

# 2015

## QATAR NATIONAL CANCER REGISTRY QNCR

### ANNUAL REPORT 2015



# 2015

## QATAR NATIONAL CANCER REGISTRY

### QNCR

2015  
Cancer Annual Report  
State of Qatar

National Cancer Program  
Qatar National Cancer Registry  
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Printed in Qatar, 2017.

**Citation:**  
Qatar National Cancer Registry,  
Ministry of Public Health,  
Qatar Cancer Incidence Report, 2015.  
Doha: 2017.



# DISCLAIMER

Information included in this report reflects the data at the time of closing the database for cleaning and analysis on August 2016. QNCR continues to receive more data and updates, so any missing or incomplete information, will be completed later on, and can be provided upon specific requests through an email to qncr@moph.gov.qa

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## ABBREVIATIONS

ASR	Age Standardized Rate
ASIR	Age-Specific Incidence Rate
cTNM	Clinical Tumor Node Metastases stage
CTR	Certified Tumor Registrar
CNS	Central Nervous System
EMRO	Eastern Mediterranean Regional Office (World Health Organization)
GI	Gastro-Intestinal
HMC	Hamad Medical Corporation
ICD 10	International Classification of Disease 10th Revision
ICD O-3	International Classification of Disease for Oncology 3rd Revision
MDT	Multi-Disciplinary Team
MTA	Medical Treatment Abroad
NCCCR	National Center for Cancer Care and Research
NCP	National Cancer Program
NCS	National Cancer Strategy
NHS	National Health Strategy
PHCC	Primary Healthcare Corporation
QNCR	Qatar National Cancer Registry
MoPH	Ministry of Public Health

# FOREWORD

I welcome the publication of the 2015 Qatar National Cancer Registry. This is an important achievement. Population-based cancer registries provide quality data to ascertain the cancer incidence, prevalence and survival in a population. They are important as they allow policy makers and service planners to measure the magnitude of the problem as well as the effectiveness of public health initiatives such as screening for selected cancers. They also, enable the evaluation of our cancer services providing diagnosis and treatment. Finally, they allow for international comparisons and are essential for world-class cancer research.

This document will be an invaluable tool for those concerned with the burden of cancer in the State of Qatar, and presents an excellent opportunity for understanding the response of our health system to the challenge posed by cancer thus providing a basis for improvement and change. Indeed Qatar is now entering a new stage in the development of cancer services aiming at a more efficient and effective prevention, diagnosis, treatment and rehabilitation towards the goals set by our National Health Strategy 2017-2022 within the framework of the National Vision 2030.

Let me use this opportunity to thank the individuals and institutions who made this undertaking possible. First of all the Hamad Medical Corporation (HMC), which set the foundation of the cancer registry, and all other stakeholders such as the National Center for Cancer Care & Research (NCCCR), and the members of the Advisory Committee for the continuous engagement, support and scientific input.

I would like to confirm my appreciation to the team of Qatar National Cancer Registry at the Ministry and the complete team members of the National Cancer Program

**H.E. Dr. Hanan Al Kuwari**  
Minister of Public Health

# QNCR: QATAR NATIONAL CANCER REGISTRY

# DATA MANAGEMENT

## INTRODUCTION

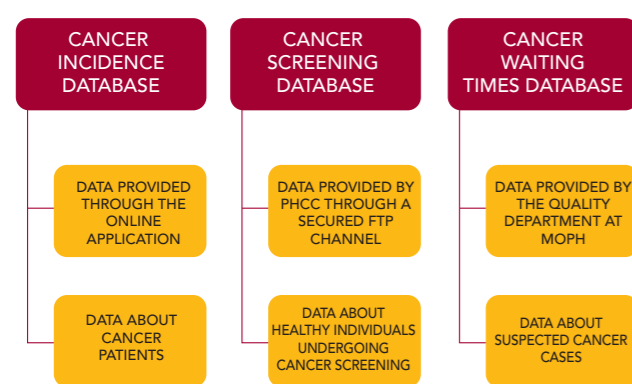
Since its creation on January 2014, the QNCR, operating under the National Cancer Program in the Ministry of Public Health, is systematically collecting cancer information from all healthcare providers and sectors, through the home-made online application.

The historical data that used to be collected by the former Qatar Cancer Registry at HMC has entirely moved to the new database at QNCR and is made available to the home-based registry at NCCCR. This data went through a rigorous and complete data cleaning process, and has allowed the update of the information previously published in the cancer incidence annual report on 2014.

## CURRENT STRUCTURE

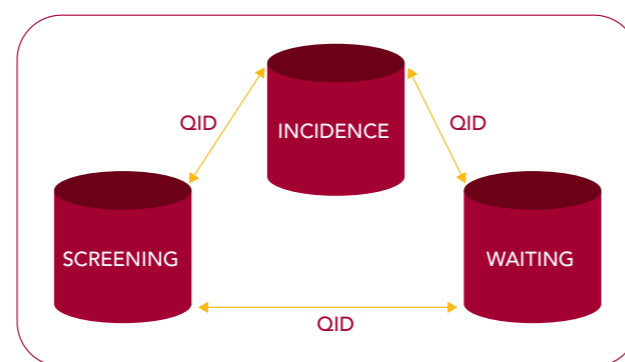
QNCR has largely developed since its creation at MoPH in 2014. In addition to the cancer incidence database, QNCR is now managing two more others. The current structure in terms of data looks as follows:

Figure 1: Databases structure at the QNCR



All three databases are interconnected based on the unique identifier of the Qatari ID, allowing tracking of patient across the three of them.

Figure 2: Schematic structure at the QNCR



## ADVISORY COMMITTEE

The Advisory Committee to the QNCR held two meetings during the year 2015, during which the following actions were taken:

- Update the data notification form
- Update data items collected, through name modifications, to deleting certain data items.
- Discuss the mortality and cause of death related to cancer

The committee had also the chance to discuss multiple other issues related to cancer screening data. In addition to that, the committee members participated in reviewing and commenting on this report.

More information and details about this committee can be read at the Qatar Cancer Incidence Report of 2014.

## DENOMINATOR

Cancer incidence nominator covers all cases diagnosed with cancer in the State of Qatar regardless of the visa status or the nationality, in addition to Qatari cases diagnosed abroad, based on the whole population of Qatar during the same year, 2015

Whilst for the calculation of prevalence and survival, we considered the Qatari population only, for being a stable population, which allows a reasonable control on the information compared to Non-Qatari population.

## REPORTED RECORDS

Among all records reported to QNCR, this year, representing cases diagnosed with different cancers of different behaviors from different healthcare providers, there were cases reported by multiple sources. Before the case consolidation process, the following table summarizes the distribution of reported records:

Table 1: Distribution of reported records from different healthcare providers

Source	% of overall reported records
HMC	71.3%
Death Notification	16.2%
MTA	2.1%
Pediatrics	2.8%
Al Ahli Hospital	4.0%
Al Borg Laboratories	2.5%
Al Emadi Hospital	0.8%
Doha Clinic	0.2%

# MATERIAL AND METHODS

## DEFINITIONS

### Incidence<sup>3</sup>

Incidence is the number of new cases arising in a given period in a specified mid-year population. This information is collected routinely by cancer registries. It can be expressed as an absolute number of cases per year or as a rate per 100,000 persons per year (see Crude rate and ASR below).

### Mortality<sup>3</sup>

Mortality is the number of deaths occurring in a given period in a specified population. It can be expressed as an absolute number of deaths per year or as a rate per 100,000 persons per year.

### Prevalence<sup>3</sup>

The prevalence of a particular cancer can be defined as the number of persons in a defined population who have been diagnosed with that type of cancer, and who are still alive at the end of a given year. Complete prevalence represents the number of persons alive at certain point in time who previously had a diagnosis of the disease, regardless of how long ago the diagnosis was, or if the patient is still under treatment or is considered cured. Partial prevalence, which limits the number of patients to those diagnosed during a fixed time in the past, is a particularly useful measure of cancer burden.

Prevalence is presented for the adult population only (ages 15 and over), and is available both as numbers and as proportions per 100,000 persons.

### Crude Rate<sup>3</sup>

Data on incidence or mortality are often presented as rates. For a specific tumor and population, a crude rate is calculated simply by dividing the number of new cancers or cancer deaths observed during a given time period by the corresponding number of person years in the population at risk. For cancer, the result is usually expressed as an annual rate per 100,000 persons at risk.

### Age Standardized Rate ASR<sup>3</sup>

An age-standardized rate (ASR) is a summary measure of the rate that a population would have if it had a standard age structure. Standardization is necessary when comparing several populations that differ with respect to age because age has a powerful influence on the risk of cancer. The ASR is a weighted mean of the age-specific rates; the weights are taken from population distribution of the standard population. The most frequently used standard population is the World Standard Population. The calculated incidence or mortality rate is then called age-standardized incidence or mortality rate (world). It is also expressed per 100,000.

### Cumulative Risk<sup>3</sup>

Cumulative incidence/mortality is the probability or risk of individuals getting/dying from the disease during a specified period. For cancer, it is expressed as the number of new born children (out of 100) who would be expected to develop/die from a particular cancer before the age of 75 if they had the rates of cancer observed in the period in the absence of competing causes.

## EQUATIONS

### Crude Incidence Rate<sup>1</sup>

It is then calculated according to the following equation:

$$\text{Crude Incidence Rate} = \frac{\text{Total Number of cancer cases diagnosed in the given year}}{\text{Total Population in the same year}} \times 100000$$

### Age-Specific Incidence Rate ASIR<sup>4</sup>

The Age-Specific Incidence Rate ASIR is calculated simply by dividing the number of cancer incidences observed in a given age category during a given time period by the corresponding number of person years in the population at risk in the same age category and time period. For cancer, the result is usually expressed as an annual rate per 100,000 person-years.

$$\text{ASIR} = \frac{\text{Number of cancer cases diagnosed in the given age group}}{\text{Population at risk in the same age group}} \times 100000$$

### Age Standardized Rate ASR<sup>4</sup>

It is calculated as

$$\text{ASR} = \sum \text{ASIR} \times \text{Weight of Standard Population}$$

Population

Whereby the weight of standard population is calculated as follows

$$\text{Weight} = \frac{\text{Standard population of a given age group}}{\text{Total standard population}}$$

Table 1 represents the standard age-group population published by WHO.<sup>5</sup>

Table 2: WHO Standard Population

Age Group	Population	Weight
0-4	88,569	0.088569
5 - 9	86,870	0.0868696
10 - 14	85,970	0.0859699
15 - 19	84,670	0.0846704
20 - 24	82,171	0.0821712
25 - 29	79,272	0.0792723
30 - 34	76,073	0.0760734
35 - 39	71,475	0.071475
40 - 44	65,877	0.0658769
45 - 49	60,379	0.0603789
50 - 54	53,681	0.0536812
55 - 59	45,484	0.0454841
60 - 64	37,187	0.037187
65 - 69	29,590	0.0295896
70 - 74	22,092	0.0220923
75 - 79	15,195	0.0151947
80 +	15,445	0.0154446
<b>Total</b>	<b>100 000</b>	<b>1</b>

### The Cumulative Risk<sup>4</sup>

The cumulative rate is expressed as

$$\text{The cumulative rate} = \sum_{i=1}^A a_i t_i$$

The Cumulative risk = 100 × [1 - exp (cumulative rate / 100)]



# OVERALL CANCER INCIDENCE

## OVERALL CANCER INCIDENCE

### EXECUTIVE SUMMARY

The Qatar National Cancer Registry (QNCR), at the Ministry of Public Health is the population based cancer registry for the State of Qatar, whose population in 2015 is recorded as 2,437,790.

There were 1466 newly diagnosed cancer cases reported during the year 2015, with a distribution of 18% Qataris, and 82% Non-Qataris. Cases were classified as follows:

Table 3: Basic Distribution of cancers by nationality and gender

Cancer Behavior	Non-Qatari			Qatari			Grand Total
	F	M	Total	F	M	Total	
In situ	22	15	37	7	5	12	49
Malignant	478	677	1155	136	126	262	1417
Grand Total	500	692	1192	143	131	274	1466

Crude incidence rate was 58 per 100 000 and Age Standardized Rate ASR was 147 per 100 000 population at risk.

## MOST COMMON CANCERS ACROSS ALL NATIONALITIES AND GENDERS

Table 4: Comprehensive table of most common malignant cancers across all nationalities and genders

ICD 10 Primary Site	N			Gender Ratio		Median Age			ASR			Cumulative Incidence risk		
	TOTAL	F	M	F	M	F	M	All	F	M	All	F	M	All
C50 Breast	248	242	6	40.3	1.0	47.5	62	48	72.08	1.82	19.19	7.41	0.13	1.96
C18-C21 Colorectal	145	51	94	1.0	1.8	53	69	62	19.90	16.52	16.46	2.37	1.59	1.78
C61 Prostate	96		96					63			28.17			3.34
C82-C85, C96 NHL	83	21	62	1.0	3.0	52	50.5	51	6.70	9.81	8.28	0.63	1.09	0.90
C91-C95 Leukemia	82	17	65	1.0	3.8	9	34	29	2.99	10.37	7.50	0.22	0.80	0.62
C73 Thyroid gland	73	53	20	1.0	2.7	38	40	39	8.54	0.92	2.43	0.70	0.06	0.20
C33-C34 Trachea, bronchus and lung	72	19	53	1	2.8	55	60	59	8.35	12.99	10.90	1.02	1.49	1.29
C44 Non-Melanoma skin cancer	65	16	49	1.0	3.1	47.5	57	55.5	3.60	10.80	8.07	0.83	0.64	0.70
C22 Liver and intrahepatic bile ducts	54	7	47	1.0	6.7	59	57	57.5	3.50	9.37	7.36	0.37	0.88	0.75
C70-C72 Brain & CNS	48	12	36	1.0	3.0	30.5	38.5	34.5	1.84	4.05	3.20	0.14	0.48	0.36

## MOST COMMON CANCER AMONGST MALES

The ten most common malignant cancers amongst males of all nationalities accounted for 561 cases or 70% of all male cancers in Qatar in 2015. Prostate cancer was the most common with 96 (11.96%) reported new cases. Colorectal cancer was the second most common with 94 (11.71%) reported new cases followed by Leukemia with 65 (8.09%) reported new cases.

