UNITED ARAB EMIRATES
MINISTRY OF HEALTH & PREVENTION

CANCER INCIDENCE IN UNITED ARAB EMIRATES ANNUAL REPORT OF THE UAE - NATIONAL CANCER REGISTRY - **2017**

Statistics and Research Center

www.mohap.gov.ae

HIS HIGHNESS SHEIKH KHALIFA BIN ZAYED AL NAHYAN

President of the United Arab Emirates

HIS HIGHNESS SHEIKH MOHAMMED BIN RASHID AL MAKTOUM

Vice President and Prime Minister of UAE and Ruler of Dubai

WORD FROM THE UNDERSECRETARY

Ministry of health and prevention is a government body set up with the mandate leadership and stewardship within health sector. Our primary aim is to promote well-being and healthy lives for everyone. Therefore, injuries, diabetes, cancer and heart diseases are rapidly increasing and cannot be ignored. The UAE Ministry of Health and Prevention is considerably making efforts to tackle NCDs that predominantly takes into account development of national NCD strategies in addition to increased expansion and funding of health care services.

UAE is in the midst of a war on non-communicable diseases (NCDs). Innovation is important and as our contribution to tackle non-communicable diseases, we are continuously making efforts to conduct research into innovation as well as finding ways to introduce it on a larger scale. Too often, important innovations spread inadequately and slowly.

We therefore work in collaboration to improve the quality of life, well-being, and health for all the individuals, our wider society, and communities that are affected by non-communicable diseases.

For meeting this target, the significance of owning correct data cannot be overstated. Effective surveillance and monitoring are thought to be a cornerstone for tracking this progress. Systematic risk factors monitoring and vigorous records are essential. With accurate analysis and data, a nation will be capable of prioritizing vital resources and develop sound policy decisions.

This document will throw light on the cancer burden in United Arab Emirates, and it is perceived as a golden opportunity for understanding the environment and is predicted to bring improvements and change in future.

I would like to extend my appreciation to all stakeholders who gave support to the UAE-National Cancer Registry namely Department of Health - Abu Dhabi (DOH), Dubai Health Authority (DHA) and all healthcare providers public and private all across UAE.

Dr. Mohamed Salim Al Olama
Undersecretary of the Ministry of Health & Prevention

WORD FROM THE DIRECTOR OF THE STATISTICS AND RESEARCH CENTER

I'm delighted to present the annual report of UAE national cancer registry 2017, which is a collaborative effort by the team of UAE National Cancer Registry (UAE-NCR) and all stakeholders, healthcare providers. (UAE-NCR) is a population based Cancer Registry with epidemiological and public health aspects in mind, and has always remained the corner stone of National Cancer Program particularly from the public health point of view. UAE-NCR is the only source which provides authentic data on incidence and mortality of cancer in various parts of the nation.

The availability of data on continuous basis has a special importance as uniformly collected long term data helps in understanding the trends in cancer occurrence in our country. The annual cancer registries make this continuous data available for research and evaluation of cancer control efforts to effectively confront the disease. Countrywide figures on the incidence of cancer are published online, while experts and academics will have access to more detailed data on request.

This consolidated report is the 4th annual report of UAE-NCR since the establishment of the UAE National Diseases Registry. It provides insight into the data collected from all healthcare providers across UAE for year 2017.

We are certain that this will help the decision makers in healthcare of our great nation to understand the burden of cancer and shall execute measures to keep it under control.

The international comparison of cancer rates with the UAE-NCR and cancer trends for the data collected from three oldest UAE-NCR reports would be of interest for all readers, the data will also allow UAE cancer patterns to be compared with those of other countries, through organizations such as the International Agency for Cancer Research at the World Health Organization.

The staff working in the UAE-NCR have put in a lot of hard work to collect, abstract, verify and made good efforts to ensure that the data reported is of international standards.

Many thanks to the UAE National Cancer Registry team in Ministry of Health & Prevention for their great efforts, and also many thanks to all stakeholders and healthcare providers who shared the success of this endeavor.

Looking forward to see forthcoming reports in this series and reports on an annual basis related to trends, and developments in treatment of cancer.

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ABBREVIATIONS

SEER	Surveillance, Epidemiology and End Results
UAE	United Arab Emirates
MOHAP	Ministry of Health And Prevention
DOH	Department of Health - Abu Dhabi
DHA	Dubai Health Authority
CIR	Crude Incidence Rate
ASMR	Age-Specific Mortality Rate
ASIR	Age-Specific Incidence Rate
ASR	Age Standardized Rate
CTR	Certified Tumor Registrar
ICD-10	International Classification of Disease 10th Revision
ICD-O-3	International Classification of Diseases for Oncology, third Edition
UAE-NCR	United Arab Emirates, National Cancer Registry
HIMS	Health Information Management System
NCDs	Non-Communicable Diseases

ACKNOWLEDGEMENTS

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The Statistics and Research Center at (MOHAP) would like to acknowledge with deep appreciation and gratitude to all stakeholders, healthcare providers and medical professionals from the various governmental, nongovernmental and private facilities, and all other health sectors in UAE for their invaluable help, hard work and timely data collection, submission, and compliance by providing cancer patients data to the UAE national cancer registry.

We would like to express our deep gratitude to focal personals in different hospitals, clinics, and laboratories for the timely collection and compliance.

The production of this report has been made possible by the active cooperation of physicians, general practitioners, pathology laboratories, labs, nursing staff, technicians, information specialists, CTR's, medical records staff, clinical coders, and directors in the different UAE healthcare facilities.

We wish to express our sincere gratitude for the generous assistance, and hard work offered by the UAE National Cancer Registry team:

- **Wael Ahmed Shelpai**
- **Maimoona Mohammad Saeed**
- **Vineetha Thomas**

GLOSSARY

SEER Summary Staging 2000

Summary staging is the most basic way of categorizing how far a cancer has spread from its point of origin. Summary staging has also been called General Staging, California Staging, and SEER Staging. The 2000 version of Summary Stage applies to every anatomic site, including the lymphomas and leukemia's. Summary staging uses all information available in the medical record; in other words, it is a combination of the most precise clinical and pathological documentation of the extent of disease [1].

UAE Resident Population

The resident population of the UAE is an estimate of all people who are usually living in UAE permanently or on a long-term basis.

Staging

Staging describes the severity of a person's cancer based on the size and/or extent (reach) of the original (primary) tumor and whether or not cancer has spread in the body. Staging is important for several reasons:

- Staging helps the doctor plan the appropriate treatment.
- Cancer stage can be used in estimating a person's prognosis.
- Knowing the stage of cancer identifying clinical trials that may be a suitable treatment option for a patient.
- Staging helps health care providers and researchers exchange information about patients, it also gives them a common terminology for evaluating the results of clinical trials and comparing the results of different trials [2 ,1].

TNM Stage

The TNM Staging System was developed and is maintained by the American Joint Cancer Committee (AJCC) and the Union for International Cancer Control (UICC). It is the most commonly used staging system by medical professionals around the world. The TNM classification system was developed as a tool for doctors to stage different types of cancer based on certain, standardized criteria. The TNM Staging System is based on the extent of the tumor (T), the extent of spread to the lymph nodes (N), and the presence of metastasis (M) [2].

International Classification of Diseases (ICD)

The International Classification of Diseases (ICD) the standard diagnostic tool for epidemiology, health management and clinical purposes. This includes the analysis of the general health situation of population groups. It is used to monitor the incidence and prevalence of diseases and other health problems, proving a picture of the general health situation of countries and populations.

ICD is used by physicians, nurses, other providers, researchers, health information managers and coders, health information technology workers, policy-makers, insurers and patient organizations to classify diseases and other health problems recorded on many types of health and vital records, including death certificates and health records. In addition to enabling the storage and retrieval of diagnostic information for clinical, epidemiological and quality purposes, these records also provide the basis for the compilation of national mortality and morbidity statistics by WHO Member States. Finally, ICD is used for reimbursement and resource allocation decision-making by countries [3].

Age-Standardized Rate

The age-standardized incidence/mortality rate is a summary measure, indicating the rate that a population would have if it had a standard age structure. It is calculated by summing the age-specific rates weighting to the world standard population; the calculated incidence/mortality rate is then called the World Standardized incidence rate. It is also expressed per 100,000.

Age-Specific Rates

Age-specific rates provide information on the incidence of a particular event in an age group relative to the total number of population at risk of that event in the same age group. It is calculated by dividing the number of events occurring in each specified age group by the corresponding 'at risk' population in the same age group and then multiplying

the result by a constant (for example 100,000) to derive the rate. Age-specific rates are often expressed per 100,000 populations.

Crude Incidence Rate

The number of new cancer cases (incidence cases) observed in the population during a defined period, divided by the number of population at risk in the same period. It is usually expressed per 100,000.

Crude Mortality Rate

A crude rate is calculated simply by dividing the number of 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 [4].

Carcinoma In-situ

An early stage cancer in which the cancerous growth or tumor is still confined to the site from which it started, and has not spread to surrounding tissue or other organs in the body. When cancer in-situ involves cells that line the internal organs, or epithelial cells, it is called carcinoma in-situ.

Malignant Tumors

The tumor is malignant (cancerous) if the cells can grow into (invade) surrounding tissues or spread (metastasize) to distant areas of the body.

EXECUTIVE SUMMARY

This is the 4th annual report of the UAE National Cancer Registry. This report summarizes cancer incidence and mortality in United Arab Emiratis for the period 2017.

Between 1st January – 31st December 2017, the total number of newly diagnosed cancer cases (malignant & in-situ) reported to the UAE National Cancer Registry (UAE-NCR) was 4299. Of which 4123 (95.91%) were malignant and 176 (4.09%) were In-situ cases. Overall cancer was more among women than men; it affected 2370 (55.1%) females and 1929 (44.9%) males.

Among UAE citizens, a total number of 1150 cases were newly diagnosed with cancer; out of which 1105 (96.1%) cases were malignant and 45 (3.9%) were in-situ cases. Similarly, in Non-UAE citizens, 3149 cases were newly diagnosed with cancer, 3018 (95.8%) cases were malignant and 131 (4.2%) were in-situ cases

Representing an overall crude incidence rate of 46.2/100,000 for both genders. Figures showed a clear female predominance for cancer incidence. The crude incidence rate was higher for females 82.1/100,000 than for males 30.1/100,000.

The overall age-standardized incidence rate (ASR) was 77.4/100,000, for females 120.3/100,000 and for males 62/100.000

Breast, colorectal, thyroid and leukemia were the top ranked cancers among all new cancer cases in both genders (Table 22). Colorectal, leukemia and prostate were the top ranked cancers among the males (Table 24).

Among females, breast, thyroid, colorectal, leukemia, uterus and cervix uteri were the top ranked cancers (Table 23).

In the year of 2017, there were 146 children at the age group of 0-14 years diagnosed with new cancer in UAE (45% were females and 55% were males). This constitutes about (3.4%) of all registered malignant and in-situ cases.

Leukemia, kidney & renal pelvis, Non-Hodgkin lymphoma, liver and intrahepatic bile ducts and brain & CNS were the most common cancers in boys and girls, Figure 39.

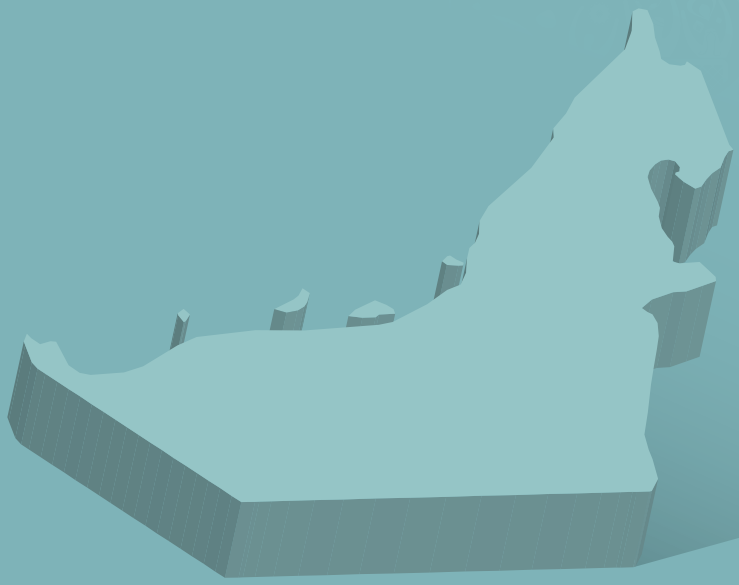
The third leading cause of death in UAE after diseases of the circulatory system and injuries was found to be cancer.

The number of deaths from cancer totaled 955 (517 in males, 438 in females) and accounted for 10.82% of all deaths regardless of nationality, type of cancer or gender, table 45 and Figure 40.

This represents an estimated age-standardized mortality rate of 26.4 deaths per 100,000 for both genders, 31 deaths per 100,000 females and 26 deaths per 100,000 males per year.

Breast cancer was the leading cause of cancer death in 2017, with an estimated average of 110 (11.5%) deaths per year, 24.4% of cancer deaths in women. Colon cancer was the second most common cause of cancer death in both sexes, with an estimated average of 98 (10.3%) deaths per year. Lung cancer was the third common cause of cancer death in both sexes, with an estimated average of 80 (8.4%) deaths. (Table 45).

Deaths from breast, colorectal, lung, leukemia, stomach and cervix uteri cancers combined made up almost half (44.4%) of all deaths from cancer during this period.



CHAPTER #01

INTRODUCTION

UAE GEOGRAPHY

The United Arab Emirates (UAE) was formed as a constitutional federation of seven emirates: Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, Ras Al Khaimah and Fujairah, which came together as one state on 2nd December 1971 under the former president, His Highness the late Sheikh Zayed bin Sultan Al Nahyan. Through exploitation of the UAE's abundant oil and natural gas resources starting in the 1960s, the country has been transformed from a tribal society reliant on agriculture and fishing to a significant and respected supplier in global energy markets as well as an important member of the international community [5].

During this period, the UAE has forged a distinct national identity and enjoyed a high degree of political stability. The UAE is located at the tip of the Arabian Peninsula with coastlines on the Gulf of Oman and the Arabian Gulf. It lies between Oman and Saudi Arabia, and is a strategic location along the Strait of Hormuz, a vital transit point for the world's crude oil [5]. According to the National Bureau of Statistics (NBS), the UAE's total land area is 71,023.6 square kilometers (km2). The Emirate of Abu Dhabi accounts for 59,435 km2 , 83.7% of the total land area, while the smallest emirate, Ajman, encompasses only 0.4% of it, 268 km2[5].

Four-fifth of the UAE is desert but has contrasting landscapes - from the towering red dunes of the Liwa to the rich palm-filled Oasis of Al Ain, from the precipitous Hajjar Mountains to the more fertile stretches of its coastal plains. The UAE has become an important player in regional and international affairs [6]. In 1971, the late President Sheikh Zayed bin Sultan Al Nahyan unified the small, underdeveloped states into a federation, the only one in the Arab world. With his visionary leadership, oil wealth was used to develop the UAE into one of the world's most open and successful economies. In 2004, His Highness Sheikh Khalifa bin Zayed Al Nahyan became the President and has since continued to strive towards an ambitious vision for the UAE [6].

LOCATION

Bordered to the North by the Arabian Gulf, to the East by the Gulf of Oman and Sultanate of Oman, to the South by Saudi Arabia and Sultanate of Oman and to the West by Qatar and Saudi Arabia [7].

CANCER REGISTRY

Cancer registration is a vital and essential tool in cancer control. A cancer registry has been defined as an organization for the storage, collection, analysis, and interpretation of data on individuals with cancer. A population-based cancer registry gathers the data from numerous healthcare providers in a defined geographic area and can serve to demonstrate incidence trends for cancer of different sites over time or between population subdivisions. It can offer data to assess the effects of different types of treatment over time and to assess the effects of early detection programs, such as colorectal screening or mammography. Cancer registry data can be used for epidemiologic studies to identify causes of cancer. It can be useful in identifying unusual clusters of cancer cases [8]. Information on the mortality as well as incidence of cancers, in addition to their changing trends, is an important element in the planning and monitoring of programs for early detection, cancer prevention, and treatment [9].

UAE NATIONAL CANCER REGISTRY

MOHAP aims to establish unified accurate national diseases registries. MOHAP has established the National Diseases Registries to enable the diseases registries to access medical information while safeguarding data confidentiality. United Arab Emirates National Cancer Registry is the population based cancer registry for the United Arab Emirates established under the jurisdiction of the Ministry of Health and Prevention (MOHAP) by the order of UAE Cabinet and His Excellency the Minister of Health and Prevention.

UAE National Cancer Registry systematically collects, stores, summarizes, analyses and distributes information about cancer patients who are diagnosed and/or treated in UAE [10]. It provides information on cancer patterns and trends over time as well as monitors cancer incidence in UAE. The Cancer Registry is a part of the National Diseases Registry and it comes under the auspices of the Statistics and Research Center. UAE National Cancer Registry will produce a report about the cancer incidence on an annual basis, and as incidence data are accumulated over the years, the registry will eventually be able to produce certain trends which would help in studying the distribution of such conditions in different regions of the country.

GOALS

The primary goal of the UAE-NCR were to determine the national cancer statistics in UAE, to provide decision makers and researchers with reliable data, to monitor cancer screening and early detection programs, and to plan for cancer services and cancer control.

UAE NATIONAL CANCER REGISTRY STAFF

Mr. Wael Shelpai, Expert of national diseases registry
Ms. Maimoona Mohammad Saeed, Administrator
Ms. Vineetha Thomas, Disease registrar

METHODS

The UAE national cancer registry (UAE-NCR) records demographic, cancer, staging, clinical, and treatment information for all cancers diagnosed in UAE in accordance with internationally accepted registration and coding standards. For UAE and Non-UAE citizens all malignant and in-situ cases diagnosed in UAE during 1st Jan. – 31st Dec. 2017 were notified and registered to UAE national cancer registry.

There are two methods of data collection:

ACTIVE METHOD

Data was collected and abstracted by registry staff through regular visits to medical treatment abroad department at MOHAP.

PASSIVE METHOD

The focal points from stakeholder and healthcare providers across UAE, collect cancer data from patient's files, HIMS (Health information management system), and pathology reports, complete a standardized form and submit it to the UAE National Cancer Registry.
Mortality data of Abu Dhabi was provided by the department of health – Abu Dhabi and mortality data of other Emirates was provided by MOHAP.

Incidence and mortality rates were calculated by using total UAE Resident Population as estimated by Federal Competitiveness and Statistics Authority (FCSA)

SOURCE OF DATA AND DATA PROCESSING

The registry collects data on malignant neoplasms according to the recommendations of the International Agency for Research on Cancer (IARC) from a combination of sources, such as:

a) DOH central cancer registry: highly qualified central based cancer registry in DOH, this registry acts as a central one covering all cancer data in Abu Dhabi.

b) DHA central cancer registry: highly qualified central based cancer registry in DHA

c) Hospital admissions and medical records departments from all public, private, and university hospitals all over UAE through international classification of disease ICD-10 and ICD-O

d) Notifications by the medical profession

e) Reports from the pathology laboratories

f) Mortality data, medical treatment abroad and others. Notifications were made mandatory since 2013.

All data supplied for this report were coded to ICD-10 and ICD-O-3 and then were converted to ICD-10 for analysis and report writing to ensure data comparability, all cases notified to the UAE-NCR must follow the IARC rules.

All relevant information of new cases would be checked for possible duplication against a master index. The clinical data would then be verified by CTR staff.

Registered cases of carcinoma in-situ were included in the computation of crude incidence rate. All the results refer to the resident population (UAE citizens and Non-UAE citizens).

The data is used for monitoring the trends in incidence, research, planning, and evaluation of the cancer care facilities.

Information presented in this report are based on the cancer data collected about patients newly diagnosed during January 1 to December 31, 2017 in UAE.

REPORTABLE LIST

All cases with a behavior code 2 and 3 of the International Classification of Diseases for Oncology, third Edition (ICD-O-3), malignant and in-situ cases of the ICD-10 were included in the registry.

DATA MANAGEMENT

A ministerial decree has categorized cancer as a mandatory notifiable disease. This ensures the opportunity for

comprehensive data collection. The UAE-NCR strives for full access to cancer data from all MOHAP and other governmental and private hospitals, as well as clinics and laboratories throughout the UAE.

Every item relating to the patient were collated and updated. The registry registered all new cases of cancer diagnosed in UAE. Multiple sources of data had assisted in optimizing completeness of collection; however, this could create problem of multiple notification of a patient. This issue was addressed by cross checking Emirates ID number, names, age, gender, date of birth and address, which is a good quality indicator and shows good coverage and completeness of cancer cases in UAE. Emirates identification card number is a unique number given to each UAE citizen and Non-UAE citizen.

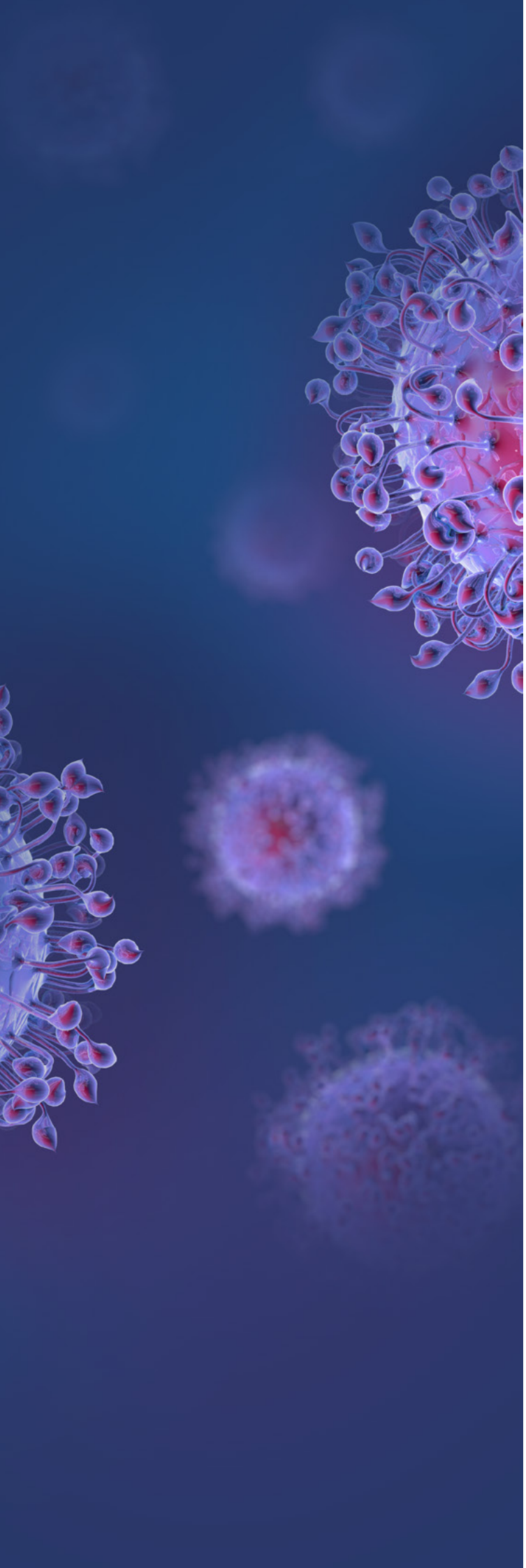
After checking and filtering cancer data received, we updated the data and excluded any duplicate and already registered cases.

Every effort was made to ensure that all the variables were completed. In the event if there was incomplete information, the notification forms with incomplete information were sent back to the respective data providers for further clarification and returned back to the registry upon completion.

All updated information collected on softcopies, either passively or actively, were entered into the computer database. Electronic data maintained in the cancer registry databases were subjected to on-going quality control.

THE UAE POPULATION USED TO CALCULATE RATES

In this report, we have used the UAE Resident Population to compute the crude and age standardized incidence rates, and mortality rates in order to describe various indicators where 'rates' were calculated.



CHAPTER #02

OVERALL CANCER INCIDENT CASES

The incidence and mortality rates are essential epidemiological measures to quantify the pattern of cancer occurrence in a specific society, and in different sub-groups of the population [12]. These cancer rates can be used for predicting the occurrence of cancers and their future magnitude and also in estimating the future demands for treatment, diagnosis and prevention of cancers across the community. The natural data source on the cancer occurrence has long been considered to be a hospital based, where majority of the cancer patients are offered treatments [12].

