Cancer Registry Report

2018 - 2020

"In God we trust, all others must bring data"

W.E. Deming

Shifa International Hospitals Ltd.

SHIFA CLINICAL RESEARCH CENTER SCRC

Shifa International Hospital

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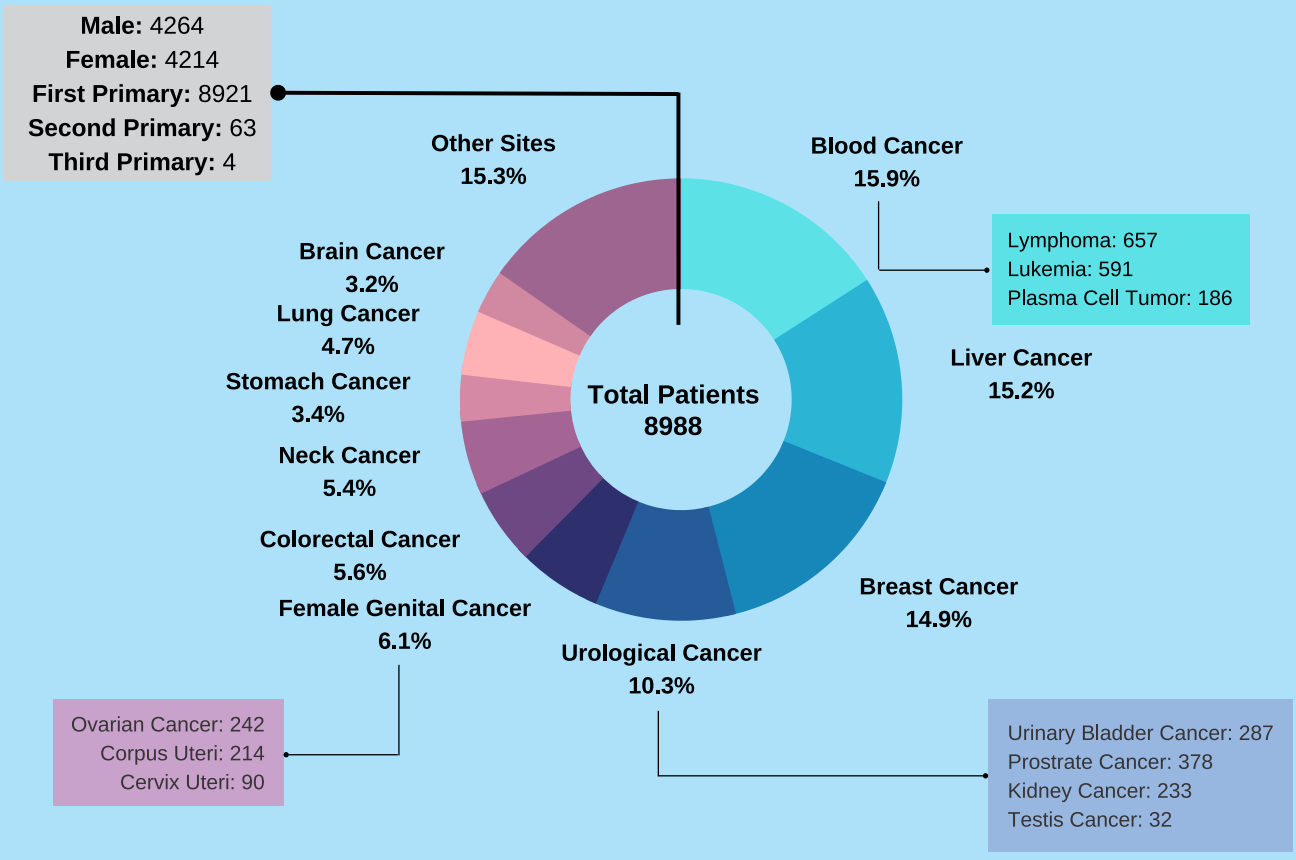
Shifa International Hospital Cancer Incidence Statistics (2018-2020)



Prologue
CANCER REGISTRY

More pieces we have, easier it becomes to comprehend what Siddhartha Mukherjee called the Emperor of all Maladies.

A Tumor Registry is not the end, but a means to the end. It provides a lens of hindsight, insight, and foresight to the course of a formidable enemy. It is not just the study of the course of destruction a hurricane has caused in the lives of thousands but a means of predicting where to build walls of prevention and shelters for victims.

It shows us the trends and the graphs worth a thousand words that are vital to planning and allocating resources. Multiple institutes pool data like rivers falling into an ocean, painting a regional and global picture of a foe we all share as humans.

Tumor Registrars are the miners of raw data that educate Physicians and our patients on what to expect and how to improve. It is on this foundation that epidemiologic and genetic studies are built, which identify targets for mibs and mabs, CARTs, and CRISPRs, which are making visible the cracks in the armor of what was once an unconquerable disease.

Our humble effort of presenting three years of data of patients presenting to Shifa with ten prevailing forms of Cancer is thus a platform that gives us hope of collaborating regionally and contributing globally to an ever-growing body of evidence.

Sincerely,

Dr. Muhammad Ayaz Mir, FACP
Section Head, Hematology/Oncology/BMT
Director, Shifa Clinical Research Center
Shifa International Hospital
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History of Shifa International Hospital

The idea of developing a world-class medical facility in Pakistan was conceived in New York, USA, in the middle of 1985 by a group of Pakistani medical professionals. The hospital was incorporated in September 1987. The dream of establishing a quality healthcare facility in Pakistan came true in June 1993 by formally starting the operations and the very first patient was welcomed at the hospital premises. Today, Shifa International Hospital is a 550-bed quaternary care facility, accredited by Joint Commission International (JCI), USA. The prestigious JCI accreditation has further strengthened our commitment and focuses on the quality of patient safety.

Shifa at Glance

- Shifa International Hospital Islamabad is a quaternary care facility in Islamabad offering comprehensive Diagnostic, Outpatient, and Inpatient services in 30+ Medical & Surgical specialties
- Accredited by Joint Commission International (JCI) the USA, which is a global benchmark in healthcare quality and ensures compliance and commitment to patient healthcare safety and quality
- More than 200 Internationally (Board Certified & British Trained) & nationally experienced teams of consultants
- 26 CPSP Post Graduate Residency/ Fellowship training programs
- Shifa covers a national footprint and outreach with a network of Lab Collection Points, Pharmacies & Medical Centers including a hospital in Faisalabad
- Shifa has been offering multi-specialty Organ Transplant services such as Liver, Kidney, Bone Marrow, and Cornea
- Critical Care & ER services (100 plus Intensive Care beds & 24-hour Emergency Services)
- A comprehensive Neurosciences & Stroke Center
- Region's leading Cancer Center (IMRT, SIB, IGRT technology for cancer treatment)

Milestones

- Shifa is the only hospital in Pakistan to complete 11,00 Living Donor Liver Transplants with a success rate comparable to international standards.
- The facility has also performed over 300 Bone Marrow/ Stem Cell Transplants, more than 700 Kidney Transplants, and over 900 Cornea Transplants

Investing In Medical Technology & Expertise:

CT-Scan (640 Slice)	**MRI Scan (3 Tesla)**	**Interventional Radiology Suite**
Advanced Cath Labs	3D Hologic Mammography System	Latest Total Lab Automation (TLA) System
State-of-The-Art Linear Accelerator and CT Simulator (Wide Bore)	Latest Brachytherapy Machine	
Specialty Labs in Histopathology, Immunology, Special Chemistry, Cytogenetics, Microbiology, NAT, etc.		

Vision & Mission

Cancer Registry

The SIH Cancer Registry is a hospital-based registry developed in 2018. The cancer registry started collecting data for patients diagnosed and/or treated in SIH on January 01, 2018. The primary goal of the SIH cancer registry is to collect accurate and complete data of patients diagnosed and/or treated for cancer at the hospital.

Cancer data is important in many ways. Researchers need accurate, up-to-date cancer data to study possible causes of cancer. Physicians need data for treatment planning, outcomes incidence, and survival rates. Medical administrators use cancer data to make decisions regarding equipment purchases and develop programs for cancer prevention. Health departments use cancer data to investigate potential cancer clusters and their causes.

Quality data collection is a complicated process because data is received from different sources at different points in different times. These various parts must be consolidated in a limited time. The phases of the cancer registry process flow include case finding, data abstraction, ICD-O3 coding, staging, entering data in software, and data analysis. The SIH Cancer Registry implements the WHO, ICD-O3 (updated) coding for Topography, Morphology, and Grade. It includes all malignancies within the ICD-O3 Morphology behavior code of 2 or 3 in the report. For staging, we use two types of staging systems, the American joint committee on cancer 8 edition (AJCC)/ (TNM) staging system, and Surveillance, Epidemiology, and End Results (SEER). For treatment purposes, AJCC (TNM) staging is favored. For multiple primary sites, we utilized the multiple primary and Histology coding Rule, National cancer institute USA SEER summary manual.

This is the first annual data report of the SIH cancer registry. I hope this data is helpful for cancer researchers, treating physicians, different health sectors, NGOs, and all those involved in cancer control activities. We tried to present accurate data following international cancer registry standards rules and World Health Organization (IARC) guidelines to contribute towards cancer prevention and control in our country.

The production of this report is a result of many valuable departments and administration of our hospital. Special thanks to the Department of Pathology, Department of Oncology, medical record, medical coding, department of Liver transplant, management Information system (MIS), and Shifa clinical research center (SCRC).

Zafar Iqbal Armani, CTR
Tumor Registrar
Cancer Registry

Cancer Center at Shifa International Hospital

The Cancer Center at Shifa International Hospital is a center of excellence for modern diagnostic and therapeutic approaches for cancer of various types in Pakistan since the early 1990s. The hospital has a state of the art treatment facility for cancer patients supported by high-quality latest technological equipment internationally experienced and board-certified multidisciplinary team of medical oncology, radiation oncology, surgical oncology, and radiology.

Scope of treatment

Shifa Provides care to cancer patients through the following services:

1: **Surgical Oncology**

2: **Medical Oncology (adult and pediatric)**

3: **Radiation Oncology**

4: **Liver Transplant**

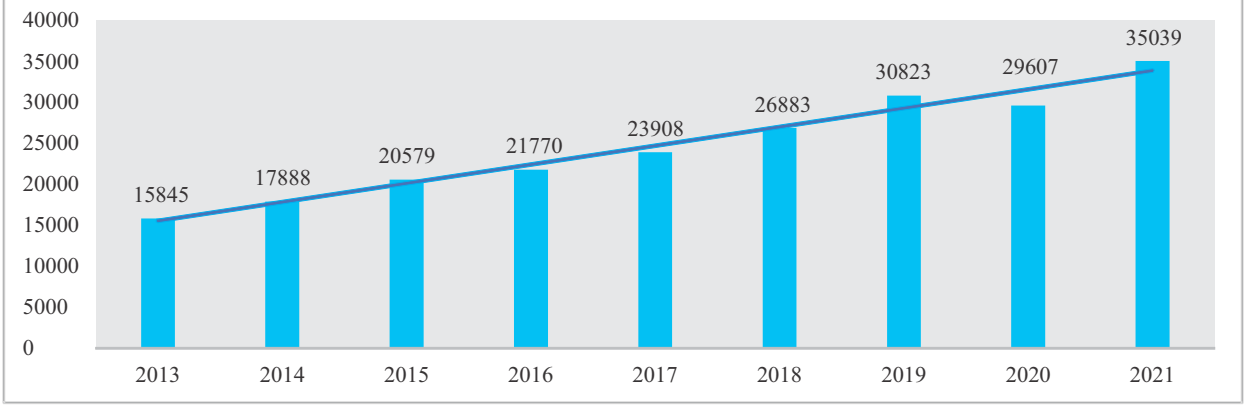
5: **Bone Marrow Transplant**

6: **Nuclear Medicine**

7: **Palliative Care**

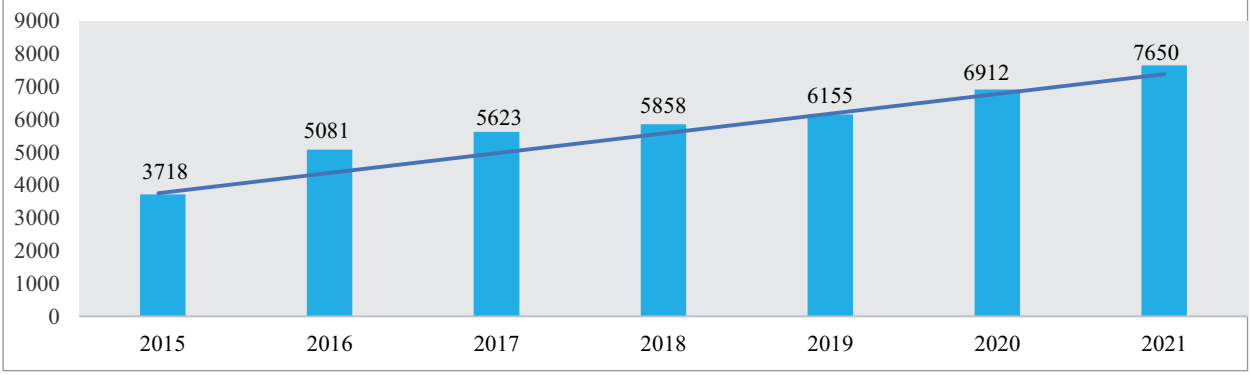
Distribution of the cancer patient visits by yearly

Figure 1: Cancer Center Visits (2013-2021)



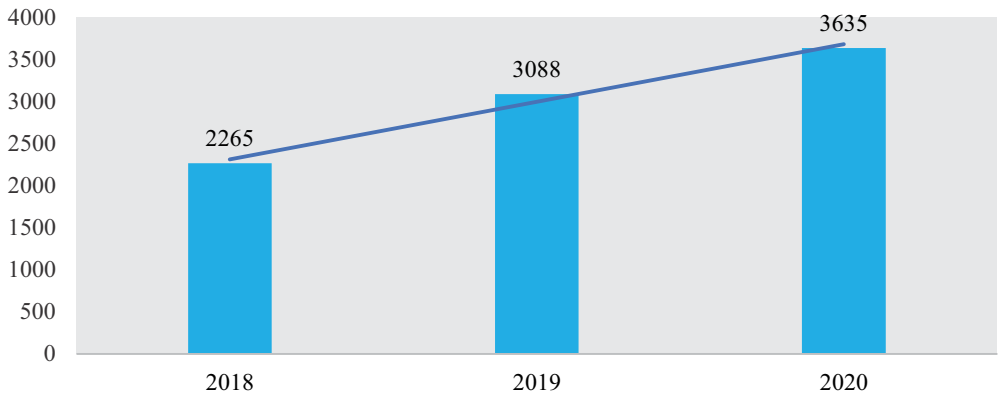
The figure shows a substantial increase in cancer center visits made by patients, from 15845 visits in 2013 to 35039 visits in 2021, with an average growth rate of 11.6% per year.

Figure 2: Oncology Center 6-year new patients visit (2015-2021)



The figure shows a substantial increase in cancer center visits made by new patients, from 3718 visits in 2015 to 7650 visits in 2021, with an average growth rate of 13.7 % per year.

Figure 3: Cancer Registry data (2018-2020)



The figure show substantial increase in cancer registry data made by new patients, from 2265 patients in 2018 to 3635 in 2020.

Part I

Shifa International Hospital
Cancer Incidence Statistics
(2018-2020)

Shifa International Hospital Cancer Incidence Statistics (2018-2020)

1.1-An Overview of Cancer Data

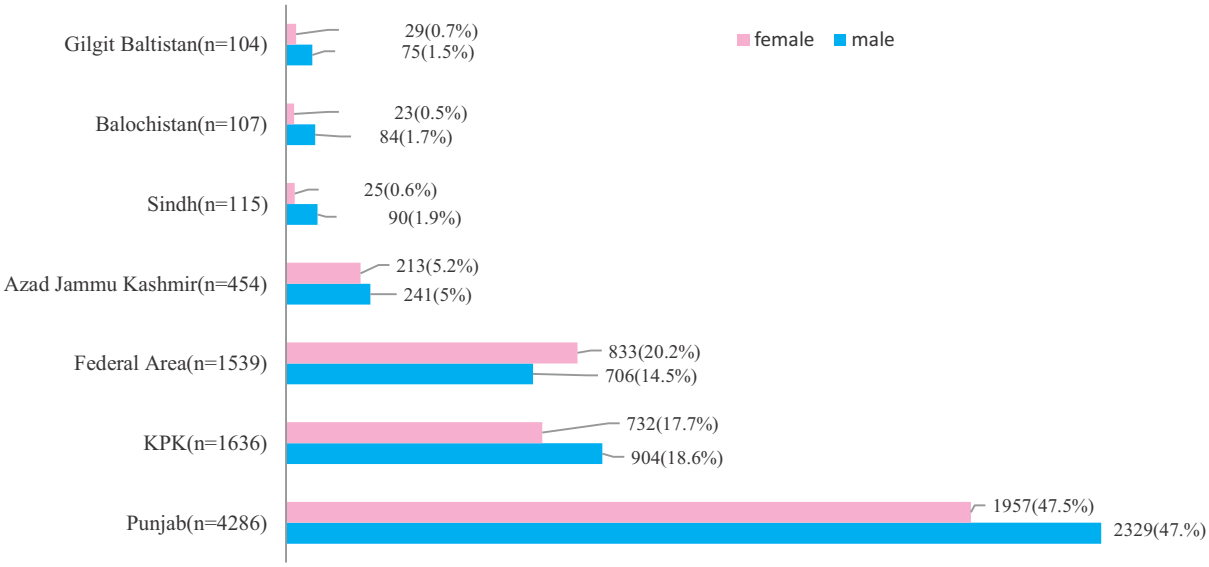
The total number of cancer patients reported at Shifa International Hospital between January 1, 2018, to December 31, 2020, was 8988, including 4864 (54.1%) male and 4124 (45.9%) female patients. Shifa International Hospital registry data showed 8921 patients with a first primary, 63 patients with a second primary, and 4 patients with a third primary. "*The Multiple Primary and Histology Coding Rules of the National Cancer Institute, SEER USA*" was used for multiple primary tumors. Overall, the incidence of cancer was observed to be about 8.2% higher in men than in women.

Figure 4: Distribution of Cancer Incidence by Gender Across All Age Groups.

1.2-Distribution of Cancer Cases by Region of Residence

A total of 8241 (91.7%) cases were reported among Pakistani nationals, and 747 (8.3%) cases were reported among national of other countries.

