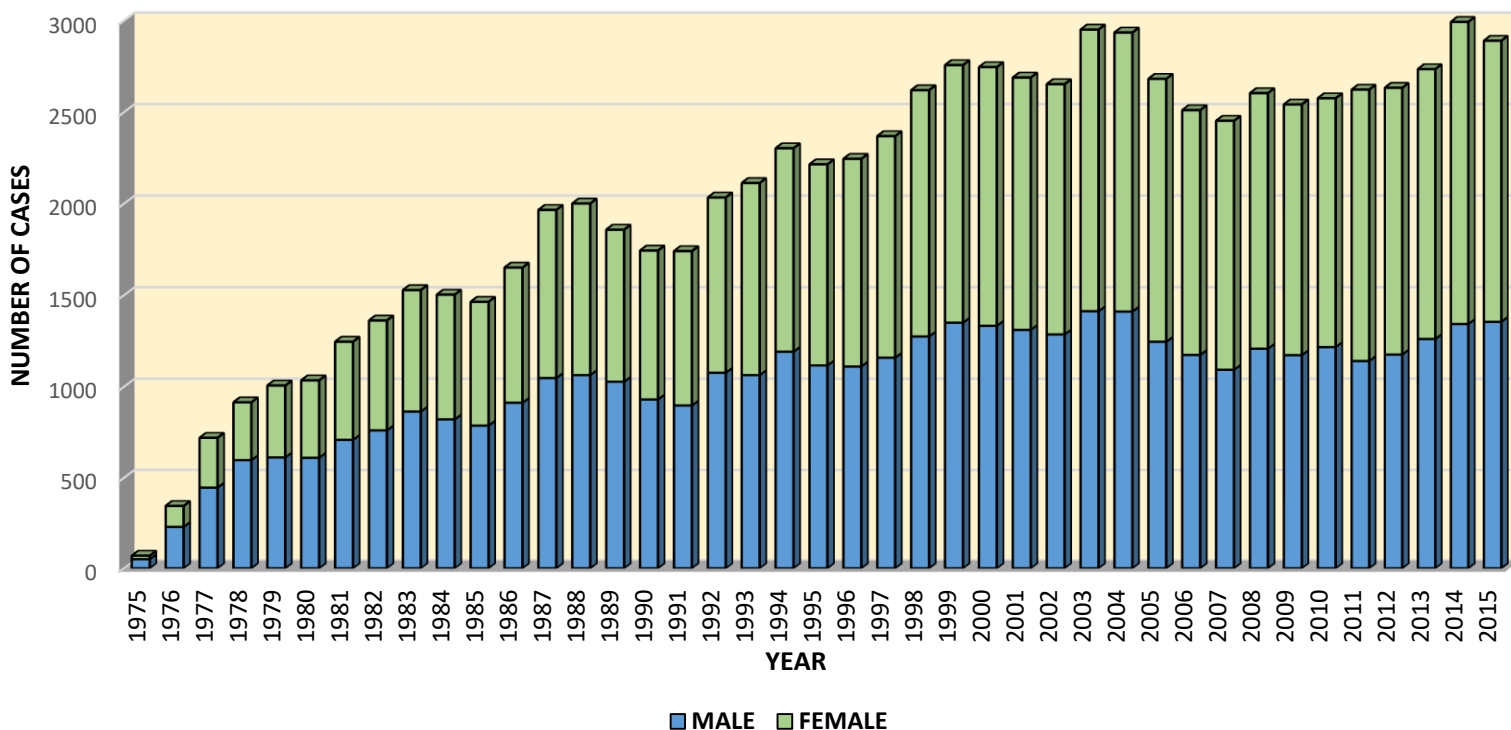
The following departments have assisted throughout the year and without their support this report would not have been possible. The Tumor Registry staff takes pride in acknowledging these departments:

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

III. KFSH&RC CANCER PATIENT POPULATION

A total of 2894 cases were accessioned in 2015, with 1,358 males and 1,536 females or a male/female ratio of 0.8:1.

FIGURE 1
DISTRIBUTION OF CASES ACCESSIONED BY YEAR
1975-2015 (TOTAL CASES = 84,030)



From the opening of the hospital (mid 1975) until December 2015, 84,030 cancer cases were registered (41,863 males and 42,166 females) with a male/female ratio of 0.9:1. There were 10,650 (12.7%) pediatric cases (0 to 14 years of age) and 73,380 (87.3%) adults (15 years old and above). In 2015, the proportions were 9.1% (263) for pediatrics and 90.9% (2,631) for adults.

TABLE 1
CASES SEEN AT KFSH&RC (MALE/FEMALE & PEDIATRICS/ADULTS) BY 5-YEAR PERIOD
1975 - 2015

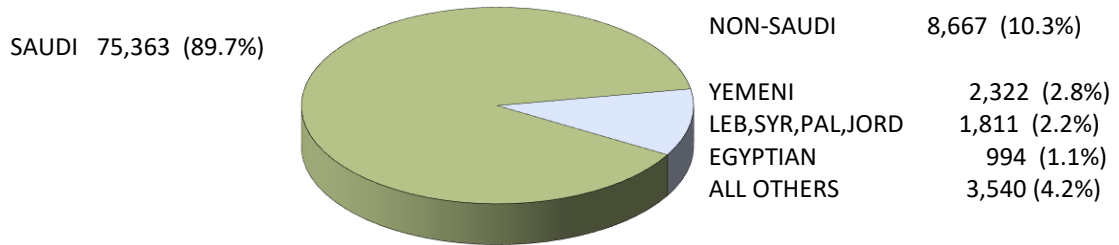
	1975-1976*	1977-1981	1982-1986	1987-1991	1992-1996	1997-2001	2002 - 2006	2007-2011	2012-2015	TOTAL
MALE	280	2,978	4,150	4,969	5,561	6,428	6,530	5,832	5,135	41,863
FEMALE	135	1,946	3,358	4,341	5,349	6,753	7,202	6,966	6,117	42,167
TOTAL	415	4,924	7,508	9,310	10,910	13,181	13,732	12,798	11,252	84,030
M/F 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	0.8:1	1.0:1
PEDIATRICS*										
*	55	593	985	1164	1397	1894	1893	1568	1101	10,650
(%)	13.3%	12.0%	13.1%	12.5%	12.8%	14.4%	13.8%	12.3%	9.8%	12.7%
ADULTS	360	4,331	6,523	8,146	9,513	11,287	11,839	11,230	10,151	73,380
(%)	86.7%	88.0%	86.9%	87.5%	87.2%	85.6%	86.2%	87.7%	90.2%	87.3%
TOTAL	415	4,924	7,508	9,310	10,910	13,181	13,732	12,798	11,252	84,030

* First two years of KFSH&RC partial operation.

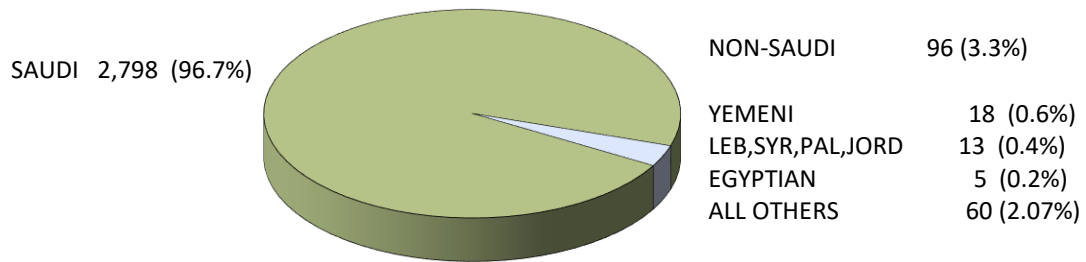
** Pediatrics = 0 to 14 years of age; Adults = 15 years and above.

FIGURE 2

DISTRIBUTION OF CASES BY NATIONALITY
1975 - 2015 (TOTAL CASES = 84,030)



2015 (TOTAL CASES = 2,894)

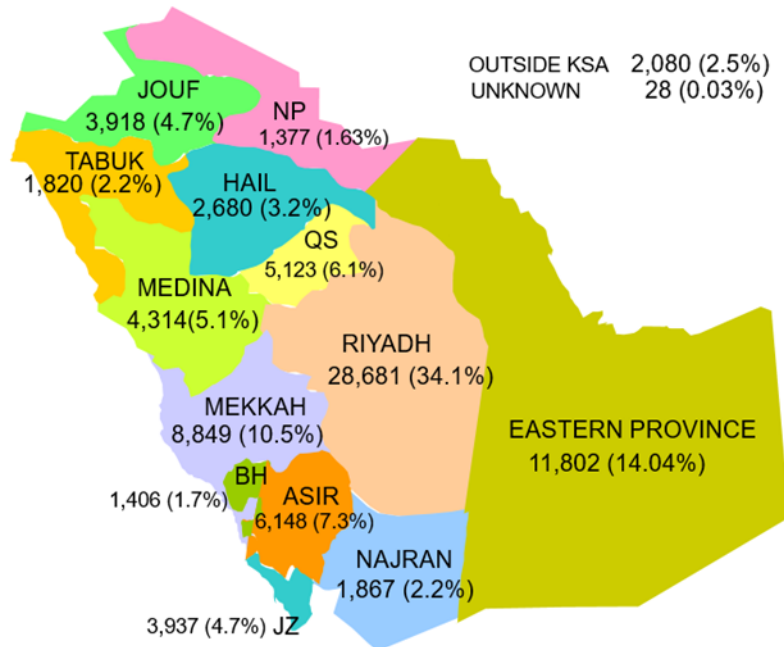


Saudi nationals totaled 2,798 (96.7%) in 2015 and the non-Saudi, 96 (3.3%). During the period 1975 to 2015, the former accounted for 89.7% (75,363) while the latter, 10.3% (8,667).

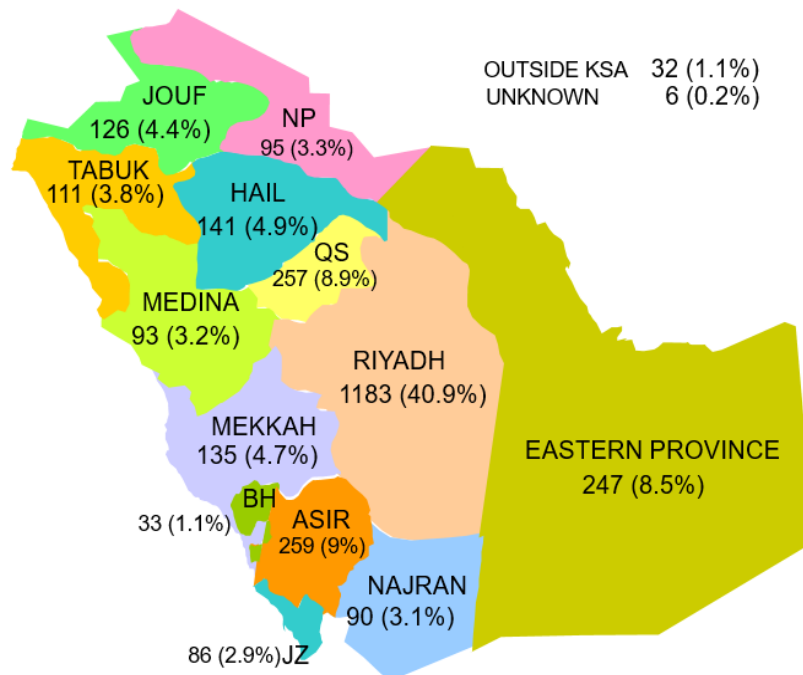
Geographically, the referral pattern in 2015 was mainly from the Riyadh region with 40.9% of all cases, followed by the Asir region with 9%, then Eastern Province region with 8.5% respectively. During the 40 years in review, 34.1% were referred from Riyadh, 14.04% from the Eastern Province and 10.5% 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)
1975-2015 (TOTAL CASES = 84,030)



2015 (TOTAL CASES = 2,894)



TRENDS IN RELATIVE FREQUENCY OF CANCER AT KFSH&RC

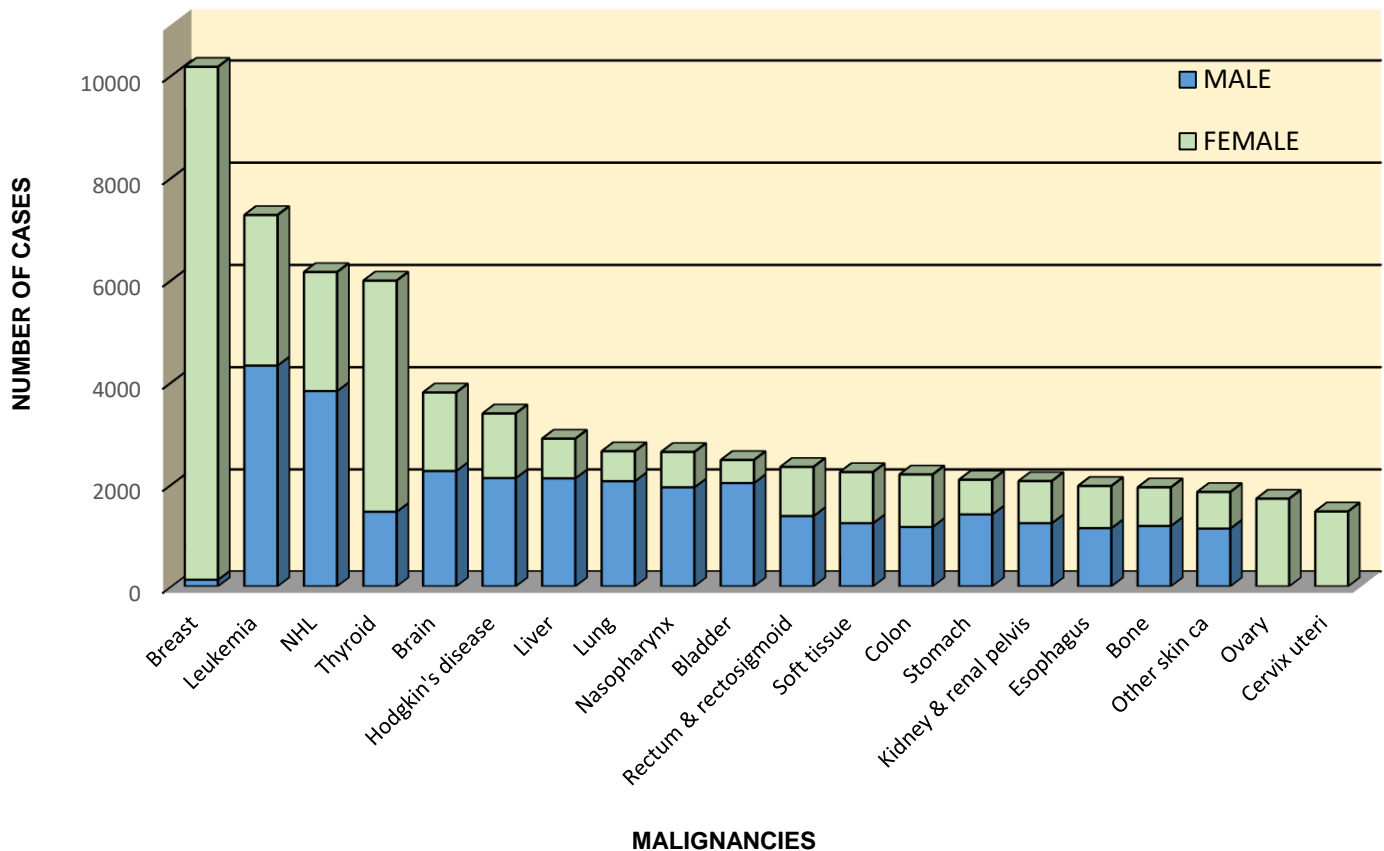
The crude relative frequency is the proportion of a given cancer in relation to all cases in a clinical or pathological series. Although such frequencies are subject to many biases, historically many elevated frequencies have been confirmed when complete cancer registration was introduced.

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 2015 with 13.8%, followed by Hemeretic cancers (9.9%), Non-Hodgkin's lymphoma (8.4%), Thyroid (8.1%) and Brain (5.2%).

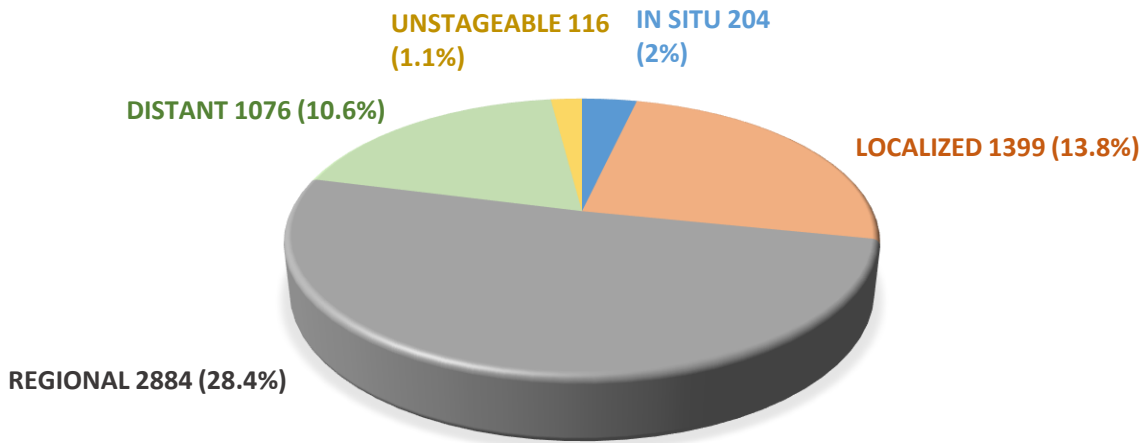
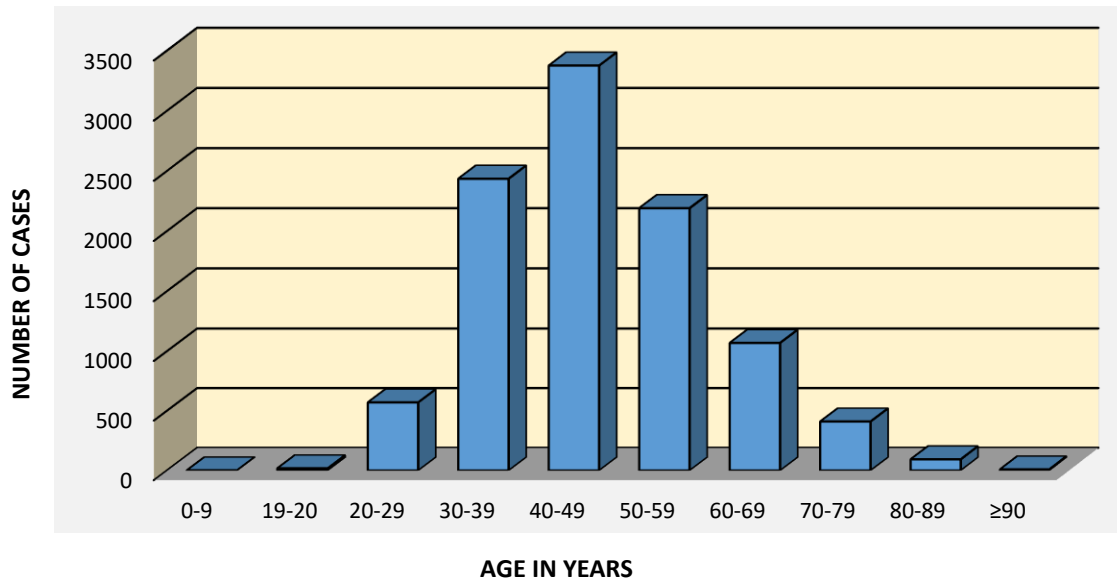
FIGURE 4

