Qatar National Cancer Registry QNCR

سجل قطر الوطني للسرطان

Annual Report

2016



2016





## 2016 Cancer Annual Report State of Qatar

National Cancer Program Qatar National Cancer Registry Ministry of Public Health, Qatar P.O. Box 42 Doha, Qatar www.nhsq.info gncr@moph.gov.qa Printed in Qatar, 2019

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#### DISCLAIMER

Information included in this report reflects the data at the time of closing the database for cleaning and analysis on March 2019. 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 <u>qncr@moph.gov.qa</u>

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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 10 <sup>th</sup> Revision
ICD O-3	International Classification of Disease for Oncology 3 <sup>rd</sup> Revision
MDT	
MDT	Multi-Disciplinary ream
MTA	Medical Treatment Abroad
MTA NCCCR	Medical Treatment Abroad National Center for Cancer Care and Research
MTA NCCCR NCP	Multi-Disciplinary ream Medical Treatment Abroad National Center for Cancer Care and Research National Cancer Program
MDT MTA NCCCR NCP NCS	Multi-Disciplinary ream Medical Treatment Abroad National Center for Cancer Care and Research National Cancer Program National Cancer Strategy
MDT MTA NCCCR NCP NCS NHS	Multi-Disciplinary ream Medical Treatment Abroad National Center for Cancer Care and Research National Cancer Program National Cancer Strategy National Health Strategy
MDT MTA NCCCR NCP NCS NHS PHCC	Multi-Disciplinary ream Medical Treatment Abroad National Center for Cancer Care and Research National Cancer Program National Cancer Strategy National Health Strategy Primary Healthcare Corporation
MDT MTA NCCCR NCP NCS NHS PHCC QNCR	Medical Treatment Abroad National Center for Cancer Care and Research National Cancer Program National Cancer Strategy National Health Strategy Primary Healthcare Corporation Qatar National Cancer Registry
MDT MTA NCCCR NCP NCS NHS PHCC QNCR MoPH	Medical Treatment Abroad National Center for Cancer Care and Research National Cancer Program National Cancer Strategy National Health Strategy Primary Healthcare Corporation Qatar National Cancer Registry Ministry of Public Health

السرطان مرض يصيبنا جميعًا بغض النظر عن الجنسية أو الجنس أو العمر، سواء بشكل مباشر أو من خلال مرض أحد المحبين. نظرًا لكوننا السبب الثاني للوفاة في قطر، يعد السرطان أحد التحديات الرئيسية التي تواجهنا في التشخيص والعلاج والتأكد من التغلب عليه. إن نشر تقرير مفصل يوفر بيانات وبائية عن السرطان في قطر، يضمن التخطيط القائم على البيانات وصنع السياسات. وهذا يتيح لنا جميعًا تحسين استراتيجياتنا الصحية وآليات مكافحة السرطان وبرامج الفحص والواية.

لذلك يسرني أن أشارككم في التقرير السنوي لسجل قطر الوطني للسرطان لعام 2016. يقدم هذا التقرير تحليلاً شاملاً لبيانات السرطان في جميع أنحاء قطر بما في ذلك التركيبة السكانية الرئيسية، والانتشار، والعلاجات ومعدلات البقاء على قيد الحياة. يظهر نشر هذا التقرير الالتزام المستمر لضمان تحقيق الإطار الوطني للسرطان 2017-2022. تذكرنا إعادة النظر في الإطار "أنه فقط من خلال جمع البيانات واستخدامها ونشرها، يمكن قياس الأداء بشفافية ... إن الوصول إلى البيانات هو مجرد البداية". تحقيق هذا الجانب من الإطار الوطني، تأكد من أننا نعمل معاً من أجل تحقيق هدفنا المتمثل في ضمان أن تصبح خدمات السرطان في قطر واحدة من أفضل الخدمات في العالم.

أود أن أشكر صاحب السمو أمير البلاد الشيخ تميم بن حمد آل ثاني وسمو الشيخة موزا بنت ناصر على قيادتهم ورؤيتهم السديدة. كما أود أن أشكر اللجنة الوطنية للسرطان والبرنامج الوطني للسرطان على دعمهم وتوجيههم المستمر. أخيرًا، أود أن أشكر المؤسسات والأفراد الذين أصدروا هذا التقرير. مؤسسة حمد الطبية، لإسهامها الكبير في البيانات، وجميع أصحاب المصلحة والرئيسيين من الوزارة والمؤسسات الحكومية الأخرى والقطاع الخاص. لا يمثل إنتاج التقرير سوى جانب واحد من التفاني والجهود المستمرة التي تبذلها جميع المؤسسات الصحية في الدولة.

تلتزم وزارة الصحة العامة بمواصلة العمل مع جميع مقدمي خدمات السرطان لضمان استمرار دعم سجل قطر الوطني للسرطان بشكل كامل وتأمل أن يوفر إصدار التقارير السنوية المستقبلية مزيدًا من المعلومات القيمة. وبصفتي وزير الصحة العامة، أود دعوة جميع أصحاب المصلحة إلى الاستفادة من هذه الفرصة القيمة لفهم التحديات التي يفرضها السرطان، والتخطيط بشكل صحيح لمواردنا الصحية للعمل على التغلب على هذا المرض الخطير في بلدنا والتأثير إيجابياً في حياة الناس.

> سعادة د. حنان الكواري وزير الصحة العامة

### الملخص التنفيذى

منذ تأسيسه عام 2014، يعكف سجل قطر الوطني للسرطان العامل في وزارة الصحة العامة، على تسجيل كافة حالات السرطان في دولة قطر والتي بلغ عدد سكانها 2634617 نسمة خلال العام 2016

المجموع الكلي	غير قطري			قطري			السلوك السرطاني	
ي ا	إناث	ذكور	المجموع	إناث	ذكور	المجموع		
1496	421	755	1176	185	135	320	خبيت	
67	36	17	53	9	5	14	موضعي	
2	0	2	2	0	0	0	حميد (الدماغ والجهاز العصبي المركزي فقط)	
1	1		1	0	0	0	غير محدد	
1566	458	774	1232	194	140	334	المجموع الكلى	

خلال العام 2016، تم تسجيل 1566 حالة إصابة جديدة بالسرطان، منها 0% قطريين، والجدول ادناه يبين توزيع هذه الحالات حسب الجنسية والجنس:





معدلات السرطان الأكثر انتشارا بين الذكور

%	‡:Žğ∕	Čƒ ÂÌ ğŠĽĆ	ICD 10
11.27	103	ČĽ <b>Ŏ</b> Ťġą şĕdeã√	C18-C21 / D01
8.97	82	Ã <i>f</i> ólæa,Äğl∵.Ð	C61 /D07.5
8.64	79	Ş∙ğıl frĕw√	C91-C95
7.88	72	ÜĕnteráÐ Íò∿Čf Á	C44 / D04
5.14	47	ęðð¼∻ ĕn∕áÐÀðājfølið, ²ŽðjČfÂí	C82-C85, C96
4.70	43	À₫õ√	C67 /D09.0
4.60	42	ŇŶŧÙŎſÃŤĎĔŎĘŀ¾4Ŏ	C22 / D01.5
4.38	40	À;Âğ¢, ÀğİİI(ÀxÙ°ğ/	C33-C34 / D02.1-D02.2
4.16	38	ĘŔ¼ãõ\ÇÙŽġÊfAţòvąžfĆğ	C70-C72
4.16	38	Àåi⅔∡ğ/	C64-C66

## معدلات السرطان الأكثر انتشارا بين الإناث

%	‡∙Žğ⁄	ČƒÂ ğŠĎĆ	ICD 10
39.72	259	Ę· "ğ	C50 / D05
8.74	57	À <b>ĕ</b> ‰ ğ.∖∴.õğ	C73 / D09.3
7.67	50	ČĎĎĚĞĄ şểÔĐĨ√	C18-C21 / D01
7.21	47	ş⁄ Âğ	C54-C55 / D07.0
4.60	30	Üðanðe ÁÐ Íò√ČƒÂÍ	C44 / D04
4.14	27	^ ĕã√	C56
3.99	26	ş∕ Âğk š	C53
3.07	20	Ş∘ğl fĕw	C91-C95
2.30	15	Ę <sup>.</sup> "ğ	C82-C85, C96
1.99	13	Àē‰ğl∴.õğ	C16 / D00.2

### FOREWORD

Cancer is a disease that affects all of us regardless of nationality, gender or age, either directly or through the illness of a loved one. Being the second cause of death in Qatar, Cancer is one of the major challenges for us to diagnose, treat and ensure we overcome. Publishing a detailed report which provides epidemiological data about cancer in Qatar, ensures data driven planning and policy making. This allows all of us to improve our health strategies, cancer control mechanisms, screening and prevention programs.

I am therefore pleased to share with you the Qatar National Cancer Registry Annual Report 2016. This report delivers a comprehensive analysis of cancer data throughout Qatar including key demographics, prevalence, treatments and survival rates. Publishing this report shows the continued commitment to ensuring the achievement of The National Cancer Framework 2017-2022. Revisiting the Framework reminds us that 'it is only through collecting, using and publishing data, that performance can be transparently measured...having access to data is just the start'. Delivering this aspect of the National Framework, ensure that we jointly work towards our goal of ensuring that Qatar cancer services become one of the best in the world.

I would like to thank His Highness the Emir Sheikh Tamim bin Hamad Al-Thani and Her Highness Sheikha Moza Bint Nasser for their prevailing leadership and vision. I would also like to thank the National Cancer Committee and the National Cancer Program for their continued support and direction. Finally, I would like to thank the institutions and individuals who produced this report. Hamad Medical Corporation (HMC), for their major contribution to the data, and all key stakeholders from the Ministry, other government organizations and the private sector. The production of the report represents just one aspect of the ongoing dedication and efforts by all health organizations in the State.

The Ministry of Public health is committed to continue to work with all providers of cancer services to ensure the Qatar National Cancer Registry continues to be fully supported and hopes that the compilation of future annual reports provide further invaluable information. As the Minister of Public Health, I would like to invite all stakeholders to take advantage of this valuable opportunity to understand the challenges posed by cancer, and to properly plan our health resources to work towards overcoming this serious disease in our country and to positively impact peoples' lives.