Table 5: Most common malignant cancer among males of all nationalities

Order	ICD 10 Primary Site	N	%
1	C61 Prostate	96	11.96%
2	C18-C21 Colorectal	94	11.71%
3	C91-C95 Leukemia	65	8.09%
4	C82-C85, C96 Non-Hodgkin Lymphoma	62	7.72%
5	C33-C34 Trachea, bronchus and lung	53	6.60%
6	C44 Non-Melanoma skin cancer	52	6.10%
7	C22 Liver and intrahepatic bile ducts	47	5.85%
8	C70-C72 Brain & CNS	36	4.48%
9	C64-C66, C68 Kidney	30	3.74%
10	C16 Stomach	29	3.61%

### MOST COMMON CANCER AMONGST FEMALES

The ten most common malignant cancers amongst females of all nationalities accounted for 537 cases or 87 % of all female malignant cancers. Breast cancer is the most common with 242 (39.41%) reported new cases, followed by the Thyroid gland with 53 (8.63%) new cases. Colorectal cancer was the next most common with 51 (8.31%) new cases.

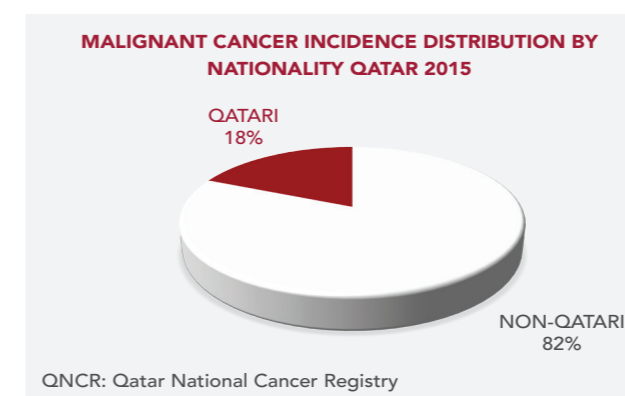
Table 6: Most common malignant cancer among females of all nationalities

Order	ICD 10 Primary Site	N	%
1	C50 Breast	242	39.41%
2	C73 Thyroid gland	53	8.63%
3	C18-C21 Colorectal	51	8.31%
4	C54-C55 Uterus	40	6.51%
5	C56 Ovary	25	4.07%
5	C53 Cervix uteri	25	4.07%
6	C82-C85, C96 Non-Hodgkin Lymphoma	21	3.42%
7	C33-C34 Trachea, bronchus and lung	19	3.09%
8	C91-C95 Leukemia	17	2.77%
9	C44 Non-Melanoma skin cancer	16	2.61%
9	C16 Stomach	16	2.61%
10	C70-C72 Brain & CNS	12	1.95%

### DISTRIBUTION BY NATIONALITY

When distributed according to nationality, 262 (18%) new cases of malignant cancer were Qataris and 1155(82 %) new cases were Non-Qataris.

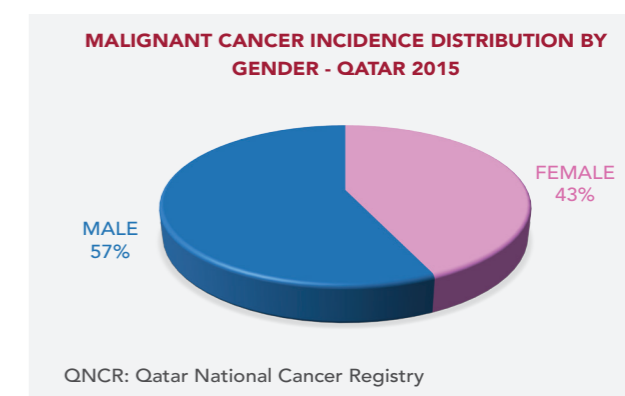
Figure 3: Malignant cancer incidence distribution by nationality



### DISTRIBUTION BY GENDER

Across all nationalities, new malignant cancer cases among males were found to be 803 (57%) cases of total malignant cancer cases, while females accounted for 614(43%) new cases.

Figure 4: Malignant cancer incidence distribution by gender

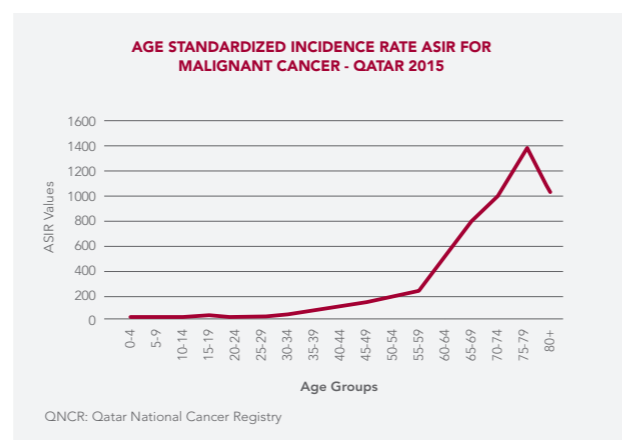


# CANCER INCIDENCE IN QATARIS

## AGE STANDARDIZED INCIDENCE RATE ASIR

The calculation of ASIR (Age Standardized Incidence Rate) shows an increasing distribution of new cases with increased age, which reflects the international trend of cancer incidence.

Figure 5: Age Standardized Incidence Rate ASIR for all malignant cancers



# CANCER INCIDENCE AMONGST QATARIS

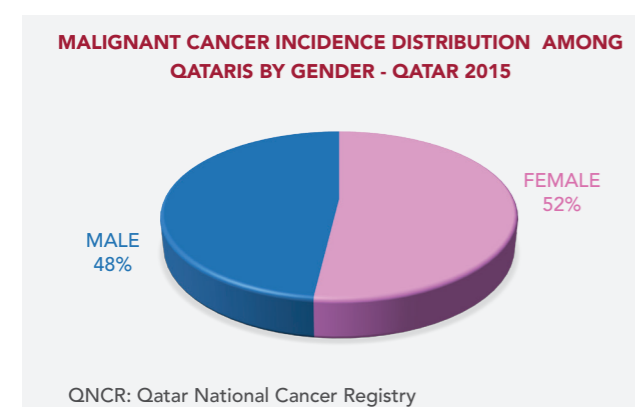
A total of 262 newly diagnosed malignant cancers were reported amongst the Qatari population along with an additional 12 cases of in situ tumors. The majority of these cases were reported as single primaries. Only one case was reported with multiple primaries.

## DEMOGRAPHIC DISTRIBUTION OF CANCER INCIDENCE

### Distribution By Gender

Cancer in female Qataris was higher than that of males. During 2015, 126 (48%) new cases were diagnosed in males, while 136 (52%) new cases were diagnosed in females.

Figure 6: Cancer incidence by gender among Qataris



## MOST COMMON CANCERS ACROSS ALL GENDERS

In the Qatari population newly diagnosed with cancer during 2015, the top ten malignant cancers accounted for 214 (82%) cases. Breast was the most common cancer with 52 (19.85%) new cases, followed by Colorectal with 31 (11.83%) new cases, Lung and Uterine with 17 (6.49%) new cases each. Prostate and Thyroid gland respectively were the fourth and fifth most common.

Table 7: Most common cancers across all genders of Qataris, 2015

Order	ICD 10 Primary Site	N	%
1	C50 Breast	52	19.85%
2	C18-C21 Colorectal	31	11.83%
3	C54-C55 Uterus	17	6.49%
3	C33-C34 Trachea, bronchus and lung	17	6.49%
4	C61 Prostate	14	5.34%
5	C73 Thyroid gland	13	4.96%
6	C70-C72 Brain & CNS	12	4.58%
7	C16 Stomach	11	4.20%
7	C91-C95 Leukemia	11	4.20%
8	C82-C85, C96 Non-Hodgkin Lymphoma	10	3.82%
9	C81 Hodgkin lymphoma	7	2.67%
9	C44 Non-Melanoma skin cancer	7	2.67%
10	C56 Ovary	6	2.29%
10	C64-C66, C68 Kidney	6	2.29%

## MOST COMMON CANCERS AMONGST MALES

Colorectal cancer accounted for 15 (11.9%) new cases and was the most common amongst Qatari males. Prostate and Lung cancers were both the second most common with 14 (11.11%) new cases each. Leukemia was the third most common cancer with 10 (7.94%) new cases.

Table 8: Most common cancers among male Qataris

Order	ICD 10 Primary Site	N	%
1	C18-C21 Colorectal	15	11.90%
2	C33-C34 Trachea, bronchus and lung	14	11.11%
2	C61 Prostate	14	11.11%
3	C91-C95 Leukemia	10	7.94%
4	C70-C72 Brain & CNS	8	6.35%
4	C16 Stomach	8	6.35%
5	C82-C85, C96 Non-Hodgkin Lymphoma	6	4.76%
6	C64-C66, C68 Kidney	5	3.97%
6	C44 Non-Melanoma skin cancer	5	3.97%

## MOST COMMON CANCERS AMONGST FEMALES

The most common cancer amongst female Qataris was Breast with 50 (37%) new cases. The second most common was uterine cancer with 17 (12.5%) new cases and the third most common cancer was colorectal with 16 (11.76%) new cases. Thyroid gland and Ovarian respectively, were the fourth and fifth most common cancers.

Table 9: Most common cancers among female Qataris

Order	ICD 10 Primary Site	N	%
1	C50 Breast	50	36.76%
2	C54-C55 Uterus	17	12.50%
3	C18-C21 Colorectal	16	11.76%
4	C73 Thyroid gland	10	7.35%
5	C56 Ovary	6	4.41%
6	C70-C72 Brain & CNS	4	2.94%
6	C82-C85, C96 Non-Hodgkin Lymphoma	4	2.94%

# CANCER INCIDENCE IN NON-QATARIS

## CANCER INCIDENCE AMONGST NON-QATARIS

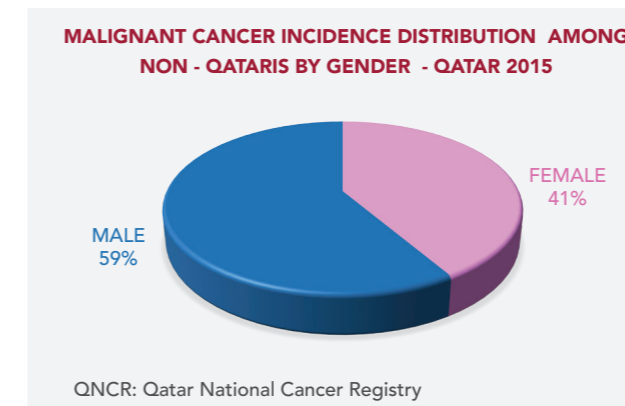
A total of 1155 newly diagnosed malignant cancers were reported among the Non-Qatari population along with an additional 37 cases of in situ tumor. The majority of these cases were reported as single primaries. Only 2 cases reported with multiple primaries.

### DEMOGRAPHIC DISTRIBUTION OF CANCER INCIDENCE

#### Distribution By Gender

Cancer presentations were higher in male Non-Qataris than in females. During 2015, 677 (59%) cases were newly diagnosed in males, while 478 (41%) new cases were diagnosed in females.

Figure 7: Cancer incidence by gender among Non-Qataris



### MOST COMMON CANCERS ACROSS ALL GENDERS

In the Non-Qatari population newly diagnosed with cancer during 2015, the top ten malignant cancers accounted for a total of 794 (69%) cases. Breast was the most common cancer with 196 (16.97%) new cases, followed by Colorectal with 114 (9.87%) new cases and Prostate with 82 (7.10%) new cases. Non-Hodgkin Lymphoma and Leukemia respectively were fourth and fifth most common.

Table 10: Most common cancers across all genders of Non-Qataris

Order	ICD 10 Primary Site	N	%
1	C50 Breast	196	16.97%
2	C18-C21 Colorectal	114	9.87%
3	C61 Prostate	82	7.10%
4	C82-C85, C96 Non-Hodgkin Lymphoma	73	6.32%
5	C91-C95 Leukemia	71	6.15%
6	C44 Non-Melanoma skin cancer	64	5.19%
7	C73 Thyroid gland	60	5.02%
8	C33-C34 Trachea, bronchus and lung	55	4.76%
9	C22 Liver and intrahepatic bile ducts	49	4.24%
10	C70-C72 Brain & CNS	36	3.12%

# COMPARATIVE STUDY

## MOST COMMON CANCERS AMONGST MALES

Prostate cancer accounted for 82 (12.11%) new cases and was the most common amongst Non-Qatari males. Colorectal cancer was the second most common with 79 (11.67%) new cases and Non-Hodgkin Lymphoma with 56 (8.27%) new cases were the third most common. Leukemia and Non-Melanoma skin cancer respectively were the fourth and fifth most common.

Table 11: Most common cancers among male Non-Qataris

Order	ICD 10 Primary Site	N	%
1	C61 Prostate	82	12.11%
2	C18-C21 Colorectal	79	11.67%
3	C82-C85, C96 Non-Hodgkin Lymphoma	56	8.27%
4	C91-C95 Leukemia	55	8.12%
5	C44 Non-Melanoma skin cancer	44	6.50%
6	C22 Liver and intrahepatic bile ducts	43	6.35%
7	C33-C34 Trachea, bronchus and lung	39	5.76%
8	C70-C72 Brain & CNS	28	4.14%
9	C64-C66, C68 Kidney	25	3.69%
10	C16 Stomach	21	3.10%

## MOST COMMON CANCERS AMONGST FEMALES

The most common cancer among Non-Qatari females was Breast with 192 (40.17%) new cases. The second most common was Thyroid gland with 43 (9.00%) new cases and the third most common cancer was Colorectal with 35 (7.32%) new cases. Uterine and Cervical respectively, were the fourth and fifth most common cancers.