**DISTRIBUTION OF 20 MOST COMMON MALIGNANCIES
1975-2015 (TOTAL CASES =84,030)**

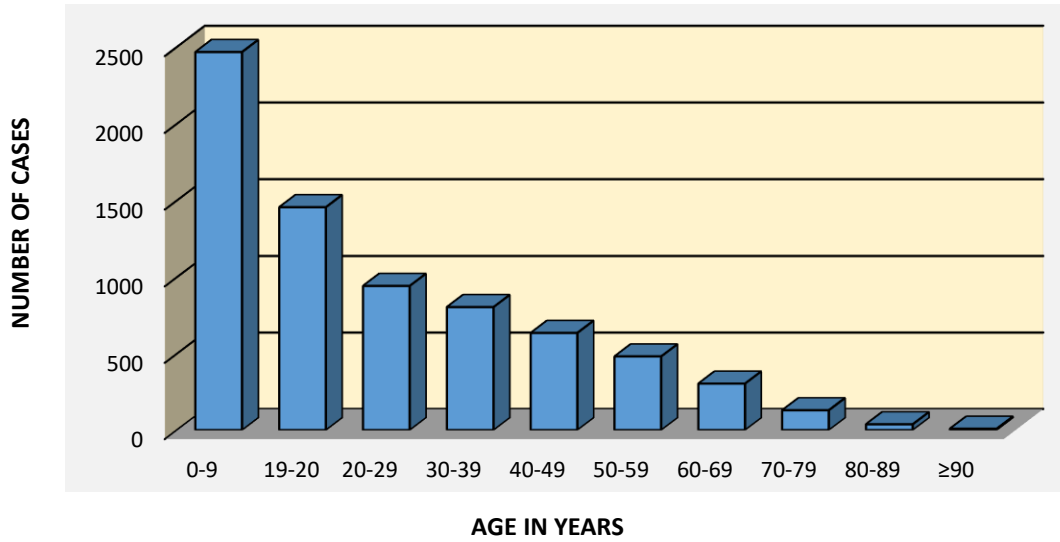


**FIGURE 5
DISTRIBUTION OF 5 MOST COMMON MALIGNANCIES
BY AGE AT DIAGNOSIS AND SEER SUMMARY STAGE
(1975 – 2015)**

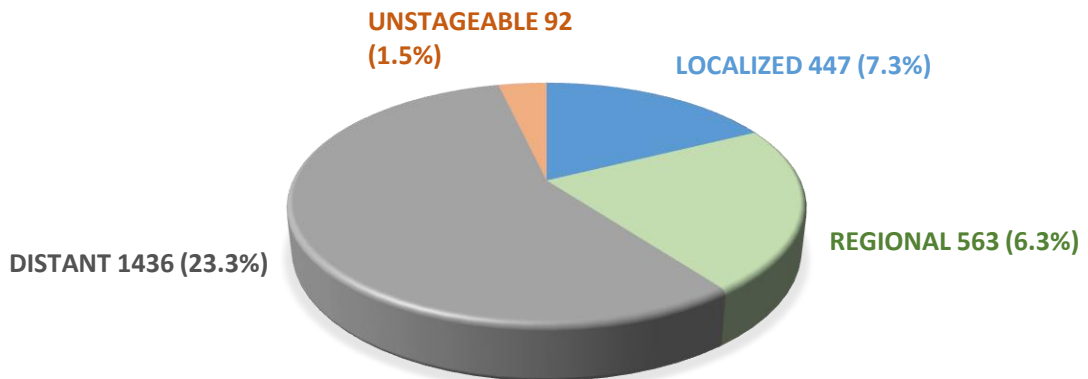
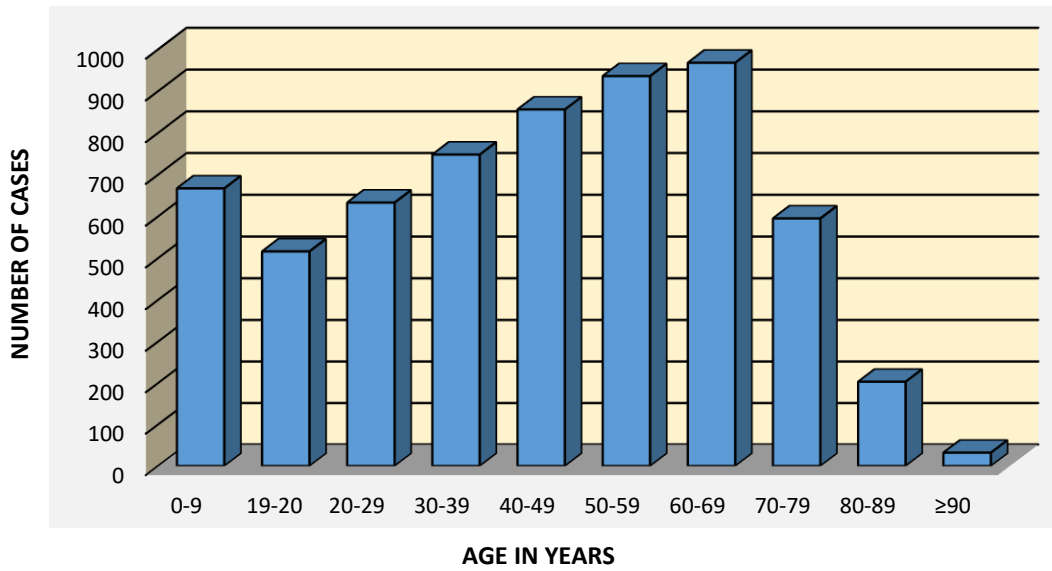
BREAST CANCER CASES



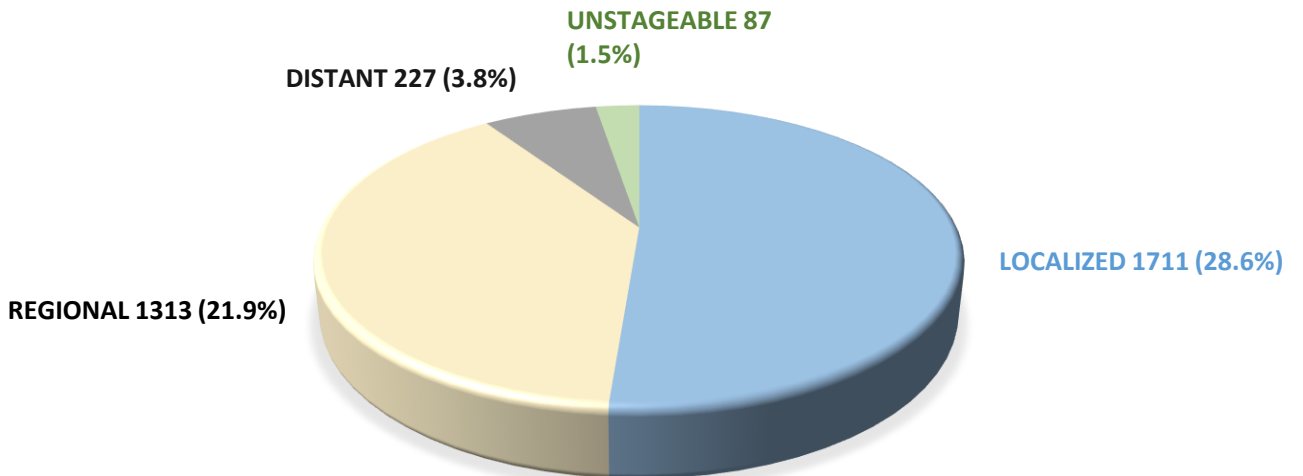
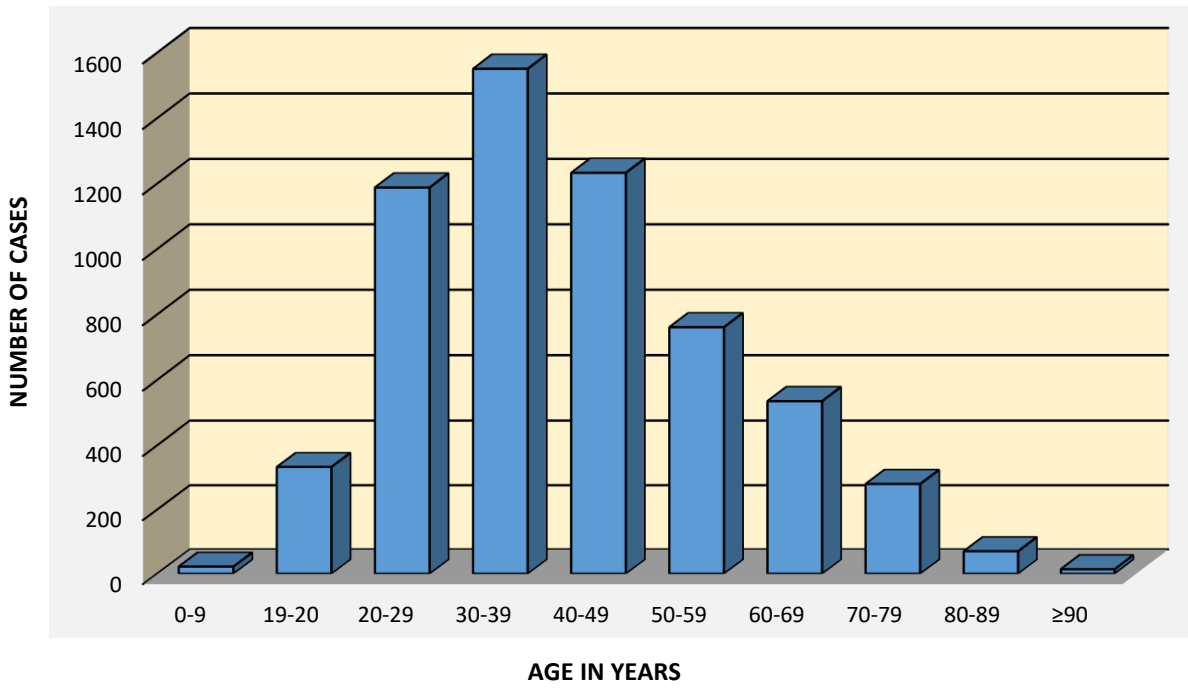
LEUKEMIA CASES



NON-HODGKIN'S LYMPHOMA CASES



THYROID CANCER CASES



BRAIN CANCER CASES

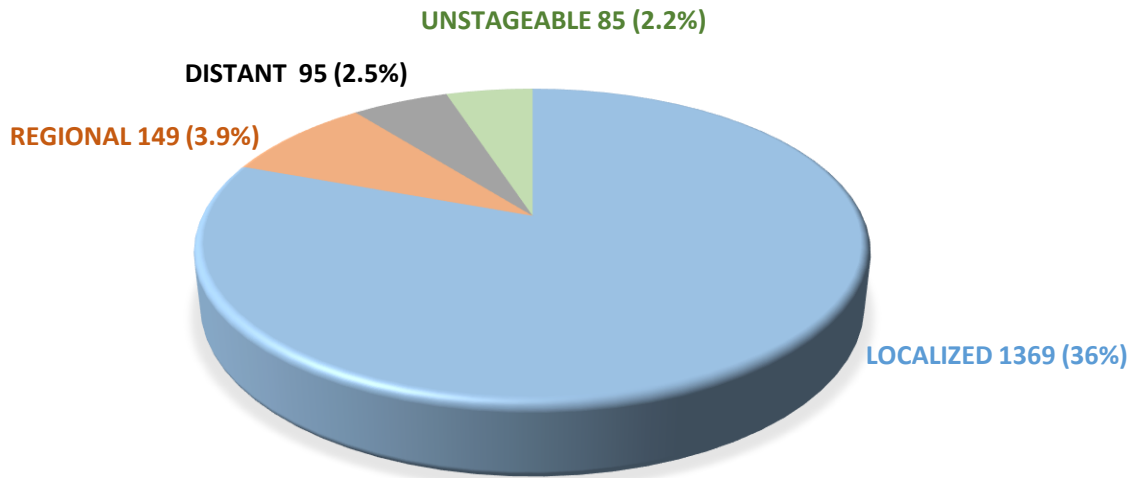
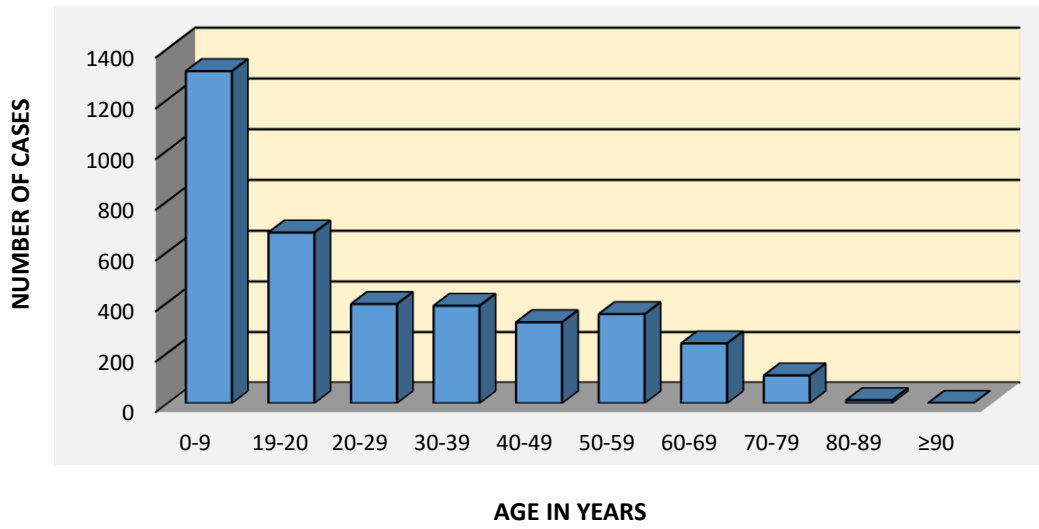


TABLE 2

**TEN MOST COMMON MALIGNANCIES BY AGE GROUP AT DIAGNOSIS
1975-2015**

SITE	AGE GROUP	No	%
BREAST	00 - 14	2	0.0
	15 - 39	3,020	29.7
	40 - 60	5,566	54.7
	>60	1,580	15.5

SITE	AGE GROUP	No	%
HODGKIN'S DISEASE	00 - 14	956	28.2
	15 - 39	1,842	54.4
	40 - 60	419	12.4
	>60	172	5.1

SITE	AGE GROUP	No	%
LEUKEMIA	00 - 14	3,164	43.5
	15 - 39	2,507	34.5
	40 - 60	1,118	15.4
	>60	481	6.6

SITE	AGE GROUP	No	%
LUNG	00 - 14	13	0.4
	15 - 39	186	6.3
	40 - 60	1,131	38.0
	>60	1,646	55.3

SITE	AGE GROUP	No	%
NON-HODGKIN'S LYMPHOMA	00 - 14	896	14.6
	15 - 39	1,668	27.1
	40 - 60	1,792	29.1
	>60	1,798	29.2

SITE	AGE GROUP	No	%
LIVER	00 - 14	111	3.8
	15 - 39	158	5.5
	40 - 60	1,057	36.5
	>60	1,572	54.2

SITE	AGE GROUP	No	%
THYROID	00 - 14	117	2.0
	15 - 39	2,977	49.7
	40 - 60	1,994	33.3
	>60	899	15.0

SITE	AGE GROUP	No	%
NASOPHARYNX	00 - 14	104	3.9
	15 - 39	784	29.7
	40 - 60	1,208	45.8
	>60	540	20.5

SITE	AGE GROUP	No	%
BRAIN,CNS	00 - 14	1,733	45.6
	15 - 39	1,032	27.2
	40 - 60	674	17.7
	>60	360	9.5

SITE	AGE GROUP	No	%
BLADDER	00 - 14	36	1.5
	15 - 39	248	10.0
	40 - 60	847	34.2
	>60	1,347	54.4

Cancer among pediatrics (under the age of 15) accounted for 12.6% of all cases from 1975 to 2015. The five most common pediatric malignancies were Leukemia (30%), brain (16.4%), Hodgkin's Disease (9.1%), Non-Hodgkin's Lymphoma (8.5%), Bone (6.9%).