#### H.E. Dr. Hanan Al Kuwari

Minister of Public Health

#### ACKNOWLEDGEMENT

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#### DATA MANAGEMENT

#### DENOMINATOR

Cancer incidence nominator covers all cases diagnosed with cancer in the State of Qatar excluding cases classified as "Visitors", in addition to Qatari cases diagnosed abroad.

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.

Only In situ and malignant cases are included, except for brain and central nervous system where all behaviors are included.

#### 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.

#### 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 calculated according to the following equation:

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

#### AGE-SPECIFIC INCIDENCE RATE ASIR **ERROR! REFERENCE SOURCE NOT FOUND.**

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.

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

#### AGE STANDARDIZED RATE ASR<sup>4</sup>

It is calculated as

$$ASR = \sum ASIR \times Weight of Standard Population$$

The weight of standard population is calculated as follows

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

Table 1 represents the standard age-group population published by WHO. Error! Reference source not found.

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
Total	100 000	1

Table 1: WHO Standard Population

THE CUMULATIVE RISK ERROR! REFERENCE SOURCE NOT FOUND.<sup>4</sup>

The cumulative rate is expressed as

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

The Cumulative risk =  $100 \times [1 - \exp(\text{cumulative rate}/100)]$ 

# Executive Summary



#### EXECUTIVE SUMMARY

#### OVERALL CANCER INCIDENCE

The Qatar National Cancer Registry (QNCR), at the Ministry of Public Health is the national cancer registry for the State of Qatar, with a population of 2,617,634 in 2016.

During the year 2016, there were 1,566 registered cancer cases, with a distribution of 21% Qataris, and 79% Non-Qataris. The following table describes the number of cases distributed by behavior, gender and nationality:

Cancer Behavior	Non-Qatari			Qatari			Grand
	F	М	Total	F	М	Total	Total
Malignant	421	755	1176	185	135	320	1496
In Situ	36	17	53	9	5	14	67
Benign (Brain & CNS)	0	2	2	0	0	0	2
Uncertain (Brain & CNS)	1	0	1	0	0	0	1
Grand Total	458	774	1232	194	140	334	1566

Table 2: Number of cases distributed by behavior, gender and nationality

Crude incidence rate was 59.83 per 100 000 and Age Standardized Rate ASR was 135 per 100 000 population at risk.

Distribution of cases by basis of diagnosis showed that 96% of the cases where microscopically confirmed:

Basis of Diagnosis	%
Histology of Primary	86.90
Cytology / Hematology	7.55
Radiology	4.34
Histology , NOS	0.60
Histology of Metastasis	0.40
Clinical	0.20
Grand Total	100

Table 3: Distribution of cases according to the basis of diagnosis

SEER Summary stage gives another view of the cancer incidence in the country. Stage at diagnosis was missing for more than 50 % of the registered cases, around 11% of the registered cases presented with distant or metastatic conditions:

SEER Summary Stage	%
Unknown	62.32
Regional	22.09
Distant	11.30
In situ	4.28

Table 4: SEER Summary stage distribution



Distribution by age group indicates that the peak of incidence was among the patients of the age 45-49:

#### Figure 1: Distribution of cancer by age groups

Regardless of the nationality and the gender, the following table presents the most common cancers diagnosed during 2016. Breast was the most common of all cancers with 16.99%% of all cases, followed by colorectal (9.77% of the cases).

ICD 10 Codes	Primary Site	N	%
C50 / D05	Breast	266	16.99
C18-C21 / D01	Colorectal	153	9.77
C44 / D04	Non-Melanoma skin cancer	102	6.51
C91-C95	Leukemia	99	6.32
C73 /D09.3	Thyroid gland	86	5.49
C61 /D07.5	Prostate	82	5.24
C82-C85, C96	Non-Hodgkin Lymphoma	62	3.96
C22 / D01.5	Liver and intrahepatic bile ducts	52	3.32
C33-C34 / D02.1-D02.2	Trachea, bronchus and lung	50	3.19
C64-C66	Kidney	49	3.13

Table 5: Top 10 cancers across all genders and all nationalities

Age-Group	N	Лаle	Fen	nale	Both Genders		
( 5 year)	N	ASIR	N	ASIR	N	ASIR	
0-4	13	18.4	8	11.8	21	15.2	
5-9	10	15.9	6	9.9	16	12.9	
10-14	3	6.1	2	4.3	5	5.2	
15-19	8	14.6	4	11.6	12	13.5	
20-24	16	7.0	8	17.9	24	8.8	
25-29	47	12.5	22	25.0	69	14.9	
30-34	62	17.8	71	78.9	133	30.3	
35-39	94	35.9	64	89.0	158	47.4	
40-44	85	43.0	76	153.2	161	65.1	
45-49	104	74.5	84	253.8	188	108.9	
50-54	101	116.7	80	361.1	181	166.5	
55-59	110	196.1	73	504.2	183	259.3	
60-64	101	415.5	56	665.6	157	479.8	
65-69	76	739.4	54	1247.7	130	890.0	
70-74	46	1125.8	21	791.0	67	993.9	
75-79	21	939.2	9	516.1	30	753.8	
80+	17	1003.5	14	863.1	31	934.9	
Total "N"	914		65	52	15	66	
ASR / 100000		125	18	37	135		
Crude Incidence / 100000	4	46.3	10	1.5	59.8		
Cumulative Risk of Incidence [0-74]		13	1	.9	1	14	

 Table 6: Summary of cancer burden in Qatar 2016, by age groups and gender

#### CANCERS ACROSS ALL NATIONALITIES AND GENDERS

	Non-Qatari							Qatari						Grand Total	
ICD 10 Primary Site		F		м	То	otal		F		м	т	otal	Gran	d lotal	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
All Sites	458	29.2	774	49.4	1232	78.7	194	12.4	140	8.9	334	21.3	1566	100.0	
C00 Malignant neoplasm of lip	0.0	0.0	6	0.4	6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	6	0.4	
C01 Malignant neoplasm of base of tongue	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1	
C02 Malignant neoplasm of other and unspecified parts of tongue	0.0	0.0	8	0.5	8	0.5	1	0.1	1	0.1	2	0.1	10	0.6	
C03 Malignant neoplasm of gum	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1	
C05 Malignant neoplasm of palate	0.0	0.0	3	0.2	3	0.2	0.0	0.0	1	0.1	1	0.1	4	0.3	
C06 Malignant neoplasm of other and unspecified parts of mouth	0.0	0.0	15	1.0	15	1.0	1	0.1	0.0	0.0	1	0.1	16	1.0	
C07 Malignant neoplasm of parotid gland	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1	
C08 Malignant neoplasm of other and unspecified major salivary glands	0.0	0.0	1	0.1	1	0.1	0.0	0.0	1	0.1	1	0.1	2	0.1	
C09 Malignant neoplasm of tonsil	0.0	0.0	2	0.1	2	0.1	0.0	0.0	2	0.1	2	0.1	4	0.3	
C10 Malignant neoplasm of oropharynx	0.0	0.0	2	0.1	2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2	0.1	
C11 Malignant neoplasm of nasopharynx	2	0.1	11	0.7	13	0.8	0.0	0.0	2	0.1	2	0.1	15	1.0	
C13 Malignant neoplasm of hypopharynx	0.0	0.0	2	0.1	2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2	0.1	
C15 Malignant neoplasm of esophagus	0.0	0.0	7	0.4	7	0.4	1	0.1	0.0	0.0	1	0.1	8	0.5	
C16 Malignant neoplasm of stomach	10	0.6	19	1.2	29	1.9	3	0.2	3	0.2	6	0.4	35	2.2	
C17 Malignant neoplasm of small intestine	2	0.1	7	0.4	9	0.6	2	0.1	2	0.1	4	0.3	13	0.8	
C18 Malignant neoplasm of colon	15	1.0	46	2.9	61	3.9	14	0.9	11	0.7	25	1.6	86	5.5	
C19 Malignant neoplasm of rectosigmoid junction	3	0.2	15	1.0	18	1.1	3	0.2	2	0.1	5	0.3	23	1.5	
C20 Malignant neoplasm of rectum	8	0.5	24	1.5	32	2.0	6	0.4	4	0.3	10	0.6	42	2.7	
C21 Malignant neoplasm of anus and anal canal	1	0.1	1	0.1	2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2	0.1	
C22 Malignant neoplasm of liver and intrahepatic bile ducts	4	0.3	36	2.3	40	2.6	6	0.4	6	0.4	12	0.8	52	3.3	
C23 Malignant neoplasm of gallbladder	4	0.3	6	0.4	10	0.6	0.0	0.0	1	0.1	1	0.1	11	0.7	
C24 Malignant neoplasm of other and unspecified parts of biliary tract	4	0.3	2	0.1	6	0.4	2	0.1	0.0	0.0	2	0.1	8	0.5	
C25 Malignant neoplasm of pancreas	1	0.1	11	0.7	12	0.8	1	0.1	3	0.2	4	0.3	16	1.0	
C26 Malignant neoplasm of other and ill-defined digestive organs	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1	