In the 4th annual report for the year 2017, we have presented the number of new cancer cases among UAE citizens and Non-UAE citizens, who were diagnosed and / or treated in UAE. Malignant and in-situ behaviors are reportable to UAE-NCR, while benign and borderline malignancies are not reportable in this registry in the year 2017.

CANCER INCIDENCE (MALIGNANT & IN-SITU) IN UAE, 2017

Between 1st January – 31st December 2017, the total number of newly diagnosed cancer cases (malignant & in-situ) reported to the UAE National Cancer Registry (UAE-NCR) was 4299. Of which 4123 (95.91%) were malignant and 176 (4.09%) were In-situ cases. Overall cancer was more among women than men; it affected 2370 (55.1%) females and 1929 (44.9%) males.

Among UAE citizens, a total number of 1150 cases were newly diagnosed with cancer; out of which 1105 (96.1%) cases were malignant and 45 (3.9%) were in-situ cases. Similarly, in Non-UAE citizens, 3149 cases were newly diagnosed with cancer, 3018 (95.8%) cases were malignant and 131 (4.2%) were in-situ cases.

Table 1 represents the distribution of all types of cancer cases among UAE population (UAE and Non-UAE citizens) according to gender.

TABLE 1: NUMBER OF CANCER CASES AMONG UAE POPULATION ACCORDING TO PRIMARY SITE, GENDER, AND NATIONALITY, 2017

PRIMARY SITE ICD-10	NON-UAE CITIZENS			UAE CITIZENS			GRAND TOTAL
	FEMALE	MALE	TOTAL	FEMALE	MALE	TOTAL	
(C00-C96) All invasive cancers (Malignant Cases)	**1570**	**1448**	**3018**	**680**	**425**	**1105**	**4123**
C00-C14 Lip, Oral cavity & Pharynx	24	96	**120**	15	16	**31**	151
C15 Esophagus	4	14	**18**	6	6	**12**	30
C16 Stomach	17	51	**68**	19	8	**27**	95
C17 Small intestine	6	12	**18**	3	1	**4**	22
C18-C21 Colorectal	108	197	**305**	58	59	**117**	422
C22 Liver and intrahepatic bile ducts	17	27	**44**	8	20	**28**	72
C23-C24 Gallbladder, Other and unspecified part of biliary tract	7	17	**24**	4	3	**7**	31
C25 Pancreas	15	30	**45**	11	13	**24**	69
C30, C31 Nasal cavity, middle ear, accessory sinuses	2	6	**8**	2	0	**2**	10
C32 Larynx	2	11	**13**	0	7	**7**	20
C34 Bronchus and Lung	30	70	**100**	7	33	**40**	140
C40-C41 Bone and articular cartilage	7	12	**19**	5	2	**7**	26
C43 Skin melanoma	9	15	**24**	0	2	**2**	26
C44 Skin	55	119	**174**	19	15	**34**	208
C45 Mesothelioma	0	2	**2**	0	1	**1**	3
C46 Kaposi sarcoma	0	2	**2**	0	2	**2**	4
C48 Retroperitoneum and peritoneum	5	8	**13**	2	4	**6**	19
C49 Connective and soft tissue	17	29	**46**	4	8	**12**	58
C50 Breast	609	8	**617**	216	1	**217**	834
C53 Cervix uteri	66	0	**66**	16	0	**16**	82
C54-C55 Uterus	63	0	**63**	48	0	**48**	111
C56 Ovary	55	0	**55**	15	0	**15**	70
C61 Prostate	0	109	**109**	0	46	**46**	155
C62 Testis	0	35	**35**	0	8	**8**	43

PRIMARY SITE ICD-10	NON-UAE CITIZENS			UAE CITIZENS			GRAND TOTAL
	FEMALE	MALE	TOTAL	FEMALE	MALE	TOTAL	
C64-C65 Kidney & Renal pelvis	21	40	**61**	8	15	**23**	84
C66, C68 Ureter and Other urinary organs	0	6	**6**	0	1	**1**	7
C67 Urinary bladder	10	68	**78**	11	23	**34**	112
C69 Eye	0	2	**2**	2	0	**2**	4
C70-C72 Brain & CNS	23	44	**67**	5	4	**9**	76
C73 Thyroid	203	86	**289**	99	24	**123**	412
C74-C75 Other endocrine glands	3	5	**8**	1	1	**2**	10
C80 Unknown primary site	25	23	**48**	6	8	**14**	62
C81 Hodgkin's lymphoma	23	29	**52**	9	14	**23**	75
C82-C85, C96 Non-Hodgkin lymphoma	42	84	**126**	23	23	**46**	172
C88, C90 Multiple myeloma	10	25	**35**	4	11	**15**	50
C91-C95 Leukemia	71	152	**223**	47	44	**91**	314
Other malignancy	21	14	**35**	7	2	**9**	44
(D00-D09) Non-invasive cancers (In-Situ Cases)	**91**	**40**	**131**	**29**	**16**	**45**	**176**
D00 Carcinoma in situ of oral cavity, oesophagus and stomach	0	1	**1**	0	0	**0**	1
D01 Carcinoma in situ of other and unspecified digestive organs	1	3	**4**	2	0	**2**	6
D02 Carcinoma in situ of middle ear and respiratory system	0	2	**2**	0	1	**1**	3
D03 Melanoma in situ	8	10	**18**	1	2	**3**	21
D04 Carcinoma in situ of skin	4	2	**6**	1	0	**1**	7
D05 Carcinoma in situ of breast	43	1	**44**	14	0	**14**	58
D06 Carcinoma in situ of cervix uteri	29	0	**29**	9	0	**9**	38
D07 Carcinoma in situ of other and unspecified genital organs	1	0	**1**	0	0	**0**	1

PRIMARY SITE ICD-10	NON-UAE CITIZENS			UAE CITIZENS			GRAND TOTAL
	FEMALE	MALE	TOTAL	FEMALE	MALE	TOTAL	
D09 Carcinoma in situ of other and unspecified sites	5	21	**26**	2	13	**15**	41
GRAND TOTAL	**1661**	**1488**	**3149**	**709**	**441**	**1150**	**4299**

FIGURE 1: DISTRIBUTION OF CANCER CASES AMONG UAE POPULATION BY TYPE OF TUMOR, 2017

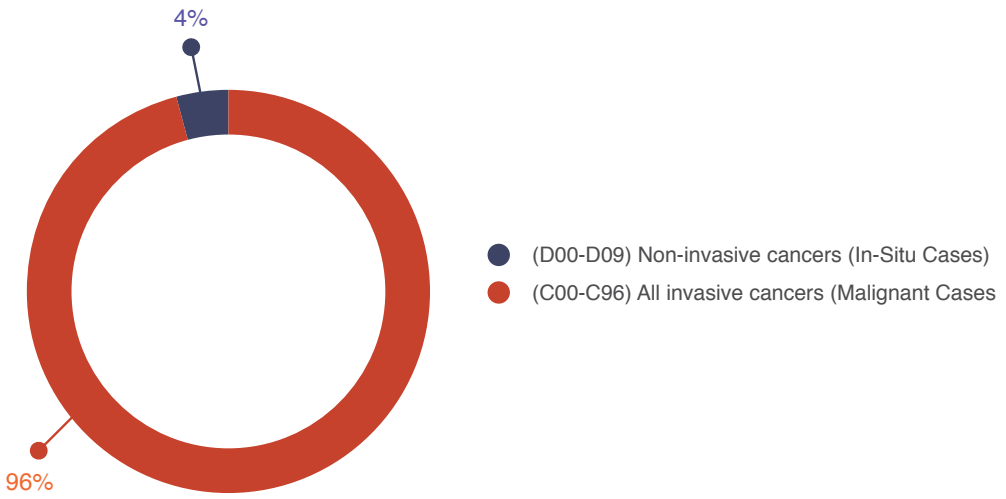


Figure 1 demonstrates the distribution of cancer cases among UAE population by the type of tumor in 2017, with 96% of malignant cases and 4% of the in-situ cases.

FIGURE 2: DISTRIBUTION OF CANCER CASES AMONG UAE POPULATION BY NATIONALITY AND TYPE OF TUMOR, 2017

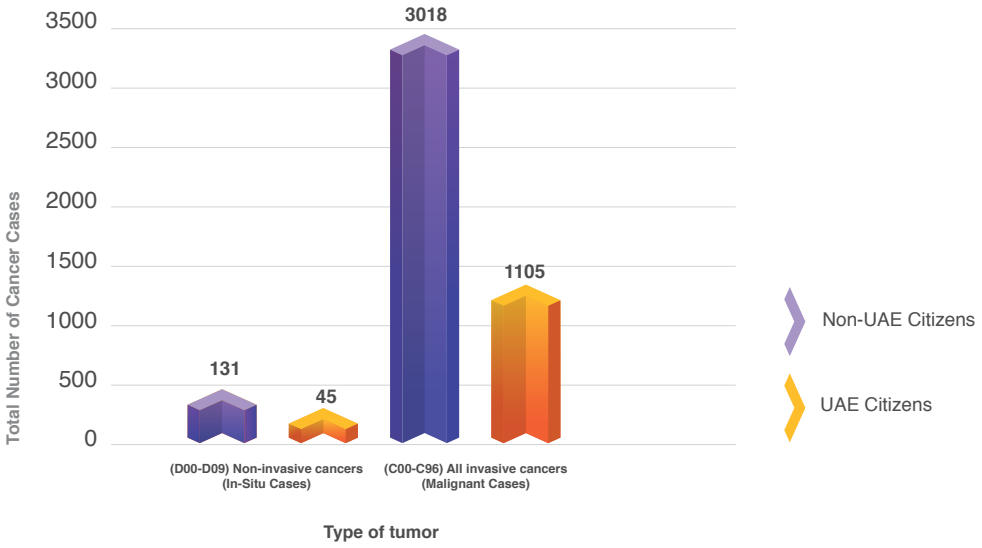


Figure 2 demonstrates the distribution of cancer cases among UAE population by nationality and type of tumor in 2017. 1105 malignant (All invasive cancers) cases were reported among UAE citizens and 3018 malignant (All invasive cancers) cases were reported among Non-UAE citizens, while 45 were in-situ cases reported in UAE citizens and 131 were in-situ cases reported in Non-UAE citizens.

FIGURE 3: DISTRIBUTION OF CANCER CASES AMONG UAE POPULATION BY GENDER AND TYPE OF TUMOR, 2017

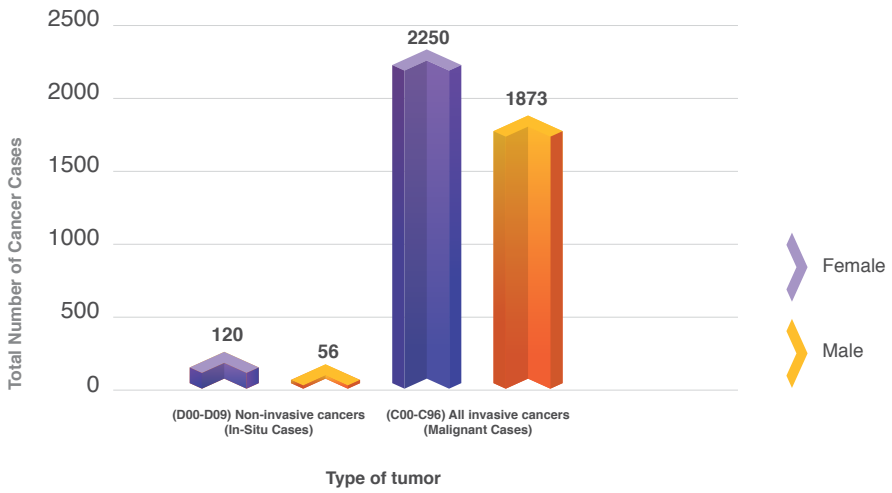


Figure 3 demonstrates the distribution of cancer cases among UAE population by gender and type of tumor in 2017, with 1873 cases being malignant reported among males, and 2250 cases being malignant among females, while, 56 cases were in-situ reported among males and 120 were in-situ cases reported among females.

CANCER CASES (MALIGNANT ONLY), 2017

A total number of 4123 malignant cases were diagnosed in UAE among both UAE and Non-UAE citizens during the period of January to December, of which represented 95.9% of all new cancer cases were diagnosed in 2017.

MALIGNANT CASES BY NATIONALITY IN UAE, 2017

TABLE 2: DISTRIBUTION OF MALIGNANT CASES BY NATIONALITY AMONG UAE POPULATION, 2017

PRIMARY SITE ICD - 10	NON-UAE CITIZENS	UAE CITIZENS	GRAND TOTAL
(C00-C96) All invasive cancers (malignant cases)	3018	1105	4123

Table 2 demonstrates that 3018 and 1105 patients having malignant cancers were Non-UAE and UAE citizens respectively.

FIGURE 4: DISTRIBUTION OF MALIGNANT CASES BY NATIONALITY AMONG UAE POPULATION, 2017

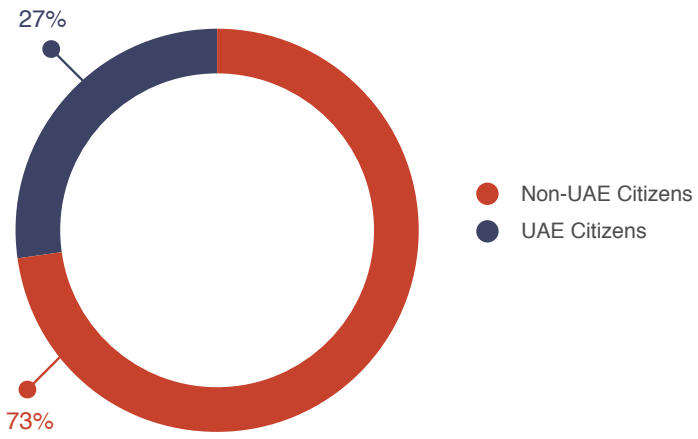


Figure 4 demonstrates the distribution of malignant cancers based on nationality in 2017. 27% of total malignant cases were UAE citizens and the remaining 73% were Non-UAE citizens.

MALIGNANT CASES BY GENDER IN UAE, 2017

TABLE 3 DISTRIBUTION OF MALIGNANT CASES BY GENDER AMONG UAE POPULATION, 2017

MALIGNANT CASES	FEMALE	MALE	GRAND TOTAL
(C00-C96) All invasive cancers (malignant cases)	2250	1873	4123

Table 3 represents a total of 4123 malignant cases, overall cancer were more among women than men; it affected 2250 (55%) females and 1873 (45%) males.

FIGURE 5: DISTRIBUTION OF MALIGNANT CASES BY GENDER, 2017

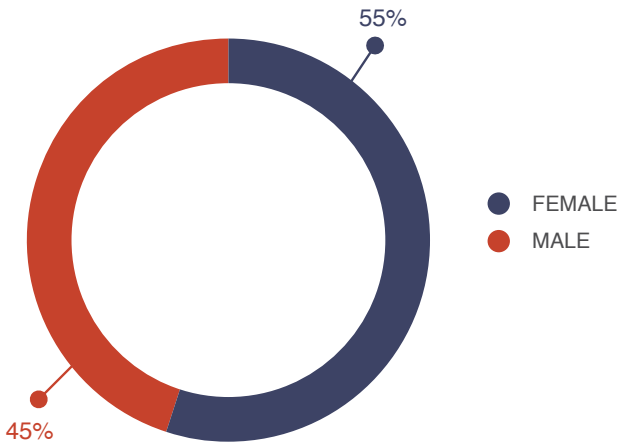


Figure 5 demonstrates the distribution of malignant cases by gender. Overall malignant cases, 45% were males and 55% were females. The distribution of frequency indicates that more females were diagnosed with cancer than males in 2017.

MALIGNANT CASES BY GENDER IN UAE CITIZENS, 2017

From 1st January to 31st December 2017, the total number of newly diagnosed malignant cases among UAE citizens reported to the UAE national cancer registry (UAE-NCR) was 1105. Overall cancer was more among women than men; it affected 680 females and 425 males.

TABLE 4: DISTRIBUTION OF MALIGNANT CASES BY GENDER AMONG UAE CITIZENS, 2017

MALIGNANT CASES	FEMALE	MALE	GRAND TOTAL
(C00-C96) All invasive cancers (malignant cases)	680	425	1105

FIGURE 6: DISTRIBUTION OF MALIGNANT CASES AMONG UAE CITIZENS BY GENDER, 2017

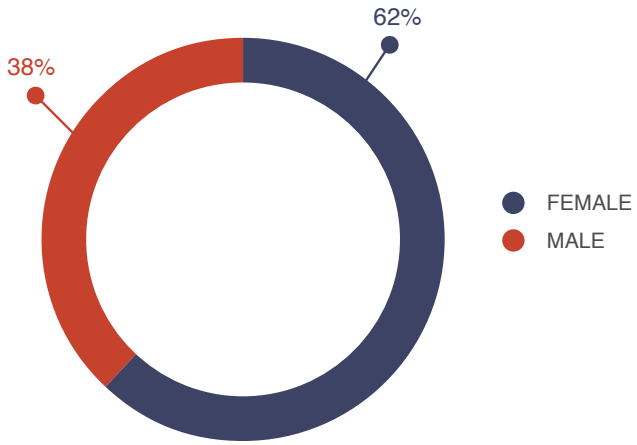


Figure 6 demonstrates the distribution of malignant cases by gender. Out of 1105 malignant cases, 38% males and 62% were females.

MALIGNANT CASES BY GENDER AMONG NON-UAE CITIZENS, 2017

A total of 3018 new malignant cases among Non-UAE citizens were registered in 2017. Overall cancer was more among women than men; it affected 1570 females and 1448 males.

TABLE 5: DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE CITIZENS BY GENDER, 2017

MALIGNANT CASES	FEMALE	MALE	GRAND TOTAL
(C00-C96) All invasive cancers (malignant cases)	1570	1448	3018

FIGURE 7: DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE CITIZENS BY GENDER, 2017

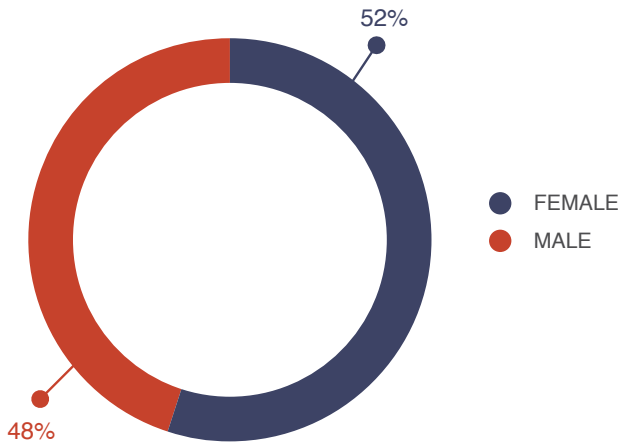


Figure 7 demonstrates the distribution of malignant cases among Non-UAE citizens by gender. Out of 3018 malignant cases, 48% were males and 52% were females.

FREQUENCY OF INCIDENT CASES OF CANCER ACCORDING TO PRIMARY SITE IN DIFFERENT AGE GROUPS AND GENDERS

PRIMARY SITE (MALIGNANT) DISTRIBUTION BY GENDER, AMONG ALL UAE POPULATION, 2017

Between January and December 2017, the total number of malignant cases reported to the UAE National Cancer Registry among UAE population was 4123. Of those, 2250 cancer cases were females and 1873 were males, Table 6
The most commonly diagnosed cancers among all UAE population were breast, colorectal, and thyroid.

TABLE 6: DISTRIBUTION OF PRIMARY SITES (MALIGNANT CASES) BY GENDER AMONG ALL UAE POPULATION, 2017

PRIMARY SITE ICD-10	FEMALE	MALE	GRAND TOTAL
(C00-C96) All invasive cancers (Malignant Cases)	**2250**	**1873**	**4123**
C00-C14 Lip, Oral cavity & Pharynx	39	112	151
C15 Esophagus	10	20	30
C16 Stomach	36	59	95
C17 Small intestine	9	13	22
C18-C21 Colorectal	166	256	422

PRIMARY SITE ICD-10	FEMALE	MALE	GRAND TOTAL
C22 Liver and intrahepatic bile ducts	25	47	72
C23-C24 Gallbladder, Other and unspecified part of biliary tract	11	20	31
C25 Pancreas	26	43	69
C30, C31 Nasal cavity, middle ear, accessory sinuses	4	6	10
C32 Larynx	2	18	20
C34 Bronchus and Lung	37	103	140
C40-C41 Bone and articular cartilage	12	14	26
C43 Skin melanoma	9	17	26
C44 Skin	74	134	208
C45 Mesothelioma	0	3	3
C46 Kaposi sarcoma	0	4	4
C48 Retroperitoneum and peritoneum	7	12	19
C49 Connective and soft tissue	21	37	58
C50 Breast	825	9	834
C53 Cervix uteri	82	0	82
C54-C55 Uterus	111	0	111
C56 Ovary	70	0	70
C61 Prostate	0	155	155
C62 Testis	0	43	43
C64-C65 Kidney & Renal pelvis	29	55	84
C66, C68 Ureter and Other urinary organs	0	7	7
C67 Urinary bladder	21	91	112
C69 Eye	2	2	4
C70-C72 Brain & CNS	28	48	76
C73 Thyroid	302	110	412
C74-C75 Other endocrine glands	4	6	10
C80 Unknown primary site	31	31	62
C81 Hodgkin's lymphoma	32	43	75
C82-C85, C96 Non-Hodgkin lymphoma	65	107	172
C88, C90 Multiple myeloma	14	36	50
C91-C95 Leukemia	118	196	314
Other malignancy	28	16	44
GRAND TOTAL	**2250**	**1873**	**4123**

PRIMARY SITE (MALIGNANT) DISTRIBUTION BY GENDER AMONG UAE CITIZENS, 2017

Between January and December 2017, the total number of malignant cases reported to the UAE National Cancer Registry among UAE citizens was 1105. Of those, 680 cancer cases were females and 425 were males, Table 7
The most commonly diagnosed cancers were breast, colorectal, and thyroid.

TABLE 7: PRIMARY SITE (MALIGNANT CASES) DISTRIBUTION BY GENDER AMONG UAE CITIZENS, 2017

PRIMARY SITE ICD-10	FEMALE	MALE	GRAND TOTAL
(C00-C96) All invasive cancers (Malignant Cases)	**680**	**425**	**1105**
C00-C14 Lip, Oral cavity & Pharynx	15	16	31
C15 Esophagus	6	6	12
C16 Stomach	19	8	27
C17 Small intestine	3	1	4
C18-C21 Colorectal	58	59	117
C22 Liver and intrahepatic bile ducts	8	20	28
C23-C24 Gallbladder, Other and unspecified part of biliary tract	4	3	7
C25 Pancreas	11	13	24
C30, C31 Nasal cavity, middle ear, accessory sinuses	2	0	2
C32 Larynx	0	7	7
C34 Bronchus and Lung	7	33	40
C40-C41 Bone and articular cartilage	5	2	7
C43 Skin melanoma	0	2	2
C44 Skin	19	15	34
C45 Mesothelioma	0	1	1
C46 Kaposi sarcoma	0	2	2
C48 Retroperitoneum and peritoneum	2	4	6
C49 Connective and soft tissue	4	8	12
C50 Breast	216	1	217
C53 Cervix uteri	16	0	16
C54-C55 Uterus	48	0	48
C56 Ovary	15	0	15
C61 Prostate	0	46	46
C62 Testis	0	8	8
C64-C65 Kidney & Renal pelvis	8	15	23

PRIMARY SITE ICD-10	FEMALE	MALE	GRAND TOTAL
C66, C68 Ureter and Other urinary organs	0	1	1
C67 Urinary bladder	11	23	34
C69 Eye	2	0	2
C70-C72 Brain & CNS	5	4	9
C73 Thyroid	99	24	123
C74-C75 Other endocrine glands	1	1	2
C80 Unknown primary site	6	8	14
C81 Hodgkin's lymphoma	9	14	23
C82-C85, C96 Non-Hodgkin lymphoma	23	23	46
C88, C90 Multiple myeloma	4	11	15
C91-C95 Leukemia	47	44	91
Other malignancy	7	2	9
GRAND TOTAL	**680**	**425**	**1105**

PRIMARY SITE (MALIGNANT) DISTRIBUTION BY GENDER AMONG NON-UAE CITIZENS, 2017

Between January and December 2017, the total number of malignant cases reported to the UAE National Cancer Registry among Non- UAE citizens was 3018. Of those, 1570 cancer cases were females and 1448 were males, Table 8
The most commonly diagnosed cancers were breast, colorectal, and thyroid.