FIGURE 6

**DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES
1975-2015 (TOTAL CASES = 10,650)**

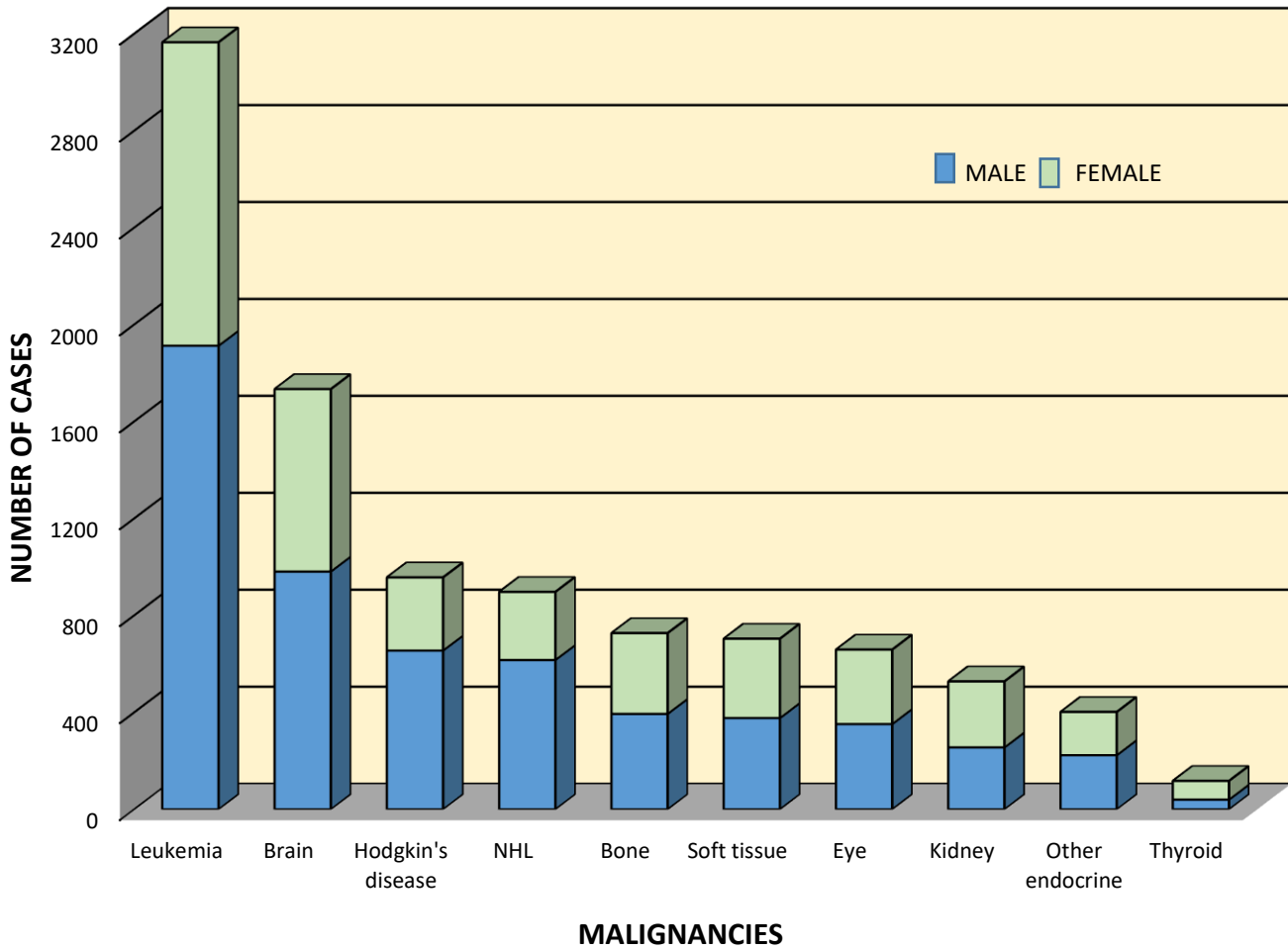
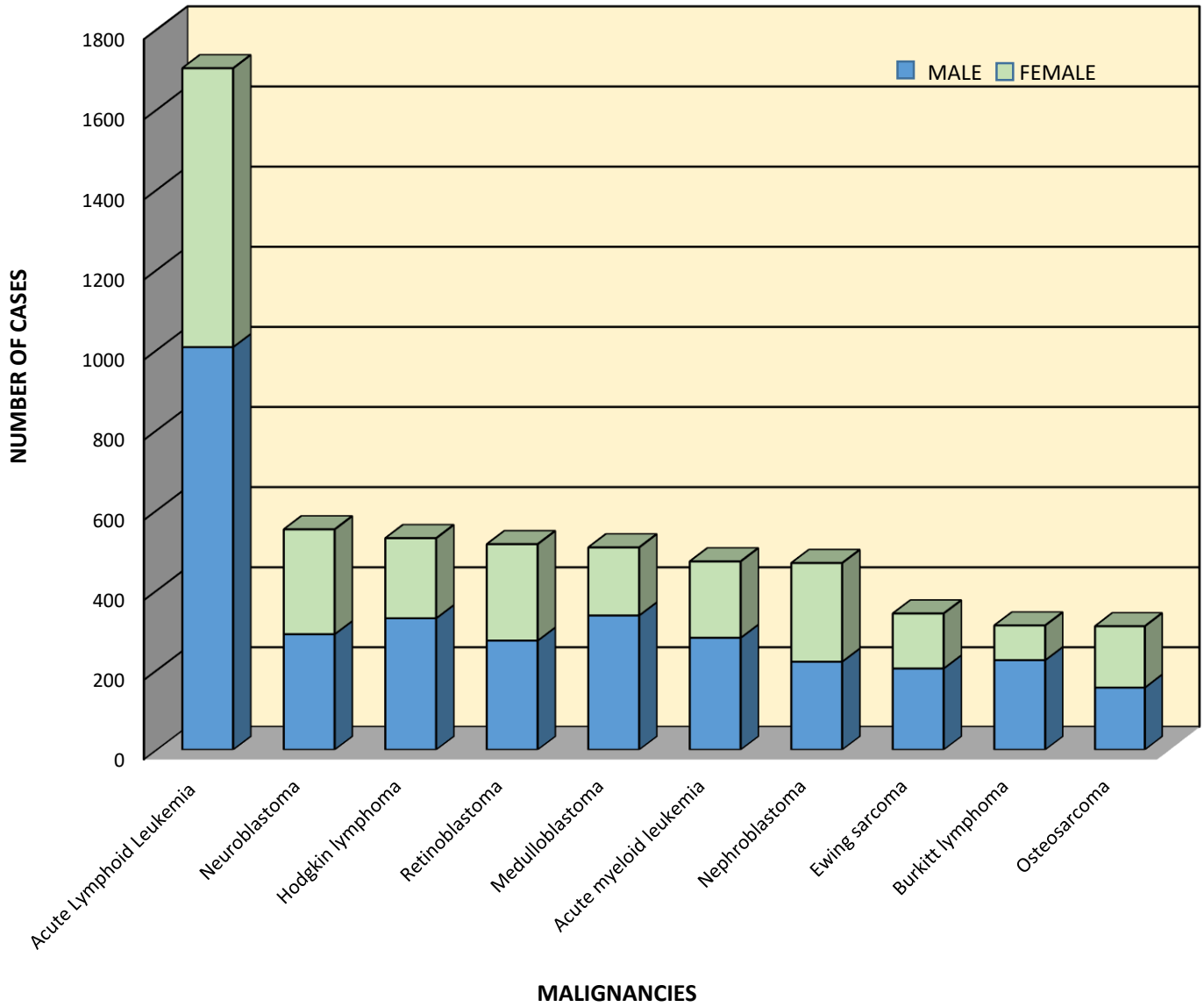


FIGURE 7

**DISTRIBUTION OF 10 MOST COMMON PEDIATRIC MALIGNANCIES BY HISTOLOGY
1975-2015 (TOTAL CASES = 10,650)**



**TABLE 3
CASES SEEN AT KFSH&RC BY SITE AND YEAR
1975-2015**

SITE GROUP	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Oral Cavity	1	8	21	58	43	52	42	57	74	50	79	52	74	94	82	74	85	83	69	74
Nasopharynx	3	17	50	55	63	54	64	69	91	72	69	73	102	100	84	91	78	82	88	81
Esophagus	1	15	51	62	67	67	57	62	77	78	56	69	76	66	68	72	66	69	47	50
Stomach	2	15	32	35	50	37	49	51	64	60	49	64	61	47	52	53	36	48	42	68
Small intestine	0	0	4	0	2	2	2	1	0	5	3	5	1	1	6	4	1	5	4	4
Colon	1	10	10	12	12	16	20	19	16	24	13	24	35	35	30	25	39	33	25	33
Rectum & rectosigmoid	0	3	11	8	16	21	24	16	20	26	26	20	31	43	26	31	35	48	46	52
Anus,anal canal,anorectum	0	0	1	4	3	1	7	4	7	9	6	7	4	4	5	8	6	7	12	10
Liver	7	15	33	44	49	33	41	54	53	64	57	84	78	71	68	55	66	76	82	103
Gallbladder	0	2	3	4	2	2	4	6	4	4	6	7	14	9	5	9	9	13	19	21
Bile ducts	1	1	0	2	2	4	1	2	3	4	3	6	6	6	2	4	2	7	2	7
Pancreas	1	5	7	11	15	14	20	22	14	20	16	28	20	16	27	12	13	27	21	22
Peritoneum,Retroperitoneum	0	0	2	1	2	1	0	0	2	1	0	1	0	1	1	1	0	2	1	0
Other digestive	0	0	0	2	2	5	4	1	1	0	3	1	4	3	6	2	1	2	4	0
Nasal cavity,sinus,ear	1	3	9	7	5	7	9	10	10	5	7	5	16	14	7	13	12	8	9	11
Larynx	1	5	12	12	12	14	20	13	23	22	25	16	23	33	21	26	34	27	31	35
Lung/Bronchus	3	11	23	34	45	40	56	63	74	74	87	84	83	106	90	74	85	79	85	89
Pleura	0	0	1	0	0	0	0	0	1	1	0	1	0	1	2	2	0	3	4	3
Other respir & thoracic	0	0	0	1	1	1	3	1	1	0	4	0	6	1	1	2	7	3	7	8
Leukemia	7	28	40	87	90	83	121	125	117	127	121	159	185	157	155	132	158	145	192	169
Myeloma	1	5	6	11	9	11	8	13	13	12	19	13	29	22	33	15	28	26	25	40
Other hematopoietic	0	1	0	1	2	2	2	2	3	1	2	9	5	3	2	2	0	1	0	2
Bone	1	6	13	25	20	20	22	42	31	40	19	31	35	44	41	37	40	52	54	56
Soft tissue	1	16	29	29	31	23	29	40	32	35	38	47	48	49	59	59	61	47	50	72
Melanoma of skin	0	4	4	8	8	6	7	4	11	12	7	8	11	12	6	5	9	15	9	7
Kaposi sarcoma	0	1	1	0	6	4	2	2	5	4	5	9	5	9	5	4	5	14	2	3
Other skin ca	2	13	26	32	41	35	48	54	51	52	62	60	43	43	53	41	47	47	51	61
Breast	3	24	53	46	57	65	101	111	111	153	131	127	174	194	137	168	169	188	251	241
Cervix uteri	0	10	18	18	25	18	26	25	33	33	41	55	51	50	33	44	35	52	50	52
Corpus uteri	1	1	2	5	5	4	8	8	11	14	10	10	16	21	21	18	12	27	20	26
Uterus nos	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Ovary	2	6	10	10	17	21	20	35	31	26	24	34	41	47	52	46	36	44	55	50
Vagina	0	0	5	2	0	1	2	0	2	2	3	1	2	1	2	3	3	2	0	5
Vulva	0	0	0	1	1	0	2	1	3	2	5	5	1	2	1	4	5	1	4	5
Other female genital	0	1	5	4	6	7	5	7	19	5	4	13	19	14	10	9	13	12	12	19
Prostate	0	7	5	4	5	10	11	18	28	19	19	17	22	27	27	24	16	41	27	45
Testis	0	3	9	8	10	11	15	11	7	12	14	14	17	17	9	14	14	21	25	21
Penis	0	1	1	0	1	0	2	2	3	4	0	0	0	2	2	5	2	0	1	3
Other male genital	0	0	0	0	2	0	1	0	1	0	3	0	3	0	2	0	0	0	1	1
Bladder	4	7	12	24	29	39	37	23	41	35	46	51	79	74	73	60	44	65	88	72
Kidney and renal pelvis	0	9	18	18	18	15	18	30	23	20	24	41	31	58	31	35	33	52	51	65
Ureter	0	0	0	0	0	0	0	0	0	1	1	0	3	1	1	0	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
Eye	0	6	11	19	12	24	29	34	25	17	30	24	35	44	26	30	9	15	39	27
Brain, CNS	3	24	27	40	26	31	31	77	53	59	49	71	88	92	98	81	84	112	88	116
Thyroid	2	8	17	28	33	44	57	51	66	71	63	82	119	112	110	94	110	141	135	158
Other endocrine	1	1	3	3	2	9	10	8	14	12	17	10	11	13	2	7	10	14	15	15
Hodgkin's disease	13	19	40	41	36	42	47	42	54	50	49	45	65	57	76	56	57	75	73	78
Non-hodgkin's lymphoma	4	23	73	75	103	112	128	116	172	139	124	142	157	153	165	154	123	150	154	160
Unknown or ill-defined	3	11	23	24	20	27	34	30	33	26	25	25	37	32	42	39	40	51	42	62
TOTAL	70	345	721	915	1007	1035	1246	1362	1528	1503	1464	1651	1966	2001	1858	1744	1741	2034	2113	2303

TABLE 3 (cont'd)
CASES SEEN AT KFSH&RC BY SITE AND YEAR
1975-2015

SITE GROUP	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
Oral Cavity	94	80	87	69	90	100	69	68	99	77	101	82	103	89	91	61	86	74	80	86	87	2945
Nasopharynx	89	113	114	126	120	100	147	92	119	117	102	92	89	93	68	85	90	71	81	71	70	3435
Esophagus	50	52	51	62	34	52	37	42	43	37	41	36	30	31	31	28	31	30	21	30	25	1970
Stomach	61	57	45	42	54	53	40	50	60	68	57	59	48	49	64	59	56	60	62	76	56	2091
Small intestine	6	6	4	7	7	9	5	3	5	9	6	4	5	5	7	4	6	8	11	20	6	193
Colon	37	34	34	57	48	73	72	92	104	76	80	95	88	83	96	84	103	101	118	131	155	2193
Rectum & rectosigmoid	48	54	62	59	94	75	77	106	99	113	112	93	92	82	92	83	93	99	92	100	115	2343
Anus,anal canal,anorectum	5	6	6	7	4	7	7	8	14	5	5	3	5	5	1	4	2	3	5	7	4	218
Liver	102	103	96	84	89	85	91	73	70	60	37	68	50	72	89	97	112	103	102	88	93	2897
Gallbladder	9	11	11	12	15	13	11	12	15	14	8	8	11	10	6	9	11	5	11	22	17	384
Bile ducts	3	9	7	10	9	8	9	10	7	4	8	6	11	7	12	13	8	10	9	12	17	254
Pancreas	25	21	24	34	18	38	26	31	30	34	27	41	26	32	40	36	31	46	60	61	50	1062
Peritoneum,Retroperitoneum	1	0	0	1	2	2	1	1	1	4	2	2	2	3	1	3	2	5	8	5	5	67
Other digestive	3	0	0	0	0	0	2	0	2	4	2	1	1	4	1	2	0	0	0	0	3	66
Nasal cavity,sinus,ear	10	9	4	8	14	10	9	11	10	9	13	11	12	8	8	5	4	7	4	4	11	349
Larynx	37	36	31	30	35	32	33	26	47	41	36	26	32	31	26	10	17	19	21	18	24	1013
Lung/Bronchus	87	84	88	106	108	91	80	91	86	94	84	64	60	63	61	63	73	72	81	91	64	2976
Pleura	1	2	1	1	2	3	8	1	4	3	3	1	3	2	4	1	0	3	3	0	4	69
Other respir & thoracic	4	4	8	8	8	2	1	5	2	4	3	3	1	4	7	7	6	5	5	2	3	139
Leukemia	209	166	228	235	258	259	239	259	258	227	205	225	205	227	219	233	205	288	259	242	226	7270
Myeloma	30	21	14	23	16	28	20	19	20	23	23	22	31	18	39	36	28	15	30	26	25	846
Other hematopoietic	2	2	1	3	4	9	11	10	9	2	8	11	7	22	14	27	23	3	1	7	21	237
Bone	56	56	63	71	63	75	83	74	62	68	69	66	52	74	59	55	62	54	49	64	39	1943
Soft tissue	81	54	67	74	87	69	73	59	78	79	70	54	83	56	54	72	67	73	72	61	64	2242
Melanoma of skin	7	9	5	5	6	5	5	6	5	8	5	8	5	8	6	7	5	7	4	4	8	281
Kaposi sarcoma	6	11	6	8	8	4	7	9	9	6	8	9	7	7	7	10	5	3	5	12	10	243
Other skin ca	44	57	52	35	58	52	62	38	52	49	56	66	30	41	41	39	42	36	49	44	47	1852
Breast	232	281	292	336	341	383	362	377	409	431	378	326	349	357	338	375	411	373	431	484	398	10168
Cervix uteri	49	48	46	62	57	42	68	53	55	47	46	38	39	43	46	32	34	42	35	43	33	1627
Corpus uteri	22	19	26	29	33	33	35	46	59	62	48	59	62	62	68	51	71	64	59	86	80	1314
Uterus nos	0	0	0	0	0	0	0	1	0	0	0	0	6	2	6	5	2	8	4	13	11	60
Ovary	55	56	60	63	53	53	51	44	55	51	48	55	44	54	49	69	51	47	49	55	51	1720
Vagina	5	2	2	1	2	1	0	1	1	2	1	0	0	0	2	0	2	1	0	1	5	65
Vulva	5	2	1	0	1	2	3	2	2	3	2	0	2	4	3	2	5	4	2	2	1	91
Other female genital	7	11	8	6	6	5	5	10	13	12	12	15	8	6	10	3	4	2	4	4	5	340
Prostate	37	49	43	44	63	47	49	49	59	59	75	46	39	60	45	47	37	37	45	67	64	1433
Testis	14	14	17	16	19	20	18	28	19	20	17	11	15	28	26	27	23	14	27	33	37	695
Penis	0	1	3	0	0	2	0	1	1	0	2	0	0	0	1	0	0	2	0	0	0	42
Other male genital	0	0	0	1	0	0	1	2	1	2	1	2	0	0	0	0	1	1	0	0	2	28
Bladder	60	56	65	85	91	80	81	71	93	102	88	66	69	65	66	82	66	61	78	75	75	2478
Kidney and renal pelvis	48	47	49	58	70	57	72	64	55	70	61	67	67	85	86	85	86	82	78	96	92	2065
Ureter	1	1	0	3	1	2	3	2	2	1	2	0	1	0	2	2	2	0	0	0	1	37
Other urinary	0	0	0	0	2	1	0	0	0	1	2	0	0	0	0	0	0	3	1	1	2	18
Eye	15	22	30	17	24	26	17	16	20	18	15	20	11	19	17	24	32	27	22	23	20	891
Brain, CNS	128	129	133	162	145	149	151	143	161	167	128	126	91	94	85	101	107	101	88	93	117	3849
Thyroid	134	162	161	192	210	186	189	169	215	214	216	205	229	254	225	212	245	247	245	284	292	5987
Other endocrine	14	14	20	12	15	23	14	18	38	27	26	23	17	30	22	28	17	24	14	19	22	614
Hodgkin's disease	88	76	76	98	116	131	121	121	132	144	130	101	118	118	122	104	96	117	107	145	113	3389
Non-hodgkin's lymphoma	158	157	193	208	207	204	175	186	206	218	181	167	178	172	148	163	139	154	160	156	197	6154
Unknown or ill-defined	36	41	35	50	50	45	49	53	45	49	32	28	19	25	31	31	24	22	39	30	27	1387
TOTAL	2215	2245	2369	2620	2757	2746	2689	2653	2951	2935	2682	2511	2453	2604	2542	2576	2623	2633	2731	2994	2894	84030

The largest number of cases in 2015 was noted in the 5th and 6th decades of life in males and in the 4th and 5th in females. The mean age was 46, the median was 48 and the mode was at 52. Pediatric malignancies were most common among children at one year of age and at less than one year of age.