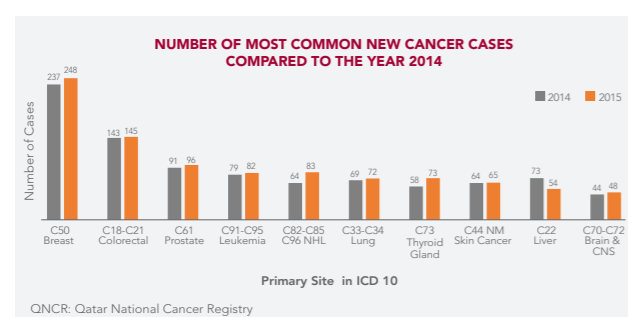
Table 12: Most common cancers among female Non-Qataris

Order	ICD 10 Primary Site	N	%
1	C50 Breast	192	40.17%
2	C73 Thyroid gland	43	9.00%
3	C18-C21 Colorectal	35	7.32%
4	C54-C55 Uterus	23	4.81%
5	C53 Cervix uteri	22	4.60%
6	C56 Ovary	19	3.97%
7	C82-C85, C96 Non-Hodgkin Lymphoma	17	3.56%
8	C33-C34 Trachea, bronchus and lung	16	3.35%
8	C91-C95 Leukemia	16	3.35%
9	C44 Non-Melanoma skin cancer	14	2.93%
10	C16 Stomach	13	2.72%

# COMPARAISON WITH THE YEAR 2014

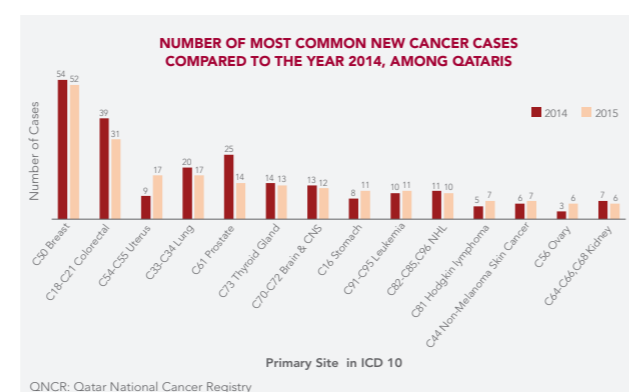
## NUMBER OF CASES COMPARED TO 2014

Figure 8: Number of most common new cancer cases compared to the year 2014



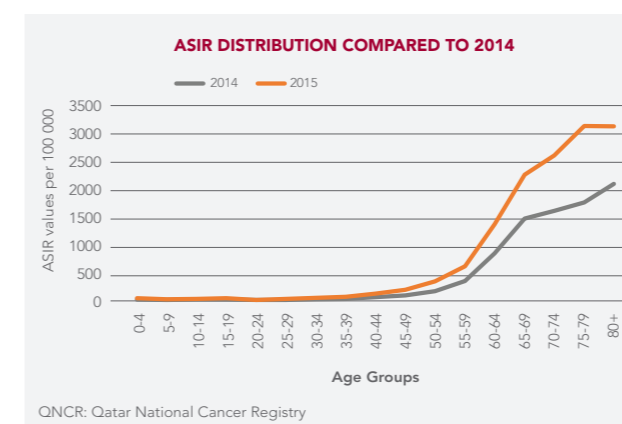
## MOST COMMON AMONG QATARIS, COMPARED TO 2014

Figure 9: Number of most common new cancer cases compared to the year 2014, among Qataris



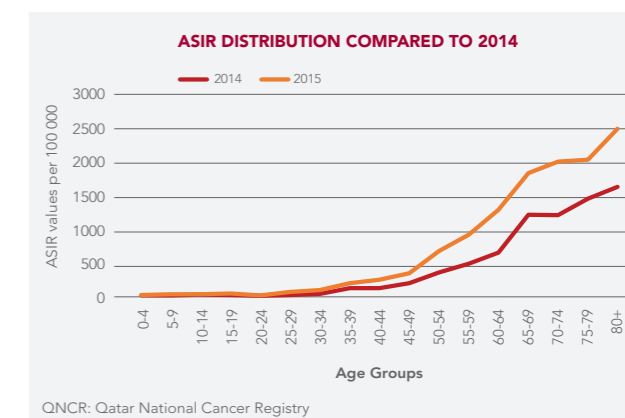
## ASIR DISTRIBUTION COMPARED TO 2014

Figure 10: ASIR Distribution compared to 2014



## ASIR DISTRIBUTION AMONG QATARIS COMPARED TO 2014

Figure 11: ASIR Distribution among Qataris compared to 2014



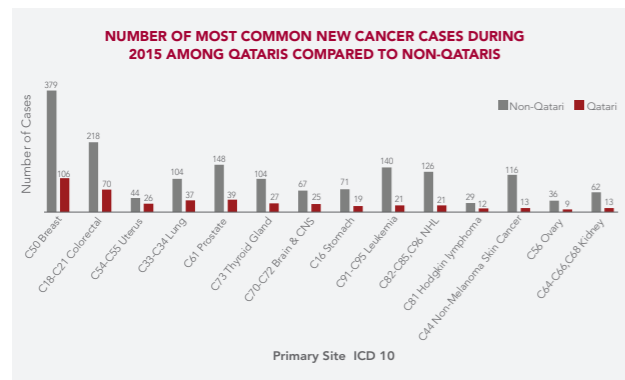


# COMPARAISON WITH NON-QATARIS

# INTERNATIONAL PERSPECTIVE

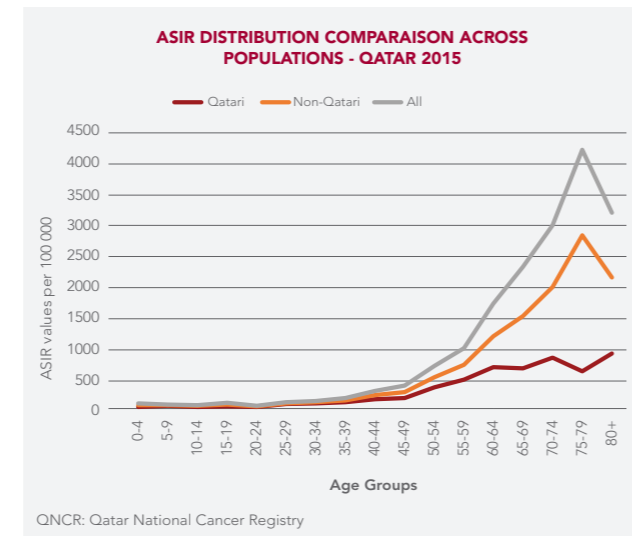
## MOST COMMON AMONG QATARIS, COMPARED TO NON-QATARIS

Figure 12: Number of most common new cancer cases during 2015 among Qataris compared to Non-Qataris



## ASIR DISTRIBUTION AMONG QATARIS COMPARED TO NON-QATARIS

Figure 13: ASIR Distribution comparison across populations - Qatar 2015

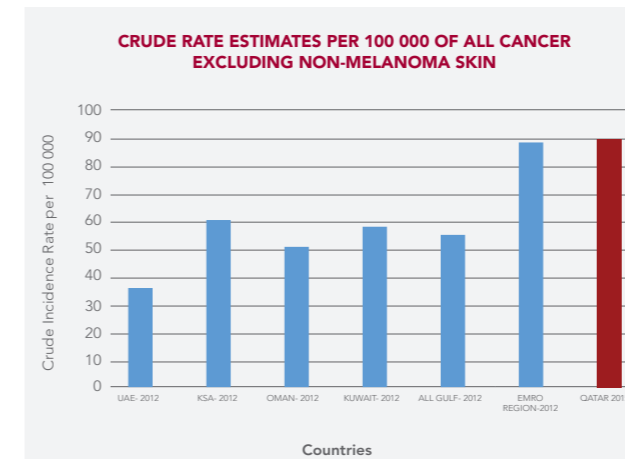


QNCR: Qatar National Cancer Registry

Reference to the most recent available cancer data estimates, that is Globocan 2012, the following comparisons help positioning the cancer burden in the State of Qatar compared to international and regional countries

### Crude Rate

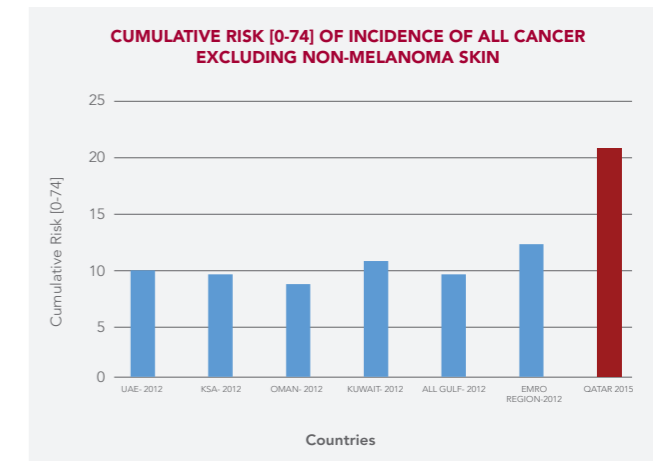
Figure 14: Crude rate of incidence in Qatar 2015 compared to regional countries Age – Specific Incidence Rate (ASIR)



### Cumulative Risk of Incidence [0-74]

Based on the estimates of Globocan -2012 and using the QNCR data for Qatar 2015, we can see higher risk of getting cancer among Qataris during the age life of 0-74 years old, compared to regional countries

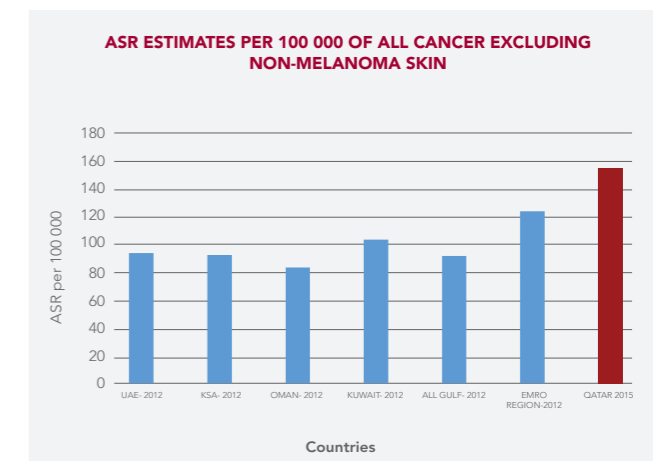
Figure 15: cumulative risk of incidence in Qatar 2015 compared to regional



### Age Standardized Rate ASR

ASR measure among Qataris in 2015 shows higher rate compared to regional countries, data based on estimates of Globocan 2012

Figure 16: ASR in Qatar 2015 compared to regional countries



# PEDIATRIC CANCER INCIDENCE

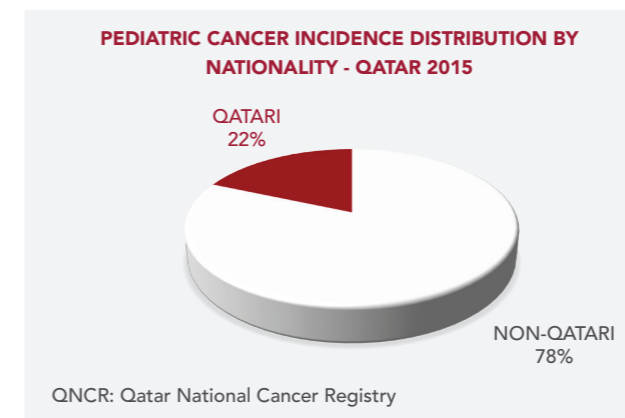
## PEDIATRIC CANCER INCIDENCE

Within the age range of 0-14 years, there were 54 cases newly diagnosed with cancer during 2015.

### DISTRIBUTION BY NATIONALITY

When distributed according to nationality, 12 (22%) new cases were Qataris, and 42(78%) new cases were Non-Qataris.

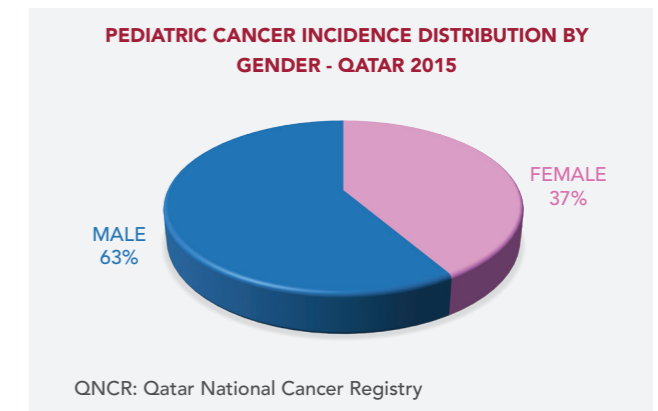
Figure 17: Pediatric cancer incidence distribution by nationality



### DISTRIBUTION BY GENDER

Across all nationalities, gender distribution shows 34(63%) new cases were found in males and 20 (37%) new cases in females.

Figure 18: Pediatric cancer incidence distribution by gender



# CANCER DEATHS

## MOST COMMON PEDIATRIC CANCERS

The most common cancer amongst pediatrics was Leukemia with 25 (46.30%) new cases. The second most common was Brain & CNS with 13 (24.07%) new cases followed by Non-Hodgkin Lymphoma with 6 (11.11%) new cases.

Table 13: Most common cancers among pediatrics

Order	ICD 10 Primary Site	N	%
1	C91-C95 Leukemia	25	46.30%
2	C70-C72 Brain & CNS	13	24.07%
3	C82-C85, C96 Non-Hodgkin Lymphoma	6	11.11%

# CANCER DEATH

During the year 2015, there were 264 deaths amongst cancer patients, among which are 79(30%) Qataris and 185(70%) Non-Qataris.

Amongst Qatari population, the Age Standardized Rate ASR for death was 56.6 per 100 000, while the cumulative risk of death within the age range of 0-74 years old was 10.14%.

## MOST COMMON CANCER DEATHS AMONGST QATARIS

Among Qataris, Breast was behind the death of 15 cases, at a percentage of 18.99% of all deaths related to cancer during the year 2015, followed by Lung with 13(16.46%) cases and Colorectal with 10(12.66%) cases.

