

Kingdom of Saudi Arabia
Ministry of Health
National Cancer Registry

**Cancer Incidence Report
Saudi Arabia
2001**

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In particular, we would like to thank their excellencies Dr. Hamad Al Manea, the Minister of Health and Dr. Mansour Al Hawasi, Deputy Minister of Health, for all their support to our program.

We also cannot over emphasize the support and assistance provided by the administration of King Faisal Specialist Hospital and Research Center and the King Faisal Cancer Center who host the National Cancer Registry main offices on their premises and who have always been very supportive. In particular we would like to thank Dr. Qasim Al Qasabi, Chief Executive Director of the Hospital, for his endless support.

Our registry relies on a variety of supporting services in order to produce reports on cancer; these include population figures and projections, mapping, computing services and general support and encouragement. We extend our thanks to all those who provided assistance.

We would like to extend special thanks to the IARC for their supply, support and update of the CanReg software program that was used for data collection and analysis.

Our registry has been helped enormously by the staff of all the hospitals and medical centers from where the data were collected. Our thanks go to them for their continued support and cooperation.

Last, but certainly not least, we would like to thank our own staff, those out in the field and in the regional offices, whose relentless effort and dedication have made possible the data capture and analysis that resulted in this report.

Forward

Cancer registration is considered to be an indispensable tool for cancer control on a rational basis. Cancer registry data can be used for clinical and epidemiological research, the evaluation of treatment protocols, quality control, and for the evaluation of preventive measures.

This is the 5th report published by the National Cancer Registry of Saudi Arabia and represents the 8th year of data collection and analysis, which started in 1994. The report represents a turning point in our reporting interval as we will be publishing our reports on an annual basis from now on.

The format of our reports is an evolving process, with relentless effort toward improvement and emphasis on an unchanging basic format. In this issue we have added illustrations of the different geographical incidence rates using the GIS mapping system.

It is important to note that our population parameters are estimations by the Ministry of Planning, based on the last national census of 1992. Hence, minor variations in age-standardized rates can be expected.

The National Cancer Registry of Saudi Arabia fully respects patient privacy. Accordingly, all patient data are treated with extreme confidentiality according to the rules and regulations of our registry.

Finally, these data are being made available to the public who are encouraged to utilize it in research towards early detection and prevention, which hopefully will translate into a cure for this dreadful disease.

Shouki Bazarbashi, MD
Chairman

Introduction

This is the fifth incidence report published by the National Cancer Registry of Saudi Arabia. Previous publications include the 1994 Summary Report, 1994-1996 Incidence Report, 1997-1998 Incidence Report, and 1999-2000 Incidence Report. The current publication covers the year 2001 and subsequent reports will be published on an annual basis. In the future, publications spanning a more extended period (5-10 years) will have the advantage of presenting more stable incidence rates and time-trends studies.

The structure of this report can be outlined as follows:

Part I Materials and Methods

This part of the report contains information about the background of the National Cancer Registry and methods used in collecting and analyzing the data. We present the basics of coding and classification of tumor topography, morphology and extent of disease at the time of diagnosis. Also we describe the software programs we have used to analyze the data.

Part II Overview of Cancer Incidence

Part II contains figures and tables that show overall cancer incidence in Saudi Arabia for the year 2001. We present these figures and tables mainly by sex and in certain areas we have it analyzed by different age groups. There are bar charts representing the age distribution of cancer incidence for the year 2001 among Saudis by sex and age groups. We present separate incidence and morphology tables for the most common types of cancers among adults and children. In addition, tables list total number of cases, ASR, CIR and Cumulative rates by primary site and sex. A bar chart depicts the most common types of cancer, by sex.

Part III Incidence of Selected-Sites

In this part the incidence of the combined top ten cancers among Saudi males and females are outlined. A standardized layout presents data for all patients and for both sexes where applicable. For each selected site the number and the percentage of all newly diagnosed cases for the year 2001, the Age-Standardized Incidence Rate (ASR) per 100,000 population for each sex, and the specific cancer rank for both sexes. In addition, international statistics for the specified cancer including the ranking of the cancer worldwide, estimated number of cases for 2000, and areas of the world that have the highest ranking are provided whenever available.

Part IV Cancer Incidence among Non-Saudis

This part presents the incidence of cancer cases among Non-Saudis including the most common types of cancer and the age-specific incidence rates. The analysis of the Non-Saudi population is performed separately due to the nature of the expatriate population in Saudi Arabia in which a large part of the population, particularly among males, falls in the 25- 44 age group.

Part V Tables of Incidences

Part V contains the following detailed tables for all newly diagnosed cancer types among Saudis and Non-Saudis for 2001.

Separate tables for males and females:

- Age-distribution of cancer cases among Saudis
 - Age-distribution of cancer cases among Non-Saudis
 - Incidence rate for cancer cases among Saudis by age group (per 100,000 population)
 - Incidence rate for cancer cases among Non-Saudis by age group (per 100,000 population)
-
- Age-standardized incidence rate and relative frequencies for all cancer cases among Saudis by site and sex

Part VI Appendices

Appendix A presents a regional listing of all the healthcare facilities from which cancer cases have been reported. The objective is to receive feedback from facilities that have not been included in order to improve our case-finding and reporting processes. Appendix B lists the staff members and addresses of all of the NCR offices throughout the Kingdom. Appendix C lists the names of the members of the Board of Directors. Appendix D is a data request form which may be copied, filled and submitted to the NCR Main Office. Appendix E is a copy of the cancer registration abstract form which is completed by cancer registrars for each cancer case.

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PART I

MATERIALS AND METHODS

Background on Saudi Arabia

Saudi Arabia is a vast country extending over four-fifths of the Arabian Peninsula. It stretches from the Arabian Gulf in the east to the Red Sea in the west. It is approximately 2,149,700* square kilometers in area and is divided into 13 administrative regions (Figure 1-1).

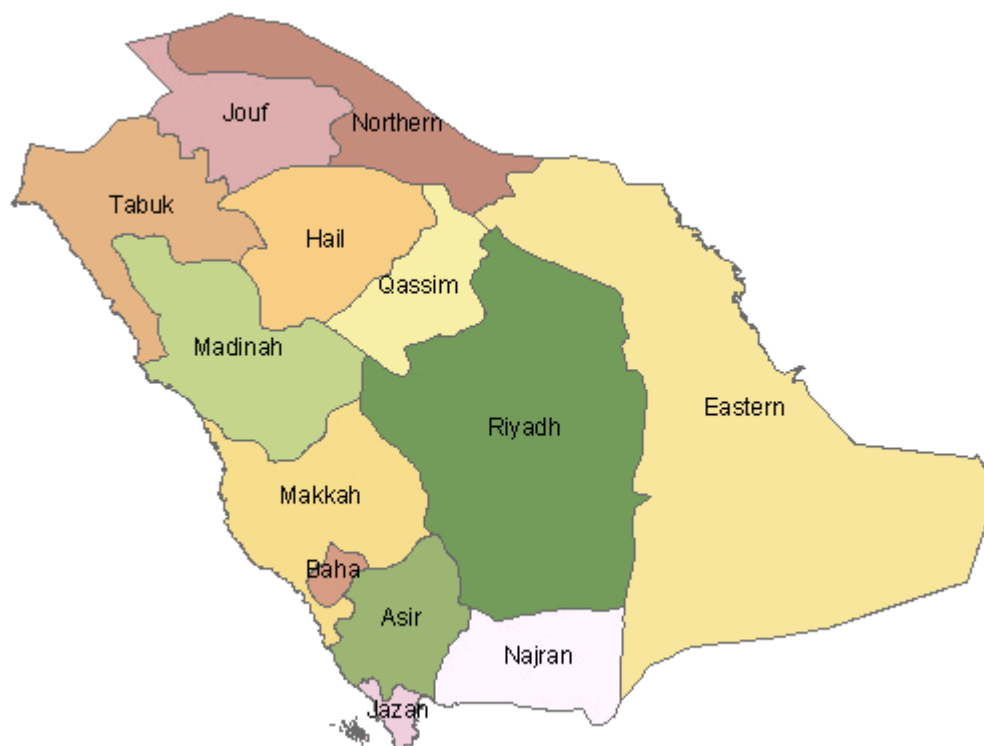


Figure 1-1 Administrative Regions of Saudi Arabia

The estimated Saudi national population for year 2001 was 16,056,470**. Of these, 8,034,053 were males and 8,022,417 were females. The estimated Non-Saudi population in 2001 was 5,505,209**; of these 3,680,116 were males and 1,825,093 females.

Figures 1-2 and 1-3 show the Saudi and Non-Saudi population pyramids by sex and age group respectively.

* Source: Demographic and Health Indicators for Countries of the East Mediterranean, WHO, Regional Office for the EM, 1999

** Source: NCR Estimation from 2000 Central Department for Statistics (CDS) data, Ministry of Planning, with a 3% growth rate for Saudis and a 4.7% growth rate for Non- Saudis (web site <http://www.planning.gov.sa>).

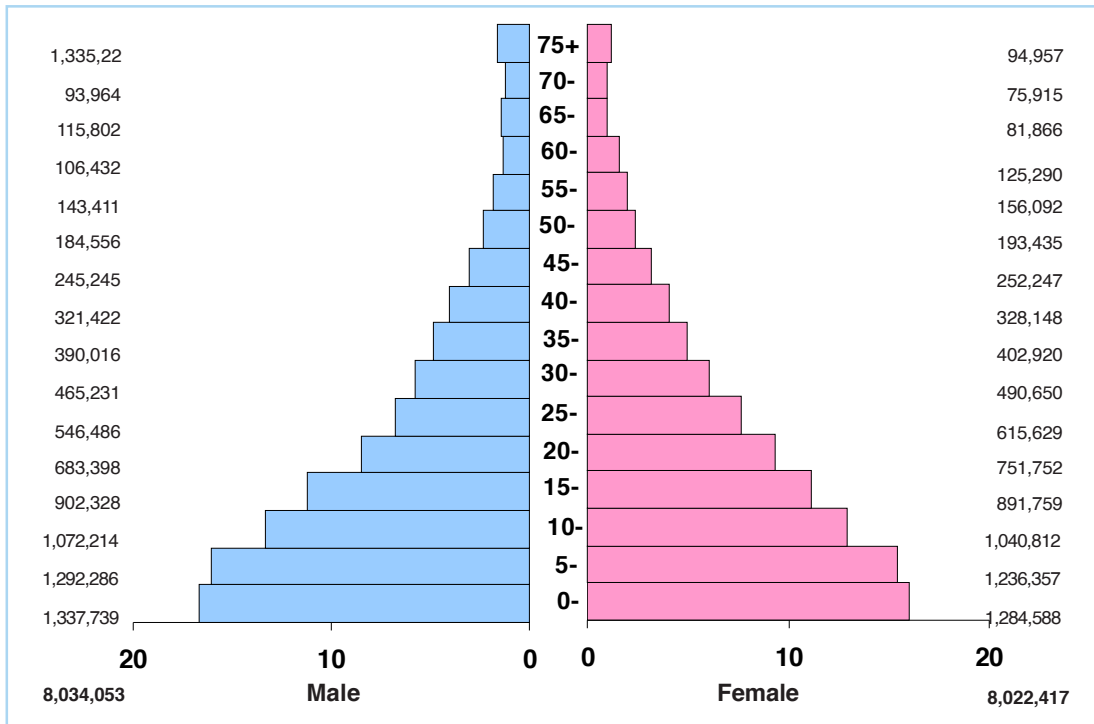


Figure 1-2 Population Pyramid of Saudis (%) by Sex and Age Group, 2001

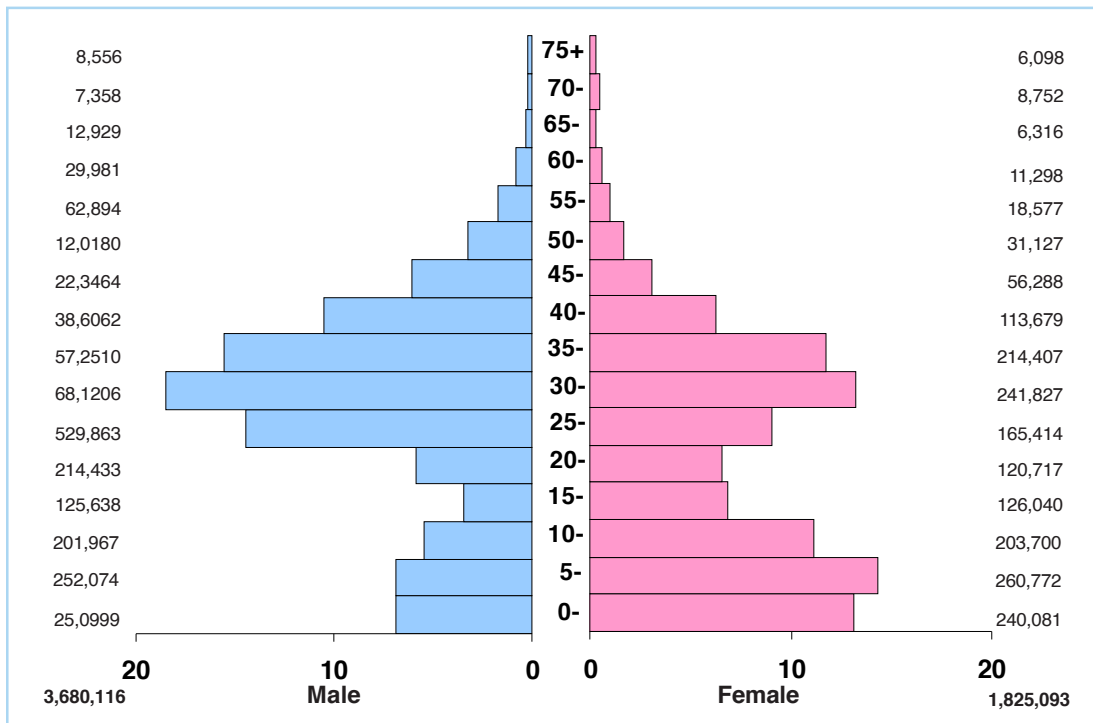


Figure 1-3 Population Pyramid of Non- Saudis (%) by Sex and Age Group, 2001

National Cancer Registry

The National Cancer Registry of Saudi Arabia is a population-based registry developed in 1992. It was established under the jurisdiction of the Ministry of Health (MOH) by the order of His Excellency the Minister of Health. The NCR commenced reporting cancer cases from 01 January 1994.

Objectives:

The primary goal of the NCR is to define the population-based incidence of cancer in Saudi Arabia. Additional objectives include programs for early detection and cancer screening, as well as cancer research projects.

Organizational Structure:

A Board of Directors was appointed to include representatives from the MOH, King Faisal Specialist Hospital and Research Center (KFSH&RC), and the Medical Services Departments of the Ministry of Defense and Aviation, Ministry of Interior, the National Guard, King Saud University, King Faisal University, King Abdul-Aziz University and King Khalid University.

The Board is charged with the responsibility of overseeing the NCR's establishment, defining demographic and cancer-related data to be collected, approving research requests, and reporting findings, as well as disseminating information collected while ensuring the confidentiality of all data reported to the NCR.

The NCR Main Office, including administrative and technical staff, is located on the premises of the KFSH&RC in Riyadh. Additionally, five regional branches and four hospital-based offices were set up to ensure comprehensive data collection from all over the Kingdom (Figure 1-4).

- Central Region: King Khalid University Hospital in Riyadh, covering Riyadh, Qassim, and Hail Health Regions.
- Eastern Region: King Fahad Hospital of the University, Al Khobar, covering Dammam, Al Ahsa, and Hafr Al-Batin Health Regions.
- Western Region: King Abdulaziz Hospital and Cancer Center, Jeddah, covering Jeddah, Makkah, Taif and Qunfudah Health Regions.
- Southern Region: King Khalid University, Abha, covering Asir, Baha, Najran, Jazan and Bisha Health Regions.
- Madinah/Northern: King Fahad Hospital, Madinah, covering Madinah, Tabuk, Jouf and Northern Health Regions.

Offices at the Medical Services Division or Oncology Department of the following establishments:

- Ministry of Defense and Aviation, Armed Forces Hospital, Riyadh
- National Guard, King Fahad Hospital, Riyadh, covering National Guard Health Affairs
- Ministry of Interior, Security Forces Hospital, Riyadh.
- King Faisal Specialist Hospital and Research Centre, Riyadh

Each of the NCR offices operates under the supervision of a member of the Board of Directors who is responsible for the daily management of that office. Staffing consists of tumor registrars and secretarial staff.

The NCR Main Office indirectly supervises the regional offices and is responsible for ensuring the accuracy and quality of data collected in all of the regions. Quality control processes include verification of site, morphology, and staging information as well as case linkage (tumor and patient), and consolidation of data. The Main Office also prepares periodic reports for dissemination of information to the medical community, government establishments, international organizations and the media.

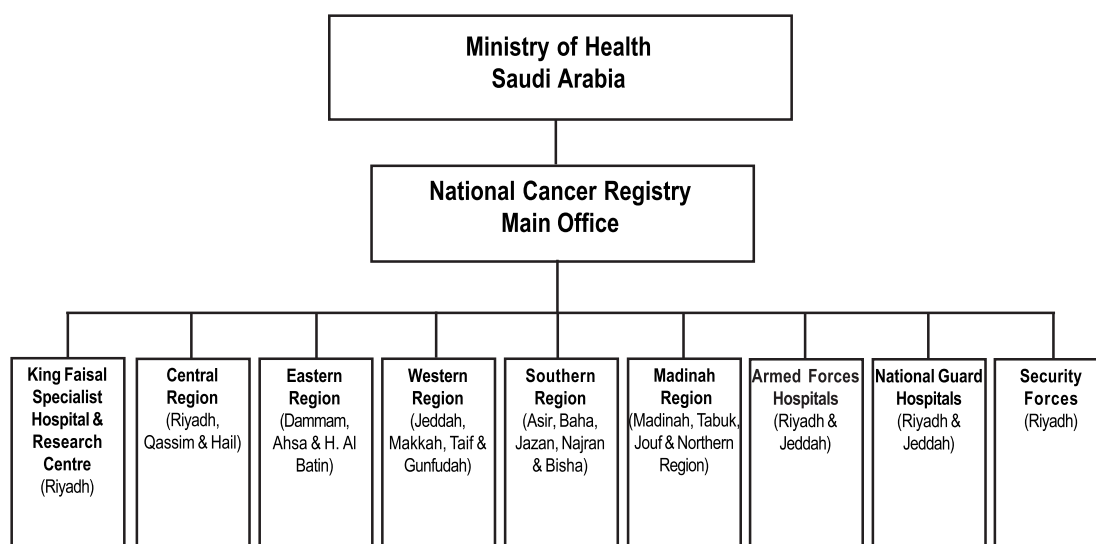


Figure 1-4 Organizational Chart of the National Cancer Registry of Saudi Arabia

Format

The format of the current report is similar to the previous reports. However, it has been enhanced by displaying the regional distribution of cancers on maps created through the Geographic Information System (GIS) software program (ARC GIS/Arc Map 8.3). The most common cancers for each region are presented in bar charts which compare the age standardized rate (ASR) of cancer incidence among Saudis with other countries. A table demonstrating the cumulative rates for males and females was also added.

Data management

A ministerial decree has categorized cancer as a mandatory notifiable disease. This ensures the opportunity for comprehensive data collection. The NCR strives for full access to cancer data from all Ministry of Health, governmental and private hospitals, as well as clinics and laboratories throughout the Kingdom. Cancer data are abstracted from patients' medical records, based on clinical and/or histopathological diagnosis, by NCR-trained cancer registrars.

The data abstract (see appendix E) includes personal identification (name, ID Number, sex, age), demographic information (address, telephone number, nationality), and tumor details (diagnosis date, primary site, histology, behavior, grade, stage, basis of diagnosis). The primary site (topography) and histology (morphology) of the malignancies are identified and coded according to the *International Classification of Diseases for Oncology 3rd Edition (ICD-O-3)*, published by the World Health Organization (WHO), 2000.

For the 2001 data year, changes for coding of cancer types and behaviors as well as staging came into effect. The new Seer Summary Stage 2000 guidelines should result in increased accuracy and consistency in the coding of stage. However, because there are some differences in the timing rules for determining stage and some sites are coded differently using the new guidelines, it may be difficult to compare staging data from the 1994-2000 data with the 2001 data. This will be the case particularly for lung, ovary and colo-rectal cancers. However, the new criteria and guidelines should improve the usefulness of staging as a predictor of prognosis and survival as the changes reflect a new understanding of the natural history of cancer. The new guidelines, SEER Summary Stage Manual 2000, available on the web at: <http://seer.cancer.gov/tools/ssm/>.

Cases diagnosed on or after 01 January 2001 are now classified according to the updated IDC-O system, ICD-O-3. Improvements in the understanding of cancer pathology over the last decade are reflected in the changes to ICD-O. While there have not been any changes in the primary site codes, there are significant changes regarding histology (cell types). Leukemias and lymphomas, particularly, are affected. A small number of cancers that were previously coded as borderline tumors are now considered benign. Counts of ovarian cancers, lymphomas and leukemias as well as some hematopoietic diseases will change due to changes in either reportability or definition. Again, it will be difficult to compare 2001 cases with those from previous years. However, as with the new staging guidelines, the ICD-O changes reflect advances in the understanding of the pathology and behavior of cancers.

It should be noted that ICD-O-3 codes are converted to ICD-10 for analysis purposes. Since the WHO has not yet converted the ICD-10 hematopoietic disease behavior changes, our software, CanReg 4.27, cannot include these cases for analysis and they have been excluded.

Every effort is made to accurately code patient and tumor information, to ensure that all data can be reviewed, linked, and consolidated, as appropriate, so that each malignancy is counted only once for statistical analysis.

The computer software programs used for data entry and incidence tables output are *CanReg 4.27*, developed by the International Agency for Research on Cancer, (IARC) Lyon, France, the Geographic Information System (GIS) ArcGIS/Arc map 8.3, developed by Environmental Systems Research Institute(ESRI), and National Cancer Registry developed by Technical Database Core Facility (TDBCf) at King Faisal Specialist Hospital & Research Center, Riyadh, Saudi Arabia.

The second part of the report includes the overall cancer incidence in Saudi Arabia and the relevant epidemiological and clinico-pathological details for the 16 most common cancers among Saudi nationals for the year 2001. For each cancer site, the number and the percentage of all newly diagnosed cases for the year 2001, the age-standardized incidence rate (ASR) per 100,000 population for each sex, and the specific cancer rank in comparison to all cancers for both sexes are presented. Useful international statistics for the specified cancer include the ranking of the cancer worldwide, the estimated number of cases for 2000, and the high incidence areas of the world. The source of this information is *World Health Organization. GLOBOCAN 2000: Cancer Incidence Mortality and Prevalence Worldwide. International Agency for research on Cancer (IARC), Lyon, 2001.*

The relevant data incorporate details for all patients presented over the year 2001. For each cancer there are four figures:

1. An arithmetic line graph represents the age-specific incidence rate (AIR) for all age groups at five-year intervals. The graph is plotted by sex, where applicable.
2. Map charts show regional distribution of ASR for particular cancer across the administrative regions and are given separately for males and females.
3. A table lists the percentages of the most common histology sub-types for each specific cancer.
4. A pie chart shows the distribution of the clinical stages of each cancer such as localized, regional, distant metastasis and unknown.
5. A table shows comparison of age-standardized incidence rate (ASR) for each cancer type in Saudi Arabia with ASR in selected countries.

In reviewing the data, its collection and analysis, two qualifying statements can be made:

- a. The number of patients presenting with malignant disease from the Riyadh region exceeds the anticipated number per population. The reason for this is that Riyadh has many referral centers providing patients from outside the region with cancer-related care. Many of these patients fail to provide their permanent address, but instead, provide a temporary Riyadh address. This situation is partially resolved through tumor and patient linkage of cases from all regions based on identifiers such as national ID.
- b. As previously noted, the software used in analyzing this report, CanReg 4.27, does not include insitu cases in the incidence tables. These cases were added to the total cancer cases in the overview.

Notification

The data included in this report were abstracted up until January 2004. 2001 incident cases which are identified after this date (late reporting) will be noted in subsequent incidence reports. It is anticipated that the number of late-reported cases will decrease as case ascertainment processes are improved.

Definitions of Terms

Age-Specific Incidence Rate (AIR)

The number of cancer cases occurring during a specific period in a population of a specific age and sex group, divided by the number of midyear population of that age and sex group.

Age-Standardized Rate (ASR)

The Age-standardized rate is a summary measure of a rate that a population would have if it had a standard age structure. Standardization is necessary when comparing several populations that differ with respect to age structure. The most frequently used standard population is the World Standard Population (see below). The calculated incidence is known as the World Standardized Incidence Rate. The rate is expressed per 100,000 populations.

Age Class	Population
0-4	12,000
5-9	10,000
10-14	9,000
15-19	9,000
20-24	8,000
25-29	8,000
30-34	6,000
35-39	6,000
40-44	6,000
45-49	6,000
50-54	5,000
55-59	4,000
60-64	4,000
65-69	3,000
70-74	2,000
75+	2,000
Total	100,000

The World Standard Population*

* Doll R, Payne P, Waterhouse J. Cancer incidence in Five Continents Vol I. International Union Against Cancer. 1966

Crude Incidence Rate

The crude incidence rate for a cancer site is the total number of cases registered as a proportion of the total population. It denotes the approximate number of cases occurring in each 100,000 individuals. All rates are thus, expressed as per 100,000 population.

Cancer rates vary greatly with age and the crude rate is strongly influenced by the demographic structure of the population. Hence, if the population structure changes over time the crude rate over that period may be artificially altered. It is not appropriate to compare crude rates across geographical areas of cancer registries with different population age structures. Therefore, in order to assess time trends in registration data or compare incidence across geographical areas or between registries it is necessary to first standardize the rates with respect to age.

Cumulative rate

Cumulative incidence is the probability or risk of individuals developing the disease during a specified period. For cancer, it is expressed as the number of new born children (out of 100, or 1000) who would be expected to develop a particular cancer before the age of 65 (or 70, or 75) if they had the rates of cancer currently observed. Like the age standardized rate, it permits comparisons between populations of different age structures. In this report the age ranges 0-64 and 0-74 years are used.

The cumulative rate is the summation of the cancer age-specific rates; which are computed for five-year age intervals. The cumulative rate is five times the sum of the age-specific rates calculated over the five-year age groups.

ICD-10

The World Health Organization's International Classification of Diseases, tenth edition.

ICD-O-3

The World Health Organization's International Classification of Diseases for Oncology, 3rd Edition has been the standard coding system for neoplasms for over 25 years. The coding system includes a four character code for primary site, a four-digit numeric code for cell type, one-digit code for behavior and a one-digit code for tumor aggressiveness (grade).

Incidence Rate

An incidence rate is defined as the rate at which a new event occurs in a population. It is calculated as the number of new cases of disease arising in a population over a defined time period, divided by the population at risk of developing that disease.

Metastasis

Metastasis is the distant spread of cancer from its original site to other organs of the body, including lymph nodes, skeletal and or visceral organs.

Rank

This measure reflects the importance of a specific cancer site relative to other sites, in terms of the number of registrations. Ranking illustrates the most and least frequent cancer sites in a population according to their frequency.

Relative Frequency

This statistic is defined as the number of specific cancer cases registered relative to the total number of all cancer. It is expressed as a percentage.

Summary Stage

Staging is the grouping of cancer cases into broad categories based on the extent of disease.

PART II
OVERVIEW OF CANCER INCIDENCE
2001

Cancer in Saudi Arabia 2001

The total number of cancer cases reported among Saudis during the year 2001 were 5616. Fifty one percent (2,875) of the cases were reported among men and 49% (2,741) among women. In Saudi Arabia, taking into consideration the population structure and the fact that cancer is primarily a disease of the aged, the pattern of cancer has some unique characteristics. During this period, 26% of the cases in men and 17% of the cases in women were found in the age group above 59 years. This age-group accounts for only 5.2% of the Saudi population. This signifies that a large proportion of cancer cases in women occur in younger age groups. For example, in the 30-44 year age-group 62.5% of the cases affect women compared to 37.5% of the cases in men. It can be safely said that Saudi women are affected in early ages more than men, and this can be attributed to breast and thyroid cancers (figure 2-1).

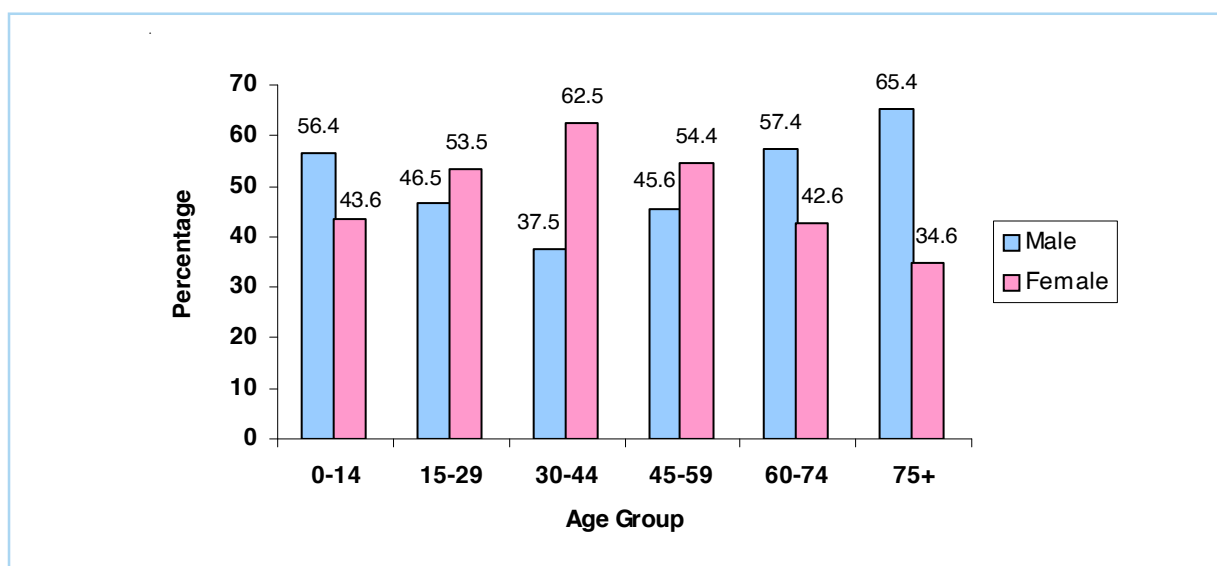


Fig. 2-1 Percentage Distribution of Cancer Incidence among Saudis by Sex according to Age Group, 2001

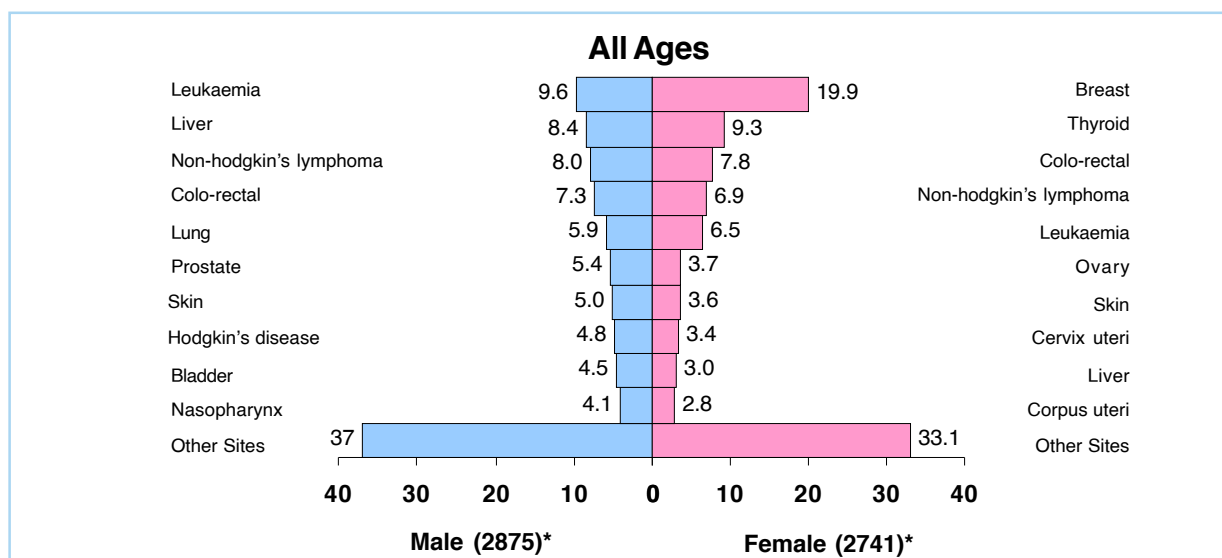


Fig. 2-2-A Percentage Distribution of Most Frequent Types of Cancer by Sex among Saudis, 2001

* 18 cases (15 males and 3 females) of unknown age are included only in the total as they may not be added to any age group.

