

ANNUAL CANCER REGISTRY REPORT-2007

CANCER STATISTICS

Distribution of neoplasms

Of a total of 4,074 new neoplasms diagnosed or treated at the hospital from January 2007 to December 2007, 2,015 were seen in male (49.46%) and 2,059 (50.54%) in female patients. Three thousand six hundred and forty two (3,642 ((89.40%)) neoplasms were found in adults, whereas, 432 (10.60%) were seen in children. Children were classified as those 18 years or less in age and adults as more than 18 years of age. Table 1 shows the stratification of cases by behavior and age groups.

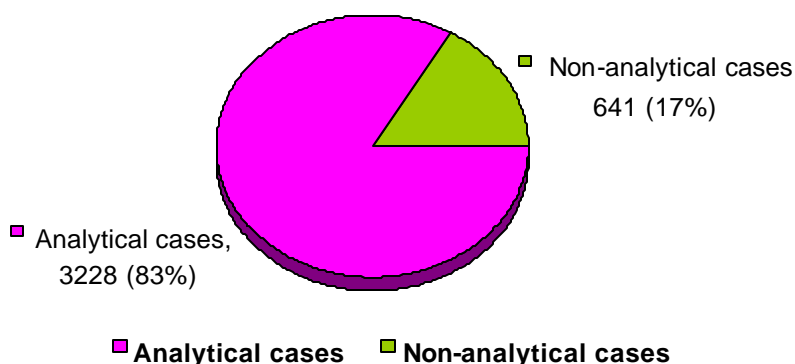
Table 1. Distribution of neoplasms by behavior and age groups.

Behavior	Age Group	Registered patients (4,057)	Reported neoplasm [?] (4,074)
Malignant[?]	Adults	3,441	3,457
	Pediatrics	412	412
	Total	3,853	3,869
Benign[€] & Uncertain Behavior	Adults	184	185
	Pediatrics	20	20
	Total	204	205

Class of Case

Of a total 3,869 malignant cases registered at the Hospital from January 2007 to December 2007, 3,228 (83.43%) were analytical cases and 641 (16.57%) were found to be non-analytical. Figure 1 shows the stratification of analytical and non-analytical cases[¥].

Figure 1: Stratification of analytical and non-analytical cases



Data Source: Cancer Registry & Clinical Data Management, SKMCH & RC

[?] The difference in the number of registered patients and reported neoplasms is attributed to multiple neoplasms in 17 patients.

[?] Cases with behavior code /3 and /2 are considered as malignant cases.

[€] Cases with behavior code /0 and /1 are considered as benign and uncertain respectively.

[¥] Class of case 0 to 2 and 3 to 9 are considered analytical cases and not analytical cases respectively according to the Facility Oncology Revised Data Standards (FORDS) Revised for 2004.

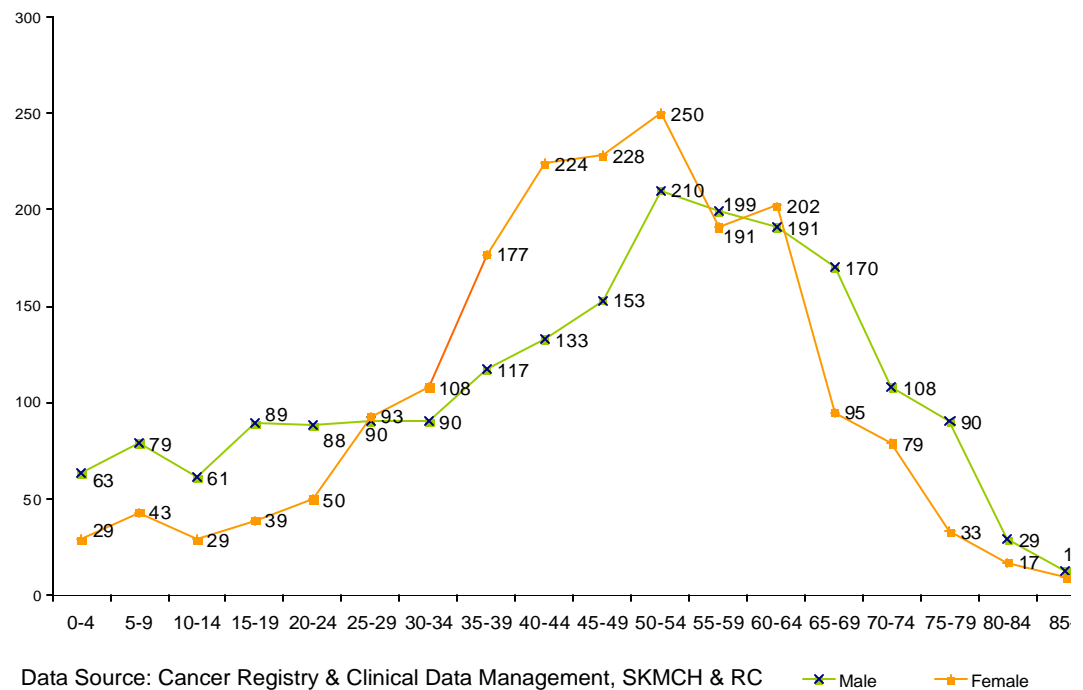
Distribution of malignancies

In the year 2007, 3,869 malignant cases were diagnosed at the hospital with 1,973 seen amongst males and 1,896 amongst females. Table 2 displays the distributions of male and female patients according to age groups and gender.