Table 14: Most common cancer deaths among Qataris

Order	ICD 10 Primary Site	N	%
1	C50 Breast	15	18.99%
2	C33-C34 Trachea, bronchus and lung	13	16.46%
3	C18-C21 Colorectal	10	12.66%
4	C22 Liver and intrahepatic bile ducts	7	8.86%
5	C16 Stomach	5	6.33%
6	C61 Prostate	4	5.06%

## MOST COMMON CANCER DEATHS AMONGST PEDIATRIC

Amongst pediatric population of the age range 0-14 years old, 6 cases died during the year 2015, 50% of these cases were related to brain tumors.

# MOST COMMON CANCERS

## ALL CANCERS C00-C96

### DEMOGRAPHICS

- By Nationality:
  - Qatari: 262 new cases, of which 126 are males and 136 females
  - Non-Qatari: 1155 cases, of which 677 are males and 478 females
- By Age:
  - Median age was 50 years (53 for Qataris)
  - Peak Incidence was in the age group of 50-54 years (55-59 for Qataris)
  - More than 50% of the cases were diagnosed above the age of 45 years ( 55 for Qataris)
  - Lowest age at diagnosis: 0 years, less than a year
  - Highest age at diagnosis: 91 years

### BASIS OF DIAGNOSIS

Table 15: Basis of diagnosis of malignant cancers

Basis of Diagnosis	%
Histology of primary	91.25%
DCO (Death Certificate Only )	4.87%
Clinical Investigation/Ultra Sound	2.61%
Histology of metastasis	0.71%
Unknown	0.56%

### PREVALENCE

The Qatari population registered in the QNCR, there were 3683 newly diagnosed cases with malignant cancer. Of these cases, 1376 (37%) have died and 2307 (63%) are still alive.

### DEATH

Out of the 262 Qatari cases diagnosed during 2015 with malignant cancer, 40 (15%) cases died during the same year.

# C50 BREAST

## KEY FACTS

In 2015, there were 248 newly diagnosed cases of malignant breast cancer, 6 of which were males and 242 were females.

Female breast cancer ranked first amongst all new cases of female malignant cancers with 39.41%.

The cumulative risk, or the chance of a female getting malignant breast cancer between the ages of 0-74, is 7.4%. The Age Standardized Rate (ASR) was found to be 72.08 per 100 000 of population at risk.

## DEMOGRAPHICS

- By Nationality:
  - Qatari: 52 cases, of which 2 are males
  - Non-Qatari: 196 cases, of which 4 are males
- By Age:
  - Median age was 48 years
  - Peak Incidence was in the age group of 40-49 years
  - More than 50% of the cases were diagnosed under the age of 49 years
  - Lowest age at diagnosis: 27 years
  - Highest age at diagnosis: 82 years

## PREVALENCE

Amongst the female Qatari population registered in the QNCR, there were 649 newly diagnosed cases with malignant breast cancer. Of these cases, 155 (24%) have died and 494 (76%) are still alive.

## HISTOLOGY

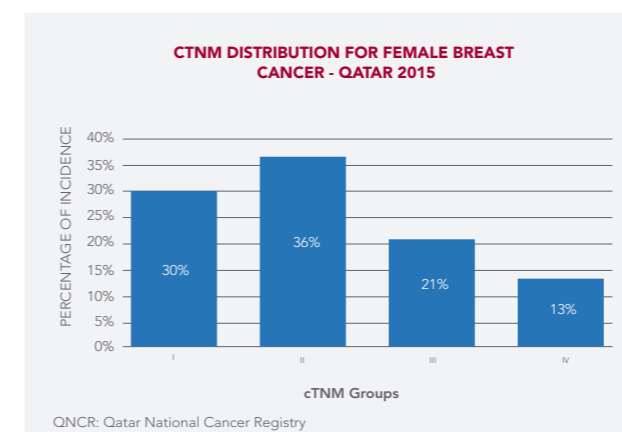
Table 16: ICD-O-3 Histology distribution of female malignant breast cancer

ICD-O-3 Histology	%
Infiltrating duct carcinoma, NOS	88.02%
Lobular carcinoma, NOS	5.79%
Infiltrating ductular carcinoma	1.65%
Phyllodes tumor, malignant	0.83%
Mucinous adenocarcinoma	0.83%
Others	3%

## STAGING

Almost 56% of the total cases reported in 2015 did not have a known cTNM stage. Of those cases that did report a cTNM stage, 66% were early stages I and II. [PLEASE SEE DISCLAIMER]

Figure 19: cTNM group staging for female malignant breast cancer



## TREATMENT

In 2015, only 168 (69%) of total cases were reported with treatment information. The following table shows the treatment types in no chronological order. [PLEASE SEE DISCLAIMER]

Table 17: Treatment types for female malignant breast cancer

Treatment Type	%
Surgery/	39.88%
Surgery/ Chemotherapy	30.95%
Chemotherapy	17.86%
Surgery/ Radiation	4.17%
Surgery/Radiation/ Chemotherapy	3.57%
Radiation/ Chemotherapy /Hormonal	1.19%
Radiation/ Hormonal	1.19%
Chemotherapy/ Radiation	0.60%
Surgery/ Chemotherapy / Hormonal	0.60%

## DEATH

Out of the 50 Qatari cases diagnosed during 2015 with malignant female breast cancer, 5 (10%) cases died during the same year. Only one of these 5 cases reported a known cTNM stage of stage IV. The age range for these deaths was from 40 to above 80 years old.

## 3-YEAR SURVIVAL 2013-2015

3-year survival from female breast cancer during the period 2013-2015 was relatively high at 82.3% with a confidence interval (CI) of 69.6% - 90.1%.

Survival calculations do not take into consideration different variables such as cTNM stage.

# C18-C21 COLORECTAL

## KEY FACTS

In 2015, there were 145 newly diagnosed cases of malignant colorectal cancer, 31 (21%) cases of which were Qataris and 114 (78%) cases Non-Qataris.

Colorectal cancer ranked the second most common amongst males with 94 new cases (11.71%) and was the third most common cancer amongst females with 51 (8.31%) new cases.

The cumulative risk, or the chance of any person getting colorectal cancer between the ages of 0-74, is 1.78%.

The Age Standardized Rate (ASR) was found to be 16.46 per 100 000 of population at risk.

## DEMOGRAPHICS

- By Nationality
  - Qatari: 31 cases, of which 15 were males and 16 were females
  - Non-Qatari: 114 cases, of which 79 were males and 35 were females
- By Age:
  - Median age overall was 62 years (69 for males and 53 for females)
  - Peak Incidence was in the age group of 50-59 years
  - More than 50 % of cases were diagnosed over the age of 55 years
  - Lowest age at diagnosis: 31 years
  - Highest age at diagnosis: 80 years

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 377 newly diagnosed cases with malignant colorectal cancer. Of these cases, 125 (33%) have died and 252 (67%) are still alive.

## HISTOLOGY

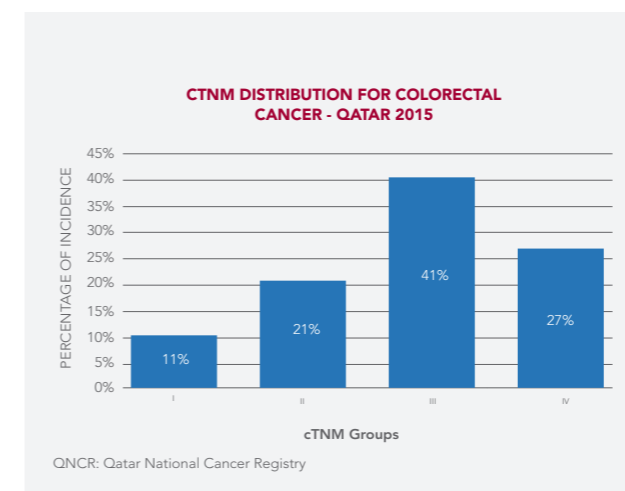
Table 18: Histology distribution for malignant colorectal cancer

ICDO-3 Histology	%
Adenocarcinoma, NOS	78.62%
Mucinous adenocarcinoma	4.83%
Carcinoid tumor, NOS	3.45%
Neuroendocrine carcinoma, NOS	2.76%
Neoplasm, malignant	2.76%
Signet ring cell carcinoma	2.07%
Squamous papillomatosis	1.38%
Gastrointestinal stromal sarcoma	0.69%
Primitive neuroectodermal tumor, NOS	0.69%
Tubular adenocarcinoma	0.69%
Carcinoma, NOS	0.69%
Leiomyosarcoma, NOS	0.69%
Goblet cell carcinoid	0.69%

## STAGING

Almost 25% of the total cases reported in 2015 did not have a known cTNM stage. Of those cases that did report a cTNM stage, 68% were late stages III and IV. [PLEASE SEE DISCLAIMER]

Figure 20: cTNM distribution for malignant colorectal cancer



## TREATMENT

In 2015, only 88 (61%) of total cases were reported with treatment information. The following table shows the treatment types in no chronological order. [PLEASE SEE DISCLAIMER]

Table 19: Treatment types for malignant colorectal cancer

Treatment Type	%
Surgery	55.68%
Surgery/Chemotherapy	18.18%
Chemotherapy	14.77%
Chemotherapy/Radiation	7.95%
Radiation	2.27%
Surgery/Radiation/Chemotherapy	1.14%

## DEATH

Out of the 31 Qatari cases diagnosed during 2015 with colorectal cancer, 5 (16%) of which died during the same year.

## 3-YEAR SURVIVAL 2013-2015

3-year survival from colorectal cancer during the period 2013-2015 was relatively high at 69.2% (CI 50.4% - 82.1%).

Survival calculations do not take into consideration different variables such as cTNM stage or gender.

# C61 PROSTATE

## KEY FACTS

In 2015, there were 96 newly diagnosed cases of malignant prostate cancer, 14 (15%) of which were Qataris and 82 (85%) were Non-Qataris.

Prostate cancer ranked first amongst all new cases of male malignant cancers with 11.96%.

The cumulative risk, or the chance of a male getting malignant prostate cancer between the ages of 0-74, is 3.34% Age Standardized Rate (ASR) was found to be 28.17 per 100 000 of population at risk.

## DEMOGRAPHICS

- By Age:
  - Median age was 63 years
  - Peak Incidence was in the age group of 60-64 years (27.08%)
  - More than 50 % of the cases were diagnosed over the age of 60 years
  - Lowest age at diagnosis: 43 years
  - Highest age at diagnosis: 83 years

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 165 newly diagnosed cases with malignant prostate cancer. Of these cases, 49 (25%) have died and 116 (75%) are still alive.

## HISTOLOGY

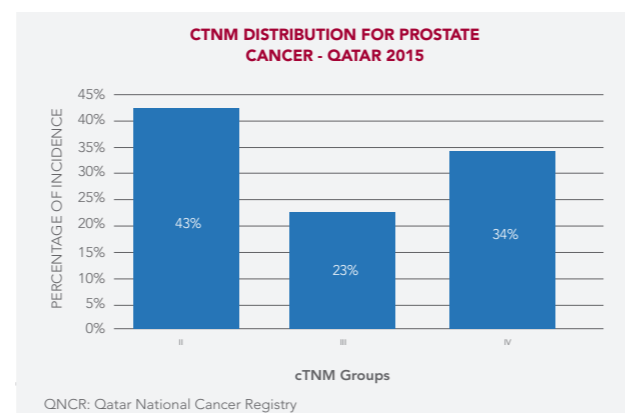
Table 20: Histology distribution for malignant prostate cancer

ICDO-3 Histology	%
Adenocarcinoma, NOS	95.83%
Acinar cell carcinoma	2.08%
Neuroendocrine carcinoma, NOS	1.04%
Neoplasm, malignant	1.04%

## STAGING

Almost 64% of the total cases reported in 2015 did not have a known cTNM stage. Of those cases that did report a cTNM stage, 57% were late stages III and IV. [PLEASE SEE DISCLAIMER]

Figure 21: cTNM Distribution for malignant prostate cancer



In 2015, only 32 (33%) of total cases were reported with treatment information. The following table shows the treatment types in no chronological order. [PLEASE SEE DISCLAIMER]

Table 21: Treatment types for malignant prostate cancer

Treatment Type	%
Surgery	62.50%
Hormonal	12.50%
Chemotherapy	9.38%
Surgery/ Radiation	6.25%
Chemo/Radiation	3.13%
Radiation/Hormonal	3.13%

## DEATH

All 14 Qatari cases diagnosed during 2015 with malignant prostate cancer are still alive.

## 3-YEAR SURVIVAL 2013-2015

3-year survival from prostate cancer during the period 2013-2015 was relatively high at 81.8% (CI 53.6% - 93.7%).

# C82-C85, C96 NON-HODGKIN LYMPHOMA

## KEY FACTS

In 2015, there were 83 newly diagnosed cases of malignant Non-Hodgkin Lymphoma, 10 (12%) cases of which were Qataris and 73 (88%) cases Non-Qataris.

Non-Hodgkin Lymphoma was the fourth most common cancer amongst males with 62 new cases (7.72%) and it was the seventh most common cancer amongst females with 21 (3.42%) new cases.

The cumulative risk, or the chance of any person getting a Non-Hodgkin Lymphoma between the ages of 0-74, is 0.9%.

The Age Standardized Rate (ASR) was found to be 8.28 per 100 000 of population at risk.

## DEMOGRAPHICS

- By Nationality:
  - Qatari: 10 cases, of which 6 were male and 4 were female
  - Non-Qatari: 73 cases, of which 56 were male and 17 were female
- By Age:
  - Median age was 51 years (50 years for males and 52 years for females)
  - Peak Incidence was in the age group of 50-54 years
  - More than 50% of the cases were diagnosed over the age of 50 years
  - Lowest age at diagnosis: 3 years
  - Highest age at diagnosis: 91 years

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 188 newly diagnosed cases with Non Hodgkin Lymphoma. Of these cases, 48 (26%) have died and 140 (76%) are still alive.