Figure 5: Distribution of Cancer Cases by Region of Residence



Other Countries (n= 747)

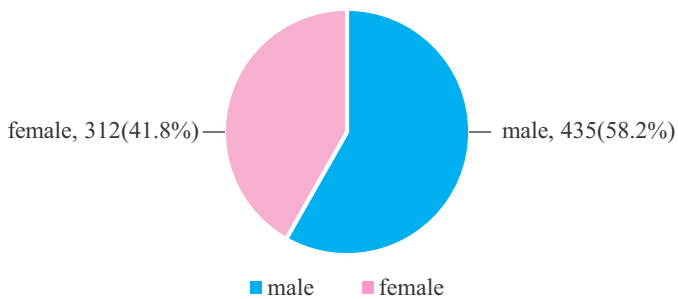
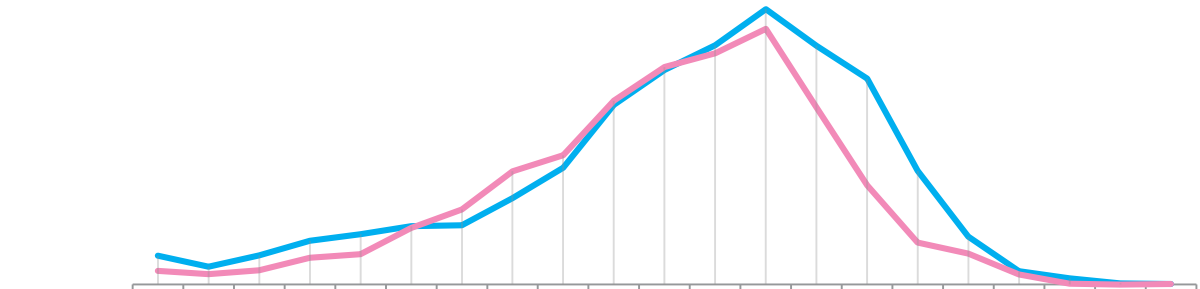


Figure 6 :Distribution of Cancer Incidence by Age and Gender(2018-2020)



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100	>100
Male	69	43	70	105	121	140	142	207	280	431	515	574	661	573	494	273	115	32	15	3	1
Female	33	25	34	64	73	136	180	272	310	441	522	555	614	425	238	101	74	24	2	0	1

Figure 7 : Distribution of Cancer Incidence by AJCC-TNM Stage

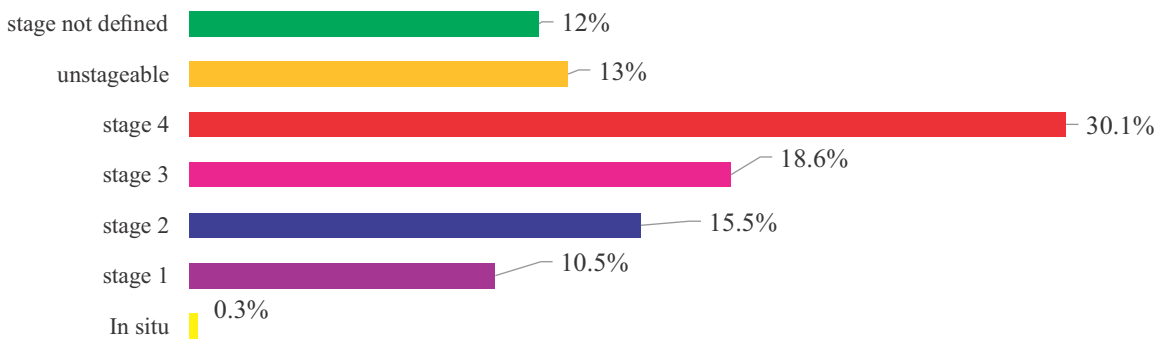


Figure 8: Distribution of Cancer Incidence by SEER Summary Stage

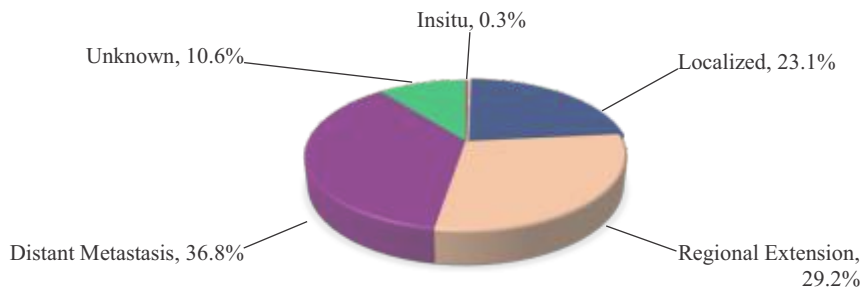


Table 2: 10 Most Common Cancer (2018-2020)

S. No	ICD-O3 Code	Anatomical site	Total	%	Male	Female
1		Blood cancer (Lymphoma, Leukemia & Plasma cell Tumor	1434	16	969	465
2	C22	Liver	1366	15.2	1000	366
3	C50	Breast	1340	14.9	14	1326
4	C61, C62, C64, C67,	Urological cancer	930	10.3	807	123
5	C51-C58	Female genital organs	546	6	----	546
6		Head & Neck	482	5.4	324	158
7	C18-C21	Colorectal	499	5.5	308	191
8	C34	Lung	419	4.7	316	103
9	C16	Stomach	307	3.4	197	110
10	C71	Brain	285	3.2	200	85
		Total	7608	84.6	4135	3473
		Other sites	1380	15.4		
		Total	8988	100		

Table 3: 10 Most Common Cancer Sites in Male

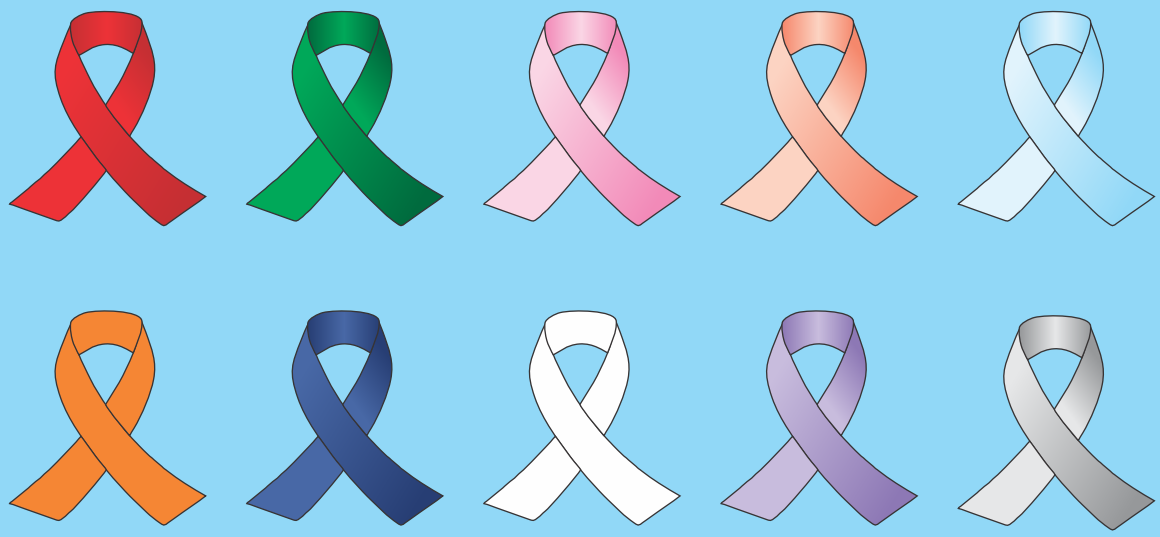
S. No	ICD-O3 Code	Topography	Total	%
1	C22.0	Liver	1004	20.6
2	C42.1	Bone marrow (Leukemia & & Myeloma)	552	11.3
3	C61.9	Prostate	378	7.8
4	C34	Lung	319	6.6
5	C77	Lymphoma (Lymph node)	263	5.4
6	C67	Urinary bladder	231	4.7
7	C16	Stomach	220	4.5
8	C71	Brain	217	4.5
9	C64.9	Kidney	168	3.5
10	C18	Colon	161	3.3
		Other sites	1351	27.8
		Total	4864	100

Table 4: 10 Most Common Cancer Sites in Female

S. No	ICD-O3 Code	Topography	Total	%
1	C50	Breast	1326	32.2
2	C22.0	Liver	371	9
3	C42.1	Bone marrow (Leukemia & Myeloma	243	5.9
4	C56.9	Ovary	242	5.9
5	C54	Corpus uteri	214	5.2
6	C77	Lymphoma (Lymph node)	141	3.4
7	C16	Stomach	119	2.9
8	C34	Lung	104	2.5
9	C18	Colon	104	2.5
10	C25	Pancreas	103	2.5
		Others	1157	28
		Total	4124	100

Part II

Ten Most Common Cancer in Shifa International Hospital



1-Blood Caner

"Cancer is a scary thing and you have to deal with it seriously"

-Kareem Abdul Jabbar Survivor of chronic myeloid leukemia

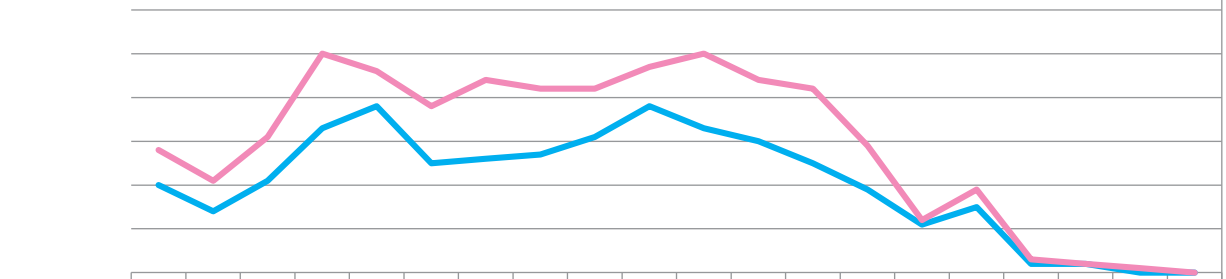
1-Blood Cancer

Between January 2018 and December 2020, a total of 1434 cases with 969 (67.6%) male and 465 (32.4%) female with blood cancer were reported.

1.1-Leukemia

During 2018–2020, SIH reported 591 diagnosed leukemia cases, including 411 (69.5%) male patients with a median age of 41 years and 180 (30.5%) female patients with a median age of 38 years. The age ranged from 11 months to 92 years.

Figure 9: Distribution of Leukemia by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Female	8	7	10	17	8	13	18	15	11	9	17	14	17	10	1	4	1	0	1	0
Male	20	14	21	33	38	25	26	27	31	38	33	30	25	19	11	15	2	2	0	0

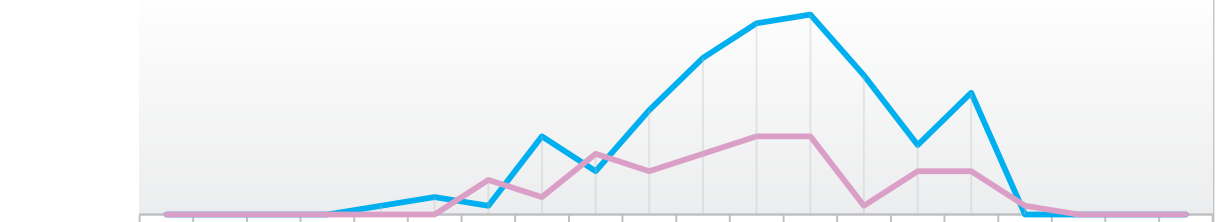
Table 5: Distribution of Leukemia by Morphology

ICD-O3 Code	Morphology	Total	%	Male	Female
9861/3	Acute Myeloid Leukemia, NOS	224	37.9	146	78
9836/3	Precursor B-cell Lymphoblastic Leukemia (ALL)	104	17.6	73	31
9863/3	Chronic myeloid Leukemia, NOS	63	10.7	42	21
9989/3	Myelodysplastic Syndromes, NOS (MDS)	56	9.5	40	16
9823/3	B-cell chronic lymphocytic Leukemia	33	5.6	20	13
9837/3	Precursor T-cell Lymphoblastic Leukemia	26	4.2	21	5
9835/3	Precursor cell Lymphoblastic Leukemia, NOS	14	2.3	10	4
9866/3	Acute Promyelocytic Leukemia	12	2	10	2
9940/3	Hairy cell Leukemia	12	2	12	0
9961/3	Primary myelofibrosis	12	2	8	4
9950/3	Polycythemia Vera	5	1	4	1
9801/3	Acute Leukemia, NOS	4	0.6	3	1
9960/3	Myeloproliferative Neoplasm, NOS	4	0.7	4	0
9975/3	Myeloproliferative Neoplasm unclassifiable	4	0.7	3	1
9800/3	Leukemia, NOS	3	0.5	2	1
9930/3	Myeloid Sarcoma	3	0.5	3	0
	Others	12	2	10	2
	Total	591	100	411	180

1.2-Plasma Cell Tumor

During 2018–2020, SIH reported 186 patients with plasma cell tumor including 131 (70%) male and 55 (30%) female patients with a median age of 59. The age ranged from 23 to 81 years.

Figure 10: Distribution of Plasma Cell Tumor by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	0	0	0	0	1	2	1	9	5	12	18	22	23	16	8	14	0	0	0	0
Female	0	0	0	0	0	0	4	2	7	5	7	9	9	1	5	5	1	0	0	0

Table 6: Distribution of Plasma Cell Tumor by Morphology

ICD-O3 Code	Morphology	Total	%	Male	Female
9731/3	Plasmacytoma, NOS	16	8.6	8	8
9732/3	Multiple Myeloma	166	89.2	120	46
9733/3	Plasma cell Leukemia	1	0.6	1	0
9734/3	Plasmacytoma, extramedullary	3	1.6	2	1
	Total	186	100	131	55

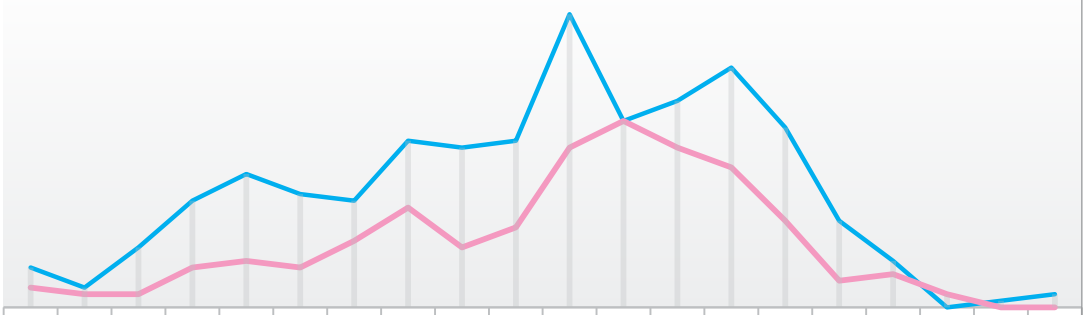
1.3-Lymphoma

During 2018–2020, SIH reported 657 patients with lymphoma including 428 (65.1%) male and 229 (34.9%) female patients. Lymphoma diagnosed in 59.1% of cases above the diaphragm, 24.3% of cases below the diaphragm, and 16.6% of cases with no lymph node. There were 544 (82.8%) cases of non-Hodgkin's lymphoma and 113 (17.2%) of Hodgkin's lymphoma.

1.3.1-Non-Hodgkin's Lymphoma

544 patients with non-Hodgkin's lymphoma were reported at SIH during 2018-2020. The age ranged from 1-96 years, with a median age of 52 in males and 56 in females.

Figure 11: Distribution of Non-Hodgkin's Lymphoma by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	6	3	9	16	20	17	16	25	24	25	44	28	31	36	27	13	7	0	1	2
Female	3	2	2	6	7	6	10	15	9	12	24	28	24	21	13	4	5	2	0	0

Table 7: Distribution of Non-Hodgkin's Lymphoma by Morphology

ICD-O3 Code	Morphology	Total	%	Male	Female
9680/3	Malignant lymphoma, large B-cell, diffuse, NOS	239	43.9	152	87
9591/3	Non-Hodgkin lymphoma, NOS	96	17.7	54	42
9729/3	Precursor T-cell lymphoblastic lymphoma	34	6.3	31	3
9673/3	Mantle cell lymphoma	22	4.0	22	0
9698/3	Follicular Lymphoma, Grade 3	20	3.7	12	8
9687/3	Burkitt lymphoma, NOS	17	3.1	14	3
9670/3	Mature T-cell lymphoma, NOS	15	2.8	11	4
9714/3	Anaplastic large cell lymphoma, T cell	12	2.2	6	6
9690/3	Follicular Lymphoma, NOS	11	2.0	6	5
9691/3	Follicular Lymphoma, Grade 2	10	1.8	4	6
9702/3	Mature T-cell lymphoma, NOS	10	1.8	7	3
9699/3	Marginal zone B-cell Lymphoma, NOS	9	1.7	4	5
9727/3	Precursor Lymphoblastic Lymphoma, NOS	9	1.7	5	4
9695/3	Follicular Lymphoma, Grade 1	7	1.3	4	3
9675/3	Malignant Lymphoma, mixed small and large cell, diffuse	6	1.1	4	2
9688/3	T-cell/histiocyte rich large B-cell lymphoma	4	0.7	3	1
9689/3	Splenic marginal zone B-cell Lymphoma, NOS	4	0.7	3	1
9728/3	Precursor B-cell lymphoblastic lymphoma	4	0.7	1	3
Others	Others	15	2.8	8	7
Total	Total	544	100	351	193

Figure 12 : Distribution of Non-Hodgkin's Lymphoma by AJCC Staging

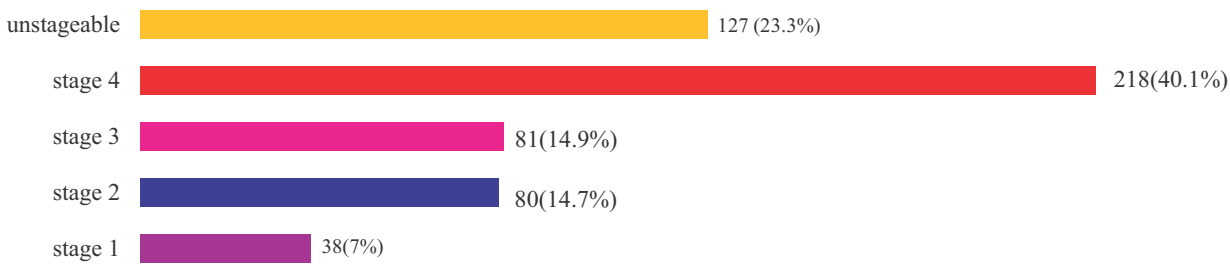


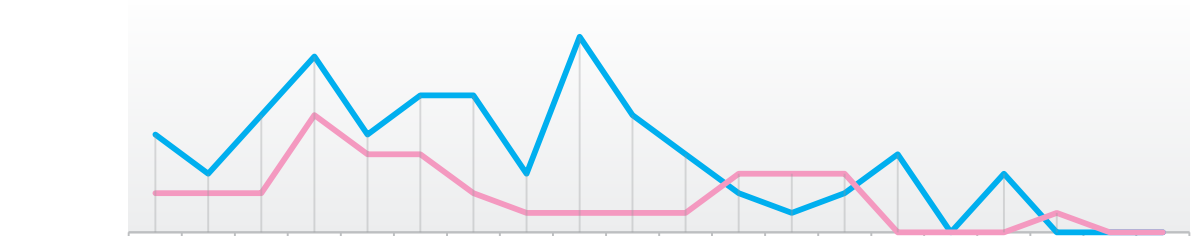
Table 8: Distribution of Non-Hodgkin's Lymphoma by B cell and T cell

Type	Total	%
B-cell Lymphoma	367	67.4
T-cell Lymphoma	80	14.7
Malignant Lymphoma Non-Hodgkin, NOS	97	17.9
Total	544	100

1.3.2-Hodgkin Lymphoma

During 2018–2020, SIH reported 113 patients with Hodgkin's lymphoma, including 77 (68.1%) male patients with a median age of 32 years and 36 (31.8%) female patients with a median age of 27.5 years.