Table 2. Distribution of cancer cases by sex and age groups

Age range	Male	Female	Total
0-4	63	29	92
5-9	79	43	122
10-14	61	29	90
15-19	89	39	128
20-24	88	50	138
25-29	90	93	183
30-34	90	108	198
35-39	117	177	294
40-44	133	224	357
45-49	153	228	381
50-54	210	250	460
55-59	199	191	390
60-64	191	202	393
65-69	170	95	265
70-74	108	79	187
75-79	90	33	123
80-84	29	17	46
85+	13	9	22
Total	1973	1896	3869

Figure 2. Distribution of malignancies by age groups and sex



Demographics

Of the 3,869 patients diagnosed with malignant cancers, nearly 76.42% (2,957) belonged to the province of Punjab and approximately 16.05% to the North West Frontier Province (N.W.F.P) (Table 3). The fact that the geographic area of residence of a vast majority of patients was Punjab can be explained in light of the information that the hospital is situated in the provincial capital of Punjab and that, this province accounts for almost 56% of the total population of the country.

Table 3. Province-wise distribution of patients

Province/Region	Patients
Punjab	2,957
N.W.F.P	621
Sindh	71
Federal Capital	57
Balochistan	46
F.A.T.A	31
Other countries	86
Total	3,869

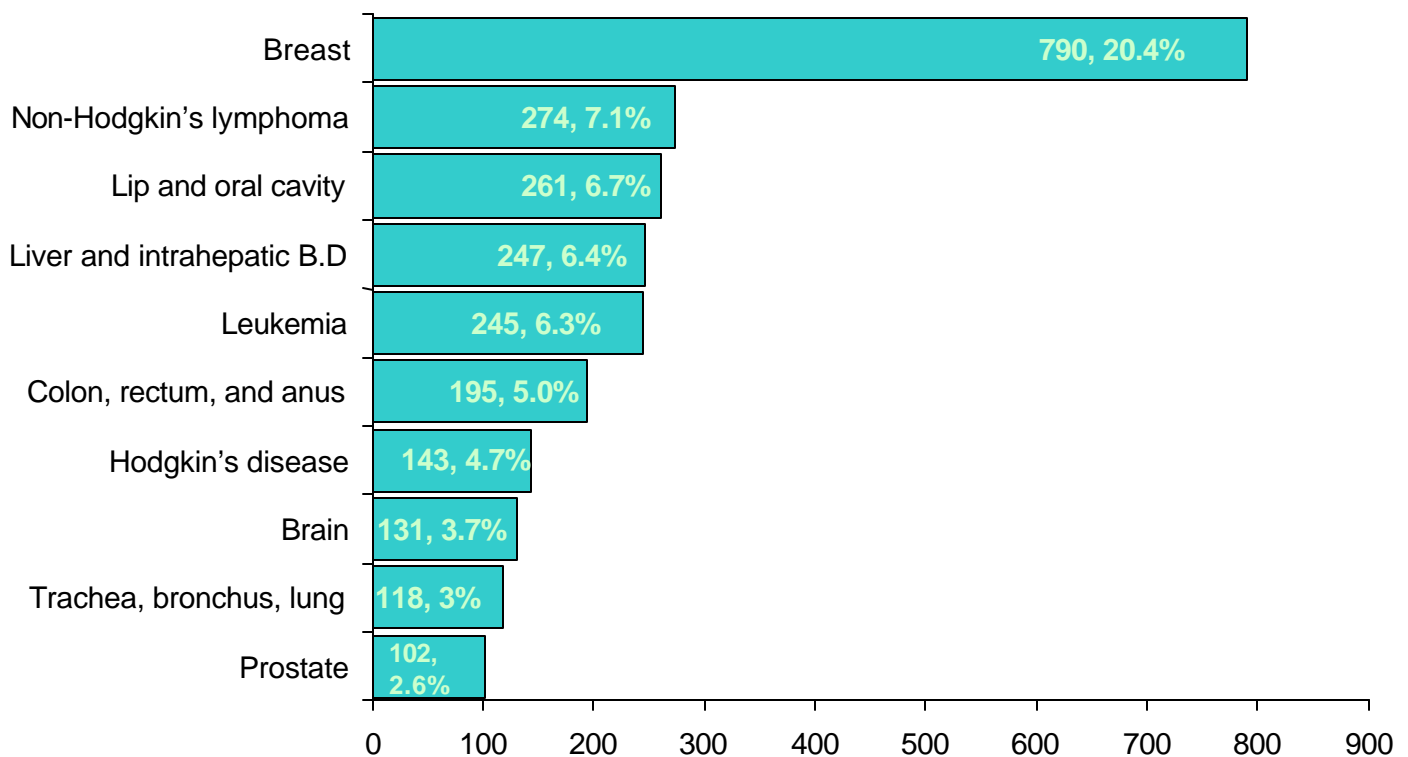
Top Ten Cancers

Table 4 shows the list of the ten commonest malignancies seen at SKMCH & RC during the year 2007. Breast cancer was the leading malignancy with 790 cases accessioned into the Registry. Non-Hodgkin's lymphoma and lip & oral cavity cancer were the second and third most frequently seen cancers, respectively.