TABLE 8: PRIMARY SITE (MALIGNANT CASES) DISTRIBUTION BY GENDER AMONG NON-UAE CITIZENS, 2017

PRIMARY SITE ICD-10	FEMALE	MALE	GRAND TOTAL
(C00-C96) All invasive cancers (Malignant Cases)	**1570**	**1448**	**3018**
C00-C14 Lip, Oral cavity & Pharynx	24	96	120
C15 Esophagus	4	14	18
C16 Stomach	17	51	68
C17 Small intestine	6	12	18
C18-C21 Colorectal	108	197	305
C22 Liver and intrahepatic bile ducts	17	27	44
C23-C24 Gallbladder, Other and unspecified part of biliary tract	7	17	24
C25 Pancreas	15	30	45

PRIMARY SITE ICD-10	FEMALE	MALE	GRAND TOTAL
C30, C31 Nasal cavity, middle ear, accessory sinuses	2	6	8
C32 Larynx	2	11	13
C34 Bronchus and Lung	30	70	100
C40-C41 Bone and articular cartilage	7	12	19
C43 Skin melanoma	9	15	24
C44 Skin	55	119	174
C45 Mesothelioma	0	2	2
C46 Kaposi sarcoma	0	2	2
C48 Retroperitoneum and peritoneum	5	8	13
C49 Connective and soft tissue	17	29	46
C50 Breast	609	8	617
C53 Cervix uteri	66	0	66
C54-C55 Uterus	63	0	63
C56 Ovary	55	0	55
C61 Prostate	0	109	109
C62 Testis	0	35	35
C64-C65 Kidney & Renal pelvis	21	40	61
C66, C68 Ureter and Other urinary organs	0	6	6
C67 Urinary bladder	10	68	78
C69 Eye	0	2	2
C70-C72 Brain & CNS	23	44	67
C73 Thyroid	203	86	289
C74-C75 Other endocrine glands	3	5	8
C80 Unknown primary site	25	23	48
C81 Hodgkin's lymphoma	23	29	52
C82-C85, C96 Non-Hodgkin lymphoma	42	84	126
C88, C90 Multiple myeloma	10	25	35
C91-C95 Leukemia	71	152	223
Other malignancy	21	14	35
GRAND TOTAL	**1570**	**1448**	**3018**

AGE GROUP DISTRIBUTION OF MALIGNANT CASES IN UAE, ALL GENDER, 2017

Table 9 reveals the distribution of malignant cancer cases in UAE by age group in the year 2017. The data indicates highest incidence of malignant cases are found among age groups 55-59 years (10.67%), 40-44 year (10.53%), 60-64 year age group (10.43%) and 35-39 years age group (10.41%) It is noteworthy that 4123 malignant cases were reported in 2017 with less incidence of cancer reported in 10-14 year age group (0.82%).

TABLE 9: AGE GROUP DISTRIBUTION OF MALIGNANT CASES IN UAE, ALL GENDER, 2017

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(0-4)	62	1.50%
(5-9)	50	1.21%
(10-14)	34	0.82%
(15-19)	36	0.87%
(20-24)	88	2.13%
(25-29)	170	4.12%
(30-34)	332	8.05%
(35-39)	429	10.41%
(40-44)	434	10.53%
(45-49)	419	10.16%
(50-54)	426	10.33%
(55-59)	440	10.67%
(60-64)	430	10.43%
(65-69)	270	6.55%
(70-74)	210	5.09%
(75-79)	122	2.96%
(80-84)	70	1.70%
(85+)	80	1.94%
Unknown	21	0.51%
GRAND TOTAL	**4123**	**100.00%**

FIGURE 8: AGE GROUP DISTRIBUTION OF MALIGNANT CASES IN UAE, ALL GENDER, 2017

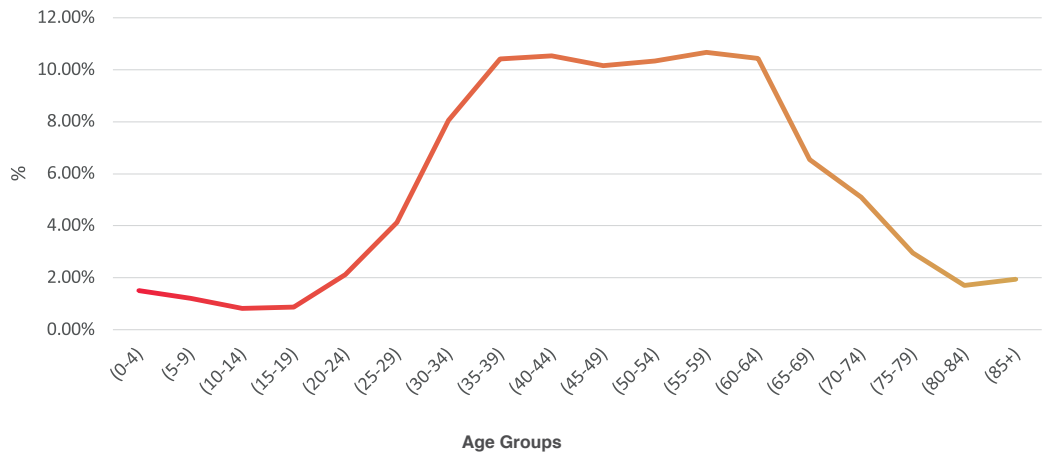


Figure 8 shows and summarizes the distribution of malignant cases by age group in UAE for the year 2017. The (55-59) year age group reached its highest peak showing highest frequency of cancer, but in contrast, malignant cases occurred relatively less frequently at (10-14) year age group.

AGE GROUP DISTRIBUTION OF MALIGNANT CASES IN UAE, AMONG FEMALES, 2017

Table 10 demonstrates the distribution by age group of malignant cases among females in UAE in the year 2017. The data indicates highest incidence of malignant cases among females at the age groups of 40-44 year (13.07%), the 2nd was 35-39 year (12%). It is noteworthy that 2250 malignant cases were reported in 2017 with less frequency of cancer reported in 10-14 age groups (0.44%).

TABLE 10: AGE GROUP DISTRIBUTION OF MALIGNANT CASES IN UAE, AMONG FEMALES, 2017

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(0-4)	28	1.24%
(5-9)	28	1.24%
(10-14)	10	0.44%
(15-19)	18	0.80%
(20-24)	48	2.13%
(25-29)	98	4.36%
(30-34)	190	8.44%
(35-39)	270	12.00%
(40-44)	294	13.07%
(45-49)	254	11.29%
(50-54)	235	10.44%
(55-59)	202	8.98%

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(60-64)	214	9.51%
(65-69)	117	5.20%
(70-74)	107	4.76%
(75-79)	58	2.58%
(80-84)	33	1.47%
(85+)	37	1.64%
Unknown	9	0.40%
GRAND TOTAL	**2250**	**100.00%**

FIGURE 9: AGE GROUP DISTRIBUTION OF MALIGNANT CASES IN UAE, AMONG FEMALES, 2017

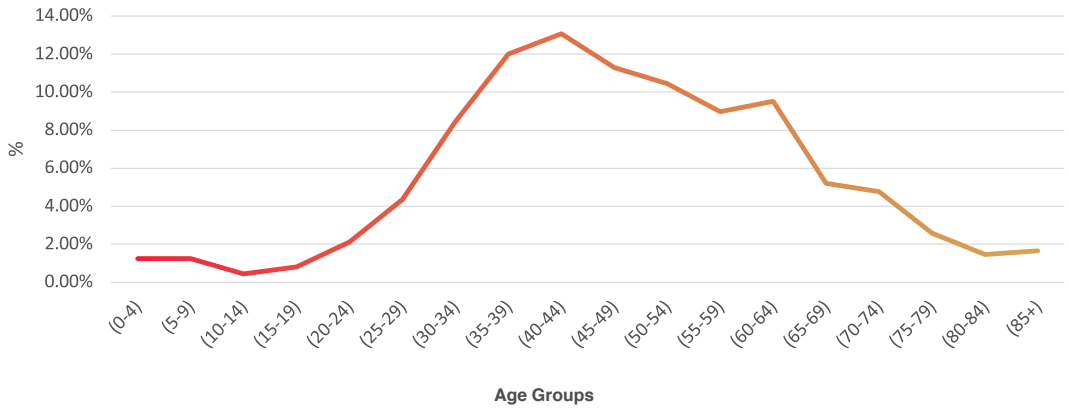


Figure 9 demonstrates and summarizes the distribution by age group of malignant cancer cases among females in UAE in year 2017. The 40-44 year age group reached its highest peak showing highest frequency of cancer, but in contrast, malignant cases occurred relatively less frequently at young ages 10-14 year.

AGE GROUP DISTRIBUTION OF MALIGNANT CASES IN UAE, AMONG MALES, 2017

Table 11 demonstrates the distribution by age group of malignant cases among males in UAE in the year 2017. The data indicates highest incidence of malignant cases among males at the age group of 55-59 year (12.71%) then in the age group 60-64 year (11.153%). It is noteworthy that 1873 malignant cases were reported in 2017 with less frequency of cancer reported in 15-19 age group (.96%).

TABLE 11: AGE GROUP DISTRIBUTION OF MALIGNANT CASES IN UAE, AMONG MALES, 2017

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(0-4)	34	1.82%
(5-9)	22	1.17%
(10-14)	24	1.28%

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(15-19)	18	0.96%
(20-24)	40	2.14%
(25-29)	72	3.84%
(30-34)	142	7.58%
(35-39)	159	8.49%
(40-44)	140	7.47%
(45-49)	165	8.81%
(50-54)	191	10.20%
(55-59)	238	12.71%
(60-64)	216	11.53%
(65-69)	153	8.17%
(70-74)	103	5.50%
(75-79)	64	3.42%
(80-84)	37	1.98%
(85+)	43	2.30%
Unknown	12	0.64%
GRAND TOTAL	**1873**	**100.00%**

FIGURE 10: AGE GROUP DISTRIBUTION OF MALIGNANT CASES IN UAE, AMONG MALES, 2017

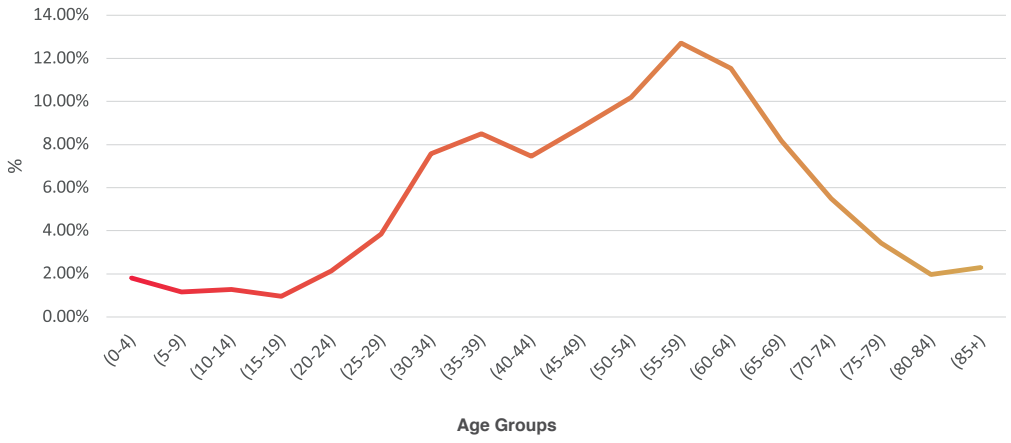


Figure 10 demonstrates and summarizes the distribution by age group of malignant cancer cases among males in UAE in year 2017. The 55-59 year age group reached its highest peak showing highest frequency of cancer, but in contrast, malignant cases occurred relatively less frequently at young ages 15-19 year.

AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG UAE CITIZENS, 2017

Table 12 demonstrates the distribution by age group of malignant cases among UAE citizens in the year 2017. The data indicates that the highest incidence of malignant cases was observed in the age group 60-64 year (11.04%). It is noteworthy that 1105 malignant cases were reported in 2017 with less frequency of cancers reported in the age group 10-14 year (1.18%).

TABLE 12: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG UAE CITIZENS, 2017

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(0-4)	20	1.81%
(5-9)	20	1.81%
(10-14)	13	1.18%
(15-19)	14	1.27%
(20-24)	41	3.71%
(25-29)	38	3.44%
(30-34)	57	5.16%
(35-39)	91	8.24%
(40-44)	89	8.05%
(45-49)	95	8.60%
(50-54)	83	7.51%
(55-59)	104	9.41%
(60-64)	122	11.04%
(65-69)	94	8.51%
(70-74)	69	6.24%
(75-79)	68	6.15%
(80-84)	34	3.08%
(85+)	52	4.71%
Unknown	1	0.09%
GRAND TOTAL	**1105**	**100.00%**

FIGURE 11: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG UAE CITIZENS, 2017

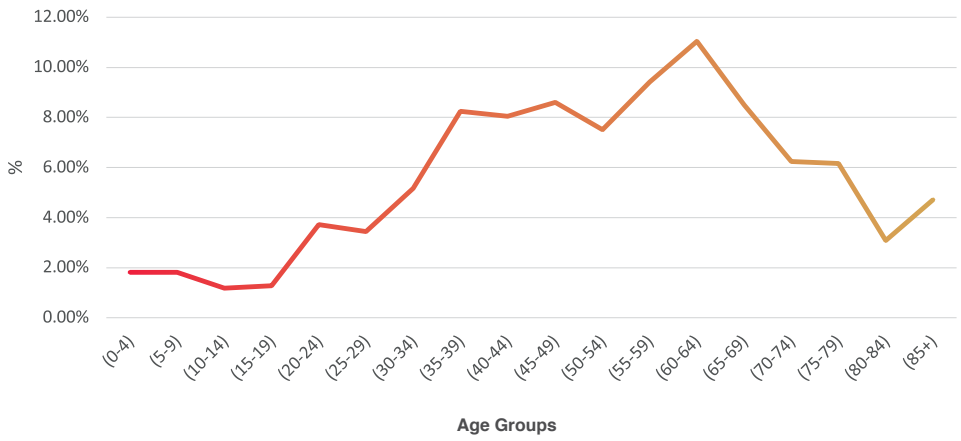


Figure 11 demonstrates and summarizes the distribution of malignant cases by age group among UAE Citizens in 2017. The 60-64 year age group reached its highest peak showing highest frequency of cancer, but in contrast, malignant cases occurred relatively less frequently at young ages 10-14 year.

AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG UAE FEMALE CITIZENS, 2017

Table 13 determines the distribution by age group of malignant cases among females in 2017. The data shows that the highest frequency of cancer among females was observed in the age group of 60-64 year (11.32%), second highest frequency was in the age group of 40-44 year (10%). It is notable that 680 malignant cases were reported in 2017 with less frequency of cancer reported in age group 10-14 year (0.44%).

TABLE 13: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG UAE FEMALE CITIZENS, 2017

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(0-4)	8	1.18%
(5-9)	11	1.62%
(10-14)	3	0.44%
(15-19)	7	1.03%
(20-24)	27	3.97%
(25-29)	24	3.53%
(30-34)	44	6.47%
(35-39)	59	8.68%
(40-44)	68	10.00%
(45-49)	66	9.71%
(50-54)	59	8.68%
(55-59)	64	9.41%
(60-64)	77	11.32%

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(65-69)	47	6.91%
(70-74)	42	6.18%
(75-79)	36	5.29%
(80-84)	13	1.91%
(85+)	24	3.53%
Unknown	1	0.15%
GRAND TOTAL	**680**	**100.00%**

FIGURE 12: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG UAE FEMALE CITIZENS, 2017

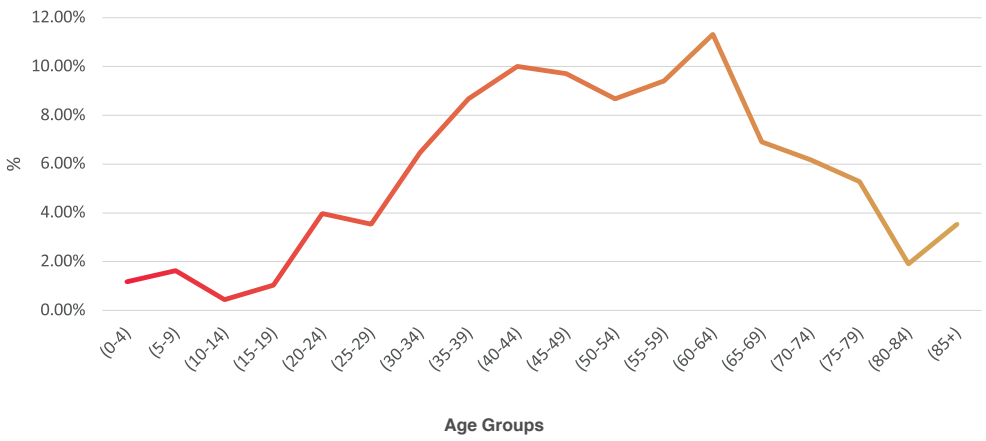


Figure 12 demonstrates and summarizes the distribution of malignant cases by age group among UAE female citizens in 2017. The age groups 60-64 year reached its highest peak showing highest frequency of cancer, but in contrast, malignant cases occurred relatively less frequently at age groups 10-14 year.

AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG UAE MALE CITIZENS, 2017

Table 14 demonstrates the distribution by age group of malignant cases among UAE male citizens in 2017. The data indicates highest frequency of cancer among males is observed in the age group of 65-69 year (11.06%), second highest frequency in the age group of 60-64 year (10.59%). It is noteworthy that 425 malignant cases were reported in 2017 among males with less frequency of cancer reported in age group 15-19 year (1.65%).

TABLE 14: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG UAE MALE CITIZENS, 2017

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(0-4)	12	2.82%
(5-9)	9	2.12%

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(10-14)	10	2.35%
(15-19)	7	1.65%
(20-24)	14	3.29%
(25-29)	14	3.29%
(30-34)	13	3.06%
(35-39)	32	7.53%
(40-44)	21	4.94%
(45-49)	29	6.82%
(50-54)	24	5.65%
(55-59)	40	9.41%
(60-64)	45	10.59%
(65-69)	47	11.06%
(70-74)	27	6.35%
(75-79)	32	7.53%
(80-84)	21	4.94%
(85+)	28	6.59%
GRAND TOTAL	**425**	**100.00%**

FIGURE 13: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG UAE MALE CITIZENS, 2017

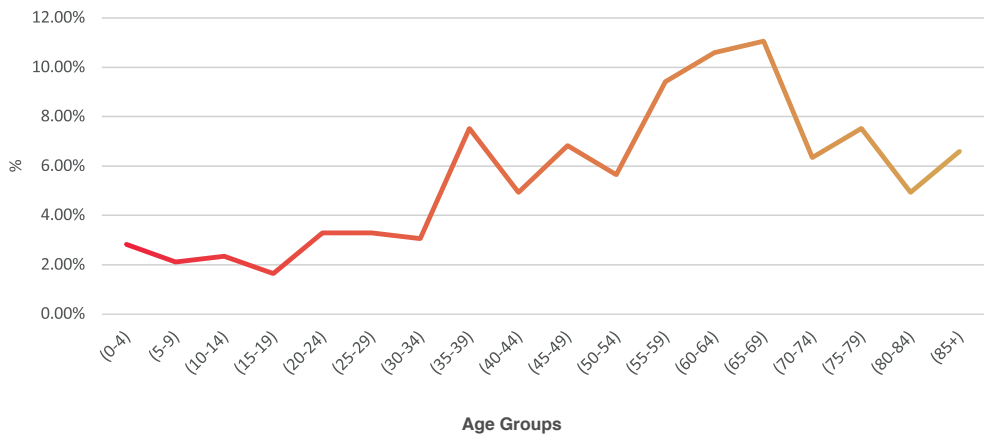


Figure 13 demonstrates and summarizes the distribution of malignant cases by age group among UAE male citizens in 2017. The age group 65-69 year reached its highest peak showing highest frequency of cancer, but in contrast, malignant cases occurred relatively less frequently at young ages 15-19 year.

AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE CITIZENS, 2017

Table 15 demonstrates the distribution by age group of malignant cases among Non-UAE citizens in the year 2017. The data indicates highest frequency of cancer is observed in the age group 40-44 years (11.43%), second highest frequency in the age group 50-54 years (11.37%). It is remarkable that 3018 malignant cases were reported in 2017 with less frequency of cancer reported in age group 10-14 (0.70%).

TABLE 15: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE CITIZENS, 2017

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(0-4)	42	1.39%
(5-9)	30	0.99%
(10-14)	21	0.70%
(15-19)	22	0.73%
(20-24)	47	1.56%
(25-29)	132	4.37%
(30-34)	275	9.11%
(35-39)	338	11.20%
(40-44)	345	11.43%
(45-49)	324	10.74%
(50-54)	343	11.37%
(55-59)	336	11.13%
(60-64)	308	10.21%
(65-69)	176	5.83%
(70-74)	141	4.67%
(75-79)	54	1.79%
(80-84)	36	1.19%
(85+)	28	0.93%
Unknown	20	0.66%
GRAND TOTAL	**3018**	**100.00%**

FIGURE 14: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE CITIZENS, 2017

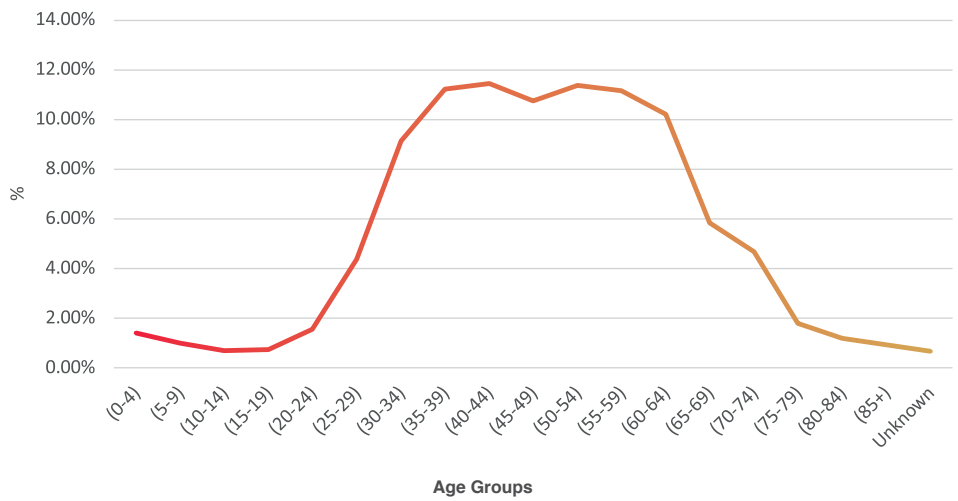


Figure 14 demonstrates and summarizes the distribution of malignant cases by age group among Non-UAE citizens in 2017. The age group 40-45 year reached its highest peak showing highest frequency of cancer, but in contrast, malignant cases occurred relatively less frequently at age group 10-14.

AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE FEMALE CITIZENS, 2017

Table 16 demonstrates the distribution by age group of malignant cases among Non-UAE female citizens in the year 2017. The data indicates highest frequency of cancer is observed in the age group 40-44 year (14.39%), second highest frequency in the age group 35-39 year (13.44%). It is notable that 1570 malignant cases were reported in 2017 in females with less frequency of cancer reported in age group 10-14 (0.45%).