Figure 13: Distribution of Hodgkin's Lymphoma by Age and Gender

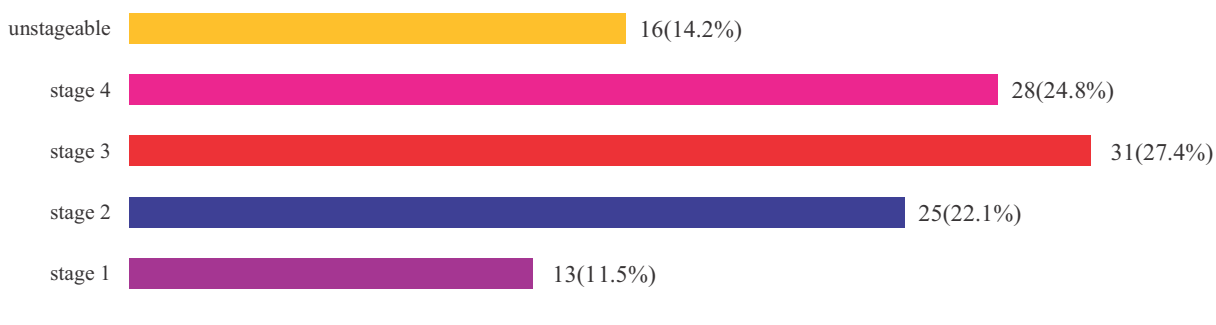


	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	5	3	6	9	5	7	7	3	10	6	4	2	1	2	4	0	3	0	0	0
Female	2	2	2	6	4	4	2	1	1	1	1	3	3	3	0	0	0	1	0	0

Table 9: Distribution of Hodgkin Lymphoma by Morphology

ICD-O3 Code	Morphology	Total	%	Male	Female
9650/3	Hodgkin Lymphoma, NOS	42	37.2	31	11
9663/3	Hodgkin Lymphoma, nodular sclerosis, NOS	39	34.5	20	19
9652/3	Hodgkin Lymphoma Mixed cellularity, NOS	20	17.7	15	5
9659/3	Hodgkin Lymphoma, Nodular lymphocyte predominance	5	4.4	5	0
9665/3	Others	7	6.2	6	01
	Total	113	100.0	77	36

Figure 14: Distribution of Hodgkin Lymphoma by AJCC Staging



2-Liver Cancer

"You can be a victim of cancer,
or a survivor of cancer. It's a mindset."

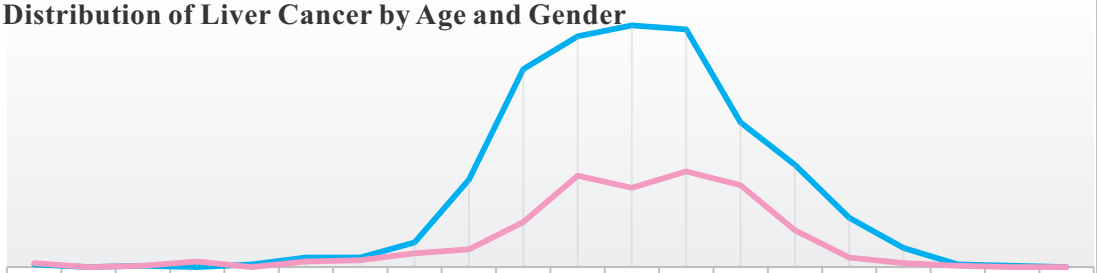
-Dave Pelzer

2.0-Liver Cancer

Shifa International Hospital has recently achieved a landmark in the country's medical history by becoming Pakistan's first-ever hospital to complete 1100 living donor liver transplants.

During 2018–2020, SIH reported 1366 cases of liver cancer, including 1,000 males (73.2%) with a median age of 58 years and 366 females (26.8%) with a median age of 60 years. Nine lymphomas in the liver cancer were ruled out.

Figure 15: Distribution of Liver Cancer by Age and Gender

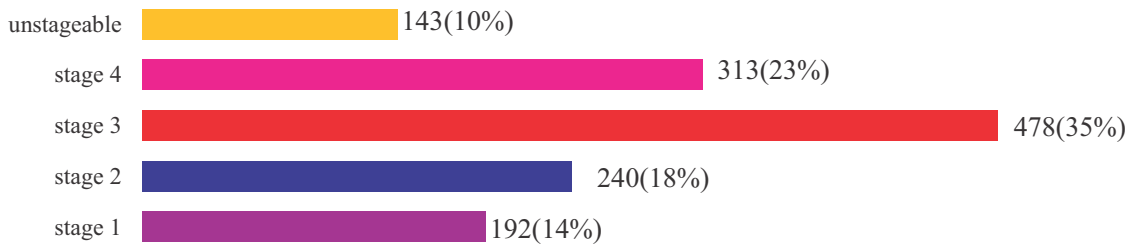


	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	2	0	1	0	2	7	7	18	64	145	169	177	174	106	75	36	14	2	1	0
Female	3	0	1	4	0	4	5	10	13	33	67	58	70	60	27	7	3	1	0	0

Table 10: Distribution of Liver Cancer Cases by Morphology

ICD-O3 Code	Morphology	Total	%	Male	Female
8170/3	Hepatocellular Carcinoma, NOS	1247	91.3	925	322
8160/3	Cholangiocarcinoma	79	5.9	51	28
8246/3	Neuroendocrine carcinoma, NOS	10	0.7	6	4
8180/3	Combined Hepatocellular carcinoma and Cholangiocarcinoma,	6	0.4	6	0
8140/3	Adenocarcinoma, NOS	6	0.4	4	2
8970/3	Hepatoblastoma	6	0.4	2	4
	Others	12	0.9	6	6
	Total	1366	100.0	1000	366

Figure 16 : Distribution of Liver Cancer by AJCC Stage



Distribution Of Liver Cancer Incidence By SEER Summary Stage

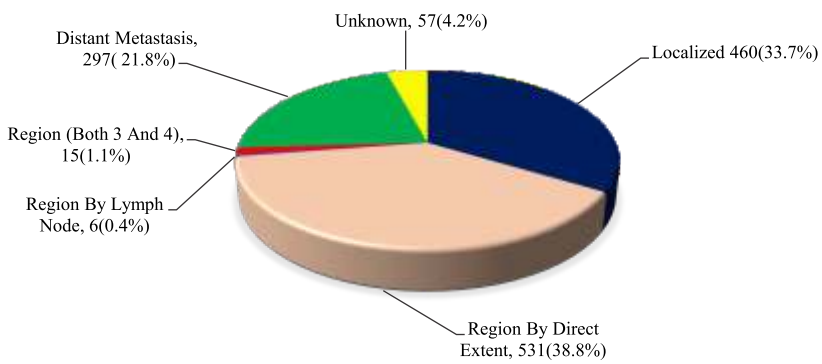


Figure 18: Distribution of Liver Cancer Incidence by Grade

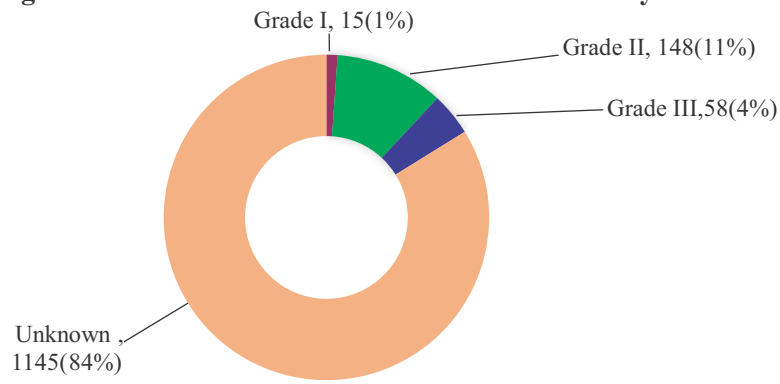
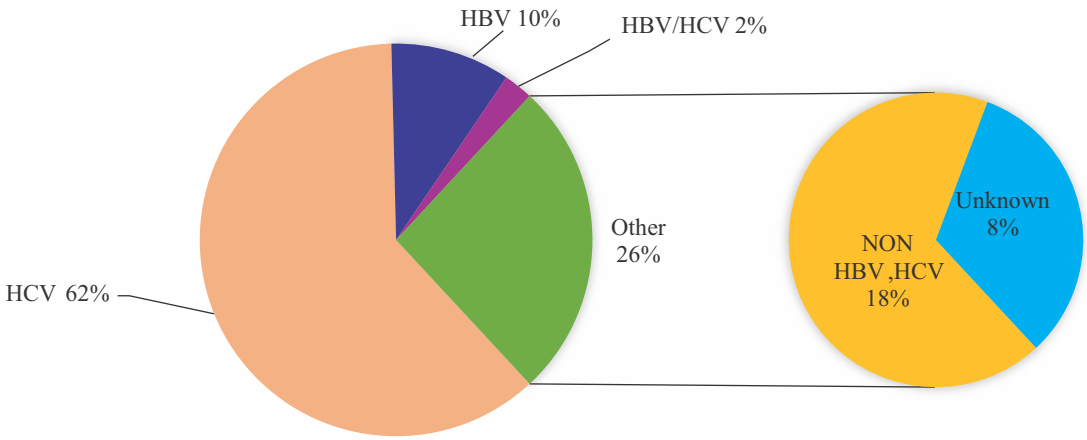
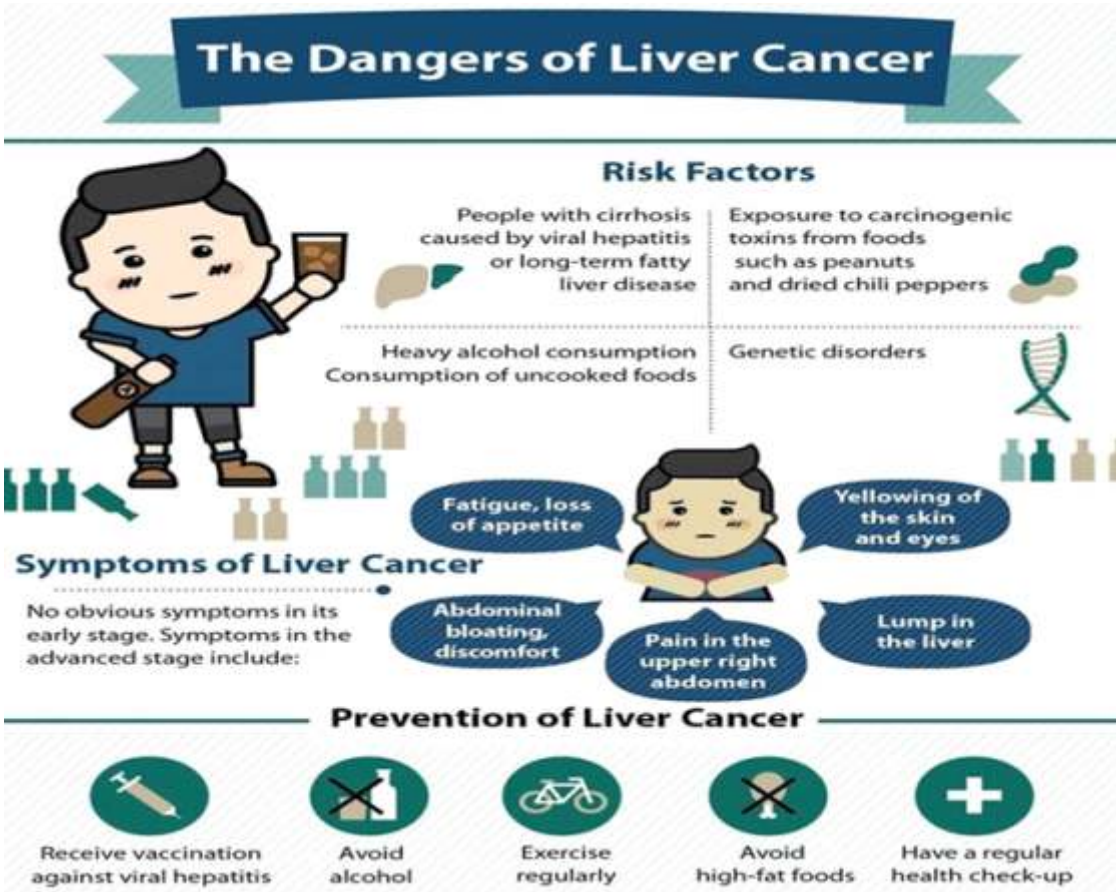


Figure 19: Distribution of Liver Cancer Incidence by Hepatitis Infection





3-Breast Cancer

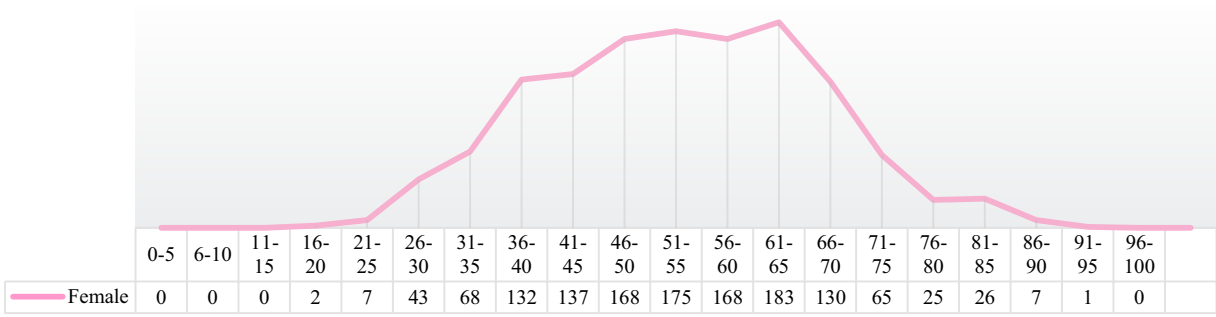
"I do not feel any less of a woman. I feel empowered that I made a strong choice that in no way diminishes my femininity"

-Angelina Jolie on getting a doule mastectomy

3-Breast Cancer

Between January 2018 and December 2020, SIH reported 1340 breast cancer patients, including 1326 (99%) female and 14 (1%) male patients. The patient's median age at the time of diagnosis was 54. Three breast lymphomas were not included in this data analysis.

Figure 20 : Distribution of Breast Cancer by Age



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Female	0	0	0	2	7	43	68	132	137	168	175	168	183	130	65	25	26	7	1	0

Table 11: Distribution of Breast Cancer Cases by Morphology

ICD-O3 Code	Morphology	Total	%
8500/3	Infiltrating Ductal Carcinoma, NOS	1001	74.7
8010/3	Carcinoma, NOS	137	10.2
8520/3	Infiltrating Lobular Carcinoma, NOS	89	6.6
8480/3	Mucinous Carcinoma	23	1.7
8500/2	Intraductal Carcinoma, NOS (DCIS)	12	0.9
8523/3	Infiltrating Duct mixed with other types of Carcinomas	11	0.8
80003/3	Neoplasm, Malignant	8	0.6
8522/3	Infiltrating Ductal and Lobular Carcinoma	8	0.6
8575/3	Metaplastic Carcinoma, NOS	8	0.6
8265/3	Micropapillary Carcinoma, NOS	6	0.4
9020/3	Phyllodes Tumor	6	0.4
8510/3	Medullary Carcinoma, NOS	3	0.3
8530/3	Paget disease, mammary	3	0.3
	Others	25	1.9
	Total	1340	100

Figure 21:Distribution of Breast Cancer by AJCC Stage

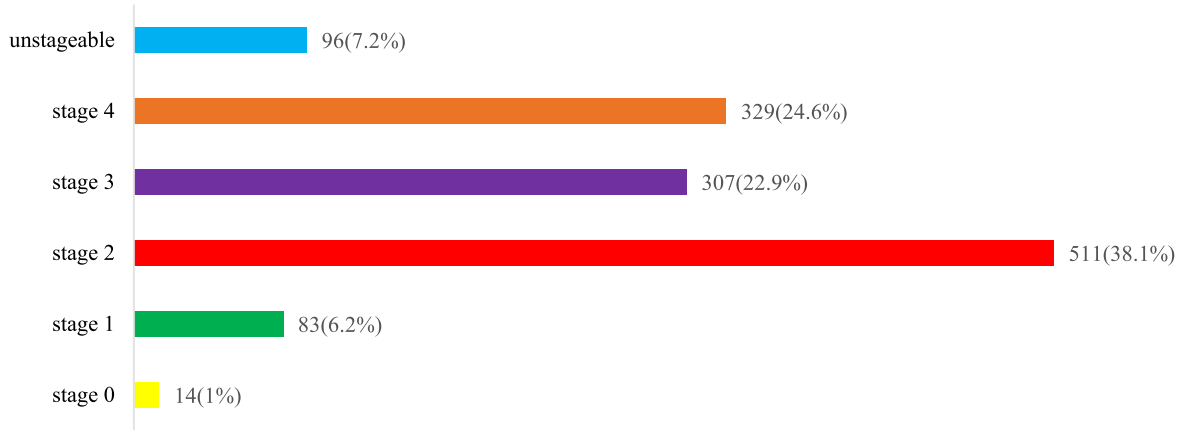


Figure 22: Distribution of Breast Cancer by Grade (SBR Grade)