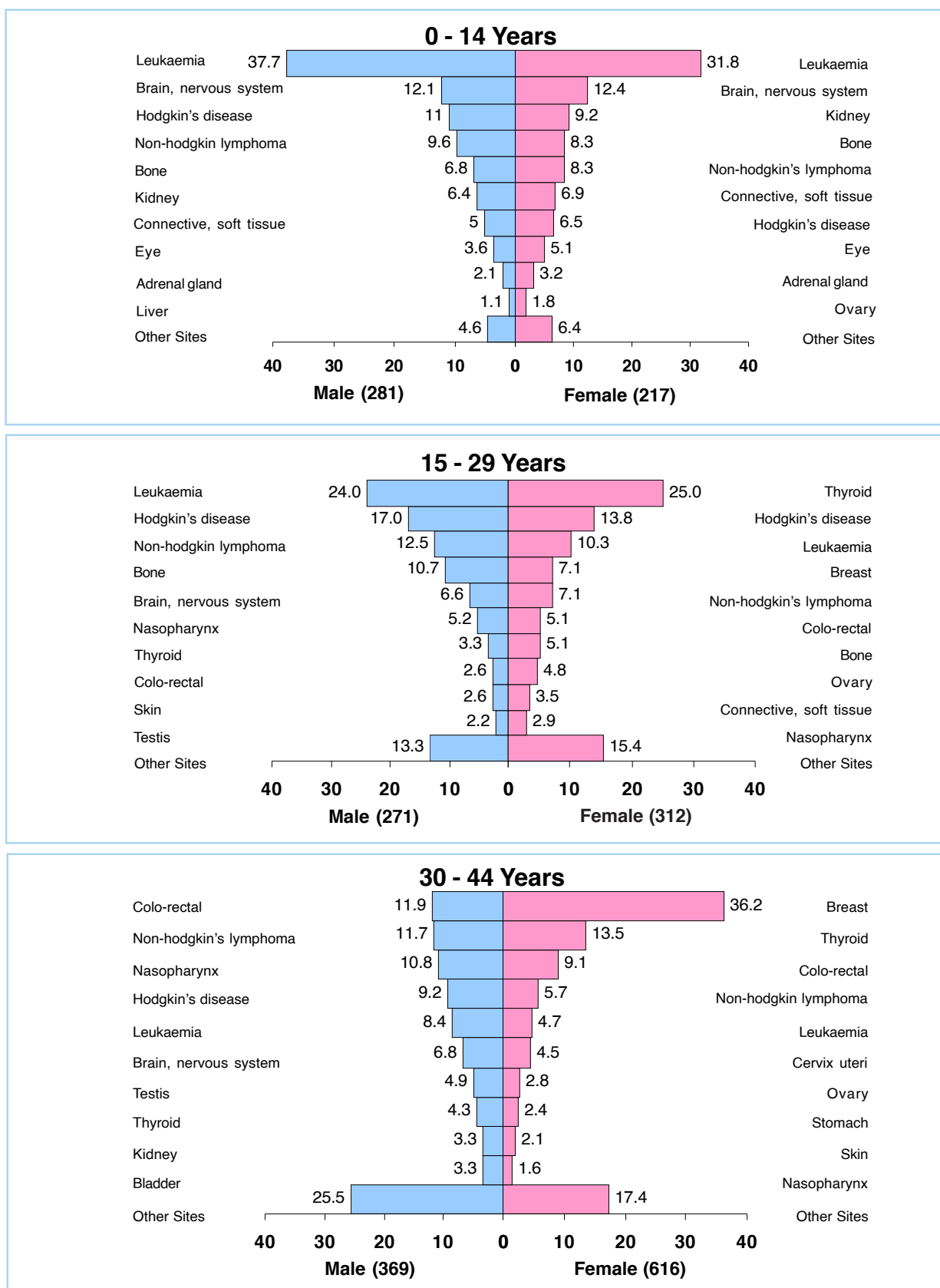


Fig. 2-2-B Percentage Distribution of Most Frequent Types of Cancer by Sex among Saudis, 2001

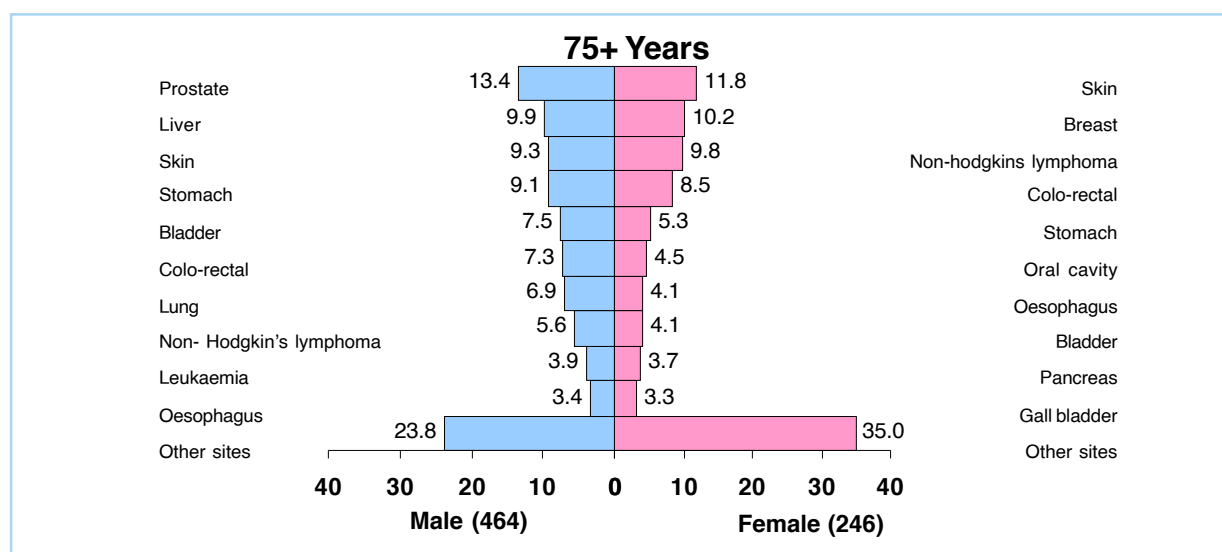
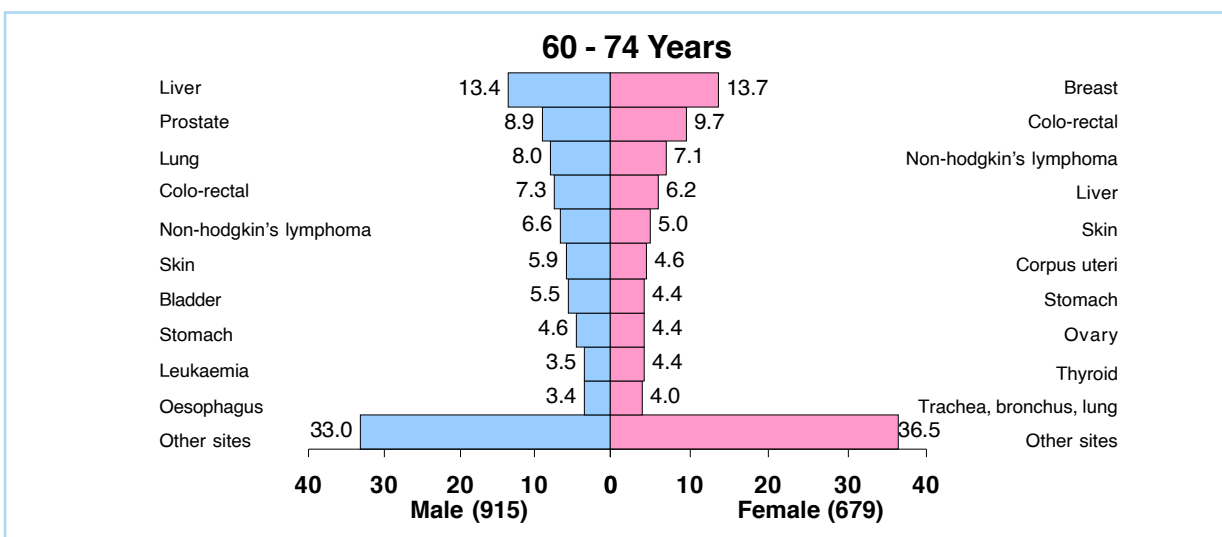
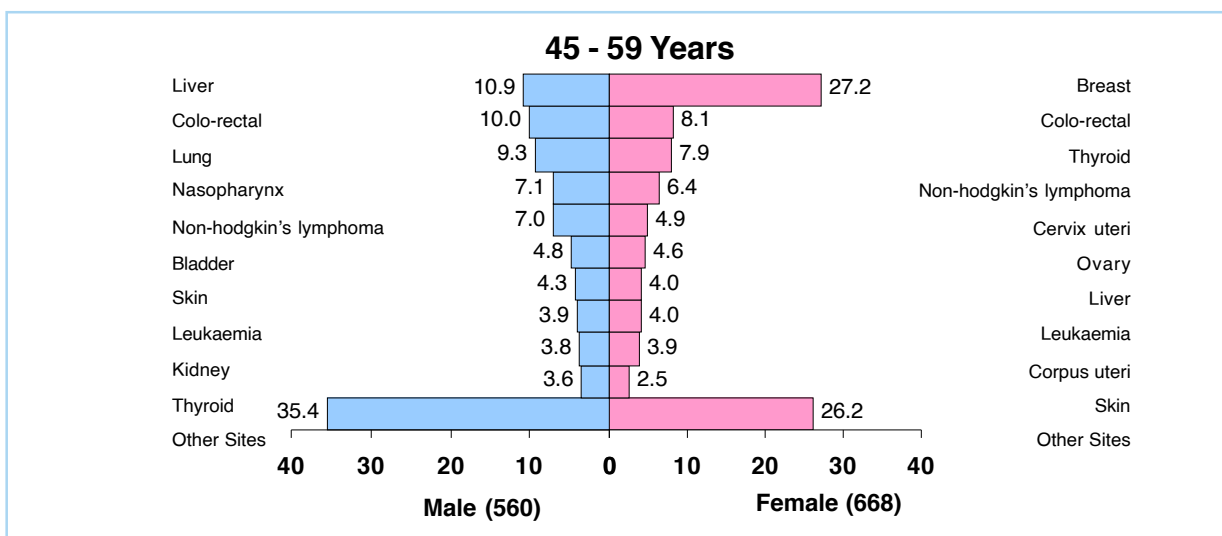


Fig. 2-2-C Percentage Distribution of Most Frequent Types of Cancer by Sex among Saudis, 2001

Reported Cancer Incidence Cases in Saudi Arabia, 2001

Between January and December 2001, the total number of incident cancer cases reported to the NCR was 7,453. Overall, cancer was more predominant in men than in women. Cancers affected 3,841 (51.5%) males and 3,612 (48.5%) females, with a male to female ratio of 106:100. Five thousand six hundred ninety one (5,691) cases were reported among Saudis, 1,654 among Non-Saudis and 108 are of unknown nationality. Histological and/or cytological diagnosis of malignancy was confirmed in 95.8% of the cases. One seventh percent of the cases were confirmed clinically, 2.6% radiologically, and 0.8% were diagnosed by other methods. The method of diagnosis was unknown for 0.2% of the cases.

Distribution of Cancer Cases in Saudi Arabia by Nationality and Sex

Out of 7,453 cancer cases, there were 108 cases of “unknown nationality” reported to the NCR for 2001. Since these cases can neither be included in the Saudi category nor in the Non-Saudi category, they were excluded from the overall analysis. Out of the 7,366 malignant cases 12 were excluded due to the problem encountered in conversion from ICD-O-3 to ICD 10 described in the Data Management section (see page15). Other exclusions include 87 *insitu* cases reported during 2001 (Table 2-1). The current software program, CanReg.4.27, does not include *insitu* cases in the statistical analysis. The total number of cases excluded from the analysis was 220.

	Saudis			Non-Saudis			Unknown			All
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Total
Total	2904	2787	5691	891	763	1654	46	62	108	7453
Invasive	2887	2749	5636	882	740	1622	46	62	108	7366
In Situ	17	38	55	9	23	32	-	-	-	87
Analysed	2875	2741	5616	878	739	1617	-	-	-	7233*

Table 2-1 Distribution of Reported Cancer Cases in Saudi Arabia by Nationality and Sex, 2001

* Unknown nationalities, in situ cases and ICD 10 conversion failures are excluded from the analysis

Based on the above, 7,233 cases were analyzed of which 5,616 (77.6%) were Saudis and 1,617 (22.4%) were non-Saudis. Among the Saudis, 2,875 (51.2%) were male and 2,741 (48.8 %) were female. The male to female ratio was 105:100. The crude incidence rate (CIR) of all cancers among the Saudi population was 35/100,000 (35.8/100,000 among males and 34.2/100,000 among females). The overall age-standardized incidence rate (ASR) for all Saudis with a world standard population reference was 58.6/100,000 (59/100,000 in males and 58.2/100,000 in females). For all sites, the age-specific incidence rate (AIR) increased with age for both males and females. After the age of 64 years, the increase was nearly twofold for males compared to females. The mean age at diagnosis was 50 years for men and 48 years for women.

ICD-10	SITE	MALE				FEMALE			
		No.	(%)	Crude rate	ASR world	No.	(%)	Crude rate	ASR world
	All sites	2875	100	35.8	59	2741	100	34.2	58.2
C00	Lip	1	0.0	0.0	0.0	3	0.1	0.0	0.1
C01-C02	Tongue	12	0.4	0.1	0.3	19	0.7	0.2	0.5
C03-C06	Mouth	27	0.9	0.3	0.7	28	1.0	0.3	0.7
C07-C08	Salivary Glands	15	0.5	0.2	0.3	8	0.3	0.1	0.2
C9	Tonsil	3	0.1	0.0	0.1	1	0.0	0.0	0.0
C10	Other oropharynx	3	0.1	0.0	0.1	0	0.0	-	-
C11	Nasopharynx	119	4.1	1.5	2.5	36	1.3	0.4	0.7
C12-C13	Hypopharynx	8	0.3	0.1	0.2	13	0.5	0.2	0.3
C14	Pharynx unspec.	1	0.0	0.0	0.0	0	0.0	-	-
C15	Oesophagus	57	2.0	0.7	1.3	35	1.3	0.4	0.9
C16	Stomach	114	4.0	1.4	2.4	71	2.6	0.9	1.7
C17	Small intestine	12	0.4	0.1	0.3	14	0.5	0.2	0.3
C18	Colon	107	3.7	1.3	2.4	131	4.8	1.6	3.1
C19-C20	Rectum	103	3.6	1.3	2.4	82	3.0	1.0	1.8
C21	Anus	12	0.4	0.0	0.1	3	0.1	0.0	0.1
C22	Liver	242	8.4	3.0	5.9	81	3.0	1.0	2.2
C23-C24	Gall bladder ect.	33	1.1	0.4	0.8	43	1.6	0.5	1.1
C25	Pancreas	46	1.6	0.6	1.1	26	0.9	0.3	0.6
C30-C31	Nose, sinuses, etc.	7	0.2	0.1	0.2	7	0.3	0.1	0.2
C32	Larynx	52	1.8	0.6	1.4	2	0.1	0.0	0.1
C33-C34	Lung	169	5.9	2.1	4.1	51	1.9	0.6	1.4
C37-C38	Other Thoracic Organs	4	0.1	0.0	0.1	4	0.1	0.0	0.1
C40-C41	Bone	57	2.0	0.7	0.6	43	1.6	0.5	0.5
C43	Melanoma of Skin	9	0.3	0.1	0.2	8	0.3	0.1	0.2
C44	Other Skin	143	5.0	1.8	3.1	100	3.6	1.2	2.4
C45	Mesothelioma	4	0.1	0.0	0.1	1	0.0	0.0	0.0
C46	Kaposi sarcoma	17	0.6	0.2	0.4	3	0.1	0.0	0.1
C47; C49	Connective, Soft Tissue	44	1.5	0.5	0.7	40	1.5	0.5	0.5
C50	Breast	12	0.4	0.1	0.3	545	19.9	6.8	11.8
C51	Vulva	-	-	-	-	16	0.6	0.1	0.2
C52	Vagina	-	-	-	-	5	0.2	0.1	0.1
C53	Cervix Uteri	-	-	-	-	92	3.4	1.1	2.2
C54	Corpus Uteri	-	-	-	-	78	2.8	1.0	2.0
C55	Uterus Unspec.	-	-	-	-	12	0.4	0.1	0.3
C56	Ovary.	-	-	-	-	101	3.7	1.3	2.3
C57	Other Female Genital	-	-	-	-	4	0.1	0.0	0.1
C58	Placenta	-	-	-	-	8	0.3	0.1	0.1
C60	Penis	1	0.0	0.0	0.0	-	-	-	-
C61	Prostate	156	5.4	1.9	3.4	-	-	-	-
C62	Testis	32	1.1	0.4	0.5	-	-	-	-
C63	Other male genital	2	0.1	0.0	0.0	-	-	-	-
C64	Kidney	83	2.9	1.0	1.7	64	2.3	0.8	1.2
C65	Renal pelvis	2	0.1	0.0	0.0	1	0.0	0.0	0.0
C66	Ureter	1	0.0	0.0	0.0	1	0.0	0.0	0.0
C67	Bladder	129	4.5	1.6	2.9	48	1.8	0.6	1.2
C68	Other urinary organs	0	0.0	-	-	0	0.0	-	-
C69	Eye	24	0.8	0.3	0.5	17	0.6	0.2	0.3
C70-C72	Brain, Nervous System	118	4.1	1.5	1.9	76	2.8	0.9	1.3
C73	Thyroid	71	2.5	0.9	1.5	254	9.3	3.2	4.4
C74	Adrenal gland	6	0.2	0.1	0.1	8	0.3	0.1	0.1
C75	Other Endocrine	2	0.1	0.0	0.0	0	0.0	-	-
C81	Hodgkin Disease	137	4.8	1.7	1.9	75	2.7	0.9	1.0
C82-C85; C96	Non Hodgkin lymphoma	230	8.0	2.9	4.4	190	6.9	2.4	4.1
C88	Immunoproliferative dis.	0	0.0	-	-	0	0.0	-	-
C90	Multiple Myeloma	36	1.3	0.4	0.9	15	0.5	0.2	0.4
C91	Lymphoid Leukaemia	147	5.1	1.8	1.9	79	2.9	1.0	1.1
C92-C94	Myeloid Leukaemia	119	4.1	1.5	1.8	97	3.5	1.2	1.6
C95	Leukaemia unspec.	10	0.3	0.1	0.2	3	0.1	0.0	0.1
Other	Other & unspecified	136	4.7	1.7	3.2	108	3.9	1.3	2.7

Table 2-2 Number, ASR and CIR of New Cases by Primary Site and Sex among Saudis, 2001

ICD-10	SITE	MALE				FEMALE			
		No.	(%)	Cum. 0-64 (%)	rates 0-74 (%)	No.	(%)	Cum. 0-64 (%)	rates 0-74 (%)
	All sites	2875	100	0.195	0.339	2741	100	0.197	0.324
C00	Lip	1	0.03	0.000	0.000	3	0.11	0.000	0.001
C01-C02	Tongue	12	0.42	0.001	0.002	19	0.69	0.002	0.003
C03-C06	Mouth	27	0.94	0.003	0.004	28	1.02	0.002	0.004
C07-C08	Salivary Glands	15	0.52	0.001	0.002	8	0.29	0.001	0.001
C9	Tonsil	3	0.10	0.000	0.000	1	0.04	0.000	0.000
C10	Other oropharynx	3	0.10	0.000	0.000	0	0.00	-	-
C11	Nasopharynx	119	4.14	0.011	0.014	36	1.31	0.003	0.003
C12-C13	Hypopharynx	8	0.28	0.001	0.001	13	0.47	0.001	0.001
C14	Pharynx unspec.	1	0.03	0.000	0.000	0	0.00	-	-
C15	Oesophagus	57	1.98	0.004	0.009	35	1.28	0.002	0.005
C16	Stomach	114	3.97	0.006	0.014	71	2.59	0.005	0.011
C17	Small intestine	12	0.42	0.001	0.001	14	0.51	0.001	0.002
C18	Colon	107	3.72	0.008	0.014	131	4.78	0.011	0.019
C19-C20	Rectum	103	3.58	0.009	0.014	82	2.99	0.006	0.010
C21	Anus	12	0.42	0.000	0.001	3	0.11	0.000	0.001
C22	Liver	242	8.42	0.018	0.038	81	2.96	0.008	0.015
C23-C24	Gall bladder ect.	33	1.15	0.003	0.005	43	1.57	0.003	0.007
C25	Pancreas	46	1.60	0.004	0.007	26	0.95	0.001	0.003
C30-C31	Nose, sinuses, etc.	7	0.24	0.001	0.001	7	0.26	0.000	0.001
C32	Larynx	52	1.81	0.006	0.009	2	0.07	0.000	0.000
C33-C34	Trachea, Bronchus, Lung	169	5.88	0.015	0.026	51	1.86	0.004	0.009
C37-C38	Other Thoracic Organs	4	0.14	0.000	0.000	4	0.15	0.000	0.000
C40-C41	Bone	57	1.98	0.002	0.002	43	1.57	0.002	0.002
C43	Melanoma of Skin	9	0.31	0.000	0.000	8	0.29	0.000	0.001
C44	Other Skin	143	4.97	0.009	0.017	100	3.65	0.006	0.012
C45	Mesothelioma	4	0.14	0.000	0.001	1	0.04	0.000	0.000
C46	Kaposi sarcoma	17	0.59	0.001	0.002	3	0.11	0.000	0.000
C47; C49	Connective, Soft Tissue	44	1.53	0.002	0.004	40	1.46	0.002	0.002
C50	Breast	12	0.42	0.001	0.002	545	19.88	0.047	0.062
C51	Vulva	-	-	-	-	16	0.58	0.001	0.001
C52	Vagina	-	-	-	-	5	0.18	0.000	0.001
C53	Cervix Uteri	-	-	-	-	92	3.36	0.009	0.011
C54	Corpus Uteri	-	-	-	-	78	2.85	0.007	0.013
C55	Uterus Unspec.	-	-	-	-	12	0.44	0.002	0.002
C56	Ovary.	-	-	-	-	101	3.68	0.008	0.014
C57	Other Female Genital	-	-	-	-	4	0.15	0.000	0.001
C58	Placenta	-	-	-	-	8	0.29	0.000	0.000
C60	Penis	1	0.03	0.000	0.000	-	-	-	-
C61	Prostate	156	5.43	0.006	0.022	-	-	-	-
C62	Testis	32	1.11	0.002	0.002	-	-	-	-
C63	Other male genital	2	0.07	0.000	0.000	-	-	-	-
C64	Kidney	83	2.89	0.006	0.009	64	2.33	0.004	0.007
C65	Renal pelvis	2	0.07	0.000	0.000	1	0.04	0.000	0.000
C66	Ureter	1	0.03	0.000	0.000	1	0.04	0.000	0.000
C67	Bladder	129	4.49	0.008	0.016	48	1.75	0.003	0.007
C68	Other urinary organs	0	0.00	-	-	0	0.00	-	-
C69	Eye	24	0.83	0.002	0.003	17	0.62	0.001	0.001
C70-C72	Brain, Nervous System	118	4.10	0.007	0.010	76	2.77	0.005	0.007
C73	Thyroid	71	2.47	0.006	0.009	254	9.27	0.016	0.023
C74	Adrenal gland	6	0.21	0.000	0.000	8	0.29	0.000	0.000
C75	Other Endocrine	2	0.07	0.000	0.000	0	0.00	-	-
C81	Hodgkin Disease	137	4.77	0.007	0.008	75	2.74	0.003	0.005
C82-C85; C96	Non Hodgkin lymphoma	230	8.00	0.015	0.024	190	6.93	0.013	0.022
C88	Immunoproliferative dis.	0	0.00	-	-	0	0.00	-	-
C90	Multiple Myeloma	36	1.25	0.003	0.006	15	0.55	0.001	0.002
C91	Lymphoid Leukaemia	147	5.11	0.006	0.008	79	2.88	0.003	0.005
C92-C94	Myeloid Leukaemia	119	4.14	0.007	0.008	97	3.54	0.006	0.008
C95	Leukaemia unspec.	10	0.35	0.001	0.001	3	0.11	0.000	0.000
Other	Other & unspecified	136	4.73	0.012	0.020	108	3.94	0.008	0.017

Table 2-3 Number and Cumulative rates of New Cases by Primary Site and Sex among Saudis, 2001

Ten Most Common Cancers Among Saudis, 2001 (All Ages)

During 2001, 8.9% of all cancers among Saudis occurred before the age of 15, and 30.4% occurred after the age of 64 years. For the total Saudi population the ten most common cancers were as follows:

CANCER	NO. OF CASES	%
Female breast	545	9.7
Leukemia	455	8.1
Colo-rectal	438	7.8
Non-Hodgkin Lymphoma (NHL)	420	7.5
Thyroid	325	5.8
Liver	323	5.8
Skin	243	4.3
Lung	220	3.9
Hodgkin Disease	212	3.8
Brain, Nervous System (CNS)	194	3.5

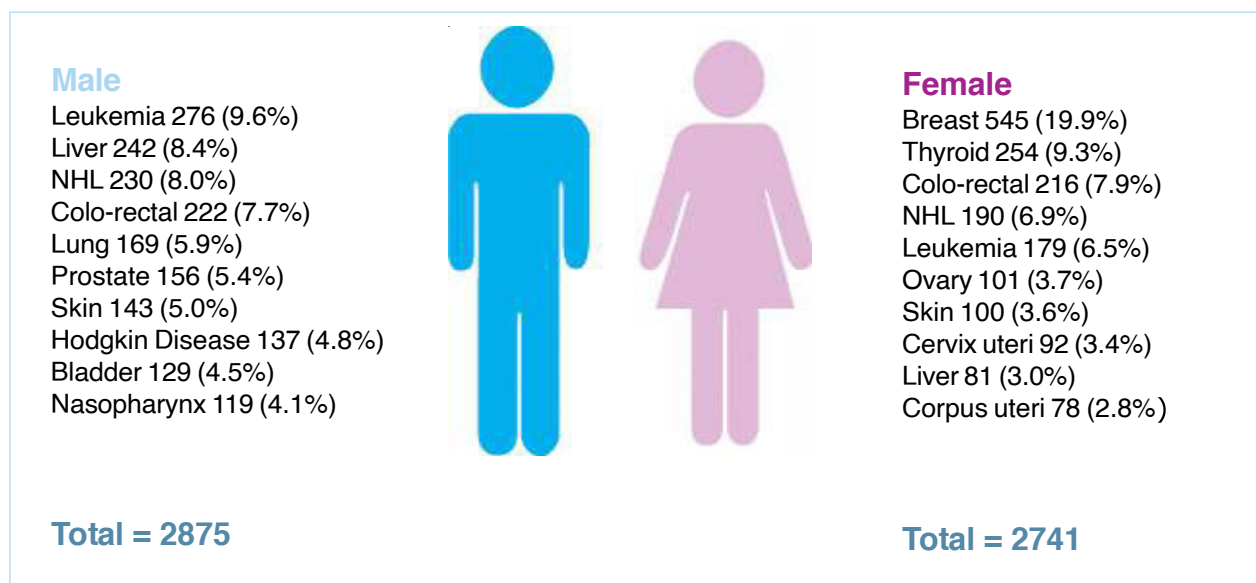


Fig. 2-3 Ten Most Common Cancers for Saudis by Sex, 2001

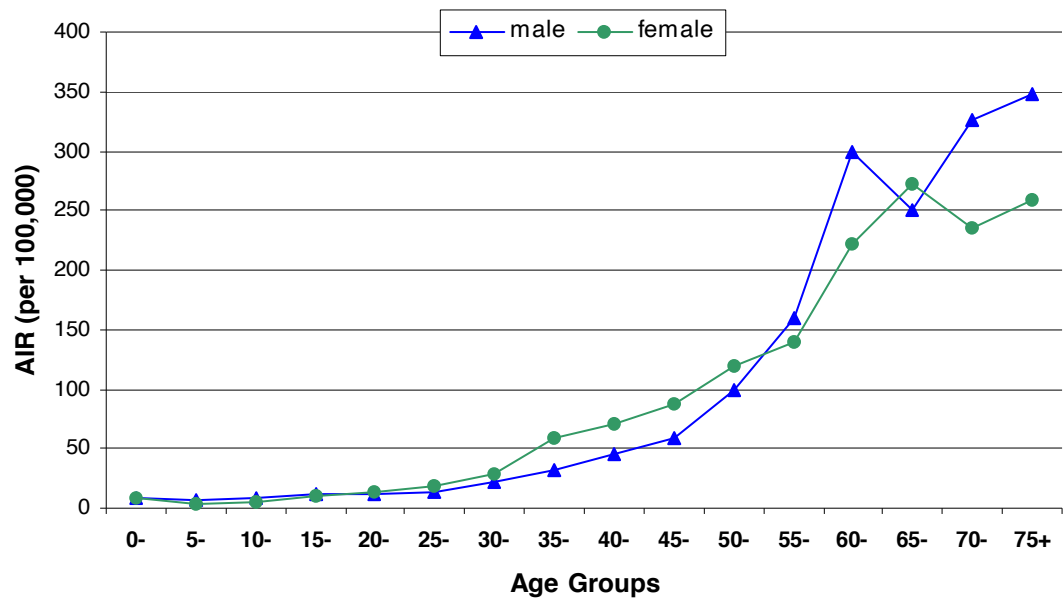


Fig. 2-4 Age-Specific Incidence Rates (AIR) for All Cancers among Saudis, 2001

Adult Cancers in Saudi Arabia, 2001 (> 14 years)

Between January and December 2001, the total number of adult cancer incident cases reported to the NCR was 6,846. Overall, cancer was predominant in males than in females. Cancer affected 3,496 (51.1%) males and 3,350 (48.9%) females, with a ratio of 104:100. Of all cases, there were 5,173 Saudis, 1,575 non-Saudis and 98 of unknown nationality. The 208 cases excluded from the analysis include 98 cases of unknown nationalities, 87 insitu cases, and 23 cases were ICD-O-3 coded couldnot be converted to ICD-10. Table 2-3 illustrates the distribution of adult cancer cases by nationality and sex.