FIGURE 8

**DISTRIBUTION OF ALL CASES BY AGE AT DIAGNOSIS
2015 (TOTAL CASES = 2,894)**

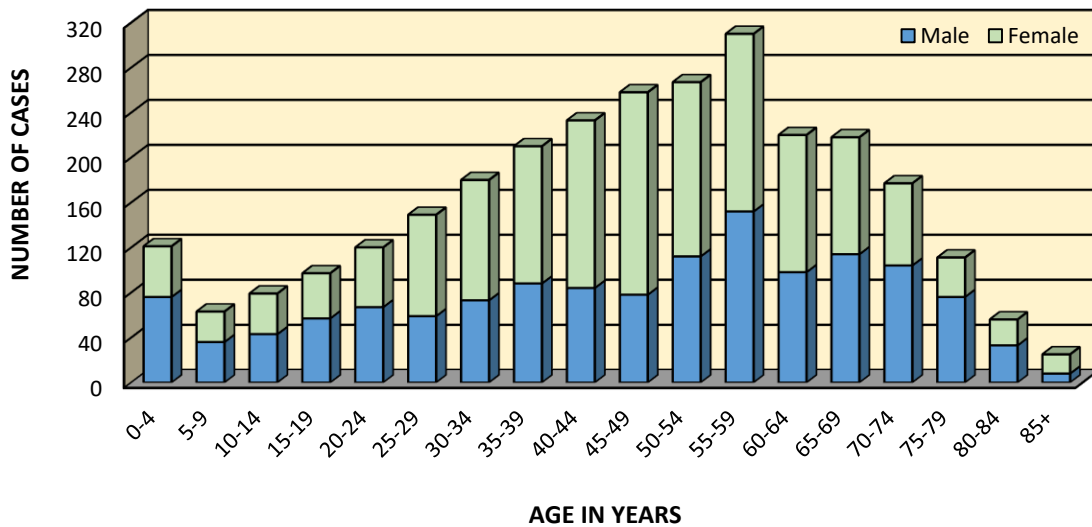
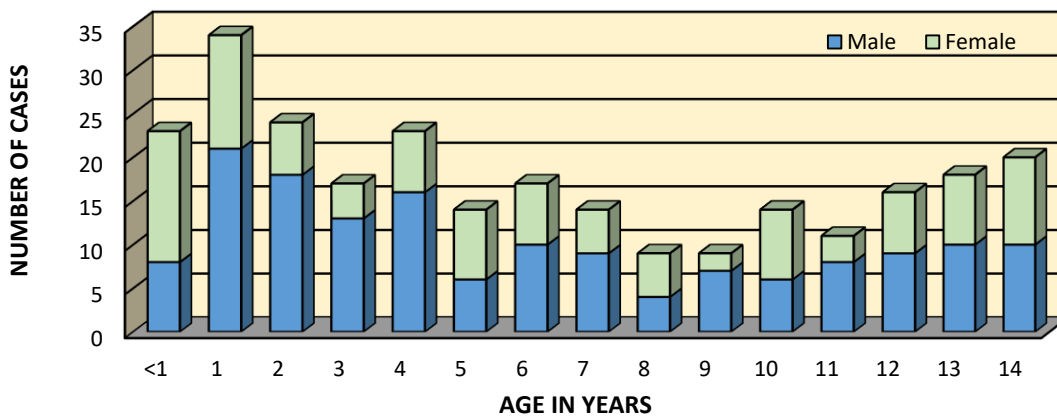


FIGURE 9

**DISTRIBUTION OF PEDIATRIC CASES BY AGE AT DIAGNOSIS
2015 (TOTAL CASES = 263)**



Of the 2,894 cases in 2015, 2,368 (81.8%) 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 526 cases (18%) were non-analytic (defined as cases diagnosed elsewhere and received all of their first course of treatment elsewhere). Out of the 2,368 analytic cases, pediatric cases totaled 263, with 155 males and 108 females.

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

(TABLE 4)

**CASES SEEN AT KFSH&RC BY SITE, SEX, CLASS OF CASE, AND SUMMARY STAGE
2015**

SITE GROUPS	Total Cases	Class		Sex		In Situ	Local	Stage		
		Analytic	NonAn	M	F			Regional	Distant	Unstageable
Oral Cavity	87	76	11	40	47	4	22	38	11	1
Nasopharynx	70	68	2	51	19	0	3	44	20	1
Esophagus	25	20	5	16	9	0	1	11	6	2
Stomach	56	46	10	37	19	0	8	12	22	4
Small Intestine	6	5	1	2	4	0	1	3	1	0
Colon	156	111	45	81	75	2	20	33	54	2
Rectum & Rectosigmoid	115	88	27	72	43	1	9	48	30	0
Anus, Canal, Anorectum	4	3	1	3	1	0	1	1	1	0
Liver	89	80	9	70	19	0	46	11	12	11
Intrahepatic Bile Ducts	4	3	1	3	1	0	0	1	1	1
Gallbladder	17	12	5	6	11	0	1	1	8	2
Other Biliary	17	15	2	10	7	0	5	3	7	0
Pancreas	50	37	13	36	14	0	2	11	23	1
Peritoneum , Retroperitoneum	5	2	3	2	3	0	0	0	2	0
Other Digestive Organs	2	1	1	1	1	0	0	0	1	0
Nose, Nasal, Middle Ear	10	7	3	5	5	0	1	4	2	0
Larynx	24	21	3	19	5	0	13	4	4	0
Lung and Bronchus	63	60	3	43	20	0	9	16	35	0
Pleura	3	1	2	2	1	0	0	0	1	0
Trachea, Other Respirat.	4	4	0	3	1	0	2	1	1	0
Bones & Joints	39	32	7	23	16	0	17	9	5	1
Soft Tissue	64	52	12	40	24	0	19	17	14	2
Melanoma - Skin	8	4	4	5	3	0	3	1	0	0
Other Non-Epithel Skin	12	6	6	7	5	0	3	2	0	1
Breast	398	330	68	5	393	13	85	171	60	1
Cervix	33	23	10	0	33	5	2	14	2	0
Corpus	80	68	12	0	80	0	44	16	6	2
Uterus, NOS	11	5	6	0	11	0	2	2	1	0
Ovary	51	44	7	0	51	0	7	6	30	1
Vagina	5	4	1	0	5	1	0	1	2	0
Vulva	1	1	0	0	1	0	1	0	0	0
Other Female Genital	5	4	1	0	5	0	0	1	3	0
Prostate	64	58	6	64	0	0	29	5	24	0
Testis	37	23	14	37	0	0	13	5	5	0
Other Male Genital	2	2	0	2	0	0	1	1	0	0
Bladder	75	49	26	60	15	15	20	7	4	3
Kidney, Renal Pelvis	92	82	10	57	35	2	40	15	24	1
Ureter	1	1	0	1	0	1	0	0	0	0
Other Urinary Organs	2	2	0	1	1	0	0	0	0	2
Eye & Orbit	20	15	5	10	10	1	6	6	2	0
Brain , CNS	117	101	16	70	47	0	73	18	3	7
Thyroid	292	257	35	63	229	2	143	91	17	4
Other Endocrine	22	21	1	12	10	0	10	2	8	1
Hodgkin's Disease	113	86	27	73	40	0	10	23	52	1
Non-Hodgkin's Lymphoma	209	170	39	130	79	0	31	24	102	13
Multiple Myeloma	25	21	4	13	12	0	2	0	18	1
Leukemia	203	160	43	122	81	0	1	0	159	0
Mesothelioma	1	1	0	1	0	0	0	0	0	1
Kaposi Sarcoma	10	9	1	10	0	0	5	2	1	1
Miscellaneous	61	51	10	28	33	0	4	2	29	16
Unknown or ill defined	34	26	8	22	12	2	17	5	1	1
TOTAL	2894	2368	526	1358	1536	49	732	688	814	85

(TABLE 5)
ANALYTIC CASES SEEN AT KFSH&RC BY SITE AND AGE
2015

Site Group	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	TOTAL
Oral Cavity	0	0	0	3	0	2	5	5	4	5	11	14	10	10	7	3	6	2	87
Nasopharynx	0	1	0	3	3	4	4	8	4	13	8	12	2	3	1	1	2	1	70
Esophagus	0	0	0	0	1	0	0	2	0	3	3	1	1	6	4	3	1	0	25
Stomach	0	0	0	0	1	2	2	6	3	4	4	7	4	5	11	6	1	0	56
Small intestine	0	0	0	0	0	0	1	0	0	1	1	1	0	2	0	0	0	0	6
Colon	0	0	0	0	1	3	6	9	11	14	16	34	21	19	9	8	3	1	155
Rectum & rectosigmoid	1	0	0	0	0	3	2	5	13	7	14	15	19	16	11	7	1	1	115
Anus,anal canal,anorectum	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	4
Liver	5	0	1	0	1	1	2	1	4	4	8	19	18	14	6	6	3	0	93
Gallbladder	0	0	0	0	0	0	0	1	3	1	2	2	3	2	0	1	2	0	17
Bile ducts	0	0	0	0	0	0	0	1	0	1	0	5	3	3	3	1	0	0	17
Pancreas	0	0	0	1	0	0	1	1	1	2	4	13	6	10	3	6	2	0	50
Peritoneum,Retroperitoneum	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	0	0	5
Other digestive	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	3
Nasal cavity,sinus,ear	0	0	1	0	0	0	2	0	2	0	2	0	1	0	3	0	0	0	11
Larynx	0	0	0	0	0	0	2	0	0	0	5	1	3	8	2	2	1	0	24
Lung/Bronchus	1	0	0	1	0	3	1	1	2	3	8	7	10	5	9	7	6	0	64
Pleura	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	4
Other respir & thoracic	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Leukemia	29	25	24	22	13	20	15	15	10	15	17	4	7	2	5	1	2	0	226
Myeloma	0	0	0	0	0	1	0	1	1	3	7	4	4	2	1	1	0	0	25
Other hematopoietic	5	0	1	0	3	0	2	1	2	3	0	0	1	2	0	1	0	0	21
Bone	0	3	8	7	3	4	1	1	3	1	0	5	0	0	3	0	0	0	39
Soft tissue	5	3	5	6	8	6	5	8	4	3	5	1	2	1	2	0	0	0	64
Melanoma of skin	0	0	0	0	0	0	1	0	1	1	0	1	1	1	2	0	0	0	8
Kaposi sarcoma	1	0	0	0	0	1	0	0	1	2	1	1	0	2	0	1	0	0	10
Other skin ca	1	1	0	1	1	1	2	6	0	1	5	9	3	0	4	2	4	6	47
Breast	0	0	0	1	4	16	30	37	71	79	55	34	18	23	15	12	1	2	398
Cervix uteri	0	0	0	0	0	0	2	5	7	5	5	1	3	1	3	1	0	0	33
Corpus uteri	0	0	0	0	0	1	1	1	2	11	9	21	7	16	9	1	1	0	80
Uterus nos	0	0	0	0	0	0	0	0	2	1	4	2	0	0	1	1	0	0	11
Ovary	0	0	3	1	3	3	4	2	2	1	5	7	7	4	3	2	1	3	51
Vagina	0	0	0	0	0	0	0	0	0	0	2	1	1	1	0	0	0	0	5
Vulva	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Other female genital	0	0	0	0	0	0	1	1	0	2	0	0	0	0	1	0	0	0	5
Prostate	0	0	0	0	0	0	0	0	1	2	1	9	9	12	15	7	6	2	64
Testis	0	0	0	3	9	5	6	7	1	3	0	3	0	0	0	0	0	0	37
Other male genital	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Bladder	1	0	0	0	0	1	3	2	5	8	4	10	8	5	9	12	6	1	75
Kidney and renal pelvis	16	5	1	0	0	3	6	7	5	2	5	12	9	8	6	5	1	1	92
Ureter	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Other urinary	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
Eye	15	0	0	0	1	1	0	1	0	1	0	0	0	0	0	1	0	0	20
Brain , CNS	23	4	9	6	5	7	8	13	5	8	10	7	3	5	2	2	0	0	117
Thyroid	1	2	5	10	26	30	37	37	36	30	21	17	16	10	10	2	2	0	292
Other endocrine	6	3	2	1	1	1	2	1	1	0	1	2	1	0	0	0	0	0	22
Hodgkin's disease	1	6	7	22	23	18	9	5	7	3	6	2	2	0	0	1	1	0	113
Non-hodgkin's lymphoma	5	9	10	9	8	12	16	15	19	13	12	20	13	16	9	4	3	4	197
Unknown or ill-defined	4	0	1	0	2	0	0	2	0	2	2	4	0	3	4	2	0	1	27
TOTAL	121	63	79	97	120	149	180	210	233	258	267	310	220	218	177	111	56	25	2894

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

Site Group	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	TOTAL
Oral Cavity	0	0	0	2	0	1	1	4	1	2	7	5	2	4	3	3	4	1	40
Nasopharynx	0	1	0	1	2	3	3	5	4	8	7	10	1	2	1	0	2	1	51
Esophagus	0	0	0	0	1	0	0	1	0	1	2	1	0	4	4	2	0	0	16
Stomach	0	0	0	0	1	1	1	3	2	4	2	4	2	5	8	4	0	0	37
Small intestine	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
Colon	0	0	0	0	0	2	3	5	6	6	9	20	5	11	7	5	1	0	80
Rectum & rectosigmoid	1	0	0	0	0	0	0	2	8	6	9	11	11	7	10	6	1	0	72
Anus,anal canal,anorectum	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	3
Liver	4	0	1	0	1	1	1	1	4	3	6	16	13	10	5	5	2	0	73
Gallbladder	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	1	1	0	6
Bile ducts	0	0	0	0	0	0	0	0	0	0	0	4	1	2	2	1	0	0	10
Pancreas	0	0	0	1	0	0	1	1	1	0	2	10	5	9	2	3	1	0	36
Peritoneum,Retroperitoneum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
Other digestive	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
Nasal cavity,sinus,ear	0	0	0	0	0	0	2	0	1	0	1	0	0	0	2	0	0	0	6
Larynx	0	0	0	0	0	0	0	0	0	0	5	1	2	7	1	2	1	0	19
Lung/Bronchus	1	0	0	0	0	2	0	0	1	2	5	5	9	4	3	7	5	0	44
Pleura	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	3
Other respir & thoracic	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Leukemia	22	12	18	15	12	10	8	8	7	2	10	2	3	2	3	0	2	0	136
Myeloma	0	0	0	0	0	0	0	1	1	2	4	3	0	2	0	0	0	0	13
Other hematopoietic	2	0	0	0	1	0	1	1	1	0	0	0	0	2	0	1	0	0	9
Bone	0	2	4	4	3	2	0	0	2	1	0	2	0	0	3	0	0	0	23
Soft tissue	3	2	3	4	4	4	4	5	3	2	2	1	2	0	1	0	0	0	40
Melanoma of skin	0	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	0	0	5
Kaposin sarcoma	1	0	0	0	0	1	0	0	1	2	1	1	0	2	0	1	0	0	10
Other skin ca	1	0	0	1	1	1	1	4	0	1	4	3	3	0	3	2	2	2	29
Breast	0	0	0	0	0	0	0	2	0	1	0	1	0	0	0	1	0	0	5
Prostate	0	0	0	0	0	0	0	0	1	2	1	9	9	12	15	7	6	2	64
Testis	0	0	0	3	9	5	6	7	1	3	0	3	0	0	0	0	0	0	37
Other male genital	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Bladder	0	0	0	0	0	1	3	1	4	8	3	10	5	3	8	10	4	0	60
Kidney and renal pelvis	7	2	1	0	0	2	5	6	2	1	4	8	5	6	4	4	0	0	57
Ureter	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Other urinary	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Eye	7	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	10
Brain , CNS	15	4	3	4	4	4	6	9	2	3	5	3	1	4	1	2	0	0	70
Thyroid	0	0	2	1	3	1	8	8	8	7	8	2	5	5	3	2	0	0	63
Other endocrine	4	1	1	1	1	0	2	0	0	0	0	1	1	0	0	0	0	0	12
Hodgkin's disease	1	4	3	14	16	11	6	3	6	3	3	0	1	0	0	1	1	0	73
Non-hodgkin's lymphoma	5	7	6	6	4	6	10	7	15	6	8	11	8	9	8	3	0	2	121
Unknown or ill-defined	1	0	1	0	0	0	0	2	0	1	1	1	0	0	4	2	0	0	13
TOTAL	76	36	43	57	67	59	73	88	84	78	112	152	98	114	104	76	33	8	1358

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

Site Group	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	TOTAL
Oral Cavity	0	0	0	1	0	1	4	1	3	3	4	9	8	6	4	0	2	1	47
Nasopharynx	0	0	0	2	1	1	1	3	0	5	1	2	1	1	0	1	0	0	19
Esophagus	0	0	0	0	0	0	0	1	0	2	1	0	1	2	0	1	1	0	9
Stomach	0	0	0	0	0	1	1	3	1	0	2	3	2	0	3	2	1	0	19
Small intestine	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	4
Colon	0	0	0	0	1	1	3	4	5	8	7	14	16	8	2	3	2	1	75
Rectum & rectosigmoid	0	0	0	0	0	3	2	3	5	1	5	4	8	9	1	1	0	1	43
Anus,anal canal,anorectum	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Liver	1	0	0	0	0	0	1	0	0	1	2	3	5	4	1	1	1	0	20
Gallbladder	0	0	0	0	0	0	0	1	2	0	2	1	2	2	0	0	1	0	11
Bile ducts	0	0	0	0	0	0	0	1	0	1	0	1	2	1	1	0	0	0	7
Pancreas	0	0	0	0	0	0	0	0	0	2	2	3	1	1	1	3	1	0	14
Peritoneum,Retroperitoneum	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	3
Other digestive	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Nasal cavity,sinus,ear	0	0	1	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	5
Larynx	0	0	0	0	0	0	2	0	0	0	0	0	1	1	1	0	0	0	5
Lung/Bronchus	0	0	0	1	0	1	1	1	1	1	3	2	1	1	6	0	1	0	20
Pleura	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Other respir & thoracic	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Leukemia	7	13	6	7	1	10	7	7	3	13	7	2	4	0	2	1	0	0	90
Myeloma	0	0	0	0	0	1	0	0	0	1	3	1	4	0	1	1	0	0	12
Other hematopoietic	3	0	1	0	2	0	1	0	1	3	0	0	1	0	0	0	0	0	12
Bone	0	1	4	3	0	2	1	1	1	0	0	3	0	0	0	0	0	0	16
Soft tissue	2	1	2	2	4	2	1	3	1	1	3	0	0	1	1	0	0	0	24
Melanoma of skin	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	3
Other skin ca	0	1	0	0	0	0	1	2	0	0	1	6	0	0	1	0	2	4	18
Breast	0	0	0	1	4	16	30	35	71	78	55	33	18	23	15	11	1	2	393
Cervix uteri	0	0	0	0	0	0	2	5	7	5	5	1	3	1	3	1	0	0	33
Corpus uteri	0	0	0	0	0	1	1	1	2	11	9	21	7	16	9	1	1	0	80
Uterus nos	0	0	0	0	0	0	0	0	2	1	4	2	0	0	1	1	0	0	11
Ovary	0	0	3	1	3	3	4	2	2	1	5	7	7	4	3	2	1	3	51
Vagina	0	0	0	0	0	0	0	0	0	0	2	1	1	1	0	0	0	0	5
Vulva	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Other female genital	0	0	0	0	0	0	1	1	0	2	0	0	0	0	1	0	0	0	5
Bladder	1	0	0	0	0	0	0	1	1	0	1	0	3	2	1	2	2	1	15
Kidney and renal pelvis	9	3	0	0	0	1	1	1	3	1	1	4	4	2	2	1	1	1	35
Other urinary	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Eye	8	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	10
Brain , CNS	8	0	6	2	1	3	2	4	3	5	5	4	2	1	1	0	0	0	47
Thyroid	1	2	3	9	23	29	29	29	28	23	13	15	11	5	7	0	2	0	229
Other endocrine	2	2	1	0	0	1	0	1	1	0	1	1	0	0	0	0	0	0	10
Hodgkin's disease	0	2	4	8	7	7	3	2	1	0	3	2	1	0	0	0	0	0	40
Non-hodgkin's lymphoma	0	2	4	3	4	6	6	8	4	7	4	9	5	7	1	1	3	2	76
Unknown or ill-defined	3	0	0	0	2	0	0	0	0	1	1	3	0	3	0	0	0	1	14
TOTAL	45	27	36	40	53	90	107	122	149	180	155	158	122	104	73	35	23	17	1536

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

The crude relative frequencies of primary cancers seen at KFSH&RC are very different from the Western world. Common tumors of the West (lung, colon, and prostate) are much less frequent here while leukemia, lymphoma and thyroid cancers are more common. The following 2015 analytic cases, which show a quite similar pattern with the data from the Saudi Cancer Registry (SCR), exhibit significant differences in trends from those of the U.S.A when compared to the data published in Cancer Facts & Figures - 2015, by the American Cancer Society:

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

SITE	KFSH&RC 2015 Analytics	SCR 2015 Saudis	USA 2015 Estimates
BREAST	13.7%	16.7%	14.1%
THYROID	10%	8.5%	3.7%
LEUKEMIA	7%	5.8%	3.3%
COLON, RECTUM	5.3%	8.5%	8%
NON-HODGKIN'S LYMPHOMA	7.2%	6.9%	4.3%
LIVER	3 %	3.1%	2.1%
HODGKIN'S LYMPHOMA	3.9%	3.6%	0.5%
ORAL CAVITY	3%	1.7%	2.7%
BRAIN	4.0%	2.6%	1.4%
KIDNEY & RENAL PELVIS	3.1%	3.4%	3.7%
LUNG/BRONCHUS	2.2%	3.5%	13.3%

Breast - The most common malignancy seen at KFSH&RC is breast cancer, comprising 13.7% of all cases, as compared to 14.1% of all neoplasms diagnosed in the U.S.A. It affects mostly women under the age of 50, while in the U.S.A., those more than 50 years of age are most frequently affected. As in the Western countries, it is the number one cancer among women.