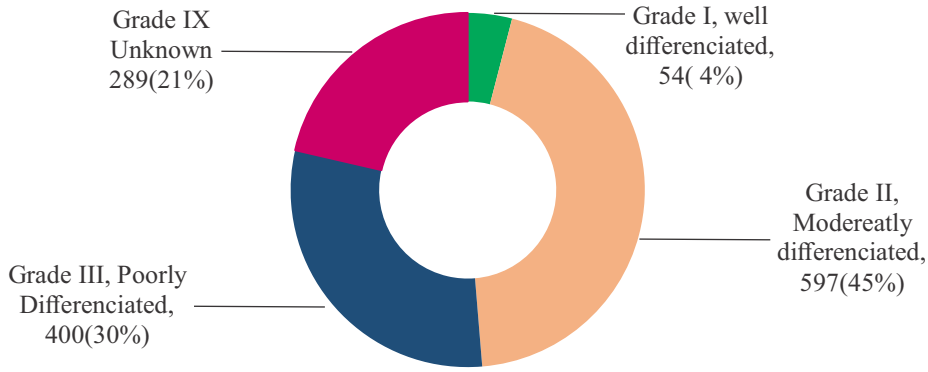


Figure 23: Distribution of Breast Cancer Anatomical by Subtype

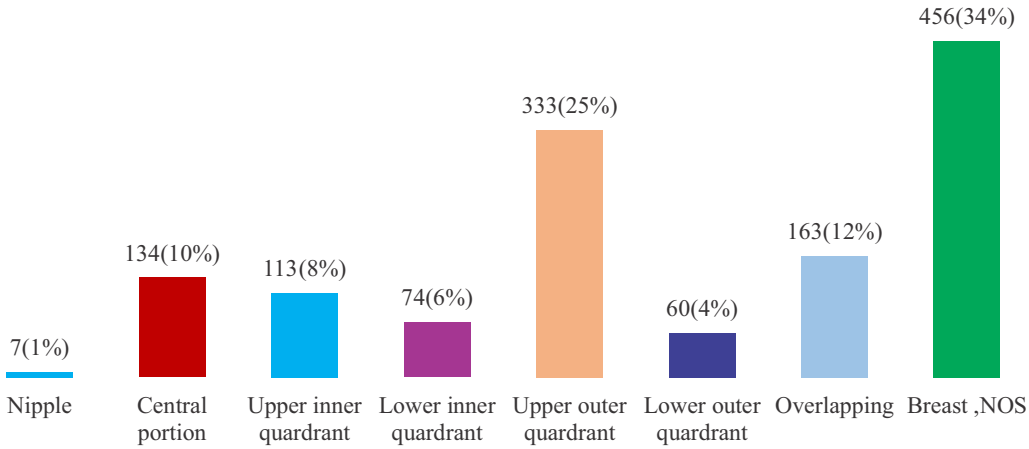


Figure 24: Distribution of Breast Cancer by SEER Summary Stage

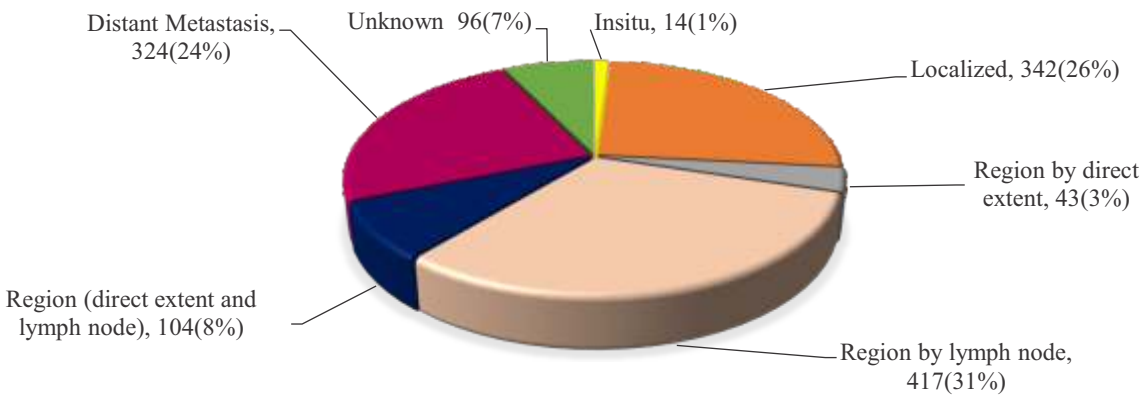


Figure 25 : Distribution of Breast Cancer by Laterality

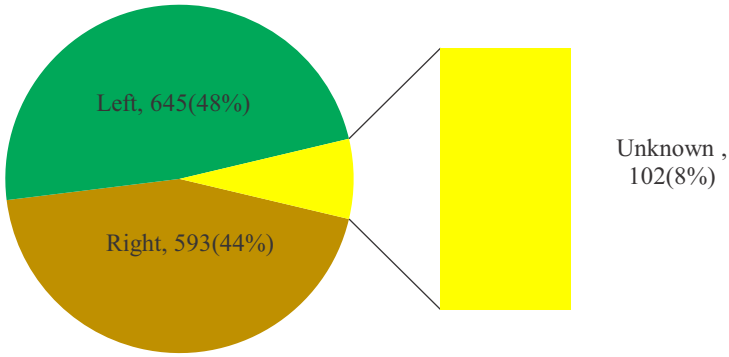


Figure 26: Distribution of Breast Cancer by Distant Metastasis

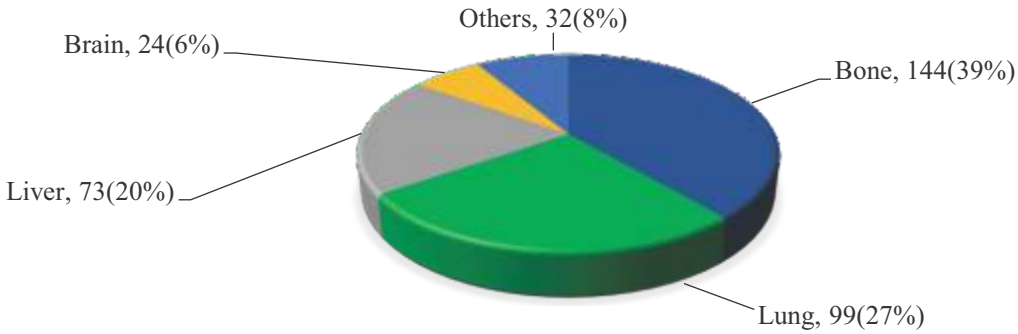


Table 12: Breast Cancer Distribution by Hormonal Receptor Status

Status	Estrogen receptor	Progesterone receptor	HER2 Neu enriched
	n= 1120	n= 1106	n= 1069
Positive	804(71.8%)	821(74.2%)	230(21.5%)
Negative	316(28.2%)	285(25.8%)	839(78.5%)

3.1-Breast Cancer Ki-67

The Ki-67 is a prognostic parameter in breast cancer patients; it helps to predict tumor aggressiveness. For data collection and analysis, Ki-67 values were arranged into 3 groups, i.e., from 0-20% were placed in the first group (Luminal A), 21-50% were in the second group (Luminal B), and 51-100% were in third group (Luminal B) as shown in figure 27. Above 51% indicated more aggressive cancer.

Figure 27: Group-wise Distribution of Ki-67

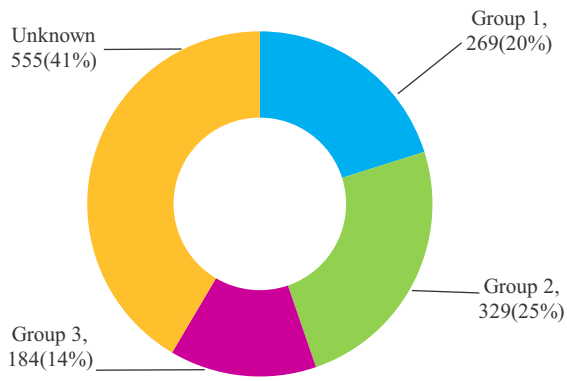
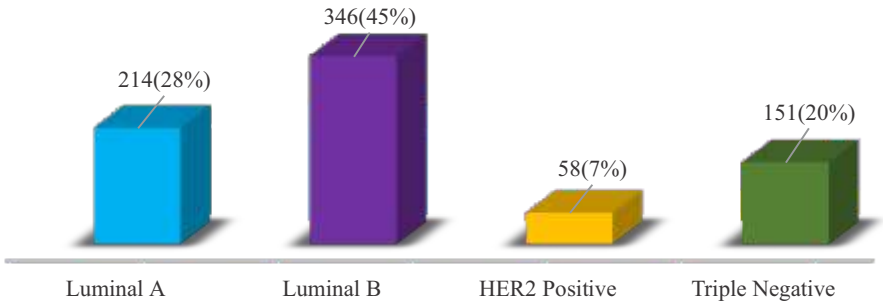


Figure 28: Distribution of Breast Cancer by Molecular Subtype (n=769)



4-Urological Cancer

"We have two options, medically and emotionally: give up or fight like hell"

-Lance Armstrong survivor of testicular cancer

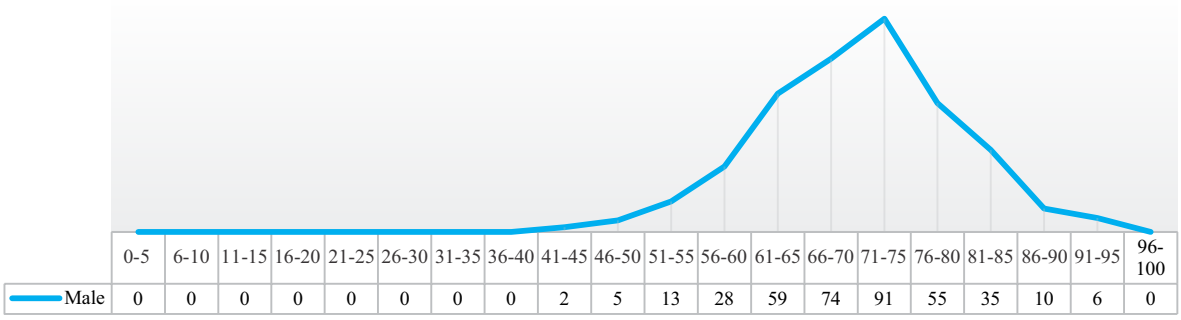
4-Urological Cancer

During 2018–2020, there were a total of 930 urological cancer cases, including 807(86.8%) male and 123(13.2%) female patients.

4.1-Prostate Cancer

During 2018–2020, SIH diagnosed 378 prostate cancer cases with a median age of 71 years.

Figure 29: Distribution of Prostate Cancer by Age



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	0	0	0	0	0	0	0	0	2	5	13	28	59	74	91	55	35	10	6	0

Table 13: Distribution of Prostate Cancer by Morphology

ICD-O-3 Code	Morphology	Total	%
8140/3	Adenocarcinoma, NOS	324	85.7
8010/3	Carcinoma, NOS	47	12.4
8574/3	Adenocarcinoma with neuroendocrine differentiation	3	0.8
8500/3	Ductal carcinoma, NOS	2	0.5
8045/3	Combined small cell carcinoma	1	0.3
8013/3	Large cell neuroendocrine carcinoma	1	0.3
	Total	378	100

Figure 31: Distribution of Prostate Cancer by SEER Summary Stage

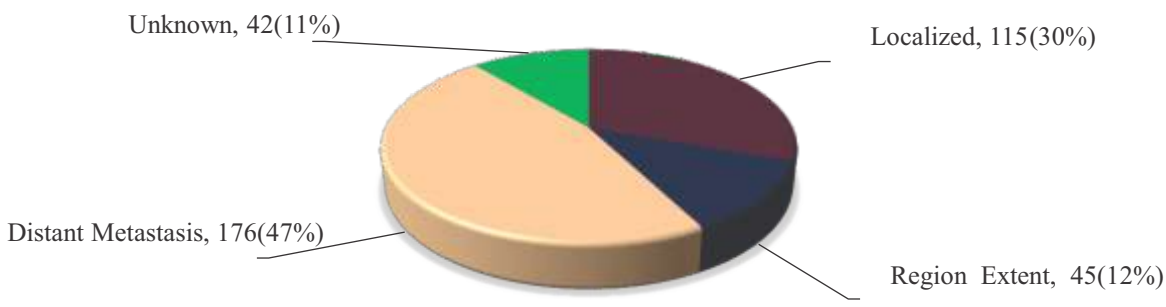
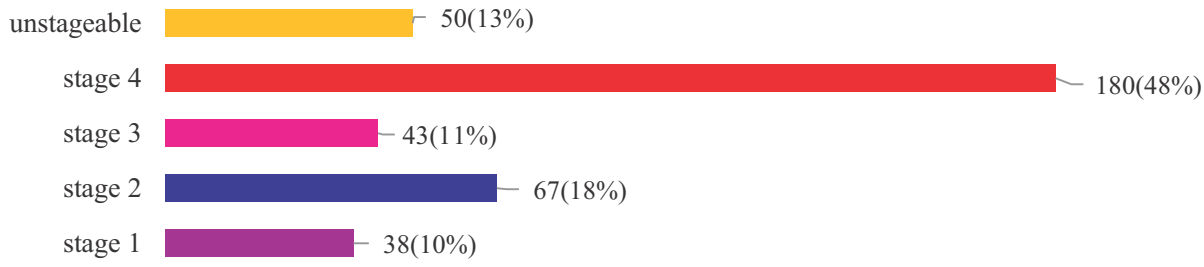


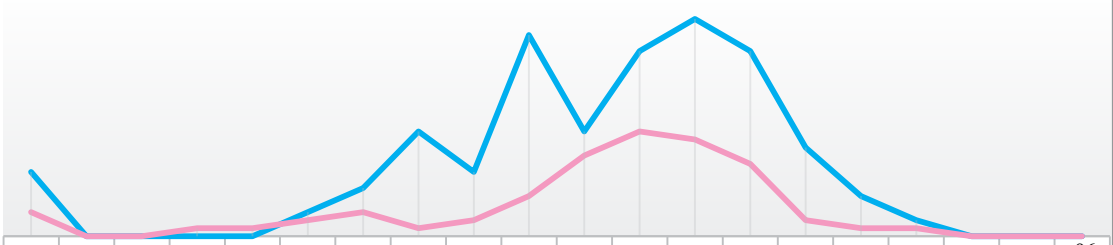
Figure 30: Distribution of Prostate Cancer by AJCC Staging System



4.2-Kidney Cancer

During 2018–2020, SIH reported 233 diagnosed kidney cancer cases including 167(71.7%) male and 66(28.3%) female patients. The age ranged from 3-85 years, with a median age of 37 years in men and 57 years in women

Figure 32: Distribution of Kidney Cancer by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	8	0	0	0	0	3	6	13	8	25	13	23	27	23	11	5	2	0	0	0
Female	3	0	0	1	1	2	3	1	2	5	10	13	12	9	2	1	1	0	0	0

Table 14: Distribution of Kidney Cancer by Morphology

ICD-O3 Code	Morphology	Total	%	Male	Female
8310/3	Clear cell Renal cell carcinoma, NOS	131	56.2	94	37
8312/3	Renal cell carcinoma, NOS	54	23.2	35	19
8260/3	Papillary Renal cell carcinoma	13	5.6	12	1
8960/3	Nephroblastoma, NOS (Wilms Tumor)	10	4.3	7	3
8317/3	Renal cell carcinoma chromophobe type	9	3.9	7	2
8010/3	Carcinoma, NOS	5	2.1	4	1
8318/3	Renal cell carcinoma, Sarcomatoid	3	1.3	3	-
9260/3	Ewing Sarcoma	2	0.9	2	-
8319/3	Collecting duct carcinoma	2	0.9	1	1
8070/3	Squamous cell carcinoma, NOS	1	0.4	-	1
9473/3	Primitive neuroectodermal tumor	1	0.4	-	1
8120/3	Urothelial cell carcinoma (Squamous differentiation)	1	0.4	1	-
8041/3	Small cell carcinoma	1	0.4	1	-
	Total	233	100	167	66

Figure 33: Distribution of Kidney Cancer by AJCC Staging

Figure 34: Distribution of Kidney Cancer by SEER Summary Stage

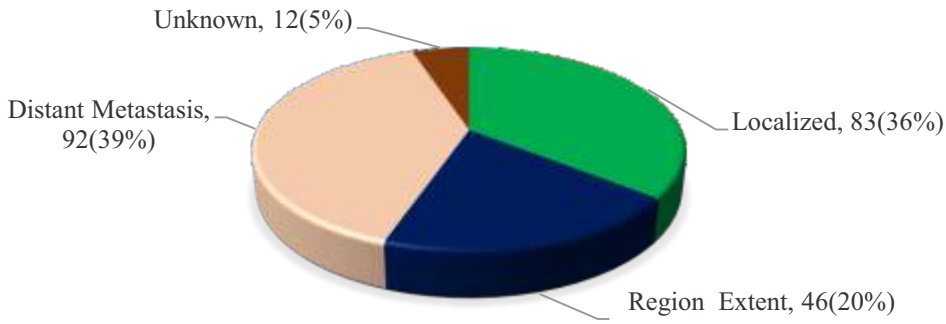


Figure 35:Distribution of Kidney Cancer by Laterality

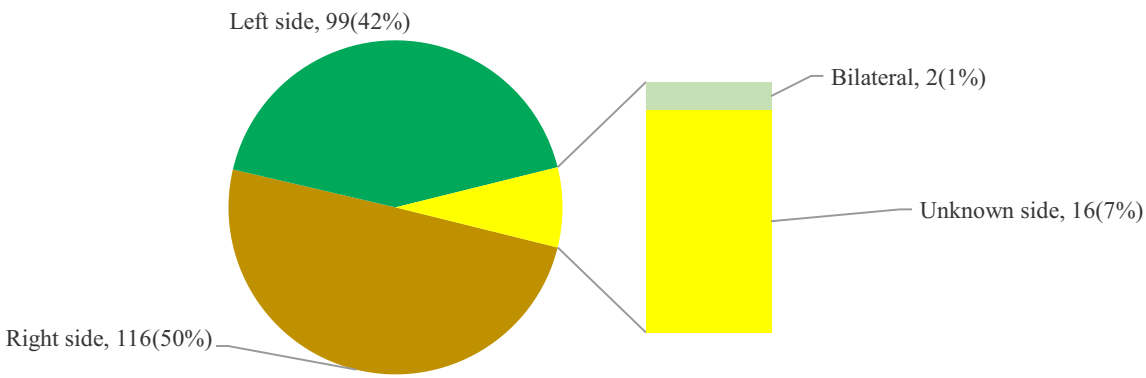
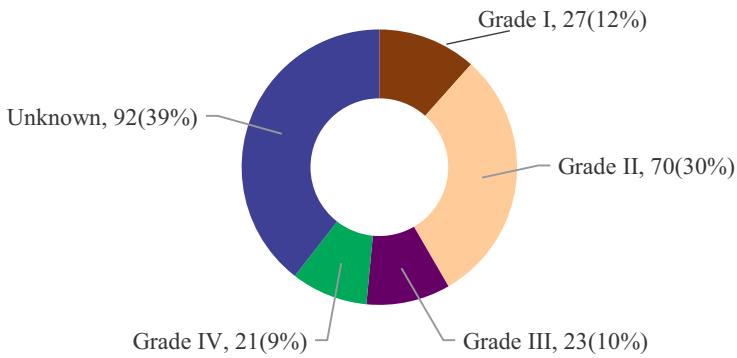


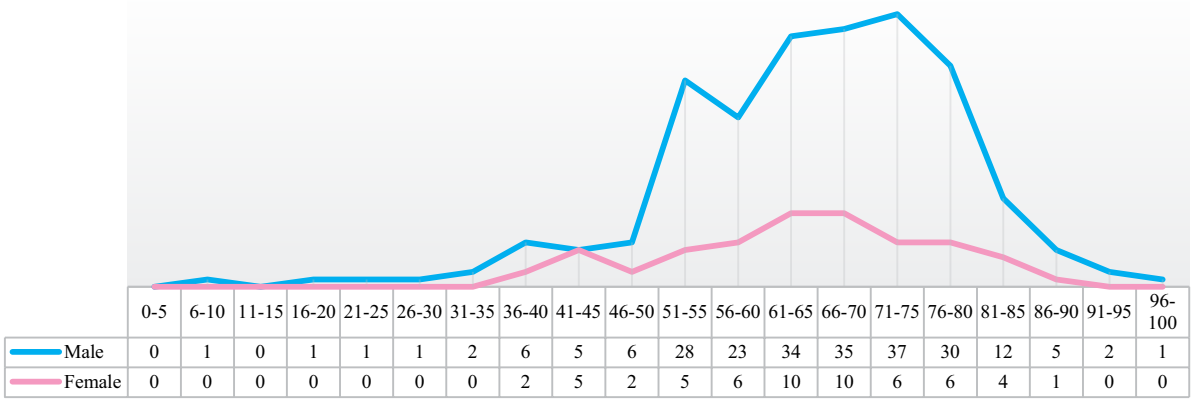
Figure 36:Distribution Of Kidney Cancer By Fuhrman Grading System



4.3-Urinary Bladder Cancer

During 2018–2020, SIH reported 287 newly diagnosed urinary bladder cancer patients, including 230 (80.1%) males with a median age of 67 years and 57 (19.9%) females with a median age of 64.5 years. According to cancer registry data, two urinary bladder sarcomas were diagnosed in children aged 7 to 16.