Table 4. Top 10 malignancies seen at SKMCH & RC from January 2007 till December 2007, in all age groups and both sexes combined

Sr. No.	ICD-O-3 Category	Count	Percentage	ICD-O-3 Code
1	Breast	790	20.4	C50.0 - C50.9
2	Non-Hodgkin's lymphoma	274	7.1	M9590,91 - M967-972
3	Lip and oral cavity	261	6.7	C00.0 - C08.9
4	Liver and intrahepatic bile ducts	247	6.4	C22.0 - C22.1
5	Leukemia	245	6.3	M982 - M994
7	Colon, rectum, and anus	195	5.0	C18.0 - C21.8
6	Hodgkin's disease	143	4.7	M9650 - M9667
8	Brain	131	3.7	C71.0 - C71.9
9	Trachea, bronchus, lung	118	3.0	C33.9 - C34.9
10	Prostate	102	2.6	C61.9

All age groups (Both sexes)

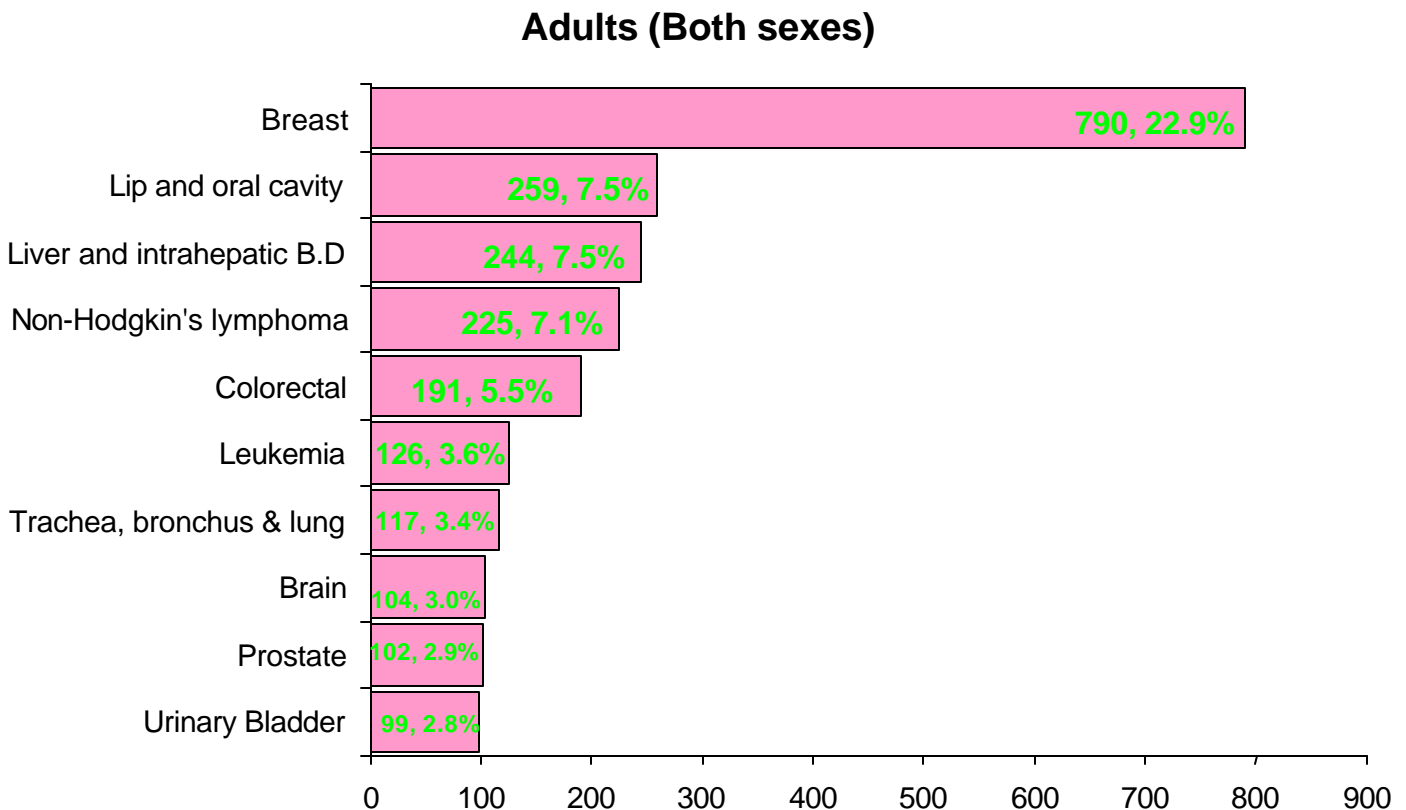


Data Source: Cancer Registry & Clinical Data Management, SKMCH & RC

Amongst adults, during the year 2007, a total of 3,457 malignancies were diagnosed or treated at the Hospital. Breast cancer, lip & oral cavity and liver & intrahepatic bile ducts were registered as the most frequently seen cancers.

Table 5. Top 10 malignancies seen amongst adults (> 18 years) at SKMCH & RC, from January 2007 till December 2007

Sr. No.	ICD-O-3 Category	Count	Percentage	ICD-O-3 Code
1	Breast	790	22.9	C50 - C50.9
2	Lip and oral cavity	259	7.5	C00.0 - C08.9
3	Liver and intrahepatic bile duct	244	7.5	C22.0 - C22.1
4	Non-Hodgkin's lymphoma	225	7.1	M9590,91 - M967-972
5	Colorectal	191	5.5	C18 - C21.8
6	Leukemia	126	3.6	M982 - M994
7	Trachea, bronchus, and lung	117	3.4	C33.9 - C34.9
8	Brain	104	3.0	C71.0 - C71.9
9	Prostate	102	2.9	C61.9
10	Urinary Bladder	99	2.8	C67.0 - C67.9