Thyroid – 10% of all malignancies in KFSH&RC are thyroid cancer, much higher than in the West. It represents 14.9% of female malignant neoplasms, second to breast cancer. The male/female ratio is 0.2:1. Thyroid cancer accounts for only 3.7% of all cases in the U.S.A., and 5.8% of female malignancies.

Leukemia - The most striking feature is the high crude relative frequency of leukemia cases, constituting 7% of all cases seen at KFSH&RC, as compared to 3.3% of all neoplasms diagnosed in the U.S.A. The male/female ratio is 1.5:1. It is the second most common malignancy seen in males and third most common malignancy in females. It is also the most common malignancy among pediatric cases.

Colon, Rectum - Less common than in the West, this disease represents only 5.3% of all cancer cases. In the U.S.A., it constitutes 8% of newly diagnosed cancer cases. Dietary factors, particularly lower animal fat intake, may play a role.

Non-Hodgkin's Lymphoma - Cases of non-Hodgkin's lymphoma account for 7.2% of all cases. In the U.S.A., NHL accounts for only 4.3% of all cancers.

Liver – The relative frequency of Liver cases at KFSH&RC is 3% as compared to the West recorded as 2.1%.

Hodgkin's Lymphoma - The incidence of Hodgkin's lymphoma is comparatively more frequent at KFSH&RC than in Western countries. In the U.S.A., it constitutes 0.5% of all cancers, compared to 3.9% at KFSH&RC.

Oral cavity – A crude relative frequency rate was also noted in cancer of Oral Cavity. In Western countries, oral cancer accounts 2.7% of all cancers, whereas at KFSH&RC represents 3% of the cases.

Brain, CNS - Primary malignant neoplasms of the brain and CNS account for 4% of all malignancies. This is much higher than in the U.S.A., with only 1.4% of all cases.

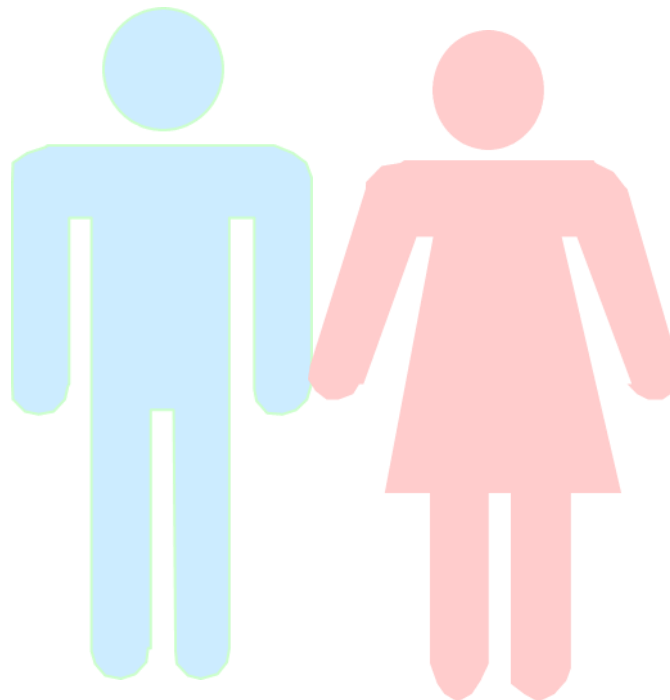
Kidney & renal pelvis – frequency of Kidney & Renal Pelvis malignancies in Western Countries is about 3.7%, where as in KFSH&RC , it accounts for 3.1% of all cancer cases.

Lung - Frequency of lung cancer at KFSH&RC is much lower than in Western countries, most likely reflecting the significantly lower levels of smoking and industrial pollution. In the U.S.A., primary lung cancer represents 13.3% of all cancer cases. At KFSH&RC, 2.2% of all cancer diagnoses are lung cancers.

FIGURE 10
DISTRIBUTION OF 20 MOST COMMON MALIGNANCIES
2015 ANALYTIC CASES (TOTAL CASES = 2,368)

MALE

- NHL 130 (9.57%)
- LEUKEMIA 122 (8.98%)
- COLON 81 (5.96%)
- HODGKIN'S DISEASE 73 (5.38%)
- RECTUM 72 (5.30%)
- LIVER 70 (5.15%)
- BRAIN, CNS 70 (5.15%)
- PROSTATE 64 (4.71%)
- THYROID 63 (4.64%)
- BLADDER 60 (4.42%)
- KIDNEY, RENAL PELVIS 57 (4.20%)
- NASOPHARYNX 51 (3.76%)
- LUNG / BRONCHUS 43 (3.17%)
- ORAL CAVITY 40 (2.95%)
- SOFT TISSUE 40 (2.95%)
- STOMACH 37 (2.72%)
- TESTIS 37 (2.72%)
- PANCREAS 36 (2.65%)
- BONES 23 (1.69%)
- LARYNX 19 (1.40%)



FEMALE

- BREAST 393 (25.59%)
- THYROID 229 (14.91%)
- LEUKEMIA 81 (5.27%)
- CORPUS 80 (5.21%)
- NHL 79 (5.14%)
- COLON 75 (4.88%)
- OVARY 51 (3.32%)
- BRAIN, CNS 47 (3.06%)
- ORAL CAVITY 47 (3.06%)
- RECTUM 43 (2.80%)
- HODGKIN'S DISEASE 40 (2.60%)
- KIDNEY, RENAL PELVIS 35 (2.28%)
- CERVIX 33 (2.15%)
- SOFT TISSUE 24 (1.56%)
- LUNG / BRONCHUS 20 (1.30%)
- LIVER 19 (1.24%)
- NASOPHARYNX 19 (1.24%)
- STOMACH 19 (1.24%)
- BONES 16 (1.04%)
- BLADDER 15 (0.98%)

FIGURE 11
DISTRIBUTION OF MOST COMMON PEDIATRIC MALIGNANCIES
2015 ANALYTIC CASES (TOTAL CASES= 263)

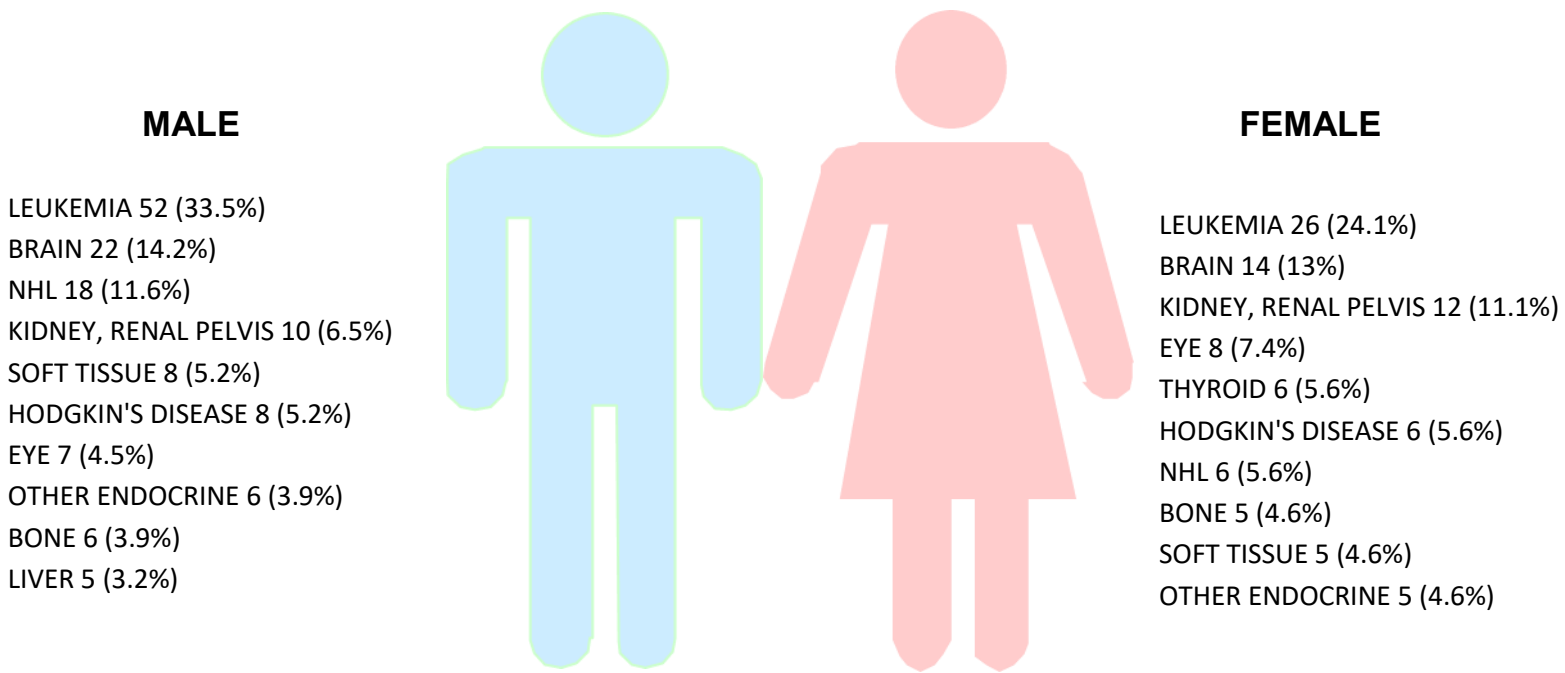


FIGURE 12
DISTRIBUTION OF MOST COMMON PEDIATRIC MALIGNANCIES BY HISTOLOGY
2015 ANALYTIC CASES (TOTAL CASES= 263)