TABLE 16: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE FEMALE CITIZENS, 2017

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(0-4)	20	1.27%
(5-9)	17	1.08%
(10-14)	7	0.45%
(15-19)	11	0.70%
(20-24)	21	1.34%
(25-29)	74	4.71%
(30-34)	146	9.30%
(35-39)	211	13.44%
(40-44)	226	14.39%
(45-49)	188	11.97%
(50-54)	176	11.21%
(55-59)	138	8.79%

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(60-64)	137	8.73%
(65-69)	70	4.46%
(70-74)	65	4.14%
(75-79)	22	1.40%
(80-84)	20	1.27%
(85+)	13	0.83%
Unknown	8	0.51%
GRAND TOTAL	**1570**	**100.00%**

FIGURE 15: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE FEMALE CITIZENS, 2017

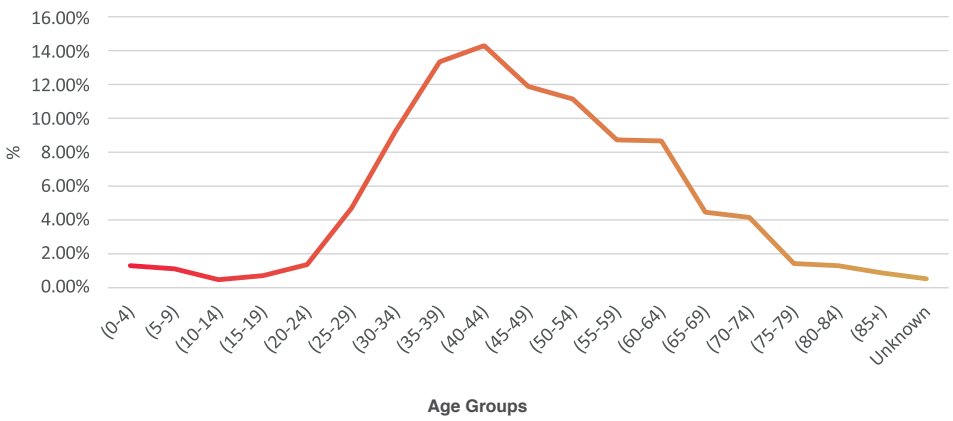


Figure 15 demonstrates and summarizes the distribution by age group of malignant cases among Non-UAE female citizens in the year 2017. The age group 40-44 year reached its highest peak showing highest frequency of cancer, but in contrast, malignant cancer occurred relatively less frequently at age group 10-14 year.

AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE MALE CITIZENS, 2017

Table 17 demonstrates the distribution by age group of malignant cases among Non-UAE male citizens in the year 2017. The data indicates highest frequency of cancer is observed in the 55-59 year age (13.67%) group. It is noteworthy that 1448 malignant cases were reported in 2017 in males with less frequency of cancer reported in age group 10-14 year (0.76%).

TABLE 17: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE MALE CITIZENS, 2017

AGE GROUP	NUMBER OF MALIGNANT CASES 2017	%
(0-4)	22	1.52%
(5-9)	13	0.90%

Age Group	NUMBER OF MALIGNANT CASES 2017	%
(10-14)	14	0.97%
(15-19)	11	0.76%
(20-24)	26	1.80%
(25-29)	58	4.01%
(30-34)	129	8.91%
(35-39)	127	8.77%
(40-44)	119	8.22%
(45-49)	136	9.39%
(50-54)	167	11.53%
(55-59)	198	13.67%
(60-64)	171	11.81%
(65-69)	106	7.32%
(70-74)	76	5.25%
(75-79)	32	2.21%
(80-84)	16	1.10%
(85+)	15	1.04%
Unknown	12	0.83%
GRAND TOTAL	**1448**	**100.00%**

FIGURE 16: AGE GROUP DISTRIBUTION OF MALIGNANT CASES AMONG NON-UAE MALE CITIZENS, 2017

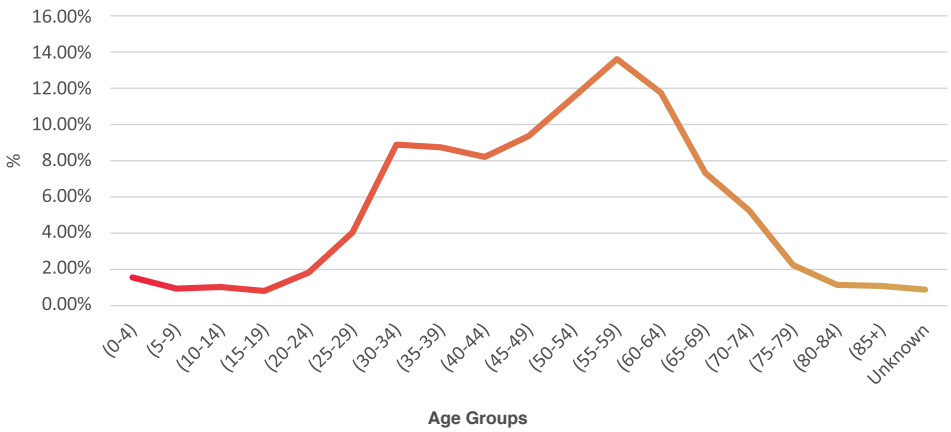


Figure 16 demonstrates and summarizes the distribution by age group of malignant cases among Non-UAE male citizens in 2017. The age group 55-59 year indicated highest frequency of cancer, but in less frequently at young, age group 10-14 year.

PRIMARY SITE (MALIGNANT) DISTRIBUTION BY AGE GROUP, AMONG ALL, 2017

The most commonly diagnosed cancers in the UAE population vary considerably by age group, with particular differences in the cancer types diagnosed in children (0-14), teenagers (15-24), young adults (25-49), adults (50-74) compared with the types diagnosed in older people (75 and over).

TABLE 18: PRIMARY SITE (MALIGNANT CASES) DISTRIBUTION BY AGE GROUP, AMONG ALL, 2017

PRIMARY SITE ICD-10	(0-4)	(5-9)	(10-14)	(15-19)	(20-24)	(25-29)	(30-34)	(35-39)	(40-44)	(45-49)	(50-54)	(55-59)	(60-64)	(65-69)	(70-74)	(75-79)	(80-84)	(85+)	UNKNOWN	GRAND TOTAL
C00-C14 Lip, Oral cavity & Pharynx	0	0	3	2	1	2	13	12	17	24	21	18	18	11	4	2	1	2	0	151
C15 Esophagus	0	0	0	0	0	0	2	2	2	3	3	3	4	2	2	2	1	4	0	30
C16 Stomach	0	0	0	0	1	2	5	8	11	10	9	8	12	9	7	3	3	6	1	95
C17 Small intestine	0	1	0	0	0	0	2	4	3	2	2	2	2	2	0	2	0	0	0	22
C18-C21 Colorectal	0	0	0	1	3	9	21	40	33	42	50	69	51	34	23	22	5	13	6	422
C22 Liver and intrahepatic bile ducts	7	1	0	1	0	0	2	1	2	5	8	11	10	7	8	3	3	2	1	72
C23-C24 Gallbladder, Other and unspecified part of biliary tract	0	0	0	0	0	0	1	4	2	1	2	10	1	3	4	1	1	0	1	31
C25 Pancreas	0	0	0	0	0	0	1	2	3	4	6	10	16	12	4	3	1	5	2	69
C30, C31 Nasal cavity, middle ear, accessory sinuses	1	0	0	0	1	1	1	2	1	1	1	0	1	0	0	0	0	0	0	10
C32 Larynx	0	0	0	0	0	0	1	0	0	0	2	6	2	4	3	1	0	1	0	20
C34 Bronchus and Lung	0	0	0	0	0	2	8	6	7	20	10	14	24	17	16	4	8	4	0	140
C40-C41 Bone and articular cartilage	0	3	3	3	1	4	4	1	3	1	0	0	1	0	0	0	1	1	0	26
C43 Skin melanoma	0	0	0	0	0	1	6	6	2	2	2	2	2	1	1	0	0	1	0	26
C44 Skin	0	1	3	0	2	7	8	22	14	21	33	31	24	18	11	3	3	7	0	208
C45 Mesothelioma	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	3
C46 Kaposi sarcoma	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	4
C48 Retroperitoneum and peritoneum	3	1	0	0	1	1	0	0	2	2	1	4	4	0	0	0	0	0	0	19
C49 Connective and soft tissue	1	3	1	2	2	5	10	8	2	7	6	3	3	1	2	1	0	1	0	58
C50 Breast	0	0	0	0	2	15	62	101	141	120	113	83	82	42	35	19	8	9	2	834
C53 Cervix uteri	0	0	0	0	0	0	10	17	16	12	9	8	5	1	2	0	1	0	1	82
C54-C55 Uterus	0	0	0	0	1	1	6	8	7	14	8	14	19	16	8	7	1	1	0	111
C56 Ovary	0	3	1	0	3	4	3	10	8	6	13	6	4	4	2	1	2	0	0	70
C61 Prostate	0	0	0	0	0	0	0	0	1	5	7	37	35	22	23	12	9	4	0	155
C62 Testis	2	1	0	0	2	6	15	7	6	0	2	1	1	0	0	0	0	0	0	43
C64-C65 Kidney & Renal pelvis	7	3	1	0	0	2	6	8	12	11	6	8	5	5	5	3	2	0	0	84
C66, C68 Ureter and Other urinary organs	0	0	0	0	1	0	0	1	0	0	1	2	0	0	0	1	1	0	0	7
C67 Urinary bladder	1	0	0	1	0	2	4	5	6	5	6	9	18	15	15	12	4	9	0	112
C69 Eye	2	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	4
C70-C72 Brain & CNS	2	2	3	1	3	6	15	4	7	9	9	3	7	3	1	0	1	0	0	76

PRIMARY SITE ICD-10	(0-4)	(5-9)	(10-14)	(15-19)	(20-24)	(25-29)	(30-34)	(35-39)	(40-44)	(45-49)	(50-54)	(55-59)	(60-64)	(65-69)	(70-74)	(75-79)	(80-84)	(85+)	UNKNOWN	GRAND TOTAL
C73 Thyroid	0	1	2	5	19	37	66	84	66	46	32	23	18	6	3	1	0	3	0	412
C74-C75 Other endocrine glands	2	0	0	0	0	1	2	1	2	1	0	0	1	0	0	0	0	0	0	10
C80 Unknown primary site	1	0	0	0	2	2	1	7	4	4	4	6	7	3	10	4	5	1	1	62
C81 Hodgkin's lymphoma	0	1	4	1	14	10	11	10	5	0	9	0	3	2	2	0	0	1	2	75
C82-C85, C96 Non-Hodgkin lymphoma	1	5	4	4	5	18	15	15	13	15	21	14	14	12	5	4	2	3	2	172
C88, C90 Multiple myeloma	1	0	0	0	2	3	1	3	8	4	6	4	10	2	3	2	0	0	1	50
C91-C95 Leukemia	29	23	9	13	18	27	26	27	18	20	22	22	22	13	9	8	6	1	1	314
Other	2	0	0	2	4	2	4	3	7	2	2	7	4	1	2	1	0	1	0	44
GRAND TOTAL	**62**	**50**	**34**	**36**	**88**	**170**	**332**	**429**	**434**	**419**	**426**	**440**	**430**	**270**	**210**	**122**	**70**	**80**	**21**	**4123**

PRIMARY SITE (MALIGNANT) DISTRIBUTION BY AGE GROUP AMONG UAE CITIZENS, 2017

The most commonly diagnosed cancers among UAE citizens varies considerably by age group, with particular differences in the cancer types diagnosed in children (0-14), teenagers (15-24), young adults (25-49), adults (50-74) compared with the types diagnosed in older people (75 and over). The highest frequencies of breast cancer cases were found among age groups 45-49 year. It was also noted that the smallest frequencies of breast cancer cases were diagnosed in the age group of (80-84). The highest frequencies of thyroid cancer cases were found among age groups (35-39) year.

TABLE 19: PRIMARY SITE (MALIGNANT CASES) DISTRIBUTION BY AGE GROUP AMONG UAE CITIZENS, 2017

PRIMARY SITE ICD-10	(0-4)	(5-9)	(10-14)	(15-19)	(20-24)	(25-29)	(30-34)	(35-39)	(40-44)	(45-49)	(50-54)	(55-59)	(60-64)	(65-69)	(70-74)	(75-79)	(80-84)	(85+)	UNKNOWN	GRAND TOTAL
C00-C14 Lip, Oral cavity & Pharynx	0	0	0	1	0	0	0	3	3	4	3	4	5	5	1	0	0	2	0	31
C15 Esophagus	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	2	1	4	0	12
C16 Stomach	0	0	0	0	0	0	1	0	2	3	0	5	4	2	2	2	2	4	0	27
C17 Small intestine	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0	0	4
C18-C21 Colorectal	0	0	0	0	1	0	4	11	9	8	11	15	14	19	6	10	1	8	0	117
C22 Liver and intrahepatic bile ducts	4	0	0	1	0	0	1	0	1	1	1	1	3	5	3	2	3	2	0	28
C23-C24 Gallbladder, Other and unspecified part of biliary tract	0	0	0	0	0	0	0	1	0	0	0	3	0	1	1	1	0	0	0	7
C25 Pancreas	0	0	0	0	0	0	0	2	1	1	4	1	4	3	1	2	1	3	1	24
C30, C31 Nasal cavity, middle ear, accessory sinuses	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
C32 Larynx	0	0	0	0	0	0	0	0	0	0	0	2	2	3	0	0	0	0	0	7
C34 Bronchus and Lung	0	0	0	0	0	0	1	2	1	6	1	3	7	3	7	1	6	2	0	40
C40-C41 Bone and articular cartilage	0	1	0	2	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	7
C43 Skin melanoma	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2
C44 Skin	0	0	2	0	1	2	1	2	2	1	4	2	4	3	4	3	0	3	0	34
C45 Mesothelioma	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1

PRIMARY SITE ICD-10	(0-4)	(5-9)	(10-14)	(15-19)	(20-24)	(25-29)	(30-34)	(35-39)	(40-44)	(45-49)	(50-54)	(55-59)	(60-64)	(65-69)	(70-74)	(75-79)	(80-84)	(85+)	UNKNOWN	GRAND TOTAL
C46 Kaposi sarcoma	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
C48 Retroperitoneum and peritoneum	2	1	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	6
C49 Connective and soft tissue	0	2	0	1	1	1	2	1	0	1	0	0	1	0	0	1	0	1	0	12
C50 Breast	0	0	0	0	0	5	9	20	24	33	25	26	30	14	9	13	3	6	0	217
C53 Cervix uteri	0	0	0	0	0	0	1	3	2	1	3	1	2	0	2	0	1	0	0	16
C54-C55 Uterus	0	0	0	0	1	1	1	2	2	4	3	9	7	9	4	3	1	1	0	48
C56 Ovary	0	2	0	0	2	0	0	1	1	2	2	1	1	1	1	1	0	0	0	15
C61 Prostate	0	0	0	0	0	0	0	0	0	0	4	7	7	6	8	6	4	4	0	46
C62 Testis	0	0	0	0	1	0	3	1	2	0	1	0	0	0	0	0	0	0	0	8
C64-C65 Kidney & Renal pelvis	3	1	1	0	0	1	2	2	1	3	2	1	1	1	2	1	1	0	0	23
C66, C68 Ureter and Other urinary organs	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
C67 Urinary bladder	0	0	0	0	0	0	0	0	1	1	2	2	5	2	4	9	3	5	0	34
C69 Eye	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2
C70-C72 Brain & CNS	0	0	1	0	0	0	2	0	1	1	1	0	1	1	0	0	1	0	0	9
C73 Thyroid	0	1	0	3	10	13	15	21	19	11	9	8	7	4	0	1	0	1	0	123
C74-C75 Other endocrine glands	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
C80 Unknown primary site	0	0	0	0	1	0	0	0	1	0	0	2	2	0	4	1	2	1	0	14
C81 Hodgkin's lymphoma	0	0	3	0	9	4	2	3	0	0	1	0	0	1	0	0	0	0	0	23
C82-C85, C96 Non-Hodgkin lymphoma	0	3	1	1	2	4	3	4	3	4	1	5	4	3	3	2	0	3	0	46
C88, C90 Multiple myeloma	0	0	0	0	2	1	1	1	3	1	1	1	1	0	1	2	0	0	0	15
C91-C95 Leukemia	10	9	5	5	5	3	5	6	6	7	3	4	6	5	4	4	3	1	0	91
Other	0	0	0	0	3	1	1	0	0	0	1	0	1	1	0	0	0	1	0	9
GRAND TOTAL	**20**	**20**	**13**	**14**	**41**	**38**	**57**	**91**	**89**	**95**	**83**	**104**	**122**	**94**	**69**	**68**	**34**	**52**	**1**	**1105**

PRIMARY SITE (MALIGNANT) DISTRIBUTION BY AGE GROUP AMONG NON-UAE CITIZENS, 2017

The commonly diagnosed cancers among Non-UAE citizens varies considerably by age group, with particular differences in the cancer types diagnosed in children (0-14), teenagers (15-24), young adults (25-49), adults (50-74) compared with the types diagnosed in older people (75 and over).The highest frequencies of breast cancer cases were found among age groups 40-44 year. It was also noted that the smallest frequencies of breast cancer cases were diagnosed in the age group of 20-24. The highest frequencies of colorectal cancer cases were found among age groups 55-59 year. It was also noted that the smallest frequencies of colorectal cancer cases were diagnosed in the age group of 15-19.

TABLE 20: PRIMARY SITE (MALIGNANT CASES) DISTRIBUTION BY AGE GROUP AMONG NON-UAE CITIZENS, 2017

PRIMARY SITE ICD-10	(0-4)	(5-9)	(10-14)	(15-19)	(20-24)	(25-29)	(30-34)	(35-39)	(40-44)	(45-49)	(50-54)	(55-59)	(60-64)	(65-69)	(70-74)	(75-79)	(80-84)	(85+)	UNKNOWN	GRAND TOTAL
C00-C14 Lip, Oral cavity & Pharynx	0	0	3	1	1	2	13	9	14	20	18	14	13	6	3	2	1	0	0	120
C15 Esophagus	0	0	0	0	0	0	2	1	1	2	3	3	3	2	1	0	0	0	0	18
C16 Stomach	0	0	0	0	1	2	4	8	9	7	9	3	8	7	5	1	1	2	1	68
C17 Small intestine	0	1	0	0	0	0	1	3	3	1	2	2	2	2	0	1	0	0	0	18
C18-C21 Colorectal	0	0	0	1	2	9	17	29	24	34	39	54	37	15	17	12	4	5	6	305
C22 Liver and intrahepatic bile ducts	3	1	0	0	0	0	1	1	1	4	7	10	7	2	5	1	0	0	1	44
C23-C24 Gallbladder, Other and unspecified part of biliary tract	0	0	0	0	0	0	1	3	2	1	2	7	1	2	3	0	1	0	1	24
C25 Pancreas	0	0	0	0	0	0	1	0	2	3	2	9	12	9	3	1	0	2	1	45
C30, C31 Nasal cavity, middle ear, accessory sinuses	1	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	8
C32 Larynx	0	0	0	0	0	0	1	0	0	0	2	4	0	1	3	1	0	1	0	13
C34 Bronchus and Lung	0	0	0	0	0	2	7	4	6	14	9	11	17	14	9	3	2	2	0	100
C40-C41 Bone and articular cartilage	0	2	3	1	0	3	3	1	2	1	0	0	1	0	0	0	1	1	0	19
C43 Skin melanoma	0	0	0	0	0	1	6	5	2	2	2	2	2	1	0	0	0	1	0	24
C44 Skin	0	1	1	0	1	5	7	20	12	20	29	29	20	15	7	0	3	4	0	174
C45 Mesothelioma	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
C46 Kaposi sarcoma	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
C48 Retroperitoneum and peritoneum	1	0	0	0	1	0	0	0	2	2	1	4	2	0	0	0	0	0	0	13
C49 Connective and soft tissue	1	1	1	1	1	4	8	7	2	6	6	3	2	1	2	0	0	0	0	46
C50 Breast	0	0	0	0	2	10	53	81	117	87	88	57	52	28	26	6	5	3	2	617
C53 Cervix uteri	0	0	0	0	0	0	9	14	14	11	6	7	3	1	0	0	0	0	1	66
C54-C55 Uterus	0	0	0	0	0	0	5	6	5	10	5	5	12	7	4	4	0	0	0	63
C56 Ovary	0	1	1	0	1	4	3	9	7	4	11	5	3	3	1	0	2	0	0	55
C61 Prostate	0	0	0	0	0	0	0	0	1	5	3	30	28	16	15	6	5	0	0	109
C62 Testis	2	1	0	0	1	6	12	6	4	0	1	1	1	0	0	0	0	0	0	35
C64-C65 Kidney & Renal pelvis	4	2	0	0	0	1	4	6	11	8	4	7	4	4	3	2	1	0	0	61
C66, C68 Ureter and Other urinary organs	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	1	1	0	0	6
C67 Urinary bladder	1	0	0	1	0	2	4	5	5	4	4	7	13	13	11	3	1	4	0	78
C69 Eye	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
C70-C72 Brain & CNS	2	2	2	1	3	6	13	4	6	8	8	3	6	2	1	0	0	0	0	67
C73 Thyroid	0	0	2	2	9	24	51	63	47	35	23	15	11	2	3	0	0	2	0	289
C74-C75 Other endocrine glands	1	0	0	0	0	1	2	0	2	1	0	0	1	0	0	0	0	0	0	8
C80 Unknown primary site	1	0	0	0	1	2	1	7	3	4	4	4	5	3	6	3	3	0	1	48
C81 Hodgkin's lymphoma	0	1	1	1	5	6	9	7	5	0	8	0	3	1	2	0	0	1	2	52
C82-C85, C96 Non-Hodgkin lymphoma	1	2	3	3	3	14	12	11	10	11	20	9	10	9	2	2	2	0	2	126

PRIMARY SITE ICD-10	(0-4)	(5-9)	(10-14)	(15-19)	(20-24)	(25-29)	(30-34)	(35-39)	(40-44)	(45-49)	(50-54)	(55-59)	(60-64)	(65-69)	(70-74)	(75-79)	(80-84)	(85+)	UNKNOWN	GRAND TOTAL
C88, C90 Multiple myeloma	1	0	0	0	0	2	0	2	5	3	5	3	9	2	2	0	0	0	1	35
C91-C95 Leukemia	19	14	4	8	13	24	21	21	12	13	19	18	16	8	5	4	3	0	1	223
Other	2	0	0	2	1	1	3	3	7	2	1	7	3	0	2	1	0	0	0	35
GRAND TOTAL	**42**	**30**	**21**	**22**	**47**	**132**	**275**	**338**	**345**	**324**	**343**	**336**	**308**	**176**	**141**	**54**	**36**	**28**	**20**	**3018**

PRIMARY SITE (MALIGNANT) DISTRIBUTION BY NATIONALITY, 2017

Between January 01 and December 31 2017, the total number of newly diagnosed malignant cases reported to the UAE National Cancer Registry (UAE-NCR) was 4123. Total of 1105 cases were reported among UAE citizens, 3018 among Non-UAE citizens. Table 21 demonstrates that the three most commonly diagnosed cancers in both UAE and Non-UAE citizens are, breast, colorectal and thyroid cancers.

TABLE 21: PRIMARY SITE (MALIGNANT CASES) DISTRIBUTION BY NATIONALITY, 2017

PRIMARY SITE ICD-10	NON-UAE CITIZENS	UAE CITIZENS	GRAND TOTAL
C00-C14 Lip, Oral cavity & Pharynx	120	31	151
C15 Esophagus	18	12	30
C16 Stomach	68	27	95
C17 Small intestine	18	4	22
C18-C21 Colorectal	305	117	422
C22 Liver and intrahepatic bile ducts	44	28	72
C23-C24 Gallbladder, Other and unspecified part of biliary tract	24	7	31
C25 Pancreas	45	24	69
C30, C31 Nasal cavity, middle ear, accessory sinuses	8	2	10
C32 Larynx	13	7	20
C34 Bronchus and Lung	100	40	140
C40-C41 Bone and articular cartilage	19	7	26
C43 Skin melanoma	24	2	26
C44 Skin	174	34	208
C45 Mesothelioma	2	1	3
C46 Kaposi sarcoma	2	2	4
C48 Retroperitoneum and peritoneum	13	6	19
C49 Connective and soft tissue	46	12	58
C50 Breast	617	217	834
C53 Cervix uteri	66	16	82
C54-C55 Uterus	63	48	111

PRIMARY SITE ICD-10	NON-UAE CITIZENS	UAE CITIZENS	GRAND TOTAL
C56 Ovary	55	15	70
C61 Prostate	109	46	155
C62 Testis	35	8	43
C64-C65 Kidney & Renal pelvis	61	23	84
C66, C68 Ureter and Other urinary organs	6	1	7
C67 Urinary bladder	78	34	112
C69 Eye	2	2	4
C70-C72 Brain & CNS	67	9	76
C73 Thyroid	289	123	412
C74-C75 Other endocrine glands	8	2	10
C80 Unknown primary site	48	14	62
C81 Hodgkin's lymphoma	52	23	75
C82-C85, C96 Non-Hodgkin lymphoma	126	46	172
C88, C90 Multiple myeloma	35	15	50
C91-C95 Leukemia	223	91	314
Other	35	9	44
GRAND TOTAL	**3018**	**1105**	**4123**

TOP MALIGNANT PRIMARY SITES AMONG ALL UAE POPULATION, 2017

Between January and December 2017, the total number of breast cancer cases reported to the UAE National Cancer Registry among UAE population was 834, representing 20.23% of all malignant cases in 2017. Table 22 demonstrates the 10 most common cancers among the UAE population. The five most common cancers among UAE population in both genders are breast, colorectal thyroid, leukemia and skin.