## HISTOLOGY

Table 22: Histology distribution for non-Hodgkin Lymphoma

ICDO-3 Histology	%
Malignant lymphoma, large B-cell, diffuse, NOS	50.60%
Malignant lymphoma, non-Hodgkin, NOS	18.07%
Follicular lymphoma, NOS	10.84%
Precursor T-cell lymphoblastic lymphoma	3.61%
Anaplastic large cell lymphoma, T cell and Null cell type	3.61%
Malignant lymphoma, NOS	2.41%
Langerhans cell sarcoma	2.41%
Malignant lymphoma, small B lymphocytic, NOS	1.20%
Burkitt lymphoma, NOS	1.20%
Mature T-cell lymphoma, NOS	1.20%
Neoplasm, malignant	1.20%
Follicular dendritic cell sarcoma	1.20%
Composite Hodgkin and non-Hodgkin lymphoma	1.20%
Malignant lymphoma, lymphoplasmacytic	1.20%

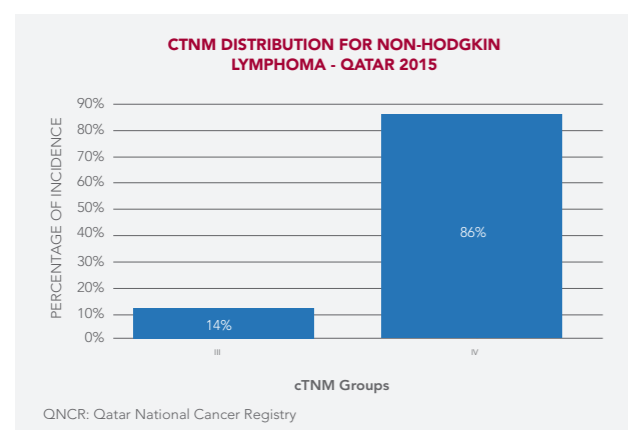


# C91-C95 LEUKEMIA

## STAGING

Almost 92% of the total cases reported in 2015 did not have a known cTNM stage. Of those cases that did report a cTNM stage, 86% were late stages IV. [PLEASE SEE DISCLAIMER]

Figure 22: cTNM Distribution for non-Hodgkin Lymphoma



## TREATMENT

In 2015, only 21(25%) of total cases were reported with treatment information. The following table shows the treatment types in no chronological order. [PLEASE SEE DISCLAIMER]

Table 23: Treatment types for non-Hodgkin Lymphoma

Treatment Type	%
Chemotherapy	85.71%
Surgery	4.76%
Surgery/Chemotherapy	4.76%
Chemotherapy/Radiation	4.76%

## DEATH

All 10 Qatari cases diagnosed during 2015 with a Non-Hodgkin Lymphoma are still alive.

### 3-YEAR SURVIVAL 2013-2015

3-year survival from Non-Hodgkin Lymphoma during the period 2013-2015 was relatively high at 79.0% (CI 38.7% - 94.3%)

## KEY FACTS

In 2015, there were 82 cases newly diagnosed with a Leukemia, 11 (13%) of which were Qataris and 71 (87%) were Non-Qataris.

Leukemia was the third most common cancer amongst males with 65 new cases (11.52%), and it was the ninth most common cancer amongst females with 17 (2.77%) new cases.

The cumulative risk, or the chance of any person getting Leukemia between the ages of 0-74, is 0.62%.

The Age Standardized Rate (ASR) was found to be 7.5 per 100 000 of population at risk.

## DEMOGRAPHICS

- By Nationality:
  - Qatari: 11 cases, of which 10 were male and 1 was female
  - Non-Qatari: 71 cases, of which 55 were male and 16 were female
- By Age:
  - Median age was 29 years (34 years for males and 9 years for females)
  - Peak Incidence was in the age group of 0-4 years
  - More than 50% of the cases were diagnosed under the age of 25 years
  - Lowest age at diagnosis: 2 years
  - Highest stage at diagnosis: 90 years

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 169 newly diagnosed cases with Leukemia. Of these cases, 56 (33%) have died and 113 (67%) are still alive.

## HISTOLOGY

Table 24: Histology distribution for leukemia

ICDO-3 Histology	%
Acute myeloid leukemia, NOS (FAB or WHO type not specified, see also M-9930/3)	30.49%
Precursor B-cell lymphoblastic leukemia	30.49%
Chronic myeloid leukemia, NOS	10.98%
Precursor T-cell lymphoblastic leukemia	8.54%
B-cell lymphocytic leukemia/small lymphocytic lymphoma	8.54%
Acute promyelocytic leukaemia, t(15;17) (q22;q11-12)	4.88%
Precursor cell lymphoblastic leukemia, NOS	3.66%
Adult T-cell leukemia/lymphoma (HTLV-1 positive) (includes all variants)	1.22%
Hairy cell leukemia (C42.1)	1.22%

## DEATH

Out of the 11 Qatari cases diagnosed during 2015 with Leukemia, 1 (9%) case died during the same year.

### 3-YEAR SURVIVAL 2013-2015

3-year survival from leukemia during the period 2013-2015 was 57.1% (CI 17.2% - 83.7%).

# C73 THYROID GLAND

# C33-C34 TRACHEA, BRONCHUS AND LUNG

## KEY FACTS

In 2015, 73 cases were newly diagnosed with malignant thyroid cancer, 13(18%) of which were Qataris and 60(82%) cases Non-Qataris.

Thyroid cancer ranked second among most common female malignant cancer with 53(8.63%) new cases.

The cumulative risk is 0.2% (0.7 % for females), that relates to the chance of a person to get malignant thyroid cancer during the age of 0-74

Age Standardized Rate ASR found to be 2.4 (8.5 for females) per 100 000 of population at risk

## DEMOGRAPHICS

- By Nationality:
  - Qatari: 13 cases, of which 3 are among males and 10 among females
  - Non-Qatari: 60 cases, of which 17 are among males and 43 among females
- By Age:
  - median age was 39 (40 for males, and 38 for females)
  - Peak of Incidence was in the age group of 35-39, earlier for females, 25-29
  - More than 50 % of the cases were diagnosed under the age of 35
  - Min age: 16
  - Max age: 62

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 185 newly diagnosed cases with malignant thyroid cancer. Of these cases, 15 (8%) have died and 170 (82%) are still alive.

## HISTOLOGY

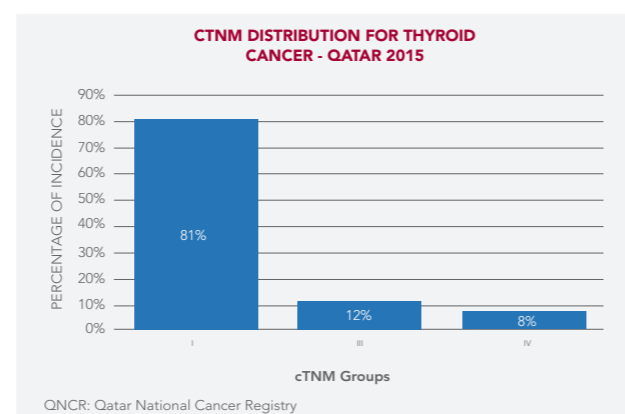
Table 25 : Histology distribution for malignant thyroid cancer

ICDO-3 Histology	%
Papilloma, NOS	53.42%
Papillary adenocarcinoma, NOS	35.62%
Papillary microcarcinoma	5.48%
Follicular adenocarcinoma, NOS	2.74%
Adenocarcinoma, NOS	1.37%
Medullary carcinoma, NOS	1.37%

## STAGING

Almost 64% of the total cases reported in 2015 did not have a known cTNM stage. Of those cases that did report a cTNM stage, 81% were early stage I. [PLEASE SEE DISCLAIMER]

Figure 23: cTNM Distribution for malignant thyroid cancer



## DEATH

All cases diagnosed during 2015 with malignant thyroid cancer among Qataris, are still alive.

## 3-YEAR SURVIVAL 2013-2015

3-year survival from malignant thyroid cancer during the period 2013-2015 was very high 90.0% (47.3% - 98.5%)

## KEY FACTS

In 2015, 72 cases were newly diagnosed with malignant lung cancer, 17(24%) of which were Qataris and 55(76%) Non-Qataris.

Lung cancer with 53 new cases ranked fifth among most common male malignant cancers with percentage of 6.60%, and ranked eight among most common female malignant cancer with 19(3.09%) new cases.

The cumulative risk is 1.29%, that relates to the chance of a person to get malignant Lung cancer during the age of 0-74

Age Standardized Rate ASR found to be 10.9 per 100 000 of population at risk

## DEMOGRAPHY

- By Nationality:
  - Qatari: 17 cases, of which 14 are among males and 3 among females
  - Non-Qatari: 55 cases, of which 39 are among males and 16 among females
- By Age:
  - median age was 59 (60 for males, and 55 for females)
  - Peak of Incidence was in the age group of 55-59
  - More than 50 % of the cases were diagnosed over the age of 55
  - Min age: 34
  - Max age: 87

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 210 newly diagnosed cases with malignant lung cancer. Of these cases, 164 (78%) have died and 46 (22%) are still alive.

## HISTOLOGY

Table 26: Histology distribution for malignant lung cancer

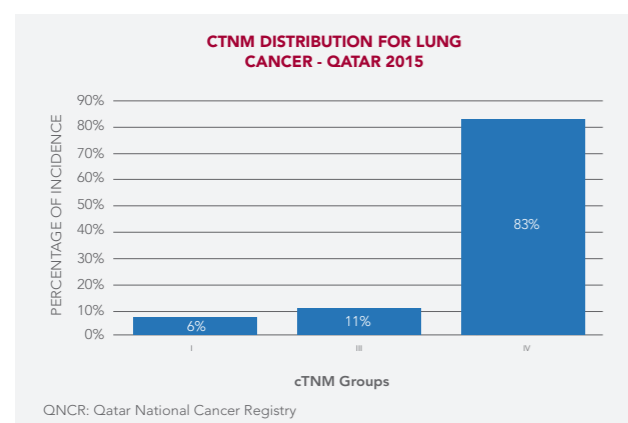
ICDO-3 Histology	%
Adenocarcinoma, NOS	55.56%
Non-small cell carcinoma	12.50%
Squamous papillomatosis	8.33%
Neoplasm, malignant	6.94%
Neuroendocrine carcinoma, NOS	6.94%
Small cell carcinoma, NOS	4.17%
Carcinoid tumor, NOS	2.78%
Carcinoma, NOS	1.39%
Papillary adenocarcinoma, NOS	1.39%

# C44 NON-MELANOMA SKIN CANCER

## STAGING

Almost 50% of the total cases reported in 2015 did not have a known cTNM stage. Of those cases that did report a cTNM stage, 83% were late stage IV. [PLEASE SEE DISCLAIMER]

Figure 24: cTNM Distribution for malignant lung cancer



## TREATMENT

In 2015, only 20 (28%) of total cases were reported with treatment information. The following table shows the treatment types in no chronological order. [PLEASE SEE DISCLAIMER]

Table 27: Treatment types for malignant lung cancer

Treatment Type	%
Chemo	50.00%
Chemo/Radio	35.00%
Surgery/	10.00%
Radiation	5.00%

## DEATH

Out of the 17 Qatari cases diagnosed during 2015 with malignant lung cancer, 9(53%) cases died. The only case with known cTNM stage was at stage IV. Age rang for these deaths was 44-80+

## 3-YEAR SURVIVAL 2013-2015

3-year survival from malignant lung cancer during the period 2013-2015 was relatively low 25.0% (11.1% - 41.8%)

## KEY FACTS

In 2015, 65 cases were newly diagnosed with non-melanoma skin cancer, 7(11%) of which were Qataris and 58(89%) cases Non-Qataris.

Non-melanoma skin cancer with 49 new cases ranked sixth among most common male malignant cancers with percentage of 6.10%, and ranked tenth among most common female malignant cancer with 16(2.61 %) new cases

The cumulative risk is 0.7% that relates to the chance of a person to get malignant non-melanoma skin cancer during the age of 0-74

Age Standardized Rate ASR found to be 8(10.8 for males) per 100 000 of population at risk

## DEMOGRAPHY

- By Nationality:
  - Qatari: 7 cases, of which 5 are among males and 2 among females
  - Non-Qatari: 58 cases, of which 44 are among males and 14 among females
- By Age:
  - median age was 55.5 (57 for males, and 47.5 for females)
  - Peak of Incidence was in the age group of 55-59
  - More than 50 % of the cases were diagnosed over the age of 55
  - Min age: 28
  - Max age: 88

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 94 newly diagnosed cases with non-melanoma skin cancer. Of these cases, 10 (11%) have died and 84 (89%) are still alive.

## HISTOLOGY

Table 28: Histology distribution for non-melanoma skin cancer

ICDO-3 Histology	%
Basal cell carcinoma, NOS	43.06%
Squamous papillomatosis	19.44%
Basal cell carcinoma, nodular	9.72%
Dermatofibrosarcoma, NOS	5.56%
Basosquamous carcinoma	4.17%
Haemangiosarcoma	2.78%
Synovial sarcoma, NOS	1.39%
Infiltrating duct carcinoma, NOS	1.39%
Ecrrine papillary adenocarcinoma	1.39%
Paget disease, mammary	1.39%

## DEATH

All of the 7 Qatari cases diagnosed during 2015 with non-melanoma skin cancer, are alive.

## 3-YEAR SURVIVAL 2013-2015

3-year survival from malignant non-melanoma skin cancer during the period 2013-2015 was relatively high 81.8% (24.0% - 97.2%)

# C22 LIVER AND INTRAHEPATIC BILE DUCTS

## KEY FACTS

In 2015, 54 cases were newly diagnosed with malignant liver cancer, 5(9%) of which were Qataris and 49(91%) Non-Qataris.

Liver cancer with 47 new cases ranked seventh among most common male malignant cancers with percentage of 5.85%.

The cumulative risk is 0.75%, that relates to the chance of a person to get malignant liver cancer during the age of 0-74

Age Standardized Rate ASR found to be 7.36 per 100 000 of population at risk

## DEMOGRAPHY

- By Nationality:
  - Qatari: 5 cases, of which 4 are among males and 1 among females
  - Non-Qatari: 49 cases, of which 43 are among males and 6 among females
- By Age:
  - median age was 57.5 (57 for males, and 59 for females)
  - Peak of Incidence was in the age group of 55-59
  - More than 50 % of the cases were diagnosed over the age of 55
  - Min age: 0 (less than a year)
  - Max age: 86

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 162 newly diagnosed cases with malignant liver cancer. Of these cases, 131 (81%) have died and 31 (19%) are still alive.