Figure 37: Distribution of Urinary Bladder Cancer by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	0	1	0	1	1	1	2	6	5	6	28	23	34	35	37	30	12	5	2	1
Female	0	0	0	0	0	0	0	2	5	2	5	6	10	10	6	6	4	1	0	0

Table 15: Distribution of Urinary Bladder Cancer by Morphology

ICD-O3 Code	Morphology	Total	%	Male	Female
8130/3	Papillary Urothelial cell carcinoma	152	53.0	121	31
8120/3	Urothelial cell carcinoma, NOS	117	40.8	98	19
8010/3	Carcinoma, NOS	6	2.1	5	1
8900/3	Rhabdomyosarcoma, NOS	2	0.7	-	2
8010/2	Carcinoma in situ	2	0.7	1	1
8041/3	Small cell carcinoma, NOS	2	0.7	-	2
8122/3	Transitional cell carcinoma spindle cell	1	0.3	1	-
8130/2	Papillary transitional cell carcinoma in situ	1	0.3	-	1
8131/3	Transitional cell carcinoma micropapillary	1	0.3	1	-
8070/3	Squamous cell carcinoma, NOS	1	0.3	-	1
8144/3	Adenocarcinoma intestinal type	1	0.3	-	1
8480/3	Mucinous adenocarcinoma	1	0.3	1	-
	Total	287		230	57

Figure 38: Distribution of Urinary Bladder Cancer by AJCC Staging

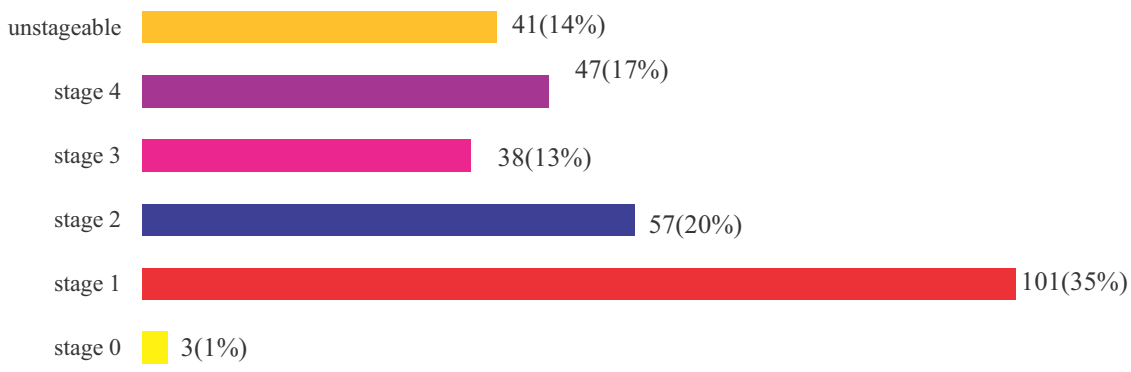


Figure 39: Distribution of Urinary Bladder Cancer by SEER Summary Stage

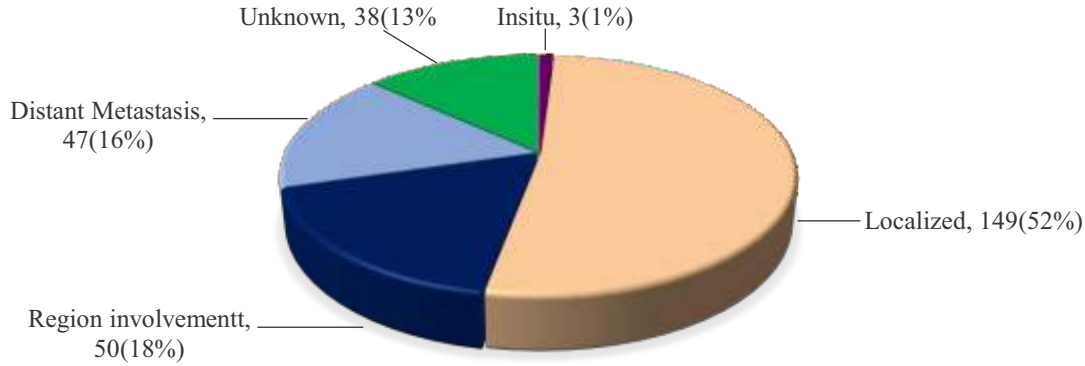
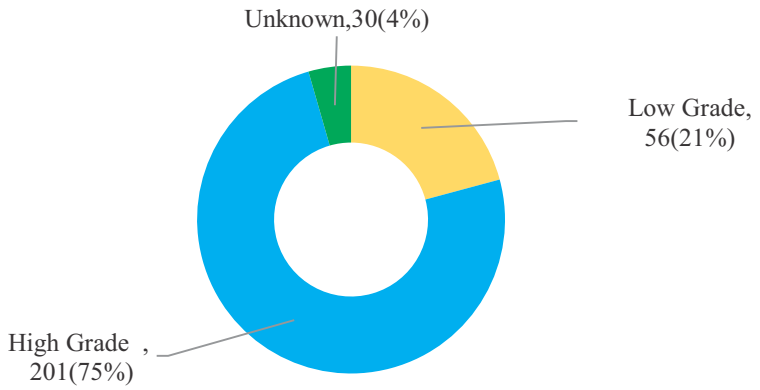
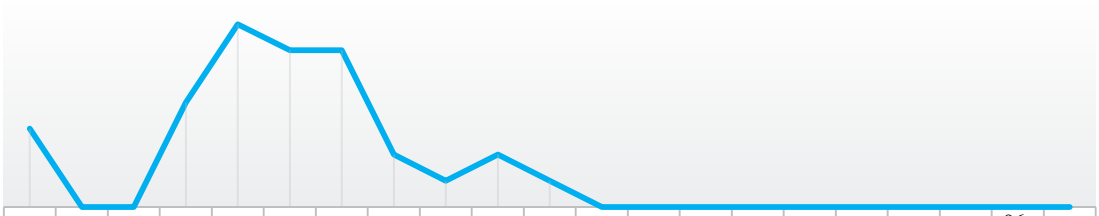


Figure 40: Distribution Of Urinary Bladder Cancer By Grade (Urothelial Cell Carcinoma)



4.4 Testicular Cancer

Figure 41: Distribution of Testis Cancer by Age



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100	>100
Male	3	0	0	4	7	6	6	2	1	2	1	0	0	0	0	0	0	0	0	0	0

Table 16: Distribution of Testis Cancer by Morphology

ICD-O3 Code	Morphology	Total	%
9085/3	Mixed germ cell Tumor	11	34.3
9061/3	Seminoma, NOS	9	28.1
9065/3	Germ cell Tumor	5	15.6
9071/3	Yolk sac Tumor	3	9.4
9070/3	Embryonal carcinoma, NOS	2	6.3
8890/3	Leiomyosarcoma, NOS	1	3.1
9040/3	Synovial Sarcoma, NOS	1	3.1
	Total	32	100

Figure 42: Distribution of Testis Cancer by AJCC stage

5-Female Genital Cancer

"I just tried to be very kind to my body. It was going through a horrible time, and I think that it's super important to be patient with yourself and treat yourself and your body with kindness"

-Cobie Smulders survivor of ovarian cancer

5-Female Genital Cancer

546 cases of female genital cancer were diagnosed. There were 90 cases of cervix uteri cancer, 214 cases of corpus uteri cancer, and 242 cases of ovarian cancer. The other forms of cancer in women's genital organs were rare, with only 5 cases of vaginal cancer and 13 cases of vulva cancer, so they are not included in this data

5.1-Cervix Uteri Cancer

During the years 2018–2020, SIH reported 90 newly diagnosed cervix uteri cancer cases.

Figure 43: Distribution of Cervix Uteri Cancer by Age

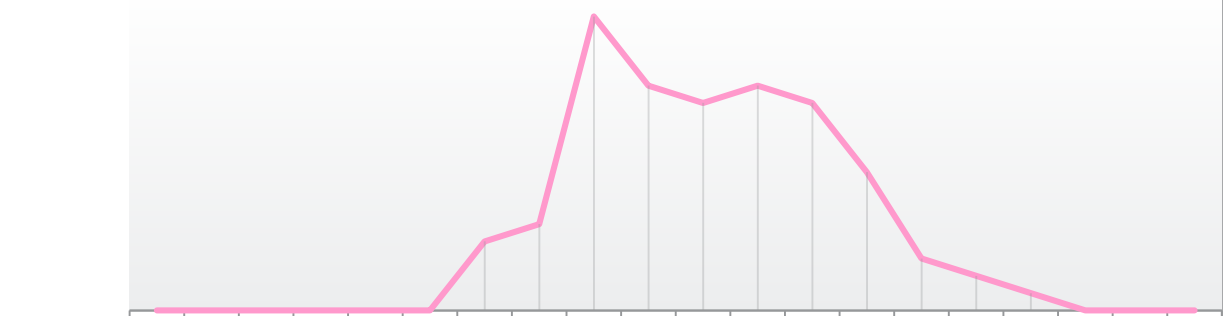


Table 17: Distribution of Cervix Uteri Cancer Cases by Morphology

ICD-3 Code	Morphology	Total	%
8070/3	Squamous cell carcinoma, NOS	50	55.6
8010/3	Carcinoma, NOS	9	10.0
8071/3	Squamous cell carcinoma keratinizing, NOS	9	10.0
8140/3	Adenocarcinoma, NOS	8	8.9
8072/3	Squamous cell carcinoma non-keratinizing, NOS	5	5.5
	Others	9	10.0
	Total	90	100.0

Figure 44: Distribution of Cervix Uteri Cancer by AJCC Staging

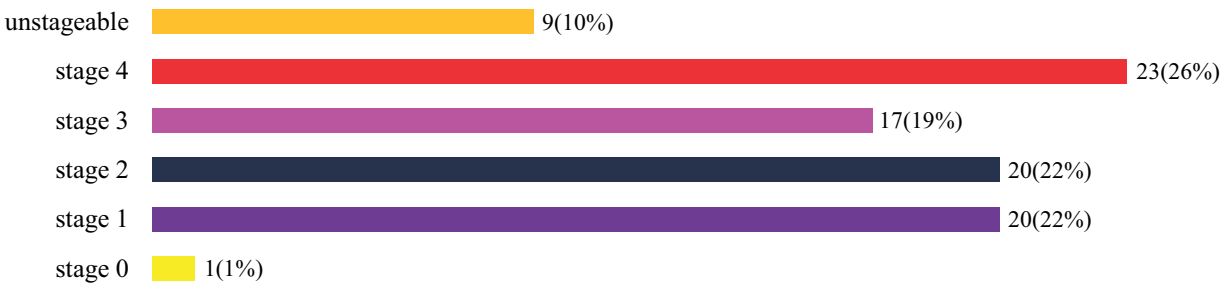


Figure 45: Distribution of Cervix Uteri Cancer by SEER Summary Stage

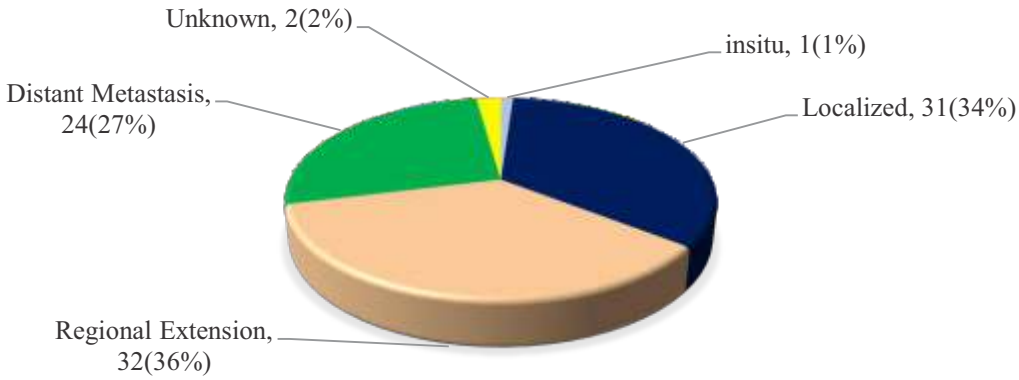
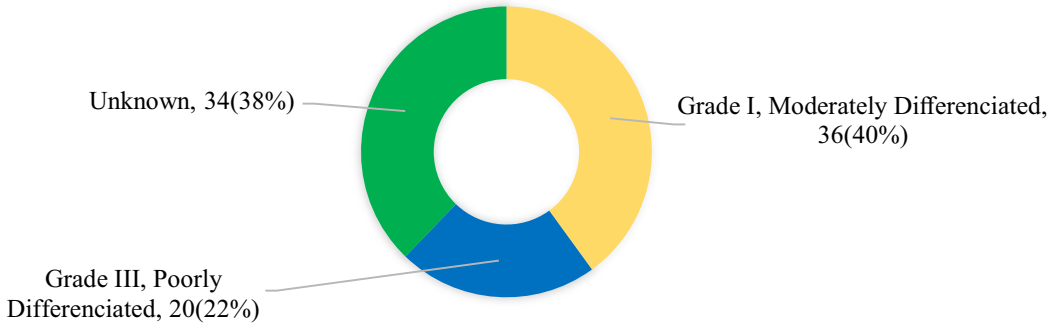


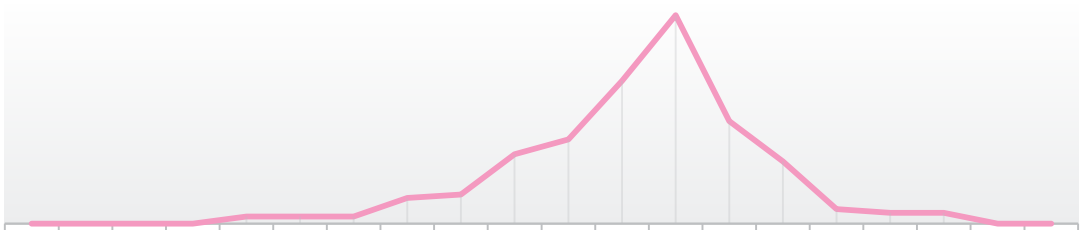
Figure 46: Distribution of Cervix Uteri Cancer by Grade (FIGO)



5.2-Corpus Uteri Cancer

During 2018–2020, SIH reported 214 newly diagnosed corpus uteri cancer cases with a median age of 61 years.

Figure 47: Distribution of Corpus Uteri Cancer by Age



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Female	0	0	0	0	2	2	2	7	8	19	23	39	57	28	17	4	3	3	0	0

Table 18: Distribution of Corpus Uteri Cancer Cases by Morphology

ICD-3 Code	Morphology	Total	%
8380/3	Endometriod adenocarcinoma, NOS	131	61.2
8441/3	Serous Cystadenocarcinoma, NOS	41	19.2
8950/3	Mullerian mixed tumor	8	3.7
8890/3	Leiomyosarcoma, NOS	7	3.2
8930/3	Endometrial stromal sarcoma, NOS	5	2.3
8460/3	Papillary Serous cystadenocarcinoma, NOS	4	1.9
8310/3	Carcinoma, NOS	3	1.4
	Others	15	7.1
	Total	214	100

Figure 48: Distribution of Corpus Uteri Cancer by AJCC Stage

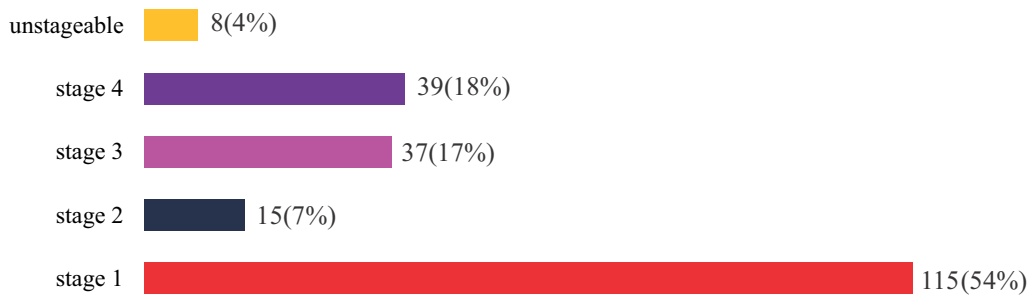


Figure 49: Distribution of Corpus Uteri Cancer by SEER Summary Stage

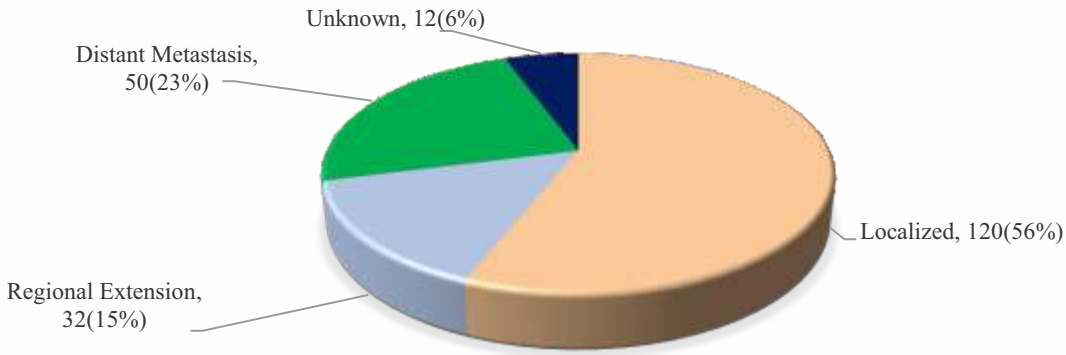
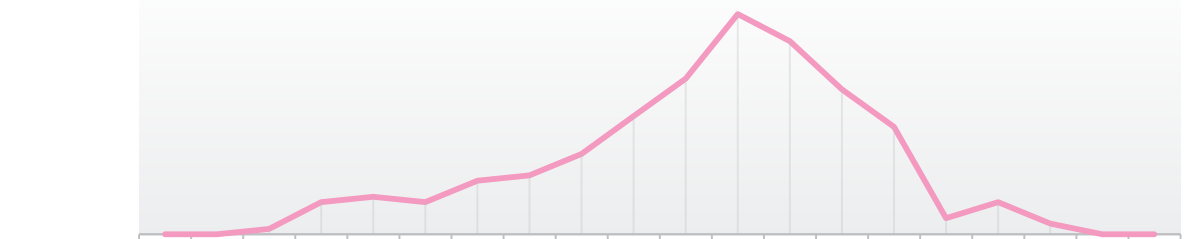


Figure 50: Distribution of Corpus Uteri Cancer by Grade

5.3-Ovarian Cancer

During 2018–2020, SIH reported 242 ovarian cancer cases diagnosed, with patients having with a median age of 57 years.