TABLE 22: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG UAE POPULATION, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	834	20.23%
C18-C21 Colorectal	422	10.24%
C73 Thyroid	412	9.99%
C91-C95 Leukemia	314	7.62%
C44 Skin	208	5.04%
C82-C85, C96 Non-Hodgkin lymphoma	172	4.17%
C61 Prostate	155	3.76%
C00-C14 Lip, Oral cavity & Pharynx	151	3.66%

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C34 Bronchus and Lung	140	3.40%
C67 Urinary bladder	112	2.72%

TOP MALIGNANT PRIMARY SITES AMONG ALL FEMALES, 2017

In females, breast is the most common cancer, representing 36.67% of all malignant cases among females in 2017. Five most commonly diagnosed cancers among females are breast, thyroid, colorectal, leukemia and uterus, Table 23.

TABLE 23: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG FEMALES, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	825	36.67%
C73 Thyroid	302	13.42%
C18-C21 Colorectal	166	7.38%
C91-C95 Leukemia	118	5.24%
C54-C55 Uterus	111	4.93%
C53 Cervix uteri	82	3.64%
C44 Skin	74	3.29%
C56 Ovary	70	3.11%
C82-C85, C96 Non-Hodgkin lymphoma	65	2.89%
C00-C14 Lip, Oral cavity & Pharynx	39	1.73%

TOP MALIGNANT PRIMARY SITES AMONG ALL MALES, 2017

In males, colorectal is the most common cancer, representing 13.67% of all malignant cases among males in 2017. Five most commonly diagnosed cancers among males are: colorectal, leukemia, prostate, skin and lip, oral cavity & pharynx, Table 24.

TABLE 24: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG MALES, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C18-C21 Colorectal	256	13.67%
C91-C95 Leukemia	196	10.46%
C61 Prostate	155	8.28%
C44 Skin	134	7.15%
C00-C14 Lip, Oral cavity & Pharynx	112	5.98%
C73 Thyroid	110	5.87%

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C82-C85, C96 Non-Hodgkin lymphoma	107	5.71%
C34 Bronchus and Lung	103	5.50%
C67 Urinary bladder	91	4.86%
C16 Stomach	59	3.15%

TOP MALIGNANT PRIMARY SITES AMONG MALES & FEMALES, 2017

Breast cancer in females and colorectal cancer in males have shown the fastest increase in incidence over the past decade across UAE. The incidence of breast, thyroid, & colorectal cancers in females and colorectal, leukemia and prostate cancers in males has also been observed to increase markedly in 2017, Table 25.

TABLE 25: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG MALES & FEMALES, 2017

PRIMARY SITE ICD-10	%
C50 Breast	36.67%
C73 Thyroid	13.42%
C18-C21 Colorectal	7.38%
C91-C95 Leukemia	5.24%
C54-C55 Uterus	4.93%
C53 Cervix uteri	3.64%
C44 Skin	3.29%
C56 Ovary	3.11%
C82-C85, C96 Non-Hodgkin lymphoma	2.89%
C00-C14 Lip, Oral cavity & Pharynx	1.73%

PRIMARY SITE ICD-10	%
C18-C21 Colorectal	13.67%
C91-C95 Leukemia	10.46%
C61 Prostate	8.28%
C44 Skin	7.15%
C00-C14 Lip, Oral cavity & Pharynx	5.98%
C73 Thyroid	5.87%
C82-C85, C96 Non-Hodgkin lymphoma	5.71%
C34 Bronchus and Lung	5.50%
C67 Urinary bladder	4.86%
C16 Stomach	3.15%

TOP MALIGNANT PRIMARY SITES AMONG UAE CITIZENS, 2017

In both genders of UAE citizens, breast is the most common cancer, representing 19.64% of all malignant cases in 2017. The 5 most commonly diagnosed cancers among UAE citizens are: breast, thyroid, colorectal, leukemia and uterus, Table 26.

TABLE 26: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG UAE CITIZENS, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	217	19.64%
C73 Thyroid	123	11.13%
C18-C21 Colorectal	117	10.59%
C91-C95 Leukemia	91	8.24%

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C54-C55 Uterus	48	4.34%
C61 Prostate	46	4.16%
C82-C85, C96 Non-Hodgkin lymphoma	46	4.16%
C34 Bronchus and Lung	40	3.62%
C44 Skin	34	3.08%
C67 Urinary bladder	34	3.08%

TOP MALIGNANT PRIMARY SITES AMONG UAE FEMALE CITIZENS, 2017

In UAE female citizens, breast is the most common cancer, representing 31.76% of all malignant cases among females in 2017. The 5 most commonly diagnosed cancers among UAE female citizens are breast, thyroid, colorectal, uterus, and leukemia, Table 27.

TABLE 27: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG UAE FEMALE CITIZENS, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	216	31.76%
C73 Thyroid	99	14.56%
C18-C21 Colorectal	58	8.53%
C54-C55 Uterus	48	7.06%
C91-C95 Leukemia	47	6.91%
C82-C85, C96 Non-Hodgkin lymphoma	23	3.38%
C16 Stomach	19	2.79%
C44 Skin	19	2.79%
C53 Cervix uteri	16	2.35%
C00-C14 Lip, Oral cavity & Pharynx	15	2.21%

TOP MALIGNANT PRIMARY SITES AMONG UAE MALE CITIZENS, 2017

In UAE male citizens, colorectal is the most common cancer, representing 13.88% of all malignant cases among males in 2017. The 5 most commonly diagnosed cancers among UAE male citizens are colorectal, prostate, leukemia, bronchus & lung and thyroid. Table 28

TABLE 28: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG UAE MALE CITIZENS, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C18-C21 Colorectal	59	13.88%
C61 Prostate	46	10.82%
C91-C95 Leukemia	44	10.35%
C34 Bronchus and Lung	33	7.76%
C73 Thyroid	24	5.65%
C67 Urinary bladder	23	5.41%
C82-C85, C96 Non-Hodgkin lymphoma	23	5.41%
C22 Liver and intrahepatic bile ducts	20	4.71%
C00-C14 Lip, Oral cavity & Pharynx	16	3.76%
C44 Skin	15	3.53%

TOP MALIGNANT PRIMARY SITES AMONG ALL UAE CITIZENS, MALES & FEMALES, 2017

Among UAE citizens, colorectal is the most common cancer, representing 13.88% of all malignant cases among males and breast cancer is representing 31.76% of all malignant cases among females in 2017, Table 29.

TABLE 29: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG ALL UAE CITIZENS IN BOTH MALES & FEMALES, 2017

PRIMARY SITE ICD-10	%
C50 Breast	31.76%
C73 Thyroid	14.56%
C18-C21 Colorectal	8.53%
C54-C55 Uterus	7.06%
C91-C95 Leukemia	6.91%
C82-C85, C96 Non-Hodgkin lymphoma	3.38%
C16 Stomach	2.79%
C44 Skin	2.79%
C53 Cervix uteri	2.35%
C00-C14 Lip, Oral cavity & Pharynx	2.21%

PRIMARY SITE ICD-10	%
C18-C21 Colorectal	13.88%
C61 Prostate	10.82%
C91-C95 Leukemia	10.35%
C34 Bronchus and Lung	7.76%
C73 Thyroid	5.65%
C67 Urinary bladder	5.41%
C82-C85, C96 Non-Hodgkin lymphoma	5.41%
C22 Liver and intrahepatic bile ducts	4.71%
C00-C14 Lip, Oral cavity & Pharynx	3.76%
C44 Skin	3.53%

TOP MALIGNANT PRIMARY SITES AMONG NON-UAE CITIZENS, 2017

Among Non-UAE citizens, breast is the most common cancer, representing 20.44% of all malignant cases among both genders in 2017. The most commonly diagnosed cancers among Non-UAE citizens are breast, colorectal, thyroid, leukemia, skin, Table 30.

TABLE 30: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG NON-UAE CITIZENS, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	617	20.44%
C18-C21 Colorectal	305	10.11%
C73 Thyroid	289	9.58%
C91-C95 Leukemia	223	7.39%
C44 Skin	174	5.77%
C82-C85, C96 Non-Hodgkin lymphoma	126	4.17%
C00-C14 Lip, Oral cavity & Pharynx	120	3.98%
C61 Prostate	109	3.61%
C34 Bronchus and Lung	100	3.31%
C67 Urinary bladder	78	2.58%

TOP MALIGNANT PRIMARY SITES AMONG NON-UAE FEMALE CITIZENS, 2017

Among Non-UAE female citizens, breast is the most common cancer, representing 38.79% of malignant cases among females in 2017. The 5 most commonly diagnosed cancers among Non-UAE female citizens are breast, thyroid, colorectal, leukemia and cervix uteri, Table 31.

TABLE 31: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG NON-UAE FEMALE CITIZENS, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	609	38.79%
C73 Thyroid	203	12.93%
C18-C21 Colorectal	108	6.88%
C91-C95 Leukemia	71	4.52%
C53 Cervix uteri	66	4.20%
C54-C55 Uterus	63	4.01%
C44 Skin	55	3.50%
C56 Ovary	55	3.50%
C82-C85, C96 Non-Hodgkin lymphoma	42	2.68%
C34 Bronchus and Lung	30	1.91%

TOP MALIGNANT PRIMARY SITES AMONG NON-UAE MALE CITIZENS, 2017

Among Non-UAE male citizens, colorectal is the most common cancer, representing 13.60% of malignant cases among males in 2017. The 5 most commonly diagnosed cancers among Non-UAE male citizens are colorectal, leukemia, skin, prostate, and lip, oral cavity & pharynx, Table 32.

TABLE 32: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG NON-UAE MALE CITIZENS, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C18-C21 Colorectal	197	13.60%
C91-C95 Leukemia	152	10.50%
C44 Skin	119	8.22%
C61 Prostate	109	7.53%
C00-C14 Lip, Oral cavity & Pharynx	96	6.63%
C73 Thyroid	86	5.94%
C82-C85, C96 Non-Hodgkin lymphoma	84	5.80%
C34 Bronchus and Lung	70	4.83%
C67 Urinary bladder	68	4.70%
C16 Stomach	51	3.52%

TOP MALIGNANT PRIMARY SITES AMONG ALL NON-UAE CITIZENS, MALES & FEMALES, 2017

Among Non-UAE citizens, colorectal is the most common cancer, representing 13.60% of malignant cases diagnosed among males and breast cancer is representing 38.79% of malignant cases diagnosed among females in 2017, Table 33.

TABLE 33: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG ALL NON-UAE CITIZENS IN BOTH MALES & FEMALES, 2017

PRIMARY SITE ICD-10	%
C50 Breast	38.79%
C73 Thyroid	12.93%
C18-C21 Colorectal	6.88%
C91-C95 Leukemia	4.52%
C53 Cervix uteri	4.20%
C54-C55 Uterus	4.01%
C44 Skin	3.50%

PRIMARY SITE ICD-10	%
C18-C21 Colorectal	13.60%
C91-C95 Leukemia	10.50%
C44 Skin	8.22%
C61 Prostate	7.53%
C00-C14 Lip, Oral cavity & Pharynx	6.63%
C73 Thyroid	5.94%
C82-C85, C96 Non-Hodgkin lymphoma	5.80%

PRIMARY SITE ICD-10	%
C56 Ovary	3.50%
C82-C85, C96 Non-Hodgkin lymphoma	2.68%
C34 Bronchus and Lung	1.91%

PRIMARY SITE ICD-10	%
C34 Bronchus and Lung	4.83%
C67 Urinary bladder	4.70%
C16 Stomach	3.52%

CANCER CASES (IN-SITU ONLY) AMONG UAE POPULATION

PRIMARY SITE (IN-SITU) DISTRIBUTION BY GENDER, AMONG ALL, 2017

In 2017, there were 58 new carcinoma in-situ of breast cases were reported to UAE National Cancer Registry. The majority of the cases were reported are carcinoma in-situ of breast followed by carcinoma in-situ of cervix uteri. Thus, total distribution of primary site (in-situ) cases diagnosed among UAE population includes 176 individuals with 120 females and 56 males, Table 34.

TABLE 34: PRIMARY SITE (IN-SITU) DISTRIBUTION BY GENDER, AMONG ALL, 2017

PRIMARY SITE ICD-10	FEMALE	MALE	GRAND TOTAL
D00 Carcinoma in situ of oral cavity, oesophagus and stomach	0	1	1
D01 Carcinoma in situ of other and unspecified digestive organs	3	3	6
D02 Carcinoma in situ of middle ear and respiratory system	0	3	3
D03 Melanoma in situ	9	12	21
D04 Carcinoma in situ of skin	5	2	7
D05 Carcinoma in situ of breast	57	1	58
D06 Carcinoma in situ of cervix uteri	38	0	38
D07 Carcinoma in situ of other and unspecified genital organs	1	0	1
D09 Carcinoma in situ of other and unspecified sites	7	34	41
GRAND TOTAL	**120**	**56**	**176**

TOP PRIMARY SITES (IN-SITU) AMONG ALL, 2017

Table 35 demonstrates the top primary sites in-situ statistics for the UAE population. Carcinoma in-situ of breast (32.95%) was most commonly observed among all in-situ cases. The most common types of cancer diagnosed in UAE population are mentioned (in order of frequency): carcinoma in-situ of breast (32.95%), followed by carcinoma in-situ of other and unspecified sites (23.3%) and carcinoma in-situ of cervix uteri (21.59%).

TABLE 35: TOP PRIMARY SITES (IN-SITU) AMONG ALL, 2017

PRIMARY SITE ICD-10	NUMBER OF IN-SITU CASES 2017	%
D05 Carcinoma in situ of breast	58	32.95%
D09 Carcinoma in situ of other and unspecified sites	41	23.30%
D06 Carcinoma in situ of cervix uteri	38	21.59%
D03 Melanoma in situ	21	11.93%
D04 Carcinoma in situ of skin	7	3.98%
D01 Carcinoma in situ of other and unspecified digestive organs	6	3.41%
D02 Carcinoma in situ of middle ear and respiratory system	3	1.70%
D00 Carcinoma in situ of oral cavity, oesophagus and stomach	1	0.57%
D07 Carcinoma in situ of other and unspecified genital organs	1	0.57%
GRAND TOTAL	**176**	**100.00%**

CHAPTER #03

INCIDENCE OF MOST COMMON CANCERS DIAGNOSED IN 2017

This section demonstrates the most common cancers diagnosed among UAE and Non-UAE citizens during the period between January and December 2017. It shows the distribution of the most common cancers by genders. Data presented as absolute numbers, relative frequency, incidence rates and stage.

FEMALE BREAST CANCER (C50)

Breast cancer is the most common of all females' cancer worldwide with an incidence of 16% and 22.9% of invasive cancers in women. 18.2% of all cancer deaths worldwide, counting both males and females, are from breast cancer [13].

Breast cancer ranked first among females, between January and December 2017, there were 825 female breast cancer cases. Breast cancer accounted to 20% from all cancers reported among UAE and Non-UAE citizens, and to 36.67% from all cancers reported among females at all ages. The ASR was 42.1/100,000 for female population.

FIGURE 17: AGE GROUP DISTRIBUTION OF FEMALE BREAST CANCER CASES IN UAE, 2017

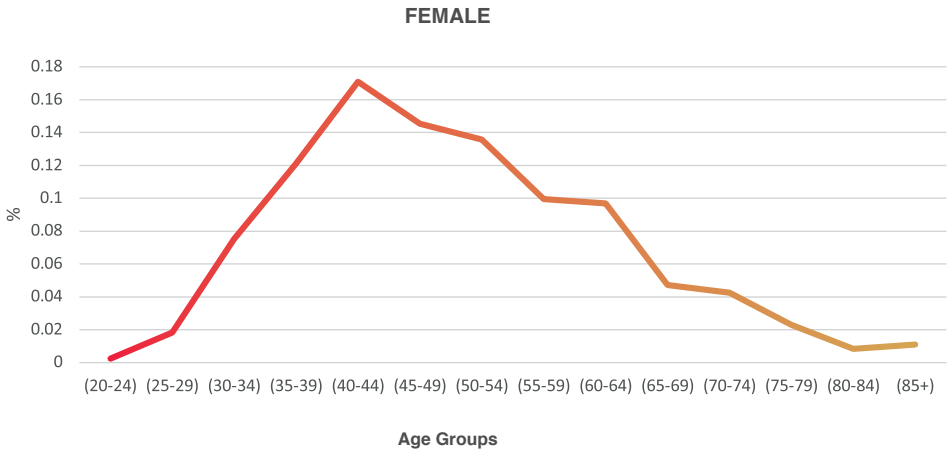


FIGURE 18: AGE-SPECIFIC INCIDENCE RATE (ASIR) FOR FEMALE BREAST CANCER CASES IN UAE, 2017

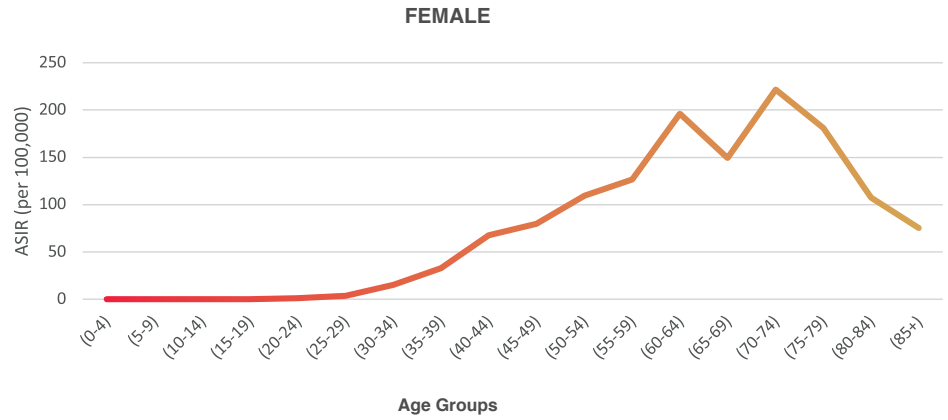
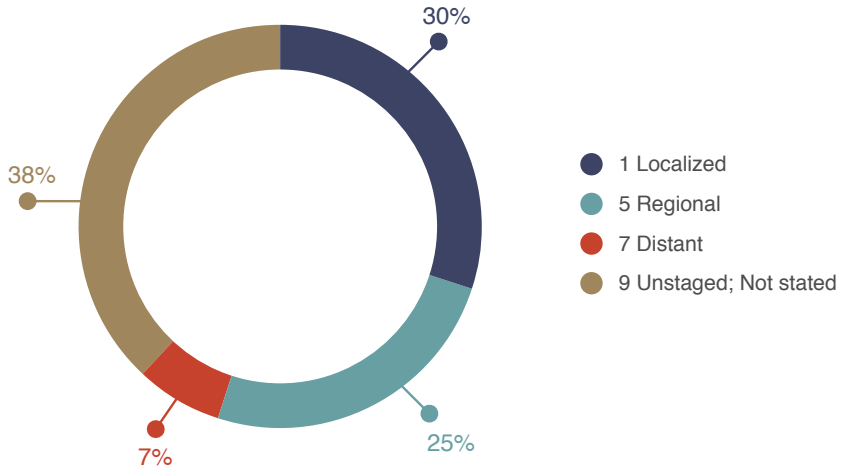


FIGURE 19: STAGE DISTRIBUTION OF BREAST CANCER AMONG FEMALES, 2017



COLORECTAL CANCER (C18-C21)

There were 422 cases of colorectal cancer accounting for 10.24% of all newly diagnosed cases in year 2017. Colorectal cancer ranked first among males and third among females. It affected 256 (60.7%) males and 166 (39.3%) females. The ASR was 8.7/100,000 for males and 9.5/100,000 for females.

FIGURE 20: AGE GROUP DISTRIBUTION OF COLORECTAL CANCER CASES IN UAE, 2017

FIGURE 21: AGE-SPECIFIC INCIDENCE RATE (ASIR) FOR COLORECTAL CANCER CASES IN UAE, 2017

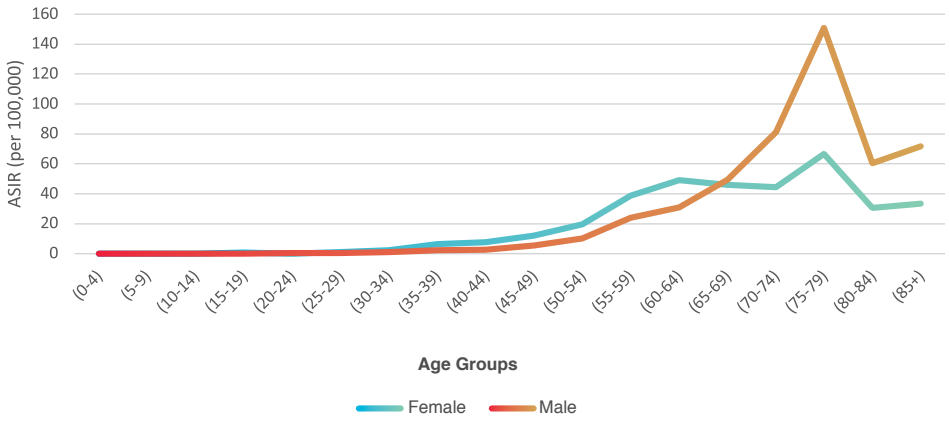
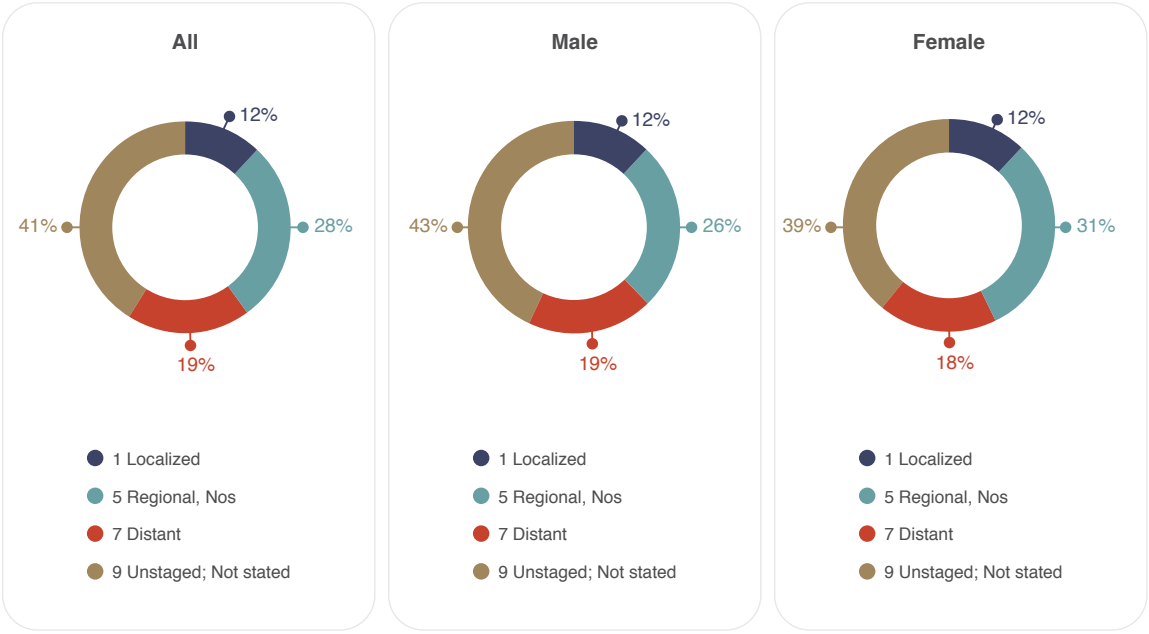


FIGURE 22: STAGE DISTRIBUTION OF COLORECTAL CANCER CASES, 2017



THYROID CANCER (C73)

Thyroid cancer ranked second among females and sixth among males. There were 412 thyroid cases cancer accounting to 9.99% from all newly diagnosed cancers in 2017.Thyroid cancer affected 302 (73.3%) females and 110 (26.7%) males. The ASR was 1.5/100,000 for males and 10.42/100,000 for females.