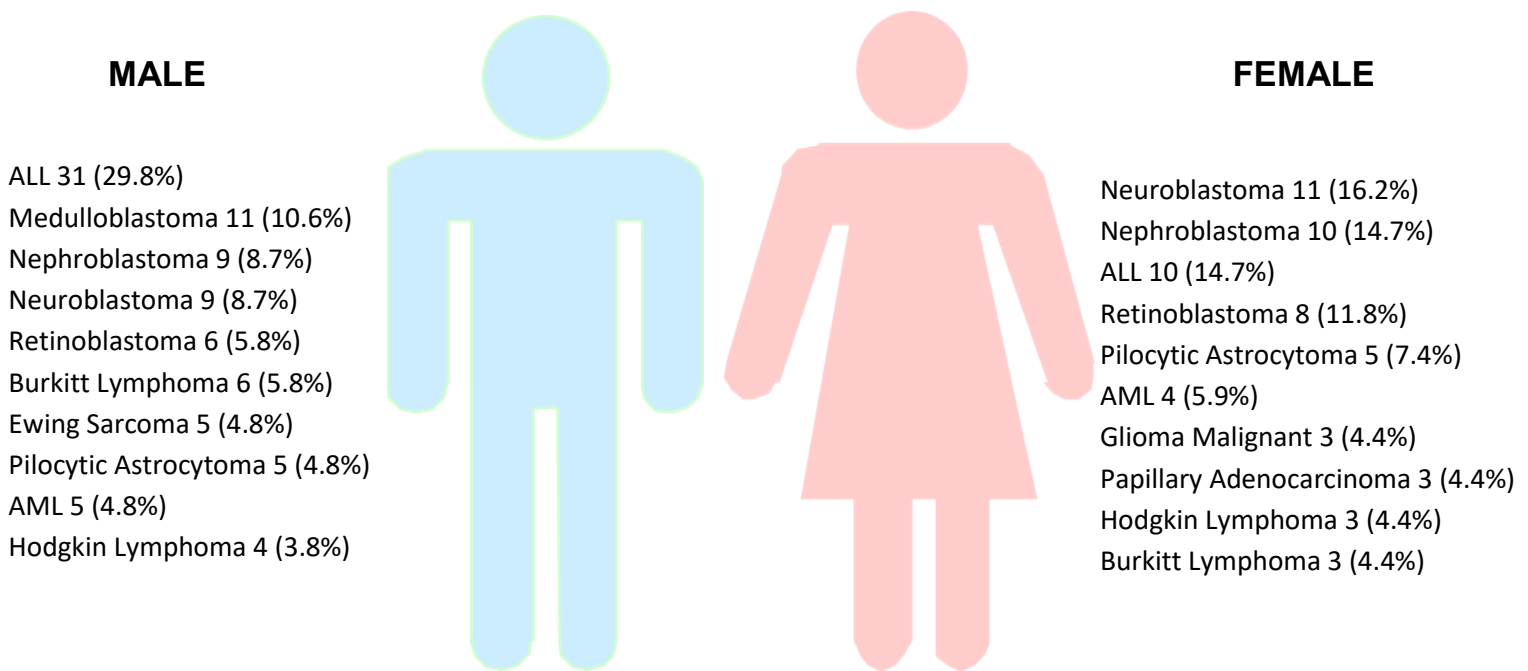


TABLE 9
PRIMARY SITE TABLE
(INCLUDES MULTIPLE PRIMARIES)
2015

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL	ADULTS		PEADIATRICS	
		CASES	MALE	FEMALE	MALE	FEMALE
		2,894	1,203	1,428	155	108
LIP		4	3	1	0	0
	Squamous Cell Carcinoma NOS	3	3	0	0	0
	Adenocarcinoma NOS	1	0	1	0	0
TONGUE		28	13	15	0	0
	Adenosquamous Carcinoma	1	0	1	0	0
	Squamous Cell Carcinoma In Situ	1	1	0	0	0
	Squamous Cell Carcinoma Large Cell Nonkeratinizing	1	1	0	0	0
	Squamous Cell Carcinoma Microinvasive	1	0	1	0	0
	Squamous Cell Carcinoma NOS	24	11	13	0	0
GUM		11	5	6	0	0
	Squamous Cell Carcinoma	10	5	5	0	0
	Mucoepidermoid Carcinoma	1	0	1	0	0
FLOOR OF MOUTH		2	1	1	0	0
	Mucoepidermoid Carcinoma	1	0	1	0	0
	Squamous Cell Carcinoma Keratinizing NOS	1	1	0	0	0
OTHER PARTS OF MOUTH		38	9	28	1	0
	Adenoid Cystic Carcinoma	4	1	2	1	0
	Alveolar Rhabdomyosarcoma	1	0	1	0	0
	Mucinous Adenocarcinoma	2	1	1	0	0
	Mucoepidermoid Carcinoma	3	1	2	0	0
	Spindle Cell Sarcoma	2	1	1	0	0
	Squamous Cell Carcinoma In Situ	2	1	1	0	0
	Squamous Cell Carcinoma NOS	23	4	19	0	0
	Squamous Cell Carcinoma Spindle Cell	1	0	1	0	0
SALIVARY GLANDS, MAJOR		14	9	5	0	0
	Adenoid Cystic Carcinoma	3	0	3	0	0
	Carcinoma In Pleomorphic Adenoma	1	1	0	0	0
	Carcinoma NOS	1	1	0	0	0
	Intracystic Carcinoma NOS	1	1	0	0	0
	Mucinous Adenocarcinoma	1	1	0	0	0
	Mucoepidermoid Carcinoma	2	1	1	0	0
	Neoplasm Malignant	2	2	0	0	0
	Oxyphilic Adenocarcinoma	1	1	0	0	0
	Small Cell Carcinoma NOS	1	0	1	0	0
	Squamous Cell Carcinoma	1	1	0	0	0
TONSIL		2	2	0	0	0
	Squamous Cell Carcinoma Large Cell Nonkeratinizing	1	1	0	0	0
	Squamous Cell Carcinoma Spindle Cell	1	1	0	0	0
RECTUM & RECTOSIGMOID JUNCTION		115	71	43	1	0
	Adenocarcinoma In Adenomatous Polyp	1	1	0	0	0
	Adenocarcinoma In Tubulovillous Adenoma	1	1	0	0	0
	Adenocarcinoma	102	63	38	1	0
	Carcinoid Tumor	1	1	0	0	0
	Carcinoma NOS	3	2	1	0	0
	Large Cell Neuroendocrine Carcinoma	1	0	1	0	0
	Mucinous Adenocarcinoma	3	1	2	0	0
	Signet Ring Cell Carcinoma	2	2	0	0	0
	Squamous Cell Carcinoma	1	0	1	0	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADIATRICS	
			MALE	FEMALE	MALE	FEMALE
ANUS, ANAL CANAL, ANORECTUM		4	3	1	0	0
	Adenocarcinoma	2	1	1	0	0
	Squamous Cell Carcinoma	2	2	0	0	0
LIVER, INTRAHEPATIC BILE DUCT		93	19	68	5	1
	Adenocarcinoma NOS	2	0	2	0	0
	Cholangiocarcinoma	3	1	2	0	0
	Embryonal Sarcoma	1	0	1	0	0
	Hemangioendothelioma Malignant	1	1	0	0	0
	Hepatocellular Carcinoma Fibrolamellar	2	0	2	0	0
	Hepatocellular Carcinoma NOS	76	16	59	1	0
	Hepatocellular Carcinoma Scirrhus	1	0	1	0	0
	Neoplasm Malignant	1	0	1	0	0
	Neuroendocrine Carcinoma NOS	1	1	0	0	0
	Hepatoblastoma	3	0	0	2	1
	Malignant Rhabdoid Tumor	1	0	0	1	0
	Neuroblastoma NOS	1	0	0	1	0
GALLBLADDER, EXTRAHEPATIC BILE DUCT		17	6	11	0	0
	Adenocarcinoma NOS	14	5	9	0	0
	Carcinoma NOS	1	0	1	0	0
	Klatskin Tumor	1	0	1	0	0
	Neoplasm Malignant	1	1	0	0	0
PANCREAS		50	36	14	0	0
	Adenocarcinoma	36	29	7	0	0
	Adenosquamous Carcinoma	1	0	1	0	0
	Atypical Carcinoid Tumor	1	1	0	0	0
	Carcinoma	4	2	2	0	0
	Invasive Carcinoma	2	1	1	0	0
	Mucinous Adenocarcinoma	1	0	1	0	0
	Neoplasm Malignant	3	1	2	0	0
	Neuroendocrine Carcinoma	2	2	0	0	0
THYROID		292	223	61	2	6
	Carcinoma Anaplastic NOS	1	1	0	0	0
	Carcinoma NOS	2	1	1	0	0
	Follicular Adenocarcinoma	6	2	4	0	0
	Follicular Adenocarcinoma Well Differentiated	1	0	1	0	0
	Follicular Carcinoma Minimally Invasive	3	2	1	0	0
	Invasive Encapsulated Follicular Papillary Ca	12	7	5	0	0
	Medullary Carcinoma	10	3	5	1	1
	Mixed Medullary Follicular Carcinoma	1	1	0	0	0
	Neoplasm Malignant	2	2	0	0	0
	Nonencapsulated Sclerosing Carcinoma	2	1	0	1	0
	Oxyphilic Adenocarcinoma	9	7	2	0	0
	Papillary Adenocarcinoma	144	113	31	0	3
	Papillary Carcinoma Columnar Cell	24	18	5	0	1
	Papillary Carcinoma Follicular Variant	54	48	5	0	1
	Papillary Carcinoma In Situ	1	1	0	0	0
	Papillary Carcinoma NOS	3	3	0	0	0
	Papillary Carcinoma Oxyphilic Cell	3	3	0	0	0
	Papillary Microcarcinoma	11	10	1	0	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADIATRICS	
			MALE	FEMALE	MALE	FEMALE
BILE DUCTS		17	10	7	0	0
	Adenocarcinoma	15	9	6	0	0
	Cholangiocarcinoma	2	1	1	0	0
NASAL CAVITY, MIDDLE EAR		12	7	4	0	1
	Adenoid Cystic Carcinoma	1	0	1	0	0
	Carcinoma NOS	1	1	0	0	0
	Undifferentiated Carcinoma	1	1	0	0	0
	Epithelioid Sarcoma	1	0	1	0	0
	Fibrosarcoma	1	1	0	0	0
	Giant Cell Sarcoma (Except Of Bone)	1	1	0	0	0
	Malignant Melanoma NOS	2	0	2	0	0
	Plasmablastic Lymphoma	1	1	0	0	0
	Squamous Cell Carcinoma NOS	2	2	0	0	0
	Peripheral Neuroectodermal Tumor	1	0	0	0	1
LUNG, BRONCHUS		64	43	20	1	0
	Adenocarcinoma	24	15	9	0	0
	Adenoid Cystic Carcinoma	1	1	0	0	0
	Carcinoid Tumor	2	0	2	0	0
	Carcinoma NOS	4	3	1	0	0
	Undifferentiated Carcinoma	1	1	0	0	0
	Clear Cell Adenocarcinoma	1	1	0	0	0
	Giant Cell Sarcoma (Except Of Bone)	1	0	1	0	0
	Hemangiosarcoma	1	1	0	0	0
	Mucinous Adenocarcinoma	1	0	1	0	0
	Neoplasm Malignant	1	1	0	0	0
	Neuroendocrine Carcinoma	1	1	0	0	0
	Non-Small Cell Carcinoma	6	5	1	0	0
	Pseudosarcomatous Carcinoma	1	1	0	0	0
	Spindle Cell Carcinoma	1	1	0	0	0
	Squamous Cell Carcinoma Keratinizing	1	0	1	0	0
	Squamous Cell Carcinoma NOS	9	7	2	0	0
	Synovial Sarcoma Spindle Cell	1	1	0	0	0
	Small Cell Carcinoma NOS	6	4	2	0	0
	Pleuropulmonary Blastoma	1	0	0	1	0
OTHER RESPIRATORY & THORACIC		3	2	0	0	1
	Germinoma	1	1	0	0	0
	Hemangiosarcoma	1	1	0	0	0
	Teratoma Malignant NOS	1	0	0	0	1
PLEURA		4	2	1	1	0
	Adenocarcinoma	1	0	1	0	0
	Carcinoma	1	1	0	0	0
	Mesothelioma Malignant	1	1	0	0	0
	Pleuropulmonary Blastoma	1	0	0	1	0
BONE, JOINTS, CARTILAGE		49	26	11	7	5
	Ameloblastoma Malignant	1	1	0	0	0
	Ameloblastoma NOS	1	1	0	0	0
	Chondroblastic Osteosarcoma	4	1	1	1	1
	Chondrosarcoma NOS	3	2	1	0	0
	Chordoma NOS	2	0	2	0	0
	Ewing Sarcoma	7	3	1	2	1
	Spindle Cell Type Malignant Tumor	1	0	1	0	0
	Mesenchymal Chondrosarcoma	1	1	0	0	0
	Myxoid Chondrosarcoma	1	1	0	0	0
	Myxoid Liposarcoma	1	0	1	0	0
	Malignant Neoplasm	1	0	1	0	0
	Osteosarcoma NOS	10	2	3	3	2
	Peripheral Neuroectodermal Tumor	1	1	0	0	0
	Spindle Cell Sarcoma	2	2	0	0	0
	Squamous Cell Carcinoma NOS	2	2	0	0	0
	Telangiectatic Osteosarcoma	1	0	0	0	1
	Kaposis Sarcoma	10	9	0	1	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADIATRICS	
			MALE	FEMALE	MALE	FEMALE
OTHER HEMATOPOIETIC		21	7	8	2	4
	Essential Thrombocytosis	8	2	5	0	1
	Langerhans Cell Histocytosis	2	0	0	1	1
	Myelodysplastic Syndrome	2	0	1	1	0
	Myelodysplastic/Myeloproliferative Neoplasm	4	2	2	0	0
	Myeloproliferative Disease	1	0	0	0	1
	Neuroblastoma NOS	1	0	0	0	1
	Polycythemia Vera	1	1	0	0	0
	Refractory Anemia With Excess Blast	1	1	0	0	0
	Plasmablastic Lymphoma	1	1	0	0	0
SKIN (MELANOMA)		8	5	3	0	0
	Acral Lentiginous Melanoma Malignant	2	2	0	0	0
	Malignant Melanoma	3	2	1	0	0
	Malignant Nodular	1	0	1	0	0
	Superficial Spreading Melanoma	2	1	1	0	0
SKIN (NON MELANOMA)		47	28	17	1	1
	Adenoid Cystic Carcinoma	1	0	1	0	0
	Basal Cell Carcinoma Nodular	4	3	1	0	0
	Basal Cell Carcinoma NOS	5	4	1	0	0
	Dermatofibrosarcoma NOS	8	5	2	1	0
	Merkel Cell Carcinoma	1	1	0	0	0
	Neurilemoma	1	0	1	0	0
	Primary Follicle Centre Lymphoma	1	0	1	0	0
	Pseudosarcomatous Carcinoma	1	1	0	0	0
	Squamous Cell Carcinoma In Situ	2	1	1	0	0
	Squamous Cell Carcinoma NOS	22	13	9	0	0
	Neuroblastoma	1	0	0	0	1
RETROPERITONEUM, PERITONEUM		5	3	2	0	0
	Adenocarcinoma	1	0	1	0	0
	Carcinoid Tumor	1	1	0	0	0
	Gastrointestinal Stromal Sarcoma	1	1	0	0	0
	Liposarcoma Well Differentiated	2	1	1	0	0
CONNECTIVE, SUBCUTEANEOUS, SOFT TISSUES		64	32	19	8	5
	Chordoma NOS	1	0	1	0	0
	Clear Cell Sarcoma (Except Of Kidney)	1	0	1	0	0
	Dermatofibrosarcoma	2	1	1	0	0
	Desmoplastic Small Round Cell Tumor	1	1	0	0	0
	Embryonal Rhabdomyosarcoma NOS	3	1	0	2	0
	Epithelioid Hemangioendothelioma NOS	1	0	1	0	0
	Ewing Sarcoma	10	4	3	3	0
	Fibromyxosarcoma	1	1	0	0	0
	Fibrosarcoma	2	1	0	1	0
	Ganglioglioma NOS	1	1	0	0	0
	Giant Cell Sarcoma (Except Of Bone)	4	4	0	0	0
	Leiomyosarcoma NOS	2	1	1	0	0
	Liposarcoma NOS	1	1	0	0	0
	Malignant Myoepithelioma	1	1	0	0	0
	Myxoid Liposarcoma	5	3	2	0	0
	Myxosarcoma	1	0	1	0	0
	Neoplasm Malignant	2	1	1	0	0
	Osteosarcoma	1	0	1	0	0
	Pleomorphic Liposarcoma	1	0	1	0	0
	Primitive Neuroectodermal Tumor NOS	1	0	1	0	0
	Sarcoma NOS	2	1	1	0	0
	Spindle Cell Sarcoma	4	3	1	0	0
	Squamous Cell Carcinoma NOS	1	1	0	0	0
	Synovial Sarcoma Biphasic	1	0	1	0	0
	Synovial Sarcoma Epithelioid Cell	1	1	0	0	0
	Synovial Sarcoma NOS	4	3	1	0	0
	Synovial Sarcoma Spindle Cell	1	1	0	0	0
	Undifferentiated Sarcoma	1	1	0	0	0
	Alveolar Rhabdomyosarcoma	1	0	0	0	1
	Hemangiosarcoma	1	0	0	0	1
	Neuroblastoma	2	0	0	0	2
	Rhabdomyosarcoma NOS	3	0	0	2	1

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADIATRICS	
			MALE	FEMALE	MALE	FEMALE
VULVA		1	0	1	0	0
	Squamous Cell Carcinoma NOS	1	0	1	0	0
CERVIX UTERI		33	0	33	0	0
	Carcinoma In Situ NOS	1	0	1	0	0
	Squamous Intraepithelial Neoplasm	5	0	5	0	0
	Adenocarcinoma	2	0	2	0	0
	Adenosquamous Carcinoma	1	0	1	0	0
	Carcinosarcoma NOS	1	0	1	0	0
	Epithelioid Sarcoma	1	0	1	0	0
	Leiomyosarcoma	1	0	1	0	0
	Neoplasm Malignant	1	0	1	0	0
	Squamous Cell Carcinoma Keratinizing	2	0	2	0	0
	Squamous Large Cell Carcinoma Nonkeratinizing	6	0	6	0	0
	Squamous Cell Carcinoma Microinvasive	1	0	1	0	0
	Squamous Cell Carcinoma NOS	10	0	10	0	0
	Squamous Cell Carcinoma Sm Cell Nonkeratinizing	1	0	1	0	0
CORPUS UTERI		80	0	80	0	0
	Adenocarcinoma	15	0	15	0	0
	Adenosquamous Carcinoma	1	0	1	0	0
	Carcinoma NOS	1	0	1	0	0
	Undifferentiated Carcinoma NOS	1	0	1	0	0
	Carcinosarcoma NOS	3	0	3	0	0
	Endometrial Stromal Sarcoma NOS	1	0	1	0	0
	Endometrioid Adenocarcinoma NOS	48	0	48	0	0
	Mullerian Mixed Tumor	1	0	1	0	0
	Sarcoma NOS	1	0	1	0	0
	Serous Cystadenocarcinoma NOS	7	0	7	0	0
	Villous Adenocarcinoma	1	0	1	0	0
OVARY		51	0	48	0	3
	Adenocarcinoma	6	0	6	0	0
	Carcinoma NOS	1	0	1	0	0
	Cleare Cell Tumor	1	0	1	0	0
	Dysgerminoma	2	0	1	0	1
	Endometrioid Adenocarcinoma	1	0	1	0	0
	Granulosa Cell Tumor Malignant	1	0	1	0	0
	Malignant Serous Tumor	1	0	1	0	0
	Mixed Germ Cell Tumor	2	0	1	0	1
	Mucinous Adenocarcinoma	2	0	2	0	0
	Mucinous Cystadenocarcinoma	1	0	1	0	0
	Neoplasm Malignant	2	0	2	0	0
	Papillary Carcinoma	1	0	1	0	0
	Papillary Serous Cystadenocarcinoma	9	0	9	0	0
	Serous Cystadenocarcinoma	17	0	17	0	0
	Serous Superface Papillary Carcinoma	1	0	1	0	0
	Transitional Cell Carcinoma NOS	1	0	1	0	0
	Yolk Sac Tumor	2	0	1	0	1
TESTIS		37	37	0	0	0
	Embryonal Carcinoma NOS	3	3	0	0	0
	Embryonal Rhabdomyosarcoma NOS	1	1	0	0	0
	Leiomyosarcoma NOS	1	1	0	0	0
	Mixed Germ Cell Tumor	13	13	0	0	0
	Seminoma NOS	17	17	0	0	0
	Spindle Cell Rhabdomyosarcoma	1	1	0	0	0
	Teratoma Malignant NOS	1	1	0	0	0
VAGINA		5	0	5	0	0
	Adenocarcinoma NOS	1	0	1	0	0
	Gastrointestinal Stromal Sarcoma	1	0	1	0	0
	Malignant Melanoma	1	0	1	0	0
	Squamous Cell Carcinoma Large Nonkeratinizing	1	0	1	0	0
	Squamous Intraepithelial Neoplasm	1	0	1	0	0
OTHER MALE / FEMALE GENITAL CANCERS		7	1	5	1	0
	Choriocarcinoma NOS	3	0	3	0	0
	Leiomyosarcoma NOS	1	0	1	0	0
	Serous Cystadenocarcinoma	1	0	1	0	0
	Spindle Cell Sarcoma	1	1	0	0	0
	Embryonal Rhabdomyosarcoma	1	0	0	1	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADIATRICS	
			MALE	FEMALE	MALE	FEMALE
BREAST		398	5	393	0	0
	Adenocarcinoma NOS	3	0	3	0	0
	Atypical Carcinoid Tumor	1	0	1	0	0
	Carcinoma NOS	4	0	4	0	0
	Carcinoma In Situ	3	0	3	0	0
	Embryonal Rhabdomyosarcoma NOS	1	0	1	0	0
	Invasive Ductal & Lobular Carcinoma	3	0	3	0	0
	Invasive Ductal Carcinoma Mixed with Other Types	3	0	3	0	0
	Invasive Lobular Carcinoma Mixed with Other Types	2	0	2	0	0
	Noninvasive Intraductal Carcinoma	8	0	8	0	0
	Invasive Ductal Carcinoma	336	4	332	0	0
	Lobular Carcinoma In Situ	2	0	2	0	0
	Lobular Carcinoma NOS	20	0	20	0	0
	Medullary Carcinoma NOS	1	0	1	0	0
	Metaplastic Carcinoma	1	0	1	0	0
	Mucinous Adenocarcinoma	1	0	1	0	0
	Malignant Neoplasm	2	0	2	0	0
	Noninvasive Intracystic Carcinoma	1	1	0	0	0
	Osteosarcoma	1	0	1	0	0
	Paget Disease In Situ	1	0	1	0	0
	Phyllodes Tumor Border Line	1	0	1	0	0
	Phyllodes Tumor Malignant	1	0	1	0	0
	Pleomorphic Carcinoma	2	0	2	0	0
BONE MARROW		226	84	64	52	26
	Acute Leukemia NOS	4	2	1	1	0
	Acute Monocytic Leukemia	3	0	1	2	0
	Acute Myeloid Leukemia	54	21	23	5	5
	Acute Myelomonocytic Leukemia	2	0	1	1	0
	Acute Promyelocytic Leukemia	12	5	4	2	1
	Adult T-Cell Leukemia	1	1	0	0	0
	B Lymphoblastic Leukemia	55	9	8	25	13
	B-Cell Chronic Lymphocytic Leukemia	9	8	1	0	0
	Burkitt Cell Leukemia	2	1	0	0	1
	Chronic Myelogenous Leukemia	12	6	5	0	1
	Chronic Myeloid Leukemia	16	9	7	0	0
	Chronic Myelomonocytic Leukemia	1	1	0	0	0
	Essential thrombocythemia	1	0	1	0	0
	Hairy Cell Leukemia	1	1	0	0	0
	Hypereosinophilic Syndrome	3	3	0	0	0
	Langerhans Cell Histiocytosis NOS	5	3	0	1	1
	Leukemia NOS	1	0	1	0	0
	Lymphoid Leukemia NOS	1	1	0	0	0
	Myelodysplastic Syndrome NOS	3	1	1	0	1
	Myeloproliferative Neoplasm	1	0	1	0	0
	Myeloid Sarcoma	3	1	0	1	1
	Myelosclerosis With Myeloid Metaplasia	1	1	0	0	0
	Plasma Cell Leukemia	1	0	1	0	0
	Polycythemia Vera	1	0	1	0	0
	Precursor B-Cell Lymphoblastic Leukemia	5	3	0	2	0
	Precursor Lymphoblastic Leukemia NOS	10	3	3	3	1
	Precursor T-Cell Lymphoblastic Leukemia	11	3	1	7	0
	Refractory Anemia	1	1	0	0	0
	Refractory Anemia With Excess Blast	1	0	1	0	0
	Therapy Related Acute Myeloid Leukemia	1	0	1	0	0
	Therapy Related Myelodysplastic Syndrome	1	0	1	0	0
	Acute Megakaryoblastic Leukemia	1	0	0	0	1
	Juvenile Myelomonocytic Leukemia	1	0	0	1	0
	Myeloid Leukemia	1	0	0	1	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADIATRICS	
			MALE	FEMALE	MALE	FEMALE
NASOPHARYNX		62	46	15	1	0
	Squamous Cell Carcinoma Large Nonkeratinizing	26	19	6	1	0
	Carcinoma Undifferentiated	26	19	7	0	0
	Carcinoma NOS	7	6	1	0	0
	Squamous Cell Carcinoma	1	1	0	0	0
	Neoplasm Malignant	1	1	0	0	0
	Transitional Cell Carcinoma NOS	1	0	1	0	0
HYPOPHARYNX		4	1	3	0	0
	Squamous Cell Carcinoma	2	0	2	0	0
	Squamous Cell Carcinoma Microinvasive	1	0	1	0	0
	Squamous Cell Carcinoma Small Nonkeratinizing	1	1	0	0	0
ESOPHAGUS		25	16	9	0	0
	Adenocarcinoma NOS	11	10	1	0	0
	Papillary Squamous Cell Carcinoma	1	1	0	0	0
	Signet Ring Cell Carcinoma	1	1	0	0	0
	Squamous Cell Carcinoma	10	3	7	0	0
	Squamous Cell Carcinoma Keratinizing	2	1	1	0	0
STOMACH		56	37	19	0	0
	Adenocarcinoma Intestinal Type	11	9	2	0	0
	Adenocarcinoma	22	14	8	0	0
	Adenocarcinoma With Mixed Subtypes	1	0	1	0	0
	Carcinoma Diffuse Type	3	3	0	0	0
	Gastrointestinal Stromal Sarcoma	2	2	0	0	0
	Gastrointestinal Stromal Tumor	1	1	0	0	0
	Mucinous Adenocarcinoma	1	0	1	0	0
	Signet Ring Cell Carcinoma	15	8	7	0	0
SMALL INTESTINE		6	2	4	0	0
	Adenocarcinoma	2	1	1	0	0
	Carcinoid Tumor	1	0	1	0	0
	Gastrointestinal Stromal Sarcoma	1	0	1	0	0
	Mucinous Adenocarcinoma	1	1	0	0	0
	Neuroendocrine Carcinoma NOS	1	0	1	0	0
COLON		155	80	75	0	0
	Adenocarcinoma In SITU	1	0	1	0	0
	Adenocarcinoma	133	69	64	0	0
	Carcinoid Tumor	1	0	1	0	0
	Glandular Intraepithelial Neoplasia Grade III	1	0	1	0	0
	Mucinous Adenocarcinofibroma	1	1	0	0	0
	Mucinous Adenocarcinoma	10	6	4	0	0
	Neoplasm Malignant	2	2	0	0	0
	Neuroendocrine Carcinoma	2	1	1	0	0
	Signet Ring Cell Carcinoma	4	1	3	0	0
MULTIPLE MYELOMA		25	13	12	0	0
	Multiple Myeloma	23	11	12	0	0
	Plasmacytoma Extramedullary	1	1	0	0	0
	Plasmacytoma	1	1	0	0	0
EYE		20	4	1	7	8
	Leiomyosarcoma NOS	1	1	0	0	0
	Malignant Myoepithelioma	1	0	1	0	0
	Undifferentiated Retinoblastoma	2	1	0	1	0
	Squamous Cell Carcinoma In Situ	1	1	0	0	0
	Squamous Cell Carcinoma NOS	1	1	0	0	0
	Embryonal Rhabdomyosarcoma NOS	1	0	0	1	0
	Differentiated Retinoblastoma	3	0	0	0	3
	Retinoblastoma NOS	10	0	0	5	5
OTHER DIGESTIVE		3	2	1	0	0
	Carcinoid Tumor	1	1	0	0	0
	Gastrointestinal Stromal Sarcoma	1	1	0	0	0
	Signet Ring Cell Carcinoma	1	0	1	0	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADIATRICS	
			MALE	FEMALE	MALE	FEMALE
PROSTATE		64	64	0	0	0
	Adenocarcinoma NOS	62	62	0	0	0
	Carcinoma NOS	2	2	0	0	0
LARYNX		24	19	5	0	0
	Adenosquamous Carcinoma	1	0	1	0	0
	Squamous Cell Carcinoma Microinvasive	1	1	0	0	0
	Squamous Cell Carcinoma NOS	22	18	4	0	0
KIDNEY		91	47	22	10	12
	Adenocarcinoma With Mixed Subtypes	1	1	0	0	0
	Carcinoma NOS	1	1	0	0	0
	Clear Cell Adenocarcinoma	21	14	6	0	1
	Nephroblastoma	19	0	0	9	10
	Neuroblastoma	2	0	0	1	1
	Papillary Adenocarcinoma	5	4	1	0	0
	Renal Cell Carcinoma Chromophobe Type	11	6	5	0	0
	Renal Cell Carcinoma NOS	27	17	10	0	0
	Renal Cell Carcinoma Sarcomatoid	1	1	0	0	0
	Sarcoma NOS	1	1	0	0	0
	Spindle Cell Sarcoma	1	1	0	0	0
	Transitional Cell Carcinoma	1	1	0	0	0
URINARY BLADDER		74	59	14	0	1
	Adenocarcinoma NOS	2	1	1	0	0
	Carcinoma NOS	2	1	1	0	0
	Embryonal Rhabdomyosarcoma Nos	1	0	0	0	1
	Neoplasm Malignant	1	1	0	0	0
	Neuroendocrine Carcinoma NOS	1	1	0	0	0
	Papillary Adenocarcinoma NOS	1	1	0	0	0
	Papillary Carcinoma NOS	1	1	0	0	0
	Papillary Transitional Cell Carcinoma	21	17	4	0	0
	Papillary Transitional Cell Carcinoma Non-Invasive	27	23	4	0	0
	Squamous Cell Carcinoma	2	1	1	0	0
	Transitional Cell Carcinoma In SITU	2	2	0	0	0
	Transitional Cell Carcinoma NOS	13	10	3	0	0
OTHER URINARY ORGAN		2	1	1	0	0
	Papillary Transitional Cell Carcinoma	2	1	1	0	0
BRAIN,CNS		117	49	32	22	14
	Astrocytoma	2	1	0	1	0
	Astrocytoma Anaplastic	2	0	2	0	0
	Chondroid Chordoma	1	0	1	0	0
	Craniopharyngioma Adamantinomatous	1	1	0	0	0
	Desmoplastic Nodular Medulloblastoma	1	0	0	1	0
	Ependymoma	2	1	0	0	1
	Ependymoma Anaplastic	2	1	0	0	1
	Fibrous Meningioma	1	1	0	0	0
	Ganglioglioma NOS	1	0	0	1	0
	Germinoma	1	0	1	0	0
	Glioblastoma	22	13	8	0	1
	Glioma Malignant	8	2	1	2	3
	Malignant Melanoma Nos (Except Juvenile Melanoma)	1	1	0	0	0
	Medulloblastoma	15	2	0	11	2
	Meningioma Malignant	5	2	3	0	0
	Meningioma NOS	13	5	8	0	0
	Mixed Glioma	11	5	6	0	0
	Neuroblastoma NOS	2	1	0	1	0