	Non-Qatari						Qatari						Grand Total	
ICD 10 Primary Site		F		м	Тс	otal		F	1	м	т	otal	Gran	d Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
C30 Malignant neoplasm														
of nasal cavity and middle ear	0.0	0.0	2	0.1	2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2	0.1
C31 Malignant neoplasm	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
C32 Malignant neoplasm of larynx	0.0	0.0	6	0.4	6	0.4	0.0	0.0	2	0.1	2	0.1	8	0.5
C34 Malignant neoplasm of bronchus and lung	6	0.4	32	2.0	38	2.4	4	0.3	8	0.5	12	0.8	50	3.2
C37 Malignant neoplasm of thymus	1	0.1	0.0	0.0	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
C38 Malignant neoplasm of heart, mediastinum and pleura	2	0.1	6	0.4	8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	8	0.5
C40 Malignant neoplasm of bone and articular cartilage of limbs	1	0.1	2	0.1	3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	3	0.2
C41 Malignant neoplasm of bone and articular cartilage of other and unspecified sites	1	0.1	4	0.3	5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5	0.3
C43 Malignant melanoma of skin	2	0.1	9	0.6	11	0.7	1	0.1	0	0.0	1	0.1	12	0.8
C44 Other and unspecified malignant neoplasm of skin	29	1.9	69	4.4	98	6.3	0.0	0.0	3	0.2	3	0.2	101	6.4
C45 Mesothelioma	1	0.1	1	0.1	2	0.1	0.0	0.0	1	0.1	1	0.1	3	0.2
C46 Kaposi's sarcoma	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
C48 Malignant neoplasm of retroperitoneum and peritoneum	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
C49 Malignant neoplasm of other connective and soft tissue	4	0.3	13	0.8	17	1.1	1	0.1	3	0.2	4	0.3	21	1.3
C50 Malignant neoplasm of breast	167	10.7	6	0.4	173	11.0	67	4.3	1	0.1	68	4.3	241	15.4
C53 Malignant neoplasm of cervix uteri	4	0.3	0	0.0	4	0.3	5	0.3	0.0	0.0	5	0.3	9	0.6
C54 Malignant neoplasm of corpus uteri	29	1.9	0	0.0	29	1.9	15	1.0	0.0	0.0	15	1.0	44	2.8
C55 Malignant neoplasm of uterus, part unspecified	2	0.1	0	0.0	2	0.1	1	0.1	0.0	0.0	1	0.1	3	0.2
C56 Malignant neoplasm of ovary	17	1.1	0	0.0	17	1.1	10	0.6	0.0	0.0	10	0.6	27	1.7
C60 Malignant neoplasm of penis	0.0	0.0	5	0.3	5	0.3	0.0	0.0	1	0.1	1	0.1	6	0.4
C61 Malignant neoplasm of prostate	0.0	0.0	65	4.2	65	4.2	0.0	0.0	17	1.1	17	1.1	82	5.2
C62 Malignant neoplasm of testis	0.0	0.0	15	1.0	15	1.0	0.0	0.0	0.0	0.0	0.0	0.0	15	1.0
C64 Malignant neoplasm of kidney, except renal pelvis	6	0.4	32	2.0	38	2.4	4	0.3	4	0.3	8	0.5	46	2.9
C65 Malignant neoplasm of renal pelvis	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
C66 Malignant neoplasm of ureter	1	0.1	1	0.1	2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2	0.1
C67 Malignant neoplasm of bladder	1	0.1	20	1.3	21	1.3	2	0.1	4	0.3	6	0.4	27	1.7

	Non-Qatari				Qatari						Crond Total			
ICD 10 Primary Site		F		М	Тс	otal		F		м	т	otal	Gran	d Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
C71 Malignant neoplasm	2	0.1	20	1.0	22	2.0	2	0.2	0	0.5	11	0.7	12	2 7
of brain	2	0.1	30	1.9	32	2.0	3	0.2	8	0.5	11	0.7	43	2.7
C72 Malignant neoplasm														
of spinal cord, cranial	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1	0.0	0.0	1	0.1	1	0.1
nerves and other parts of								-				-		
C72 Malignant noonlasm														
of thyroid gland	40	2.6	27	1.7	67	4.3	17	1.1	2	0.1	19	1.2	86	5.5
C74 Malignant neoplasm													_	
of adrenal gland	1	0.1	1	0.1	2	0.1	0.0	0.0	3	0.2	3	0.2	5	0.3
C75 Malignant neoplasm														
of other endocrine glands	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
and related structures														
C76 Malignant neoplasm	1	0.1	4	0.2	-	0.2	1	0.1	2	0.1	2	0.2	0	0.5
of other and ill-defined	1	0.1	4	0.3	5	0.3	1	0.1	2	0.1	3	0.2	8	0.5
C77 Secondary and														
unspecified malignant	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
neoplasm of lymph nodes														
C80 Malignant neoplasm														
without specification of	3	0.2	7	0.4	10	0.6	1	0.1	1	0.1	2	0.1	12	0.8
site														
C81 Hodgkin lymphoma	9	0.6	16	1.0	25	1.6	3	0.2	8	0.5	11	0.7	36	2.3
C82 Follicular lymphoma	1	0.1	7	0.4	8	0.5	2	0.1	0	0.0	2	0.1	10	0.6
C83 Non-follicular	10	0.6	25	1.6	35	2.2	1	0.1	6	0.4	7	0.4	42	2.7
lymphoma							_		-		-			
C84 Mature I/NK-cell	1	0.1	2	0.1	3	0.2	0.0	0.0	3	0.2	3	0.2	6	0.4
C85. Other specified and														
unspecified types of non-	0.0	0.0	2	0.1	2	0.1	0.0	0.0	1	0.1	1	0.1	3	0.2
Hodgkin lymphoma				-		-				-		-		-
C86 Other specified types	1	0.1		0.0	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
of T/NK-cell lymphoma	-	0.1		0.0	Т	0.1	0.0	0.0	0.0	0.0	0.0	0.0	T	0.1
C88 Malignant														
immunoproliferative	3	0.2	4	0.3	7	0.4	1	0.1	1	0.1	2	0.1	9	0.6
B-cell lymphomas														
C90 Multiple myeloma														
and malignant plasma cell	3	0.2	17	1.1	20	1.3	0.0	0.0	1	0.1	1	0.1	21	1.3
neoplasms														
C91 Lymphoid leukemia	8	0.5	33	2.1	41	2.6	3	0.2	6	0.4	9	0.6	50	3.2
C92 Myeloid leukemia	6	0.4	31	2.0	37	2.4	2	0.1	6	0.4	8	0.5	45	2.9
C93 Monocytic leukemia	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
C94 Other leukemias of	1	0.1	1	0.1	2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2	0.1
specified cell type		-		-		-								-
C95 Leukemia of	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
C96 Other and unspecified														
malignant neoplasms of														
lymphoid, hematopoietic	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
and related tissue														
D01 Carcinoma in situ of														
other and unspecified	1	0.1	0.0	0.0	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
digestive organs														
middle ear and respiratory	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
system	0.0	0.0	1	0.1	Т	0.1	0.0	0.0	0.0	0.0	0.0	0.0	Т	0.1
,														

	Non-Qatari					Qatari						Grand Total		
ICD 10 Primary Site		F		м	Т	otal		F		м	т	otal	Gran	u TOLAI
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
D03 Melanoma in situ	0.0	0.0	1	0.1	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
D04 Carcinoma in situ of skin	1	0.1	0.0	0.0	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
D05 Carcinoma in situ of breast	24	1.5	0.0	0.0	24	1.5	1	0.1	0.0	0.0	1	0.1	25	1.6
D06 Carcinoma in situ of cervix uteri	10	0.6	1	0.1	11	0.7	7	0.4	0.0	0.0	7	0.4	18	1.1
D09 Carcinoma in situ of other and unspecified sites	0.0	0.0	14	0.9	14	0.9	1	0.1	5	0.3	6	0.4	20	1.3
D33 Benign neoplasm of brain and other parts of central nervous system	0.0	0.0	2	0.1	2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2	0.1
D43 Neoplasm of uncertain behavior of brain and central nervous system	1	0.1	0.0	0.0	1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1	0.1
D45 Polycythemia vera	2	0.1	16	1.0	18	1.1	0.0	0.0	4	0.3	4	0.3	22	1.4
D46 Myelodysplastic syndromes	1	0.1	2	0.1	3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	3	0.2
D47 Other neoplasms of uncertain behavior of lymphoid, hematopoietic and related tissue	0.0	0.0	5	0.3	5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	5	0.3

Table 7: Comprehensive table of cancers across all nationalities and gender

#### MOST COMMON CANCER IN MALES

The most common cancer in males was colorectal with 11.27% of the registered cases, followed by prostate with 8.97%.

ICD 10 codes	Primary Site	N	%
C18-C21 / D01	Colorectal	103	11.27
C61 /D07.5	Prostate	82	8.97
C91-C95	Leukemia	79	8.64
C44 / D04	Non-Melanoma skin cancer	72	7.88
C82-C85, C96	Non-Hodgkin Lymphoma	47	5.14
C67 / D09.0	Bladder	43	4.70
C22 / D01.5	Liver and intrahepatic bile ducts	42	4.60
C33-C34 / D02.1-D02.2	Trachea, bronchus and lung	40	4.38
C70-C72	Brain & CNS	38	4.16
C64-C66	Kidney	38	4.16

Table 8: Most common cancers in males of all nationalities

#### MOST COMMON CANCER IN FEMALES

Breast was the most common cancer with 39.72% of the registered cases in females. Thyroid was the second most common with 8.74%.

ICD 10 codes	Primary Site	N	%
C50 / D05	Breast	259	39.72
C73 /D09.3	Thyroid gland	57	8.74
C18-C21 / D01	Colorectal	50	7.67
C54-C55 / D07.0	Uterus	47	7.21
C44 / D04	Non-Melanoma skin cancer	30	4.60
C56	Ovary	27	4.14
C53 / D06	Cervix uteri	26	3.99
C91-C95	Leukemia	20	3.07
C82-C85, C96	Non-Hodgkin Lymphoma	15	2.30
C16 / D00.2	Stomach	13	1.99

Table 9: Most common cancers in females of all nationalities

#### DISTRIBUTION BY NATIONALITY

When distributed according to nationality, 334 (21%) new cases of cancer were Qataris and 1232(79%) new cases were Non-Qataris.



Figure 2: Cancer incidence distribution by nationality

#### DISTRIBUTION BY GENDER

Across all nationalities, new malignant cancer cases among males were found to be 914 (58%) cases of total cancer cases, while females accounted for 652(42%) new cases.



Figure 3: Cancer incidence distribution by gender

#### AGE STANDARDIZED INCIDENCE RATE ASIR

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



Figure 4: Age Standardized Incidence Rate ASIR for all cancers

# CANCER INCIDENCE IN QATARIS



#### CANCER INCIDENCE AMONGST QATARIS

A total of 334 cancer cases were registered amongst Qataris. The majority of them were reported as single primary. Only one case was reported with multiple primaries.

#### DISTRIBUTION BY GENDER

During 2016, 194 (58%) new cases were diagnosed in females, while 140 (42%) new cases were diagnosed in males.