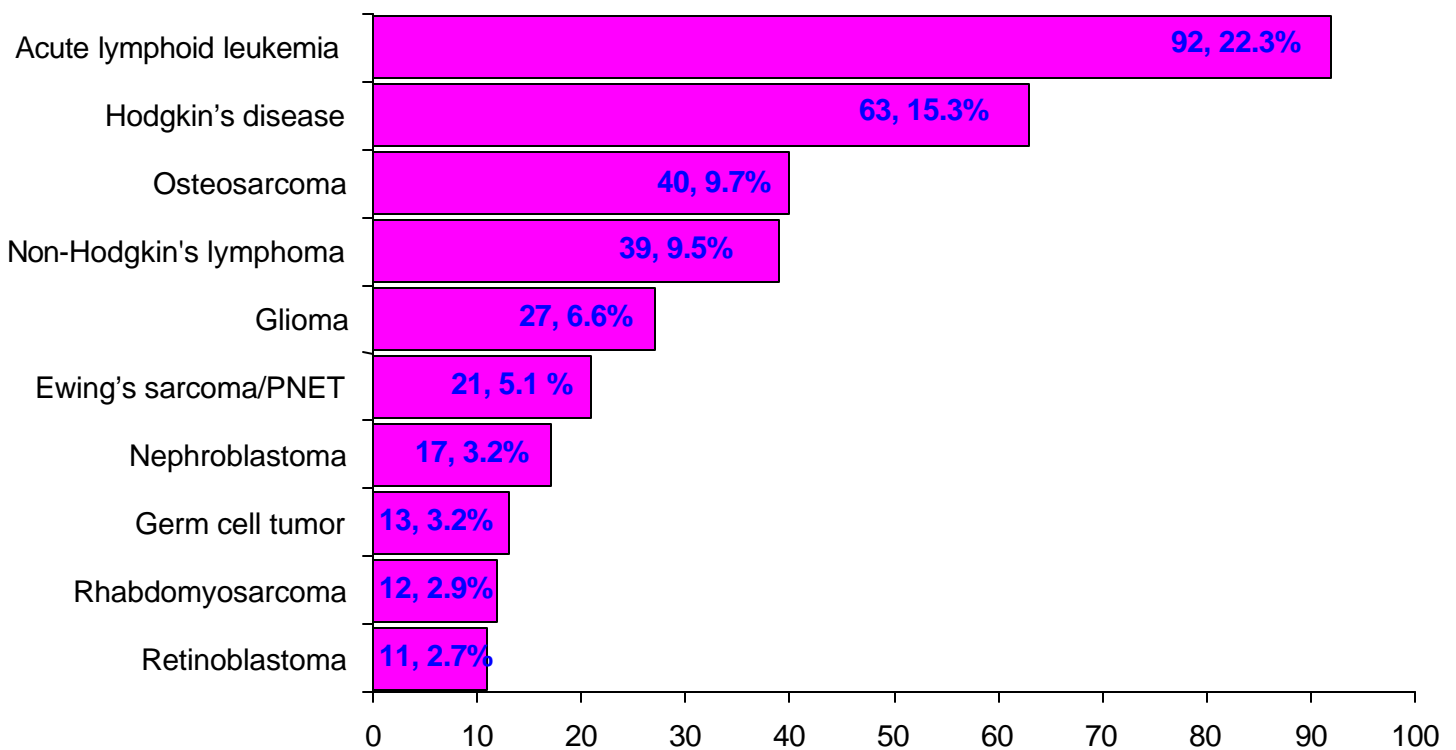
Data Source: Cancer Registry & Clinical Data Management, SKMCH & RC

In children, using the classification based on tumor morphology, Acute Lymphoid Leukemia, Hodgkin's disease, and Osteosarcoma were identified as the three most common malignancies diagnosed or treated at the Hospital. Table 6 shows the distributions of the top ten malignancies seen in children at SKMCH and RC.

Table 6. Top 10 malignancies seen in children (<= 18 years) at SKMCH & RC, from January 2007 till December 2007

Sr. No.	ICD-O-3 Category	Count	Percentage	ICD-O-3 Code
1	Acute lymphoid leukemia	92	22.3	982 - 983
2	Hodgkin's disease	63	15.3	9650 - 9667
3	Osteosarcoma	40	9.7	9180 - 9195
4	Non-Hodgkin's lymphoma	39	9.5	9590, 91- 967-972
5	Glioma	27	6.6	938-948
6	Ewing's sarcoma/PNET	21	5.1	9260 - 9364
7	Nephroblastoma	17	4.1	8960
8	Germ cell tumor	13	3.2	906 - 909
9	Rhabdomyosarcoma	12	2.9	8900 - 8921
10	Retinoblastoma	11	2.7	9510-9514

Pediatrics (both sexes)