	Saudis			non-Saudis			Unknown Nationality			All
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Total
Total	2607	2566	5173	848	727	1575	41	57	98	6846
Invasive	2590	2528	5118	839	704	1543	41	57	98	6759
In Situ	17	38	55	9	23	32	-	-	-	87
Analysed	2579	2521	5100	835	703	1538	-	-	-	6638*

Table 2-4 Distribution of Reported Adult Cancer Cases in Saudi Arabia by Nationality and Sex, 2001

* Unknown nationalities, in situ cases and ICD 10 conversion failures are excluded from the analysis

As shown in table 2-3, the total number of cases analyzed was 6,638 including 5,100 (76.8%) Saudis and 1,538 (23.2%) non-Saudis. Among Saudis, 2,579 (50.6%) cases were male and 2,521(49.4%) were female. The male to female ratio was 102:100. For all sites, the age-specific incidence rate (AIR) increased with age for both males and females. The mean age at diagnosis was 57 years in males and 51 years in females.

During the year 2001, adult cancers accounted for 91.1% of all cancers among Saudis. The number of case occurred after the age of 64 counted for 30.4%. For the total adult Saudi population the ten most common cancers were as follows:

CANCER	NO. OF CASES	%
Female breast	545	10.7
Colo-rectal	436	8.5
Non Hodgkin Lymphoma	374	7.3
Thyroid	322	6.3
Liver	316	6.2
Leukemia	277	5.4
Skin	237	4.6
Trachea, Bronchus, Lung	219	4.3
Stomach	184	3.6
Bladder	176	3.5
Hodgkin Disease	167	3.3

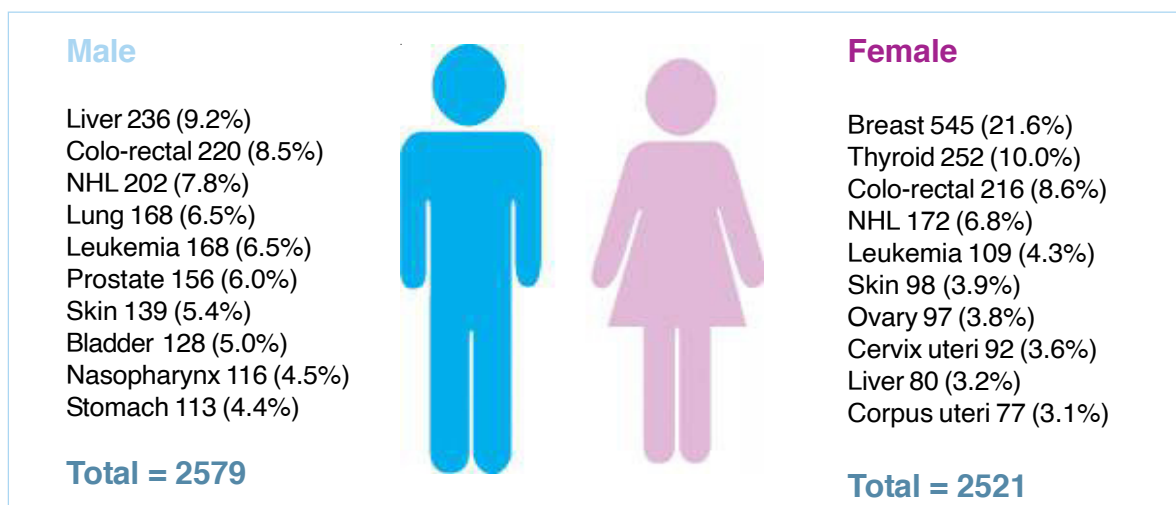


Fig. 2-6 Ten Most Common Types of Cancer among Adult Saudis by Sex, 2001

Primary Site	Code	Morphology	Male No.	%*	Female No.	%*
Female breast	8500	Infiltrating duct carcinoma, NOS	-	-	433	79.4
	8520	Lobular carcinoma, NOS	-	-	45	8.3
	8010	Carcinoma, NOS	-	-	15	2.8
	8541	Paget disease and infiltrating duct carcinoma of breast	-	-	7	1.3
	8140	Adenocarcinoma, NOS	-	-	6	1.1
		All other	-	-	39	7.2
Colo-rectal	8140	Adenocarcinoma, NOS	147	66.8	159	73.6
	8480	Mucinous adenocarcinoma	25	11.3	17	7.8
	8261	Adenocarcinoma in villous adenoma	6	2.7	8	3.7
	8010	Carcinoma, NOS	4	1.8	9	4.1
	8263	Adenocarcinoma in tubulovillous adenoma	8	3.6	4	1.8
		All other	30	13.1	19	8.1
NHL	9680	Malignant lymphoma, large B-cell, diffuse, NOS	107	52.9	93	54
	9591	Malignant lymphoma, non-Hodgkin, NOS	18	8.9	16	9.3
	9699	Marginal zone B-cell lymphoma, NOS	6	2.9	7	4
	9590	Malignant lymphoma, NOS	7	3.4	5	2.9
	9675	Malignant lymphoma, mixed small and large cell, diffuse	4	1.9	7	4
		All other	60	28.2	44	24.6
Thyroid	8260	Papillary adenocarcinoma, NOS	28	40	108	42.8
	8050	Papillary carcinoma, NOS	13	18.5	58	23
	8340	Papillary carcinoma, follicular variant	12	17.1	35	13.8
	8330	Follicular adenocarcinoma, NOS	1	1.4	14	5.5
	8341	Papillary microcarcinoma	0	0	15	5.9
		All other	16	22.6	22	7.9
Liver	8170	Hepatocellular carcinoma, NOS	210	88.9	68	85
	8160	Cholangiocarcinoma	8	3.3	2	2.5
	8140	Adenocarcinoma, NOS	3	1.2	5	6.2
	8000	Neoplasm, malignant	5	2.1	1	1.2
	8010	Carcinoma, NOS	5	2.1	0	0
		All other	5	2	4	4.8
Leukaemia	9863	Chronic myeloid leukemia, NOS	36	21.4	36	33
	9835	Precursor cell lymphoblastic leukemia, NOS	27	16	10	9.1
	9823	B-cell chronic lymphocytic leukemia/small lymphocytic lymphoma	20	11.9	9	8.2
	9861	Acute myeloid leukemia, NOS	14	8.3	14	12.8
	9866	Acute promyelocytic leukemia	12	7.1	4	3.6
		All other	59	33.6	36	32.5

Primary Site	Code	Morphology	Male		Female	
			No.	%*	No.	%*
Skin	8090	Basal cell carcinoma, NOS	76	54.6	58	59.1
	8070	Squamous cell carcinoma, NOS	27	19.4	13	13.2
	8832	Dermatofibrosarcoma, NOS	9	6.4	6	6.1
	8071	Squamous cell carcinoma, keratinizing, NOS	9	6.4	4	4
	8410	Sebaceous adenocarcinoma	4	2.8	4	4
		All other	14	9.8	13	13
Trachea, bronchus, lung	8070	Squamous cell carcinoma, NOS	55	32.7	9	17.6
	8140	Adenocarcinoma, NOS	27	16	14	27.4
	8010	Carcinoma, NOS	18	10.7	3	5.8
	8041	Small cell carcinoma, NOS	15	8.9	2	3.9
	8046	Non-small cell carcinoma	13	7.7	4	7.8
		All other	40	22.7	19	36.8
Stomach	8140	Adenocarcinoma, NOS	48	42.4	28	39.4
	8490	Signet ring cell carcinoma	28	24.7	16	22.5
	8144	Adenocarcinoma, intestinal type	13	11.5	6	8.4
	8010	Carcinoma, NOS	3	2.6	4	5.6
	8000	Neoplasm, malignant	3	2.6	4	5.6
		All other	18	15.1	13	18.2
Bladder	8130	Papillary transitional cell carcinoma	71	55.4	19	39.5
	8120	Transitional cell carcinoma, NOS	40	31.2	15	31.2
	8070	Squamous cell carcinoma, NOS	6	4.6	9	18.7
	8122	Transitional cell carcinoma, spindle cell	2	1.5	1	2
	8010	Carcinoma, NOS	2	1.5	1	2
		All other	7	5.1	3	6
Prostate	8140	Adenocarcinoma, NOS	137	87.8	-	-
	8010	Carcinoma, NOS	9	5.7	-	-
	8000	Neoplasm, malignant	4	2.5	-	-
	8021	Carcinoma, anaplastic, NOS	3	1.9	-	-
	8130	Papillary transitional cell carcinoma	1	0.6	-	-
		All other	2	1.2	-	-
Nasopharynx	8020	Carcinoma, undifferentiated, NOS	46	39.6	16	47
	8010	Carcinoma, NOS	41	35.3	8	23.5
	8072	Squamous cell carcinoma, large cell, nonkeratinizing, NOS	15	12.9	4	11.7
	8070	Squamous cell carcinoma, NOS	9	7.7	2	5.8
	8000	Neoplasm, malignant	2	1.7	1	2.9
		All other	3	2.5	3	8.7
Ovary	8460	Papillary serous cystadenocarcinoma	-	-	24	24.7
	8140	Adenocarcinoma, NOS	-	-	11	11.3
	8470	Mucinous cystadenocarcinoma, NOS	-	-	10	10.3
	8461	Serous surface papillary carcinoma	-	-	6	6.1
	8010	Carcinoma, NOS	-	-	4	4.1
		All other	-	-	42	42.3
Cervix uteri	8070	Squamous cell carcinoma, NOS	-	-	34	36.9
	8072	Squamous cell carcinoma, large cell, nonkeratinizing, NOS	-	-	15	16.3
	8071	Squamous cell carcinoma, keratinizing, NOS	-	-	14	15.2
	8140	Adenocarcinoma, NOS	-	-	12	13
	8010	Carcinoma, NOS	-	-	4	4.3
		All other	-	-	13	13.2
Corpus uteri	8380	Endometrioid adenocarcinoma, NOS	-	-	24	31.1
	8140	Adenocarcinoma, NOS	-	-	17	22
	8950	Mullerian mixed tumor	-	-	6	7.7
	8930	Endometrial stromal sarcoma, NOS	-	-	5	6.4
	8010	Carcinoma, NOS	-	-	4	5.1
		All other	-	-	21	26.2

Table 2-5 Number and Proportion of Morphological Types for the Most Common Types of Cancer among Saudi Adults, 2001

* Relative percentage of morphology type within primary site.

Childhood Cancers in Saudi Arabia, 2001 (≤ 14 years)

The total incident cases reported among children (0-14 years as defined by the WHO) between January and December 2001 was 589. This represented 8.9 % of the total number of cancers in Saudi Arabia. The total reported incidents show that cancer was predominant in boys than in girls. Three hundred thirty three (56%) cases were reported among boys and 259 (44%) among girls, with a male to female ratio of 127:100. Of all the cases reported, there were 500 Saudis, 79 non-Saudis and 10 of “unknown nationality”.

Childhood cancer is very important, not only because of the age of occurrence, but also because 45.2% of the Saudi population is under 15 years of age. In addition to this, recent years have shown a breakthrough for the cure of many childhood cancers. Childhood cancers accounted for 8.9% of all cancers among Saudis.

As explained earlier, there were some cases that were excluded from the analysis. Table 2-5 demonstrates the distribution of childhood cancer cases by nationality and sex. The total number of cases excluded from the analysis were 12.

	Saudis			non-Saudis			Unknown Nationality			All
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Total
Total	282	218	500	43	36	79	5	5	10	589
Invasive	282	218	500	43	36	79	5	5	10	579
In Situ	0	0	0	0	0	0	-	-	-	0
Analysed	281	217	498	43	36	79	-	-	-	577*

Table 2-6 Distribution of Reported Childhood Cancer Cases in Saudi Arabia by Nationality and Sex, 2001

* Unknown nationalities, in situ cases and ICD 10 conversion failures are excluded from the analysis

Based on the above, the total number of cases analyzed was 577 including 498 (86.3%) Saudis and 79 (13.7%) non-Saudis. Among Saudis, 281 (56.4%) were male and 217 (43.6%) were female. The male to female ratio was 129: 100. The leading cancer among Saudi children was leukaemia, which accounted for 35.1%, followed by Brain (CNS) then Hodgkin’s disease and NHL. The following is a listing of the ten most common types of cancer among Saudi children in order of relative frequency. Figure 2-7 shows the top ten sites by sex and frequency, and table 2-6 shows the number and proportion of the morphological types for the most common types of cancer.

CANCER	NO. OF CASES	%
Leukemia	175	35.1
Brain, Nervous System	61	12.2
Hodgkin Disease	45	9.0
NHL	45	9.0
Kidney	38	7.6
Bone	37	7.4
Connective, Soft Tissue	29	5.8
Eye	21	4.2
Adrenal gland	13	2.6
Nasopharynx	5	1.0
Skin	5	1.0

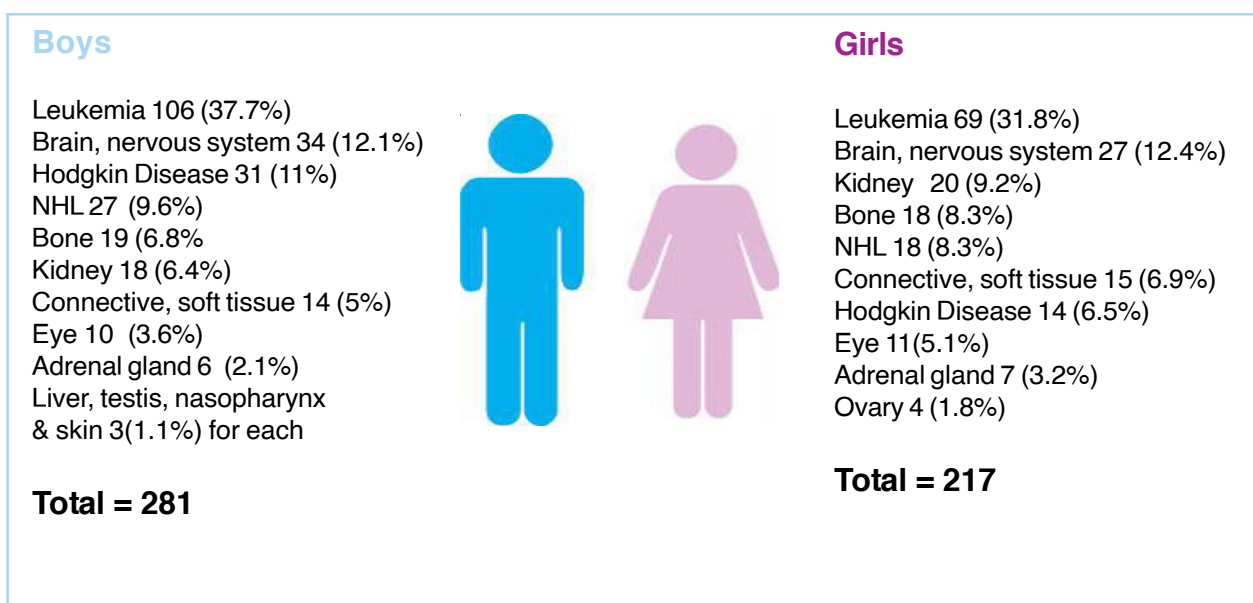


Fig. 2-7 Ten Most Common Types of Cancer among Saudi Children by Sex, 2001

Primary Site	Code	Morphology	Male No.	%*	Female No.	%*
Leukemia	9835	Precursor cell lymphoblastic leukemia, NOS	51	48.1	33	47.8
	9836	Precursor B-cell lymphoblastic leukemia	19	17.9	14	20.2
	9861	Acute myeloid leukemia, NOS	10	9.4	10	14.4
	9866	Acute promyelocytic leukemia	3	2.8	4	5.7
	9837	Precursor T-cell lymphoblastic leukemia	5	4.7	1	1.4
		All other	18	16.3	7	9.8
Brain, CNS	9470	Medulloblastoma, NOS	12	35.2	6	22.2
	9380	Glioma, malignant	8	23.5	3	11.1
	9391	Ependymoma, NOS	2	5.8	4	14.8
	9400	Astrocytoma, NOS	0	0.0	4	14.8
	9392	Ependymoma, anaplastic	4	11.7	0	0.0
		All other	8	23.2	10	37.0
Hodgkin disease	9663	Hodgkin lymphoma, nodular sclerosis, NOS	13	41.9	7	50.0
	9652	Hodgkin lymphoma, mixed cellularity, NOS	6	19.3	3	21.4
	9665	Hodgkin lymphoma, nodular sclerosis, grade 1	3	9.6	2	14.2
	9659	Hodgkin lymphoma, nodular lymphocyte predominance	2	6.4	1	7.1
	9651	Hodgkin lymphoma, lymphocyte-rich	3	9.6	0	0.0
		All other	4	12.8	1	7.1
NHL	9687	Burkitt lymphoma, NOS	11	40.7	6	33.3
	9591	Malignant lymphoma, non-Hodgkin, NOS	4	14.8	3	16.6
	9680	Malignant lymphoma, large B-cell, diffuse, NOS	5	18.5	2	11.1
	9727	Precursor cell lymphoblastic lymphoma, NOS	2	7.4	5	27.7
	9675	Malignant lymphoma, mixed small and large cell, diffuse	1	3.7	1	5.5
		All other	4	14.8	1	5.5
Kidney	8960	Nephroblastoma, NOS	18	100.0	19	95.0
	8312	Renal cell carcinoma, NOS	0	0.0	1	5.0

* Relative percentage of morphology type within primary site.

Primary Site	Code	Morphology	Male No.	%*	Female No.	%*
Bone	9260	Ewing sarcoma	8	42.1	10	55.5
	9180	Osteosarcoma, NOS	8	42.1	6	33.3
	9181	Chondroblastic osteosarcoma	1	5.2	1	5.5
	9220	Chondrosarcoma, NOS	1	5.2	0	0.0
	9194	High grade surface osteosarcoma	0	0.0	1	5.5
	9183	Telangiectatic osteosarcoma	1	5.2	0	0.0
Connective, soft tissue	9500	Neuroblastoma, NOS	4	28.5	4	26.6
	8910	Embryonal rhabdomyosarcoma, NOS	2	14.2	3	20.0
	8920	Alveolar rhabdomyosarcoma	2	14.2	1	6.6
	8900	Rhabdomyosarcoma, NOS	2	14.2	1	6.6
	9364	Peripheral neuroectodermal tumor	2	14.2	1	6.6
		All other	2	14.2	5	33.1
Eye	9512	Retinoblastoma, undifferentiated	6	60.0	6	54.5
	9510	Retinoblastoma, NOS	3	30.0	3	27.2
	9511	Retinoblastoma, differentiated	1	10.0	1	9.0
	8910	Embryonal rhabdomyosarcoma, NOS	0	0.0	1	9.0
Adrenal gland	9500	Neuroblastoma, NOS	5	83.3	6	85.7
	9490	Ganglioneuroblastoma	1	16.6	0	0.0
	8000	Neoplasm, malignant	0	0.0	1	14.2
Nasopharynx	8020	Carcinoma, undifferentiated, NOS	3	100.0	0	0.0
	8910	Embryonal rhabdomyosarcoma, NOS	0	0.0	1	50.0
	8900	Rhabdomyosarcoma, NOS	0	0.0	1	50.0
Ovary	9060	Dysgerminoma	-	-	2	50.0
	9080	Teratoma, malignant, NOS	-	-	1	25.0
	9064	Germinoma	-	-	1	25.0
Liver	8970	Hepatoblastoma	3	100.0	0	0.0
	8170	Hepatocellular carcinoma, NOS	0	0.0	1	100.0
Skin (non melanoma)	8004	Malignant tumor, spindle cell type	-	-	1	50
	8010	Carcinoma, NOS	1	33.3	-	-
	8070	Squamous cell carcinoma, NOS	1	33.3	-	-
	8090	Basal cell carcinoma, NOS	-	-	1	50
	8832	Dermatofibrosarcoma, NOS	1	33.3	-	-
Testis	9085	Mixed germ cell tumor	2	66.7	-	-
	8900	Rhabdomyosarcoma, NOS	1	33.3	-	-

Table 2-7 Number and Proportion of Morphological Types for the Most Common Types of Cancer among Saudi Children, 2001

* Relative percentage of morphology type within primary site.

International Comparison of Age-Standardized Incidence Rates

Worldwide, it is estimated that over 10,055,551 people developed cancer in 2000. Of these, 53.5% were in developing countries and 46.5% were in more developed countries. According to 2000 estimates, the most common cancer site in men was lung cancer. In developed countries it was followed by prostate, colo-rectal and stomach cancers. In developing regions, stomach cancer is the second most frequently appearing cancer, followed by liver, esophagus and colo-rectal cancers, with wide regional variations. In women, breast cancer was the most common followed by colo-rectal, lung and stomach cancers in developed countries and cancers of the cervix, stomach and lung in developing regions.

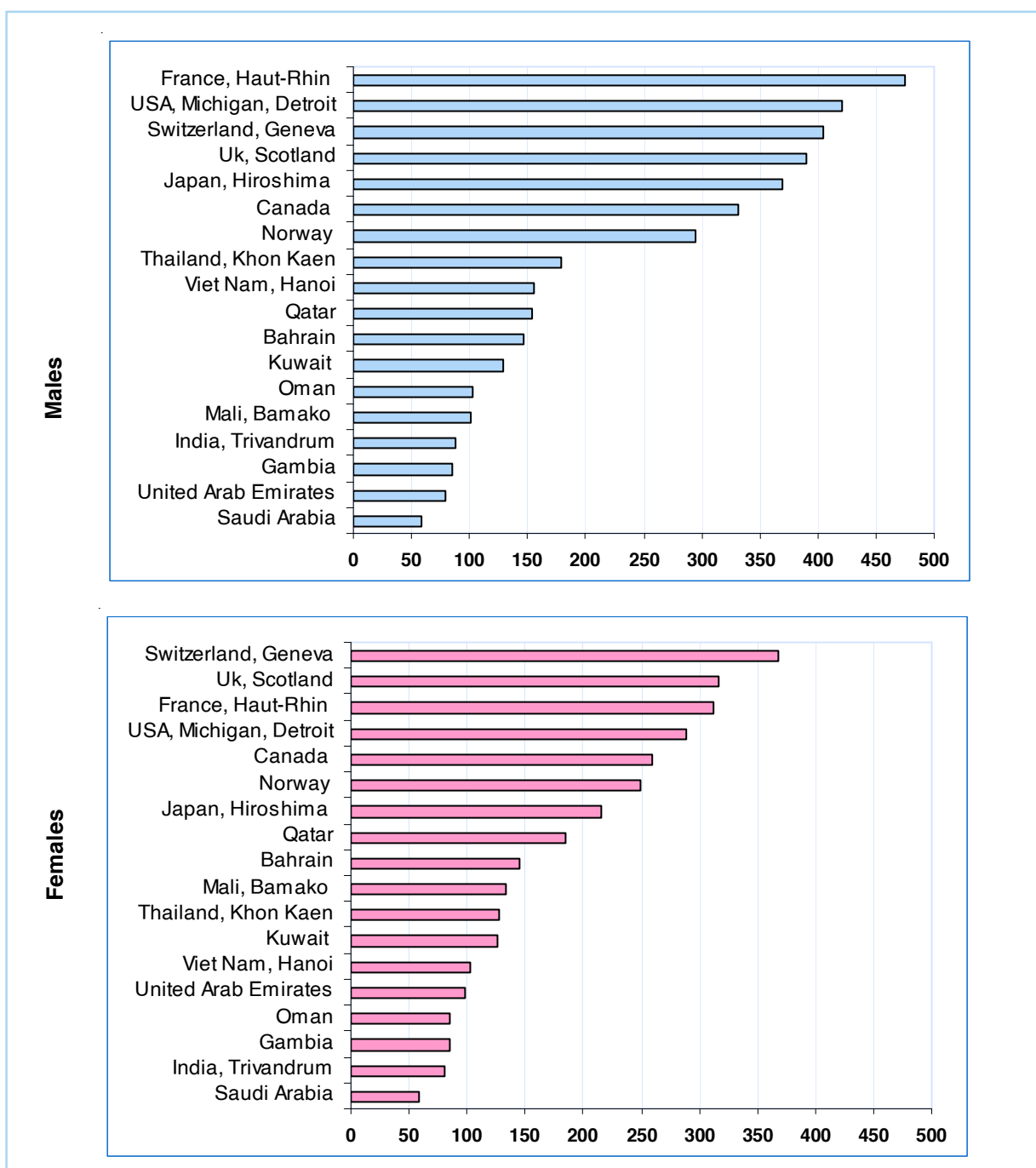


Fig. 2-9 Comparison of ASR for Saudi Males and Females with Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

PART III
CANCER INCIDENCE FOR SPECIFIC SITES
2001

Cancer Incidence for Specific Sites, 2001

In this section the incidence of the combined top ten cancers among Saudi males and females is outlined in order, according to their relative frequency in the whole Saudi population. The relevant data incorporate details for all patients presented over the period of January through December 2001.

CANCER	CASES	(%)
Female breast	545	9.7
Leukemia	455	8.1
Colo-rectal	438	7.8
Non Hodgkin lymphoma	420	7.5
Thyroid	325	5.8
Liver	323	5.8
Skin	243	4.3
Lung	220	3.9
Hodgkin Disease	212	3.8
Brain, nervous system	194	3.5
Bladder	177	3.2
Prostate	156	2.8
Nasopharynx	155	2.8
Ovary	101	1.8
Cervix uteri	92	1.6
Corpus uteri	78	1.4

Female Breast (C50)

Between January and December 2001, there were 545 cases of female breast cancer. Breast cancer is the most common cancer, ranked first among females and it accounted for 19.9% of all newly diagnosed female cancers (2,741). The ASR was 11.8/100,000 for female population. The mean age at diagnosis was 48 years (Range 17-93 years).

Cancer of the breast is the most common cancer in the world among women. The estimated number of cases diagnosed worldwide in 2000 was 1,050,346. Fifty-five point two percent (55.2%) were in more developed countries. Incidence rates were highest in Southern America, Northern America, Western Europe, Northern Europe and Western Asia.

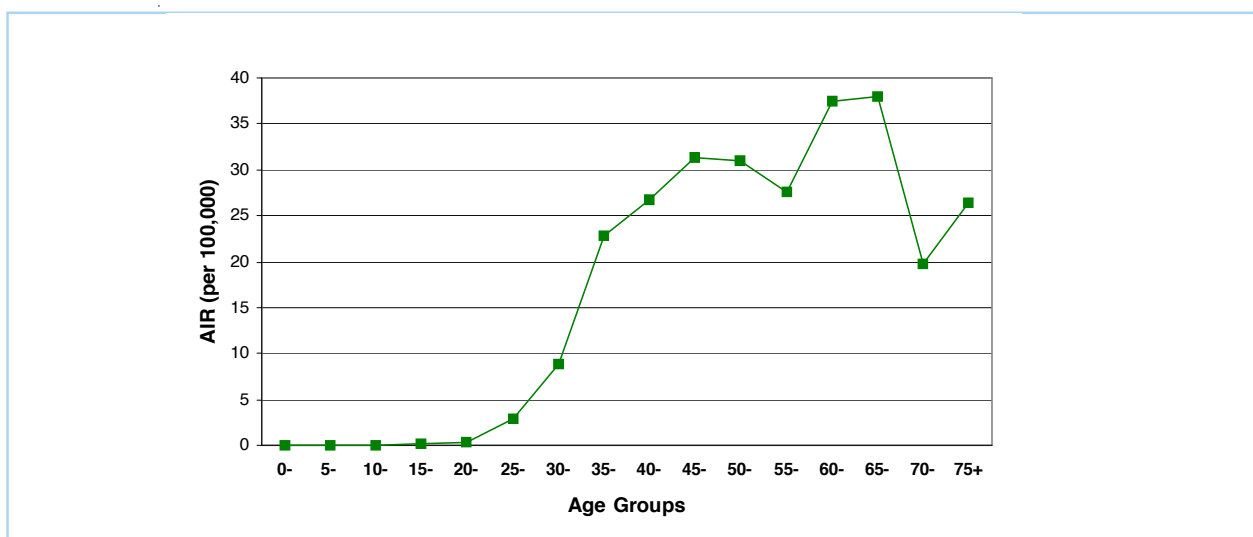


Fig. 3-1 Age-Specific Incidence Rate (AIR) for Female Breast Cancer in Saudi Arabia, 2001

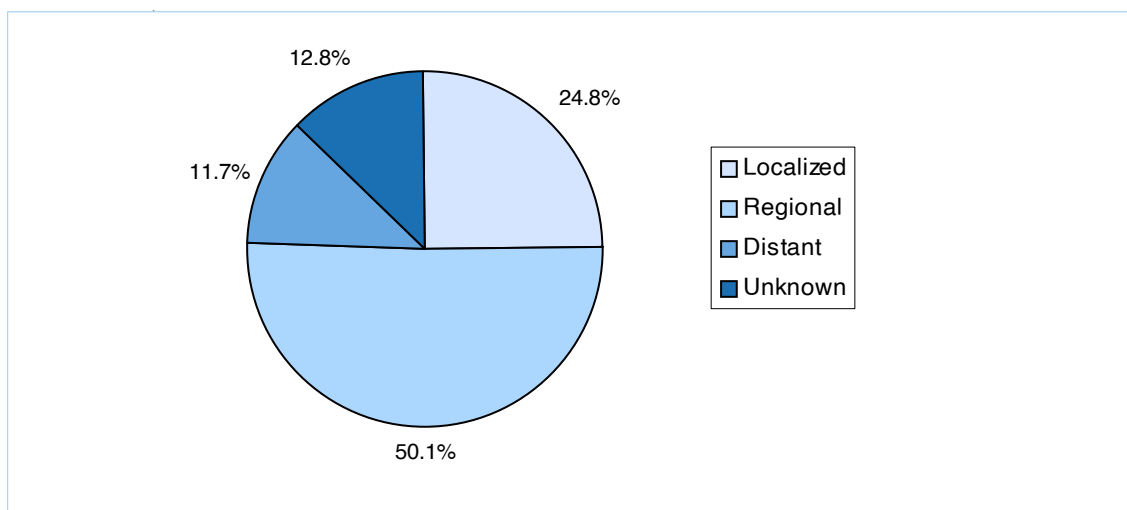


Fig. 3-3 Stage Distribution of Female Breast Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8500	Infiltrating duct carcinoma, NOS	433	79.4
8520	Lobular carcinoma, NOS	45	8.3
8010	Carcinoma, NOS	15	2.8
8541	Paget disease and infiltrating duct carcinoma	7	1.3
8140	Adenocarcinoma, NOS	6	1.1
8522	Infiltrating duct and lobular carcinoma	6	1.1
	All others	33	6.1

Table 3-1 Morphological Distribution of Female Breast Cancer in Saudi Arabia, 2001

Country	ASR
Uruguay, Montevideo	114.9
USA, Washington, Seattle	96.0
Netherlands	85.6
Iceland	76.1
Bahrain	58.6
Singapore	43.5
Kuwait	36.0
Qatar	33.2
United Arab Emirates	27.2
Japan, Saga Prefecture	23.6
Algeria, Algiers	21.3
Oman	15.3
Saudi Arabia	11.8
Thailand, Khon Kaen	10.8
China, Jiashan	9.1
Gambia	7.0

Table 3-2 Comparison of ASR for Female Breast Cancer among Saudi Females with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Leukemia (C91-C95)

Between January and December 2001 there were 455 cases of leukaemia accounting for 8.1% of all 5,616 newly diagnosed cancers. The overall ASR was 3.3/100,000. The ASR was 3.9/100,000 and 2.7/100,000 in males and females respectively. This cancer ranked first for males and fifth for females and affected 276 (60.7%) males and 179 (39.3%) females with a male to female ratio of 154:100. The mean age at diagnosis is 28 years in males (range 0-94 years) and 27 years in females (range 0-85 years).