Figure 5: Distribution of cancer incidence by gender among Qataris

#### MOST COMMON CANCERS ACROSS ALL GENDERS

In the Qatari population, the top ten cancers accounted for 227 (68%) among cases newly diagnosed with cancer among Qataris during 2016. On top of which is the breast (20.66%) followed by colorectal (11.98%)

ICD 10 codes	Primary Site	N	%
C50 / D05	Breast	69	20.66
C18-C21 / D01	Colorectal	40	11.98
C73 /D09.3	Thyroid gland	19	5.69
C61/D07.5	Prostate	17	5.09
C91-C95	Leukemia	17	5.09
C54-C55 / D07.0	Uterus	16	4.79
C82-C85, C96	Non-Hodgkin Lymphoma	13	3.89
C33-C34 / D02.1-D02.2	Trachea, bronchus and lung	12	3.59
C22 / D01.5	Liver and intrahepatic bile ducts	12	3.59
C53 / D06	Cervix uteri	12	3.59

Table 10: Most common cancers across all genders of Qataris, 2016

#### MOST COMMON CANCERS AMONGST MALES

Colorectal and prostate cancer accounted for 17 cases each (12.14%) and were the most common amongst Qatari males. Leukemia was the third most common cancer with 12 (8.57%) new cases.

ICD 10 codes	Primary Site	Ν	%
C18-C21 / D01	Colorectal	17	12.14
C61 /D07.5	Prostate	17	12.14
C91-C95	Leukemia	12	8.57
C82-C85, C96	Non-Hodgkin Lymphoma	10	7.14
C67 / D09.0	Bladder	9	6.43
C33-C34 / D02.1-D02.2	Trachea, bronchus and lung	8	5.71
C70-C72	Brain & CNS	8	5.71
C81	Hodgkin lymphoma	8	5.71
C22 / D01.5	Liver and intrahepatic bile ducts	6	4.29
C64-C66	Kidney	4	2.86

Table 11: Most common cancers among male Qataris

#### MOST COMMON CANCERS AMONGST FEMALES

The most common cancer amongst female Qataris was breast with 68 (35.05%) new cases. The second most common was colorectal with 23 (11.86%) new cases.

ICD 10 codes	Primary Site	Ν	%
C50 / D05	Breast	68	35.05
C18-C21 / D01	Colorectal	23	11.86
C73 /D09.3	Thyroid gland	17	8.76
C54-C55 / D07.0	Uterus	16	8.25
C53 / D06	Cervix uteri	12	6.19
C56	Ovary	10	5.15
C22 / D01.5	Liver and intrahepatic bile ducts	6	3.09
C91-C95	Leukemia	5	2.58
C70-C72	Brain & CNS	4	2.06
C33-C34 / D02.1-D02.2	Trachea, bronchus and lung	4	2.06

Table 12: Most common cancers among female Qataris

#### DISTRIBUTION BY AGE



#### Figure 6: Cancer distribution by age groups amongst Qataris

Age-Group		Лаle	Female		Both Genders	
( 5 year)	N	ASIR	N	ASIR	Ν	ASIR
0-4	5	24.6	4	20.7	9	22.7
5-9	4	20.7	1	5.3	5	13.1
10-14	1	6.1	1	6.3	2	6.2
15-19	3	20.9	1	7.2	4	14.2
20-24	3	21.9	5	38.4	8	29.9
25-29	11	93.8	3	25.0	14	59.0
30-34	3	30.7	12	110.5	15	72.7
35-39	5	61.7	6	64.3	11	63.1
40-44	5	71.5	12	152.9	17	114.5
45-49	13	205.9	16	226.4	29	216.7
50-54	11	210.5	25	403.0	36	315.0
55-59	11	262.2	30	582.8	41	438.8
60-64	14	456.6	24	691.2	38	581.2
65-69	17	990.1	30	1520.5	47	1273.7
70-74	13	1019.6	11	693.6	24	838.9
75-79	8	788.2	4	364.0	12	567.6
80+	13	1677.4	9	1015.8	22	1324.5
Total "N"	140		194		334	
ASR / 100000	169		201		186	
Crude Incidence / 100000	96.9		130.7		114	
Cumulative Risk of Incidence [0-74]	16		20		18	

Table 13: Summary of cancer burden in Qataris

#### AGE STANDARDISED INCIDENCE RATE BY GENDER



Figure 7: Age Standardized Incidence Rate (ASIR) by gender in Qataris

# CANCER INCIDENCE IN NON-QATARIS


# CANCER INCIDENCE AMONGST NON-QATARIS

A total of 1232 newly diagnosed cancers were reported among the Non-Qatari population. The majority of these cases were reported as single primary. Fourteen 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 2016, 774 (63%) cases were newly diagnosed in males, while 458 (37%) new cases were diagnosed in females.



Figure 8: Distribution of cancer incidence by gender among Non-Qataris

#### MOST COMMON CANCERS ACROSS ALL GENDERS

In the Non-Qatari population newly diagnosed with cancer during 2016, the top ten cancers accounted for a total of 791 (64%) cases. Breast was the most common cancer with 197 (15.99%) new cases, followed by colorectal with 113 (9.17%) new cases.

ICD 10 codes	Primary Site	N	%
C50 / D05	Breast	197	15.99
C18-C21 / D01	Colorectal	113	9.17
C44 / D04	Non-Melanoma skin cancer	99	8.04
C91-C95	Leukemia	82	6.66
C73 / D09.3	Thyroid gland	67	5.44
C61 / D07.5	Prostate	65	5.28
C82-C85, C96	Non-Hodgkin Lymphoma	49	3.98
C64-C66, C68	Kidney	41	3.33
C22 / D01.5	Liver and intrahepatic bile ducts	40	3.25
C33-C34 / D02.1-D02.2	Trachea, bronchus and lung	38	3.08

Table 14: Most common cancers across all genders of Non-Qataris

### MOST COMMON CANCERS AMONGST MALES

Colorectal cancer accounted for 86 (11.11%) of the new cases and was the most common amongst Non-Qatari males, followed by non-melanoma skin cancer with 69 (8.9%) new cases.

ICD 10 codes	Primary Site	N	%
C18-C21 / D01	Colorectal	86	11.11
C44 / D04	Non-Melanoma skin cancer	69	8.91
C91-C95	Leukemia	67	8.66
C61 /D07.5	Prostate	65	8.40
C82-C85, C96	Non-Hodgkin Lymphoma	37	4.78
C22 / D01.5	Liver and intrahepatic bile ducts	36	4.65
C64-C66	Kidney	34	4.39
C67 / D09.0	Bladder	34	4.39
C33-C34 / D02.1-D02.2	Trachea, bronchus and lung	32	4.13
C70-C72	Brain & CNS	30	3.88

Table 15: Most common cancers among male Non-Qataris

#### MOST COMMON CANCERS AMONGST FEMALES

The most common cancer among Non-Qatari females was Breast with 191 (41.7%) new cases. The second most common was thyroid gland with 40 (8.73%) new cases.

ICD 10 codes	Primary Site	N	%
C50 / D05	Breast	191	41.70
C73 /D09.3	Thyroid gland	40	8.73
C54-C55 / D07.0	Uterus	31	6.77
C44 / D04	Non-Melanoma skin cancer	30	6.55
C18-C21 / D01	Colorectal	27	5.90
C56	Ovary	17	3.71
C91-C95	Leukemia	15	3.28
C53 / D06	Cervix uteri	14	3.06
C82-C85, C96	Non-Hodgkin Lymphoma	12	2.62
C16 / D00.2	Stomach	10	2.18

Table 16: Most common cancers among female Non-Qataris

# DISTRIBUTION BY AGE



Figure 9: Cancer distribution by age groups amongst Non-Qataris

Age-Group	Male		Female		Both Genders	
( 5 year)	N	ASIR	N	ASIR	Ν	ASIR
0-4	8	15.9	4	8.3	12	12.2
5-9	6	13.8	5	12.0	11	12.9
10-14	2	6.2	1	3.2	3	4.7
15-19	5	12.4	3	14.6	8	13.1
20-24	13	6.0	3	9.5	16	6.5
25-29	36	9.9	19	25.1	55	12.5
30-34	59	17.4	59	74.5	118	28.2
35-39	89	35.1	58	92.6	147	46.5
40-44	80	42.0	64	153.2	144	61.9
45-49	91	68.3	68	261.2	159	99.9
50-54	90	110.6	55	344.8	145	149.0
55-59	99	190.8	43	460.9	142	232.0
60-64	87	409.5	32	647.5	119	454.4
65-69	59	689.1	24	1019.1	83	760.3
70-74	33	1174.0	10	935.5	43	1108.2
75-79	13	1064.7	5	775.2	18	964.6
80+	4	435.3	5	679.3	9	543.8
Total "N"	774		458		1232	
ASR / 100000	115		18	31	12	26
Crude Incidence / 100000	42.3		92	92.8		3
Cumulative Risk of Incidence [0-74]	13		1	8	1	.4

Table 17: Summary of cancer burden in Non-Qataris

AGE STANDARDISED INCIDENCE RATE BY GENDER



Figure 10: Age Standardized Incidence Rate (ASIR) by gender in Non-Qataris

# Trends of Cancer 2010-2016



# TRENDS OF CANCER 2010-2016

# CRUDE RATE AND AGE STANDARDIZED RATE

Year of Diagnosis	Ν	Crude Rate per 100 000	ASR per 100 000	ASR World per 100 000
2010	891	55	173	355.6
2011	1120	64.6	217	379.9
2012	1167	63.7	201	392.7
2013	1150	57.4	188	385.5
2014	1418	66.3	224	378.4
2015	1455	59.6	150	381.9
2016	1566	59.8	135	382.1

Table 18: Trend in crude rates and Age Standardized Rate (ASR) of all nationalities



Figure 11: Trend in Age Standardized Rate (ASR) of all nationalities





Figure 12: Trend of cancer incidence, number of cases, of all nationalities



TREND OF INCIDENCE BY GENDER 2010-2016

Figure 13: Trend of number of cases, by gender of all nationalities

# TRENDS OF CANCER 2010-2016 AMONGST QATARIS

### CRUDE RATE AND AGE STANDARDIZED RATE

Vear of		World		
Diagnosis	N	Crude Incidence Rate / 100 000	ASR / 100 000	ASR / 100 000
2010	214	86.7	176	355.6
2011	284	112.5	225	379.9
2012	230	88.5	177	392.7
2013	253	94.4	169	385.5
2014	315	114.4	220	378.4
2015	273	96.6	162	381.9
2016	334	114	186	382.1