SITE	HISTOLOGY (NOS - Not Otherwise Specified)	ALL CASES	ADULTS		PEADIATRICS	
			MALE	FEMALE	MALE	FEMALE
	Neurilemoma NOS	2	2	0	0	0
	Oligodendroblastoma [OBS]	1	1	0	0	0
	Oligodendroglioma	6	5	1	0	0
	Oligodendroglioma Anaplastic	3	2	1	0	0
	Pilocytic Astrocytoma	11	1	0	5	5
	Pleomorphic Xanthoastrocytoma	3	2	0	0	1
	OTHER ENDOCRINE GLANDS	22	6	5	6	5
	Adrenal Cortical Carcinoma	4	1	3	0	0
	Germinoma	2	1	0	1	0
	Lymphoepithelial Carcinoma	1	0	1	0	0
	Neoplasm Malignant	2	1	1	0	0
	Neuroblastoma NOS	7	0	0	4	3
	Pineoblastoma	1	0	0	0	1
	Thymoma NOS	1	1	0	0	0
	Thymoma Type B2 Malignant	1	1	0	0	0
	Thymoma Type B3 Malignant	1	1	0	0	0
	Retinoblastoma NOS	1	0	0	1	0
	Squamous Cell Carcinoma Keratinizing NOS	1	0	0	0	1
	LYMPH NODES (HODGKIN'S LYMPHOMA)	109	65	34	6	4
	Nodular Sclerosis	47	28	19	0	0
	Nodular Lymphocyte Predominance	15	10	2	2	1
	Lymphocyte Rich	3	2	1	0	0
	Lymphocyte Depletion	1	1	0	0	0
	Hodgkin's Lymphoma NOS	39	21	11	4	3
	Mixed Cellularity	4	3	1	0	0
	LYMPH NODES (NON HODGKIN'S LYMPHOMA)	191	97	70	18	6
	Anaplastic Large Cell Lymphoma T Cell	6	3	2	1	0
	Burkitt Lymphoma	16	7	0	6	3
	Cutaneous T-Cell Lymphoma NOS	3	2	1	0	0
	Follicular Lymphoma Grade 1	4	1	3	0	0
	Follicular Lymphoma Grade3	5	4	1	0	0
	Follicular lymphoma NOS	4	2	1	0	1
	Large B-Cell Diffuse	85	40	41	3	1
	Malignant Lymphoma Non-Hodgkin NOS	16	6	7	2	1
	Malignant Lymphoma NOS	6	5	1	0	0
	Malignant Lymphoma Lymphoplasmacytic	2	0	2	0	0
	Mantle Cell Lymphoma	1	1	0	0	0
	Marginal Zone B-Cell Lymphoma NOS	3	3	0	0	0
	Mature T-Cell Lymphoma	12	8	1	3	0
	Mycosis Fungoides	21	12	8	1	0
	NK/T-Cell Lymphoma Nasal and Nasal Type	4	2	1	1	0
	PRECURSOR CELL LYMPHOBLASTIC LYMPHOMA	1	0	0	1	0
	Splenic Marginal Zone B-Cell Lymphoma	2	1	1	0	0
	UNKNOWN OR ILL-DEFINED	27	11	11	2	3
	Adenocarcinoma NOS	5	3	2	0	0
	Carcinoma NOS	7	5	2	0	0
	Choriocarcinoma NOS	1	0	1	0	0
	Clear Cell Sarcoma NOS (Except Of Kidney)	1	0	1	0	0
	Liposarcoma	1	1	0	0	0
	Ewing Sarcoma	1	0	1	0	0
	Large B-Cell Lymphoma (In Multicentric Castleman Disease)	1	0	1	0	0
	Neuroblastoma NOS	5	0	0	2	3
	Neoplasm Malignant	1	0	1	0	0
	Neuroendocrine Carcinoma	3	1	2	0	0
	Renal Cell Carcinoma NOS	1	1	0	0	0

TABLE 10
MULTIPLE PRIMARY SITES TABLE
2015

PRIMARY SITE 2013	HISTOLOGY (NOS - Not Otherwise Specified)	OTHER PRIMARIES (PREVIOUS OR CONCURRENT)	ALL		
			CASES	MALE	FEMALE
			193	75	118
LIP			2	2	0
Squamous Cell Carcinoma		Refractory Anemia Excess Blasts	1	1	0
Squamous Cell Carcinoma		skin - Sq Cell Ca	1	1	0
TONGUE			3	2	1
Squamous Cell Carcinoma*		Lip - Sq Cell Ca	1	0	1
		Rt Lower Alveolus - Sq Cell Ca			
Squamous Cell Carcinoma		Nasopharynx - Undifferentiated Ca	1	1	0
Squamous Cell Carcinoma*		Oral Cavity - Sq Cell Ca	1	1	0
		CML			
MOUTH			4	1	3
Spindle Cell Sarcoma		Peritoneum - malignant Neoplasm	1	1	0
Squamous Cell Carcinoma		Tongue - Sq Cell Ca	1	0	1
Squamous Cell Carcinoma		Cheek Mucosa - Sq Cell Carcinoma	1	0	1
Squamous Cell Carcinoma		Colon - Adenocarcinoma	1	0	1
SALIVARY GLAND			2	1	1
Adenoid Cystic Carcinoma		Thyroid - Papillary Carcinoma	1	0	1
Malignant Neoplasm		Bladder - Urothelial Carcinoma	1	1	0
GUM			1	0	1
Squamous Cell Carcinoma		Bone Marrow - CML	1	0	1
ESOPHAGUS			2	2	0
Signet Ring Cell Ca		Bladder - Papillary Transitional Cell Ca	1	1	0
Adenocarcinoma		Thyroid - Papillary Adenocarcinoma	1	1	0
STOMACH			1	1	0
Adenocarcinoma		Kidney - Nephroblastoma	1	1	0
SMALL INTESTINE			1	0	1
Adenocarcinoma		Nasopharynx - Sq Cell Ca	1	0	1
COLON			16	7	9
Adenocarcinoma		Lung - Sq Cell Ca	1	1	0
Adenocarcinoma		Retroperitoneum - Adenocarcinoma	1	0	1
Adenocarcinoma		Stomach - Signet Ring Cell Ca	1	1	0
Adenocarcinoma In Situ		Breast - Ductal Carcinoma	1	0	1
Adenocarcinoma		Liver - Hepatocellular Carcinoma	1	1	0
Adenocarcinoma		Pancreas - Adenosquamous Ca	1	0	1
Adenocarcinoma		Thyroid - Papillary Adenocarcinoma	1	0	1
Adenocarcinoma		Rectum - Adenocarcinoma	1	0	1
Neoplasm Malignant		Rectum - Adenocarcinoma	1	1	0
Adenocarcinoma		Breast - Ductal Carcinoma	1	0	1
Adenocarcinoma		Kidney - Renal Cell Ca	1	1	0
Adenocarcinoma		Thyroid - Follicular Adenocarcinoma	1	0	1
Adenocarcinoma		Skin - Basal Cell Carcinoma	1	1	0
Adenocarcinoma		Kidney - Renal Cell Ca	1	1	0
Adenocarcinoma		Skin - Sq Cell Ca	1	0	1
Adenocarcinoma		Rectum - Adenocarcinoma	1	0	1

PRIMARY SITE 2013	HISTOLOGY (NOS - Not Otherwise Specified)	OTHER PRIMARIES (PREVIOUS OR CONCURRENT)	ALL CASES	MALE	FEMALE
RECTUM & RECTOSIGMOID JUNCTION			3	1	2
Adenocarcinoma		Thyroid - Papillary Adenocarcinoma	1	0	1
Adenocarcinoma		Thyroid - Papillary Adenocarcinoma	1	1	0
Adenocarcinoma		Colon - Adenocarcinoma	1	0	1
CORPUS UTERI			5	0	5
Endometrioid Adenoca		Lymph Nodes- Large B-Cell Lymphoma	1	0	1
Serous Cystadenocarcinoma		Breast - Ductal Carcinoma	1	0	1
Endometrioid Adenoca		Breast - Ductal Carcinoma	1	0	1
Endometrioid Adenoca		Ovary - Serous Cystadenoca	1	0	1
Endometrioid Adenoca		Thyroid - Papillary Adenoca	1	0	1
BRAIN,CNS			3	2	1
Glioblastoma		Bone Marrow- Multiple Myeloma	1	1	0
Ependymoma Anaplastic		Brain - Glioblastoma	1	1	0
Meningioma		Thyroid - Carcinoma	1	0	1
LIVER, INTRAHEPATIC BILE DUCT			4	4	0
Hepatocellular Carcinoma		Liver - Hepatocellular Ca	1	1	0
Hepatocellular Carcinoma		Large B-Cell Lymphoma	1	1	0
Hepatocellular Carcinoma		Liver - Hepatocellular Ca	1	1	0
Hepatocellular Carcinoma		Bladder - Transitional Cell Ca	1	1	0
PANCREAS			1	1	0
Adenocarcinoma		Bladder - Transitional Cell Carcinoma	1	1	0
NASOPHARYNX			1	1	0
Carcinoma		Thyroid - Papillary Adenocarcinoma	1	1	0
LUNG			3	2	1
Squamous Cell Carcinoma		Thyroid - Papillary Adenocarcinoma	1	0	1
Adenocarcinoma		Stomach - Adenocarcinoma	1	1	0
Non-Small Cell Ca		hodgkin's Lymphoma	1	1	0
BONE			4	3	1
Osteosarcoma		Eye-Retinoblastoma	1	1	0
Neoplasm Malignant		Soft Tissue- Neoplasm Malignant	1	0	1
Mesenchymal Chondrosarcoma		Hodgkin's Lymphoma	1	1	0
Kaposi Sarcoma		Prostate- Malignant Neoplasm	1	1	0
BONE MARROW			13	5	8
Acute Lymphoblastic Leukemia		Bone - Ewing Sarcoma	1	1	0
Acute Myeloid Leukemia*		Skin - Basal Cell Carcinoma	1	0	1
		Cervix Uteri - Sarcoma			
Myeloid Leukemia		Hypereosinophilic Syndrome	1	1	0
Acute Myeloid Leukemia		Chronic Myeloid Leukemia	1	0	1
Acute Myeloid Leukemia		Breast - Invasive Ductal Ca	1	0	1
Chronic Myelogenous Leukemia		Breast - Invasive Ductal Ca	1	0	1
Myelodysplastic Syndrome		Refractory Anemia Excess Blasts	1	0	1
Acute Myeloid Leukemia		Chronic Myeloid Leukemia	1	0	1
Acute Myeloid Leukemia		Thyroid - Papillary Microcarcinoma	1	0	1
Acute Myeloid Leukemia		Tongue - Sq Cell Ca	1	0	1
Chronic Lymphocytic Leukemia		B-Cell Prolymphocytic Leukemia	1	1	0
B-Cell Lymphoblastic Leukemia		Kidney - Renal Cell Ca	1	1	0
Acute Myeloid Leukemia		Lymph Nodes - Hodgkin's Lymphoma	1	1	0
EYE			2	1	1
Retenoblastoma		Other Eye - Retenoblastoma	1	1	0
Retenoblastoma		Other Eye - Retenoblastoma	1	0	1
SOFT TISSUE			2	2	0
Ewing Sarcoma*		Soft tissue - Ewing Sarcoma	1	1	0
		Hodgkin's Lymphoma			
Giant Cell Sarcoma		Soft tissue - Giant Cell Sarcoma	1	1	0

PRIMARY SITE	HISTOLOGY	OTHER PRIMARIES	ALL	MALE	FEMALE
2013	(NOS - Not Otherwise Specified)	(PREVIOUS OR CONCURRENT)	CASES		
SKIN			8	6	2
Melanoma		salivary Gland - Sq Cell Ca	1	1	0
Basal Cell Ca		Skin - Basal Cell Ca	1	1	0
Squamous Cell Ca		Skin - Basal Cell Ca	1	0	1
Basal Cell Ca		Skin - Basal Cell Ca	1	1	0
Basal Cell Ca		Skin - Basal Cell Ca	1	1	0
Squamous Cell Ca		Breast - Invasive Ductal Ca	1	0	1
Squamous Cell Ca		Adrenal Gland - Cortical Carcinoma	1	1	0
Basal Cell Ca		Prostate - Adenocarcinoma	1	1	0
BREAST			42	0	42
Peliomorphic Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Kidney- Clear Cell Adenocarcinoma	1	0	1
Ductal Carcinoma		Lymph Nodes - Hodgkin's Lymphoma	1	0	1
Ductal Carcinoma In Situ		Thyroid- Papillary Adenocarcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Corpus Uteri- Endometrioid Adenoca	1	0	1
Ductal Carcinoma In Situ		Liver -Hepatocellular Ca	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Ovary - Serous Cystadenocarcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Breast - Neoplasm Malignant	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma*		Corpus Uteri- Sarcoma	1	0	1
		Breast - Ductal Carcinoma			
Ductal Carcinoma		Thyroid- Medullary Carcinoma	1	0	1
Ductal Carcinoma		Thyroid - Papillary Microcarcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Thyroid - Papillary adenocarcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma In Situ		Breast - Ductal Ca In Situ	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Lobular Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Breast - Medullary Carcinoma	1	0	1
Ductal Carcinoma		Kidney- Renal Cell Carcinoma	1	0	1
Ductal Carcinoma		Liver -Hepatocellular Ca	1	0	1
Ductal Carcinoma		Breast - Lobular Carcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Ca In Situ	1	0	1
Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma*		Breast - Ductal Carcinoma	1	0	1
		Kidney - Clear Cell Sarcoma			
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
Ductal Carcinoma		Breast - Lobular Carcinoma In Situ	1	0	1
Lobular Carcinoma		Breast - Lobular Carcinoma	1	0	1
Ductal Carcinoma In Situ		Breast - Ductal Ca In Situ	1	0	1
Ductal Carcinoma		Breast - Carcinoma	1	0	1
Lobular Carcinoma		Corpus Uteri - Adenocarcinoma	1	0	1
Ductal Carcinoma		Breast - Ductal Ca	1	0	1
Ductal Carcinoma		Breast - Ductal Ca	1	0	1
Lobular Carcinoma		Breast - Lobular Ca	1	0	1
Ductal Carcinoma		Breast - Ductal Carcinoma	1	0	1
PROSTATE GLAND			2	2	0
Adenocarcinoma		Large B-Cell Lymphoma	1	1	0
Adenocarcinoma		Bladder - Papillary Transitional Cell Ca	1	1	0
VAGINA			1	0	1
Squamous Cell Carcinoma*		Skin - Mycosis Fungoides	1	0	1
TESTIS			1	1	0
Seminoma		Testis - Mixed Germ Cell Tumor	1	1	0