Figure 51: Distribution of Ovarian Cancer by Age



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Female	0	0	1	6	7	6	10	11	15	22	29	41	36	27	20	3	6	2	0	0

Table 19: Distribution of Ovarian Cancer by morphology

ICD-3 Code	Morphology	Total	%
8441/3	Serous cystadenocarcinoma, NOS	130	53.7
8010/3	Carcinoma, NOS	24	10
8380/3	Endometriod adenocarcinoma, NOS	17	7
8310/3	Clear cell Adenocarcinoma, NOS	12	5
8480/3	Mucinous adenocarcinoma, NOS	11	4.5
8140/3	Adenocarcinoma, NOS	9	3.7
9080/3	Teratoma, malignant, NOS	9	3.7
8460/3	Papillary serous cystadenocarcinoma	7	2.9
9060/3	Dysgerminoma	5	2.1
8490/3	Signet ring cell carcinoma	3	1.2
	Others	15	6.2
	Total	242	100

Figure 52: Distribution Of Ovarian Cancer By AJCC Stage

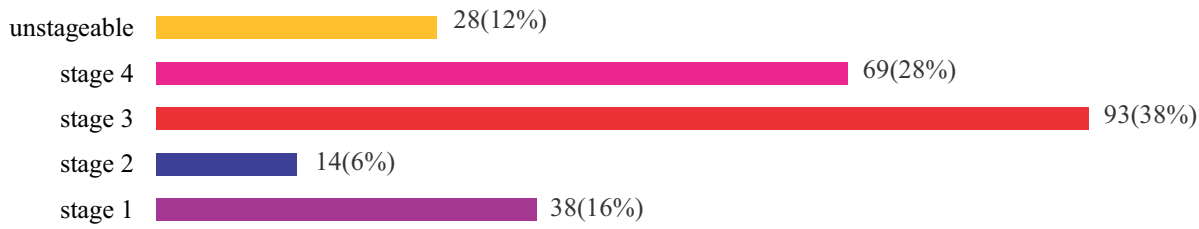


Figure 53: Distribution of Ovarian Cancer by SEER Summary Stage

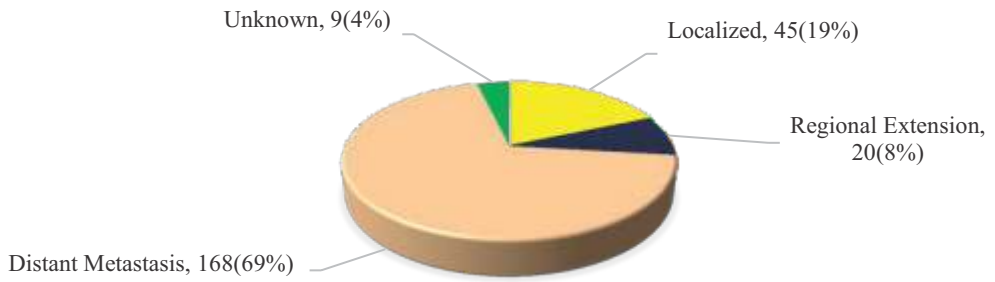


Figure 54: Distribution of Ovarian Cancer by Grade

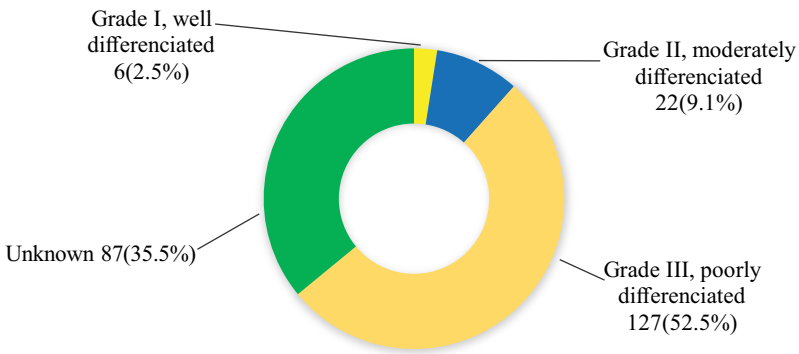
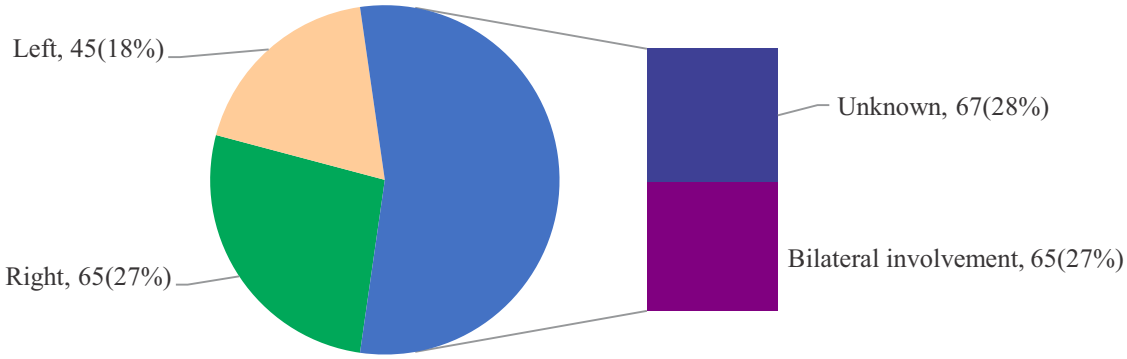
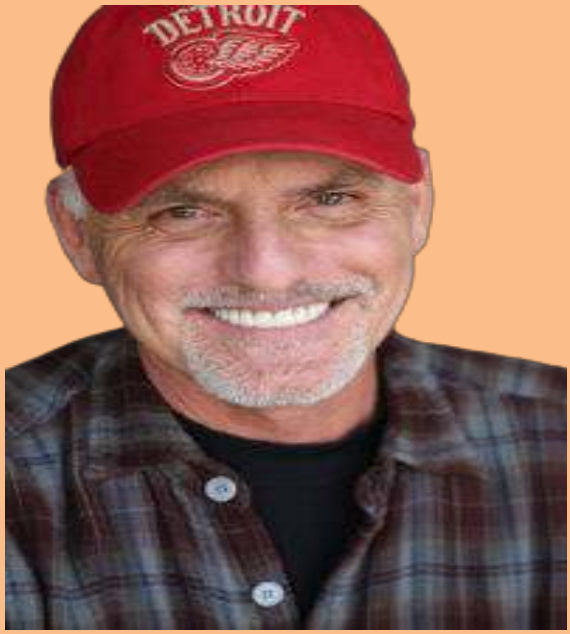


Figure 55: Distribution of Ovarian Cancer by Laterality



6-Head & Neck Cancer



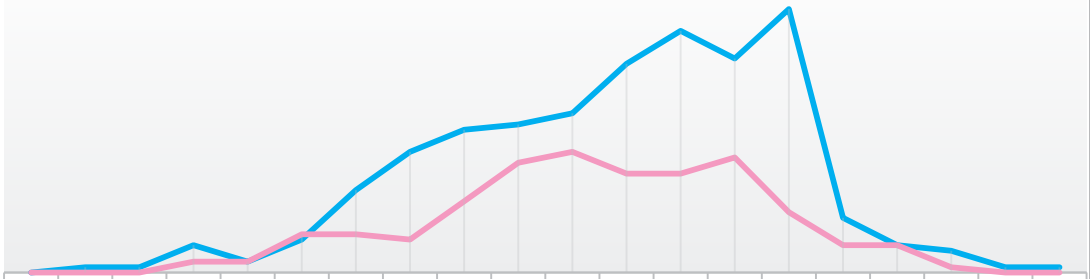
"I'm living proof that early diagnosis and treatment can improve your chances of surviving oral, head and neck cancers."

-Rob Paulsen
throat cancer survivor

6-Head & Neck Cancer

482 diagnosed head and neck cancer cases were reported at SIH during 2018–2020, of which 324 (67.2%) were males with a median age of 60 years, and 158 (32.8%) were females with a median age of 55.5 years.

Figure 56: Distribution of Head & Neck Cancer by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	0	1	1	5	2	6	15	22	26	27	29	38	44	39	48	10	5	4	1	1
Female	0	0	0	2	2	7	7	6	13	20	22	18	18	21	11	5	5	1	0	0

Table 20: Distribution of Head & Neck Cancer by Morphology

ICD-O3 Code	Morphology	Total	%	Male	Female
8070/3	Squamous cell carcinoma, NOS	304	63.0	205	99
8010/3	Carcinoma, NOS	37	7.7	30	7
8071/3	Squamous cell carcinoma, keratinizing	30	6.2	22	8
8430/3	Mucoepidermoid carcinoma	18	3.7	2	16
8200/3	Adenoid cystic carcinoma	16	3.3	9	7
8072/3	Squamous cell carcinoma large cell nonkeratinizing, NOS	14	2.9	12	2
8051/3	Verrucous carcinoma, NOS	11	2.3	5	6
8074/3	Squamous cell carcinoma, spindle cell	5	1.1	5	0
8140/3	Adenocarcinoma, NOS	5	1.1	2	3
8720/3	Malignant melanoma, NOS	4	0.9	3	1
8010/2	Carcinoma in situ, NOS	3	0.6	3	0
8082/3	Lymphoepithelial carcinoma	3	0.6	2	1
8562/3	Epithelial-myoepithelial carcinoma	3	0.6	2	1
	Others	29	6	22	7
	Total	482	100	324	158

Figure 57: Distribution of Head & Neck Cancer by AJCC Staging

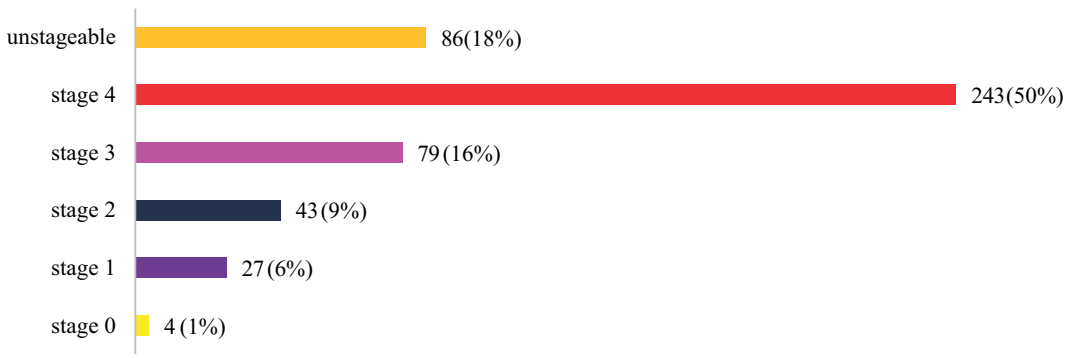


Figure 58: Distribution of Head & Neck Cancer by SEER Summary Stage

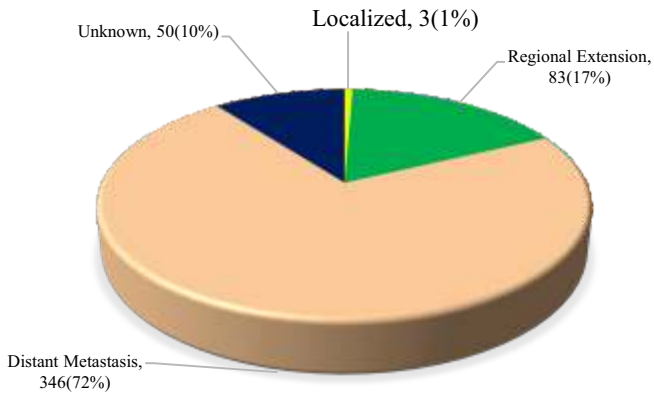


Figure 59: Distribution of Head & Neck Cancer by Grade

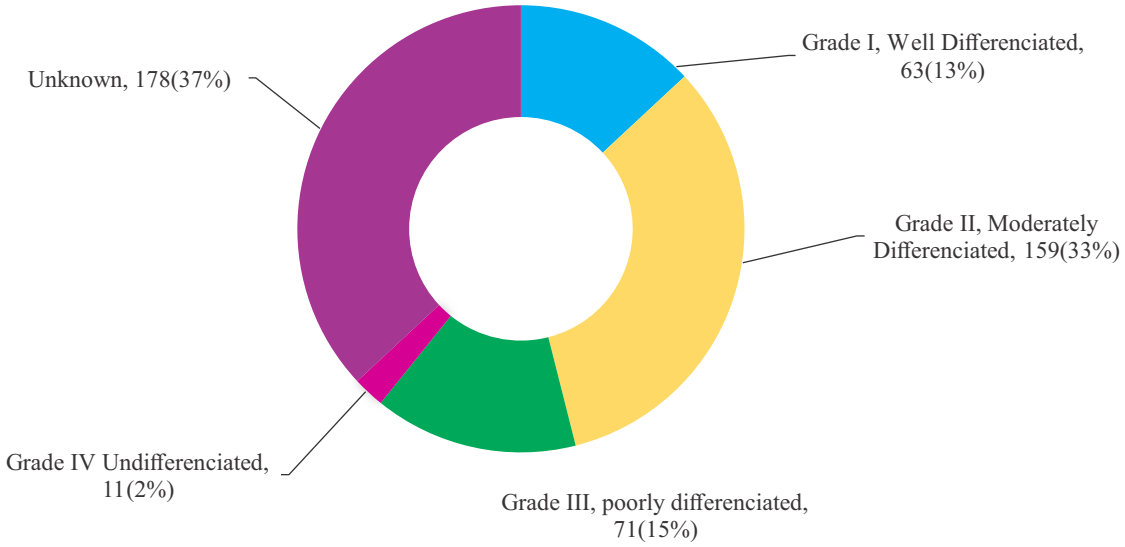


Table 21: Distribution of Head & Neck cancer by Site

ICD-O3 Code	Site	Total	%	Male	Female
C00	Lip	9	1.9	8	1
C01	Base of Tongue	3	0.6	2	1
C02	Tongue, NOS	90	18.7	56	34
C03	Gum	34	7.1	22	12
C04	Floor of mouth	2	0.4	1	1
C05	Palate, NOS	13	2.7	8	5
C06	Mouth, (Cheek Mucosa, Vestibule, Retromolar area)	69	14.3	43	26
C07	Parotid Gland	32	6.6	18	14
C08	Other Major Salivary Gland	10	2.1	3	7
C09	Tonsil	6	1.2	4	2
C10	Oropharynx	7	1.5	6	1
C11	Nasopharynx	45	9.3	36	9
C12	Pyriform Sinus	5	1.1	4	1
C13	Hypopharynx	42	8.7	23	19
C14	Pharynx	1	0.2	0	1
C30	Nasal Cavity	16	3.3	9	7
C31	Maxillary Sinus	15	3.1	10	5
C32	Larynx	83	17.2	71	12
	Total	482	100	324	158

7-Colorectal Cancer

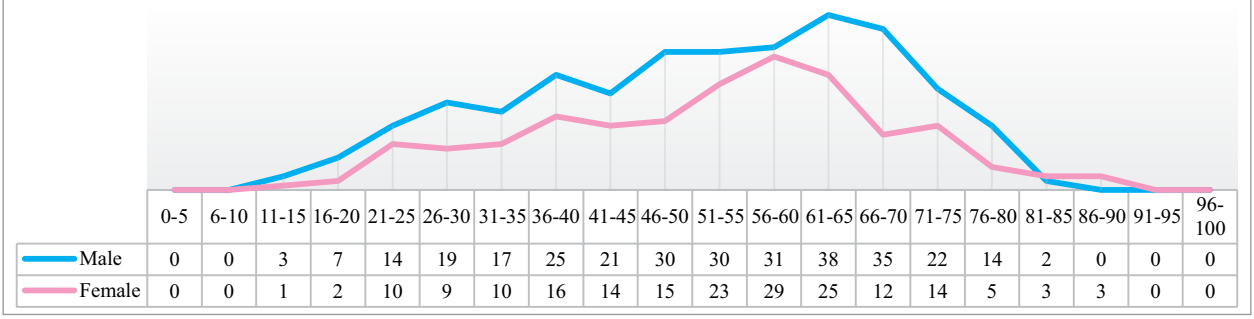
"Fight for the things that care about, but do it in a way that will lead others to join you."

-U.S. Supreme Court Justice Ruth Bader Ginsburg
survivor of colon cancer

7-Colorectal Cancer

499 colorectal cancer cases were diagnosed in SIH from January 2018 to December 2020, accounting for 6.7% of all cancer cases, including 308 (61.7%) male and 191 (38.3%) female patients. The age ranged from 12–89 years, with a median age of 54 for males and females. Subsite distribution of colorectal cancer was reported to be 252 (50.5%) cases in the colon, 53 (8.8%) cases in the recto-sigmoid junction, and 181 (36.3%) cases in the rectum, and 13 (2.6%) cases in the anus. According to our registry data, young age colorectal cancer patients were diagnosed between the ages of 12 and 30, accounting for 65 patients (13.0 %) of all colorectal cancer cases, and between the ages of 12 and 40 years, 133 patients (26.6%) of all colorectal cancer cases were reported.