FIGURE 23: AGE GROUP DISTRIBUTION OF THYROID CANCER CASES IN UAE, 2017

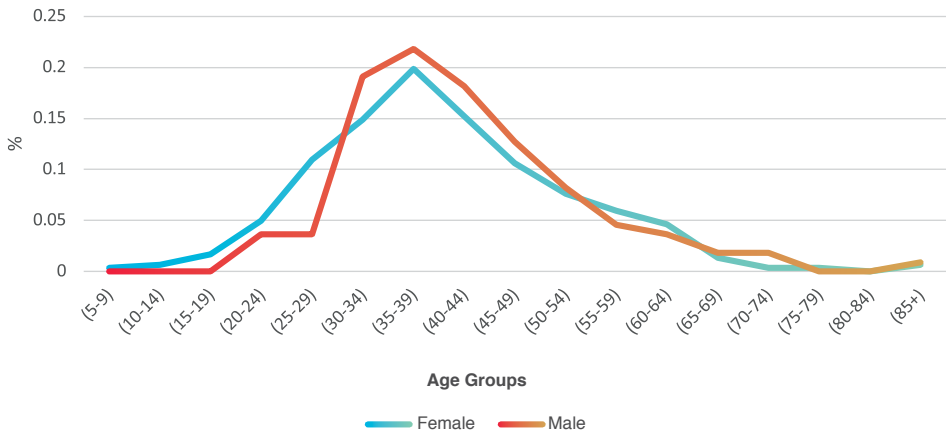


FIGURE 24: AGE-SPECIFIC INCIDENCE RATE (ASIR) FOR THYROID CANCER CASES IN UAE, 2017

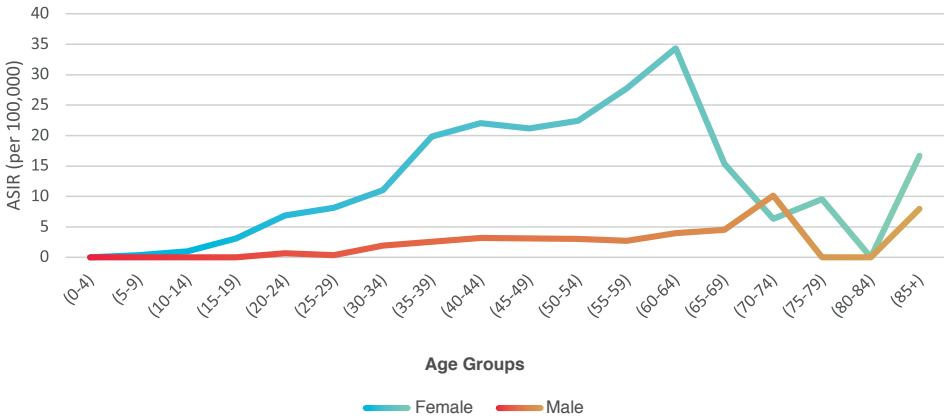
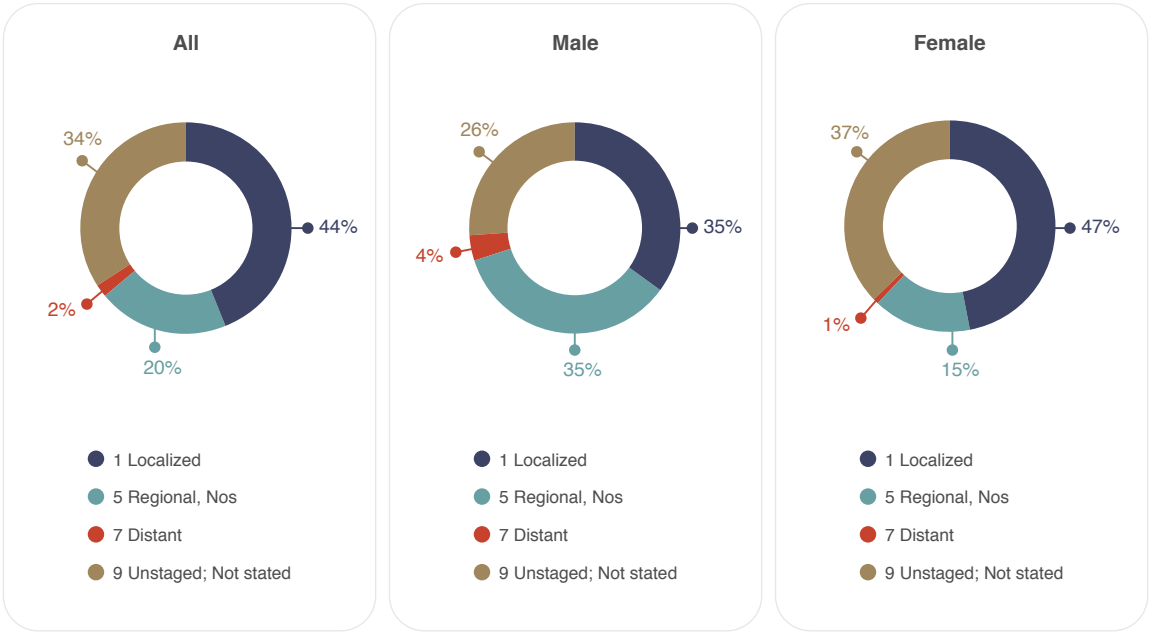


FIGURE 25: STAGE DISTRIBUTION OF THYROID CANCER CASES, 2017



LEUKEMIA (C91-C95)

Leukemia ranked second among males and the fourth among females, there were 314 cases accounted to 7.62% of all cancer cases diagnosed in 2017. Leukemia affected 196 (62.4%) males and 118 (37.6%) females. The ASR was 5.4/100,000 for males and 5.6/100,000 for females.

FIGURE 26: AGE GROUP DISTRIBUTION OF LEUKEMIA CASES IN UAE, 2017

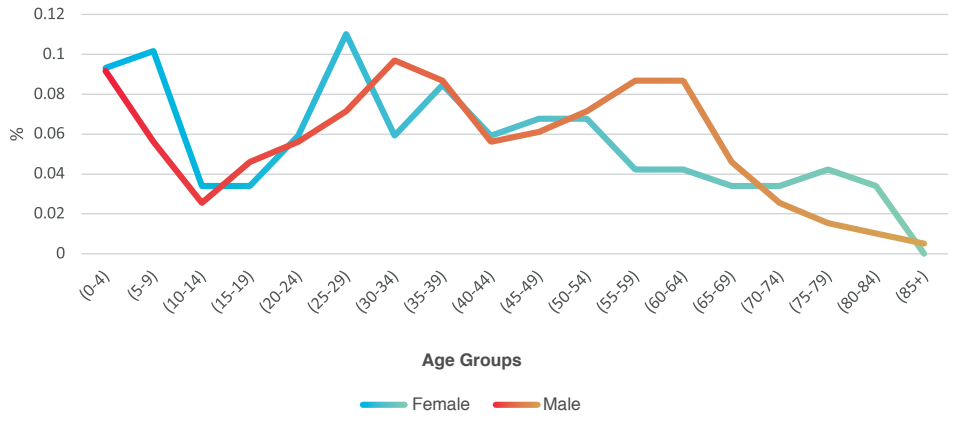
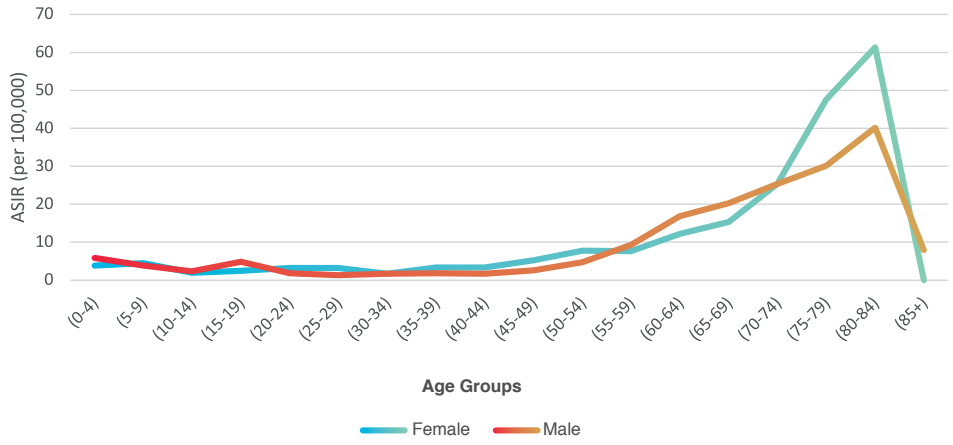


FIGURE 27: AGE-SPECIFIC INCIDENCE RATE (ASIR) FOR LEUKEMIA CASES IN UAE, 2017



NON-HODGKIN LYMPHOMA (C82-C85, C96)

Non-Hodgkin´s lymphoma ranked the seventh among males and ninth among females. There were 172 cases of Non-Hodgkin´s lymphoma accounted to 4.17% of all cancer cases diagnosed in 2017. Non-Hodgkin´s lymphoma affected 107 (62.2%) males and 65 (37.8%) females. The ASR was 2.6/100,000 for males and 3.37/100,000 for females.

FIGURE 28: AGE GROUP DISTRIBUTION OF NON-HODGKIN LYMPHOMA CASES IN UAE, 2017

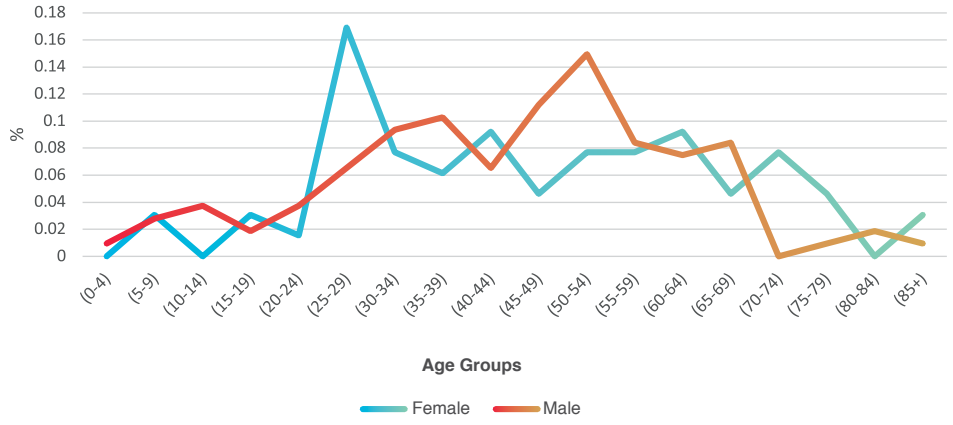


FIGURE 29: AGE-SPECIFIC INCIDENCE RATE (ASIR) FOR NON-HODGKIN LYMPHOMA CASES IN UAE, 2017

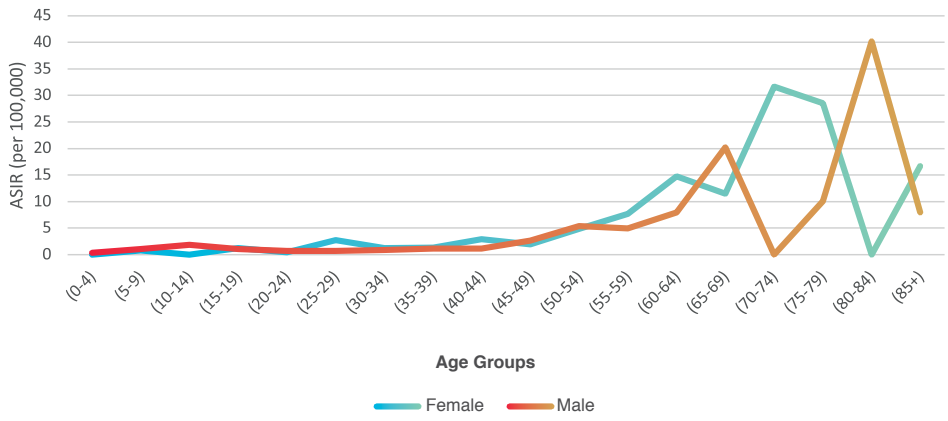
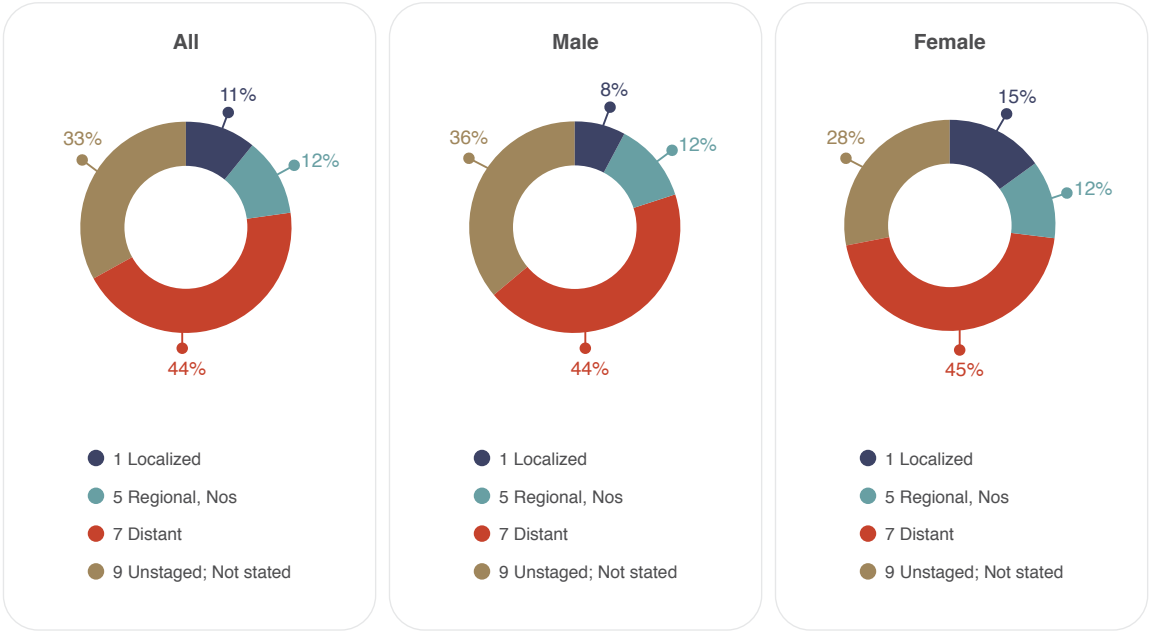


FIGURE 30: STAGE DISTRIBUTION OF NON-HODGKIN LYMPHOMA CASES, 2017



PROSTATE CANCER (C61)

Prostate cancer ranked the 3rd among males. There were 155 cases of prostate cancer accounted to 3.76% of all cancer cases among both genders and 8.28% of all cancer cases among males diagnosed in 2017. The ASR was 8.5/100,000 for males.

FIGURE 31: AGE GROUP DISTRIBUTION OF PROSTATE CANCER CASES IN UAE, 2017

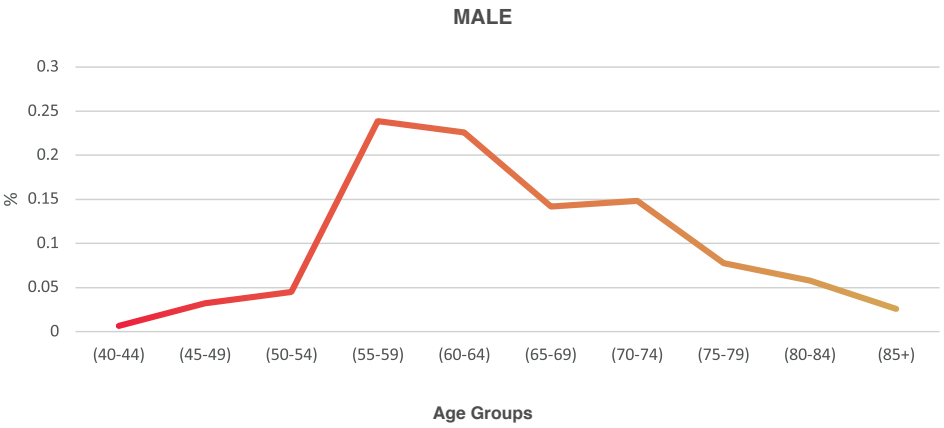


FIGURE 32: AGE-SPECIFIC INCIDENCE RATE (ASIR) FOR PROSTATE CANCER CASES IN UAE, 2017

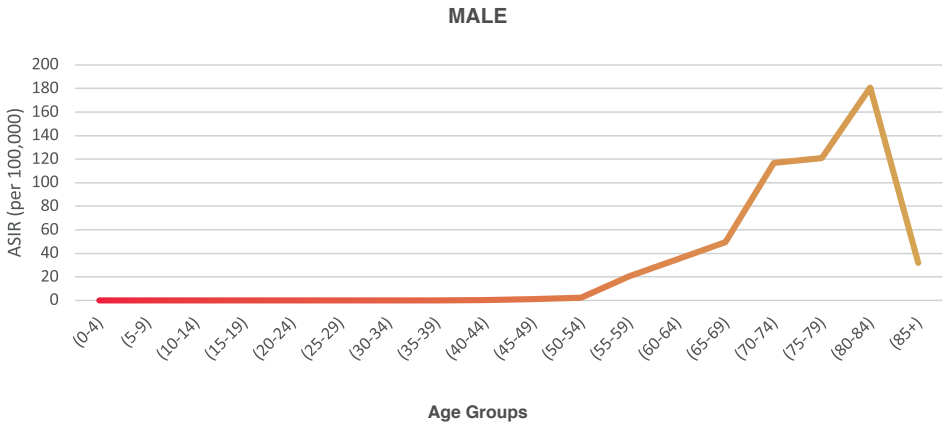
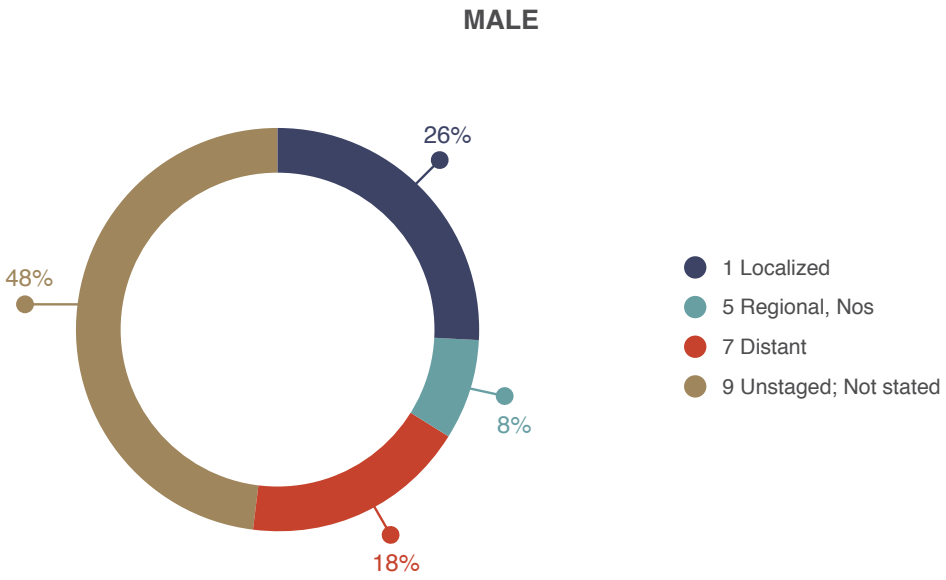


FIGURE 33: STAGE DISTRIBUTION OF PROSTATE CANCER CASES, 2017



CERVIX UTERI CANCER (C53)

Cervix uteri cancer ranked the sixth among females. There were 82 cases of cervix uteri cancer accounted to 3.64% of all cancer cases among female diagnosed in 2017. The ASR was 3.3/100,000 for females.

FIGURE 34: AGE GROUP DISTRIBUTION OF CERVIX UTERI CANCER CASES IN UAE, 2017

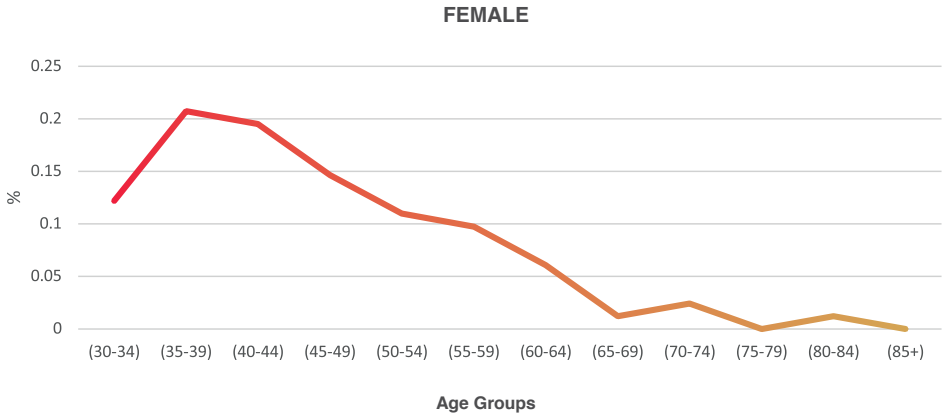


FIGURE 35: AGE-SPECIFIC INCIDENCE RATE (ASIR) FOR CERVIX UTERI CANCER CASES IN UAE, 2017

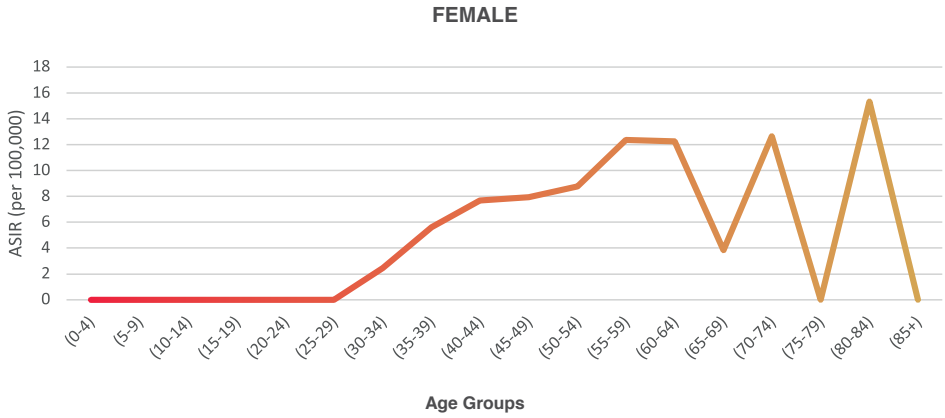
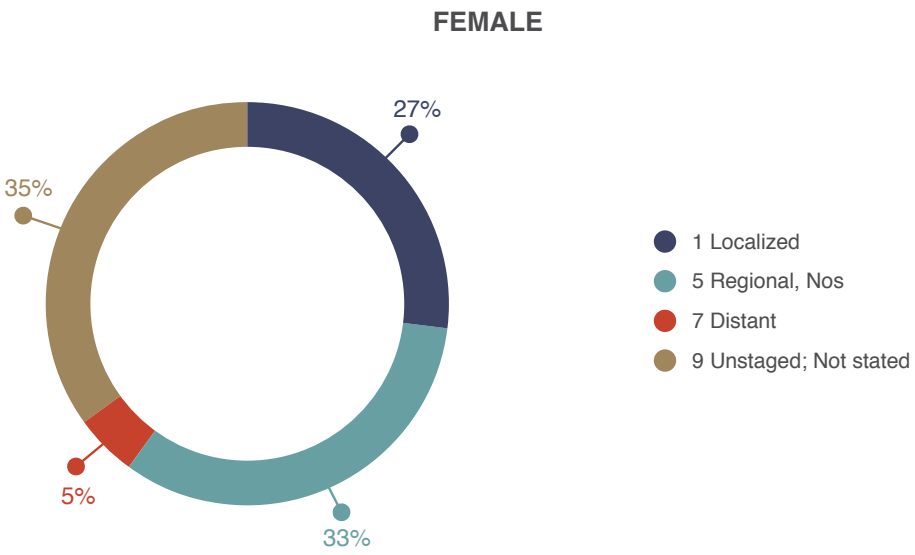
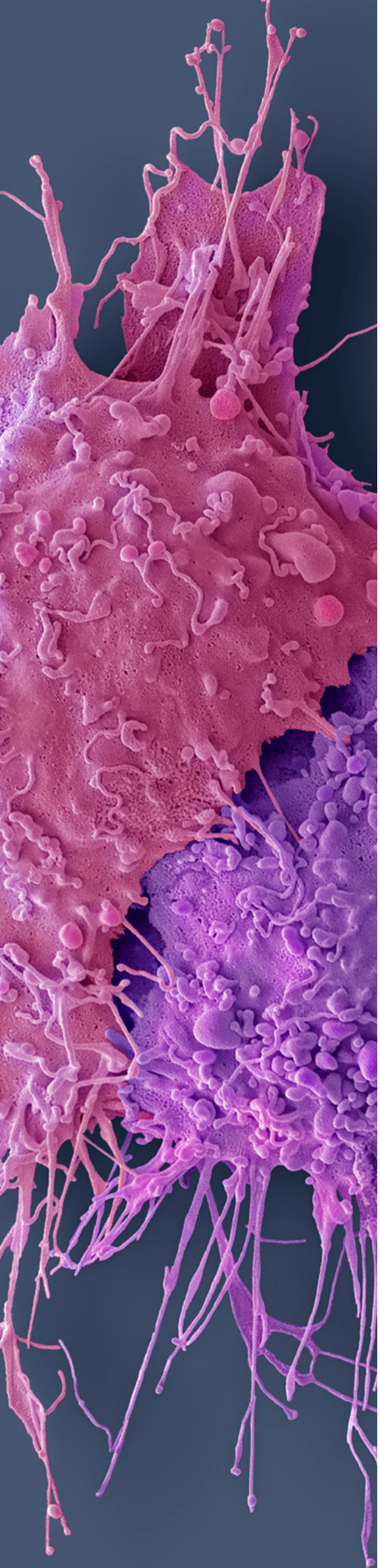


FIGURE 36: STAGE DISTRIBUTION OF CERVIX UTERI CANCER CASES, 2017





CHAPTER
#04

ADULT MALIGNANCIES IN UAE

In the year of 2017, there were 4153 adults aged above 14 years diagnosed with new cancer in UAE. This constitutes about (96.6%) of all registered malignant and in-situ cases.