Table 19: Trend in crude rates and Age Standardized Rate (ASR) of Qataris



Figure 14: Trend in Age Standardized Rate (ASR) of Qataris

# TREND OF INCIDENCE BY GENDER 2010-2016



Figure 15: Trend of number of cases, by gender of Qataris

# INTERNATIONAL PERSPECTIVE

Reference to the most recent available cancer data estimates, that is Globocan 2018, the following comparisons help position the cancer burden in the State of Qatar compared to international and regional countries

#### CRUDE RATE

Within the Gulf region and the overall of EMRO countries, and based on the estimates of Globocan-2018, Qatar data of 2016 shows low crude rate



Figure 16: Crude rate of incidence in Qatar 2016 compared to regional countries

#### CUMULATIVE RISK OF INCIDENCE [0-74]

Based on the estimates of Globocan -2018 and using the QNCR data for Qatar 2016, there is a lower risk of getting cancer among Qataris during the age life of 0-74 years old, compared to international countries



Figure 17: cumulative risk of incidence in Qatar 2016 compared to international countries

#### AGE STANDARDIZED RATE ASR -WHO REGIONS



Figure 18: Age Standardized Rate (ASR) compared to WHO regions

# PEDIATRIC CANCER INCIDENCE



# PEDIATRIC CANCER INCIDENCE

Within the age range of 0-14 years, there were 42 cases newly diagnosed with cancer during 2016.

#### DISTRIBUTION BY NATIONALITY

When distributed according to nationality, 16 (38%) new cases were Qataris, and 26(62%) new cases were Non-Qataris.



#### Figure 19: Distribution by nationality of Pediatric cancer

#### DISTRIBUTION BY GENDER

Across all nationalities, gender distribution shows 26(62%) new cases were found in males and 16 (38%) new cases in females.



Figure 20: Distribution by gender of Pediatric cancer

# MOST COMMON PEDIATRIC CANCERS

The most common cancer amongst pediatrics was Leukemia with 18 (42.86%) new cases. The second most common was Brain & CNS with five (11.90%) new cases.

ICD 10 codes	Primary Site	N	%
C91-C95	Leukemia	18	42.86
C70-C72	Brain & CNS	5	11.90
C49	Other connective and soft tissue	4	9.52
C74	Adrenal gland	4	9.52
C81	Hodgkin lymphoma	2	4.76
C82-C85, C96	Non-Hodgkin Lymphoma	2	4.76
C22	Liver and intrahepatic bile ducts	2	4.76
D43	Neoplasm of uncertain behavior of brain and central		
	nervous system	1	2.38
C18-C21	Colorectal	1	2.38
C05	Palate	1	2.38

 Table 20: Most common cancers among pediatrics of all nationalities

# CANCER DEATHS



# CANCER DEATH - QATARIS

During the year 2016, there were 165 deaths amongst Qataris cancer patients.

Amongst Qatari population, the Age Standardized Rate ASR for death was 126 per 100 000, while the cumulative risk of death within the age range of 0-74 years old was 5.6

Age-Group	Qataris		
( 5 year)	N	ASIR	
0-4	0	0.0	
5-9	1	2.6	
10-14	0	0.0	
15-19	0	0.0	
20-24	0	0.0	
25-29	1	4.2	
30-34	0	0.0	
35-39	2	11.5	
40-44	2	13.5	
45-49	0	0.0	
50-54	6	52.5	
55-59	8	85.6	
60-64	4	61.2	
65-69	8	216.8	
70-74	20	699.1	
75-79	58	2743.6	
80+	55	3311.3	
Total "N"	165		
ASR / 100000	126		
Crude Mortality / 100000	56.3		
Cumulative Risk of Mortality [0-74]	5.6		

Table 21: Death summary amongst Qataris cancer patients





#### MOST COMMON CANCER DEATHS - QATARIS

Among Qataris, most of the deaths that occurred during 2016 were lung cases with 13.94% of all deaths amongst Qataris during 2016, followed by liver with 10.91%

	ICD 10 – Primary Site	N	%
C33-C34 / D02.1-D02.2	Trachea, bronchus and lung	23	13.94
C22 / D01.5	Liver and intrahepatic bile ducts	18	10.91
C18-C21 / D01	Colorectal	14	8.48
C15 /D00.1	Esophagus	12	7.27
C61 /D07.5	Prostate	12	7.27
C16 / D00.2	Stomach	10	6.06
C82-C85, C96	Non-Hodgkin Lymphoma	9	5.45
C70-C72	Brain & CNS	8	4.85
C50 / D05	Breast	8	4.85
C91-C95	Leukemia	7	4.24

Table 22: Most common cancer deaths among Qataris

#### MOST COMMON CANCER DEATHS AMONGST PEDIATRIC

Amongst pediatric population of the age range 0-14 years old, 1 case died during the year 2016, suffering from bone cancer.

#### MORTALITY / INCIDENCE RATIO

The healthcare system is actively working on improving the reporting of causes of death, so at present it is difficult to generate mortality to incidence ratio. However, it is possible to calculate the ratio of adjusted age in death among Qatari cancer patients to the adjusted age of incidence.



Figure 22: Distribution of Age Standardized Incidence Rate (ASIR) to Age Standardized Mortality Rate (ASMR) in Qataris

# Special Report on Most Common Cancers



# BREAST

# ICD 10 CODES

ICD 10 Code	Description
C50	Malignant neoplasm of breast
D05	Carcinoma in situ of breast

Table 23: ICD 10 codes for breast neoplasm in QNCR

#### **KEY FACTS**

In 2016, there were 266 newly diagnosed cases of breast cancer, 7 of which were males (one case of Qatari). There were 241 malignant cases versus 25 cases in situ.

Cancer Behavior		Non-Qa	atari	Qatari			Grand
	F	М	Total	F	М	Total	Total
Malignant	167	6	173	67	1	68	241
In Situ	24	0	24	1	0	1	25
Grand Total	191	6	197	68	1	69	266

Table 24: Breast cancer distribution by behavior, gender and nationality

The Age Standardized Rate (ASR) was found to be 73 per 100 000 of female population at risk. The crude incidence rate found to be 40 per 100 000.

Age-Group	Female		
( 5 year)	N	ASIR	
20-24	1	2.2	
25-29	1	1.1	
30-34	26	28.9	
35-39	27	37.5	
40-44	37	74.6	
45-49	39	117.8	
50-54	44	198.6	
55-59	25	172.7	
60-64	22	261.5	
65-69	26	600.7	
70-74	7	263.7	
75-79	0	0.0	
80+	4	246.6	
Total "N"	259		
ASR / 100000	73		
Crude Incidence / 100000	40		
Cumulative Risk of Incidence [0-74]	8.4		

Table 25: Summary of female breast cancer burden

# DEMOGRAPHICS

Peak of incidence was in the age group of 50-54, where the youngest age was 23 years old and the average age was 49.6 years old.



Figure 23: Breast cancer distribution by age groups

Average of Age	Min (years)	Max (years)
49.6	23	88

#### PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 737 cases diagnosed with breast cancer. Of these cases, 192 (26%) have died and 595 (74%) are still alive.

# HISTOLOGY

Histology	%
Infiltrating duct carcinoma	77.99%
Intraductal carcinoma, noninfiltrating	8.11%
Infiltrating lobular carcinoma	4.25%
Mucinous adenocarcinoma	1.54%
Infiltrating duct carcinoma	0.77%

Table 26: ICDO-3 Histology distribution of female breast cancer

# STAGING

Almost 87% of the total cases reported in 2016 did not have a known cTNM stage. Of those cases that did report a cTNM stage, 23 were early stages I and II. [PLEASE SEE DISCLAIMER]



Figure 24: cTNM group staging for female breast cancer

#### TREATMENT

In 2016, only 168 (69%) of total cases were reported with treatment information. The following table shows the treatment types in no particular order. [PLEASE SEE DISCLAIMER]

Treatment Modality	%
Surgery /Chemotherapy / Hematologic Transplant	13.90
No Treatment	13.90
Surgery / Hematologic Transplant	11.20
Surgery /Chemotherapy / Hormone / Radiotherapy / Hematologic Transplant	10.42
Chemotherapy	9.65
Surgery /Chemotherapy / Radiotherapy / Hematologic Transplant	8.88
Surgery / Hormone / Radiotherapy / Hematologic Transplant	7.72
Surgery / Radiotherapy / Hematologic Transplant	5.79
Chemotherapy / Hormone	3.47
Surgery / Hormone / Hematologic Transplant	3.09
Hormone	2.32
Chemotherapy / Radiotherapy	1.93
Surgery /Chemotherapy / Hormone / Hematologic Transplant	1.93
Surgery /Hematological Transplant	0.77

Treatment Modality	%
Surgery /Chemotherapy / Radiotherapy	0.77
Radiotherapy	0.77
Surgery /Chemotherapy / Radiotherapy /Immunotherapy / Hematologic	
Transplant	0.77
Surgery /Chemotherapy	0.77
Surgery / Hormone	0.39
Chemotherapy / Hormone / Radiotherapy/ Hematologic Transplant	0.39
Surgery / Hormone / Radiotherapy /Immunotherapy / Hematologic Transplant	0.39
Surgery	0.39
Chemotherapy / Hormone /Immunotherapy	0.39

Table 27: Treatment modalities for breast cancer

# SURVIVAL DATA 2013-2016

Survival from breast cancer during the period 2013-2016 was relatively high at 89.07 with a confidence interval (95 CI) of 80.64-93.96.