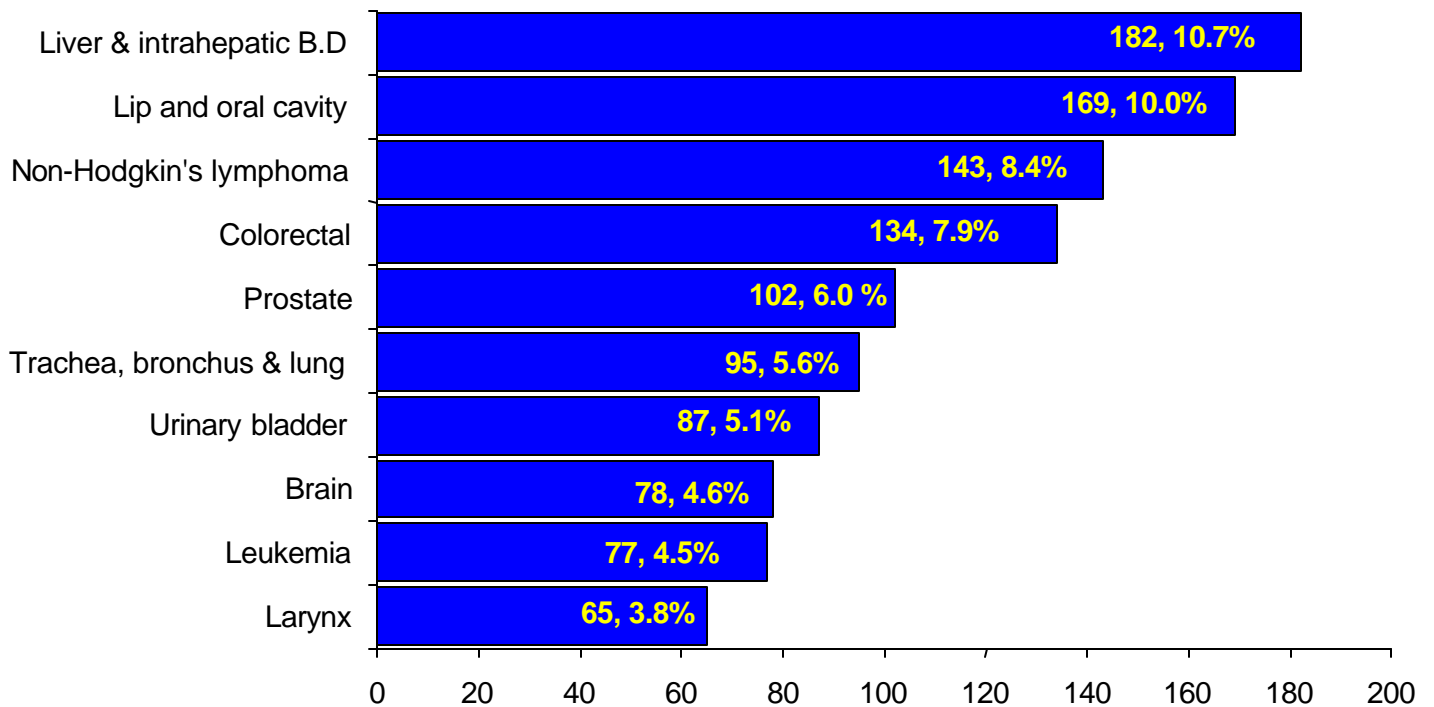
Data Source: Cancer Registry & Clinical Data Management, SKMCH & RC

In adult males, the commonest malignancies were liver cancer, lip & oral cavity, non-Hodgkin's lymphoma (Table 7).

Table 7. Top 10 malignancies in adult males seen at SKMCH & RC from January 2007 till December 2007

Sr.No.	ICD Category	Count	Percentage	ICD-O-3 Code
1	Liver and intra hepatic bile ducts	182	10.7	C22.0 - C22.1
3	Lips and oral cavity	169	10.0	C00.0 - C08.9
2	Non-Hodgkin's lymphoma	143	8.4	M9590, 91- M967-972
4	Colorectal	134	7.9	C18 - C21.8
6	Prostate	102	6.0	C61.9
5	Trachea, bronchus, and lung	95	5.6	C33 - C34.9
8	Urinary bladder	87	5.1	C67.0 - C67.9
7	Brain	78	4.6	C71.0 - C71.9
9	Leukemia	77	4.5	M980 - M994
10	Larynx	65	3.8	C32.0 - C32.9

Adult Males



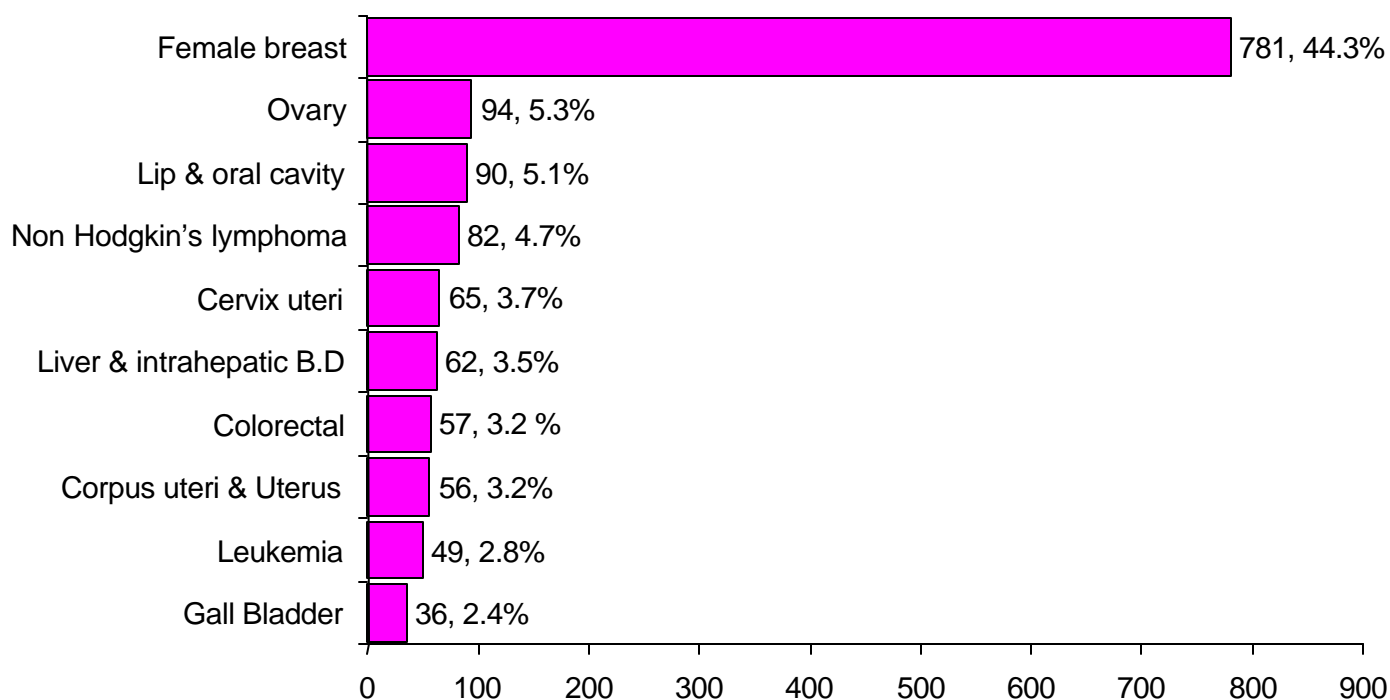
Data Source: Cancer Registry & Clinical Data Management, SKMCH & RC