CANCER INCIDENCE AMONG ADULTS (>14 YEARS), 2017

Between January and December 2017, the total number of cancer incidence cases reported to the UAE National Cancer Registry among adults aged above 14 years was 4153. Of those, 1097 cancer cases were among UAE citizens and 3056 were among Non-UAE citizens. Total of 1849 (44.5%) cases were males and 2304 (55.5%) were females, Table 36

TABLE 36: NUMBER OF CANCER CASES AMONG ADULTS (>14 YEARS) ACCORDING TO PRIMARY SITE, GENDER, AND NATIONALITY, 2017

PRIMARY SITE ICD-10	NON-UAE		NON-UAE TOTAL	UAE		UAE TOTAL	GRAND TOTAL
	FEMALE	MALE		FEMALE	MALE		
C00-C14 Lip, Oral cavity & Pharynx	**23**	**94**	**117**	**15**	**16**	**31**	**148**
C15 Esophagus	4	14	**18**	6	6	**12**	30
C16 Stomach	17	51	**68**	19	8	**27**	95
C17 Small intestine	6	11	**17**	3	1	**4**	21
C18-C21 Colorectal	108	197	**305**	58	59	**117**	422
C22 Liver and intrahepatic bile ducts	14	26	**40**	8	16	**24**	64
C23-C24 Gallbladder, Other and unspecified part of biliary tract	7	17	**24**	4	3	**7**	31
C25 Pancreas	15	30	**45**	11	13	**24**	69
C30, C31 Nasal cavity, middle ear, accessory sinuses	2	5	**7**	2	0	**2**	9
C32 Larynx	2	11	**13**	0	7	**7**	20
C34 Bronchus and Lung	30	70	**100**	7	33	**40**	140
C40-C41 Bone and articular cartilage	4	10	**14**	5	1	**6**	20
C43 Skin melanoma	9	15	**24**	0	2	**2**	26
C44 Skin	55	117	**172**	18	14	**32**	204
C45 Mesothelioma	0	2	**2**	0	1	**1**	3
C46 Kaposi sarcoma	0	1	**1**	0	2	**2**	3
C48 Retroperitoneum and peritoneum	4	8	**12**	0	3	**3**	15
C49 Connective and soft tissue	15	28	**43**	4	6	**10**	53
C50 Breast	609	8	**617**	216	1	**217**	834
C53 Cervix uteri	66	0	**66**	16	0	**16**	82
C54-C55 Uterus	63	0	**63**	48	0	**48**	111
C56 Ovary	53	0	**53**	13	0	**13**	66
C61 Prostate	0	109	**109**	0	46	**46**	155
C62 Testis	0	32	**32**	0	8	**8**	40
C64-C65 Kidney & Renal pelvis	15	40	**55**	5	13	**18**	73
C66, C68 Ureter and Other urinary organs	0	6	**6**	0	1	**1**	7
C67 Urinary bladder	10	67	**77**	11	23	**34**	111
C69 Eye	0	0	**0**	2	0	**2**	2
C70-C72 Brain & CNS	19	42	**61**	5	3	**8**	69
C73 Thyroid	201	86	**287**	98	24	**122**	409
C74-C75 Other endocrine glands	3	4	**7**	0	1	**1**	8
C80 Unknown primary site	25	22	**47**	6	8	**14**	61

PRIMARY SITE ICD-10	NON-UAE		NON-UAE TOTAL	UAE		UAE TOTAL	GRAND TOTAL
	FEMALE	MALE		FEMALE	MALE		
C81 Hodgkin's lymphoma	22	28	**50**	9	11	**20**	70
C82-C85, C96 Non-Hodgkin lymphoma	41	79	**120**	22	20	**42**	162
C88, C90 Multiple myeloma	9	25	**34**	4	11	**15**	49
C91-C95 Leukemia	55	131	**186**	36	31	**67**	253
Other malignancy	20	13	**33**	7	2	**9**	42
D00 Carcinoma in situ of oral cavity, oesophagus and stomach	0	1	**1**	0	0	**0**	1
D01 Carcinoma in situ of other and unspecified digestive organs	1	3	**4**	2	0	**2**	6
D02 Carcinoma in situ of middle ear and respiratory system	0	2	**2**	0	1	**1**	3
D03 Melanoma in situ	8	10	**18**	1	2	**3**	21
D04 Carcinoma in situ of skin	4	2	**6**	1	0	**1**	7
D05 Carcinoma in situ of breast	43	1	**44**	14	0	**14**	58
D06 Carcinoma in situ of cervix uteri	29	0	**29**	9	0	**9**	38
D07 Carcinoma in situ of other and unspecified genital organs	1	0	**1**	0	0	**0**	1
D09 Carcinoma in situ of other and unspecified sites	5	21	**26**	2	13	**15**	41
GRAND TOTAL	**1617**	**1439**	**3056**	**687**	**410**	**1097**	**4153**

TABLE 37: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG UAE POPULATION - ADULTS, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	834	20.97%
C18-C21 Colorectal	422	10.61%
C73 Thyroid	409	10.28%
C91-C95 Leukemia	253	6.36%
C44 Skin	204	5.13%
C82-C85, C96 Non-Hodgkin lymphoma	162	4.07%
C61 Prostate	155	3.90%
C00-C14 Lip, Oral cavity & Pharynx	148	3.72%
C34 Bronchus and Lung	140	3.52%
C54-C55 Uterus	111	2.79%

TABLE 38: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG UAE POPULATION - ADULTS MALES & FEMALES, 2017

FEMALE	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	825	37.77%
C73 Thyroid	299	13.69%
C18-C21 Colorectal	166	7.60%
C54-C55 Uterus	111	5.08%
C91-C95 Leukemia	91	4.17%
C53 Cervix uteri	82	3.75%
C44 Skin	73	3.34%
C56 Ovary	66	3.02%
C82-C85, C96 Non-Hodgkin lymphoma	63	2.88%
C00-C14 Lip, Oral cavity & Pharynx	38	1.74%

MALE	NUMBER OF MALIGNANT CASES 2017	%
C18-C21 Colorectal	256	14.28%
C91-C95 Leukemia	162	9.04%
C61 Prostate	155	8.64%
C44 Skin	131	7.31%
C00-C14 Lip, Oral cavity & Pharynx	110	6.13%
C73 Thyroid	110	6.13%
C34 Bronchus and Lung	103	5.74%
C82-C85, C96 Non-Hodgkin lymphoma	99	5.52%
C67 Urinary bladder	90	5.02%
C16 Stomach	59	3.29%

TABLE 39: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG UAE CITIZEN - ADULTS, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	217	20.63%
C73 Thyroid	122	11.60%
C18-C21 Colorectal	117	11.12%
C91-C95 Leukemia	67	6.37%
C54-C55 Uterus	48	4.56%
C61 Prostate	46	4.37%
C82-C85, C96 Non-Hodgkin lymphoma	42	3.99%
C34 Bronchus and Lung	40	3.80%
C67 Urinary bladder	34	3.23%
C44 Skin	32	3.04%

TABLE 40: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG UAE CITIZEN - ADULTS MALES & FEMALES, 2017

FEMALE	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	216	32.83%
C73 Thyroid	98	14.89%
C18-C21 Colorectal	58	8.81%
C54-C55 Uterus	48	7.29%
C91-C95 Leukemia	36	5.47%
C82-C85, C96 Non-Hodgkin lymphoma	22	3.34%
C16 Stomach	19	2.89%
C44 Skin	18	2.74%
C53 Cervix uteri	16	2.43%
C00-C14 Lip, Oral cavity & Pharynx	15	2.28%

MALE	NUMBER OF MALIGNANT CASES 2017	%
C18-C21 Colorectal	59	14.97%
C61 Prostate	46	11.68%
C34 Bronchus and Lung	33	8.38%
C91-C95 Leukemia	31	7.87%

MALE	NUMBER OF MALIGNANT CASES 2017	%
C73 Thyroid	24	6.09%
C67 Urinary bladder	23	5.84%
C82-C85, C96 Non-Hodgkin lymphoma	20	5.08%
C00-C14 Lip, Oral cavity & Pharynx	16	4.06%
C22 Liver and intrahepatic bile ducts	16	4.06%
C44 Skin	14	3.55%

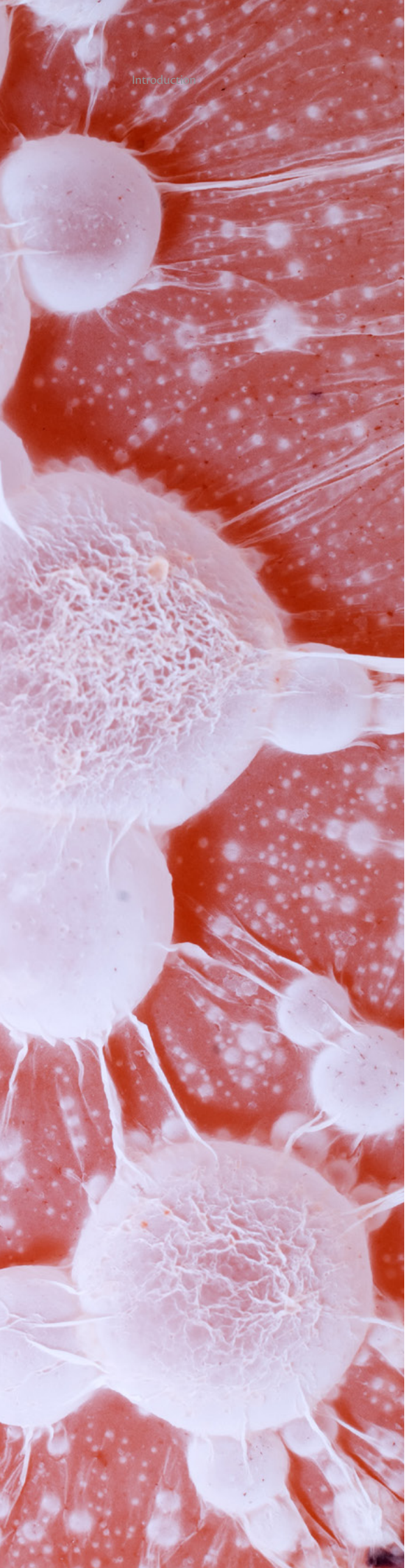
TABLE 41: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG NON-UAE CITIZEN - ADULTS, 2017

PRIMARY SITE ICD-10	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	617	21.09%
C18-C21 Colorectal	305	10.43%
C73 Thyroid	287	9.81%
C91-C95 Leukemia	186	6.36%
C44 Skin	172	5.88%
C82-C85, C96 Non-Hodgkin lymphoma	120	4.10%
C00-C14 Lip, Oral cavity & Pharynx	117	4.00%
C61 Prostate	109	3.73%
C34 Bronchus and Lung	100	3.42%
C67 Urinary bladder	77	2.63%

TABLE 42: TOP TEN MOST COMMON MALIGNANT PRIMARY SITES AMONG NON-UAE CITIZEN - ADULTS MALES & FEMALES, 2017

FEMALE	NUMBER OF MALIGNANT CASES 2017	%
C50 Breast	609	39.91%
C73 Thyroid	201	13.17%
C18-C21 Colorectal	108	7.08%
C53 Cervix uteri	66	4.33%
C54-C55 Uterus	63	4.13%
C44 Skin	55	3.60%
C91-C95 Leukemia	55	3.60%
C56 Ovary	53	3.47%
C82-C85, C96 Non-Hodgkin lymphoma	41	2.69%
C34 Bronchus and Lung	30	1.97%

MALE	NUMBER OF MALIGNANT CASES 2017	%
C18-C21 Colorectal	197	14.08%
C91-C95 Leukemia	131	9.36%
C44 Skin	117	8.36%
C61 Prostate	109	7.79%
C00-C14 Lip, Oral cavity & Pharynx	94	6.72%
C73 Thyroid	86	6.15%
C82-C85, C96 Non-Hodgkin lymphoma	79	5.65%
C34 Bronchus and Lung	70	5.00%
C67 Urinary bladder	67	4.79%
C16 Stomach	51	3.65%



CHAPTER #05

PEDIATRIC MALIGNANCIES IN UAE

Until now cancer is the second prominent cause of death (following accidents) in children aged 5 to 14 years [18]. Incidence of pediatric cancers differ worldwide representing between 0.5% and 4.6% of all cancers. Overall incidence rates fluctuate between 50 and 200 per million children across the world [19].

Pediatric Malignancies in UAE, 2017

In the year of 2017, there were 146 children at the age group of 0-14 years diagnosed with new cancer in UAE. This constitutes about (3.4%) of all registered malignant and in-situ cases.

PEDIATRIC CANCER CASES BY GENDER IN UAE, 2017

FIGURE 37: DISTRIBUTION BY GENDER OF NEW PEDIATRIC CANCER CASES IN UAE, 2017

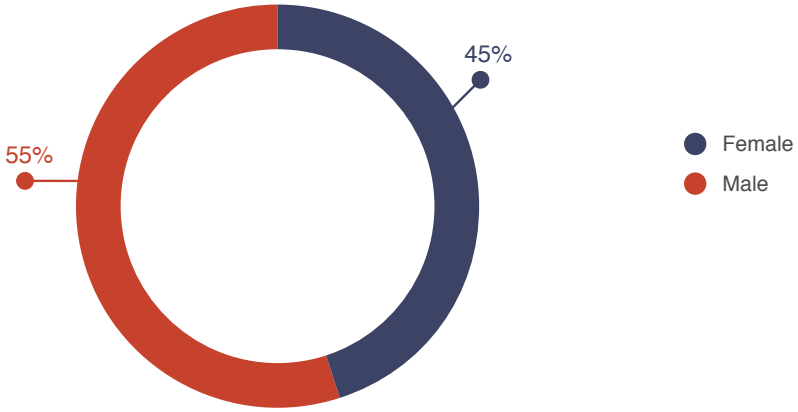


Figure 37 represents a total of 146 new pediatric cancer cases that were registered out of which 45% were females and 55% were males.

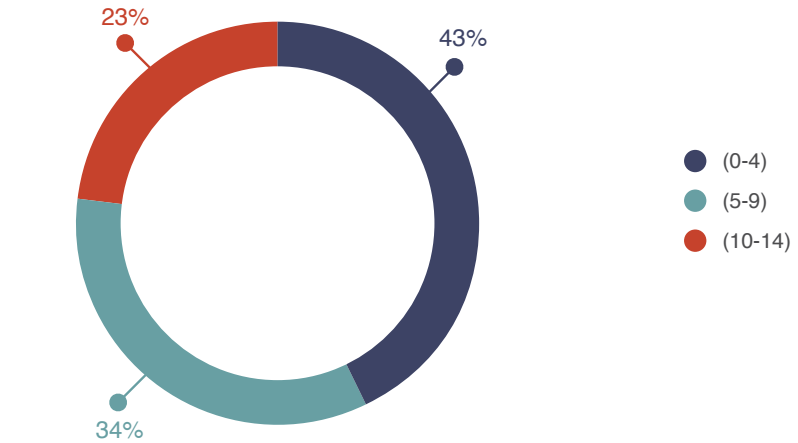
DISTRIBUTION OF PEDIATRIC CANCER CASES BY AGE GROUP IN UAE, 2017

TABLE 43: AGE GROUP DISTRIBUTION OF PEDIATRIC CANCER CASES IN UAE, 2017

AGE GROUP	NUMBER OF PEDIATRIC CANCER CASES	%
(0-4)	62	42.5%
(5-9)	50	34.2%
(10-14)	34	23.3%
GRAND TOTAL	**146**	**100.00%**

Table 43 shows the distribution by age group of 146 pediatric cancer cases in UAE in the year of 2017. The data indicates that the top most frequency of pediatric cancer cases was found among age group 0-4 year (62; 42.5%), followed by age group 5-9 year (50; 34.2%). It was noted that the less number of cancer cases in pediatric population were diagnosed in the age group of 10-14 year (34; 23.3%).

FIGURE 38: DISTRIBUTION OF PEDIATRIC CANCER CASES BY AGE GROUPS IN UAE, 2017



TOP FIVE PEDIATRIC CANCERS BY PRIMARY SITES AMONG BOTH GENDERS IN UAE, 2017

TABLE 44: DISTRIBUTION OF TOP FIVE PEDIATRIC CANCER CASES BY PRIMARY SITES IN UAE, 2017

PRIMARY SITES ICD-10	NUMBER OF PEDIATRIC CANCER CASES	%
C91-C95 Leukemia	61	41.8%
C64-C65 Kidney & Renal pelvis	11	7.5%
C82-C85, C96 Non-Hodgkin lymphoma	10	6.8%
C22 Liver and intrahepatic bile ducts	8	5.5%
C70-C72 Brain & CNS	7	4.8%

Table 44 demonstrates the distribution of top five pediatric cancer sites among both genders in UAE population in the year 2017. The data represents that most common occurring cancer was leukemia (41.8%) followed by kidney & renal pelvis (7.5%), Non-Hodgkin lymphoma (6.8%), liver and intrahepatic bile ducts (5.5%) and brain & CNS (4.8%).

FIGURE 39: DISTRIBUTION OF TOP FIVE PEDIATRIC CANCER CASES IN UAE, 2017

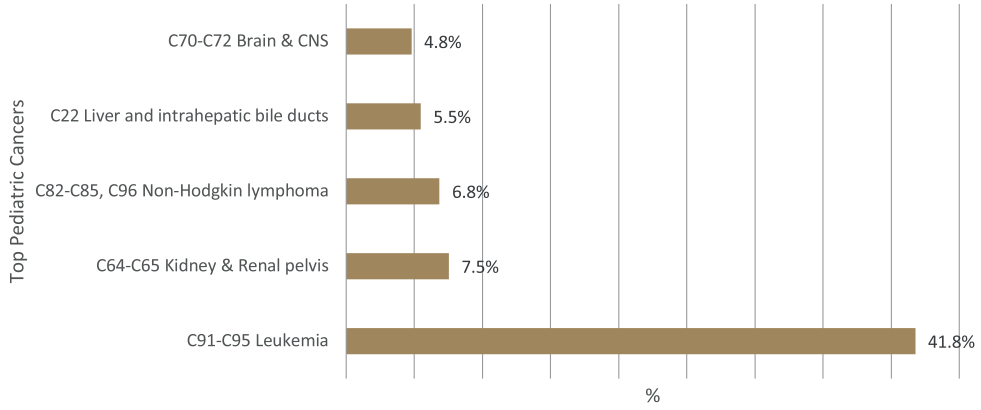
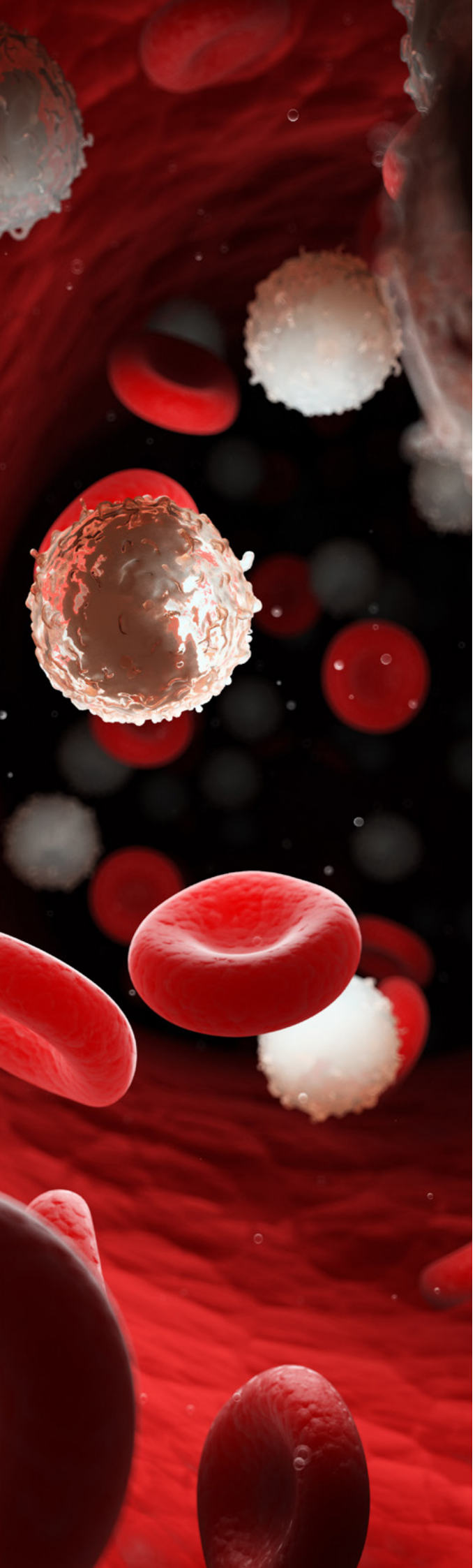


Figure 39 demonstrates the distribution of top five pediatric cancer sites among both genders in UAE population in the year 2017. The data represents that most common occurring cancer was leukemia (41.8%) followed by kidney & renal pelvis (7.5%), Non-Hodgkin lymphoma (6.8%), liver and intrahepatic bile ducts (5.5%) and brain & CNS (4.8%).



CHAPTER #06

CANCER MORTALITY, 2017

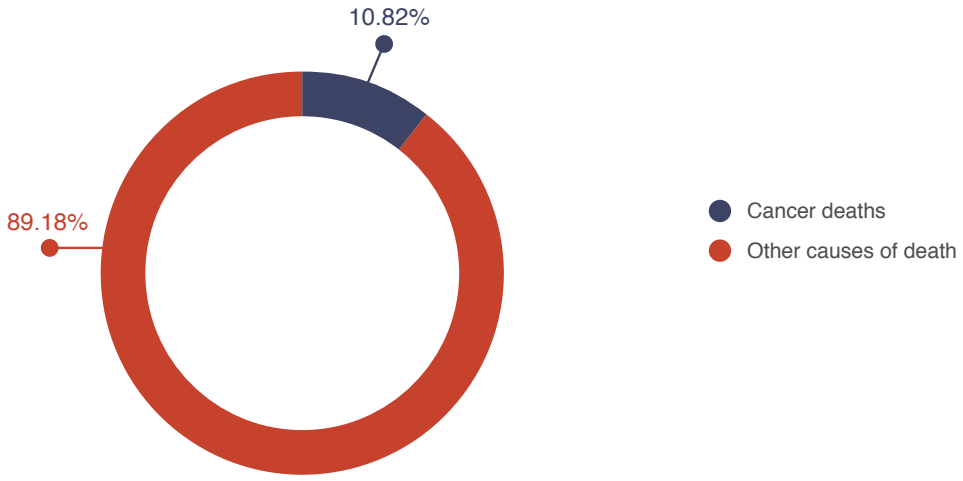
Total Number of Deaths

Cancer mortality has been contributed as the third leading cause of death in the United Arab Emirates after diseases of the circulatory system and injuries [20]. In 2017, a total number of 8826 death cases were reported in UAE among both UAE citizens and Non-UAE citizens regardless of the gender.