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

# COLORECTAL

# ICD 10 CODES

ICD 10 Code	Description
C18	Malignant neoplasm of colon
C19	Malignant neoplasm of rectosigmoid junction
C20	Malignant neoplasm of rectum
C21	Malignant neoplasm of anus and anal canal
D010	Carcinoma in situ of colon
D011	Carcinoma in situ of rectosigmoid junction
D012	Carcinoma in situ of rectum
D013	Carcinoma in situ of anus and anal canal

 Table 28: ICD 10 codes for colorectal neoplasm in QNCR

# **KEY FACTS**

In 2016, there were 153 newly diagnosed cases of malignant colorectal cancer, and of these 103 (67) cases were in males, and 50 (33) cases were in females. The crude incidence was found to be 5.8 per 100 000 and the Age Standardized Rate ASR to be 14 per 100 000.

	Non-Qatari			Qatari			Grand
Cancer Behavior	F	М	Total	F	М	Total	Total
Malignant	27	86	113	23	17	40	153
Grand Total	27	86	113	23	17	40	153

Table 29: Colorectal cancer distribution by behavior, gender and nationality

Age-Group		/lale	Female		Both Genders	
( 5 year)	N	ASIR	N	ASIR	N	ASIR
0-4	0.0	0.0	0.0	0.0	0.0	0.0
5-9	0.0	0.0	0.0	0.0	0.0	0.0
10-14	1 *	2.0	0.0	0.0	1	1.0
15-19	0.0	0.0	0.0	0.0	0.0	0.0
20-24	1	0.4	0.0	0.0	1	0.4
25-29	2	0.5	1	1.1	3	0.6
30-34	5	1.4	5	5.6	10	2.3
35-39	10	3.8	6	8.3	16	4.8
40-44	9	4.6	3	6.0	12	4.9
45-49	15	10.8	6	18.1	21	12.2
50-54	10	11.5	6	27.1	16	14.7
55-59	17	30.3	10	69.1	27	38.3
60-64	13	53.5	6	71.3	19	58.1

Age-Group		∕lale	Female		Both Genders	
( 5 year)	N	ASIR	N	ASIR	N	ASIR
65-69	12	116.7	2	46.2	14	95.8
70-74	4	97.9	2	75.3	6	89.0
75-79	1	44.7	1	57.3	2	50.3
80+	3	177.1	2	123.3	5	150.8
Total "N"	103		50		153	
ASR / 100000	15		16		14	
Crude Incidence / 100000	5.2		7.8		5.8	
Cumulative Risk of Incidence [0-74]	1.7		1.7 1.6		1.6	

Table 30: Summary of colorectal cancer burden

\*: One case of "C18.1" Appendix

# DEMOGRAPHICS

Amongst males and females, the peak age group of colorectal cancer incidence was 55-59. The youngest age was 13 years old (One case of "C18.1" Appendix) and the average age was 52 years old.



Figure 25: Colorectal cancer distribution by age groups and gender

Average of Age	Min (years)	Max (years)
52	13	86

#### PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 420 cases diagnosed with colorectal cancer. Of these cases, 172 (41) have died and 248 (59) are still alive.

# HISTOLOGY

Histology	%
Adenocarcinoma, NOS	73
Neuroendocrine carcinoma, NOS	7.19
Mucinous adenocarcinoma	5.88
Carcinoid tumor, NOS	4.58
Signet ring cell adenocarcinoma	1.69
Others	6.8

#### Table 31: ICDO-3 Histology distribution for colorectal cancer

#### STAGING

Of the reported cases, 22 had cTNM data, out of which, more than 57 were at late stage (III and IV).



Figure 26: cTNM distribution for colorectal cancer

#### TREATMENT

In 2016, only 120 (78) of total cases were reported with treatment information. The following table shows the treatment types in no particular order. [PLEASE SEE DISCLAIMER]

Treatment Modality	%
Surgery / Hematologic Transplant	50.83
Surgery /Chemotherapy / Hematologic Transplant	17.50
Chemotherapy / Radiotherapy	9.17
Chemotherapy	8.33
Surgery /Chemotherapy / Radiotherapy / Hematologic	
Transplant	6.67
Surgery /Chemotherapy	2.50
Surgery	2.50
Surgery /Hematological Transplant	1.67
Surgery /Chemotherapy / Radiotherapy /Immunotherapy /	
Hematologic Transplant	0.83

Table 32: Treatment modalities for colorectal cancer

# SURVIVAL DATA 2013-2016

Survival from colorectal cancer during the period 2013-2016 was relatively high at 69.91 with a confidence interval (95 CI) of 56.14-80.10 .Survival calculations do not take into consideration different variables such as cTNM stage or gender.

# LEUKEMIA

# ICD 10 CODES

ICD 10 Code	Description
C91	Lymphoid leukemia
C92	Myeloid leukemia
C93	Monocytic leukemia
C94	Other leukemias of specified cell type
C95	Leukemia of unspecified cell type

#### Table 33: ICD 10 codes for leukemia in QNCR

#### **KEY FACTS**

During the year 2016, 99 cases were reported with Leukemia, 20 cases (20) amongst females, and 79 (80) amongst males. There was a total of 82 cases (82) were in non-Qatari and 17 cases (18) amongst Qataris.

Cancer Behavior		Non-Qatari			Qatari			
	F	М	Total	F	М	Total	Total	
Malignant	15	67	82	5	12	17	99	
Grand Total	15	67	82	5	12	17	99	

#### Table 34: Distribution of leukemia by gender and nationality

Age-Group		∕lale	Ferr	nale	ale Both Genders	
( 5 year)	N	ASIR	N	ASIR	N	ASIR
0-4	5	7.1	4	5.9	9	6.5
5-9	5	7.9	3	4.9	8	6.5
10-14	0	0.0	1	2.1	1	1.0
15-19	4	7.3	1	2.9	5	5.6
20-24	4	1.7	0	0.0	4	1.5
25-29	7	1.9	1	1.1	8	1.7
30-34	9	2.6	1	1.1	10	2.3
35-39	5	1.9	0	0.0	5	1.5
40-44	7	3.5	1	2.0	8	3.2
45-49	15	10.8	2	6.0	17	9.8
50-54	5	5.8	1	4.5	6	5.5
55-59	3	5.3	1	6.9	4	5.7
60-64	6	24.7	3	35.7	9	27.5
65-69	1	9.7	0	0.0	1	6.8
70-74	0	0.0	1	37.7	1	14.8
75-79	2	89.4	0	0.0	2	50.3
80+	1	59.0	0	0.0	1	30.2

Age-Group		Лаle	Female		Both Genders	
( 5 year)	N	ASIR	N	ASIR	N	ASIR
Total "N"	79		20		99	
ASR / 100000	7.5		4.8		6	.4
Crude Incidence / 100000	4		3.11		3.8	
Cumulative Risk of Incidence [0-74]		0.5	0.6		0	.5

Table 35: Summary of leukemia burden

#### DEMOGRAPHICS

Amongst males, the peak age group of leukemia incidence was 45-49, while it was 0-4 amongst females. The youngest age was 1 year old and the average age was 36 years old.



Figure 27: Distribution of leukemia by age groups

Average of Age	Min (years)	Max (years)
36	1	81

#### PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 186 newly diagnosed cases with leukemia. Of these cases, 66 (36) have died and 120 (64) are still alive.

# HISTOLOGY

ICDO-3 Histology	%
Lymphoid leukaemias	30.30
Acute myeloid leukemia	25.25
Chronic Myeloid leukaemias	18.18
Chronic Lymphoid leukaemias	16.16
Acute myeloid leukemia with recurrent genetic abnormalities	5.05
Acute Lymphoid leukaemias	4.04
Acute leukemia	1.01

Table 36: ICDO-3 Histology distribution for leukemia

# SURVIVAL DATA 2013-2016

Survival from leukemia during the period 2013-2016 was 66.67 (40.35-83.43).

# THYROID GLAND

# ICD 10 CODES

ICD 10 Code	Description					
C73	Malignant neoplasm of thyroid gland					
D093	Carcinoma in situ of thyroid and other endocrine glands					

Table 37: ICD 10 codes for thyroid neoplasm in QNCR

#### **KEY FACTS**

In 2016, 86 cases were newly diagnosed with malignant thyroid cancer, 19(22) of which were Qataris and 67(77) cases Non-Qataris. Of the total cases 57 (66) were amongst female, while 29(34) were in males. The Age Standardized Rate ASR was found to be 3.5 (10 for females) per 100 000 of population at risk.

Cancer Behavior		Non-Qa	atari		Grand		
	F	М	Total	F	М	Total	Total
Malignant	40	27	67	17	2	19	86
Grand Total	40	27	67	17	2	19	86

#### Table 38: Distribution of thyroid cancer by gender and nationality

Age-Group		∕lale	Female		Both Genders	
( 5 year)	Ν	ASIR	N	ASIR	N	ASIR
0-4	0	0.00	0	0.00	0	0.00
5-9	0	0.00	0	0.00	0	0.00
10-14	0	0.00	0	0.00	0	0.00
15-19	0	0.00	0	0.00	0	0.00
20-24	0	0.00	1	2.24	1	0.36
25-29	1	0.27	7	7.97	8	1.73
30-34	7	2.01	13	14.44	20	4.56
35-39	9	3.44	11	15.29	20	5.99
40-44	4	2.02	9	18.14	13	5.26
45-49	3	2.15	5	15.11	8	4.63
50-54	3	3.46	3	13.54	6	5.52
55-59	1	1.78	1	6.91	2	2.83
60-64	0	0.00	3	35.65	3	9.17
65-69	0	0.00	4	92.42	4	27.38
70-74	0	0.00	0	0.00	0	0.00
75-79	1	44.72	0	0.00	1	25.13
80+	0	0.00	0	0.00	0	0.00
Total "N"	29		57		86	
ASR / 100000	1.6		10		3.5	
Crude Incidence / 100000		1.5	8.	.9	3.3	
Cumulative Risk of Incidence [0-74]	0.1		1.1		0.3	

#### Table 39: Summary of thyroid cancer burden

### DEMOGRAPHICS

Amongst females, the peak age group of Thyroid cancer incidence was 30-34, while it was 35-39 amongst males. The youngest age was 22 years old and the average age was 40 years old.



Figure 28: Distribution of thyroid cancer by age groups

Average of Age	Min (years)	Max (years)
40	22	78

#### PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 204 cases diagnosed with thyroid cancer. Of these cases, 25 (12) have died and 179 (88) are still alive.