The most frequent diagnosis in adult women was breast cancer accounting for 44.29% of the total cancers in females. Ovary was ranked as the second highest cancer accounting for 5.33% and, Lip and oral cavity the third most common malignancy with 5.10% of the total malignancies in females.

Table 8. Top 10 malignancies seen at SKMCH & RC from January 2007 till December 2007 amongst adult females

Sr. No.	ICD Category	Count	Percentage	ICD-O 3 Code
1	Female breast	781	44.3	C50.0 - C50.9
2	Ovary	94	5.3	C56.9 - C57.9
3	Lip and oral cavity	90	5.1	C00.0 - C08.9
4	Non Hodgkin's lymphoma	82	4.7	M9590, 91- M967 - 972
5	Cervix uteri	65	3.7	C53.0 - C53.9
6	Liver and intrahepatic bile ducts	62	3.5	C22.0 - C22.1
7	Colorectal	57	3.2	C18.0 - C21.8
8	Corpus uteri & Uterus	56	3.2	C54.0 - C55.9
9	Leukemia	49	2.8	M980 - M994
10	Gall Bladder	36	2.4	C23.9

Adult Females



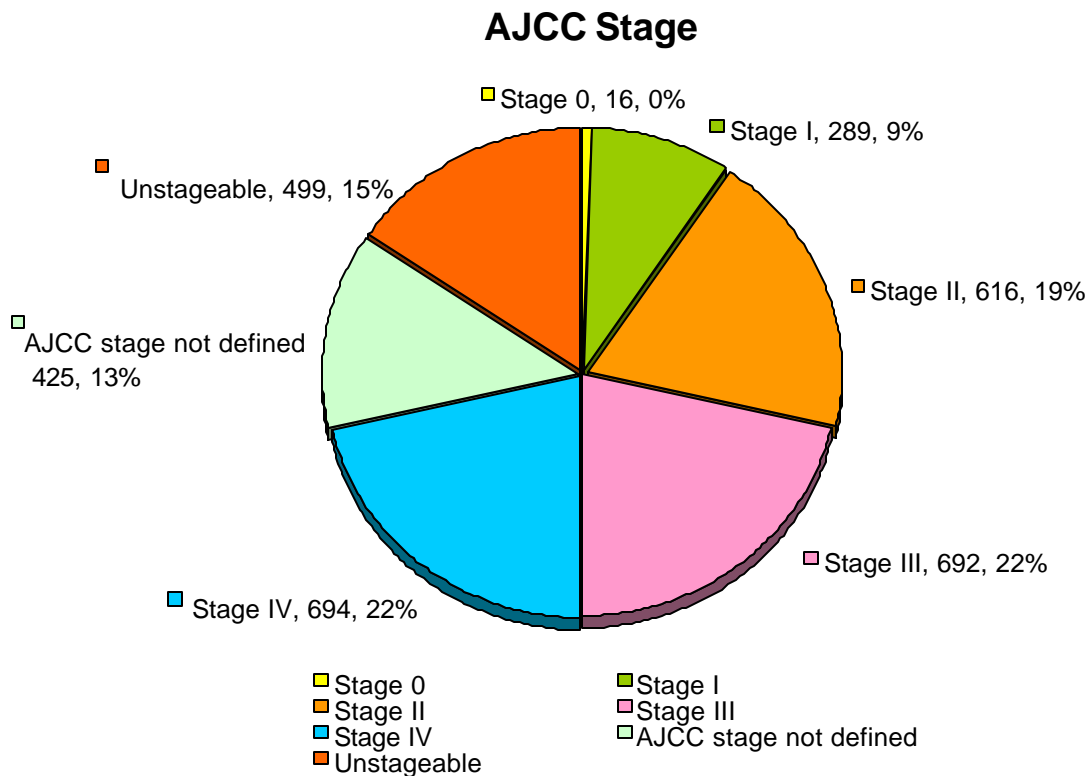
Data Source: Cancer Registry & Clinical Data Management, SKMCH & RC

Staging

The Registry uses the American Joint Commission on Cancer TNM staging system for all analytical cancer cases. TNM categorizes cancers in stages 0, 1, 2, 3, 4, unstageable, and not applicable on all analytical cases (Class of case 0, 1, 2). Cancers are classified as being unstageable as the patients may choose not to receive any treatment or undergo further tests at the hospital needed to establish an appropriate stage. “Not applicable” means non-availability of AJCC staging for that site. During the year 2007, cancer staging for 3,231 analytical cases (class of case 0, 1, 2) showed that 16 (0.49%) cases fell into 0 or in situ category, 289 (8.94%) in stage I, 616 (19.06%) in stage II, 692 (21.41%) cases in stage III, and 694 (21.47%) in stage IV, (table 9); 499 (15.44%) cases were unstageable and 425 (13.2%) had no AJCC stage for the site.