## HISTOLOGY

Table 29: Histology distribution for malignant liver cancer

ICDO-3 Histology	%
Neoplasm, malignant	59.26%
Hepatocellular carcinoma, NOS	29.63%
Cholangiocarcinoma	9.26%
Hepatoblastoma	1.85%

## DEATH

Out of the 5 Qatari cases diagnosed during 2015 with malignant liver cancer, 3(60%) cases died, and 2 (40%) cases are still alive.

## 3-YEAR SURVIVAL 2013-2015

3-year survival from malignant liver cancer during the period 2013-2015 was relatively low 18.8% (4.6% - 40.3%)

# C70-C72 BRAIN & CNS

## KEY FACTS

In 2015, 48 cases were newly diagnosed with malignant brain cancer, 12(25%) of which were Qataris and 36(75%) Non-Qataris.

Brain cancer with 36 new cases ranked eighth among most common male malignant cancers with percentage of 4.48%.

The cumulative risk is 0.36% that relates to the chance of a person to get malignant brain cancer during the age of 0-74

Age Standardized Rate ASR found to be 3.2 per 100 000 of population at risk

## DEMOGRAPHY

- By Nationality:
  - Qatari: 12 cases, of which 8 are among males and 4 among females
  - Non-Qatari: 36 cases, of which 28 are among males and 8 among females
- By Age:
  - median age was 34.5 (38.5 for males, and 30.5 for females)
  - Peak of Incidence was in the age group of 0-4
  - More than 50 % of the cases were diagnosed under the age of 35
  - Min age: 0 (less than 1 year)
  - Max age: 73

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 116 newly diagnosed cases with malignant brain cancer. Of these cases, 62 (53%) have died and 54 (47%) are still alive.

## HISTOLOGY

Table 30: Histology distribution for malignant brain cancer

ICDO-3 Histology	%
Glioblastoma	25.00%
Oligodendroglioma, anaplastic	18.75%
Oligodendroglioma, NOS	8.33%
Neuroblastoma, NOS	6.25%
Medulloblastoma, NOS	4.17%
Gliosarcoma	4.17%
Fibrillary astrocytoma	4.17%
Neoplasm, malignant	4.17%
Atypical teratoid/rhabdoid tumor	4.17%
Mixed glioma	2.08%
Neurilemoma, malignant	2.08%
Ependymoma, NOS	2.08%
Ependymoma, anaplastic	2.08%
Choroid plexus carcinoma	2.08%
Ganglioglioma, anaplastic	2.08%
Astrocytoma, NOS	2.08%
Primitive neuroectodermal tumor, NOS	2.08%
Astrocytoma, anaplastic	2.08%
Glioma, malignant	2.08%

# APPENDICES

## TREATMENT

In 2015, only 23 (48%) of total cases were reported with treatment information. The following table shows the treatment types in no chronological order. [PLEASE SEE DISCLAIMER]

Table 31: Treatment types for malignant brain cancer

Treatment Type	%
Surgery/	60.87%
Surgery/Radiation/Chemo	21.74%
Chemo	8.70%
Radiation	4.35%
Surgery/Chemo	4.35%

## DEATH

Out of the 12 Qatari cases diagnosed during 2015 with malignant female breast cancer, 2(17%) cases died and 10(83%) cases are still alive.

### 3-YEAR SURVIVAL 2013-2015

3-year survival from malignant brain cancer during the period 2013-2015 was 53.9% (24.8% - 76.0%)

# APPENDICE 1

## FACT SHEET ON ALL CANCERS IN QATAR DURING 2015

- Including Non-Melanoma skin cancers (C44)**
  - There were 1417 newly diagnosed cases of malignant cancer, 262 (18.5%) of which were Qataris and 1155 (81.5%) Non-Qataris.
  - There were 49 newly diagnosed cases of In situ cancer, 12 (24.5%) of which were Qataris and 37 (75.5%) Non-Qataris.
  - Crude incidence rate was 58 per 100 000 and Age Standardized Rate ASR was 147 per 100 000 population at risk of all nationalities.
  - For Qataris, crude incidence rate was 93 per 100 000 and Age Standardized Rate ASR was 156 per 100 000 population at risk.
  - For all nationalities, the cumulative risk, or the chance of a getting malignant cancer between the ages of 0-74, is 14.35%.
  - For Qataris, the cumulative risk, or the chance of a getting malignant cancer between the ages of 0-74, is 21.34%.
- Excluding Non-Melanoma skin cancers (C44)**
  - There were 1352 newly diagnosed cases of malignant cancer, 255 (18.86%) of which were Qataris and 1097 (81.14%) Non-Qataris.
  - Crude incidence rate was 55.46 per 100 000 and Age Standardized Rate ASR was 104 per 100 000 population at risk of all nationalities.
  - For Qataris, crude incidence rate was 90.3 per 100 000 and Age Standardized Rate ASR was 153 per 100 000 population at risk.
  - For all nationalities, the cumulative risk, or the chance of a getting malignant cancer between the ages of 0-74, is 10.62%.
  - For Qataris, the cumulative risk, or the chance of a getting malignant cancer between the ages of 0-74, is 21.18%.

# APPENDICE 2

## MALIGNANT CASES DISTRIBUTION BY GENDER AND NATIONALITY

ICD 10 Primary Site	Non-Qatari		Qatari		Grand Total
	F	M	F	M	
	Total	Total	Total	Total	
C02 Malignant neoplasm of other and unspecified parts of tongue	<3	10	11	<3	12
C04 Malignant neoplasm of floor of mouth		<3	<3		<3
C05 Malignant neoplasm of palate		<3	<3		<3
C06 Malignant neoplasm of other and unspecified parts of mouth		10	10		10
C07 Malignant neoplasm of parotid gland		3	3		3
C08 Malignant neoplasm of other and unspecified major salivary glands		<3	<3		<3
C09 Malignant neoplasm of tonsil		<3	<3		2
C10 Malignant neoplasm of oropharynx				<3	<3
C11 Malignant neoplasm of nasopharynx		14	14	4	4
C13 Malignant neoplasm of hypopharynx		4	4		4
C15 Malignant neoplasm of esophagus		12	12		12
C16 Malignant neoplasm of stomach	13	21	34	3	11
C17 Malignant neoplasm of small intestine		8	8	<3	<3
C18 Malignant neoplasm of colon	29	46	75	12	24
C19 Malignant neoplasm of rectosigmoid junction	<3	10	12	2	3
C20 Malignant neoplasm of rectum	4	21	25	<3	4
C21 Malignant neoplasm of anus and anal canal		<3	<3		<3
C22 Malignant neoplasm of liver and intrahepatic bile ducts	6	43	49	<3	5
C23 Malignant neoplasm of gallbladder	<3	7	9		9
C24 Malignant neoplasm of other and unspecified parts of biliary tract	<3	3	4	<3	5
C25 Malignant neoplasm of pancreas	9	11	20		20
C26 Malignant neoplasm of other and ill-defined digestive organs				<3	<3
C30 Malignant neoplasm of nasal cavity and middle ear				<3	<3
C31 Malignant neoplasm of accessory sinuses	<3	<3	<3		<3
C32 Malignant neoplasm of larynx	<3	5	6		6
C34 Malignant neoplasm of bronchus and lung	16	39	55	3	17
					72

## MALIGNANT CASES DISTRIBUTION BY GENDER AND NATIONALITY

ICD 10 Primary Site	Non-Qatari			Qatari			Grand Total
	F	M	Total	F	M	Total	
	C37 Malignant neoplasm of thymus		5	5			
C38 Malignant neoplasm of heart, mediastinum and pleura		<3	<3				<3
C40 Malignant neoplasm of bone and articular cartilage of limbs	4	5	9	<3	<3	<3	11
C41 Malignant neoplasm of bone and articular cartilage of other and unspecified sites	<3	4	6	<3	<3	3	9
C43 Malignant melanoma of skin	4	7	11	<3	<3	4	15
C44 Other and unspecified malignant neoplasm of skin	14	44	58	<3	5	7	65
C45 Mesothelioma		<3	<3				<3
C48 Malignant neoplasm of retroperitoneum and peritoneum		<3	<3				<3
C49 Malignant neoplasm of other connective and soft tissue	<3	7	9	<3	<3	3	12
C50 Malignant neoplasm of breast	192	4	196	50	<3	52	248
C53 Malignant neoplasm of cervix uteri	22		22	3		3	25
C54 Malignant neoplasm of corpus uteri	22		22	16		16	38
C55 Malignant neoplasm of uterus, part unspecified	<3		<3	<3		<3	<3
C56 Malignant neoplasm of ovary	19		19	6		6	25
C60 Malignant neoplasm of penis		<3	<3		<3	<3	<3
C61 Malignant neoplasm of prostate		82	82		14	14	96
C62 Malignant neoplasm of testis		12	12		3	3	15
C64 Malignant neoplasm of kidney, except renal pelvis	9	25	34	<3	5	6	40
C67 Malignant neoplasm of bladder	<3	14	16	<3	4	5	21
C71 Malignant neoplasm of brain	8	26	34	4	8	12	46
C72 Malignant neoplasm of spinal cord, cranial nerves and other parts of central nervous system		<3	<3				<3
C73 Malignant neoplasm of thyroid gland	43	17	60	10	3	13	73
C74 Malignant neoplasm of adrenal gland		<3	<3				<3
C76 Malignant neoplasm of other and ill-defined sites		<3	<3				<3
C80 Malignant neoplasm without specification of site	8	9	17	3	<3	4	21
C81 Hodgkin lymphoma	3	10	13	3	4	7	20

## MALIGNANT CASES DISTRIBUTION BY GENDER AND NATIONALITY

ICD 10 Primary Site	Non-Qatari			Qatari			Grand Total
	F	M	Total	F	M	Total	
	C82 Follicular lymphoma	4	4	8	<3		
C83 Non-follicular lymphoma	6	36	42	<3	4	6	48
C84 Mature T/NK-cell Lymphoma	<3	3	4				4
C85 Other specified and unspecified types of non-Hodgkin lymphoma	4	10	14	<3	<3	3	17
C86 Other specified types of T/NK-cell lymphoma		<3	<3				<3
C88 Malignant immunoproliferative diseases and certain other B-cell Lymphoma		3	3				3
C90 Multiple myeloma and malignant plasma cell neoplasms	3	5	8				8
C91 Lymphoid leukemia	10	25	35	<3	8	9	44
C92 Myeloid leukemia	6	30	36		<3	<3	38
C96 Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue	<3	3	5				5
D42 Neoplasm of uncertain behavior of meninges	<3		<3				<3
D45 Polycythemia vera	<3		<3	<3	<3	3	5
D47 Other neoplasms of uncertain behavior of lymphoid, hematopoietic and related tissue					<3	<3	<3
<b>Grand Total</b>	<b>478</b>	<b>677</b>	<b>1155</b>	<b>136</b>	<b>126</b>	<b>262</b>	<b>1417</b>

# APPENDICE 3

## IN SITU CASES DISTRIBUTION BY GENDER AND NATIONALITY

ICD 10 primary Sites	Non-Qatari			Qatari			Grand Total
	F	M	Total	F	M	Total	
	D00 Carcinoma in situ of oral cavity, esophagus and stomach	<3	<3	<3			
D01 Carcinoma in situ of other and unspecified digestive organs	<3		<3	<3		3	
D02 Carcinoma in situ of middle ear and respiratory system	<3	<3	<3			<3	
D04 Carcinoma in situ of skin	<3	3	<3	<3		4	
D05 Carcinoma in situ of breast	4		4			4	
D06 Carcinoma in situ of cervix uteri	12		12	4		16	
D07 Carcinoma in situ of other and unspecified genital organs	<3		<3	<3	<3	3	
D09 Carcinoma in situ of other and unspecified sites	<3	12	13	3	3	16	
<b>Grand Total</b>	<b>22</b>	<b>15</b>	<b>37</b>	<b>7</b>	<b>5</b>	<b>12</b>	<b>49</b>

# APPENDICE 4

## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS ACROSS ALL NATIONALITIES

ICD 10 Primary Sites	Age Groups																	Grand Total	
	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+		UNK
	C02 Malignant neoplasm of other and unspecified parts of tongue					<3	<3	3	<3	<3	<3	<3	<3				<3		
C04 Malignant neoplasm of floor of mouth						<3													<3
C05 Malignant neoplasm of palate						<3													<3
C06 Malignant neoplasm of other and unspecified parts of mouth							<3	4	<3	<3	<3	<3	<3	<3					10
C07 Malignant neoplasm of parotid gland							<3		<3										<3
C08 Malignant neoplasm of other and unspecified major salivary glands									<3										<3
C09 Malignant neoplasm of tonsil										<3		<3							<3
C10 Malignant neoplasm of oropharynx											<3								<3
C11 Malignant neoplasm of nasopharynx				<3	<3		<3	<3	5	5	<3	<3	4						18
C13 Malignant neoplasm of hypopharynx								<3			<3	<3	<3	<3					4
C15 Malignant neoplasm of esophagus						<3	<3	3		5		<3	<3	<3	<3				12
C16 Malignant neoplasm of stomach						<3	5	5	5	<3	4	7	<3	<3	3	6	<3	<3	45
C17 Malignant neoplasm of small intestine										<3	<3	<3		<3	<3				10



## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS ACROSS ALL NATIONALITIES

ICD 10 Primary Sites	Age Groups														Grand Total				
	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+	UNK
C18 Malignant neoplasm of colon	<3	<3	<3	8	10	8	16	13	10	6	5	6	10	6	5	6	<3		99
C19 Malignant neoplasm of rectosigmoid junction				<3	3	<3		4	<3	<3			<3	<3		<3			15
C20 Malignant neoplasm of rectum				<3	3	<3	4	3	<3	5	3	<3	<3	5	3	<3	<3		29
C21 Malignant neoplasm of anus and anal canal							<3		<3				<3					<3	<3
C22 Malignant neoplasm of liver and intrahepatic bile ducts	<3					<3	3	4	4	5	15	7	5	3	3	<3			54
C23 Malignant neoplasm of gallbladder						<3			<3		<3		<3						9
C24 Malignant neoplasm of other and unspecified parts of biliary tract						<3			<3		<3		<3						5
C25 Malignant neoplasm of pancreas						<3			<3	<3	4	4	3	5	<3	<3			20
C26 Malignant neoplasm of other and ill-defined digestive organs											<3								<3
C30 Malignant neoplasm of nasal cavity and middle ear										<3									<3
C31 Malignant neoplasm of accessory sinuses																			<3
C32 Malignant neoplasm of larynx									<3	<3	<3		<3			<3			6

## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS ACROSS ALL NATIONALITIES

ICD 10 Primary Sites	Age Groups														Grand Total				
	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+	UNK
C34 Malignant neoplasm of bronchus and lung							<3	3	3	11	9	12	11	9	7	3	3		72
C37 Malignant neoplasm of thymus				<3		<3			<3			<3							5
C38 Malignant neoplasm of heart, mediastinum and pleura						<3													<3
C40 Malignant neoplasm of bone and articular cartilage of limbs		<3	<3	3		<3	<3	<3			<3	<3	<3		<3		<3		11
C41 Malignant neoplasm of bone and articular cartilage of other and unspecified sites					<3	<3	<3	<3		<3	<3		<3				<3		9
C43 Malignant melanoma of skin				<3		<3	<3			<3		<3	4				<3		15
C44 Other and unspecified malignant neoplasm of skin						<3	5	6	5	10	15	7	4	<3	3	4	4	<3	65
C45 Mesothelioma												<3			<3				<3
C48 Malignant neoplasm of retroperitoneum and peritoneum							<3												<3
C49 Malignant neoplasm of other connective and soft tissue			<3			3	<3	<3	<3	<3				<3					12
C50 Malignant neoplasm of breast					4	12	32	45	45	38	26	20	13	5	4	4	4		248
C53 Malignant neoplasm of cervix uteri						<3	<3	4	9	3	<3	<3	<3						25

## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS ACROSS ALL NATIONALITIES

ICD 10 Primary Sites	Age Groups														Grand Total				
	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+	UNK
C54 Malignant neoplasm of corpus uteri			<3	<3			<3	<3	3	4	6	14	4	<3	<3	<3	<3		38
C55 Malignant neoplasm of uterus, part unspecified				<3				<3		<3									<3
C56 Malignant neoplasm of ovary	<3			<3		<3	<3	5	<3	3	4	<3	<3	<3	<3	<3	<3		25
C60 Malignant neoplasm of penis						<3								<3					<3
C61 Malignant neoplasm of prostate							<3	3	8	14	26	24	10	7	3	3	3		96
C62 Malignant neoplasm of testis	<3				<3	4	4	<3			<3								15
C64 Malignant neoplasm of kidney, except renal pelvis	<3					<3	<3	3	6	9	7	6	<3	<3	<3	<3			40
C67 Malignant neoplasm of bladder							<3	<3		4	4	3	3	<3	<3	<3	<3		21
C71 Malignant neoplasm of brain	9	<3	<3	<3	4	4	5	5	3	4	3	3	<3	<3	<3				46
C72 Malignant neoplasm of spinal cord, cranial nerves and other parts of central nervous system							<3							<3					<3
C73 Malignant neoplasm of thyroid gland				3	4	12	12	13	12	8	6	<3	<3						73
C74 Malignant neoplasm of adrenal gland									<3										<3
C76 Malignant neoplasm of other and ill-defined sites							<3												<3

## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS ACROSS ALL NATIONALITIES

ICD 10 Primary Sites	Age Groups														Grand Total				
	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+	UNK
C80 Malignant neoplasm without specification of site						<3	<3		4	<3	4	<3	<3	<3	<3	<3	3		21
C81 Hodgkin lymphoma			<3	<3	<3	3	5	<3	<3		<3				<3	<3	<3		20
C82 Follicular lymphoma							<3		4	<3	<3			<3					9
C83 Non-follicular lymphoma	<3	<3	<3	<3	4	<3	4	4	4	<3	8	7	5	<3	3	<3	<3		48
C84 Mature T/NK-cell Lymphoma										<3			<3						4
C85 Other specified and unspecified types of non-Hodgkin lymphoma		<3				<3		<3	3	<3	3	<3	<3	<3	<3	<3	<3		17
C86 Other specified types of T/NK-cell lymphoma											<3								<3
C88 Malignant immunoproliferative diseases and certain other B-cell Lymphoma									<3					<3					3
C90 Multiple myeloma and malignant plasma cell neoplasms									<3	3	<3	<3	<3	<3	<3	<3	<3		8
C91 Lymphoid leukemia	11	6	3	4	<3	<3	3			<3	<3	<3	3	<3	<3	<3	<3		44
C92 Myeloid leukemia		3	<3	<3	<3	5	5	3	5	<3	4	<3	<3	<3	<3	<3	<3		38

# APPENDICE 5

## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS ACROSS ALL NATIONALITIES

ICD 10 Primary Sites	Age Groups																	Grand Total		
	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+		UNK	Grand Total
C96 Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue		<3				<3					<3					<3				5
D42 Neoplasm of uncertain behavior of meninges											<3									<3
D45 Polycythemia vera				<3							<3				<3					5
D47 Other neoplasms of uncertain behavior of lymphoid, hematopoietic and related tissue													<3							<3
<b>Grand Total</b>	<b>27</b>	<b>17</b>	<b>10</b>	<b>23</b>	<b>14</b>	<b>66</b>	<b>89</b>	<b>106</b>	<b>154</b>	<b>160</b>	<b>182</b>	<b>172</b>	<b>154</b>	<b>102</b>	<b>59</b>	<b>47</b>	<b>32</b>	<b>3</b>	<b>1417</b>	

## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS AMONG QATARIS

ICD 10 Primary Sites	Age Groups																	Grand Total		
	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+		UNK	Grand Total
C02 Malignant neoplasm of other and unspecified parts of tongue												<3								<3
C10 Malignant neoplasm of oropharynx											<3									<3
C11 Malignant neoplasm of nasopharynx				<3							<3		<3							4
C16 Malignant neoplasm of stomach					<3	<3	<3	<3					<3	<3	<3	<3	<3		<3	11
C17 Malignant neoplasm of small intestine												<3		<3						<3
C18 Malignant neoplasm of colon					<3		<3	<3				<3	4	3	4					24
C19 Malignant neoplasm of rectosigmoid junction						<3					<3				<3					3
C20 Malignant neoplasm of rectum														<3	<3	<3				4
C22 Malignant neoplasm of liver and intrahepatic bile ducts											<3		<3	<3						5
C24 Malignant neoplasm of other and unspecified parts of biliary tract													<3							<3
C26 Malignant neoplasm of other and ill-defined digestive organs												<3								<3
C30 Malignant neoplasm of nasal cavity and middle ear											<3									<3
C34 Malignant neoplasm of bronchus and lung									<3	<3	3	4		<3	3	<3	3			17
C40 Malignant neoplasm of bone and articular cartilage of limbs		<3																		<3

MALIGNANT CASES DISTRIBUTION BY AGE GROUPS AMONG QATARIS

ICD 10 Primary Sites	Age Groups																	Grand Total	
	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+		UNK
C41 Malignant neoplasm of bone and articular cartilage of other and unspecified sites							<3	<3									<3		3
C43 Malignant melanoma of skin				<3			<3										<3		4
C44 Other and unspecified malignant neoplasm of skin						<3		<3				<3						<3	7
C49 Malignant neoplasm of other connective and soft tissue				<3		<3							<3						3
C50 Malignant neoplasm of breast						<3	5	7	8	6	9	6	3	3	<3	<3	<3		52
C53 Malignant neoplasm of cervix uteri										<3	<3	<3							3
C54 Malignant neoplasm of corpus uteri							<3		<3	<3	<3	7	<3	<3	<3	<3	<3		16
C55 Malignant neoplasm of uterus, part unspecified										<3									<3
C56 Malignant neoplasm of ovary								<3	<3	<3			<3				<3		6
C60 Malignant neoplasm of penis															<3				<3
C61 Malignant neoplasm of prostate								<3			3	4	4	4	<3		<3		14
C62 Malignant neoplasm of testis					<3	<3													3
C64 Malignant neoplasm of kidney, except renal pelvis						<3		<3					<3						6

MALIGNANT CASES DISTRIBUTION BY AGE GROUPS AMONG QATARIS

ICD 10 Primary Sites	Age Groups																	Grand Total	
	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+		UNK
C67 Malignant neoplasm of bladder											<3		<3	<3	<3		<3		5
C71 Malignant neoplasm of brain	3	<3	<3			<3		<3				3		<3					12
C73 Malignant neoplasm of thyroid gland						<3	3	3	3	3	<3	<3							13
C80 Malignant neoplasm without specification of site										<3			<3		<3				4
C81 Hodgkin lymphoma										<3	<3							<3	7
C82 Follicular lymphoma											<3								<3
C83 Non-follicular lymphoma									<3					<3					6
C85 Other specified and unspecified types of non-Hodgkin lymphoma											<3								3
C91 Lymphoid leukemia		3	<3										<3	<3	<3		<3		9
C92 Myeloid leukemia		<3									<3	<3							<3
D45 Polycythemia vera																			3
D47 Other neoplasms of uncertain behavior of lymphoid, hematopoietic and related tissue													<3						<3
<b>Grand Total</b>	<b>3</b>	<b>7</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>11</b>	<b>13</b>	<b>19</b>	<b>19</b>	<b>20</b>	<b>33</b>	<b>36</b>	<b>34</b>	<b>19</b>	<b>19</b>	<b>10</b>	<b>14</b>	<b>3</b>	<b>262</b>

# APPENDICE 6

MALIGNANT CASES DISTRIBUTION BY AGE GROUPS AMONG NON-QATARIS

ICD 210 Primary Sites	Age Groups																	Grand Total
	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+	
C02 Malignant neoplasm of other and unspecified parts of tongue						<3	<3		3	<3	<3					<3		11
C04 Malignant neoplasm of floor of mouth						<3												<3
C05 Malignant neoplasm of palate						<3												<3
C06 Malignant neoplasm of other and unspecified parts of mouth								<3	<3	4	<3		<3					10
C07 Malignant neoplasm of parotid gland							<3			<3								3
C08 Malignant neoplasm of other and unspecified major salivary glands									<3									<3
C09 Malignant neoplasm of tonsil										<3								<3
C11 Malignant neoplasm of nasopharynx				<3			<3		<3	5		<3	3					14
C13 Malignant neoplasm of hypopharynx								<3	<3			<3	<3					4
C15 Malignant neoplasm of esophagus							<3		3		5		<3			<3		12
C16 Malignant neoplasm of stomach						<3	4	4	4	<3	4	5	<3	<3	<3	5		34
C17 Malignant neoplasm of small intestine										3	<3	<3		<3	<3			8
C18 Malignant neoplasm of colon		<3		<3	<3	4	7	7	9	6	11	11	6	6	<3	<3	<3	75
C19 Malignant neoplasm of rectosigmoid junction							<3	<3	3	<3		3	<3	<3				12

MALIGNANT CASES DISTRIBUTION BY AGE GROUPS AMONG NON-QATARIS

ICD 210 Primary Sites	Age Groups																	Grand Total
	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+	
C20 Malignant neoplasm of rectum							<3	<3	3	5	4	3	<3	4	<3	<3		25
C21 Malignant neoplasm of anus and anal canal										<3			<3					<3
C22 Malignant neoplasm of liver and intrahepatic bile ducts	<3						<3	3	4	4	5	13	5	4	3	3	<3	49
C23 Malignant neoplasm of gallbladder							<3		4	<3	<3	<3		<3				9
C24 Malignant neoplasm of other and unspecified parts of biliary tract								<3				<3	<3					4
C25 Malignant neoplasm of pancreas								<3	<3	<3	4	4	3	5	<3	<3		20
C31 Malignant neoplasm of accessory sinuses							<3											<3
C32 Malignant neoplasm of larynx									<3	<3	<3		<3			<3		6
C34 Malignant neoplasm of bronchus and lung							<3	3	<3	10	6	8	11	8	4	<3		55
C37 Malignant neoplasm of thymus				<3					<3			<3						5
C38 Malignant neoplasm of heart, mediastinum and pleura						<3												<3
C40 Malignant neoplasm of bone and articular cartilage of limbs			<3	3			<3				<3	<3						9
C41 Malignant neoplasm of bone and articular cartilage of other and unspecified sites							<3			<3	<3		<3	<3				6

## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS AMONG NON-QATARIS

ICD 210 Primary Sites	Age Groups																	Grand Total	
	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+		
C43 Malignant melanoma of skin						<3	<3			<3		<3	4						11
C44 Other and unspecified malignant neoplasm of skin							<3	5	5	3	9	14	7	4	<3	3	4		58
C45 Mesothelioma													<3						<3
C48 Malignant neoplasm of retroperitoneum and peritoneum						<3													<3
C49 Malignant neoplasm of other connective and soft tissue						<3	<3	<3	<3	<3	<3								9
C50 Malignant neoplasm of breast						<3	11	27	38	37	32	17	14	10	4	<3	<3		196
C53 Malignant neoplasm of cervix uteri						<3	<3	<3	4	9	<3	<3	<3	<3					22
C54 Malignant neoplasm of corpus uteri						<3	<3		<3	<3	<3	5	7	3		<3			22
C55 Malignant neoplasm of uterus, part unspecified									<3										<3
C56 Malignant neoplasm of ovary	<3			<3		<3	<3	<3	3	<3	<3	4	<3		<3		<3		19
C60 Malignant neoplasm of penis							<3												<3
C61 Malignant neoplasm of prostate									<3	<3	8	11	22	20	9	7	<3		82
C62 Malignant neoplasm of testis	<3					3	4	<3	<3				<3						12
C64 Malignant neoplasm of kidney, except renal pelvis	<3				<3	<3	<3	<3	<3	6	7	7	4	<3	<3				34
C67 Malignant neoplasm of bladder							<3	<3	<3		3	4	<3	<3					16

## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS AMONG NON-QATARIS

ICD 210 Primary Sites	Age Groups																	Grand Total	
	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+		
C71 Malignant neoplasm of brain	6	<3	<3	<3	<3	3	5	5	<3	4	3		<3	<3					34
C72 Malignant neoplasm of spinal cord, cranial nerves and other parts of central nervous system							<3							<3					<3
C73 Malignant neoplasm of thyroid gland				3	4	11	9	12	9	7	3		<3						60
C74 Malignant neoplasm of adrenal gland									<3										<3
C76 Malignant neoplasm of other and ill-defined sites								<3											<3
C80 Malignant neoplasm without specification of site						<3	<3		4	<3	3	<3		<3			3		17
C81 Hodgkin lymphoma			<3		<3	3	3	<3	<3		<3					<3			13
C82 Follicular lymphoma							<3			3	<3	<3			<3				8
C83 Non-follicular lymphoma	<3	<3	<3	<3		4	<3	4	3	<3	8	6	5	<3	<3	<3	<3		42
C84 Mature T/NK-cell Lymphoma										<3			<3						4
C85 Other specified and unspecified types of non-Hodgkin lymphoma						<3			3	<3	3	<3	<3		<3			<3	14
C86 Other specified types of T/NK-cell lymphoma											<3								<3
C88 Malignant immunoproliferative diseases and certain other B-cell Lymphoma									<3					<3					3
C90 Multiple myeloma and malignant plasma cell neoplasms										<3	3	<3	<3	<3					8

## MALIGNANT CASES DISTRIBUTION BY AGE GROUPS AMONG NON-QATARIS

ICD 210 Primary Sites	Age Groups																Grand Total		
	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+	
C91 Lymphoid leukemia	11	3	<3	4	<3	<3	3			<3	<3	<3	<3	<3	<3	<3	<3	35	
C92 Myeloid leukemia		<3	<3	<3	<3	5	5	3	5	<3	3	<3	<3	<3	<3	<3	<3	<3	36
C96 Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue		<3				<3				<3						<3		5	
D42 Neoplasm of uncertain behavior of meninges												<3						<3	
D45 Polycythemia vera				<3														<3	
<b>Grand Total</b>	<b>24</b>	<b>10</b>	<b>8</b>	<b>18</b>	<b>12</b>	<b>55</b>	<b>77</b>	<b>93</b>	<b>135</b>	<b>140</b>	<b>149</b>	<b>136</b>	<b>120</b>	<b>83</b>	<b>40</b>	<b>37</b>	<b>18</b>	<b>1155</b>	

## APPENDICE 7

## PEDIATRIC CASES BY AGE GROUPS

ICD 10 Primary Sites	Age Groups				Grand Total
	0-4	5-9	10-14	15-19	
C18 Malignant neoplasm of colon		<3			<3
C22 Malignant neoplasm of liver and intrahepatic bile ducts	<3				<3
C40 Malignant neoplasm of bone and articular cartilage of limbs		<3	<3		<3
C56 Malignant neoplasm of ovary	<3				<3
C62 Malignant neoplasm of testis	<3				<3
C64 Malignant neoplasm of kidney, except renal pelvis	<3				<3
C71 Malignant neoplasm of brain	9	<3	<3		13
C81 Hodgkin lymphoma			<3		<3
C83 Non-follicular lymphoma	<3	<3	<3		3
C84 Mature T/NK-cell Lymphoma		<3			<3
C85 Other specified and unspecified types of non-Hodgkin lymphoma		<3			<3
C91 Lymphoid leukemia	11	6	3		20
C92 Myeloid leukemia		3	<3		5
C96 Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue		<3			<3
<b>Grand Total</b>	<b>27</b>	<b>17</b>	<b>10</b>		<b>54</b>

# APPENDICE 8

## DATA NOTIFICATION FORM

PATIENT INFORMATION																			
(1) Patient Name			(2) Qatar ID Number																
First	Father	Grand father	Family																
			(3) Visa Number																
(4) Nationality	(5) Telephone number	(6) Gender	(7) Ethnic Group																
		1 <input type="checkbox"/> Male	1 <input type="checkbox"/> Arab																
		2 <input type="checkbox"/> Female	2 <input type="checkbox"/> Indian																
		3 <input type="checkbox"/> Other	3 <input type="checkbox"/> European																
		(hermaphrodite)	4 <input type="checkbox"/> African																
		4 <input type="checkbox"/> Transsexual	5 <input type="checkbox"/> Asian																
		9 <input type="checkbox"/> Unknown	9 <input type="checkbox"/> Other																
		(8) Date of Birth																	
		<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>d</td><td>d</td><td>m</td><td>m</td><td>y</td><td>y</td><td>y</td><td>y</td> </tr> </table>										d	d	m	m	y	y	y	y
d	d	m	m	y	y	y	y												
		(If DOB unknown, specify AGE) (If only year is known, use 01/07/yyyy) Age ( years)																	
CASE INFORMATION																			
Identifying Information																			
(9) Level of Education	(10) Family History of Cancer	(11) Alcohol history																	
1 <input type="checkbox"/> Illiterate	1 <input type="checkbox"/> First degree relatives (parents, sibling and offspring)	1 <input type="checkbox"/> Never used																	
2 <input type="checkbox"/> Read/ Write	2 <input type="checkbox"/> Second degree relatives (grandparents, aunts, uncles)	2 <input type="checkbox"/> Drinking alcohol																	
3 <input type="checkbox"/> Primary	4 <input type="checkbox"/> Free - No History of cancer in the family	4 <input type="checkbox"/> Previous use																	
4 <input type="checkbox"/> Intermediate/ Secondary	9 <input type="checkbox"/> Unknown	9 <input type="checkbox"/> Unknown																	
5 <input type="checkbox"/> Professional diploma		Text																	
6 <input type="checkbox"/> University																			
7 <input type="checkbox"/> High education																			
9 <input type="checkbox"/> Unknown																			
(12) Smoking status / History	(13) Occupation	(14) Marital status at diagnosis	(15) Patient address at diagnosis																
0 <input type="checkbox"/> Never used		1 <input type="checkbox"/> Single	City																
1 <input type="checkbox"/> Cigarette smoker, Current		2 <input type="checkbox"/> Married																	
2 <input type="checkbox"/> Cigar/ Pipe smoker, Current		3 <input type="checkbox"/> Divorced																	
3 <input type="checkbox"/> Sheesha smoker, Current		4 <input type="checkbox"/> Widowed																	
4 <input type="checkbox"/> Snuff/ Chew/ Smokeless, Current		9 <input type="checkbox"/> Unknown	Region																
5 <input type="checkbox"/> Combination use, Current																			
6 <input type="checkbox"/> Previous use																			
9 <input type="checkbox"/> Unknown																			

CASE INFORMATION																																		
Diagnosis																																		
(16) Date of Birth	(17) Place of diagnosis	(18) Date of Birth																																
<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>d</td><td>d</td><td>m</td><td>m</td><td>y</td><td>y</td><td>y</td><td>y</td> </tr> </table>									d	d	m	m	y	y	y	y		<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>d</td><td>d</td><td>m</td><td>m</td><td>y</td><td>y</td><td>y</td><td>y</td> </tr> </table>									d	d	m	m	y	y	y	y
d	d	m	m	y	y	y	y																											
d	d	m	m	y	y	y	y																											
(19) Place of first presentation	(20) Basis of diagnosis	(21) Co-morbidities ICD-10																																
1 <input type="checkbox"/> Clinic	0 <input type="checkbox"/> DCO	6 <input type="checkbox"/> Histology of metastasis																																
2 <input type="checkbox"/> ER / Triage	1 <input type="checkbox"/> Clinical	7 <input type="checkbox"/> Histology of Primary																																
3 <input type="checkbox"/> Hospital	2 <input type="checkbox"/> Radiology	8 <input type="checkbox"/> Histology , NOS																																
4 <input type="checkbox"/> Other	3 <input type="checkbox"/> Surgery/Autopsy	8 <input type="checkbox"/> Unknown																																
9 <input type="checkbox"/> Unknown	4 <input type="checkbox"/> Lab test																																	
	5 <input type="checkbox"/> Cytology/Hematology																																	
CASE INFORMATION																																		
Cancer Identification																																		
(22) Class of case																																		
<input type="checkbox"/> Diagnosis at the reporting facility and all treatment or a decision not to treat was done elsewhere <input type="checkbox"/> Initial diagnosis at the reporting facility, and part or all of first course treatment or a decision not to treat was at the reporting facility <input type="checkbox"/> Initial diagnosis elsewhere and all or part of first course treatment or a decision not to treat was done at the reporting facility <input type="checkbox"/> Initial diagnosis elsewhere and all or part of first course treatment or a decision not to treat was done at the reporting facility <input type="checkbox"/> Case diagnosed before QNCR's Reference Date (January 2014), having initial diagnosis AND part or all of first course treatment by reporting facility <input type="checkbox"/> Initial diagnosis established by autopsy at the reporting facility, cancer not suspected prior to death <input type="checkbox"/> Diagnosis and all first course treatment given at the same staff physician's office <input type="checkbox"/> Pathology or other lab specimens only, excluding autopsy <input type="checkbox"/> Death certificate only, used by central registries only. <input type="checkbox"/> Unknown, no sufficient information in patient records. Used by central registries only																																		
(23) Topography	(23) Topography	(23) Behavior																																
ICDO Code	ICDO Code	0 <input type="checkbox"/> Benign																																
		1 <input type="checkbox"/> Uncertain																																
Text	Text	2 <input type="checkbox"/> In Situ																																
		3 <input type="checkbox"/> Malignant/Invasive																																
		6 <input type="checkbox"/> Metastasis																																





# ACKNOWLEDGEMENT

(67) <input type="checkbox"/> BMT	(68) Date of therapy <table border="1"> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>d</td><td>d</td><td>m</td><td>m</td><td>y</td><td>y</td><td>y</td><td>y</td></tr> </table>									d	d	m	m	y	y	y	y	(69) BMT type <input type="checkbox"/> No BMT <input type="checkbox"/> Type not specified <input type="checkbox"/> Autologous <input type="checkbox"/> Allogenic <input type="checkbox"/> Stem Cell <input type="checkbox"/> Unknown	(70) Intent of Rx <input type="checkbox"/> Curative <input type="checkbox"/> Palliative <input type="checkbox"/> Unknown (71) Location of Rx <input type="checkbox"/> In this hospital <input type="checkbox"/> Elsewhere in Qatar <input type="checkbox"/> Abroad	(72) Response of Rx <input type="checkbox"/> Not Documented <input type="checkbox"/> Complete Remission <input type="checkbox"/> Partial Response <input type="checkbox"/> Stable Disease <input type="checkbox"/> Disease Progression <input type="checkbox"/> Unknown																
d	d	m	m	y	y	y	y																													
(73) Surgeon name <input type="text"/>		(74) Oncologist name <input type="text"/>		(75) Radiotherapy physician name <input type="text"/>																																
<b>CASE INFORMATION</b>																																				
<b>Follow Up</b>																																				
(76) Recurrence site <input type="checkbox"/> None <input type="checkbox"/> Local <input type="checkbox"/> Regional <input type="checkbox"/> Distant (77) Distant site <input type="checkbox"/> None <input type="checkbox"/> Bone <input type="checkbox"/> Peritoneum <input type="checkbox"/> CNS <input type="checkbox"/> Lung <input type="checkbox"/> Skin <input type="checkbox"/> Pleura <input type="checkbox"/> L.Nodes <input type="checkbox"/> Liver <input type="checkbox"/> Other	(78) Date of therapy <table border="1"> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>d</td><td>d</td><td>m</td><td>m</td><td>y</td><td>y</td><td>y</td><td>y</td></tr> </table> (79) Cancer status <input type="checkbox"/> Evidence of tumor <input type="checkbox"/> No evidence of tumor <input type="checkbox"/> Unknown (80) Date of therapy <table border="1"> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>d</td><td>d</td><td>m</td><td>m</td><td>y</td><td>y</td><td>y</td><td>y</td></tr> </table>									d	d	m	m	y	y	y	y									d	d	m	m	y	y	y	y	(81) Performance status post treatment <input type="checkbox"/> Normal activity <input type="checkbox"/> Symptomatic and ambulatory <input type="checkbox"/> Ambulatory > 50% <input type="checkbox"/> Ambulatory < 50% <input type="checkbox"/> Bedridden <input type="checkbox"/> Not applicable, dead <input type="checkbox"/> Unknown	(82) Medical record number <input type="text"/>	
d	d	m	m	y	y	y	y																													
d	d	m	m	y	y	y	y																													
(83) Vital status <input type="checkbox"/> Alive <input type="checkbox"/> Dead <input type="checkbox"/> Unknown	(84) Date of death <table border="1"> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>d</td><td>d</td><td>m</td><td>m</td><td>y</td><td>y</td><td>y</td><td>y</td></tr> </table>									d	d	m	m	y	y	y	y	(85) Underlying cause of death <input type="text"/>		(86) Place of death <input type="checkbox"/> Hospital <input type="checkbox"/> Home <input type="checkbox"/> Abroad <input type="checkbox"/> Unknown																
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(87) Notes <input type="text"/>																																				
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This report was made under the leadership and the review of Dr. Saleh Al Marri, Ministry of Public Health

HMC cancer registry, led by Dr. Mufid M. El Mistiri, and his team were supportive in providing the necessary data.

The Qatar Cancer Incidence Annual Report for 2015 was mainly edited by Mr. Amid Abu Hmaidan, Manager of the Cancer Registry.

Big thank you for:

- Dr. Delaram Ardalan, from Al Borg Laboratories
- Dr. Rafif Al Saady, form Al Ahli Hospital
- Ms. Parvaneh Amani, from Al Emadi Hospital.

Special thanks to Fiona Bonas Director of the National Cancer Program.

For their dedication, support and quality data reported.

The following healthcare providers and stakeholder largely participated through the reporting of cancer incidence data within timelines and according to the QNCR policy:

We would like to extend our thanks to Dr. Roberto Bertollini, Senior Advisor for the Minister of Public Health, for his in-depth advice and recommendations for the scientific content of the report.

- National Center for Cancer Care and Research in HMC
- Al Ahli Hospital
- Al Emadi Hospital
- Doha Clinic Hospital
- American Hospital
- Al Borg Laboratories
- Micro Health Laboratories
- HMC-sidra pediatric service
- AXA Health Insurance Company
- MOPH Death Database
- MOI Database

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