The number of deaths from cancer totaled 955 (517 in males, 438 in females) and accounted for 10.82% of all deaths regardless of nationality, type of cancer or gender. Table 45 and Figure 40

This represents an estimated age-standardized mortality rate of 26.4 deaths per 100,000 for both genders, 31 deaths per 100,000 females and 26 deaths per 100,000 males per year.

FIGURE 40: PERCENTAGE OF REPORTED CANCER DEATHS AMONG UAE POPULATION, 2017



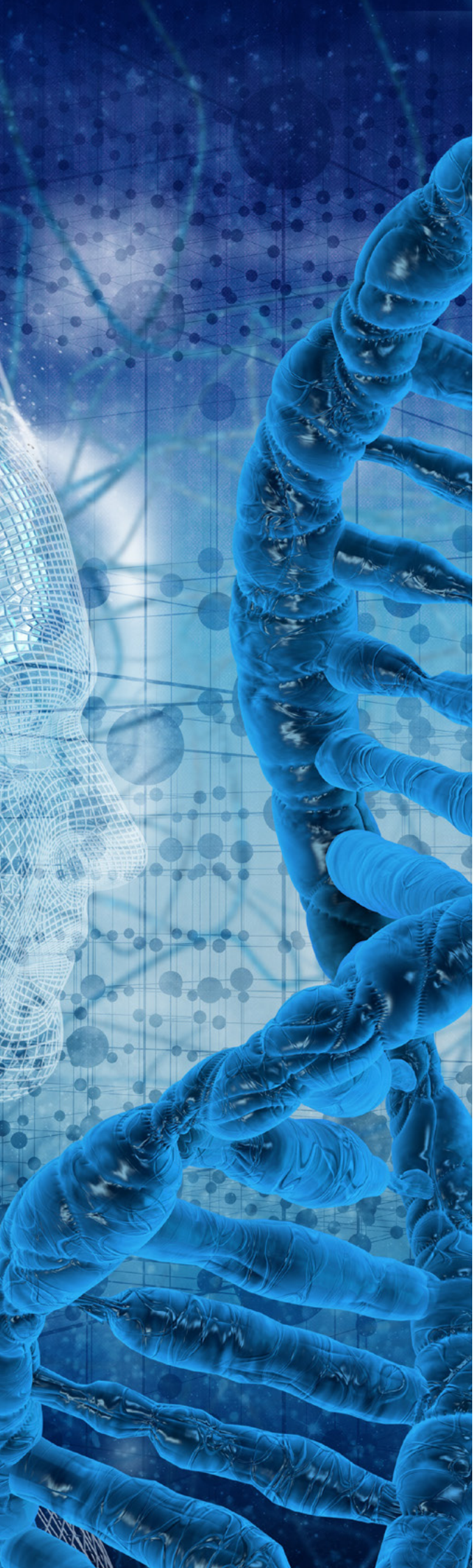
MORTALITY ACCORDING TO THE PRIMARY SITES

Breast cancer was the leading cause of cancer death in 2017, with an estimated average of 110 (11.5%) deaths per year, 24.4% of cancer deaths in women. Colon cancer was the second most common cause of cancer death in both sexes, with an estimated average of 98 (10.3%) deaths per year, 12.6% of cancer deaths in males and 7.5% of cancer deaths in females. Lung cancer was the third common cause of cancer death in both sexes, with an estimated average of 80 (8.4%) deaths, 10.8% of cancer deaths in males and 5.5% of cancer deaths in females. (Table 45).

Deaths from breast, colorectal, lung, leukemia, stomach and cervix uteri cancers combined made up almost half (44.4%) of all deaths from cancer during this period.

TABLE 45: DISTRIBUTION OF MALIGNANT CANCER DEATHS BY TYPE OF CANCER IN UAE, 2017

UNDERLYING CAUSE OF DEATH	FEMALE	%	MALE	%	TOTAL	%
Malignant Neoplasm of Breast	107	24.4%	3	0.6%	110	11.5%
Malignant Neoplasm of Colon	33	7.5%	65	12.6%	98	10.3%
Malignant Neoplasm of Trachea, bronchus & Lung	24	5.5%	56	10.8%	80	8.4%
Leukemia	25	5.7%	27	5.2%	52	5.4%
Malignant Neoplasm of Stomach	20	4.6%	30	5.8%	50	5.2%
Malignant Neoplasm of Cervix Uteri	18	4.1%	0	0.0%	18	1.9%
Malignant Neoplasm of Rectum	4	0.9%	12	2.3%	16	1.7%
Other Malignant Neoplasm	207	47.3%	324	62.7%	531	55.6%
GRAND TOTAL	**438**	**100.00%**	**517**	**100.00%**	**955**	**100.00%**



CHAPTER #07

CANCER INCIDENCE AND MORTALITY RATES

Cancer Incidence Rates

The UAE population has substantially increased over the past few decades, and this is primarily due to the high net inward migration of the expatriate workers.

A total of 4299 new cancer cases (malignant & in-situ) were registered between 1st January and 31 December, 2017, representing a crude incidence rate of 46.2/100,000 in 2017. Of these diagnosed cases, 176 and 4123 cases were in-situ and malignant, respectively.

Records for all invasive cancers (malignant cases), represented 95.9% of all registered cases and 4123 were registered; equivalent to a crude incidence rate of 44.3/100,000 for both genders. Figures showed a clear female predominance for cancer incidence. The crude incidence rate for malignant cases was higher for females 77.9/100,000 than for males 29.2/100,000. Summary incidence data for 2017 for individual cancers is listed in Table 46.

The overall age-standardized incidence rate (ASR) was 77.4/100,000, for females 120.3/100,000 and for males 62/100.000

TABLE 46: CRUDE INCIDENCE RATES PER 100,000 POPULATION, 2017

PRIMARY SITE ICD-10	CANCER INCIDENCE CASES 2017			CRUDE INCIDENCE RATES PER 100,000 POPULATION		
	FEMALE	MALE	TOTAL	FEMALE	MALE	TOTAL
(C00-C96) All invasive cancers (Malignant Cases)	**2250**	**1873**	**4123**	**77.9**	**29.2**	**44.3**
C00-C14 Lip, Oral cavity & Pharynx	39	112	151	**1.4**	**1.7**	**1.6**
C15 Esophagus	10	20	30	**0.3**	**0.3**	**0.3**
C16 Stomach	36	59	95	**1.2**	**0.9**	**1.0**
C17 Small intestine	9	13	22	**0.3**	**0.2**	**0.2**
C18-C21 Colorectal	166	256	422	**5.7**	**4.0**	**4.5**
C22 Liver and intrahepatic bile ducts	25	47	72	**0.9**	**0.7**	**0.8**
C23-C24 Gallbladder, Other and unspecified part of biliary tract	11	20	31	**0.4**	**0.3**	**0.3**
C25 Pancreas	26	43	69	**0.9**	**0.7**	**0.7**
C30, C31 Nasal cavity, middle ear, accessory sinuses	4	6	10	**0.1**	**0.1**	**0.1**
C32 Larynx	2	18	20	**0.1**	**0.3**	**0.2**
C34 Bronchus and Lung	37	103	140	**1.3**	**1.6**	**1.5**
C40-C41 Bone and articular cartilage	12	14	26	**0.4**	**0.2**	**0.3**
C43 Skin melanoma	9	17	26	**0.3**	**0.3**	**0.3**
C44 Skin	74	134	208	**2.6**	**2.1**	**2.2**
C45 Mesothelioma	0	3	3	**0.0**	**0.0**	**0.0**
C46 Kaposi sarcoma	0	4	4	**0.0**	**0.1**	**0.0**
C48 Retroperitoneum and peritoneum	7	12	19	**0.2**	**0.2**	**0.2**
C49 Connective and soft tissue	21	37	58	**0.7**	**0.6**	**0.6**
C50 Breast	825	9	834	**28.6**	**0.1**	
C53 Cervix uteri	82	0	82	**2.8**		
C54-C55 Uterus	111	0	111	**3.8**		
C56 Ovary	70	0	70	**2.4**		
C61 Prostate	0	155	155		**2.4**	
C62 Testis	0	43	43		**0.7**	
C64-C65 Kidney & Renal pelvis	29	55	84	**1.0**	**0.9**	**0.9**
C66, C68 Ureter and Other urinary organs	0	7	7	**0.0**	**0.1**	**0.1**
C67 Urinary bladder	21	91	112	**0.7**	**1.4**	**1.2**
C69 Eye	2	2	4	**0.1**	**0.0**	**0.0**
C70-C72 Brain & CNS	28	48	76	**1.0**	**0.7**	**0.8**
C73 Thyroid	302	110	412	**10.5**	**1.7**	**4.4**
C74-C75 Other endocrine glands	4	6	10	**0.1**	**0.1**	**0.1**
C80 Unknown primary site	31	31	62	**1.1**	**0.5**	**0.7**
C81 Hodgkin's lymphoma	32	43	75	**1.1**	**0.7**	**0.8**
C82-C85, C96 Non-Hodgkin lymphoma	65	107	172	**2.3**	**1.7**	**1.8**
C88, C90 Multiple myeloma	14	36	50	**0.5**	**0.6**	**0.5**
C91-C95 Leukemia	118	196	314	**4.1**	**3.1**	**3.4**
Other malignancy	28	16	44	**1.0**	**0.2**	**0.5**
(D00-D09) Non-invasive cancers (In-situ Cases)	**120**	**56**	**176**	**4.2**	**0.9**	**1.9**

PRIMARY SITE ICD-10	CANCER INCIDENCE CASES 2017			CRUDE INCIDENCE RATES PER 100,000 POPULATION		
	FEMALE	MALE	TOTAL	FEMALE	MALE	TOTAL
D00 Carcinoma in situ of oral cavity, oesophagus and stomach	0	1	1	0.0	0.0	0.0
D01 Carcinoma in situ of other and unspecified digestive organs	3	3	6	0.1	0.0	0.1
D02 Carcinoma in situ of middle ear and respiratory system	0	3	3	0.0	0.0	0.0
D03 Melanoma in situ	9	12	21	0.3	0.2	0.2
D04 Carcinoma in situ of skin	5	2	7	0.2	0.0	0.1
D05 Carcinoma in situ of breast	57	1	58	2.0	0.0	
D06 Carcinoma in situ of cervix uteri	38	0	38	1.3		
D07 Carcinoma in situ of other and unspecified genital organs	1	0	1	0.0	0.0	0.0
D09 Carcinoma in situ of other and unspecified sites	7	34	41	0.2	0.5	0.4
GRAND TOTAL	**2370**	**1929**	**4299**	**82.1**	**30.1**	**46.2**

*Crude incidence rate: number of new cases per 100,000 population per year, we used the UAE resident population to calculate crude incidence rates.

FIGURE 41: DISTRIBUTION OF AGE-SPECIFIC INCIDENCE RATES (ASIR) FOR BOTH GENDERS, 2017

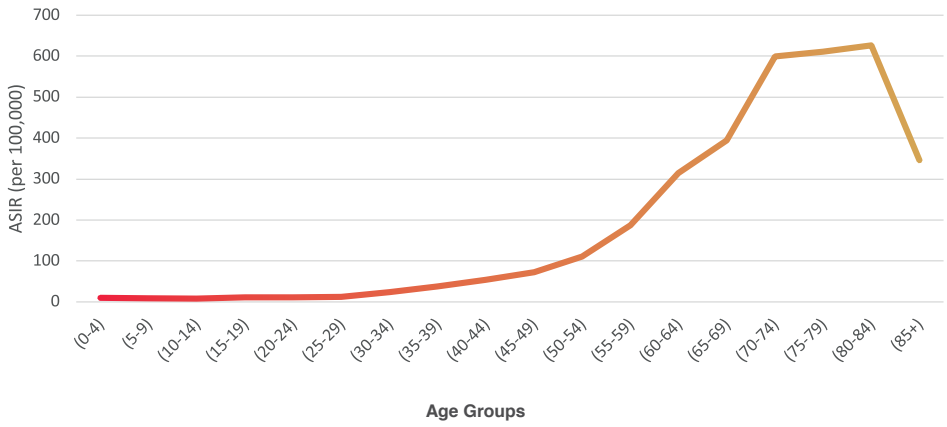


Figure 41 shows the age-specific incidence rate (ASIR) increased with advancing age and peak at 80-84 years.

FIGURE 42: DISTRIBUTION OF AGE-SPECIFIC INCIDENCE RATES (ASIR) FOR FEMALES, 2017

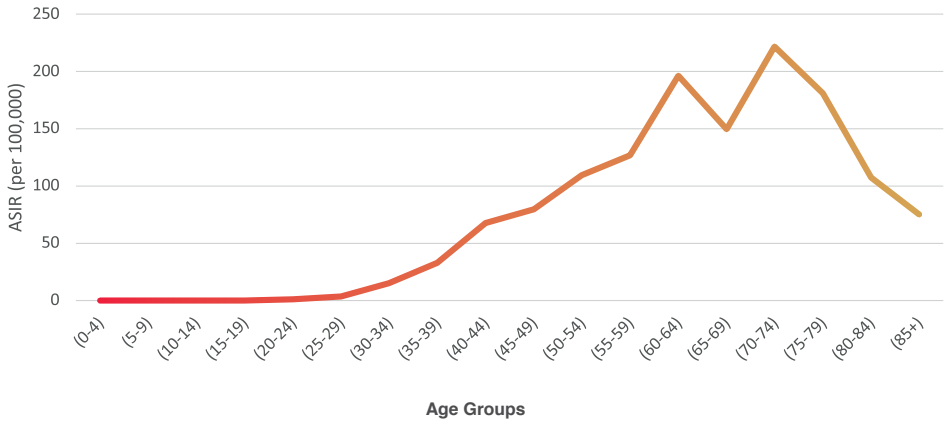


Figure 42 shows the age-specific incidence rate (ASIR) increased with advancing age and peak at 70-74 years.

FIGURE 43: DISTRIBUTION OF AGE-SPECIFIC INCIDENCE RATES (ASIR) FOR MALES, 2017

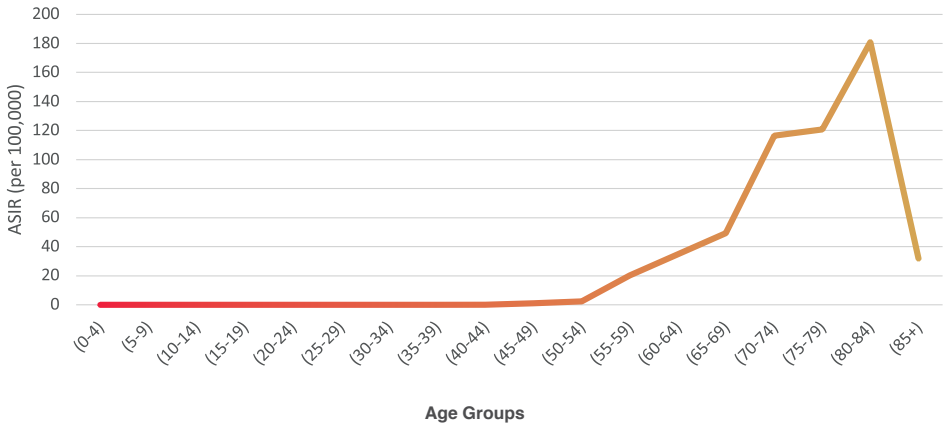


Figure 43 shows the age-specific incidence rate (ASIR) increased with advancing age and peak at 80-84 years.

CANCER MORTALITY RATES

Cancer was the third most common cause of death registered in UAE during 2017 after diseases of the circulatory system and injuries, representing 10.82%, of all deaths. A total number of 955 cancer deaths were registered for the period 2017.

This represents an estimated age-standardized mortality rate of 26.4 deaths per 100,000 of population, for females 31/100,000 and for males 26/100,000. And a crude mortality rate of 10.26 deaths per 100,000, for females 15.2/100,000 and for males 8.1/100,000.

FIGURE 44: DISTRIBUTION OF AGE-SPECIFIC MORTALITY RATES (ASMR) FOR BOTH GENDERS, 2017

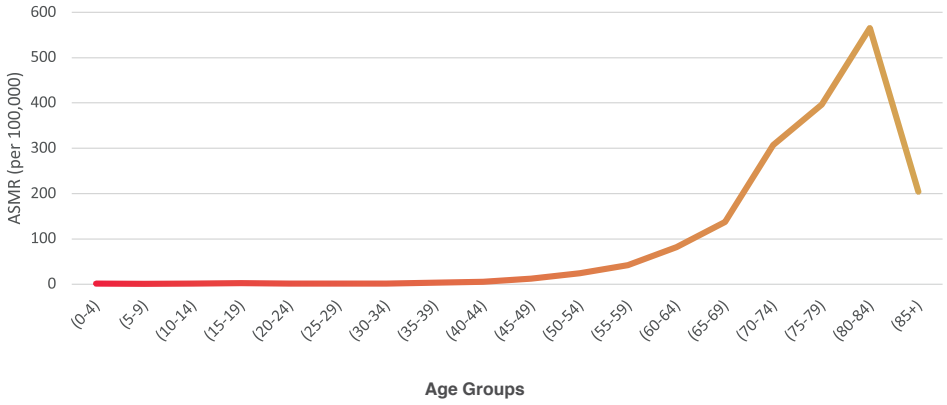


FIGURE 45: DISTRIBUTION OF AGE-SPECIFIC MORTALITY RATES (ASMR) FOR FEMALES, 2017

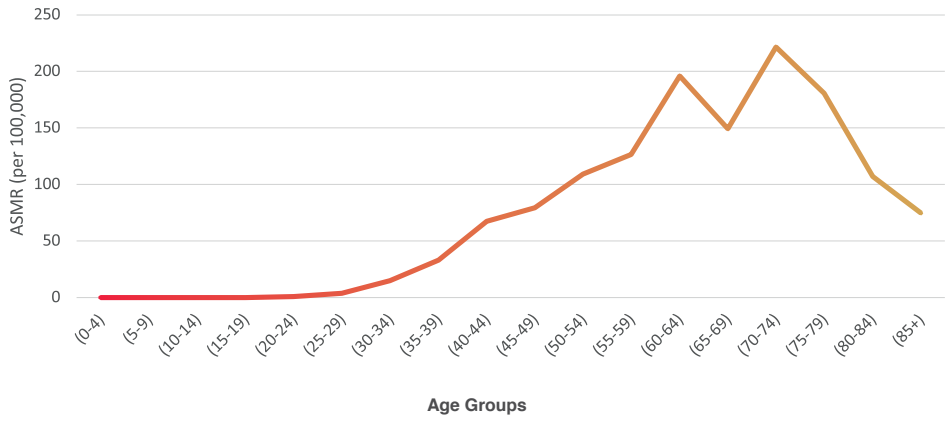
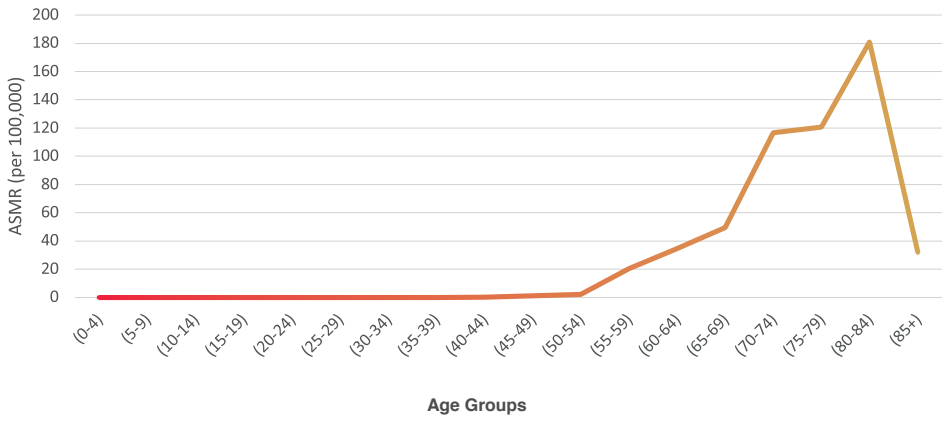


FIGURE 46: DISTRIBUTION OF AGE-SPECIFIC MORTALITY RATES (ASMR) FOR MALES, 2017



REFERENCES

1. Sadamo M, Dickie, L, Ruhl J. SEER Program Coding and Staging Manual 2017. National Cancer Institute, Bethesda, MD 20850-9765; 2017.
2. AJCC. American Joint Commission, Atlas; 2017.
3. WHO. International Statistical Classification of Diseases and Related Health Problems, Volume 2; 2010.
4. Bonio, M., & Heanue, M. (n.d.). IARC, CI: Age Standardization and Denominators. retrieved from https://www.iarc.fr/en/publications/pdfs-online/epi/sp160/CI5vol9-7.pdf
5. UAE state of Green Economy. The UAE Approach towards an Inclusive Green Economy, United Arab Emirates Ministry of Environment and Water, 2014. retrieved from http://www.moccae.gov.ae/assets/e3bd136a/UAE-state-of-green-economy-report-2014.aspx
6. About UAE, UAE Research Program for Rain Enhancement Science,2017 retrieved from https://www.UAErep.ae/ en/app/about-UAE/52
7. UOS, University of Sharjah. About the UAE; 2017, retrieved from http://www.sharjah.ac.ae/en/Media/ Conferences/ACRAO/Pages/eo.aspx
8. Tadmouri G, Al-Sharhan M. Cancers in the United Arab Emirates. Genetic Disorders in the Arab World: United Arab Emirates. 2004.
9. WHO IARC. Cancer Registration; Principles and methods. Lyon, France: 1991.Menck H. Central Cancer Registries: design, management, and use. CRC Press; 1994.
10. Das A. Cancer registry databases: an overview of techniques of statistical analysis and impact on cancer epidemiology. Cancer Epidemiology. 2009:31-49.
11. UN (2017) Population from United Nations, United Nations-Department of Economic and Social Affairs, Population Division, retrieved from 2017 http://www.un.org/en/development/desa/population/
12. Gliklich RE, Dreyer NA, Leavy MB, editors. Registries for evaluating patient outcomes: a user's guide. Government Printing Office; 2014 Apr 1.
13. Nordqvist C. Breast cancer: causes, symptoms and treatments. [Serial on the internet]. Available at: http://www.medicalnewstoday.com/articles/37136.php
14. Elobaid YE. Breast Cancer Presentation Delay among Women in the United Arab Emirates. . Dissertations; 31, 2014 Retrieved from http://scholarworks.UAEu.ac.ae/cgi/viewcontent.cgi?article=1030&context=all_dissertations
15. Loney T, Aw TC, Handysides DG, Ali R, Blair I, Grivna M, Shah SM, Sheek-Hussein M, El-Sadig M, Sharif AA, El-Obaid Y. An analysis of the health status of the United Arab Emirates: the 'Big 4'public health issues. Global health action. 2013 Feb 5; 6.
16. Haggar FA, Boushey RP. Colorectal cancer epidemiology: incidence, mortality, survival, and risk factors. Clinics in colon and rectal surgery. 2009 Nov; 22(04):191-7.
17. Kitahara CM, Sosa JA. The changing incidence of thyroid cancer. Nature Reviews Endocrinology. 2017 Jul 15.
18. Ward E, DeSantis C, Robbins A, Kohler B, Jemal A. Childhood and adolescent cancer statistics, 2014. CA Cancer J Clin. 2014; 64(2): 83-103.
19. Sminkey L. Cancer: International childhood cancer 2017. [Serial on the internet]. Updated 2017. Available at: http://www.who.int/cancer/en/
20. WAM. Cancer the third leading cause of death in UAE. [Serial on the internet]. Updated: 20th Sep 2010. Available at: http://www.emirates247.com/news/emirates/cancer-the-third-leading-cause-of-death-in-UAE-2010-09-20-1.293190