Table 9. Cancer stage of patients at SKMCH & RC during year 2007

AJCC Stage	No. of Patients
Stage 0	16
Stage I	289
Stage II	616
Stage III	692
Stage IV	694
Unstageable	499
AJCC stage not defined	425
Total	3231



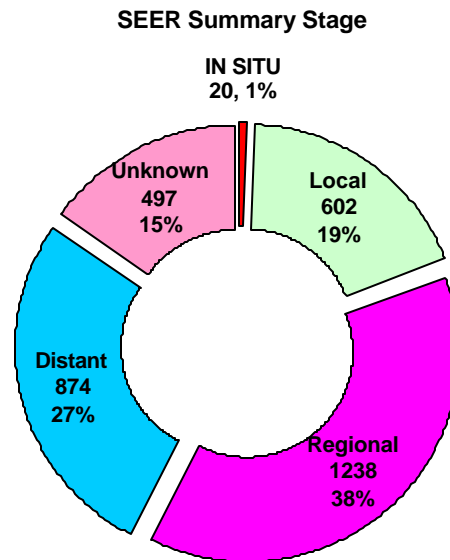
Data Source: Cancer Registry & Clinical Data Management, SKMCH & RC

Summary Stage

The SEER Summary Staging Manual-2000 Codes and Coding Instructions were used to describe how far the tumor had spread from the organ or the site of origin. This manual consists of a one digit hierarchical code for each and every site. All analytical cases (Class of case 0, 1, 2) were included to generate results. The cancer data for the year 2007 reflects that there were 0.61% in situ cases, 18.63% localized cancers, 38.31% regional cases, 27.05% distant, and there were 15.38% cases in which the summary stage was unknown.

Table 10. Classification according to the SEER summary stage during the year 2007

SEER Summary Stage	
In situ	20
Local	602
Regional	1238
Distant	874
Unknown	497
TOTAL	3,231



Data Source: Cancer Registry & Clinical Data Management, SKMCH & RC

SUPPLEMENTAL INFORMATION

Table 11 depicts the result stratified by primary sites, age groups, and gender. According to this, cancers of the breast, lymphatic and hematopoietic tissues, and digestive systems are the commonest systems/site(s) for malignancies seen at the hospital.

Table 11. Distribution of Primary Malignant Sites, 2007

FEMALES

ICD-O-3 Code*	Primary 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
C00	Lip											1	1							2
C01-C02	Tongue						1		1	6	6	9	5	4	4	2	1	1		40
C07-C08	Salivary gland					3	2	1				1	1							8
C03	Gum						1	1	2		4	2	1	1	2	2	1		2	19
C04-C06	Floor & other part of mouth				1		1	1			1	8	3	2	2	1	1	1		22
C9-C10	Tonsil & oropharynx										1			1						2
C11	Nasopharynx			2	2	2	1					2		1						10
C12-C13	Pyriiform sinus & hypopharynx				3	1		1	3	4	3	5	2	3		1	1	1	1	29
C15	Esophagus							2	3	1	5	5	5	4	4	2	1			32
C16	Stomach					2		2	2	2		2	3	2	1					16
C18	Colon			1	1	1	1	2	2	2	3	5	3	2		3				26
C19-C21	Rectum, anal canal & anus					2	4	5	2	2	4	5	2	2		2	3			33
C22	Liver & intrahepatic bile duct	1							2	1	4	13	12	14	8	5	3			63
C23-C24	Gall Bladder & extrahepatic bile duct							1		3	4	6	9	3	4	3	1	1	1	36
C25	Pancreas								1		1	2	1	2	1					8
C48	Peritoneum & Retroperitoneum						1						1		1					3
C30-C31	Nasal cavity, middle ear and acc. Sinuses							1	1	1	2	1	1	2				1		10
C32	Larynx								1		1		2	3						7
C33-C34	Trachea, bronchus & Lung						2	1			5	1	2	4	2	2	1	1	1	22
C37-C38	Thymus, heart, mediastinum & pleura									1				1						2
C40-C41	Bone & articular cartilage		2	8	8	2		2	2	1				1						26
C49	Connective & soft tissue	2	1	2	3	2	1	3	6	2	7	4	2	1		1				37
C44	Skin					2	1	2	3	4	4	1	4	4	2		2			29
C50	Breast					5	32	55	93	141	105	101	82	82	37	30	10	6	2	781