Leukaemia is the twelfth most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 257,076, with 58.8% in less developed countries. Incidence rates were highest in Southern Europe, Australia, North America, and Northern Europe.

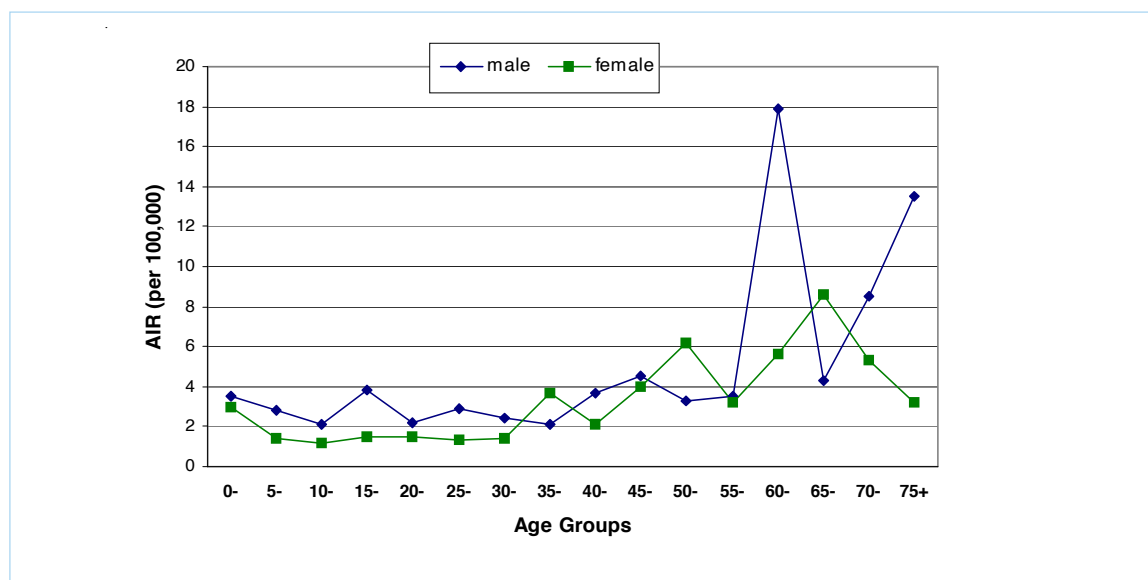


Fig. 3-7 Age-Specific Incidence Rate (AIR) for Leukaemia in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
Italy, Biella Province	14.4	8.8
Australia, South	12.7	8.2
USA, Iowa	12.9	7.6
Canada	10.7	6.9
Denmark	9.7	6.4
Qatar	6.9	8.5
Oman	5.6	4.7
Bahrain	6.3	3.1
China, Taiwan	4.9	3.9
Kuwait	4.8	2.8
United Arab Emirates	2.6	4.3
Saudi Arabia	3.9	2.7
India, Bangalore	3.2	2.6
Mali, Bamako	1.3	2.6
Algeria, Algiers	2.4	1.5
Uganda, Kyadondo County	0.9	1.6

Table 3-6 Comparison of ASR for Leukaemia among Saudis with ASR in Selected Countries*

ICD-O Code	Morphology	Total	%
9835	Precursor cell lymphoblastic leukemia, NOS	121	26.6
9863	Chronic myeloid leukemia, NOS	73	16.0
9836	Precursor B-cell lymphoblastic leukemia	48	10.5
9861	Acute myeloid leukemia, NOS	48	10.5
9823	B-cell chronic lymphocytic leukemia/small lymphocytic lymphoma	30	6.6
9866	Acute promyelocytic leukemia	23	5.1
9867	Acute myelomonocytic leukemia	13	2.9
9891	Acute monocytic leukemia	13	2.9
9801	Acute leukemia, NOS	10	2.2
9873	Acute myeloid leukemia without maturation	10	2.2
9826	Burkitt cell leukemia	10	2.2
9874	Acute myeloid leukemia with maturation	9	2.0
9837	Precursor T-cell lymphoblastic leukemia	7	1.5
9872	Acute myeloid leukemia, minimal differentiation	5	1.1
9940	Hairy cell leukemia	5	1.1
9945	Chronic myelomonocytic leukemia, NOS	5	1.1
	All others	25	5.5

Table 3-5 Morphological Distribution of Leukaemia in Saudi Arabia, 2001

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Colo-rectal (C18-C21)

Between January and December 2001 there were 438 cases of colo-rectal cancer accounting for 7.8% of all 5,616 newly diagnosed cases. The overall ASR was 5.0/100,000. The ASR was 5.0/100,000 in males and 5.0/100,000 in females. This cancer ranked fourth in males and third for females and affected 222 (51%) males and 216 (49%) females with a male to female ratio of 103:100. The mean age at diagnosis was 57 years in males (range 20-92 years) and 53 years for females (range 17-87 years).

Colo-rectal cancer is the third most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 944,717, with 64.6% in more developed countries. Incidence rates were highest in Eastern Asia, New Zealand, Australia, Western Europe and Northern Europe.

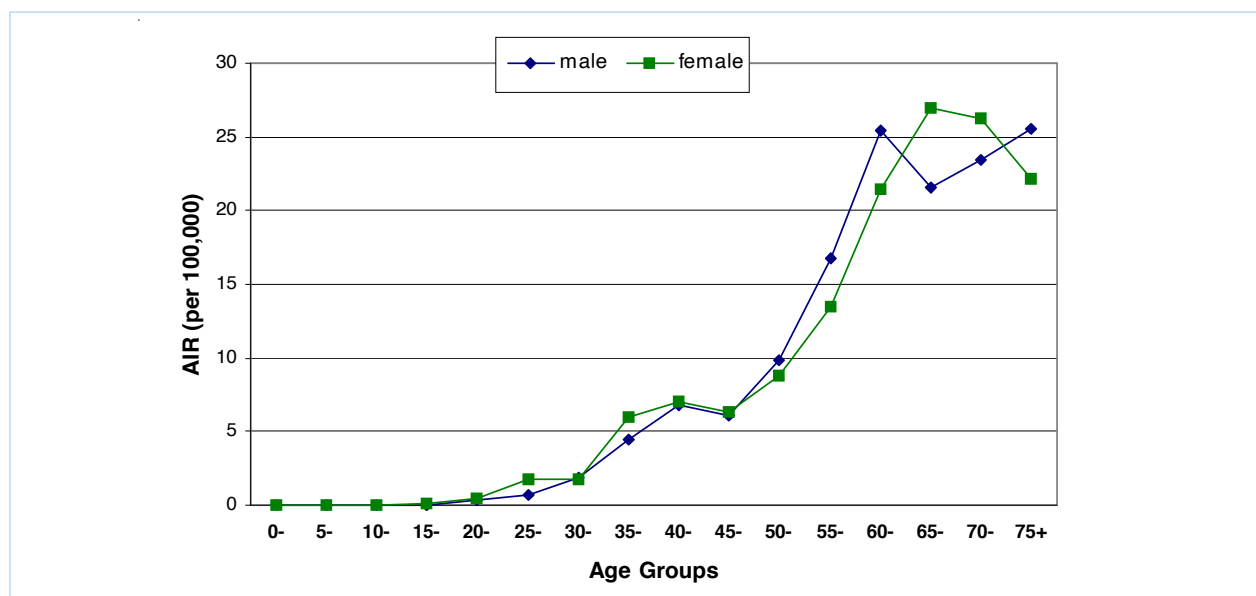


Fig. 3-9 Age Specific Incidence rate (AIR) for Colo-rectal Cancer in Saudi Arabia, 2001

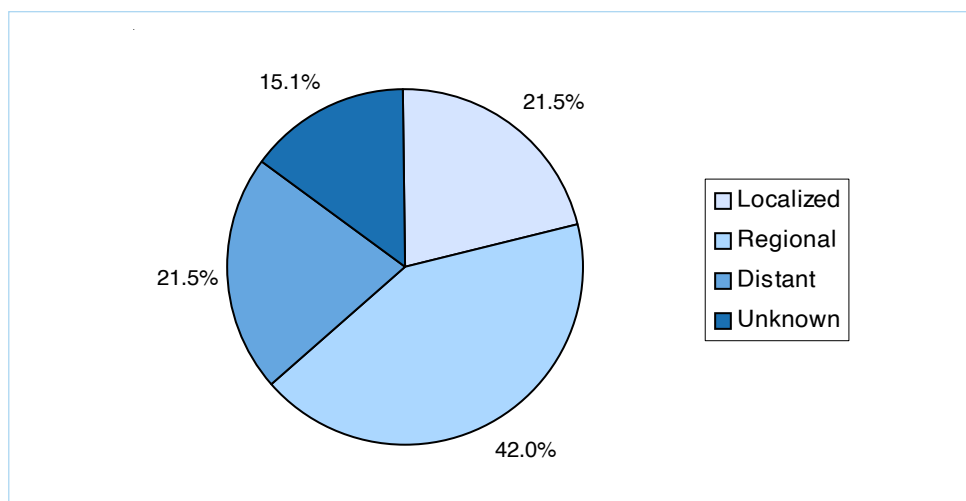


Fig. 3-11 Stage Distribution of Colo-rectal Cancer, 2001

ICD-O Code	Morphology	Total	%
8140	Adenocarcinoma, NOS	306	69.9
8480	Mucinous adenocarcinoma	43	9.8
8261	Adenocarcinoma in villous adenoma	15	3.4
8010	Carcinoma, NOS	13	3.0
8481	Mucin-producing adenocarcinoma	12	2.7
8263	Adenocarcinoma in tubulovillous adenoma	12	2.7
8210	Adenocarcinoma in adenomatous polyp	6	1.4
8490	Signet ring cell carcinoma	6	1.4
	All others	25	5.7

Table 3-7 Morphological Distribution of Colo-rectal Cancer in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
Japan, Hiroshima	86.7	40.2
New Zealand	52.0	40.6
Australia, Tasmania	48.3	36.7
France, Bas-Rhin	52.0	26.3
USA, Iowa	42.7	31.2
UK, Scotland	42.6	28.6
Sweden	30.3	23.2
Kuwait	14.0	14.8
Qatar	15.3	8.4
United Arab Emirates	14.3	6.3
Bahrain	12.4	5.3
Algeria, Algiers	7.1	6.2
Oman	6.6	3.9
Saudi Arabia	5.0	5.0
Mali, Bamako	5.2	4.7
India, Karunagappally	3.1	2.7

Table 3-8 Comparison of ASR for Colo-rectal Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Non-Hodgkin Lymphoma (C82-C85;C96)

Between January and December 2001 there were 420 cases of non-Hodgkin lymphoma accounting for 7.5% of all newly diagnosed cancers (5,616). The overall ASR was 4.3/100,000. The ASR was 4.4/100,000 in males and 4.1/100,000 in females. This cancer ranked third in males and fourth in females and affected 230(55%) males and 190(45%) females with a male to female ratio of 121:100. The mean age at diagnosis was 46 years in males (range 1-89 years) and 49 years in females (range 2-90 years).

NHL is the tenth most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 287,428, with 50.9% in more developed countries. Incidence rates were highest in Northern America, Western Europe, Western Asia and Southern Europe.

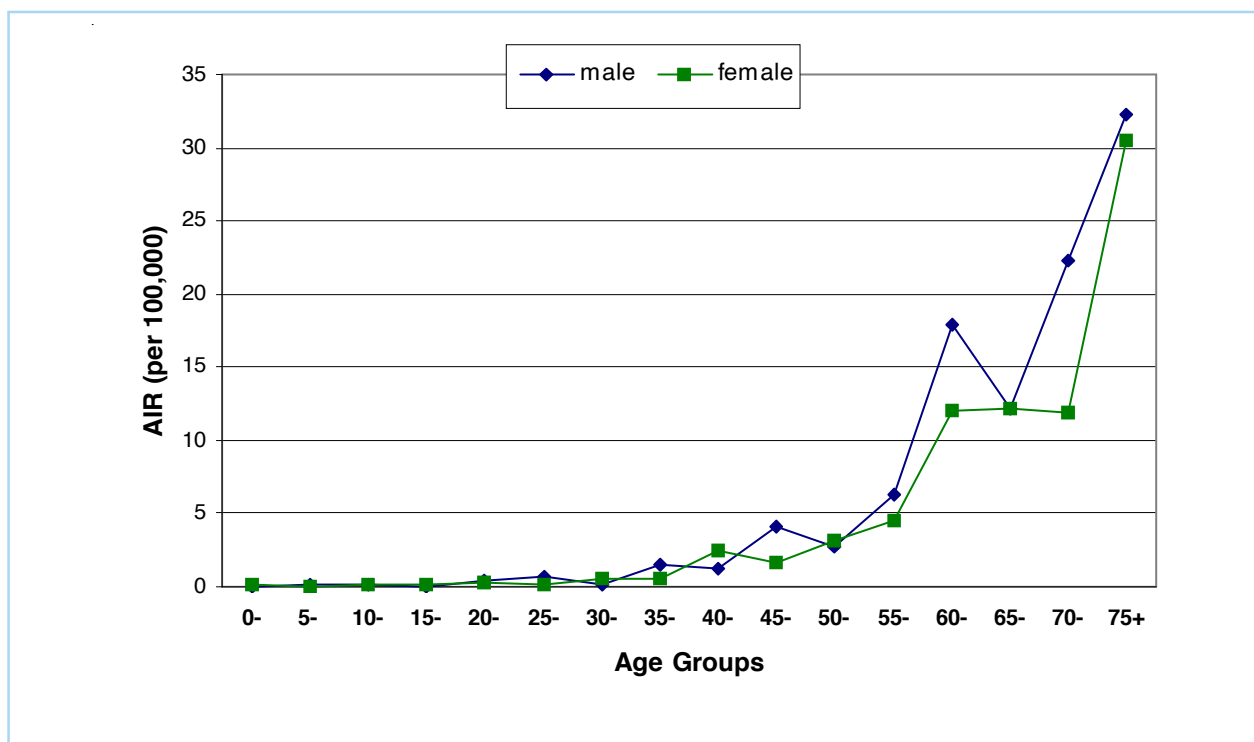


Fig. 3-4 Age-Specific Incidence Rates (AIR) for NHL in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
9680	Malignant lymphoma, large B-cell, diffuse, NOS	208	49.5
9591	Malignant lymphoma, non-Hodgkin, NOS	41	9.8
9687	Burkitt lymphoma, NOS	25	6.0
9590	Malignant lymphoma, NOS	13	3.1
9675	Malignant lymphoma, mixed small and large cell, diffuse	13	3.1
9699	Marginal zone B-cell lymphoma, NOS	13	3.1
9714	Anaplastic large cell lymphoma, T cell and Null cell type	12	2.9
9727	Precursor cell lymphoblastic lymphoma, NOS	10	2.4
9690	Follicular lymphoma, NOS	10	2.4
9691	Follicular lymphoma, grade 2	9	2.1
9702	Mature T-cell lymphoma, NOS	9	2.1
9698	Follicular lymphoma, grade 3	9	2.1
9700	Mycosis fungoides	7	1.7
9729	Precursor T-cell lymphoblastic lymphoma	6	1.4
9695	Follicular lymphoma, grade 1	6	1.4
9670	Malignant lymphoma, small B lymphocytic, NOS	5	1.2
9709	Cutaneous T-cell lymphoma, NOS	5	1.2
9684	Malignant lymphoma, large B-cell, diffuse, immunoblastic, NOS	5	1.2
	All others	14	3.3

Table 3-3 Morphological Distribution of NHL in Saudi Arabia, 2001

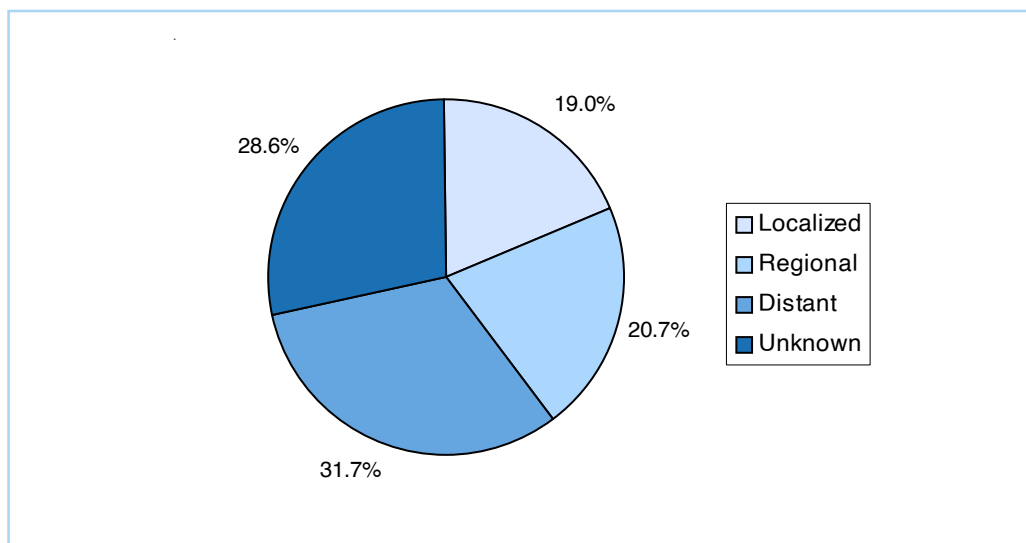


Fig. 3-6 Stage Distribution of NHL in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
USA, California, San Francisco	21.5	10.21
Belgium, Limburg	14.23	13.08
Qatar	12.4	14.7
Italy, Venetian Region	15.8	11.06
Canada	13.9	9.97
Iceland	11.35	7.29
Kuwait	10.0	6.1
China, Hong Kong	8.26	5.4
Oman	6.7	5.3
Bahrain	7.5	4.3
United Arab Emirates	5.6	5.1
Slovakia	6	4.03
Saudi Arabia	4.4	4.1
Thailand, Khon Kaen	3.66	2.69
Korea, Kangwha County	3.9	1.51
Mali, Bamako	1.98	2.19
India, Ahmedabad	2.5	1.23

Table 3-4 Comparison of ASR for NHL among Saudis with ASR in Selected Countries

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Thyroid (C73)

Between January and December 2001 there were 325 cases of thyroid cancer accounting for 5.8% of all 5,616 newly diagnosed cases. The overall ASR was 3/100,000. ASR in males was 1.5/100,000 and 4.4/100,000 in females. This cancer ranked fourteenth in males and second in females and affected 71 (22%) males and 254 (78%) females with a male to female ratio of 28:100. The mean age at diagnosis was 51 years in males (range 17-91 years) and 39 years in females (range 7-90 years).

Thyroid cancer is the 21st most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 122,803, with 60.5% in less developed countries. Incidence rates were highest in Western Asia, Northern America, Northern Europe, and Eastern Asia.

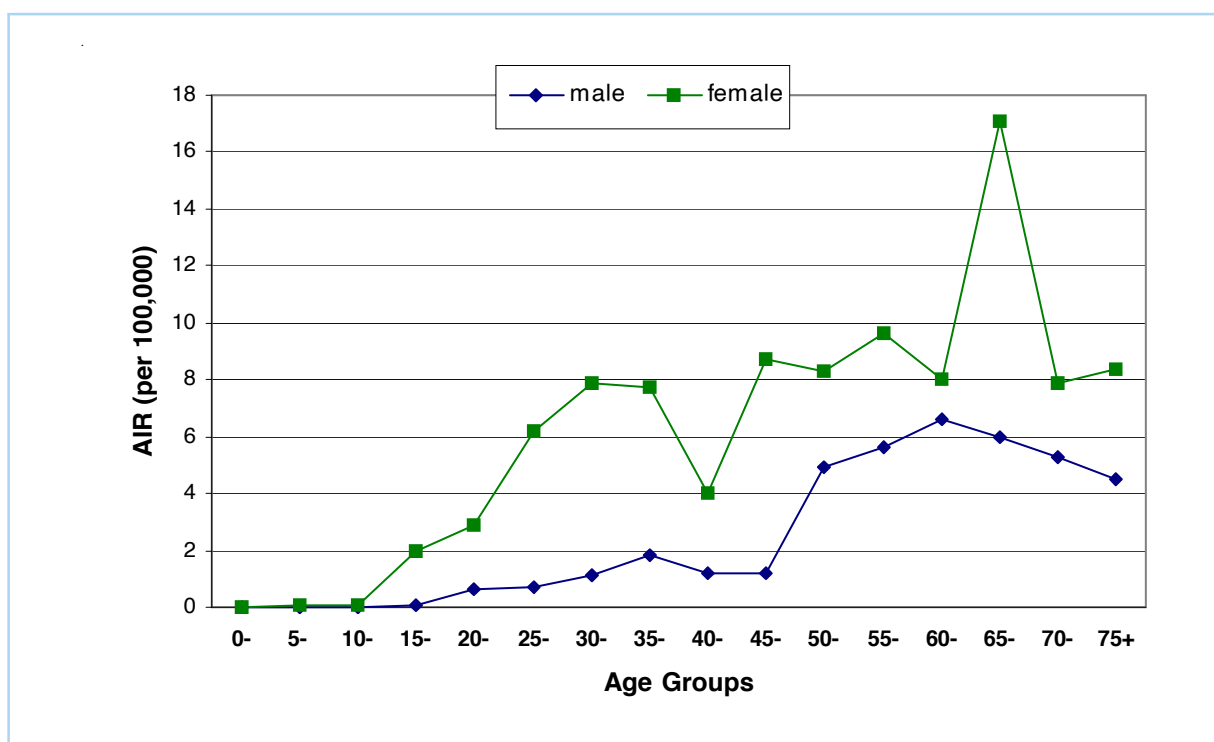


Fig. 3-15 Age-Specific Incidence Rate (AIR) for Thyroid Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8260	Papillary adenocarcinoma, NOS	136	41.8
8050	Papillary carcinoma, NOS	72	22.2
8340	Papillary carcinoma, follicular variant	48	14.8
8341	Papillary microcarcinoma	15	4.6
8330	Follicular adenocarcinoma, NOS	15	4.6
8021	Carcinoma, anaplastic, NOS	11	3.4
8510	Medullary carcinoma, NOS	6	1.8
8343	Papillary carcinoma, encapsulated	5	1.5
8335	Follicular carcinoma, minimally invasive	5	1.5
	All others	12	3.7

Table 3-11 Morphological Distribution of Thyroid Cancer in Saudi Arabia, 2001

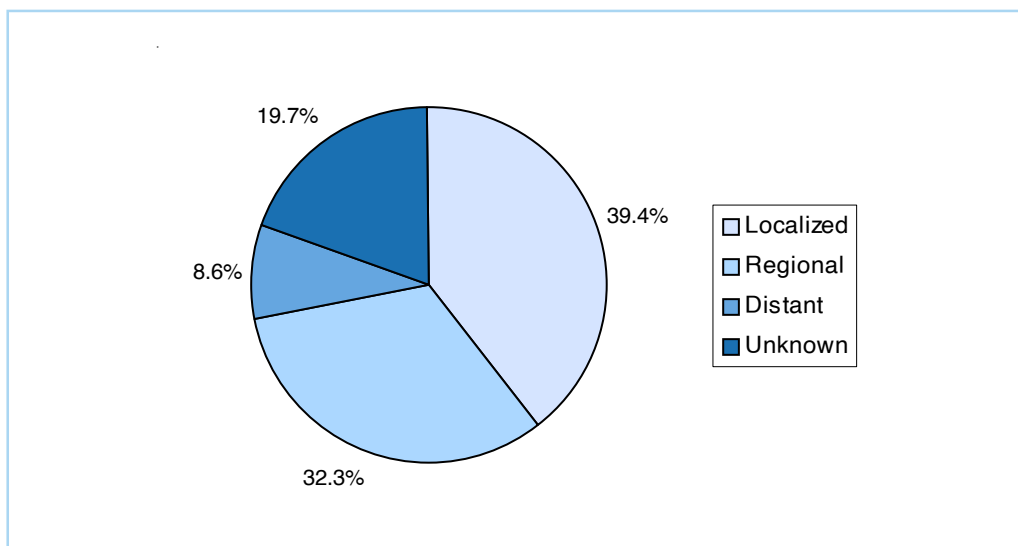


Fig. 3-17 Stage Distribution of Thyroid Cancer in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
Qatar	6.0	18.4
USA, Hawaii:Filipino	5.0	19.4
Iceland	4.3	12.6
United Arab Emirates	4.3	8.4
Japan, Hiroshima	2.1	10.5
Kuwait	5.4	6.3
Bahrain	1.7	8.9
Oman	2.8	7.4
China, Hong Kong	1.9	7.1
Canada	2.2	6.4
Saudi Arabia	1.5	4.4
Sweden	1.4	3.5
Viet Nam, Hanoi	1.3	2.4
Denmark	1.0	2.3
UK, England	0.8	1.9
India, Ahmedabad	0.3	0.8
China, Qidong County	0.2	0.6

Table 3-12 Comparison of ASR for Thyroid Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Liver (C22)

Between January and December 2001 there were 323 cases of liver cancer accounting for 5.8% of all 5,616 newly diagnosed cases. The overall ASR was 4.1/100,000. The ASR was 5.9/100,000 in males and 2.2/100,000 in females. This cancer ranked second in males, and ninth in females and affected 242 (75%) males and 81 (25%) females with a male to female ratio of 299:100. The mean age at diagnosis was 64 years in males (range 1-95 years) and 59 years in female (range 3-90 years).

Liver cancer is the fifth most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 564,336, with 81.1% in less developed countries. Incidence rates were highest in Eastern Asia, South-Eastern Asia, Western Africa and Eastern Africa.

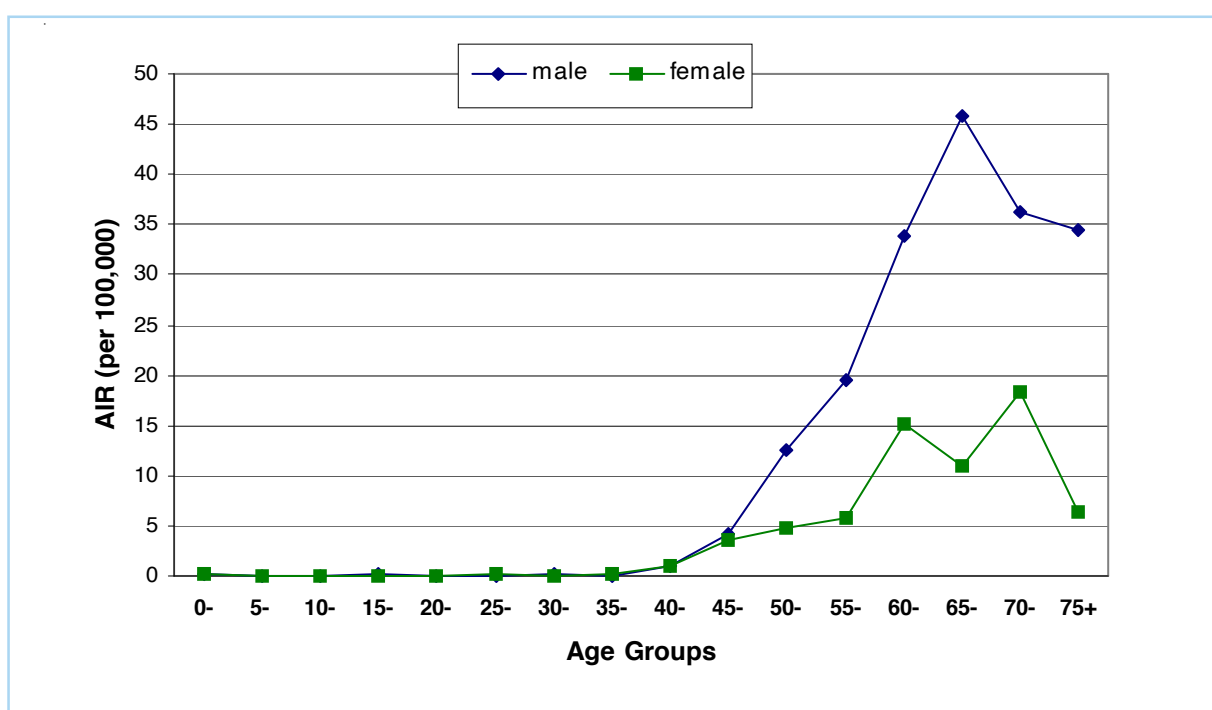


Fig. 3-12 Age-Specific Incidence Rate (AIR) for Liver Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8170	Hepatocellular carcinoma, NOS	282	87.3
8160	Cholangiocarcinoma	10	3.1
8140	Adenocarcinoma, NOS	8	2.5
8000	Neoplasm, malignant	6	1.9
8010	Carcinoma, NOS	5	1.5
	All others	12	3.7

Table 3-9 Morphological Distribution of Liver Cancer in Saudi Arabia, 2001

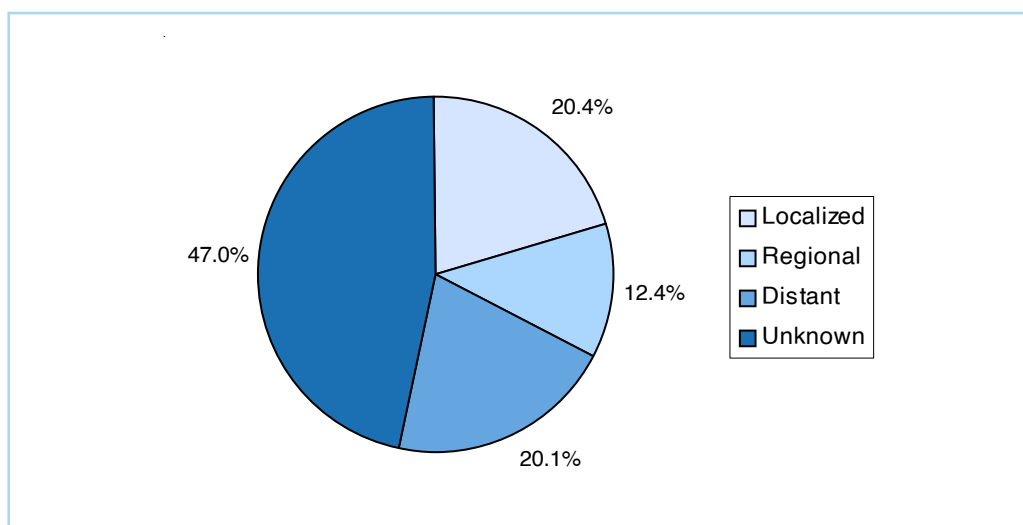


Fig. 3-14 Stage Distribution of Liver Cancer in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
China, Qidong County	95.7	29.6
Thailand, Khon Kaen	88.0	35.4
Gambia	48.9	17.6
Japan, Hiroshima	43.2	13.4
Zimbabwe, Harare:African	27.9	11.6
Philippines, Manila	23.3	7.4
Singapore, Chinese	21.2	5.1
Italy, Parma Province	19.6	6.6
Qatar	15.9	6.1
Switzerland, Valais	14.7	1.8
Kuwait	10.3	3.6
Oman	6.8	2.5
Saudi Arabia	5.9	2.2
Bahrain	6.4	0.5
United Arab Emirates	2.2	1.1
Norway	1.7	0.9
Algeria, Algiers	0.9	0.9

Table 3-10 Comparison of ASR for Liver Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Skin (Non-Melanoma) (C44)

Between January and December 2001 there were 243 cases of skin cancers accounting for 4.3% of all 5,616 newly diagnosed cases. The overall ASR was 2.8/100,000. The ASR was 3.1/100,000 in males and 2.4/100,000 in females. This cancer ranked seventh in both males and females and affected 143 (59%) males and 100 (41%) females with a male to female ratio of 143:100. The mean age at diagnosis was 63 years in males (range 8-97 years) and 61 years in females (range 4-95 years).