PRIMARY SITE 2013	HISTOLOGY (NOS - Not Otherwise Specified)	OTHER PRIMARIES (PREVIOUS OR CONCURRENT)	ALL		
			CASES	MALE	FEMALE
OVARY			10	0	10
Clear Cell Adenocarcinoma*	Cervix Uteri - Sq Cell Ca		1	0	1
	Uterus - Adenocarcinoma				
Serous Cystadenocarcinoma	Ovary - Papillary Carcinoma		1	0	1
Serous Cystadenocarcinoma	Ovary - Serous Cystadenoca		1	0	1
Serous Cystadenocarcinoma	Ovary - Serous Cystadenoca		1	0	1
Papillary Serous Cystadenoca	Ovary - Papillary Serous Cystadenoca		1	0	1
Adenocarcinoma	Ovary - Serous Cystadenoca		1	0	1
Serous Cystadenocarcinoma	Ovary - Serous Cystadenoca		1	0	1
Papillary Serous Cystadenoca	Ovary - Serous Cystadenoca		1	0	1
Papillary Serous Cystadenoca	Ovary - Serous Cystadenoca		1	0	1
Malignant Serous Tumor	Ovary - Malignant Serous Tumor		1	0	1
KIDNEY			7	6	1
Renal Cell Carcinoma	Kidney - Renal Cell Ca		1	1	0
Renal Cell Carcinoma*	Lung - Adenoca		1	1	0
	Lung - Neuroendocrine Ca				
Renal Cell Carcinoma	Breast - Carcinoma		1	0	1
Renal Cell Ca Sarcomatoid	Bladder - Papillary Transitional Cell Ca		1	1	0
Renal Cell Carcinoma	Skin - Sq Cell Ca		1	1	0
Renal Cell Carcinoma	Liver - Hepatocellular Ca		1	1	0
Neuroblastoma	unknown - Neuroblastoma		1	1	0
URINARY BLADDER			7	6	1
Transitional Cell Ca	Liver-Hepatocellular Ca		1	1	0
Papillary Transitional Cell Ca	Lip- Squamous Cell Ca		1	1	0
Non-Invasive					
Papillary Transitional Cell Ca	Bladder - Papillary Transitional Cell Ca		1	1	0
Papillary Transitional Cell Ca	Large B-Cell Lymphoma		1	1	0
Papillary Transitional Cell Ca	Cervix Uteri- Endometrioid Adenoca.		1	0	1
Non-invasive					
Transitional Cell Ca In Situ	Prostate - Adenocarcinoma		1	1	0
Adenocarcinoma	Prostate - Adenocarcinoma		1	1	0
	Cervix - Sq Cell Ca				
LYMPH NODES			11	6	5
Hodgkin's Lymphoma	Large B-Cell Lymphoma		1	0	1
Hodgkin's Lymphoma	Large B-Cell Lymphoma		1	1	0
Hodgkin's Lymphoma	Thrombocytopenia		1	1	0
Hodgkin's Lymphoma	Large Anaplastic Lymphoma		1	0	1
Non-Hodgkin's Lymphoma	Stomach - Large B-Cell Lymphoma		1	1	0
Non-Hodgkin's Lymphoma	Mixed Cellularity Hodgkin's Disease		1	1	0
Non-Hodgkin's Lymphoma	Skin - Basal Cell Ca		1	1	0
Non-Hodgkin's Lymphoma	Thyroid - Papillary Adenocarcinoma		1	0	1
Non-Hodgkin's Lymphoma	Breast - Invasive Ductal Ca		1	0	1
Non-Hodgkin's Lymphoma	Large B-Cell Lymphoma		1	0	1
Non-Hodgkin's Lymphoma	Lymph Nodes - Kaposis Sarcoma		1	1	0
THYROID			25	6	19
Papillary Carcinoma	Thyroid - Oxyphilic Adenocarcinoma		1	0	1
Papillary Carcinoma	Tongue - Sq Cell Ca		1	0	1
Papillary Adenocarcinoma	Acute Myeloid Leukemia		1	1	0
Papillary Adenocarcinoma	Breast - Non-Infiltrating Intraductal Ca		1	0	1
Mixed Medullary Follicular Ca	Thyroid - Papillary Adenoca		1	0	1
Papillary Microcarcinoma	Thyroid - Papillary Carcinoma		1	0	1
Follicular Carcinoma	Nasopharynx - Undifferentiated Ca		1	1	0
Papillary Adenocarcinoma	Rectum - Adenocarcinoma		1	0	1
Papillary Adenocarcinoma	Breast - Invasive Ductal Ca		1	0	1
Oxyphilic Adenocarcinoma	Hodgkin's Lymphoma		1	1	0
Papillary Adenocarcinoma	Endometrium - Sq Cell Ca		1	0	1
Papillary Carcinoma	Bone - Chondroblastic Osteosarcoma		1	0	1
Papillary Adenocarcinoma	Breast - Invasive Ductal Ca		1	0	1
Papillary Adenocarcinoma	Rt Thigh - Basal Squamous Cell Ca		1	0	1
Papillary Adenocarcinoma	Soft Tissue - Undifferentiated Sarcoma		1	0	1
Papillary Carcinoma	Thyroid - Oxyphilic Adenocarcinoma		1	0	1
Papillary Adenocarcinoma	Unknown - Clear Cell Sarcoma		1	0	1
Papillary Carcinoma	Nasopharynx - Nonkeratinizing Ca		1	0	1
Papillary Carcinoma	Larynx - Sq Cell Ca		1	1	0
Papillary Carcinoma	Thyroid - Papillary Carcinoma		1	0	1
Papillary Adenocarcinoma	LN - Follicular Lymphoma		1	0	1
Papillary Follicular Ca	Nasopharynx - Undifferentiated Ca		1	1	0
Papillary Follicular Ca	Rectum - Adenocarcinoma		1	0	1
Papillary Follicular Ca	Nasopharynx - Undifferentiated Ca		1	1	0
Papillary Follicular Ca	Uterus - Leiomyosarcoma		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

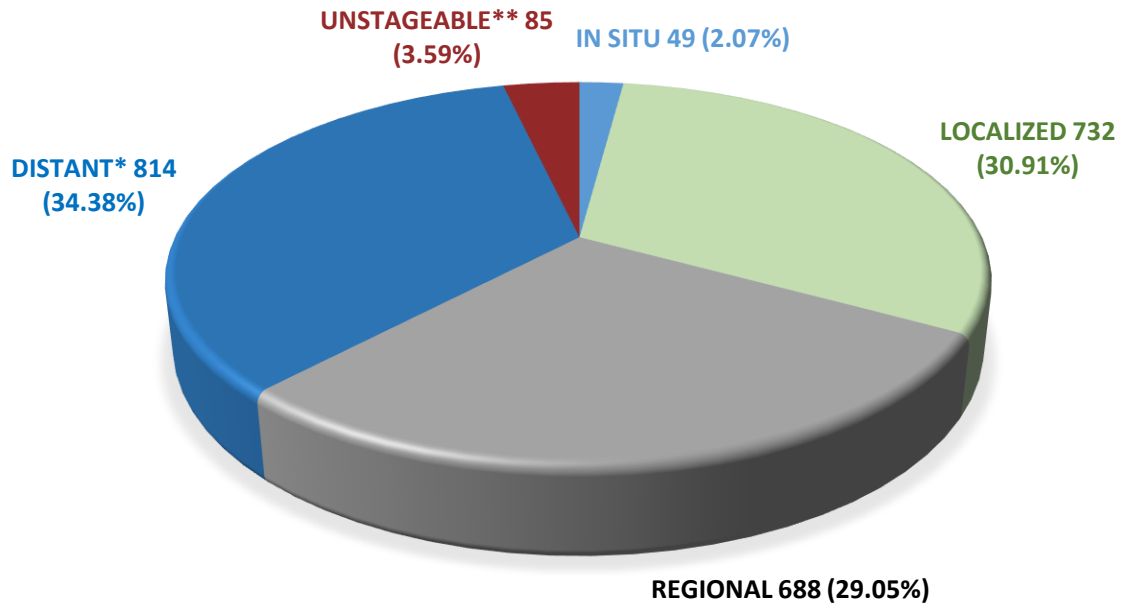
Systemic diseases, i.e., leukemia and multiple myeloma and cases of unstageable unknown primary were disregarded in graphically illustrating the stages for all analytic cases seen at KFSH&RC in 2015 (Figure 13).

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

- T: Extent of the primary tumor
- N: Absence or presence and extent of regional lymph node involvement
- M: Absence or presence of distant metastasis

FIGURE 13

**DISTRIBUTION OF ANALYTIC CASES
BY SEER STAGE AT DIAGNOSIS
2015 (TOTAL CASES = 2,368)**



*Excludes Hematopoietic Primaries (203 cases)

**Excludes Unstageable Unknown Primaries (95 cases)

TABLE 11
AJCC CLINICAL TNM STAGE GROUP OF 2010-2015 CASES OF MAJOR SITES

BREAST							
STAGE	2010	2011	2012	2013	2014	2015	TOTAL
0	8	12	14	13	8	6	61
0IS	0	0	0	0	0	1	1
1	0	0	0	7	12	3	22
1A	39	39	37	27	14	19	175
1B	0	0	0	2	0	0	2
2	0	0	0	1	1	0	2
2A	61	67	72	84	50	42	376
2B	53	61	34	61	62	51	322
3	0	0	0	0	1	1	2
3A	16	30	31	47	43	50	217
3B	35	46	39	50	48	37	255
3C	6	3	8	2	9	10	38
4	75	70	71	70	52	66	404
4B	0	0	0	0	1	1	2
UNSTAGEABLE	1	0	0	1	0	0	2
UNK	81	82	66	66	30	24	349
TOTAL	375	410	372	431	331	311	2230

NHL							
STAGE	2010	2011	2012	2013	2014	2015	TOTAL
1	0	1	4	6	5	2	18
1A	26	22	27	17	11	11	114
1B	7	1	3	7	7	9	34
2	1	0	3	2	3	2	11
2A	27	15	16	14	17	15	104
2B	8	9	5	10	5	10	47
3	1	3	5	2	8	6	25
3A	18	9	10	13	4	11	65
3B	8	6	9	16	5	7	51
3C	0	0	0	0	0	1	1
4	4	5	8	5	12	15	49
4A	29	26	24	17	11	14	121
4B	27	31	31	46	30	25	190
UNSTAGEABLE	0	1	2	1	1	5	10
UNK	6	10	6	3	6	5	36
TOTAL	162	139	153	159	125	138	876

THYROID							
STAGE	2010	2011	2012	2013	2014	2015	TOTAL
1	140	158	167	166	64	85	780
2	16	11	12	15	8	16	78
3	6	12	12	8	8	11	57
4	0	1	2	0	4	3	10
4A	5	1	1	6	0	4	17
4B	1	1	0	0	0	0	2
4C	8	17	3	8	0	8	44
UNSTAGEABLE	0	0	1	0	0	1	2
UNK	36	44	48	40	19	48	235
TOTAL	212	245	246	243	103	176	1225

HODGKIN'S DISEASE							
STAGE	2010	2011	2012	2013	2014	2015	TOTAL
1	0	0	1	0	1	1	3
1A	5	4	9	8	14	10	50
1B	1	0	0	1	1	0	3
2	1	0	1	0	3	1	6
2A	25	21	24	17	27	26	140
2B	12	10	13	13	17	7	72
3	0	0	0	3	6	3	12
3A	12	13	17	14	17	12	85
3B	14	17	11	17	13	7	79
4	0	0	1	5	5	10	21
4A	3	6	11	3	3	5	31
4B	30	24	28	25	34	19	160
UNK	1	1	1	1	0	2	6
TOTAL	104	96	117	107	141	103	668

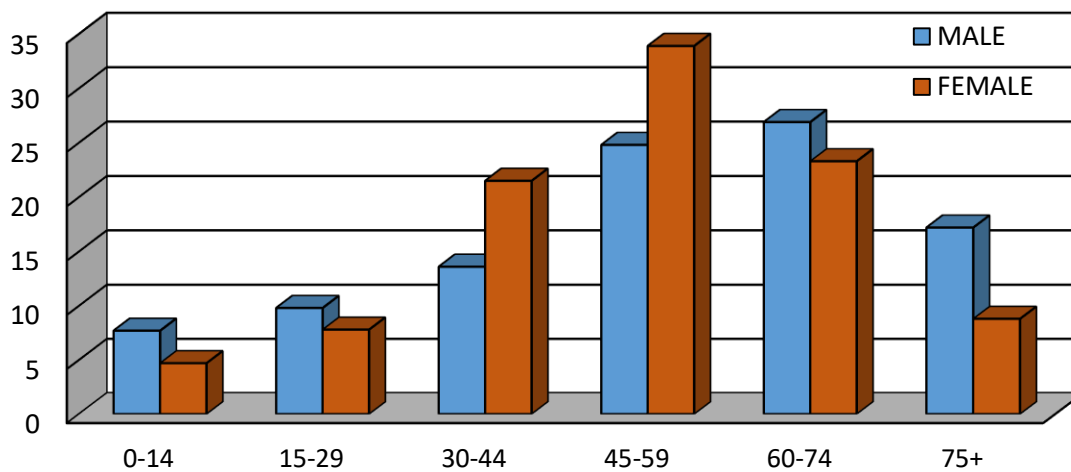
LIVER							
STAGE	2010	2011	2012	2013	2014	2015	TOTAL
1	24	20	25	18	2	16	105
2	12	16	11	10	6	4	59
3	0	0	0	0	0	1	1
3A	2	7	3	6	2	2	22
3B	2	2	1	2	1	4	12
3C	1	0	2	0	0	0	3
4	3	2	4	0	4	5	18
4A	0	3	1	0	0	1	5
4B	8	15	6	10	2	5	46
UNSTAGEABLE	14	13	7	13	3	3	53
UNK	30	32	41	39	5	8	155
TOTAL	96	110	101	98	25	49	479

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

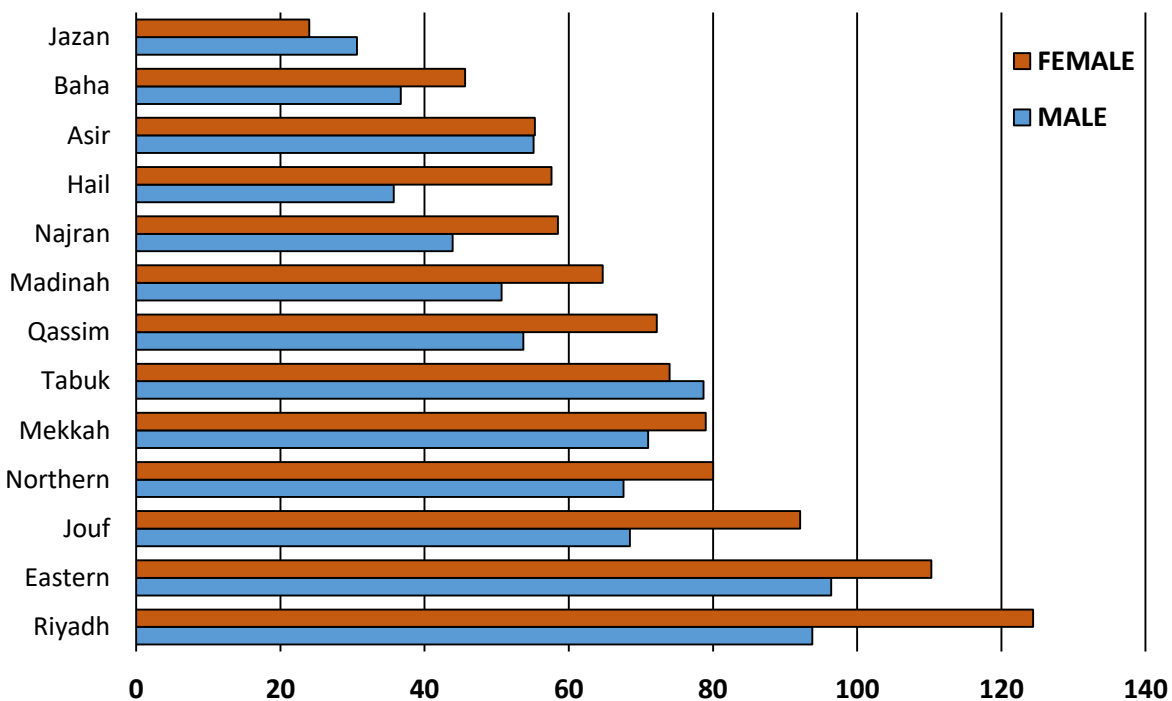
Cancer Incidence in Saudi Arabia, 2015:

Between January 01 and December 31, 2015, the total number of newly diagnosed cancer cases reported to the Saudi Cancer Registry (SCR) was 16,210. Overall cancer was more among women than men; it affected 8,565 (52.8%) females and 7,645 (47.2%) males. Total of 12,038 cases were reported among Saudi nationals, 3,504 among non-Saudi, and 142 of unknown nationality.

DISTRIBUTION OF CANCER CASES AMONG SAUDI NATIONALS BY GENDER AND AGE GROUP, 2015



AGE STANDARIZED RATE OF ALL CANCER SITES AMONG SAUDI REGIONS, 2015



V. APPENDIX

REQUESTS FOR TUMOR REGISTRY DATA 2015

January

MRN of patient with ovarian granulosa cell tumor(adult).
All stages, any treatment since start of the hospital till now. Dr. M. Elshenawy

Patient population: Tumors of pancreas (malignant) (Adenocarcinoma).
Tumor period: 2005-2014, Site: Pancreas
Treatment: all except palliative patients who underwent surgery chemotherapy
And radiation. Dr. M. Alsebayl

1- Follicular lymphoma with and without extra nodal involvement.
2- Follicular lymphoma and age <30 years. Dr. S. Akhtar

March

We plan to conduct a research regarding micro papillary thyroid cancer
(<1 cm), We wish to provide us with all PTC that care less than 1cm from 2002. Dr. A. Alzahrani

Outcome of VCEP-M in Acute Phenotypic Leukemia from Tumor Registry
1994-Now 2015, Age > 14 Years. Dr. A. Alhurajji

1- Distribution of 20 most common malignancies
2- Comparative data KFSHRC VS. SCR VS, USA (Bone Tumor)
3- Distribution of 10 most common pediatric malignancies including Osteosarcoma
by histology
4- Treatment of osteosarcoma in KFSHRC Dr. H. Alkhalaf

April

I need tables and graphs on total cancer and thyroid cancer for lecture
that I have outside. Dr. A. Alzahrani

All patients over last 30 years
1- Nodular Lymphocyte predominant Hodgkin's lymphoma.
2- Nodular Lymphocyte Predominant Hodgkin's Disease.
MRN/Gender/Age/Stage/Grade/Therapy chemotherapy/Radiotherapy Dr. Z. Khan

VI. GLOSSARY OF TERMS

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

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

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

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

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

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

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

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

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

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

Local: Tumor is confined to organ of origin.

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

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

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

T+N+M = Stage

T: Extent of primary tumor

N: Extent of regional lymph node involvement

M: Distant Metastasis

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

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