FEMALES

ICD-O-3 Code	Primary 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
C55	Uterus							1		2		2								5
C53	Cervix uteri				2	1	4	6	9	9	12	11	5	3	2	2	1			67
C58	Placenta					3														3
C54	Corpus uteri						1		5	2	4	11	9	11	2	2		1		48
C56-C57	Ovary & Uterine adnexa	1		1	2	6	4	3	10	11	12	16	14	13	3	1			1	98
C51-C52	Vulva & Vagina	1		1							3	1	2	3	2		1			14
C67	Urinary bladder									2	2	1	2	3		2				12
C64-C68	Kidney & other urinary organ	6	5						2		1		1	2	2		2			21
C69	Eye	3				1														4
C70-C71	Brain	1	4	1	2		1	3	2	3	1	5	2	5		2		2		34
C72	Other parts of nervous system		1			2	1	1	3	2	1		1	2						14
C73	Thyroid gland				1	1	6	3	5	2	3	2	2	1	2	3		1		32
C74-C75	Endocrine gland and related structure	1	1	1																3
C76	Other and ill-defined sites	1				1														2
C80	Unknown primary							1	2	1	7	5	3	5	5	3	1		1	34
M965-M962	Hodgkin's lymphoma		7	3	4	6	3	4	4	5	6	2		2	1					47
M9590-91, 967-972	Non Hodgkin's lymphoma	2	1	4	6	5	9	2	5	6	8	15	4	11	5	6	3	1		93
M9731-M9732	Multiple myeloma & immuno. neoplasms										4	2	1		2	3				12
M982-M983	Lymphoid Leukemia	10	18	1	1		1					2	1	1	1					36
M984-M993	Myeloid Leukemia		2	4	3	3	13	4	6	8	3	1	2							49
C42.0, C42.2-4	Other lymphatic, histiocytic & hemato. tissue		1				1				1			1		1				5
	Total	29	43	29	39	51	92	108	177	224	228	250	191	202	95	79	33	17	9	1896

MALES

ICD-O-3 Code	Primary 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
C00	Lip										1						1			2
C01-C02	Tongue							2	1	4	10	10	8	10	3	2	1	1		52
C07-C08	Salivary gland				1		1		1	1	4	2	1	2	3	2				18
C03	Gum						2	1	2		4	3	9	7	5	1	1	1		36
C04-C06	Floor of mouth							1	9	9	7	10	15	4	4	2		1		62
C9-C10	Tonsil & oropharynx											1		3	1					5
C11	Nasopharynx			4	1	2		3	2	2	1	1	2	1						19
C12-C13	Pyriiform sinus & hypopharynx				1	3		1	1	1	2	3	3	3	3		1			22
C15	Esophagus				1	1			3	1	5	5	5	6	2	1	3			33
C16	Stomach					1	5	3	2	5	6	9	6	9	4	3	3			56
C17	Small intestine							2		2		1			1					6
C18	Colon						3	5	7	6	8	8	5	3	4	3	1	2		55
C19-C21	Rectum & Anal canal				2	3	11	4	8	6	11	14	6	3	3	4	4	1	1	81
C22	Liver & intrahepatic bile duct	1			1			1	6	5	15	29	42	32	25	16	11			184
C23-C24	Gall Bladder & extrahepatic bile duct									2	3	4	5	3	3	2		1		23
C25	Pancreas						1		3	2	1	3	5	4	4	2				25
C48	Retroperitoneum	2					1	1												4
C30-C31	Nasal cavity, middle ear and acc. Sinuses			1		1	1		2	1	1	3	3		1	2			1	17
C32	Larynx							2	2	8	4	10	3	8	10	9	6	2	1	65
C33-C34	Bronchus & Lung			1				1	2	5	8	4	11	21	21	10	9	3		96
C37-C38	Thymus, heart, mediastinum							1		2							1			4
C40-C41	Bone & articular cartilage		3	13	25	11	6	1			1	1								61
C49	Connective & soft tissue	2	1	4	7	7	5	5	2	3	3	7	1	2	5	2	2	1		59

MALES

ICD-O-3 Code	Primary 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
C44	Skin						3	3	2	4	2	4	6	8	5	3	2	1	1	44
C50	Breast						1				1	1	2		1	2	1			9
C61	Prostate								1		4	4	8	9	21	18	22	9	6	102
C62	Testis	5			3	8	11	12	6	7	1	1								54
C60,C63	Penis & Other male genital organs																1			1
C67	Urinary bladder							1	5	6	8	9	12	16	14	11	3	1	1	87
C64-C68	Kidney & other urinary organ	6	2			1	1	1	1	1	4	7	4	8	2	1	3			42
C69	Eye	7	2						1	1		1				1				13
C70-C71	Brain	2	10	5	3	9	7	8	9	13	2	12	4	7	6					97
C72	Other parts of nervous system			1	2		2	3	3	5	2	4			1	1				24
C73	Thyroid gland			1		2	1	3	1	4	2	3	2							19
C74-C75	Endocrine gland and related structure	2		1																3
C76	Other and ill-defined sites	1																		1
C80	Unknown primary			1	1	1			1	4	5	6	4	4	6	1	5	2	1	42
M965-M962	Hodgkin's lymphoma	1	22	16	12	13	2	7	7	1	6	2	4	1	1			1		96
M9590-91, 967-972	Non hodgkin's lymphoma	7	10	7	15	17	10	8	21	10	10	17	15	11	7	5	8	2	1	181
M9731-M9732	Multiple myeloma & immuno. neoplasms							1		3	2	1	5	4	2	1				19
M982-M983	Lymphoid Leukemia	26	29	4	6	2	2			1	2	4	1	1	2	1				81
M984-M993	Myeloid Leukemia	1		2	8	6	14	8	6	6	7	4	2	1		2				67
C42.0, C42.2-4	Other lymphatic, histiocytic & hemato. Tissue							1		2		2					1			6
	Total	63	79	61	89	88	90	90	117	133	153	210	199	191	170	108	90	29	13	1973

* Diseases are listed according the International Classification of Diseases for Oncology, Third edition (ICD-O-3) codes.

Non-malignant primary intracranial and CNS tumors reported in 2007 and onward are also included in the Registry.