Incidence rates were highest in Southern America, Northern Europe, Southern Europe and Western Europe.

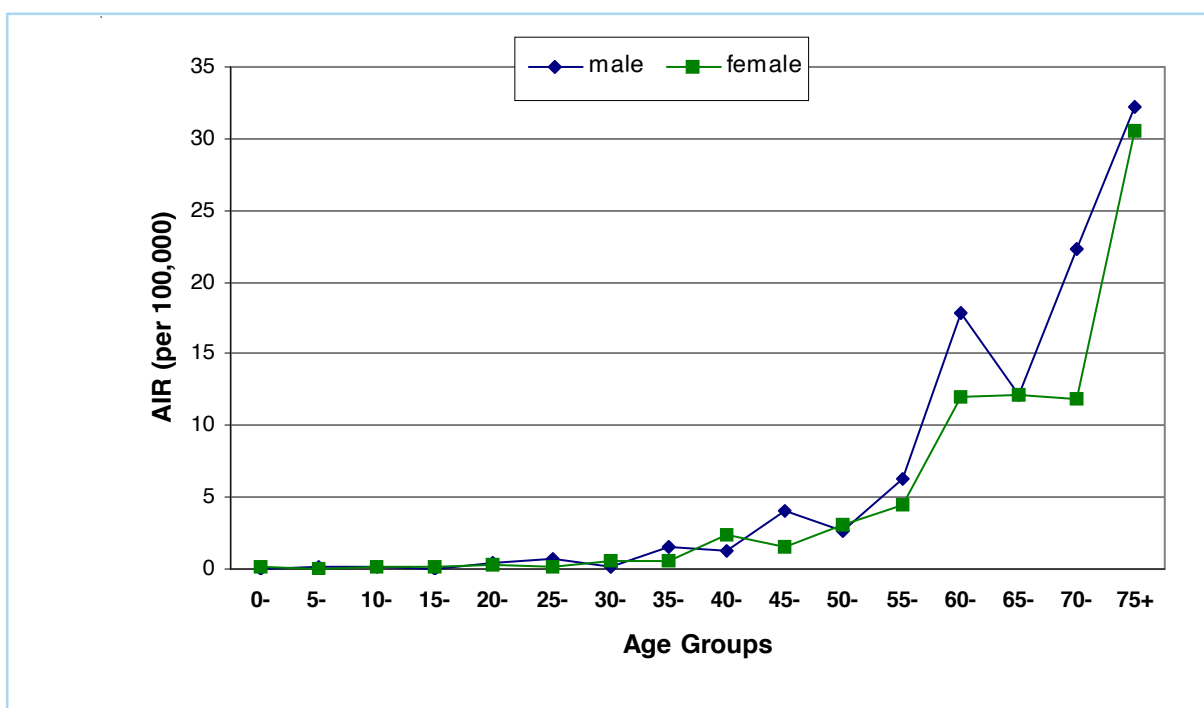


Fig. 3-30 Age-Specific Incidence Rates (AIR) for Skin Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8090	Basal cell carcinoma, NOS	135	55.6
8070	Squamous cell carcinoma, NOS	42	17.3
8832	Dermatofibrosarcoma, NOS	16	6.6
8071	Squamous cell carcinoma, keratinizing, NOS	13	5.3
8410	Sebaceous adenocarcinoma	8	3.3
8072	Squamous cell carcinoma, large cell, non-keratinizing, NOS	4	1.6
8094	Basosquamous carcinoma	4	1.6
8097	Basal cell carcinoma, nodular	3	1.2
	All others	18	7.4

Table 3-21 Morphological Distribution of Skin Cancer (Non-Melanoma) in Saudi Arabia, 2001

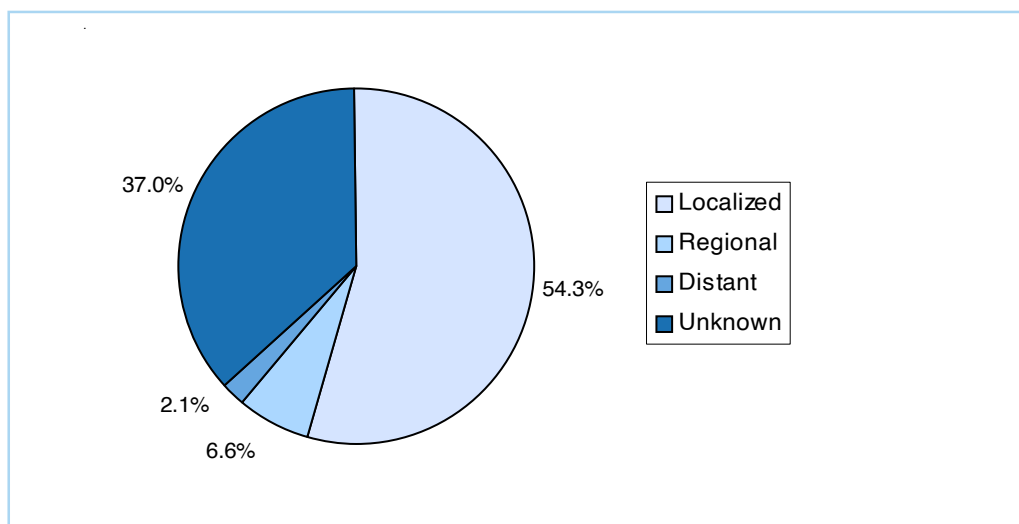


Fig. 3-14 Stage Distribution of Skin Cancer in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
Brazil, Goiania	169.5	154.8
Ireland	146.3	96.0
Spain, Mallorca	100.8	72.0
Denmark	58.9	51.5
Austria	59.7	44.7
Argentina, Concordia	45.5	35.2
United Arab Emirates	2.2	5.8
Oman	4.2	3.3
Bahrain	4.4	2.6
Saudi Arabia	3.1	2.4
Mali, Bamako	2.2	2.9
Kuwait	1.8	1.7
India, Delhi	1.3	1.2
Qatar	2.1	0.0
Canada	0.9	0.7
Colombia	0.4	0.2

Table 3-10 Comparison of ASR for Skin Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 2001 Cancer Incidence of Gulf Cooperation Council Countries

Lung (C33-C34)

Between January and December 2001 there were 220 cases of lung cancer accounting for 3.9% of all 5,616 newly diagnosed cases. The overall ASR was 2.7/100,000. The ASR was 4.1/100,000 in males and 1.4/100,000 in females and affected 169 (77%) males and 51 (23%) females with a male to female ratio of 331:100. Lung cancer ranked fifth in males and fifteenth in females. The mean age at diagnosis was 63 years for males (range 4-94 years) and 62 years females (range 24-93 years).

Lung cancer is the most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 1,238,861, with 52.2% in more developed countries. Incidence rates were highest in Northern America, Eastern Europe, Northern Europe, Eastern Asia, Western Europe and Southern Europe.

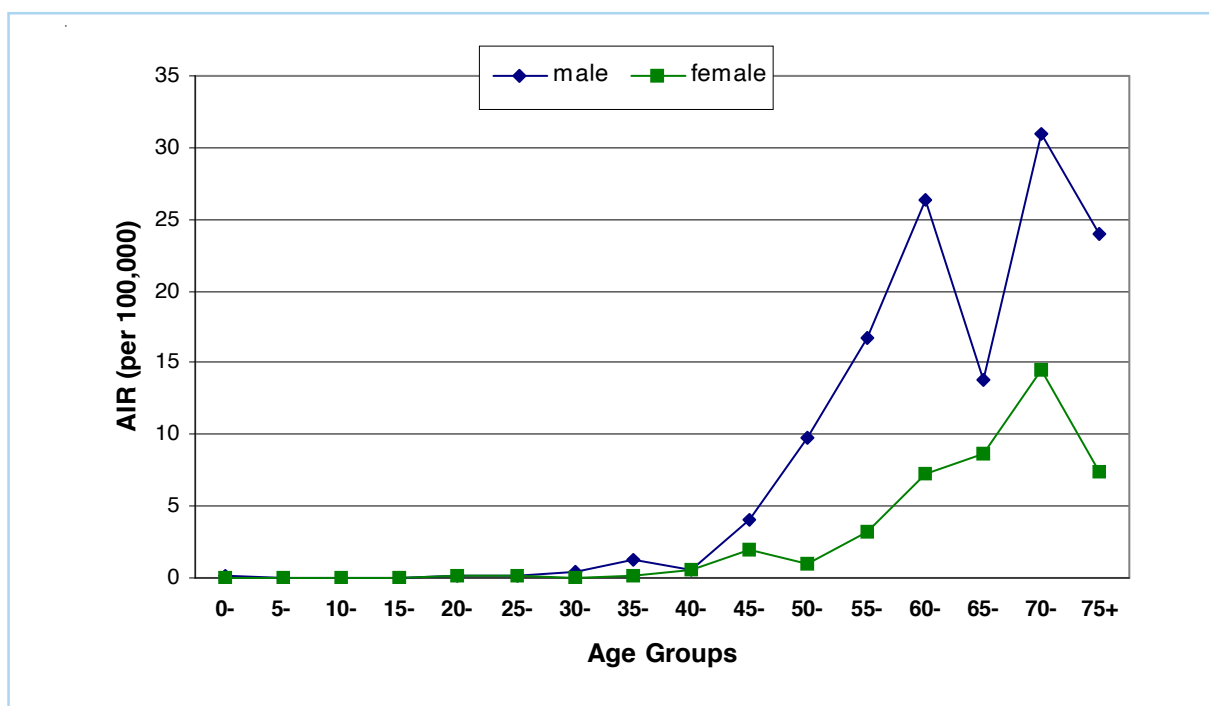


Fig. 3-21 Age-Specific Incidence Rate (AIR) for Lung Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8070	Squamous cell carcinoma, NOS	64	29.1
8140	Adenocarcinoma, NOS	41	18.6
8010	Carcinoma, NOS	21	9.5
8041	Small cell carcinoma, NOS	17	7.7
8046	Non-small cell carcinoma	17	7.7
8012	Large cell carcinoma, NOS	14	6.4
8072	Squamous cell carcinoma, large cell, nonkeratinizing, NOS	8	3.6
8250	Bronchiolo-alveolar adenocarcinoma, NOS	8	3.6
8240	Carcinoid tumor, NOS	4	1.8
8000	Neoplasm, malignant	4	1.8
8071	Squamous cell carcinoma, keratinizing, NOS	3	1.4
	All others	19	8.6

Table 3-15 Morphological Distribution of Lung Cancer in Saudi Arabia, 2001

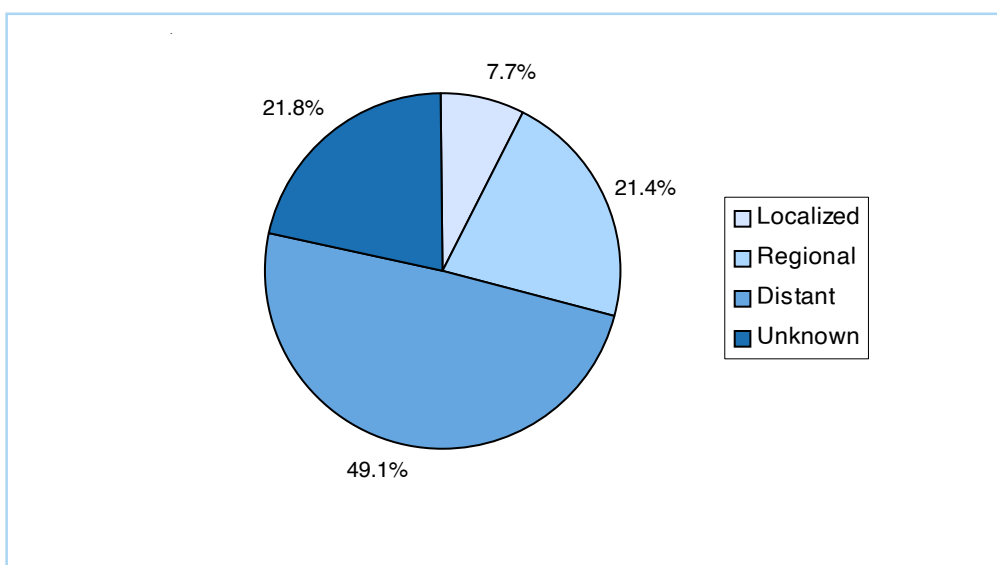


Fig. 3-20 Stage Distribution of Lung Cancer in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
Canada, Northwest Territories	87.2	72.0
USA, Louisiana, New Orleans:Black	107.0	37.9
Poland, Lower Silesia	92.5	19.4
UK, Scotland	71.6	35.5
China, Tianjin	62.8	39.1
Netherlands, Eindhoven	73.0	14.7
Italy, Venetian Region	72.5	12.6
Korea, Kangwha County	44.8	6.7
Bahrain	36.7	7.2
Qatar	8.7	6.8
Kuwait	11.3	4.1
Oman	9.2	2.9
United Arab Emirates	8.2	3.6
India, Bangalore	6.7	1.7
Saudi Arabia	4.1	1.4
Mal, Bamako	2.7	0.14

Table 3-16 Comparison of ASR for Lung Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Hodgkin Disease (C81)

Between January and December 2001 there were 212 cases of Hodgkin Disease accounting for 3.8% of all 5,616 newly diagnosed cases. The overall ASR was 1.4/100,000. The ASR was 1.9/100,000 in males and 1/100,000 in females. This cancer ranked eighth in males and 12th in females and affected 137 (65%) males and 75 (35%) females with a male to female ratio of 183:100. The mean age at diagnosis was 29 years in males (range 4-87 years) and 25 years in females (range 2-71 years).

Hodgkin Disease is the twenty-fourth most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 62,158, with 56.5% in less developed countries. Incidence rates were highest in Southern Europe, Northern America, Western Europe, Northern Europe and Western Asia.

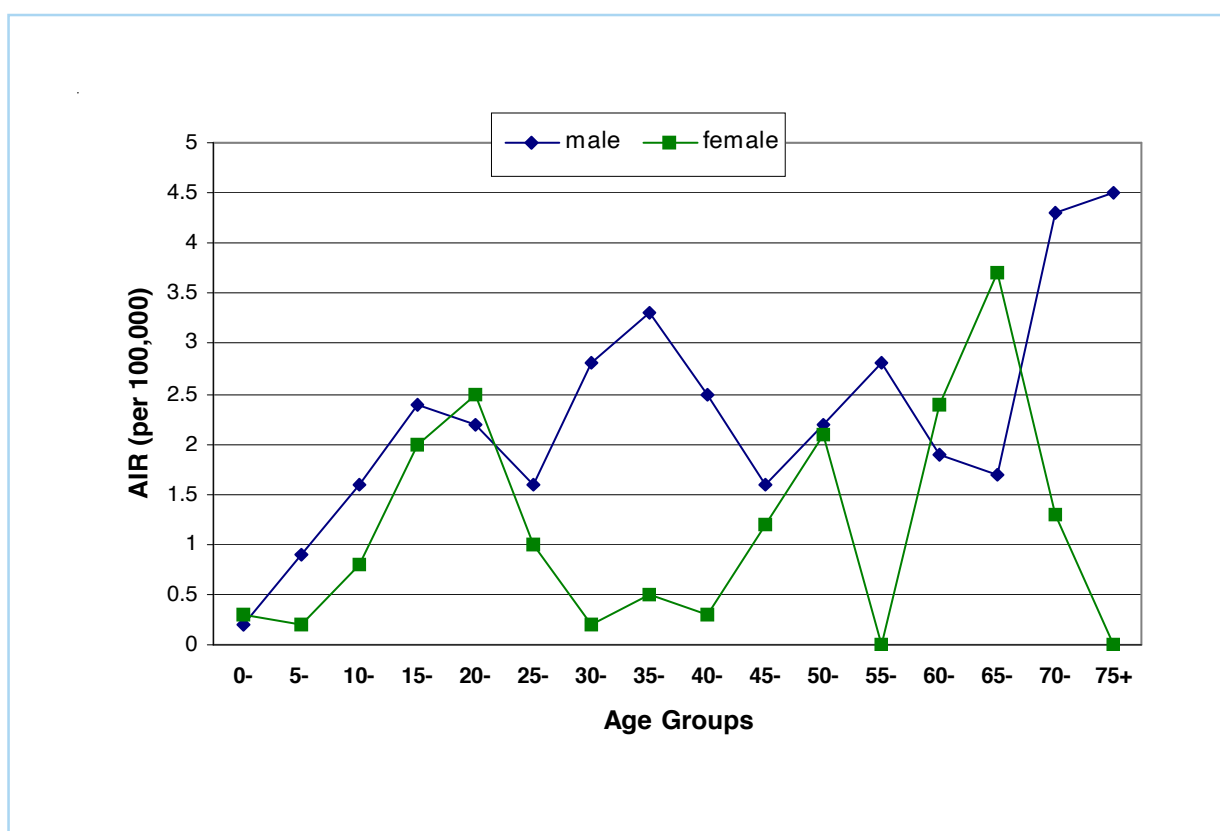


Fig. 3-24 Age-Specific Incidence Rate (AIR) for Hodgkin Disease in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
9663	Hodgkin lymphoma, nodular sclerosis, NOS	102	48.1
9652	Hodgkin lymphoma, mixed cellularity, NOS	46	21.7
9665	Hodgkin lymphoma, nodular sclerosis, grade 1	18	8.5
9650	Hodgkin lymphoma, NOS	16	7.5
9659	Hodgkin lymphoma, nodular lymphocyte predominance	10	4.7
9667	Hodgkin lymphoma, nodular sclerosis, grade 2	8	3.8
9651	Hodgkin lymphoma, lymphocyte-rich	5	2.4
9653	Hodgkin lymphoma, lymphocyte depletion, NOS	3	1.4
9664	Hodgkin lymphoma, nodular sclerosis, cellular phase	3	1.4
9654	Hodgkin lymphoma, lymphocyte depletion, diffuse fibrosis	1	0.5

Table 3-17 Morphological Distribution of Hodgkin Disease in Saudi Arabia, 2001

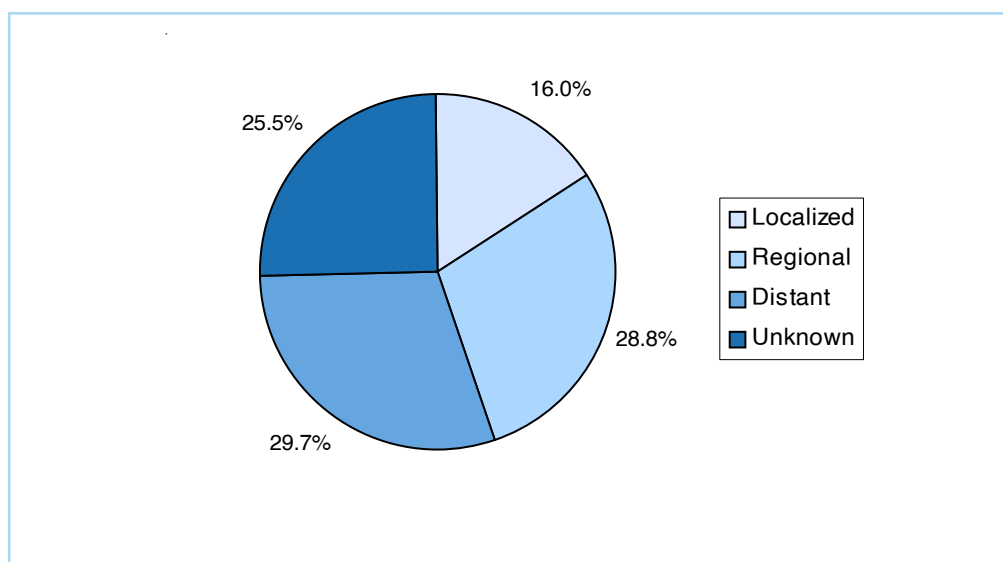


Fig. 3-25 Stage Distribution of Hodgkin's Disease in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
Italy, Biella Province	4.2	4.6
USA, Connecticut:White	3.8	3.1
Switzerland, Valais	4.2	2.7
Malta	2.9	2.4
Finland	2.7	2.1
Kuwait	3.3	1.0
Denmark	2.4	1.6
Oman	3.0	0.7
Bahrain	0.0	3.5
Saudi Arabia	1.9	1.0
Qatar	1.7	0.9
Croatia	1.3	1.3
United Arab Emirates	0.6	0.6
Algeria, Algiers	0.6	0.6
India, Karunagappally	0.4	0.3
Thailand	0.3	0.2
Japan, Yamagata Prefecture	0.1	0.1

Table 3-18 Comparison of ASR for Hodgkin Disease among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Brain, Nervous System (C70-C72)

Between January and December 2001 there were 194 cases of brain and central nervous system cancer accounting for 3.5% of all newly diagnosed cases. The overall ASR was 1.6/100,000. The ASR was 1.9/100,000 in males and 1.3/100,000 in females. This cancer ranked eleventh in both males and females and affected 118(61%) males and 76 (39%) females with a male to female ratio of 155:100. The mean age at diagnosis was 34 years in both males and females (range 0-81 years for both) .

Brain and CNS cancer is the seventeenth most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 176,056, with 58.2% in less developed countries. Incidence rates were highest in Southern Europe, Northern Europe, Eastern Europe and Australia.

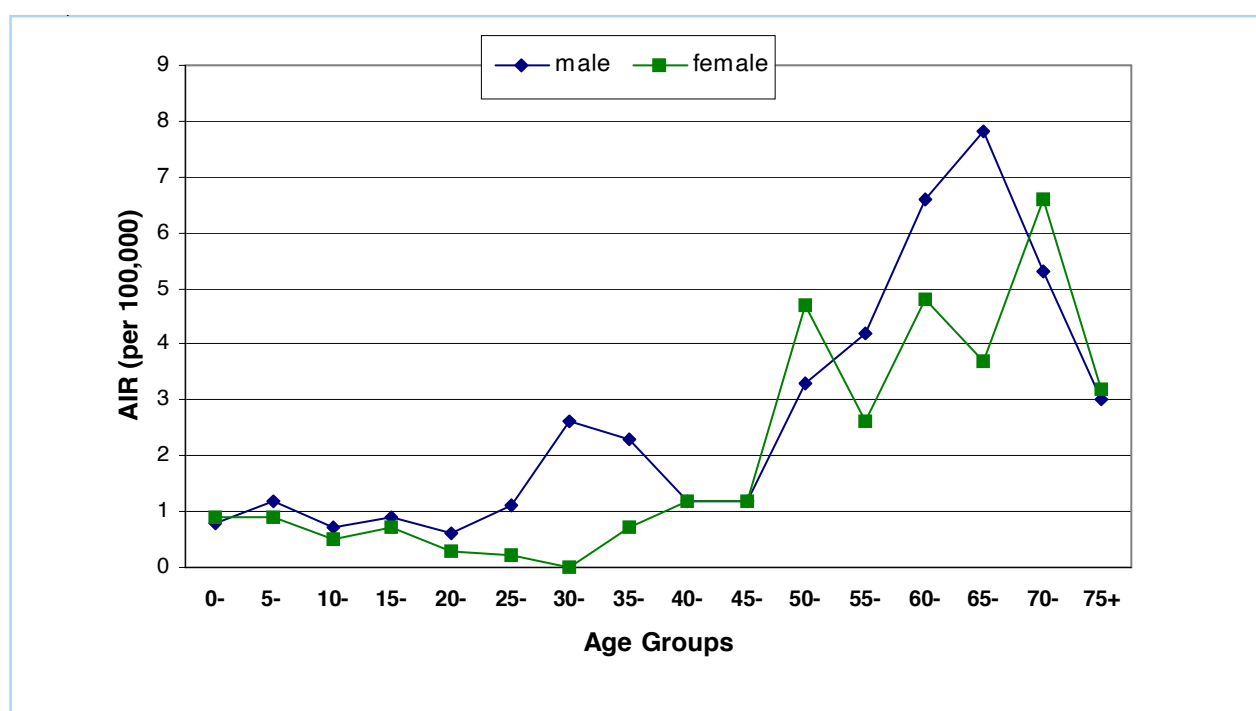


Fig. 3-18 Age-Specific Incidence Rate (AIR) for Brain, CNS Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
9440	Glioblastoma, NOS	40	20.6
9400	Astrocytoma, NOS	28	14.4
9380	Glioma, malignant	21	10.8
9470	Medulloblastoma, NOS	20	10.3
9382	Mixed glioma	10	5.2
9391	Ependymoma, NOS	10	5.2
9450	Oligodendroglioma, NOS	9	4.6
9392	Ependymoma, anaplastic	7	3.6
9451	Oligodendroglioma, anaplastic	6	3.1
9471	Desmoplastic nodular medulloblastoma	5	2.6
9473	Primitive neuroectodermal tumor, NOS	4	2.1
9442	Gliosarcoma	4	2.1
9401	Astrocytoma, anaplastic	4	2.1
9064	Germinoma	4	2.1
9530	Meningioma, malignant	4	2.1
9420	Fibrillary astrocytoma	3	1.5
	All others	15	7.5

Table 3-13 Morphological Distribution of Brain, CNS Cancer in Saudi Arabia, 2001

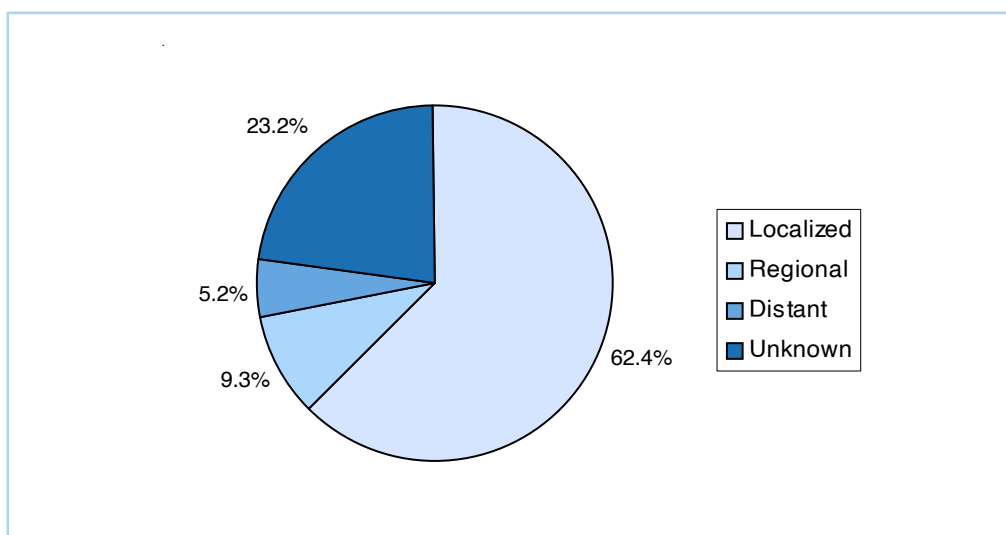


Fig. 3-20 Stage Distribution of Brain, CNS Cancer in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
Croatia	9.3	6.5
Italy, Umbria	8.3	6.1
Norway	7.8	6.5
Poland, Lower Silesia	8.1	6.2
Australia, Tasmania	7.2	5.8
USA, New York State:White	7.5	5.4
Ireland	7.6	5.3
France, Isere	7.1	5.0
Kuwait	6.9	1.8
Qatar	7.1	1.3
Oman	4.3	3.3
Japan, Hiroshima	2.5	1.6
Saudi Arabia	1.9	1.3
Bahrain	2.2	0.0
United Arab Emirates	1.5	0.7
Uganda, Kyadondo County	0.8	0.4

Table 3-14 Comparison of ASR for Brain, CNS Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Bladder (C67)

Between January and December 2001 there were 177 cases of bladder cancers accounting for 3.2% of all 5,616 newly diagnosed cases. The overall ASR was 2.1/100,000. The ASR was 2.9/100,000 in males and 1.2/100,000 in females. This cancer ranked ninth in male and seventeenth in females and affected 129 (73%) males and 48 (27%) females with a male to female ratio of 269:100. The mean age at diagnosis was 62 in males (range 2-98 years) and 61 in females (range 21-92 years).

Bladder cancer is the ninth most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 335,795, with 58.6% in less developed countries. Incidence rates were highest in Western Europe, Southern Europe, Northern Europe, Northern America, and Western Asia.