Figure 60: Distribution of Colorectal Cancer by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	0	0	3	7	14	19	17	25	21	30	30	31	38	35	22	14	2	0	0	0
Female	0	0	1	2	10	9	10	16	14	15	23	29	25	12	14	5	3	3	0	0

Table 22: Distribution of Colorectal Cancer by Morphology

ICD-O-3	Morphology	Total	%	Male	Female
8140/3	Adenocarcinoma, NOS	349	69.8	215	134
8480/3	Mucinous adenocarcinoma	61	12.2	34	27
8490/3	Signet ring cell carcinoma	35	7.0	27	8
8010/3	Carcinoma, NOS	21	4.4	15	6
8246/3	Neuroendocrine carcinoma, NOS	8	1.6	5	3
8263/3	Adenocarcinoma in tubulovillous adenoma	7	1.4	3	4
8240/3	Carcinoid Tumor, NOS	3	0.6	0	3
	Others	15	3.0	9	6
	Total	499	100	308	191

Figure 61: Distribution of Colorectal Cancer by AJCC Stage

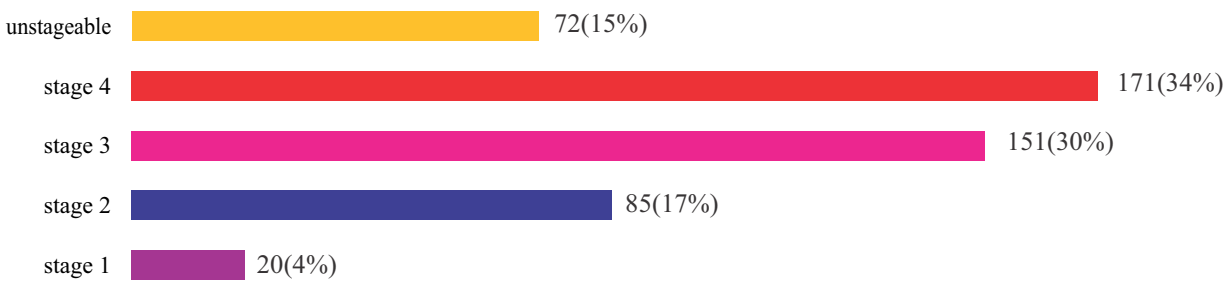


Figure 62: Distribution of Colorectal Cancer by SEER Summary Stage

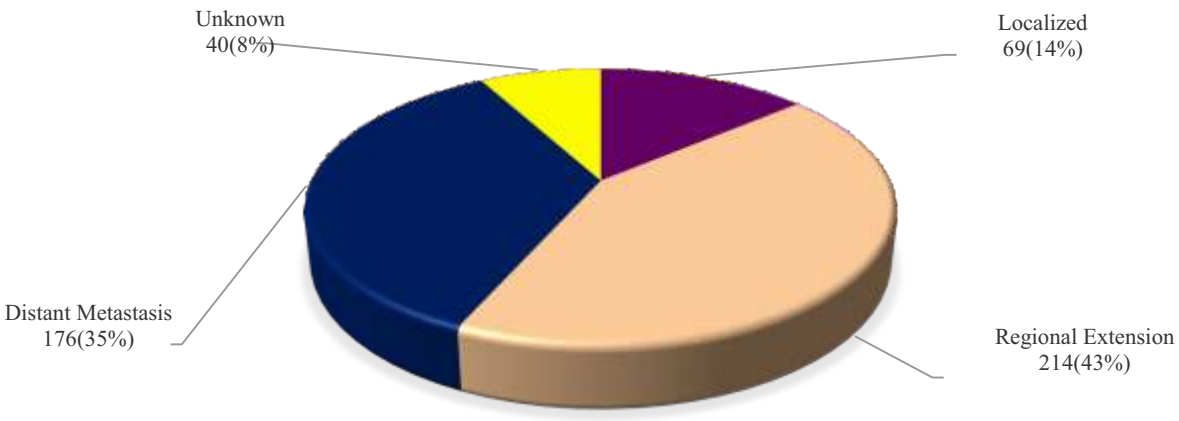
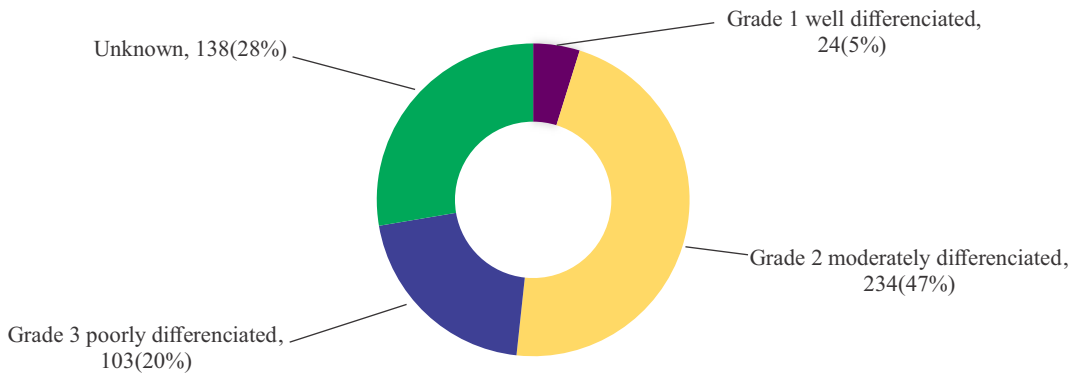


Figure 63: Distribution of Colorectal Cancer by Grade

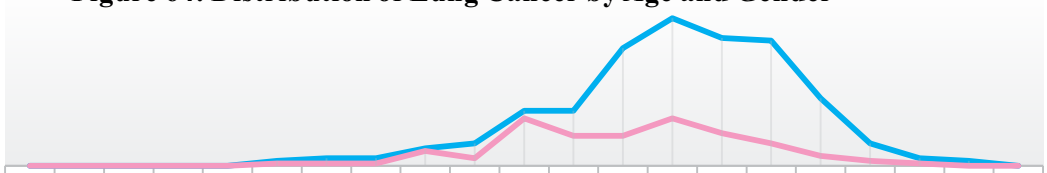


8-Lung Cancer

8-Lung Cancer

Lung cancer was reported in 419(4.7%) of all diagnosed cancer cases in SIH during 2018-2020 including 316 (75.4%) males with a median age of 60 years and 103(24.6%) females with a median age of 55.5 years. 4 lymphomas diagnosed in the lung were excluded from this data analysis. According to our registry data, 115 (27.4%) patients were reported as smoker.

Figure 64: Distribution of Lung Cancer by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100	>100
Male	0	0	0	0	0	2	3	3	7	9	22	22	47	59	51	50	27	9	3	2	0
Female	0	0	0	0	0	1	1	1	6	3	19	12	12	19	13	9	4	2	1	0	0

Table 23: Distribution of Lung cancer by Morphology

ICD-O3 Code	Morphology	Total	%	Male	Female
8140/3	Adenocarcinoma, NOS	167	39.8	112	55
8070/3	Squamous cell carcinoma, NOS	89	21.2	78	11
8041/3	Small cell carcinoma, NOS	62	14.8	52	10
8010/3	Carcinoma, NOS	42	10.0	28	14
8071/3	Squamous cell carcinoma, keratinizing	6	1.4	6	0
8033/3	Pseudosarcomatous carcinoma (Sarcomatoid carcinoma)	5	1.2	5	0
8246/3	Neuroendocrine carcinoma, NOS	5	1.2	5	0
8013/3	Large cell neuroendocrine carcinoma	4	1.0	2	2
8046/3	Non-small cell carcinoma	4	1.0	4	0
8480/3	Mucinous Adenocarcinoma	4	1.0	2	2
8560/3	Adenosquamous cell carcinoma	4	1.0	3	1
	Others	27	6.4	19	8
	Total	419	100	316	103

Figure 65: Distribution of Lung Cancer by AJCC Staging

Figure 66: Distribution of Lung Cancer by SEER Summary Stage

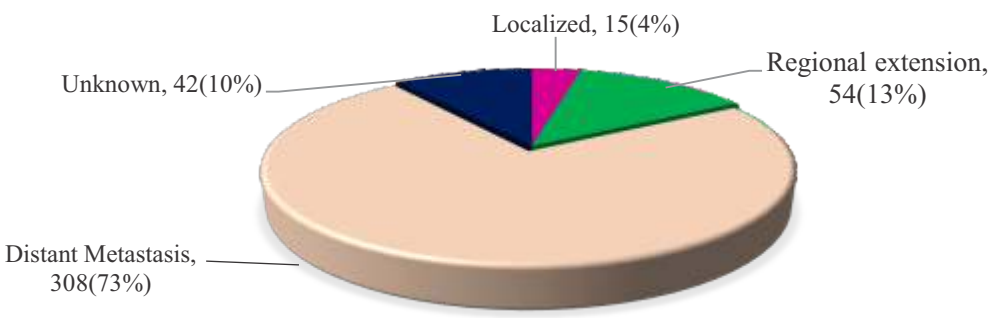


Figure 67: Distribution of Lung Cancer by Grading

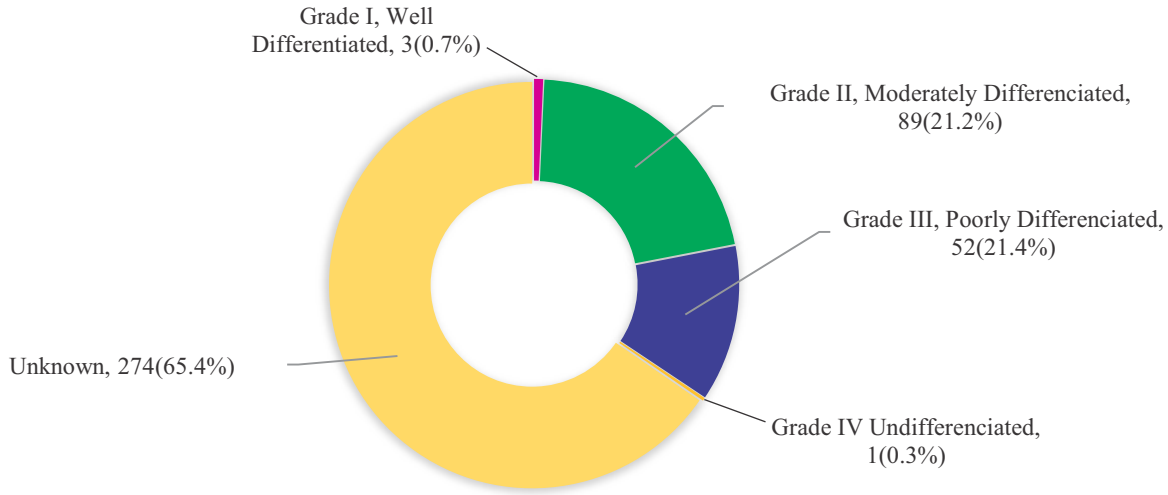


Figure 67: Distribution of Lung Cancer by Laterality

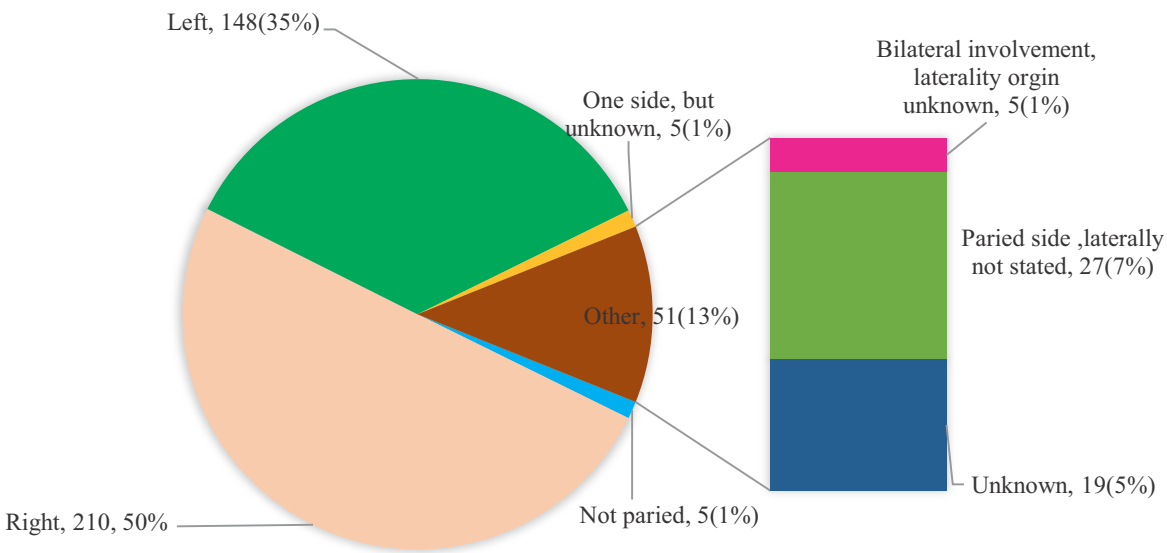
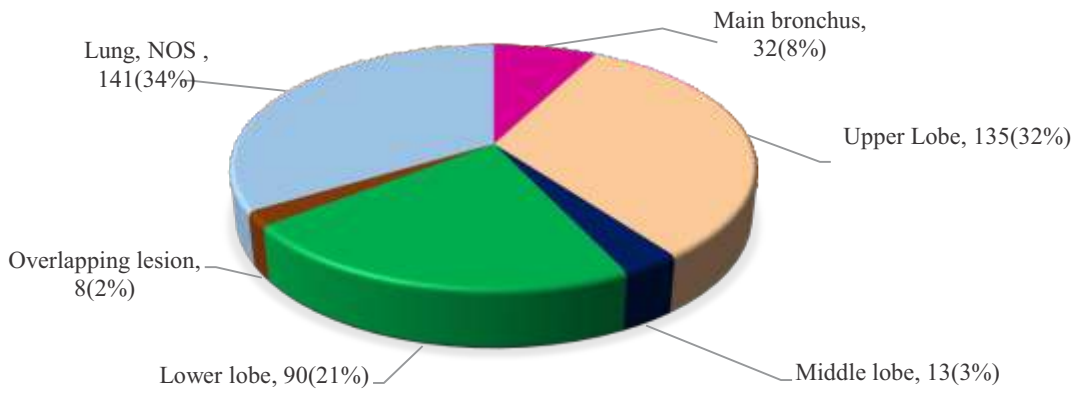


Figure 68: Distribution of Lung Cancer by Sub-site



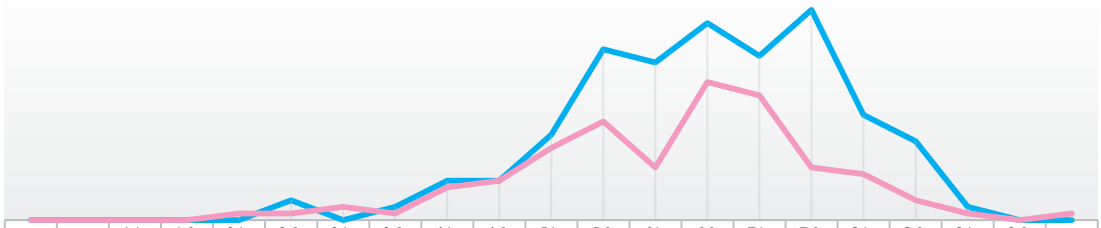
9-Stomach Cancer

"Surviving cancer is not the end of a a gruesome story, it's the begining of a beautiful once."

9-Stomach Cancer

Stomach cancer accounted for 307(3.8%) cases, including 197(64.1%) male and 110(35.9%) female patients. The age ranged from 18 to 114 years, with a median age of 61 for males and females. A significant amount of extra nodular lymphoma (n=36) is diagnosed in the stomach, which is excluded from this data analysis.

Figure 69: Distribution of Stomach Cancer by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100	>100
Male	0	0	0	0	0	3	0	2	6	6	13	26	24	30	25	32	16	12	2	0	0
Female	0	0	0	0	1	1	2	1	5	6	11	15	8	21	19	8	7	3	1	0	1

Table 24: Distribution of Stomach Cancer by Morphology

ICD-O-3	Morphology	Total	%	Male	Female
8140/3	Adenocarcinoma, NOS	166	54.1	117	49
8490/3	Signet ring cell carcinoma	78	25.4	37	41
8144/3	Adenocarcinoma, intestinal type	17	5.5	14	3
8480/3	Mucinous adenocarcinoma	9	2.9	7	2
8070/3	Squamous cell carcinoma, NOS	8	2.6	6	2
8010/3	Carcinoma, NOS	7	2.3	4	3
8246/3	Neuroendocrine carcinoma, NOS	6	2.0	3	3
	Others	16	5.2	9	7
	Total	307	100.0	197	110

Figure 70: Distribution of Stomach Cancer by AJCC Stage

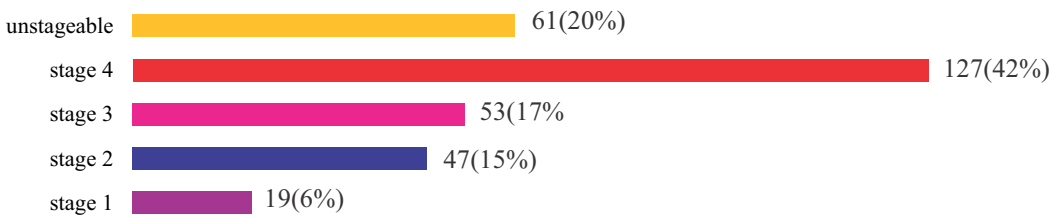


Figure 71: Distribution of Stomach Cancer Incidence by SEER Summary Stage

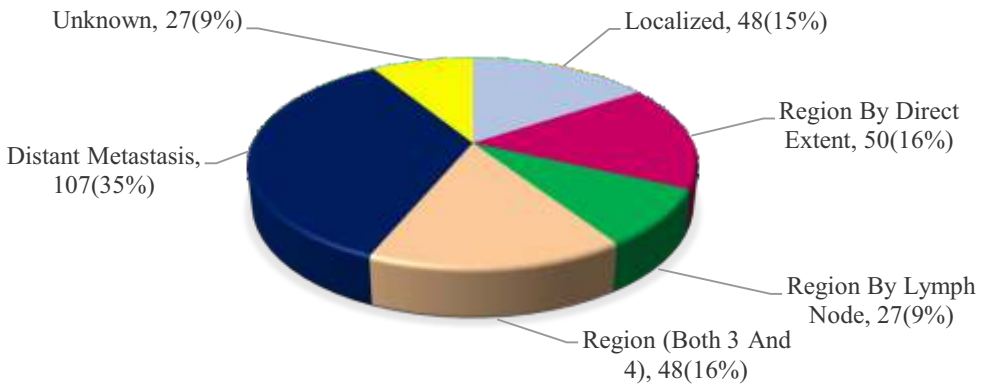
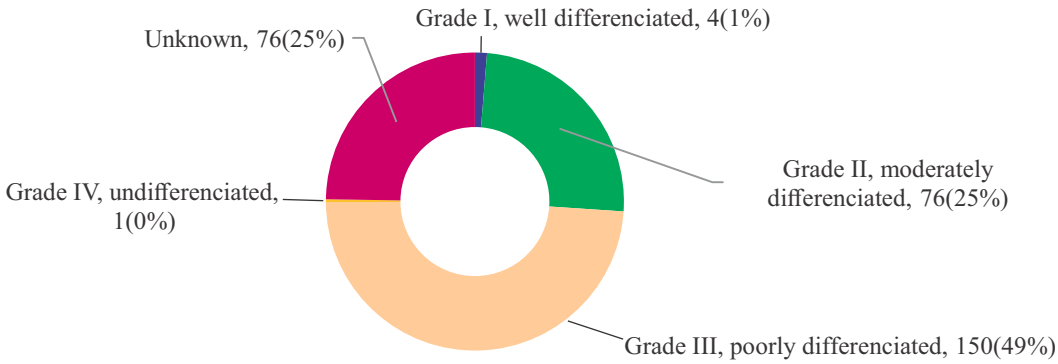


Figure 72: Distribution of Stomach Cancer by Grade



10-Brain Cancer

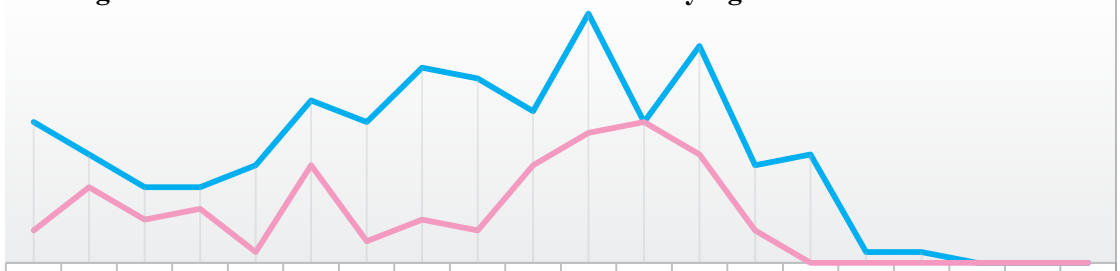
"Cancer can take away all of my physical abilities. It cannot touch my mind, it cannot touch my heart, and it cannot touch my soul"

-Jim Valvano

10-Brain Cancer

There were 285 cases of brain cancer, which accounted for 3.2% of all newly diagnosed cases in 2018-2020 including 200 (70.2%) male and 85 (29.8%) female patients. The median age at diagnosis was 44 years. Brain Lymphoma(n=30) was excluded from the data analysis.