# HISTOLOGY

Histology	%
Papillary	83.72
Papillary / follicular variant	5.81
Medullary	5.81
Carcinoma, Others	2.33
Follicular	2.33

Table 40 : ICDO-3 Histology distribution for thyroid cancer

# STAGING

Almost 89 of the total cases reported in 2016 did not have a known cTNM stage. Of those cases that did report a cTNM stage, more than 66 were early stage I and II. [PLEASE SEE DISCLAIMER]



SURVIVAL DATA 2013-2016

Survival from malignant thyroid cancer during the period 2013-2016 was very high 90.24 (66.32-97.47)

# PROSTATE

# ICD 10 CODES

ICD 10 Code	Description			
C61	Malignant neoplasm of prostate			
D075	Carcinoma in situ of prostate			

Table 41: ICD 10 codes for prostate neoplasm in QNCR

#### KEY FACTS

Cancer Behavior	Non-Qatari	Qatari	Grand Total
Malignant	65	17	82
Grand Total	65	17	82

Table 42: Distribution of prostate cancer by gender and nationality

In 2016, there were 82 newly diagnosed cases of prostate cancer, 17 (21) of which were Qataris and 65 (79) were Non-Qataris.

The cumulative risk, or the chance of a male getting prostate cancer between the ages of 0-74, is 2.6. Age Standardized Rate (ASR) was found to be 21 per 100 000 of population at risk.

Age-Group ( 5 year)	Male	
	N	ASIR
45-49	4	2.87
50-54	7	8.08
55-59	13	23.18
60-64	25	102.84
65-69	17	165.39
70-74	9	220.26
75-79	3	134.17
80+	4	236.13
Total "N"	82	
ASR / 100000	21	
Crude Incidence / 100000	4.1	
Cumulative Risk of Incidence [0-74]	2.6	

Table 43: Summary of prostate cancer burden
#### DEMOGRAPHICS

The peak of incidence of prostate cancer is in the age group 60-64. The youngest age was 46 years old and the average age was 63 years old.



Figure 30: Distribution of prostate cancer by age groups

Average of Age	Min (years)	Max (years)		
63	46	86		

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 182 cases diagnosed with prostate cancer. Of these cases, 64 (35) have died and 118 (65) are still alive.

## HISTOLOGY

Histology	%
Adenocarcinoma, NOS	72
Acinar adenocarcinoma	26
Others	2

Table 44: ICDO-3 Histology distribution for prostate cancer

#### STAGING

Almost 89 of the total cases reported in 2016 did not have a known cTNM stage. Of those cases that did report a cTNM stage, more than 77 were early stages I and II. [PLEASE SEE DISCLAIMER]



#### Figure 31: cTNM Distribution for prostate cancer

#### TREATMENT

In 2016, only 32 (33) of total cases were reported with treatment information. The following table shows the treatment types in no particular order. [PLEASE SEE DISCLAIMER]

Treatment Modality	%
Surgery / Hematologic Transplant	35.71
Hormone	14.29
Chemotherapy / Hormone	12.50
Radiotherapy	10.71
Hormone / Radiotherapy	8.93
Surgery / Hormone / Radiotherapy / Hematologic Transplant	7.14
Surgery / Radiotherapy / Hematologic Transplant	5.36
Surgery /Hematological Transplant	3.57
Chemotherapy	1.79

Table 45: Treatment modalities for prostate cancer

#### SURVIVAL DATA 2013-2016

Survival from prostate cancer during the period 2013-2016 was relatively high at 80.39 (59.14-91.33)

# NON-HODGKIN LYMPHOMA

## ICD 10 CODES

ICD 10 Code	Description
C82	Follicular lymphoma
C83	Non-follicular lymphoma
C84	Mature T/NK-cell lymphomas
C85	Other specified and unspecified types of non-Hodgkin lymphoma
	Other and unspecified malignant neoplasms of lymphoid, hematopoietic and
C96	related tissue

Table 46: ICD 10 codes for NHL neoplasm in QNCR

## **KEY FACTS**

Cancer Behavior		Non-Qa	itari	Qatari			Grand	
	F	М	Total	F	М	Total	Total	
Malignant	12	37	49	3	10	13	62	
Grand Total	12	37	49	3	10	13	62	

Table 47: Non-Hodgkin Lymphoma distribution by gender and nationality

In 2016, there were 62 newly diagnosed cases of malignant Non-Hodgkin Lymphoma, 13 (21) cases of which were Qataris and 49 (79) cases Non-Qataris.

The cumulative risk, or the chance of any person getting a Non-Hodgkin Lymphoma between the ages of 0-74, is 0.4. The Age Standardized Rate (ASR) was found to be 4.8 per 100 000 of population at risk.

Age-Group		Male		Female		Both Genders	
( 5 year)	N	ASIR	N	ASIR	Ν	ASIR	
0-4	1	1.41	0	0.00	1	0.72	
5-9	0	0.00	0	0.00	0	0.00	
10-14	1	2.04	0	0.00	1	1.04	
15-19	1	1.83	0	0.00	1	1.12	
20-24	2	0.87	0	0.00	2	0.73	
25-29	4	1.07	0	0.00	4	0.86	
30-34	3	0.86	0	0.00	3	0.68	
35-39	4	1.53	5	6.95	9	2.70	
40-44	8	4.05	4	8.06	12	4.85	
45-49	5	3.58	0	0.00	5	2.90	
50-54	5	5.77	2	9.03	7	6.44	
55-59	4	7.13	2	13.82	6	8.50	
60-64	3	12.34	1	11.88	4	12.22	
65-69	0	0.00	0	0.00	0	0.00	
70-74	3	73.42	0	0.00	3	44.50	

Age-Group ( 5 year)		Лаle	Female		Both Genders	
		ASIR	N	ASIR	N	ASIR
75-79	3	134.17	1	57.34	4	100.50
80+	0	0.00	0	0.00	0	0.00
Total "N"	47		15		62	
ASR / 100000	6		3.5		4.8	
Crude Incidence / 100000	2.4		2.3		2.4	
Cumulative Risk of Incidence [0-74]		0.6	0.2		0.4	

Table 48: Summary of Non-Hodgkin Lymphoma burden

#### DEMOGRAPHICS

Amongst males, peak of incidence of Non-Hodgkin Lymphoma was in the age group 40-44, and in females, it was in the age group 35-39. More than 53 of the cases were under the age group of 40-44. The youngest age was 4 years old and the average age was 79 years old.



#### Figure 32: Distribution of Non-Hodgkin Lymphoma by age groups

Average of Age	Min (years)	Max (years)
45	4	79

#### PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 201 cases diagnosed with Non-Hodgkin Lymphoma. Of these cases, 65 (32) have died and 136 (68) are still alive.

# HISTOLOGY

Histology	%
B-cell lymphoma	37.95
Malignant lymphoma, non-Hodgkin	32.51
Follicular lymphoma	7.25
T-cell lymphoma	5.57
Burkitt lymphoma	4.15
Mycosis fungoides	4.02
Anaplastic large cell lymphoma	2.85
lymphoblastic lymphoma	1.81
Langerhans cell	1.42
Mantle cell	0.91
lymphoma, lymphoplasmacytic	0.65
Composite Hodgkin and non-Hodgkin lymphoma	0.26
Neuroblastoma	0.26
Mixed germ cell	0.26
Ewing sarcoma	0.13

Table 49: ICDO-3 Histology distribution for Non-Hodgkin Lymphoma

## TREATMENT

In 2016, only 21(25) of total cases were reported with treatment information. The following table shows the treatment types in no particular order. [PLEASE SEE DISCLAIMER]

Treatment Modality	%
Chemotherapy	65.31
Chemotherapy / Radiotherapy	10.20
Surgery / Hematologic Transplant	10.20
Surgery /Chemotherapy / Hematologic Transplant	6.12
Radiotherapy	4.08
Surgery / Radiotherapy / Hematologic Transplant	2.04
Chemotherapy / Hormone	2.04

Table 50: Treatment modalities for Non-Hodgkin Lymphoma

#### SURVIVAL DATA 2013-2016

Survival from Non-Hodgkin Lymphoma during the period 2013-2016 was relatively high at 63.16 (37.90-80.44)

# LIVER AND INTRAHEPATIC BILE DUCTS

## ICD 10 CODES

ICD 10 Code	Description
C22	Malignant neoplasm of liver and intrahepatic bile ducts
D015	Carcinoma in situ of liver, gallbladder and bile ducts

Table 51: ICD 10 codes for liver neoplasm in QNCR

#### **KEY FACTS**

Cancer Behavior		Non-Qa	atari	Qatari			Grand	
	F	М	Total	F	М	Total	Total	
Malignant	4	36	40	6	6	12	52	
Grand Total	4	36	40	6	6	12	52	

Table 52: Distribution of liver cancer by gender and nationality

In 2016, 52 cases were newly diagnosed with liver cancer, 12(23) of which were Qataris and 40(77) Non-Qataris. The cumulative risk is 0.6, that relates to the chance of a person to get liver cancer during the age of 0-74. The Age Standardized Rate ASR was found to be 5.9 per 100 000 of population at risk.

Age-Group	Ν	∕lale	Fen	nale	Both G	enders
( 5 year)	Ν	ASIR	N	ASIR	Ν	ASIR
0-4	1	1.41	1	1.48	2	1.45
5-9	0	0.00	0	0.00	0	0.00
10-14	0	0.00	0	0.00	0	0.00
15-19	0	0.00	0	0.00	0	0.00
20-24	0	0.00	0	0.00	0	0.00
25-29	3	0.80	0	0.00	3	0.65
30-34	0	0.00	0	0.00	0	0.00
35-39	5	1.91	0	0.00	5	1.50
40-44	1	0.51	1	2.02	2	0.81
45-49	3	2.15	0	0.00	3	1.74
50-54	7	8.08	2	9.03	9	8.28
55-59	11	19.61	2	13.82	13	18.42
60-64	3	12.34	0	0.00	3	9.17
65-69	4	38.91	0	0.00	4	27.38
70-74	3	73.42	1	37.66	4	59.34
75-79	1	44.72	1	57.34	2	50.25
80+	0	0.00	2	123.30	2	60.31
Total "N"		42	1	.0	5	2
ASR / 100000		5.7	ļ	5	5	.9
Crude Incidence / 100000		2.12	1.	56	1.	98

Age-Group		Male Female		Both Genders		
( 5 year)	Ν	ASIR	N	ASIR	N	ASIR
Cumulative Risk of Incidence [0-74]		0.8	0	.3	0	.6

Table 53: Summary of liver cancer burden

#### DEMOGRAPHY

Across both genders, 71 of the cases were above the age of 55. The youngest age was 2 years old and the average age was 53 years old.