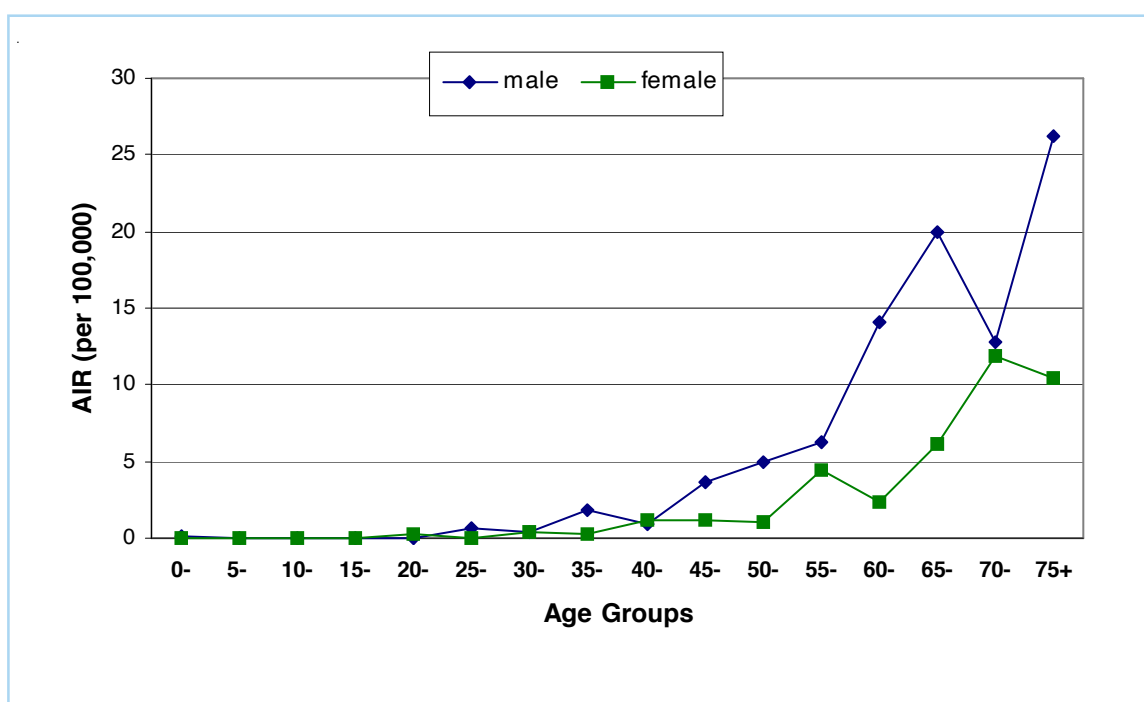


Fig. 3-27 Age-Specific Incidence Rate (AIR) for Bladder Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8130	Papillary transitional cell carcinoma	90	50.8
8120	Transitional cell carcinoma, NOS	55	31.1
8070	Squamous cell carcinoma, NOS	15	8.5
8010	Carcinoma, NOS	3	1.7
8122	Transitional cell carcinoma, spindle cell	3	1.7
8140	Adenocarcinoma, NOS	3	1.7
8260	Papillary adenocarcinoma, NOS	2	1.1
	All others	6	3.4

Table 3-19 Morphological Distribution of Bladder Cancer in Saudi Arabia, 2001

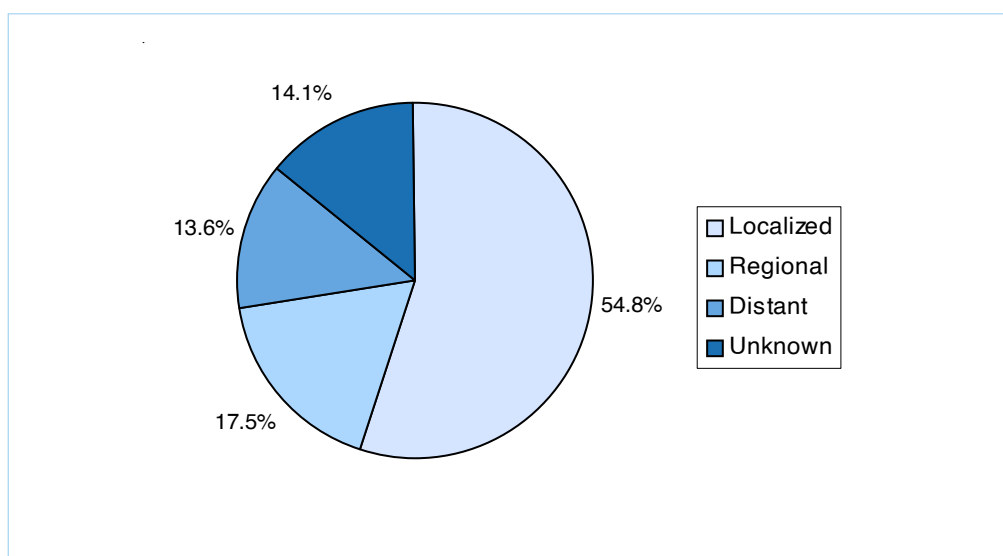


Fig. 3-29 Stage Distribution of Bladder Cancer in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
Belgium, Limburg	42.5	7.9
Spain, Mallorca	39.5	4.6
France, Haut-Rhin	32.4	5.37
Denmark	28.3	7.9
USA, Connecticut:White	27.8	8.0
UK, England, North Western	26.2	8.0
Switzerland, Geneva	25.9	7.4
Qatar	19.4	1.3
Bahrain	11.5	5.0
Algeria, Algiers	10.8	2.3
Kuwait	8.1	3.9
Oman	4.1	2.1
United Arab Emirates	3.8	0.8
Saudi Arabia	2.9	1.2
Thailand, Khon Kaen	3.3	0.48
India, Trivandrum	2.0	0.4

Table 3-20 Comparison of ASR for Bladder Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Prostate (C61)

Between January and December 2001 there were 156 cases of prostate cancer accounting for 5.4% of all 2,875 newly diagnosed cases among males. The ASR was 3.4/100,000 among males. This cancer ranked sixth in males. The mean age at diagnosis was 72 years (range 44-94 years) .

Prostate cancer is the third most common cancer in the world among males. The estimated number of cases diagnosed worldwide in 2000 was 542,990, with 76.5% in more developed countries. Incidence rates were highest in Northern America, Australia, Western Europe, and Northern Europe.

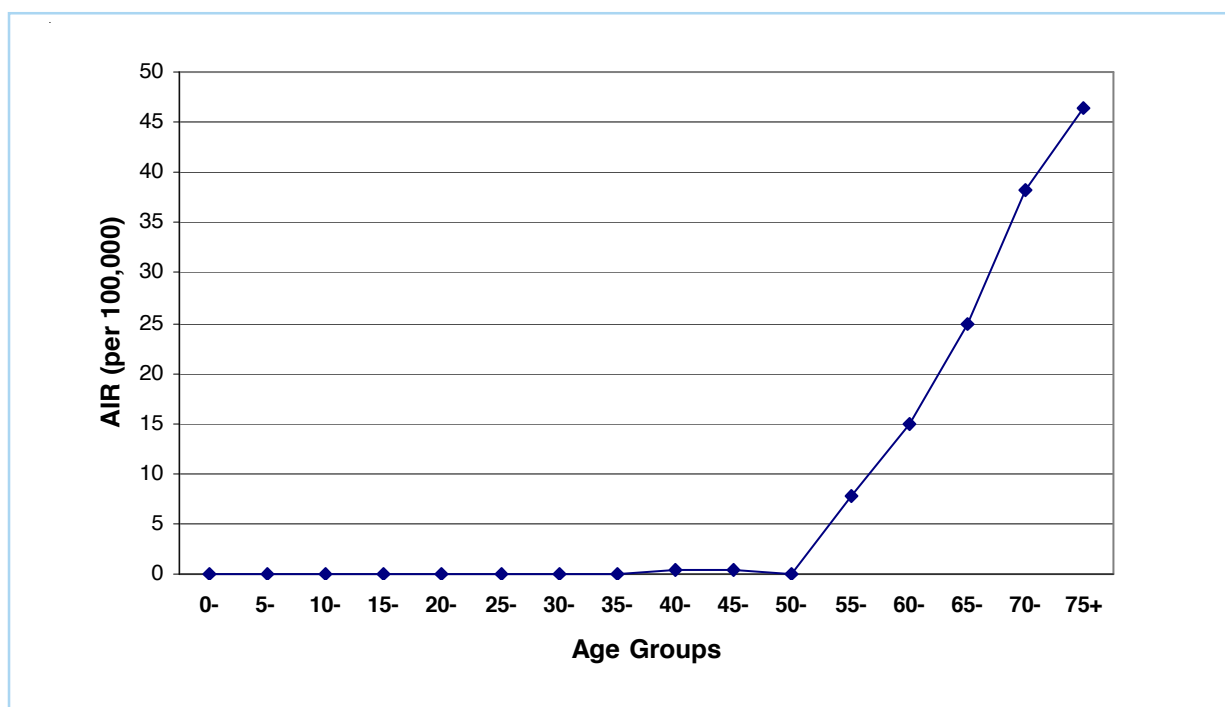


Fig. 3-33 Age-Specific Incidence Rate (AIR) for Prostate Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8140	Adenocarcinoma, NOS	137	87.8
8010	Carcinoma, NOS	9	5.8
8000	Neoplasm, malignant	4	2.6
8021	Carcinoma, anaplastic, NOS	3	1.9
	All others	3	1.9

Table 3-22 Morphological Distribution of Prostate Cancer in Saudi Arabia, 2001

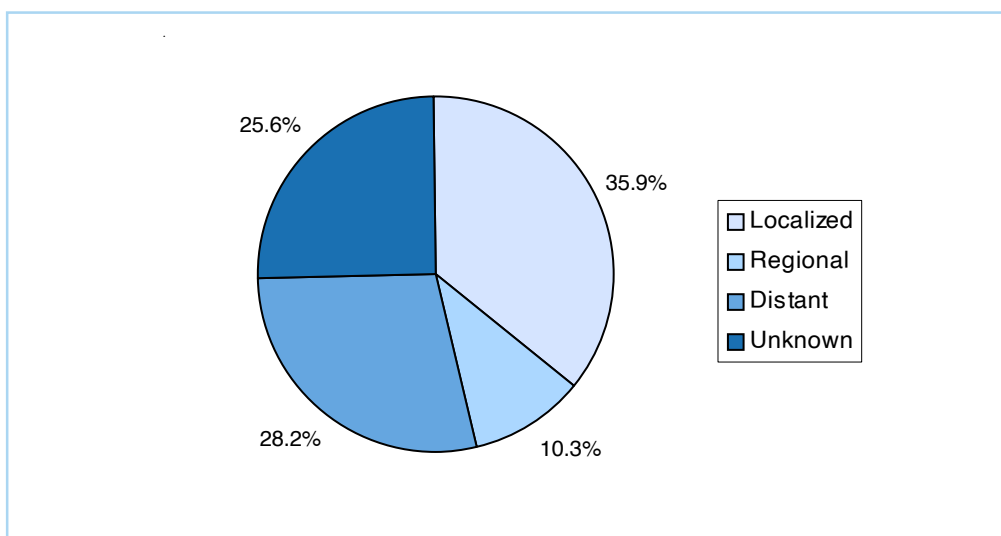


Fig. 3-35 Stage Distribution of Prostate Cancer in Saudi Arabia, 2001

Country	ASR (Male)
USA, Michigan, Detroit:Black	202.0
Australia, Capital Territory	112.27
Canada, Prince Edward Island	108.5
France, Martinique	96.3
Finland	62.8
Costa Rica	33.1
Malta	25.6
Bahrain	12.7
Kuwait	12.6
Qatar	12.1
Oman	10.3
United Arab Emirates	7.1
India, Bangalore	3.8
Saudi Arabia	3.4
Viet Nam, Hanoi	1.5
China, Qidong County	1.1

Table 3-23 Comparison of ASR for Prostate Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries.

Nasopharynx (C11)

Between January and December 2001 there were 155 cases of nasopharynx cancer accounting for 2.8% of all newly diagnosed cases. The overall ASR was 1.6/100,000. The ASR was 2.5/100,000 in males and 0.7/100,000 in females. This cancer ranked eighteenth in males and 21st in females and affected 119 (77%) males and 36 (23%) females with a male to female ratio of 331:100. The mean age diagnosis was 44 years in males (range 10-84 years) and 41 years in females (range 3-82 years).

Nasopharynx cancer is 23rd most common cancer in the world. The estimated number of cases diagnosed worldwide in 2000 was 64,796 with 88.7 % in less developed countries. Incidence rates were highest in Eastern Asia, South-Eastern Asia and Western Asia.

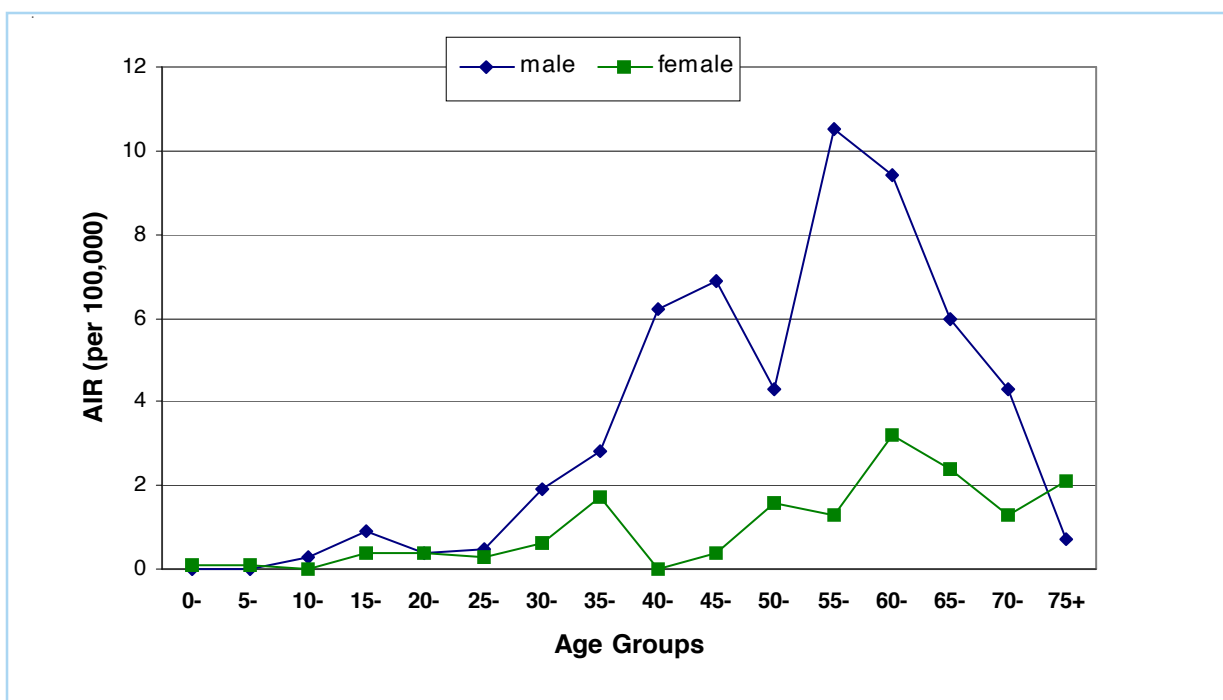


Fig. 3-30 Age-Specific Incidence Rate (AIR) for Nasopharyngeal Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8020	Carcinoma, undifferentiated, NOS	65	41.9
8010	Carcinoma, NOS	49	31.6
8072	Squamous cell carcinoma, large cell, non-keratinizing, NOS	19	12.3
8070	Squamous cell carcinoma, NOS	11	7.1
8000	Neoplasm, malignant	3	1.9
8071	Squamous cell carcinoma, keratinizing, NOS	2	1.3
8082	Lymphoepithelial carcinoma	2	1.3
8200	Adenoid cystic carcinoma	2	1.3
	All others	2	1.3

Table 3-13 Morphological Distribution of Nasopharyngeal Cancer in Saudi Arabia, 2001

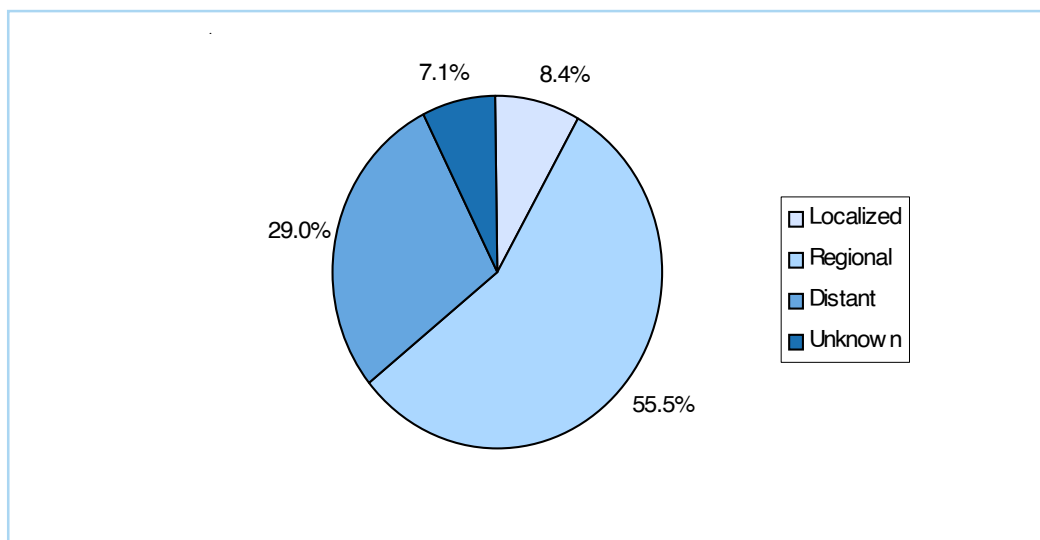


Fig. 3-32 Stage Distribution of Nasopharyngeal Cancer in Saudi Arabia, 2001

Country	ASR (Male)	ASR (Female)
China, Hong Kong	21.4	8.3
Singapore	13.8	4.6
Philippines, Manila	7.2	2.5
Qatar	7.0	1.0
Thailand, Bangkok	4.5	1.6
Kuwait	3.4	1.0
Saudi Arabia	2.5	0.7
Bahrain	1.9	0.0
Brazil, Goiania	1.1	0.4
Oman	1.3	0.0
USA, SEER	0.8	0.4
United Arab Emirates	0.6	0.6
Finland	0.3	0.1
Japan, Hiroshima	0.2	0.1
France, Somme	0.1	0.1
Mali, Bamako	0.0	0.1

Table 3-14 Comparison of ASR for Nasopharyngeal Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Ovary (C56)

Between January and December 2001 there were 101 cases of ovary cancer among females accounting for 3.7% of all 2,741 newly diagnosed cases among females. The ASR was 2.3/100,000 among female populations. This cancer ranked sixth in females. The mean age at diagnosis was 48 years (range 10-90 years).

Ovarian cancer is the sixth most common cancer in the world among women. The estimated number of cases diagnosed worldwide in 2000 was 192,379, with 53.3% in less developed countries. Incidence rates were highest in Western Europe, Northern Europe, Northern America and Eastern Europe.

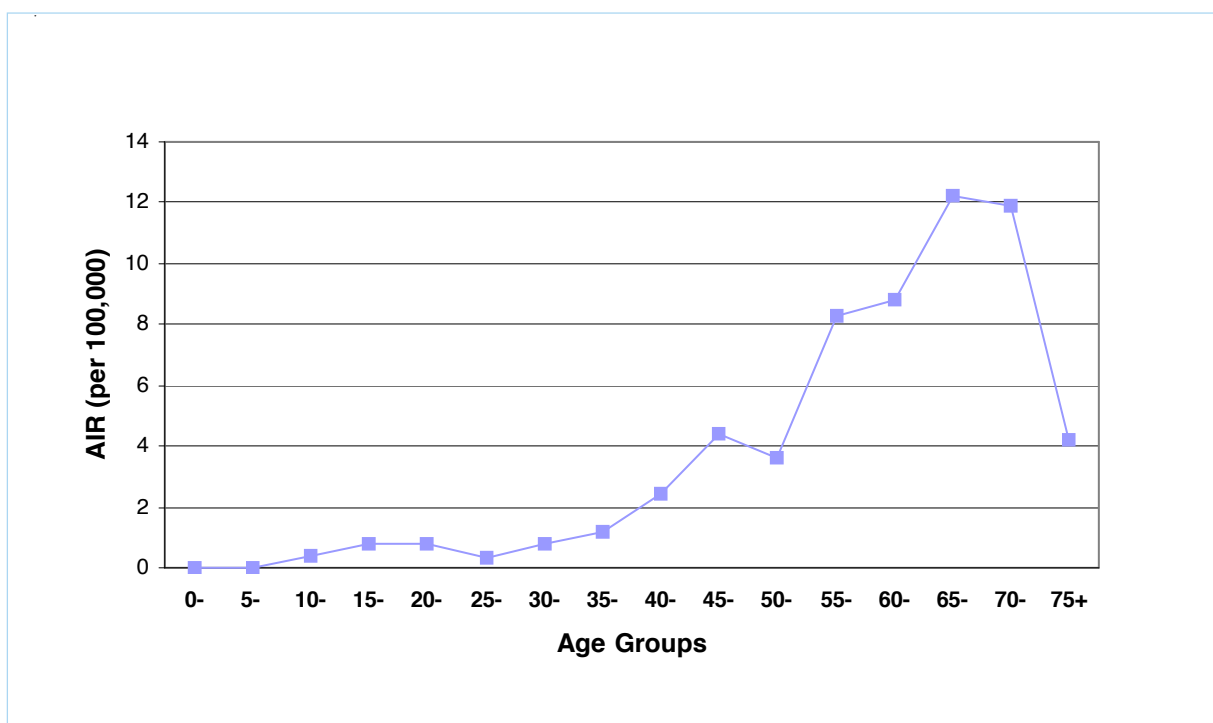


Fig. 3-33 Age-Specific Incidence Rate (AIR) for Ovarian Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8460	Papillary serous cystadenocarcinoma	24	23.8
8140	Adenocarcinoma, NOS	11	10.9
8470	Mucinous cystadenocarcinoma, NOS	10	9.9
8461	Serous surface papillary carcinoma	6	5.9
9080	Teratoma, malignant, NOS	5	5.0
9060	Dysgerminoma	4	4.0
8010	Carcinoma, NOS	4	4.0
8380	Endometrioid adenocarcinoma, NOS	4	4.0
8441	Serous cystadenocarcinoma, NOS	4	4.0
8310	Clear cell adenocarcinoma, NOS	3	3.0
8440	Cystadenocarcinoma, NOS	3	3.0
9071	Yolk sac tumor	3	3.0
8620	Granulosa cell tumor, malignant	3	3.0
8480	Mucinous adenocarcinoma	2	2.0
8000	Neoplasm, malignant	2	2.0
8260	Papillary adenocarcinoma, NOS	2	2.0
	All others	11	10.9

Table 3-24 Morphological Distribution of Ovarian Cancer in Saudi Arabia, 2001

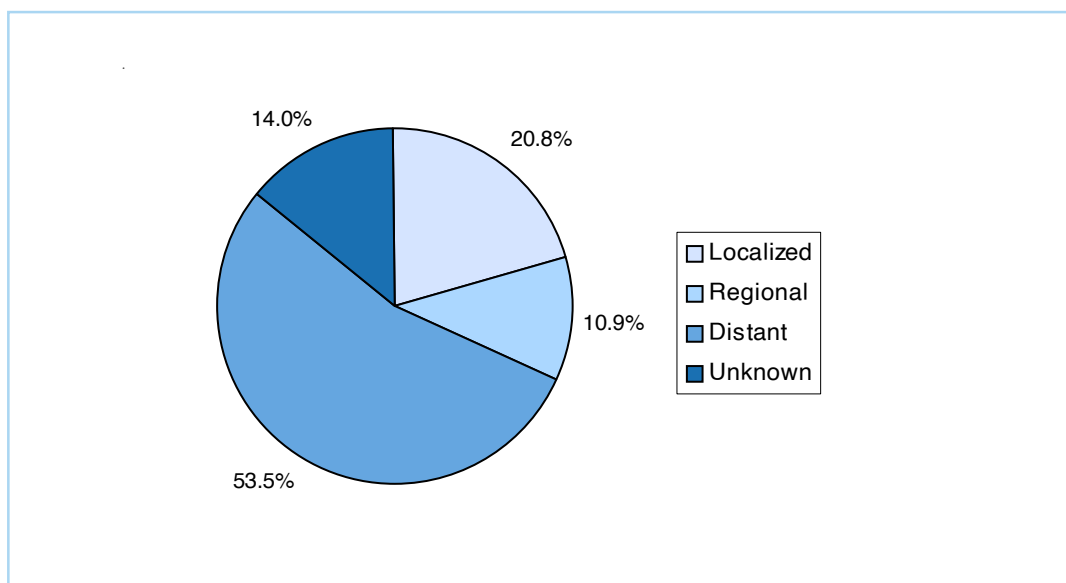


Fig. 3-35 Stage Distribution of Ovarian Cancer in Saudi Arabia, 2001

Country	ASR (Female)
Switzerland, St Gall-Appenzell	16.3
Iceland	16.2
Uk, England, Oxford Region	15.1
USA, New Jersey:White	14.4
Czech Republic	14.2
Philippines, Manila	13.5
Bahrain	8.3
United Arab Emirates	6.3
Qatar	5.3
Japan, Yamagata Prefecture	5.2
India, Trivandrum	4.5
Oman	4.3
Kuwait	4.0
Saudi Arabia	2.3
Algeria, Algiers	1.0
China, Hong Kong	0.1

Table 3-25 Comparison of ASR for Ovarian Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 2001 Cancer Incidence of Gulf Cooperation Council Countries

Cervix Uteri (C53)

Between January and December 2001, there were 92 cases of cervix uteri cancer among females accounting for 3.4 % of all 2,741 newly diagnosed cases for females. The ASR was 2.2/100,000 among female population. This cancer ranked eighth in females. The mean age at diagnosis was 52 years (range 25-89 years).

Cervix uteri cancer is the second most common cancer in the world among women. The estimated number of cases diagnosed worldwide in 2000 was 470,606, with 80.6% in less developed countries. Incidence rates were highest in Eastern Africa, Southern America, South Central Asia and South-Eastern Asia.

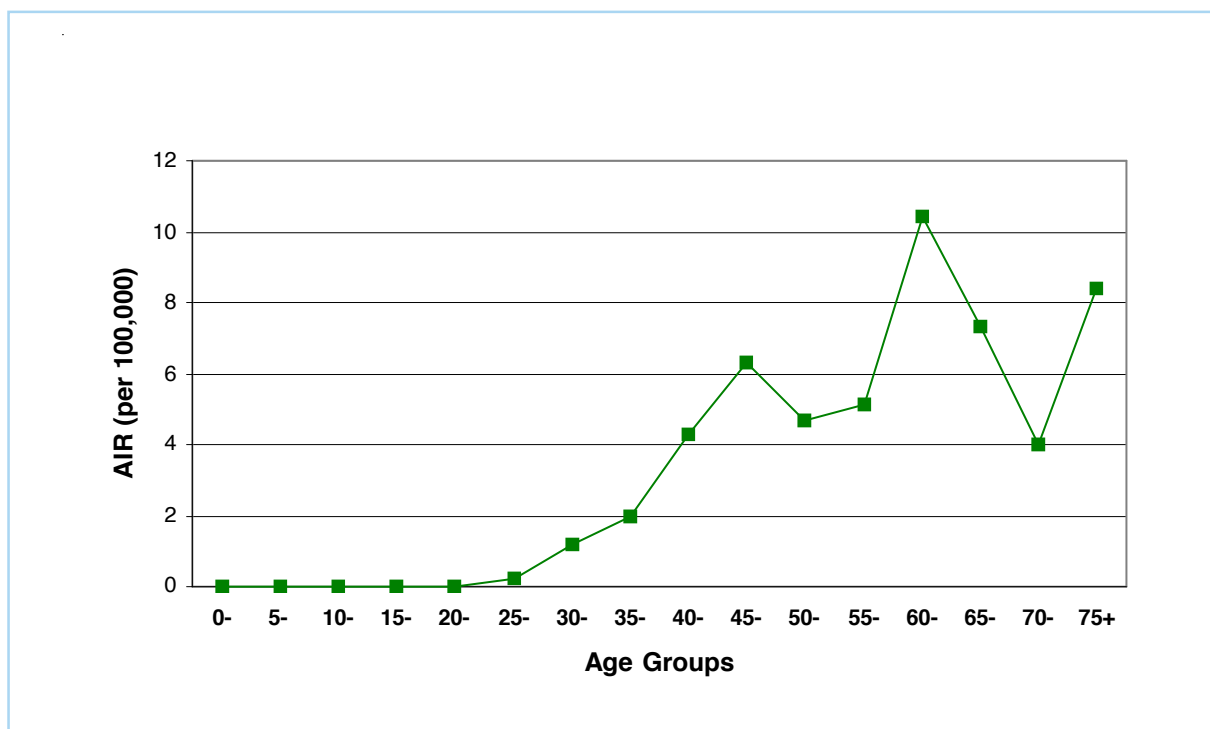


Fig. 3-36 Age-Specific Incidence Rate (AIR) for Cervical Cancer in Saudi Arabia, 2001

ICD-O Code	Morphology	Total	%
8070	Squamous cell carcinoma, NOS	34	37.0
8072	Squamous cell carcinoma, large cell, nonkerating, NOS	15	16.3
8071	Squamous cell carcinoma, keratinizing, NOS	14	15.2
8140	Adenocarcinoma, NOS	12	13.0
8010	Carcinoma, NOS	4	4.3
8480	Mucinous adenocarcinoma	3	3.3
	All others	10	11.0

Table 3-26 Morphological Distribution of Cervical Cancer in Saudi Arabia, 2001

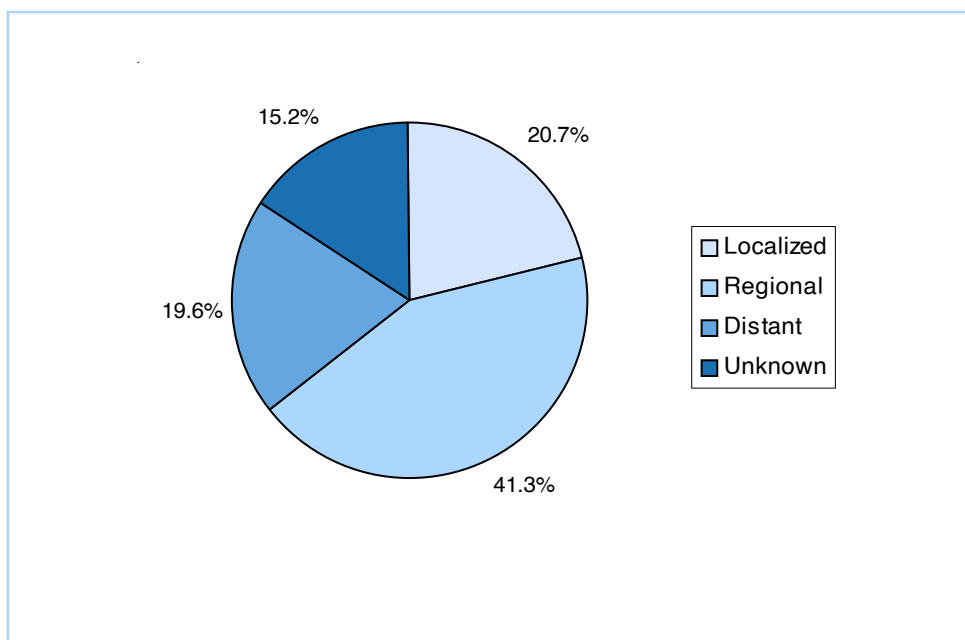


Fig. 3-38 Stage Distribution of Cervical Cancer in Saudi Arabia, 2001

Country	ASR
Zimbabwe, Harare:African	55.0
Uganda, Kyadondo County	41.7
Brazil, Goiania	38.2
India, Chennai (Madras)	30.1
Thailand, Chiang Mai	25.3
Korea, Seoul	22.3
Qatar	10.1
Canada	7.3
Kuwait	6.8
United Arab Emirates	5.9
Switzerland, Geneva	5.5
Oman	5.4
Bahrain	4.6
Finland	4.0
Saudi Arabia	2.2
China, Jiashan	1.2

Table 3-27 Comparison of ASR for Cervical Cancer among Saudis with ASR in Selected Countries*

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 and 2001 Cancer Incidence of Gulf Cooperation Council Countries

Corpus Uteri (C54)

Between January and December 2001, there were 78 cases of corpus uteri cancer among females accounting for 2.8 % of all 2,741 newly diagnosed cases for females. The ASR was 2/100,000 among female population. This cancer ranked tenth in females. The mean age at diagnosis was 78 years (range 12-91 years).

Corpus uteri cancer is the 7th most common cancer in the world among women. The estimated number of cases diagnosed worldwide in 2000 was 188,952, with 60.1 % in more developed countries. Incidence rates were highest in Northern America, Western Asia, Eastern Europe, Southern Europe and Northern Europe.