Figure 73: Distribution of Brain Cancer Cases by Age and Gender

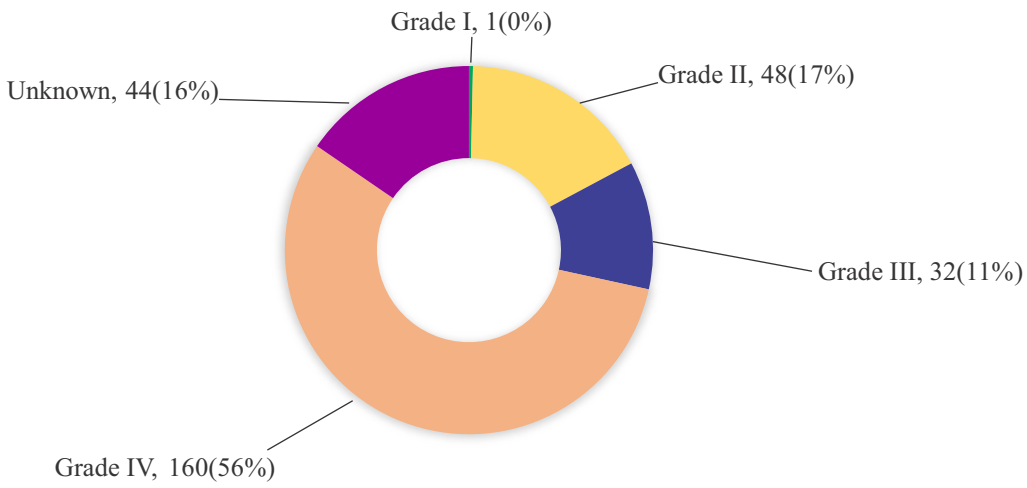


	0-5	6-10.	11-15.	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	13	10	7	7	9	15	13	18	17	14	23	13	20	9	10	1	1	0	0	0
Female	3	7	4	5	1	9	2	4	3	9	12	13	10	3	0	0	0	0	0	0

Table 25: Distribution of Brain Cancer by Morphology

ICD-O-3	Morphology	Total	%	Male	Female
9440/3	Glioblastoma, NOS	126	44.2	81	45
9400/3	Astrocytoma, NOS	40	14.3	33	7
9380/3	Glioma, malignant	26	9.1	21	5
9470/3	Medulloblastoma, NOS	23	8.1	16	7
9450/3	Oligodendroglioma, NOS	20	7.0	17	3
9391/3	Ependymoma, NOS	11	3.8	8	3
9401/3	Astrocytoma, anaplastic	7	2.4	5	2
9442/3	Gliosarcoma	5	1.7	4	1
9411/3	Gemistocytic astrocytoma	3	1.0	2	1
	Others	24	8.4	13	11
	Total	285	100	200	85

Figure 74: Distribution of Incidence of Brain Cancer by Grade

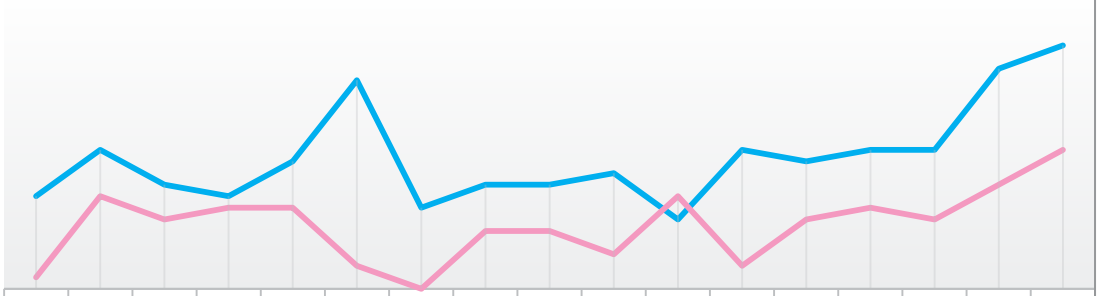


Childhood Cancer

Childhood Cancer

During 2018-2020, 288 childhood cancer cases were diagnosed at SIH. The age range was 0–16 years. 211 (73.3%) were males with a median age of 9 years, and 77 (26.7%) were female with a median age of 10 years.

Figure 75: Distribution of Childhood Cancer by Age and Gender

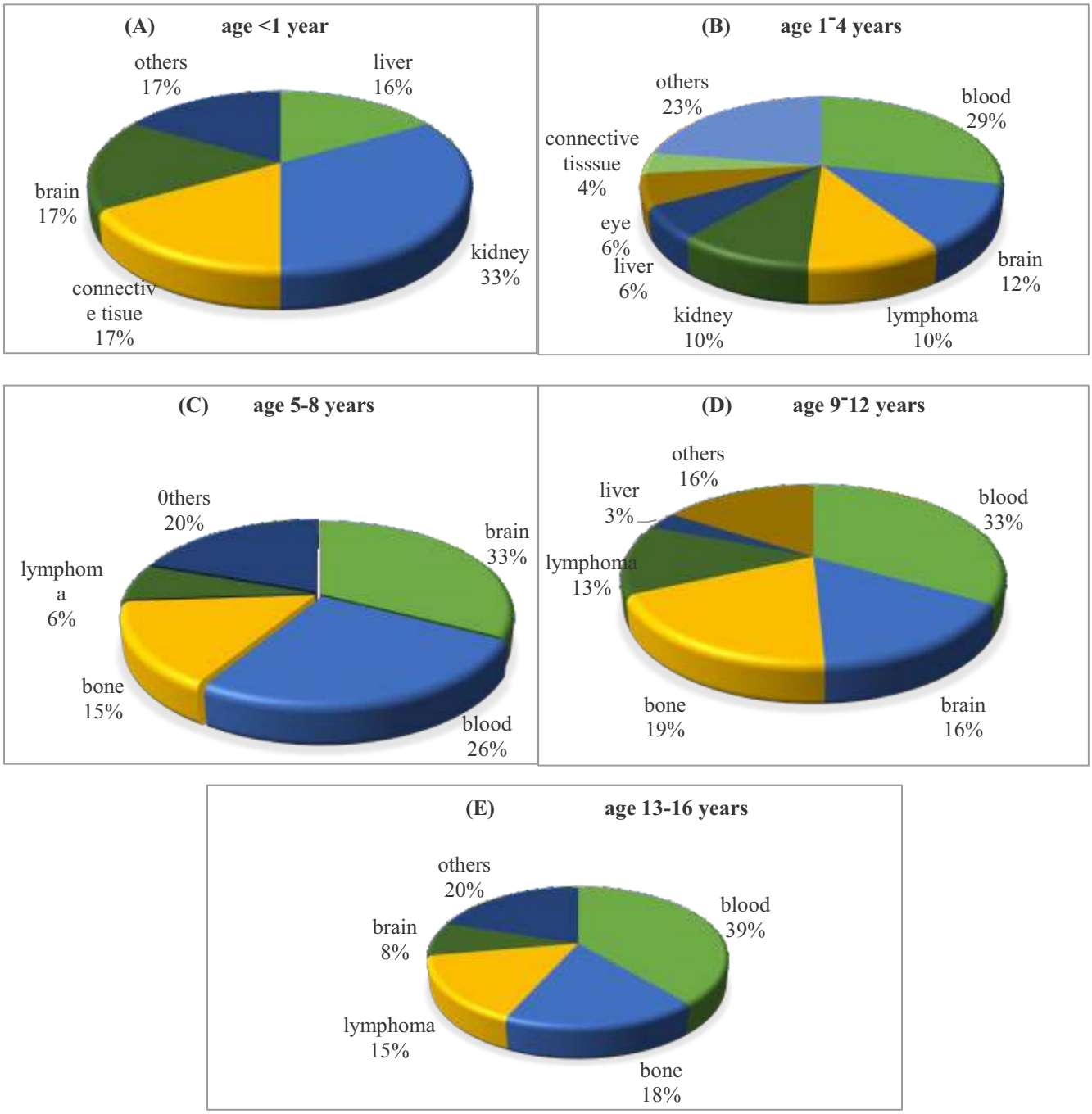


	<1 year-	1-	2-	3-	4-	5-	6-	7-	8-	9-	10-	11-	12-	13-	14-	15-	16-
Male	8	12	9	8	11	18	7	9	9	10	6	12	11	12	12	19	21
Female	1	8	6	7	7	2	0	5	5	3	8	2	6	7	6	9	12

Table 26: Distribution of Childhood Cancer by Topography

ICD-O Code	Cancer	Total	%	Male	Female
C42	Blood	95	33	87	8
C71	Brain	46	16	30	16
C40,41	Bone	35	12.1	23	12
C77	Lymph Node (Lymphoma)	37	12.8	27	10
C64	Kidney	11	3.8	8	3
C22	Liver	8	2.8	3	5
C76	Other and ill-defined sites (head, face, neck)	8	2.8	5	3
C49	Connective tissue	6	2.1	3	3
	Others	42	14.6	25	17
	Total	288	100	211	77

Figure 76: Distribution of Childhood Cancer by Different Age Groups



A. Kidney cancer is most common in children younger than 1 year.

B. Blood cancer is most common in children aged 1-4 years.

C. Brain cancer is most common in children aged 5-8 years.

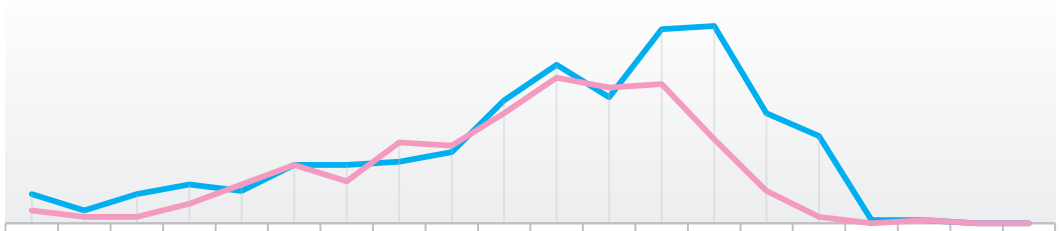
D. Blood cancer is most common in children aged 9-12 years.

E. Blood cancer is most common in children aged 13-16 years.

Common Cancer in Afghan Patients

During 2018–2020, 740 Afghan patients were diagnosed at SIH, accounting for 8.2% of cancer cases. According to our registry data, a 9-month-old Afghan patient was diagnosed with retinoblastoma. 431 (58.2%) were males with a median age of 56, and 309 (41.8%) were females with a median age of 52

Figure 77: Distribution of Common Cancer in Afghan Patients by Age and Gender



	0-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-80	81-85	86-90	91-95	96-100
Male	9	4	9	12	10	18	18	19	22	38	49	39	60	61	34	27	1	1	0	0
Female	4	2	2	6	12	18	13	25	24	34	45	42	43	26	10	2	0	1	0	0

Figure 78: Distribution of Cancer in Afghan Patients by AJCC Stage

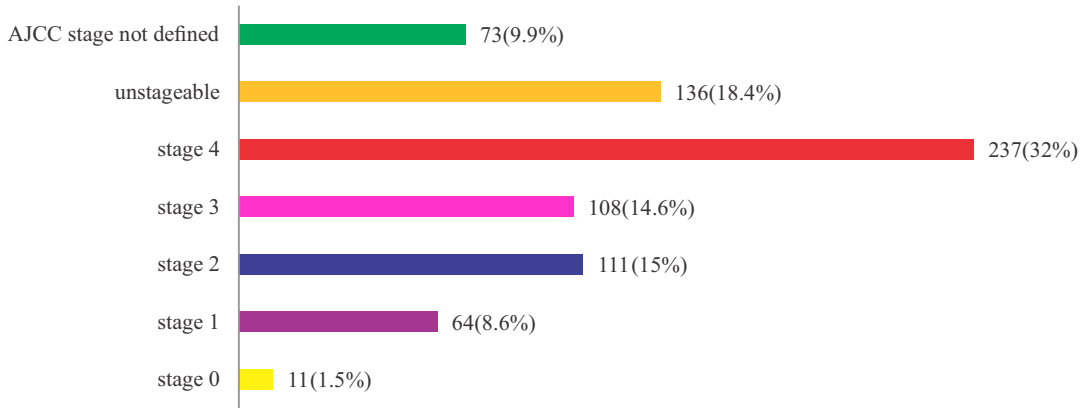


Table 27: Distribution of Common Cancer in Afghan Patients by Topography

ICDO-3	Topography (Site)	Total	%	Male	Female
C16	Stomach	103	13.9	77	26
C50	Breast	87	11.7	3	84
C42	Leukemia and myeloma	65	8.8	50	15
C22	Liver	56	7.5	43	13
C15	Esophagus	55	7.4	33	22
C77	Lymph node (Lymphoma)	31	4.2	21	10
C34	Lung	30	4	18	12
C18	Colon	24	3.2	15	9
C61	Prostate	24	3.2	24	0
C25	Pancreases	22	2.9	11	11
C73	Thyroid	22	2.9	6	16
C44	Skin	21	2.8	16	5
C71	Brain	19	2.5	12	7
C20	Rectum	16	2.2	12	4
C56	Ovary	14	1.9	0	14

C67	Urinary Bladder	13	1.7	8	5
C64	Kidney	12	1.6	11	1
C19	Rectosigmoid	10	1.3	7	3
C80	Unknown primary	10	1.3	8	2
C53	Cervix Uteri	9	1.2	0	9
C24	Extra hepatic bile duct	8	1.1	6	2
C11	Nasopharynx	7	0.9	7	0
C38	Mediastinum and pleura	6	1	4	2
C41	Bone and cartilage	6	1	2	4
C54	Corpus uteri	6	1	0	6
C76	Other ill-defined sites	6	1	5	1
C07	Salivary gland	5	0.7	2	3
C48	Peritoneum and retroperitoneum	5	0.7	3	2
C62	Testis	5	0.7	5	0
C09	Tonsil	4	0.5	3	1
C13	Hypopharynx	4	0.5	3	1
C03	Mouth	3	0.4	3	0
C17	Small intestine	3	0.4	2	1
	Others	29	3.9	11	18
	Total	740	100	431	309

Table 28: Yearly Distribution of All Cancer by the Site.

ICD-O3 Code	Topography	2018	2019	2020	Total
C00	Lip	4	2	3	9
C01-C02	Tongue	25	29	39	93
C03-C06	Mouth	31	29	61	121
C07-C08	Salivary gland	19	10	18	47
C09	Tonsil	3	7	9	19
C10	Other Oropharynx	1	1	8	10
C11	Nasopharynx	10	14	22	46
C12	Pyriform sinus	2	1	2	5
C13	Hypopharynx	7	17	18	42
C14	Pharynx	0	1	0	1
C15	Esophagus	35	58	66	159
C16	Stomach	92	118	129	339
C17	Small intestine	14	10	6	30
C18	Colon	72	76	117	265
C19	Recto sigmoid	18	13	22	53
C20	Rectum	46	47	91	184
C21	Anus	3	1	9	13
C22	Liver	257	636	482	1375
C23	Gall bladder	29	44	38	111
C24	Extra hepatic bile duct	27	35	36	98
C25	Pancreas	64	81	108	253
C26	Other ill-defined digestive organs	15	4	7	26
C30	Nasal cavity	8	7	6	21
C31	Accessory Sinuses	9	7	4	20
C32	Larynx	25	26	33	84
C33	Trachea	0	1	0	1
C34	Lung	124	143	156	423
C37	Thymus	2	2	8	12
C38	Mediastinum & Pleura	23	9	11	43
C40-C41	Bone & cartilage	31	53	53	137
C42	Bone marrow (Leukemia & multiple myeloma)	215	242	338	795
C42.2	Spleen	3	0	4	7
C44	Skin	34	65	78	177
C47	Peripheral nerves	0	1	1	2
C48	Peritoneum & Retroperitoneum	12	11	13	36
C49	Connective soft tissue	17	19	30	66
C50	Breast	320	448	572	1340
C51	Vulva	2	4	7	13
C52	Vagina	3	1	1	5
C53	Cervix uteri	24	24	42	90
C54	Corpus uteri	52	66	96	214
C55	Uterus unspecified	6	16	4	26
C56	Ovary	69	66	107	242
C60	Male Genital organ	1	0	1	2
C61	Prostate	103	129	146	378
C62	Testis	8	11	17	36
C64	Kidney	64	78	93	235
C65	Renal pelvis	4	6	3	13
C66	Ureter	2	1	1	4
C67	Urinary bladder	71	119	98	288
C68	Urethra	1	0	0	1
C69	Eye	3	2	6	11
C70	Cerebral meninges	0	0	1	1
C71	Brain	81	82	152	315
C72	Nervous system	2	3	8	13

C73	Thyroid gland	39	34	37	110
C74	Adrenal gland	0	6	4	10
C75	Other endocrine glands	0	1	2	3
C76	Other and ill-defined sites (head, face, neck)	11	6	13	30
C77	Lymphoma (Lymph node)	105	141	158	404
C80	Unknown primary	17	19	30	66
	Total	2265	3088	3635	8988

* This list contains diagnosed lymphoma in the organ, but it was excluded during site analysis.

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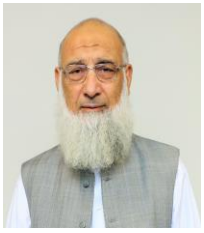

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