Figure 33: Distribution of liver cancer by age groups

Average of Age	Min (years)	Max (years)
53	2	85

## PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 174 cases diagnosed with liver cancer. Of these cases, 152 (871) have died and 22 (13) are still alive.

## HISTOLOGY

Histology	%
Hepatocellular carcinoma	73.08
Adenocarcinoma	7.69
Cholangiocarcinoma	7.69
Hepatoblastoma	3.85
Epithelioid hemangioendothelioma, malignant	1.92
Angiosarcoma	1.92
Mucinous adenocarcinoma	1.92
Hepatocellular carcinoma, clear cell type	1.92

Table 54: ICDO-3 Histology distribution for liver cancer

SURVIVAL DATA 2013-2016

Survival from liver cancer during the period 2013-2016 was relatively low 13.73 (3.91-29.62).

#### STAGING

Almost 86% of the total cases reported in 2016 did not have a known cTNM stage. Of those cases that did report a cTNM stage, more than 57% were late stages III and IV. [PLEASE SEE DISCLAIMER]



Figure 34: cTNM distribution for liver cancer

## TREATMENT

In 2016, only 29(55.8%) of total cases were reported with treatment information. The following table shows the treatment types in no particular order. [PLEASE SEE DISCLAIMER]

Treatment Modality	%
Chemotherapy	37.93
Surgery / Hematologic Transplant	20.69
Surgery /Chemotherapy / Hematologic Transplant	17.24
Radiotherapy	17.24
Surgery /Hematological Transplant	3.45
Chemotherapy /Immunotherapy	3.45

Table 55: Treatment modalities for liver cancer

# TRACHEA, BRONCHUS AND LUNG

## ICD 10 CODES

ICD 10 Code	Description
C33	Malignant neoplasm of trachea
C34	Malignant neoplasm of bronchus and lung
D02.1	Carcinoma in situ of trachea

Table 56: ICD 10 codes for lung neoplasm in QNCR

#### **KEY FACTS**

Cancer Behavior	Non-Qatari				Grand		
	F	М	Total	F	М	Total	Total
Malignant	6	32	38	4	8	12	50
Grand Total	6	32	38	4	8	12	50

Table 57: Distribution of lung cancer by gender and nationality

In 2016, 50 cases were newly diagnosed with lung cancer, 12(24) of which were Qataris and 38(76) Non-Qataris. The cumulative risk is 0.7, that relates to the chance of a person to get malignant Lung cancer during the age of 0-74. The Age Standardized Rate ASR was found to be 6.6 per 100 000 of population at risk.

Age-Group	Male		Female		Both Genders	
( 5 year)	Ν	ASIR	N	ASIR	N	ASIR
0-4	0	0.00	0	0.00	0	0.00
5-9	0	0.00	0	0.00	0	0.00
10-14	0	0.00	0	0.00	0	0.00
15-19	0	0.00	0	0.00	0	0.00
20-24	0	0.00	0	0.00	0	0.00
25-29	1	0.27	0	0.00	1	0.22
30-34	1	0.29	0	0.00	1	0.23
35-39	3	1.15	0	0.00	3	0.90
40-44	4	2.02	1	2.02	5	2.02
45-49	0	0.00	1	3.02	1	0.58
50-54	7	8.08	2	9.03	9	8.28
55-59	7	12.48	2	13.82	9	12.75
60-64	6	24.68	0	0.00	6	18.34
65-69	4	38.91	2	46.21	6	41.08
70-74	4	97.90	0	0.00	4	59.34
75-79	2	89.45	1	57.34	3	75.38
80+	1	59.03	1	61.65	2	60.31
Total "N"		40	1	0	5	0
ASR / 100000		7.8	4.	.6	6	.6

Age-Group		∕lale	Female		Both Genders	
( 5 year)	Ν	ASIR	N	ASIR	N	ASIR
Crude Incidence / 100000	2.04		1.56		1.9	
Cumulative Risk of Incidence [0-74]	0.9		0.4		0.7	

Table 58: Summary of lung cancer burden

#### DEMOGRAPHY

Across both genders, 78 of the cases were above the age of 50. The youngest age was 28 years old and the average age was 57 years old.



Figure 35: Distribution of lung cancer by age groups

Average of Age	Min (years)	Max (years)
57	28	90

#### PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 221 cases diagnosed with lung cancer. Of these cases, 181 (82) have died and 40 (18) are still alive.

## HISTOLOGY

Histology	%
Adenocarcinoma	32.00
Squamous cell carcinoma	12.00
Non-small cell carcinoma	12.00
Neuroendocrine carcinoma	6.00
Small cell carcinoma	6.00

Table 59: ICDO-3 Histology distribution for lung cancer

#### STAGING

Almost 86 of the total cases reported in 2016 did not have a known cTNM stage. Of those cases that did report a cTNM stage, 71were late stage IV. [PLEASE SEE DISCLAIMER]



Figure 36: cTNM Distribution for lung cancer

#### TREATMENT

In 2016, only 33 (66%) of total cases were reported with treatment information. The following table shows the treatment types in no particular order. [PLEASE SEE DISCLAIMER]

Treatment Modality	%
Chemotherapy	48.48
Chemotherapy / Radiotherapy	15.15
Surgery /Chemotherapy / Radiotherapy / Hematologic Transplant	12.12
Radiotherapy	9.09
Surgery / Hematologic Transplant	6.06
Surgery /Chemotherapy / Hematologic Transplant	6.06
Surgery	3.03

Table 60: Treatment modalities for lung cancer

SURVIVAL DATA 2013-2016

Survival from lung cancer during the period 2013-2016 was relatively low 24.24 (11.43-39.62).

# KIDNEY

## ICD 10 CODES

ICD 10 Code	Description
C64	Malignant neoplasm of kidney, except renal pelvis
C65	Malignant neoplasm of renal pelvis
C66	Malignant neoplasm of ureter

Table 61: ICD 10 codes for kidney neoplasm in QNCR

#### **KEY FACTS**

Cancer Behavior		Non-Qa	atari	Qatari			Grand
	F	М	Total	F	М	Total	Total
Malignant	7	34	41	4	4	8	49
Grand Total	7	34	41	4	4	8	49

 Table 62: Distribution of kidney cancer by gender and nationality

In 2016, 49 cases were newly diagnosed with kidney cancer, 8(16) of which were Qataris and 41(84) Non-Qataris. The cumulative risk is 0.7 that relates to the chance of a person to get kidney cancer during the age of 0-74. The Age Standardized Rate ASR was found to be 4.9 per 100 000 of population at risk.

Age-Group		Лаle	Female		Both Genders	
( 5 year)	N	ASIR	N	ASIR	N	ASIR
0-4	0	0.00	0	0.00	0	0.00
5-9	0	0.00	0	0.00	0	0.00
10-14	0	0.00	0	0.00	0	0.00
15-19	0	0.00	0	0.00	0	0.00
20-24	0	0.00	0	0.00	0	0.00
25-29	1	0.27	2	2.28	3	0.65
30-34	3	0.86	1	1.11	4	0.91
35-39	5	1.91	0	0.00	5	1.50
40-44	4	2.02	1	2.02	5	2.02
45-49	3	2.15	0	0.00	3	1.74
50-54	7	8.08	1	4.51	8	7.36
55-59	1	1.78	2	13.82	3	4.25
60-64	6	24.68	1	11.88	7	21.39
65-69	3	29.19	2	46.21	5	34.23
70-74	5	122.37	0	0.00	5	74.17
75-79	0	0.00	1	57.34	1	25.13
80+	0	0.00	0	0.00	0	0.00
Total "N"	38		11		49	

Age-Group	Male		Female		Both Genders	
( 5 year)	Ν	ASIR	N	ASIR	N	ASIR
ASR / 100000	5.5		3.9		4.9	
Crude Incidence / 100000	1.92		1.7		1.	87
Cumulative Risk of Incidence [0-74]	1		0.4		0.7	

Table 63: Summary of kidney cancer burden

## DEMOGRAPHY



Figure 37: Distribution of kidney cancer by age groups

Average of Age	Min (years)	Max (years)		
52	27	78		

#### PREVALENCE

Amongst the Qatari population registered in the QNCR, there were 96 cases diagnosed with kidney cancer. Of these cases, 38 (40) have died and 58 (60) are still alive.

# HISTOLOGY

Histology	%
Renal cell carcinoma,	67.35
Papillary renal cell carcinoma	10.20
Neoplasm, malignant	4.08
Papillary transitional cell carcinoma, non-invasive	4.08
Leiomyosarcoma	4.08
Renal cell carcinoma, chromophobe type	4.08
Papillary adenocarcinoma	2.04
Renal cell carcinoma, sarcomatoid	2.04
Clear cell carcinoma	2.04

#### Table 64: ICDO-3 Histology distribution for kidney cancer

### TREATMENT

In 2016, only 41 (84%) of total cases were reported with treatment information. The following table shows the treatment types in no particular order. [PLEASE SEE DISCLAIMER]

Treatment Modality	%
Surgery / Hematologic Transplant	75.61
Surgery / Radiotherapy / Hematologic Transplant	4.88
Surgery /Hematological Transplant	4.88
Surgery	4.88
Surgery /Chemotherapy / Radiotherapy /Immunotherapy /	
Hematologic Transplant	2.44
Hormone	2.44
Chemotherapy	2.44
Surgery /Chemotherapy / Hematologic Transplant	2.44

Table 65: Treatment modalities for kidney cancer

SURVIVAL DATA 2013-2016

Survival from kidney cancer during the period 2013-2016 was 73.91 (39.01-90.75).

# 2016 Cancer Incidence Report State of Qatar

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