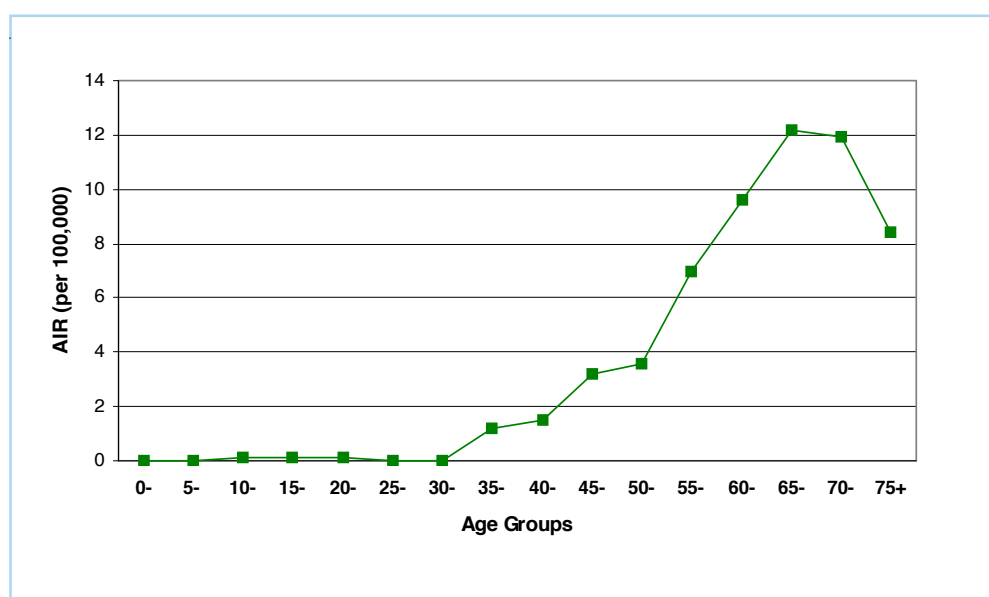


Fig. 3-39 Age-Specific Incidence Rate (AIR) for Uterine Cancer in Saudi Arabia, 2001

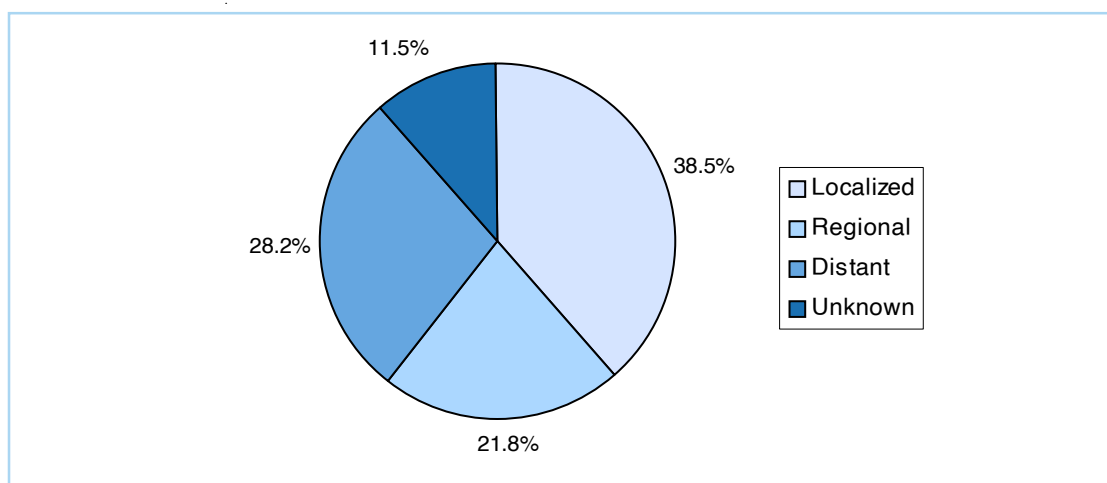


Fig. 3-41 Stage Distribution of Corpus Uteri Cancer in Saudi Arabia, 2001

Country	ASR
USA, Hawaiian	26.6
Qatar	18.7
Slovakia	17.1
Malta	16.3
Italy, Parma Province	15.0
Sweden	14.3
Uruguay, Montevideo	13.6
Uk, England, East anglia	11.3
Ireland	9.1
Singapore	7.8
Kuwait	5.8
Bahrain	5.7
United Arab Emirates	4.4
Saudi Arabia	2.0
Oman	1.8
India, Ahmedabad	1.4

Table 3-27 Comparison of ASR for Uterine Cancer among Saudis with ASR in Selected Countries*

ICD-O Code	Morphology	Total	%
8380	Endometrioid adenocarcinoma, NOS	24	30.8
8140	Adenocarcinoma, NOS	17	21.8
8950	Mullerian mixed tumor	6	7.7
8930	Endometrial stromal sarcoma, NOS	5	6.4
8890	Leiomyosarcoma, NOS	4	5.1
8010	Carcinoma, NOS	4	5.1
8460	Papillary serous cystadenocarcinoma	3	3.8
8570	Adenocarcinoma with squamous metaplasia	3	3.8
8070	Squamous cell carcinoma, NOS	2	2.6
8210	Adenocarcinoma in adenomatous polyp	2	2.6
8260	Papillary adenocarcinoma, NOS	2	2.6
	All others	6	7.8

Table 3-26 Morphological Distribution of Uterine Cancer in Saudi Arabia, 2001

* Source: Cancer Incidence in five Continents Vol. VIII. International Agency for research on Cancer (IARC), Lyon, France, 2002 2001 Cancer Incidence of Gulf Cooperation Council Countries

PART IV
CANCER INCIDENCE AMONG NON-SAUDIS
2001

Cancer Among Non- Saudi Population 2001

Between January and December 2001, a total of 1,654 non-Saudi cases were reported. Males accounted for 891 (53.9%) cases while females accounted for 763 (46.1%) . The male to female ratio was 117:100.

Thirty-seven (37) cases were excluded from the analysis including 32 in situ cases and five (5) cases that could not be converted from ICD-O-3 to ICD-10 for reasons explained in the Data Management section (see p. 14). As a result, the total number of cases analyzed were 1617, out of this 878 (54.3%) were males and 739 (45.7%) were females. The male to female ratio was 119:100.

Taking into consideration the population structure of non-Saudis and the fact that cancer is primarily a disease of the elderly, the pattern of cancer had some significant differences. Those over 60 years represented only 1.7 % and the 20 to 54 age-group represented 66.7% of non-Saudi population. During 2001, approximately 4.9% of all cancers occurred before the age of 15, 13.9% after age of 64 and 62.9% occurred between age 20 to 54 years. The mean age at diagnosis was 46 years in males (range 0-91 years) and 44 years in females (range 0-90 years). The crude incidence rate of all cancers in the non-Saudi population was 32.2/100,000 (23.9/100,000 in males and 40.5/100,000 in females). The ten most common cancers seen among the non-Saudi population are as follows:

CANCER	NO. OF CASES	%
Female breast	260	16.1
Leukemia	131	8.1
Colo-rectal	128	7.9
NHL	94	5.8
Skin	89	5.5
Bladder	68	4.2
Brain, nervous system	59	3.6
Stomach	59	3.6
Lung	57	3.5
Cervix uteri	56	3.5

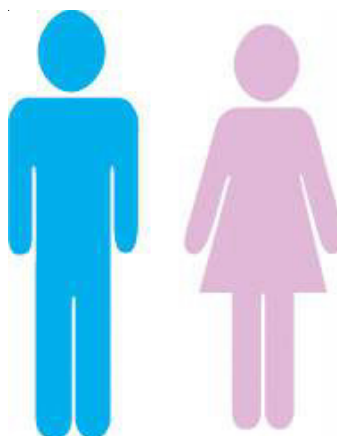
The distribution of cancer cases among the different nationalities in order of relative frequency is as follows 316 Yemenis (19.5%), 209 Sudanese (12.9%), 158 Egyptians (9.8%), 107 Philippines (6.6%), 104 Pakistanis (6.4%), 74 Syrians (4.6%), 69 Indians (4.3%), 59 Bangladeshis (3.6%), 56 Palestinians (3.5%), 50 Jordanians (3.1%), 46 Indonesians (2.8%), 40 Americans (2.5%), 33 Eritreans (2%), 31 Somalis (1.9%), 21 British (1.3%), and 244 cases (15.1%) among other nationalities.

Figure 4-1 represents the most common sites of cancer among all non-Saudi patients designated by sex. The data were ranked using ICD-10 to include the frequency for the year 2001.

Male

Colo-rectal 87 (9.9%)
 Leukemia 87 (9.9%)
 NHL 70 (8%)
 Bladder 57 (6.5%)
 Skin 56 (6.4%)
 Lung 45 (5.1%)
 Stomach 43 (4.9%)
 Brain, nervous system 41 (4.7%)
 Prostate 38 (4.3%)
 Liver 36 (4.1%)

Total = 891



Female

Breast 260 (35.2%)
 Cervix uteri 56 (7.6%)
 Leukemia 44 (6%)
 Colo-rectal 41 (5.5%)
 Skin 33 (4.5%)
 Thyroid 29 (3.9%)
 Ovary 26 (3.5%)
 NHL 24 (3.2%)
 Corpus uteri 21 (2.8%)
 Brain, nervous system 18 (2.4%)

Total = 763

Fig. 4-1 Ten Most Common Cancers among non-Saudis by Sex, 2001

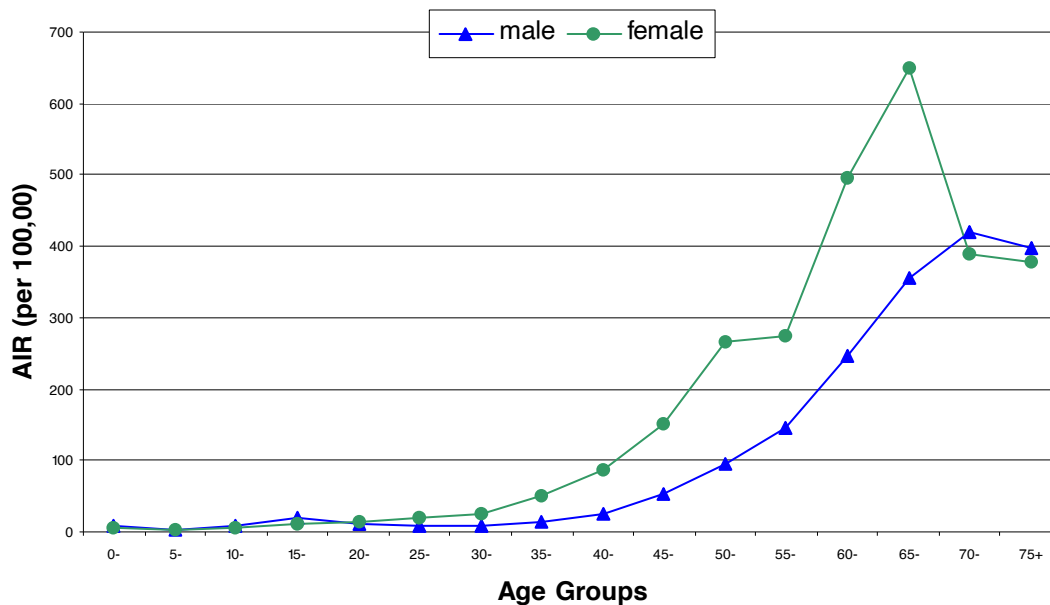


Fig. 4-2 Age-Specific Incidence Rate (AIR) for All Cancers among non-Saudis in Saudi Arabia, 2001

PART V

TABLES

Table 5-1-1 Age Distribution of Cancer Cases among Saudi Males, 2001

ICD (10)	SITE	Tot.	UNK	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
C00	Lip	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
C01-C02	Tongue	12	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1
C03-C06	Mouth	27	-	-	-	2	-	-	-	-	1	3	2	1	1	8	4
C07-C08	Salivary Glands	15	-	-	-	1	1	2	2	-	1	2	1	-	2	2	-
C9	Tonsil	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
C10	Other oropharynx	3	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
C11	Nasopharynx	119	-	-	3	8	3	3	3	9	11	20	17	8	15	10	7
C12-C13	Hypopharynx	8	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1
C14	Pharynx unspec.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C15	Oesophagus	57	2	-	-	-	-	-	-	-	1	2	-	3	2	11	6
C16	Stomach	114	1	-	-	-	-	-	3	1	4	5	2	4	10	10	12
C17	Small intestine	12	-	-	-	-	-	-	-	-	2	-	-	1	2	1	-
C18	Colon	107	2	-	-	-	-	1	1	3	9	12	5	9	11	9	18
C19-C20	Rectum	103	-	-	-	-	-	2	3	6	7	7	10	9	12	14	5
C21	Anus	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
C22	Liver	242	3	3	-	-	2	-	-	1	-	3	10	23	28	36	53
C23-C24	Gallbladder ect.	33	-	-	-	-	-	-	1	1	-	-	1	2	4	7	6
C25	Pancreas	46	-	-	-	-	-	-	1	1	-	2	3	3	9	6	2
C30-C31	Nose, sinuses, etc.	7	-	-	-	-	-	-	-	-	1	-	-	-	-	2	3
C32	Larynx	52	-	-	-	-	1	-	-	-	-	1	3	8	7	14	7
C33-C34	Trachea, Bronchus, Lung	169	-	1	-	-	-	1	1	2	5	2	10	18	24	28	16
C37-C38	Other Thoracic Organs	4	-	-	-	1	-	-	1	-	-	1	-	-	-	-	1
C40-C41	Bone	57	-	3	16	14	11	4	-	-	2	2	-	2	-	1	-
C43	Melanoma of Skin	9	-	-	-	-	-	-	-	1	-	-	3	1	-	-	-
C44	Other Skin	143	1	-	1	2	-	3	4	1	6	4	10	5	9	19	14
C45	Mesothelioma	4	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1
C46	Kaposi sarcoma	17	-	-	-	-	-	-	-	-	1	2	-	4	3	1	4
C47; C49	Connective, Soft Tissue	44	-	6	4	4	1	2	-	4	-	3	4	-	3	3	2
C50	Breast	12	-	-	-	-	-	-	-	1	-	1	1	1	-	2	1
C60	Penis	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C61	Prostate	156	-	-	-	-	-	-	-	-	-	1	1	-	11	16	29
C62	Testis	32	-	1	-	2	1	3	2	8	5	5	4	-	-	1	-
C63	Other male genital	2	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
C64	Kidney	83	-	13	2	3	1	-	-	3	3	6	4	10	7	9	5
C65	Renal pelvis	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
C66	Ureter	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
C67	Bladder	129	-	1	-	-	-	-	4	2	7	3	9	9	9	15	23
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	24	-	10	-	-	-	-	-	-	-	1	-	-	2	5	1
C70-C72	Brain, Nervous System	118	1	11	15	8	8	4	6	12	9	4	3	6	6	7	9
C73	Thyroid	71	1	-	-	-	1	4	4	5	7	4	3	9	8	7	7
C74	Adrenal gland	6	-	5	1	-	-	-	-	-	-	-	-	-	-	-	-
C75	Other Endocrine	2	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
C81	Hodgkin Disease	137	-	3	11	17	22	15	9	13	13	8	4	4	4	2	2
C82-C85; C96	Non Hodgkin lymphoma	230	1	5	15	7	14	13	7	10	15	18	10	17	12	19	24
C88	Immunoproliferative dis.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	36	-	-	-	-	-	-	-	1	-	2	4	6	4	3	7
C91	Lymphoid Leukaemia	147	2	34	28	17	15	4	5	4	1	6	4	1	3	8	2
C92-C94	Myeloid Leukaemia	119	-	11	7	6	18	11	10	7	7	5	7	5	2	8	3
C95	Leukaemia unspec.	10	-	2	1	-	1	-	1	-	-	1	-	-	-	3	-
Other	Other & unspecified	136	1	2	-	-	2	3	3	2	5	4	6	13	18	22	10
All	All Sites	2875	15	108	88	85	114	82	75	99	126	144	146	184	230	319	289
All but C44	All sites but C44	2732	14	108	87	83	114	79	71	98	120	140	136	179	221	300	275

Table 5-1-2 Age Distribution of Cancer Cases among Saudi Females, 2001

ICD 10	SITE	Tot	UNK	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
C00	Lip	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
C01-C02	Tongue	19	-	-	-	-	-	-	1	-	1	1	-	3	4	5	2
C03-C06	Mouth	28	-	1	-	-	-	-	-	2	-	1	-	4	3	2	2
C07-C08	Salivary Glands	8	-	-	-	-	1	-	1	-	-	2	-	-	1	1	-
C9	Tonsil	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
C10	Other oropharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C11	Nasopharynx	36	-	1	1	-	4	3	2	3	7	-	1	3	2	4	2
C12-C13	Hypopharynx	13	-	-	-	-	-	-	1	-	-	2	2	2	2	2	-
C14	Pharynx unspec.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C15	Oesophagus	35	-	-	-	-	-	-	-	1	1	1	3	1	3	6	5
C16	Stomach	71	-	-	-	-	-	2	3	3	5	7	1	3	4	11	7
C17	Small intestine	14	-	-	-	-	-	1	-	1	3	1	-	3	-	1	1
C18	Colon	131	-	-	-	-	1	7	4	14	11	11	7	11	17	19	12
C19-C20	Rectum	82	-	-	-	-	-	3	4	5	10	12	9	6	4	7	10
C21	Anus	3	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
C22	Liver	81	-	1	-	-	-	-	1	-	1	3	9	9	9	19	9
C23-C24	Gallbladder ect.	43	-	-	-	-	-	1	-	2	-	2	2	5	4	4	9
C25	Pancreas	26	-	-	-	-	-	-	-	-	2	2	1	4	-	2	2
C30-C31	Nose, sinuses, etc.	7	-	-	-	-	-	-	-	1	-	-	-	1	-	1	1
C32	Larynx	2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
C33-C34	Trachea, Bronchus, Lung	51	-	-	-	-	-	1	1	-	1	2	5	2	5	9	7
C37-C38	Other Thoracic Organs	4	-	1	-	-	1	-	-	-	-	2	-	-	-	-	-
C40-C41	Bone	43	-	1	3	14	11	2	3	2	1	1	1	1	-	-	2
C43	Melanoma of Skin	8	-	-	-	-	-	-	-	2	-	-	-	-	-	-	1
C44	Other Skin	100	-	1	-	1	2	2	1	3	2	8	4	6	7	15	10
C45	Mesothelioma	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
C46	Kaposi sarcoma	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
C47; C49	Connective, Soft Tissue	40	-	7	5	3	5	2	4	1	4	2	-	2	3	1	1
C50	Breast	545	-	-	-	-	1	3	18	43	92	88	79	60	43	47	31
C51	Vulva	7	-	-	-	-	-	-	-	-	-	-	1	-	1	3	1
C52	Vagina	5	-	1	-	-	-	-	-	-	-	-	-	-	1	1	-
C53	Cervix Uteri	92	-	-	-	-	-	-	1	6	8	14	16	9	8	13	6
C54	Corpus Uteri	78	-	-	-	1	1	1	-	-	5	5	8	7	11	12	10
C55	Uterus Unspec.	12	-	-	-	-	-	1	-	-	-	1	-	1	3	4	-
C56	Ovary	101	-	-	-	4	7	6	2	4	5	8	11	7	13	11	10
C57	Other Female Genital	4	-	-	-	-	-	-	-	-	-	-	1	-	-	2	1
C58	Placenta	8	-	-	-	1	-	2	1	1	1	1	1	-	-	-	-
C64	Kidney	64	1	18	2	-	1	2	3	2	3	3	3	8	3	6	3
C65	Renal pelvis	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
C66	Ureter	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Bladder	48	-	-	-	-	-	2	-	2	1	4	3	2	7	3	5
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	17	-	10	1	-	-	-	-	1	-	-	-	-	2	2	1
C70-C72	Brain, Nervous System	76	-	11	11	5	6	2	1	-	3	4	3	9	4	6	3
C73	Thyroid	254	-	-	1	1	18	22	38	39	31	13	22	16	15	10	14
C74	Adrenal gland	8	-	7	-	-	-	-	-	-	1	-	-	-	-	-	-
C75	Other Endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin Disease	75	-	4	2	8	18	19	6	1	2	1	3	4	-	3	3
C82-C85; C96	Non-Hodgkin lymphoma	190	-	5	6	7	7	10	5	10	7	18	11	15	17	18	23
C88	Immunoproliferative dis.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	15	-	-	-	-	-	-	-	-	1	1	-	2	3	3	1
C91	Lymphoid Leukaemia	79	-	28	13	8	4	3	2	2	2	-	1	4	3	2	3
C92-C94	Myeloid Leukaemia	97	1	11	4	5	8	8	6	5	13	6	9	8	2	4	4
C95	Leukaemia unspec.	3	-	-	-	-	1	-	-	-	-	1	-	-	-	1	-
Other	Other & unspecified	108	1	1	1	-	-	1	3	2	7	5	4	12	9	17	17
All	All sites	2741	3	109	50	58	97	100	115	144	238	234	221	230	217	278	223
All but C44	All sites but C44	2641	3	108	50	57	95	98	114	141	236	226	217	224	210	263	213

Table 5-1-3 Incidence Rates for Cancer Cases among Saudi Males by Age Group (per 100,000), 2001

ICD 10	SITE	Tot	UNK	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
C00	Lip	1	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-
C01-C02	Tongue	12	-	-	-	-	-	-	-	-	-	0.3	0.4	0.5	0.7	0.9	0.9	5.3
C03-C06	Mouth	27	-	-	-	0.2	-	-	-	0.3	0.9	0.8	0.5	0.7	0.7	7.5	3.5	2.1
C07-C08	Salivary Glands	15	-	-	-	0.1	0.1	0.4	-	0.3	0.6	0.4	-	1.4	1.9	-	-	2.1
C9	Tonsil	3	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	-	-
C10	Other oropharynx	3	-	-	-	-	-	-	-	-	-	0.3	0.4	-	-	-	-	1.1
C11	Nasopharynx	119	-	-	-	0.3	0.9	0.4	0.5	1.9	2.8	6.2	6.9	4.3	10.5	9.4	6	4.3
C12-C13	Hypopharynx	8	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8	0.9	1.1
C14	Pharynx unspec.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1
C15	Oesophagus	57	2	-	-	-	-	-	-	0.3	0.6	-	-	1.6	1.4	10.3	5.2	14.9
C16	Stomach	114	1	-	-	-	-	-	0.5	0.2	1	1.6	0.8	2.2	7	9.4	10.4	21.3
C17	Small intestine	12	-	-	-	-	-	-	-	-	0.5	-	-	0.5	1.4	0.9	-	2.1
C18	Colon	107	2	-	-	-	0.1	0.2	0.6	2.3	3.7	2	4.9	7.7	8.5	15.5	8.5	-
C19-C20	Rectum	103	-	-	-	-	0.3	0.5	1.3	1.8	2.2	4.1	4.9	8.4	13.2	4.3	13.8	-
C21	Anus	3	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	-	2.1
C22	Liver	242	3	0.2	-	-	0.2	-	-	0.2	-	0.9	4.1	12.5	19.5	33.8	45.8	36.2
C23-C24	Gall bladder ect.	33	-	-	-	-	-	-	0.2	0.2	-	-	0.4	1.1	2.8	6.6	5.2	4.3
C25	Pancreas	46	-	-	-	-	-	-	0.2	0.2	-	-	0.6	1.2	1.6	6.3	5.6	1.7
C30-C31	Nose, sinuses, etc.	7	-	-	-	-	-	-	-	0.3	-	-	-	-	-	1.9	2.6	1.1
C32	Larynx	52	-	-	-	-	0.1	-	-	0.3	0.3	1.2	4.3	4.9	13.2	6	6.4	-
C33-C34	Trachea, Bronchus, Lung	169	-	0.1	-	-	0.1	0.2	0.4	1.3	0.6	4.1	9.8	16.7	26.3	13.8	30.9	-
C37-C38	Other Thoracic Organs	4	-	-	-	-	0.1	0.2	-	0.2	-	0.3	-	-	-	-	0.9	-
C40-C41	Bone	57	-	0.2	1.5	1.6	1.6	0.7	-	0.5	0.6	-	1.1	-	-	0.9	-	-
C43	Melanoma of Skin	9	-	-	-	-	-	-	0.2	-	-	-	1.2	0.5	-	-	-	-
C44	Other Skin	143	1	-	0.1	0.2	-	0.4	0.7	0.2	1.5	1.2	4.1	2.7	6.3	17.9	12.1	22.3
C45	Mesothelioma	4	-	-	-	-	-	-	-	-	0.3	-	-	-	-	0.9	0.9	-
C46	Kaposi sarcoma	17	-	-	-	-	-	-	-	0.2	0.5	-	-	2.2	2.1	0.9	3.5	-
C47; C49	Connective, Soft Tissue	44	-	0.4	0.3	0.4	0.1	0.3	-	0.9	-	0.9	1.6	-	2.1	2.8	1.7	3.2
C50	Breast	12	-	-	-	-	-	-	0.2	-	0.2	0.3	0.4	0.5	-	1.9	0.9	2.1
C60	Penis	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1
C61	Prostate	156	-	-	-	-	-	-	-	-	-	0.3	0.4	-	7.7	15	25	38.3
C62	Testis	32	-	0.1	-	0.2	0.1	0.4	0.4	1.7	1.3	1.6	1.6	-	-	0.9	-	-
C63	Other male genital	2	-	-	-	-	-	-	-	-	-	-	0.8	-	-	-	-	-
C64	Kidney	83	-	1	0.2	0.3	0.1	-	-	0.6	0.8	1.9	1.6	5.4	4.9	8.5	4.3	6.4
C65	Renal pelvis	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.9	-
C66	Ureter	1	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-
C67	Bladder	129	-	0.1	-	-	-	-	0.7	0.4	1.8	0.9	3.7	4.9	6.3	14.1	19.9	12.8
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	24	-	0.7	-	-	-	-	-	-	-	0.3	-	-	1.4	4.7	0.9	2.1
C70-C72	Brain, Nervous System	118	1	0.8	1.2	0.7	0.9	0.6	1.1	2.6	2.3	1.2	1.2	3.3	4.2	6.6	7.8	5.3
C73	Thyroid	71	1	-	-	-	0.1	0.6	0.7	1.1	1.8	1.2	1.2	4.9	5.6	6.6	6	5.3
C74	Adrenal gland	6	-	0.4	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	Other Endocrine	2	-	-	-	-	0.1	0.1	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin Disease	137	-	0.2	0.9	1.6	2.4	2.2	1.6	2.8	3.3	2.5	1.6	2.2	2.8	1.9	1.7	4.3
C82-C85; C96	Non Hodgkin lymphoma	230	1	0.4	1.2	0.7	1.6	1.9	1.3	2.1	3.8	5.6	4.1	9.2	8.4	17.9	20.7	18.1
C88	Immunoproliferative dis.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	36	-	-	-	-	-	-	-	0.2	-	0.6	1.6	3.3	2.8	2.8	6	6.4
C91	Lymphoid Leukaemia	147	2	2.5	2.2	1.6	1.7	0.6	0.9	0.9	0.3	1.9	1.6	0.5	2.1	7.5	1.7	6.4
C92-C94	Myeloid Leukaemia	119	-	0.8	0.5	0.6	2	1.6	1.8	1.5	1.8	1.6	2.9	2.7	1.4	7.5	2.6	2.1
C95	Leukaemia unspec.	10	-	0.1	0.1	-	0.1	-	0.2	-	-	0.3	-	-	-	2.8	-	-
Other	Other & unspecified	136	1	0.1	-	-	0.2	0.4	0.5	0.4	1.3	1.2	2.4	7	12.6	20.7	8.6	23.4
All	All sites	2875	15	8.1	6.8	7.9	12.6	12	13.7	21.3	32.3	44.8	59.5	99.7	160.4	299.7	249.6	326.7
All but C44	All sites but C44	2732	14	8.1	6.7	7.7	12.6	11.6	13	21.1	30.8	43.6	55.5	97	154.1	281.9	237.5	304.4

Table 5-1-4 Incidence Rates for Cancer Cases among Saudi Females by Age Group (per 100,000), 2001

ICD 10	SITE	Tot	UNK	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
C00	Lip	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	-	1.1
C01-C02	Tongue	19	-	-	-	-	-	-	0.2	-	0.2	0.3	-	1.6	2.6	4	2.4	-	2.1
C03-C06	Mouth	28	-	0.1	-	-	-	-	-	-	0.5	-	-	2.1	1.9	1.6	2.4	5.3	9.4
C07-C08	Salivary Glands	8	-	-	-	-	0.1	-	0.2	-	-	0.6	-	-	0.6	0.8	-	-	2.1
C9	Tonsil	1	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-	-	-	-
C10	Other oropharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C11	Nasopharynx	36	-	0.1	0.1	-	0.4	0.4	0.3	0.6	1.7	-	0.4	1.6	1.3	3.2	2.4	1.3	2.1
C12-C13	Hypopharynx	13	-	-	-	-	-	-	0.2	-	-	0.6	0.8	1	1.3	1.6	-	-	2.1
C14	Pharynx unspec.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C15	Oesophagus	35	-	-	-	-	-	-	-	0.2	0.2	0.3	1.2	0.5	1.9	4.8	6.1	5.3	10
C16	Stomach	71	-	-	-	-	-	0.3	0.5	0.6	1.2	2.1	0.4	1.6	2.6	8.8	8.6	15.8	13
C17	Small intestine	14	-	-	-	-	-	0.1	-	0.2	0.7	0.3	-	1.6	-	0.8	1.2	1.3	2.1
C18	Colon	131	-	-	-	-	0.1	0.1	1.1	0.8	3.5	3.4	2.8	5.7	10.9	15.2	14.7	17.1	14
C19-C20	Rectum	82	-	-	-	-	-	0.4	0.6	1	2.5	3.7	3.6	3.1	2.6	5.6	12.2	6.6	7.4
C21	Anus	3	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	-	2.6	-
C22	Liver	81	-	0.1	-	-	-	-	0.2	-	0.2	0.9	3.6	4.7	5.8	15.2	11	18.4	6.3
C23-C24	Gall bladder ect.	43	-	-	-	-	-	0.1	-	0.4	-	-	0.6	0.8	2.6	3.2	11	7.9	8.4
C25	Pancreas	26	-	-	-	-	-	-	-	-	0.5	0.6	0.4	2.1	-	1.6	2.4	5.3	9.4
C30-C31	Nose, sinuses, etc.	7	-	-	-	-	-	-	-	0.2	-	-	-	0.5	-	0.8	1.2	-	3.4
C32	Larynx	2	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	1.2	-	-
C33-C34	Trachea, Bronchus, Lung	51	-	-	-	-	-	0.1	0.2	-	0.2	0.6	2	1	3.2	7.2	8.6	14.5	7.4
C37-C38	Other Thoracic Organs	4	-	0.1	-	-	0.1	-	-	-	-	0.6	-	-	-	-	-	-	-
C40-C41	Bone	43	-	0.1	0.2	1.3	1.2	0.3	0.5	0.4	0.2	0.3	0.4	0.5	0.6	-	2.4	-	-
C43	Melanoma of Skin	8	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	1.2	1.3	4.4
C44	Other Skin	100	-	0.1	-	0.1	0.2	0.3	0.2	0.6	0.5	2.4	1.6	3.1	4.5	12	12.2	11.9	30
C45	Mesothelioma	1	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-	-	-	-
C46	Kaposi's sarcoma	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	-	2.1
C47; C49	Connective, Soft Tissue	40	-	0.5	0.4	0.3	0.6	0.3	0.6	0.2	1	0.6	-	1	1.9	0.8	1.2	-	-
C50	Breast	545	-	-	-	-	0.1	0.4	2.9	8.8	22.8	26.8	31.3	31	27.5	37.5	37.9	19.8	26
C51	Vulva	7	-	-	-	-	-	-	-	-	-	-	0.4	-	0.6	2.4	1.2	-	1.1
C52	Vagina	5	-	0.1	-	-	-	-	-	-	-	-	-	-	0.6	0.8	-	1.3	1.1
C53	Cervix Uteri	92	-	-	-	-	-	-	0.2	1.2	2	4.3	6.3	4.7	5.1	10.4	7.3	4	8.4
C54	Corpus Uteri	78	-	-	-	0.1	0.1	-	-	-	1.2	1.5	3.2	3.6	7	9.6	12.2	11.9	8.4
C55	Uterus Unspec.	12	-	-	-	-	0.1	-	-	-	-	0.3	-	0.5	1.9	3.2	-	2.6	-
C56	Ovary	101	-	-	-	0.4	0.8	0.8	0.3	0.8	1.2	2.4	4.4	3.6	8.3	8.8	12.2	11.9	4.4
C57	Other Female Genital	4	-	-	-	-	-	-	-	-	-	-	0.4	-	-	1.6	1.2	-	-
C58	Placenta	8	-	-	-	0.1	-	0.3	0.2	0.2	0.2	0.3	0.4	-	-	-	-	-	-
C64	Kidney	64	1	1.4	0.2	-	0.1	0.3	0.5	0.4	0.7	0.9	1.2	4.1	1.9	4.8	3.7	6.6	1.1
C65	Renal pelvis	1	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-	-	-	-
C66	Ureter	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1
C67	Bladder	48	-	-	-	-	-	0.3	-	0.4	0.2	1.2	1.2	1	4.5	2.4	6.1	11.9	10
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	17	-	0.8	0.1	-	-	-	-	0.2	-	-	-	-	1.3	1.6	1.2	-	-
C70-C72	Brain, Nervous System	76	-	0.9	0.9	0.5	0.7	0.3	0.2	-	0.7	1.2	1.2	4.7	2.6	4.8	3.7	6.6	3.4
C73	Thyroid	254	-	-	0.1	0.1	2	2.9	6.2	7.9	7.7	4	8.7	8.3	9.6	8	17.1	7.9	8.4
C74	Adrenal gland	8	-	0.5	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-
C75	Other Endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin Disease	75	-	0.3	0.2	0.8	2	2.5	1	0.2	0.5	0.3	1.2	2.1	-	2.4	3.7	1.3	-
C82-C85; C96	Non Hodgkin lymphoma	190	-	0.4	0.5	0.7	0.8	1.3	0.8	2	1.7	5.5	4.4	7.8	10.9	14.4	28.1	9.2	25
C88	Immunoproliferative dis.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	15	-	-	-	-	-	-	-	-	0.2	0.3	-	1	1.9	2.4	1.2	2.6	2.1
C91	Lymphoid Leukaemia	79	-	2.2	1.1	0.8	0.4	0.4	0.3	0.4	0.5	-	0.4	2.1	1.9	1.6	3.7	2.6	2.1
C92-C94	Myeloid Leukaemia	97	1	0.9	0.3	0.5	0.9	1.1	1	1	3.2	1.8	3.6	4.1	1.3	3.2	4.9	2.6	1.1
C95	Leukaemia unspec.	3	-	-	-	-	0.1	-	-	-	-	0.3	-	-	-	0.8	-	-	-
Other	Other & unspecified	108	1	0.1	0.1	-	-	0.1	0.5	0.4	1.7	1.5	1.6	6.2	5.8	13.6	20.8	17.1	15
A II	All sites	2741	3	8.5	4	5.6	10.9	13.3	18.7	29.3	59.1	71.3	87.6	118.9	139	221.9	272.4	234.5	259
A II but C44	All sites but C44	2641	3	8.4	4	5.5	10.7	13	18.5	28.7	58.6	68.9	86	115.8	134.5	209.9	260.2	222.6	228

Table 5-3-1 Age Distribution of Cancer Cases among non-Saudi Males, 2001

ICD 10	SITE	Tot.	UNK	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
C00	Lip	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
C01-C02	Tongue	6	-	-	-	-	-	-	-	-	-	1	1	1	2	1	-
C03-C06	Mouth	13	-	-	-	-	-	-	-	2	1	2	1	2	2	1	1
C07-C08	Salivary Glands	4	-	-	-	-	-	-	-	1	1	-	2	-	-	-	-
C9	Tonsil	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C10	Other oropharynx	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C11	Nasopharynx	25	-	-	-	-	2	1	-	2	4	3	5	6	2	-	-
C12-C13	Hypopharynx	3	-	-	-	-	-	-	-	-	1	1	-	-	1	-	-
C14	Pharynx unspec.	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
C15	Oesophagus	16	-	-	-	-	-	-	-	1	1	1	2	5	2	4	-
C16	Stomach	43	-	-	-	-	-	2	1	1	3	3	4	9	9	2	3
C17	Small intestine	8	-	-	-	-	-	-	2	1	-	2	2	1	-	-	-
C18	Colon	44	-	-	-	-	-	1	2	2	3	8	5	6	10	3	2
C19-C20	Rectum	37	-	-	-	-	-	-	3	2	5	5	5	8	4	2	-
C21	Anus	4	-	-	-	-	-	-	-	1	1	-	1	-	-	1	-
C22	Liver	36	-	-	-	-	-	-	-	2	2	1	5	6	6	4	3
C23-C24	Gall bladder ect.	7	-	-	-	-	-	-	-	1	1	3	1	-	-	1	-
C25	Pancreas	7	-	-	-	-	-	1	-	-	1	1	1	-	-	1	-
C30-C31	Nose, sinuses, etc.	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1
C32	Larynx	18	-	-	-	-	-	-	-	1	-	-	4	3	3	1	1
C33-C34	Trachea, Bronchus, Lung	45	-	-	-	-	-	-	-	-	4	3	7	7	6	12	5
C37-C38	Other Thoracic Organs	3	-	1	-	-	-	1	-	-	-	1	-	-	-	-	-
C40-C41	Bone	13	-	1	-	-	4	1	2	3	-	2	-	-	-	-	-
C43	Melanoma of Skin	7	-	-	-	-	-	-	1	1	2	-	-	-	-	1	2
C44	Other Skin	56	-	-	2	-	-	-	-	1	6	7	12	8	6	6	3
C45	Mesothelioma	3	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
C46	Kaposi sarcoma	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47; C49	Connective, Soft Tissue	23	-	2	1	-	-	2	-	3	5	2	3	1	2	2	-
C50	Breast	4	-	-	-	-	-	-	-	-	-	1	1	-	-	1	1
C60	Penis	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C61	Prostate	38	-	-	-	-	-	-	-	-	-	2	2	3	4	8	9
C62	Testis	11	-	-	-	-	-	-	5	2	1	1	2	-	-	-	-
C63	Other male genital	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	Kidney	22	-	1	-	-	-	-	-	-	3	2	6	5	4	-	-
C65	Renal pelvis	2	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-
C66	Ureter	2	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
C67	Bladder	57	-	-	-	-	-	-	1	2	4	7	9	11	5	7	6
C68	Other urinary organs	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	5	-	3	-	-	-	-	-	1	-	1	-	-	-	-	-
C70-C72	Brain, Nervous System	41	-	1	1	4	2	1	5	5	2	4	6	3	2	2	1
C73	Thyroid	25	-	-	-	-	-	-	4	6	3	2	5	3	-	1	-
C74	Adrenal gland	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
C75	Other Endocrine	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
C81	Hodgkin Disease	23	-	-	-	2	1	2	4	4	2	2	-	1	2	2	-
C82-C85; C96	Non Hodgkin lymphoma	70	-	1	1	-	2	5	7	7	8	9	12	7	7	1	2
C88	Immunoproliferative dis.	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
C90	Multiple Myeloma	9	-	-	-	-	-	-	-	-	-	-	1	2	2	1	2
C91	Lymphoid Leukaemia	45	-	8	3	5	11	-	2	1	2	2	3	4	1	1	1
C92-C94	Myeloid Leukaemia	40	-	1	-	4	-	2	7	6	4	8	4	1	-	2	-
C95	Leukaemia unspec.	2	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Other	Other & unspecified	51	-	-	-	-	2	1	1	2	3	7	5	9	6	4	3
A II	All Sites	878	-	19	9	15	24	21	48	60	75	95	122	113	92	74	46
All but C44	All sites but C44	822	-	19	7	15	24	21	48	59	69	88	110	105	86	68	43

Table 5-3-2 Age Distribution of Cancer Cases among non-Saudi Females, 2001

ICD 10	SITE	Tot	UNK	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
C00	Lip	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C01-C02	Tongue	2	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-
C03-C06	Mouth	5	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-
C07-C08	Salivary Glands	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
C9	Tonsil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C10	Other oropharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C11	Nasopharynx	7	-	-	-	1	-	-	-	3	2	-	-	-	-	-	-
C12-C13	Hypopharynx	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
C14	Pharynx unspec.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
C15	Oesophagus	11	-	-	-	-	-	-	1	-	1	-	-	1	3	2	1
C16	Stomach	16	-	-	-	-	-	-	2	1	2	1	1	3	1	1	2
C17	Small intestine	3	-	-	-	-	-	-	-	2	-	-	1	-	-	-	-
C18	Colon	24	-	-	-	-	-	1	3	-	5	3	3	3	2	2	-
C19-C20	Rectum	13	-	-	-	-	-	-	-	2	4	2	2	-	-	2	1
C21	Anus	4	-	-	-	-	-	-	-	1	1	-	1	-	-	-	1
C22	Liver	14	-	1	-	-	-	-	-	-	-	1	1	4	1	1	1
C23-C24	Gallbladderect.	4	-	-	-	-	-	-	-	-	-	1	-	1	1	-	1
C25	Pancreas	9	-	-	-	-	-	1	-	-	1	1	-	2	1	2	1
C30-C31	Nose, sinuses, etc.	2	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-
C32	Larynx	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C33-C34	Trachea, Bronchus, Lung	12	-	-	-	2	-	-	-	-	-	-	2	1	-	2	2
C37-C38	Other Thoracic Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40-C41	Bone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C43	Melanoma of Skin	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
C44	Other Skin	33	-	-	-	-	-	-	2	2	4	5	3	5	5	2	3
C45	Mesothelioma	2	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
C46	Kaposi's sarcoma	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
C47; C49	Connective, Soft Tissue	10	-	1	1	1	1	-	1	-	1	2	-	1	-	1	-
C50	Breast	260	-	-	-	-	-	2	11	22	50	47	41	32	15	14	12
C51	Vulva	2	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-
C52	Vagina	3	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1
C53	Cervix Uteri	56	-	-	-	-	-	-	1	6	11	7	8	4	6	5	1
C54	Corpus Uteri	21	-	-	-	-	-	-	-	1	4	3	5	2	2	2	1
C55	Uterus Unspec.	5	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-
C56	Ovary	26	-	-	-	2	1	-	1	-	3	5	4	3	-	3	2
C57	Other Female Genital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C58	Placenta	4	-	-	-	-	-	-	3	-	-	1	-	-	-	-	-
C64	Kidney	4	-	1	1	-	-	-	-	-	-	-	-	-	1	-	-
C65	Renal pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Bladder	11	-	-	-	-	-	-	-	-	-	2	-	3	-	1	4
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	4	-	3	-	-	-	-	-	1	-	-	-	-	-	-	-
C70-C72	Brain, Nervous System	18	-	1	3	3	2	-	-	2	-	1	2	-	1	1	2
C73	Thyroid	29	-	-	-	2	2	2	2	5	6	4	4	1	-	1	1
C74	Adrenal gland	3	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-
C75	Other Endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin Disease	5	-	-	1	-	2	1	-	-	1	-	-	-	-	-	-
C82-C85; C96	Non Hodgkin lymphoma	24	-	1	-	4	1	1	-	2	4	1	1	1	4	3	-
C88	Immunoproliferative dis.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	5	-	-	-	-	-	-	-	-	-	1	-	1	1	1	1
C91	Lymphoid Leukaemia	20	-	5	2	3	1	1	-	-	1	2	-	2	1	2	-
C92-C94	Myeloid Leukaemia	22	-	1	1	-	2	4	2	2	5	2	2	1	-	-	-
C95	Leukaemia unspec.	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Other	Other & unspecified	38	-	1	1	-	-	1	1	2	3	4	4	5	3	5	2
All	All Sites	739	-	16	10	10	15	17	32	58	109	99	85	83	51	56	41
All but C44	All Sites but C44	706	-	16	10	10	15	17	30	56	105	94	82	78	46	54	38

Table 5-3-3 Incidence Rates for Cancer Cases among non-Saudi Males by Age Group (per 100,000), 2001

ICD 10	SITE	Tot	UNK	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
C00	Lip	1	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-
C01-C02	Tongue	6	-	-	-	-	-	-	-	-	-	0.3	0.4	0.8	3.2	3.3	-	-	-
C03-C06	Mouth	13	-	-	-	-	-	-	-	0.3	0.2	0.5	0.4	1.7	3.2	3.3	7.7	13.6	-
C07-C08	Salivary Glands	4	-	-	-	-	-	-	-	0.1	0.2	-	0.9	-	-	-	-	-	-
C9	Tonsil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C10	Other oropharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C11	Nasopharynx	25	-	-	-	1.6	0.5	-	-	0.3	0.7	0.8	2.2	5	3.2	-	-	-	-
C12-C13	Hypopharynx	3	-	-	-	-	-	-	-	-	0.2	0.3	-	-	1.6	-	-	-	-
C14	Pharynx unspec.	1	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-
C15	Oesophagus	16	-	-	-	-	-	-	-	0.1	0.2	0.3	0.9	4.2	3.2	13.3	-	-	-
C16	Stomach	43	-	-	-	-	-	0.9	0.2	0.1	0.5	0.8	1.8	7.5	14.3	6.7	23.2	27.2	46
C17	Small intestine	8	-	-	-	-	-	-	0.4	0.1	-	0.5	0.9	0.8	-	-	-	-	-
C18	Colon	44	-	-	-	-	-	0.5	0.4	0.3	0.5	2.1	2.2	5	15.9	10	15.5	13.6	11
C19-C20	Rectum	37	-	-	-	-	-	-	0.6	0.3	0.9	1.3	2.2	6.7	6.4	6.7	-	13.6	23
C21	Anus	4	-	-	-	-	-	-	-	0.1	0.2	-	0.4	-	-	-	7.7	-	-
C22	Liver	36	-	-	-	-	-	-	-	0.3	0.3	0.3	2.2	5	9.5	13.3	23.2	40.8	46
C23-C24	Gall bladder ect.	7	-	-	-	-	-	-	-	0.1	0.2	0.8	0.4	-	-	3.3	-	-	-
C25	Pancreas	7	-	-	-	-	-	0.5	-	-	0.2	0.3	0.4	-	-	3.3	-	13.6	11
C30-C31	Nose, sinuses, etc.	3	-	-	-	-	-	-	-	-	-	-	-	-	3.2	-	7.7	-	-
C32	Larynx	18	-	-	-	-	-	-	-	0.1	-	-	1.8	2.5	4.8	3.3	7.7	40.8	23
C33-C34	Trachea, Bronchus, Lung	45	-	-	-	-	-	-	-	-	0.7	0.8	3.1	5.8	9.5	40	38.7	-	11
C37-C38	Other Thoracic Organs	3	-	0.4	-	-	-	0.5	-	-	-	0.3	-	-	-	-	-	-	-
C40-C41	Bone	13	-	0.4	-	-	3.2	0.5	0.4	0.4	-	0.5	-	-	-	-	-	-	-
C43	Melanoma of Skin	7	-	-	-	-	-	-	0.2	0.1	0.3	-	-	-	-	3.3	15.5	-	-
C44	Other Skin	56	-	-	0.8	-	-	-	-	0.1	1	1.8	5.4	6.7	9.5	20	23.2	27.2	35
C45	Mesothelioma	3	-	-	-	-	-	-	-	-	-	-	1.3	-	-	-	-	-	-
C46	Kaposi sarcoma	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C47; C49	Connective, Soft Tissue	23	-	0.8	0.4	-	-	0.9	-	0.4	0.9	0.5	1.3	0.8	3.2	6.7	-	-	-
C50	Breast	4	-	-	-	-	-	-	-	-	-	0.3	0.4	-	-	3.3	7.7	-	-
C60	Penis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C61	Prostate	38	-	-	-	-	-	-	-	-	-	0.5	0.9	2.5	6.4	26.7	69.6	40.8	81
C62	Testis	11	-	-	-	-	-	-	0.9	0.3	0.2	0.3	0.9	-	-	-	-	-	-
C63	Other male genital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C64	Kidney	22	-	0.4	-	-	-	-	-	-	0.5	0.5	2.7	4.2	6.4	-	-	13.6	-
C65	Renal pelvis	2	-	-	-	-	-	-	-	-	-	-	-	0.8	-	3.3	-	-	-
C66	Ureter	2	-	-	-	-	-	-	-	-	-	-	-	-	1.6	3.3	-	-	-
C67	Bladder	57	-	-	-	-	-	-	0.2	0.3	0.7	1.8	4	9.2	7.9	23.3	46.4	40.8	23
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	5	-	1.2	-	-	-	-	-	0.1	-	0.3	-	-	-	-	-	-	-
C70-C72	Brain, Nervous System	41	-	0.4	0.4	2	1.6	0.5	0.9	0.7	0.3	1	2.7	2.5	3.2	6.7	7.7	27.2	-
C73	Thyroid	25	-	-	-	-	-	-	0.8	0.9	0.5	0.5	2.2	2.5	-	3.3	-	-	11
C74	Adrenal gland	1	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C75	Other Endocrine	1	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin Disease	23	-	-	-	1	0.8	0.9	0.8	0.6	0.3	0.5	-	0.8	3.2	6.7	-	13.6	-
C82-C85; C96	Non Hodgkin lymphoma	70	-	0.4	0.4	-	1.6	2.3	1.3	1	1.4	2.3	5.4	5.8	11.1	3.3	15.5	13.6	-
C88	Immunoproliferative dis.	1	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-	-	-
C90	Multiple Myeloma	9	-	-	-	-	-	-	-	-	-	-	0.4	1.7	3.2	3.3	15.5	-	11
C91	Lymphoid Leukaemia	45	-	3.2	1.2	2.5	8.8	-	0.4	0.1	0.3	0.5	1.3	3.3	1.6	3.3	7.7	-	11
C92-C94	Myeloid Leukaemia	40	-	0.4	-	2	-	0.9	1.3	0.9	0.7	2.1	1.8	0.8	-	6.7	-	13.6	-
C95	Leukaemia unspec.	2	-	-	-	-	-	-	0.2	-	-	-	0.4	-	-	-	-	-	-
Other	Other & unspecified	51	-	-	-	-	1.6	0.5	0.2	0.3	0.5	1.8	2.2	7.5	9.5	13.3	23.2	54.4	46
All	All Sites	878	-	7.6	3.6	7.4	19.1	9.8	9.1	8.8	13.1	24.6	54.6	94	146.3	246.8	355.8	421.3	397
All but C44	All Sites but C44	822	-	7.6	2.8	7.4	19.1	9.8	9.1	8.7	12.1	22.8	49.2	87.4	136.7	226.8	332.6	394.1	362

Table 5-3-4 Incidence Rates for Cancer Cases among non-Saudi Females by Age Group (per 100,000), 2001

ICD 10	SITE	Tot	UNK	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
C00	Lip	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C01-C02	Tongue	2	-	-	-	-	-	-	-	0.4	-	-	-	3.2	-	-	-	-	-
C03-C06	Mouth	5	-	-	-	-	-	-	-	-	-	-	-	6.4	5.4	-	-	11.4	16
C07-C08	Salivary Glands	1	-	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	-
C9	Tonsil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C10	Other oropharynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C11	Nasopharynx	7	-	-	-	-	0.8	-	-	1.2	0.9	-	-	-	-	-	-	-	16
C12-C13	Hypopharynx	1	-	-	-	-	-	-	-	-	-	-	1.8	-	-	-	-	-	-
C14	Pharynx unspes.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.8	-	-
C15	Oesophagus	11	-	-	-	-	-	-	0.6	-	0.5	-	-	3.2	16.1	17.7	15.8	-	32
C16	Stomach	16	-	-	-	-	-	-	1.2	0.4	0.9	0.9	1.8	9.6	5.4	8.9	31.7	11.4	16
C17	Small intestine	3	-	-	-	-	-	-	-	0.8	-	-	1.8	-	-	-	-	-	-
C18	Colon	24	-	-	-	-	-	0.8	1.8	-	2.3	2.6	5.3	9.6	10.8	17.7	-	11.4	16
C19-C20	Rectum	13	-	-	-	-	-	-	-	0.8	1.9	1.8	3.6	-	-	17.7	15.8	-	-
C21	Anus	4	-	-	-	-	-	-	-	0.4	0.5	-	1.8	-	-	-	15.8	-	-
C22	Liver	14	-	0.4	-	-	-	-	-	-	-	0.9	1.8	12.9	5.4	8.9	15.8	22.9	32
C23-C24	Gallbladder ect.	4	-	-	-	-	-	-	-	-	-	0.9	-	3.2	5.4	-	15.8	-	-
C25	Pancreas	9	-	-	-	-	-	0.8	-	-	0.5	0.9	-	6.4	5.4	17.7	15.8	-	-
C30-C31	Nose, sinuses, etc.	2	-	-	-	-	-	-	0.6	-	-	-	1.8	-	-	-	-	-	-
C32	Larynx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C33-C34	Trachea, Bronchus, Lung	12	-	-	-	1	-	-	-	-	-	-	3.6	3.2	-	17.7	31.7	22.9	16
C37-C38	Other Thoracic Organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C40-C41	Bone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C43	Melanoma of Skin	2	-	-	-	-	-	-	-	-	-	-	-	-	-	8.9	-	11.4	-
C44	Other Skin	33	-	-	-	-	-	-	1.2	0.8	1.9	4.4	5.3	16.1	26.9	17.7	47.5	11.4	16
C45	Mesothelioma	2	-	-	-	-	-	-	0.6	-	0.5	-	-	-	-	-	-	-	-
C46	Kaposi sarcoma	1	-	-	-	-	-	-	-	-	-	-	-	-	-	8.9	-	-	-
C47; C49	Connective, Soft Tissue	10	-	0.4	0.4	0.5	0.8	-	0.6	-	0.5	1.8	-	3.2	-	8.9	-	-	-
C50	Breast	260	-	-	-	-	-	1.7	6.6	9.1	23.3	41.3	72.8	102.8	80.7	123.9	190	102.8	8
C51	Vulva	2	-	-	-	-	-	-	-	0.4	-	-	-	3.2	-	-	-	-	-
C52	Vagina	3	-	-	-	-	-	-	-	-	-	1.8	-	-	-	-	15.8	-	-
C53	Cervix Uteri	56	-	-	-	-	-	-	0.6	2.5	5.1	6.2	14.2	12.9	32.3	44.3	15.8	45.7	48
C54	Corpus Uteri	21	-	-	-	-	-	-	-	-	3.5	5.3	5.3	16.1	10.8	17.7	15.8	11.4	32
C55	Uterus Unspec.	5	-	-	-	-	-	-	-	-	0.5	-	-	-	10.8	-	-	22.9	-
C56	Ovary.	26	-	-	-	-	1.6	0.8	-	1.2	1.4	4.4	7.1	9.6	-	26.6	31.7	-	-
C57	Other Female Genital	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C58	Placenta	4	-	-	-	-	-	-	1.8	-	-	0.9	-	-	-	-	-	-	-
C64	Kidney	4	-	0.4	0.4	-	-	-	-	-	-	-	-	-	5.4	-	-	11.4	-
C65	Renal pelvis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C66	Ureter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C67	Bladder	11	-	-	-	-	-	-	-	-	-	1.8	-	9.6	-	8.9	63.3	11.4	-
C68	Other urinary organs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C69	Eye	4	-	1.2	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-
C70-C72	Brain, Nervous System	18	-	0.4	1.2	1.5	1.6	-	-	0.8	-	0.9	3.6	-	5.4	8.9	31.7	-	-
C73	Thyroid	29	-	-	-	-	1.6	1.7	1.2	2.1	2.8	3.5	7.1	3.2	-	8.9	15.8	11.4	-
C74	Adrenal gland	3	-	0.4	0.4	-	-	-	-	-	0.5	-	-	-	-	-	-	-	-
C75	Other Endocrine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C81	Hodgkin Disease	5	-	-	-	0.5	-	1.7	0.6	-	0.5	-	-	-	-	-	-	-	-
C82-C85; C96	Non Hodgkin lymphoma	24	-	0.4	-	-	3.2	0.8	-	0.8	1.9	0.9	1.8	3.2	21.5	26.6	-	22.9	-
C88	Immunoproliferative dis.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
C90	Multiple Myeloma	5	-	-	-	-	-	-	-	-	-	0.9	-	3.2	5.4	8.9	15.8	-	-
C91	Lymphoid Leukaemia	20	-	2.1	0.8	1.5	0.8	0.8	-	-	0.5	1.8	-	6.4	5.4	17.7	-	-	-
C92-C94	Myeloid Leukaemia	22	-	0.4	0.4	-	1.6	3.3	1.2	0.8	2.3	1.8	3.6	3.2	-	-	-	-	-
C95	Leukaemia unspes.	2	-	-	-	-	-	-	-	-	-	-	-	-	-	8.9	-	16	-
Other	Other & unspecified	38	-	0.4	0.4	-	-	0.8	0.6	0.8	1.4	3.5	7.1	16.1	16.1	44.3	31.7	45.7	32
All	All Sites	739	-	6.7	3.8	4.9	11.9	14.1	19.3	24	50.8	87.1	151	266.6	274.5	495.7	649.2	388.5	37
All but C44	All Sites but C44	706	-	6.7	3.8	4.9	11.9	14.1	18.1	23.2	49	82.7	145.7	250.6	247.6	478	601.7	377.1	36

PART VI

APPENDICES

APPENDIX A-1 Reporting Healthcare Facilities

There were 10575 reported cases from 185 different healthcare

Asir Region

Asir Central Hospital	Mahael General Hospital
Abha Private Hospital	Maternity Hospital
Al Ahli Hospital	Mjaridah General Hospital
Armed Forces Hospital South	Namas General Hospital
Balasmr General Hospital	Prince Abd Bin Abd Aziz Hospital
Khamis Mushayt Civil Hospital	Sabt Al Alaya Hospital
King Fahad Hospital	Saudi German Hospital (Abha)
King Faisal Military Hospital	Wasat Al Khamis Hospital

Baha Region

King Fahd Hospital	Physical Therapy Center
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Eastern Province

Al Amal Hospital	King Abd Aziz Navy Base Hospital
Al Mana General Hospital, Dammam	King Fahad Hospital, Hofuf
Al Mana General Hospital, Khobar	King Fahad Hosp of the University
Al Mana General Hospital, Hofuf	King Fahad Military Med Complex
Anak General Hospital	King Khalid General Hospital
Arabian Oil Company Hospital	King Khalid Military Complex
ARAMCO Clinic	Maternity & Children's Hospital
Astoon Hospital	Maternity & Children's Hospital
Chest Disease Hospital	Al Mousa Hospital
Dammam Central Hospital	Al Mouwasat Hospital
Dammam Medical Dispensary	Al Obeid Hospital
Dhahran Medical Center	Prince Saud Bin Jalawi Hospital
Al Dossary Hospital	Psychiatric Hospital
Dr Fakhry & Mouhawis Hospital	Qatif Central Hospital
Fanateer Hospital	Rowdha Dispensary
Jubail Hospital	Saddiq Hospital
Jufer Hospital	Al Salama Hospital
Khafj Joint Operation Hospital	Al Shaibani Hospital, Jubail
King Abd Aziz Airbase Hospital	Yousif Hospital

Hail Region

Bagsa General Hospital	King Khaled General Hospital, Hail
Hail General Hospital	

Jazan Region

Abu Arish General Hospital	King Fahd Central Hospital
Fayfa General Hospital	

Jouf Region

Prince Abd Rahman Sudairi Hospital	Quarayyat General Hospital
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APPENDIX A-2 Reporting Healthcare Facilities

Madinah Region

Al Ansar Hospital	Al Ula General Hospital
Hanakyah Hospital	Zahra Private Hospital
Meeqat Hospital	Badr General Hospital
King Fahad Hospital	Al Khaybar General Hospital
Maternity & Children's Hospital	Yanboa General Hospital
Madina National Hospital	Zen Laboratory
Ohoud Hospital	

Makkah Region

Abuzinaida Hospital	King Abd Aziz University Hospital
Al Abraj Laboratory	King Fahad Air Base Hospital
Al Ahli Clinic	King Fahad Armed Forces Hospital
Al Hada Military Hospital Taif	King Fahad General Hospital
Alawi Tunsi & Bros Hospital	King Faisal Hospital Taif
Amen Hospital	King Faisal Specialist Hosp& Research Center
Bakhsh Hospital	Maternity & Children's Hospital
Bugshan General Hospital	Maternity & Childrens Hospital
Maternity & Children's Hospital, Jeddah	Mustaqbal (Dhagastani) Hospital
Dr Erfan & Bagedo Hospital	New Jeddah Clinic
Dr Solaiman Fakeeh Hospital	Noor Specialist Hospital
Dr. Ghassan Pharaon Hospital	Qunfudah General Hospital
Dr. Khalid Idriss Hospital	Rabegh General Hospital
El Moghraby Eye Hospital	Rafie Hospital
Eye Hospital MOH Jeddah	Al Salama Hospital
Hai Al Jamea Hospital	Saudi German Hospital, Jeddah
Hera General Hospital	Saudi Medical Services
Al Jedaani Hospital	Taif Childrens Hospital
King Abd Aziz Al Zaher Hospital	Umm Al Qura Poly Clinic
King Abd Aziz Hosp & Oncology Center	United Doctors Hospital
King Abd Aziz Med City for National Guard (KKH)	

Najran Region

King Khaled General Hospital	Sharourah General Hospital
Najran General Hospital	

Northern Region

Arar Central Hospital	Rafha General Hospital
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APPENDIX A-3 Reporting Healthcare Facilities

Qassim Region

Bukairyah General Hospital Buraidah Central Hospital King Fahd Specialist Hospital King Saud Hospital	Maternity & Childrens Hospital Midnab General Hospital Rass General Hospital
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Riyadh Region

Afif General Hospital Al Bustan Clinic Al Eman General Hospital Al Obeid Hospital Armed Forces Hosp Wadi Dawasser Artwiyah Clinic Chest Diseases Hospital Consulting Clinics Dallah Hospital Dawadmi General Hospital Dr Abdl Rahman Al Mishari Hospital Dr Al Moagel's Polyclinic Dr. Al Mofarreh Polyclinic Dr. Fahd Al Shedoukhy Polyclinic Dr. Sulaiman Al Habib Medical Center Eman General Hospital Green Crescent Hospital Hammadi Hospital Hota Bani Tammim Hospital Hotat Sudair Hospital Huraymila General Hospital Islamic University Medical Center Kharj General Hospital King Abd Aziz Medical City for National Guard (KFH)	King Abdul Aziz University Hospital King Faisal Specialist Hosp & Research Center King Khaled Eye Specialist Hospital King Khaled General Hospital , Al Kharj King Khaled General Hospital, Majmaah King Khaled University Hospital Maternity & Childrens Hospital, Riyadh Mobarak Hospital Olaya Medical Center Prince Salman Bin Abd Aziz Hospital Riyadh Care Hospital (GOSI) Riyadh Medical Complex Riyadh Military Hospital (RKH) Saudi Medical Services Security Forces Hospital Shaqra Hospital Shifa Health Center Sulail Hospital Sulaimania Children's Hospital Wadi Al Dawasser Hospital Watani (Ry National) Al Yamamah Hospital Zulfi General Hospital
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Tabuk Region

King Fahad Hospital King Khalid General Hospital Tabuk Civil Hospital King Khalid Military Hospital	North West Armed Forces Hospital Umm Lujj General Hospital Prince Fahad Bin Sultan Hospital
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APPENDIX B-1 NCR Board Member Contact Information

NCR Main Office MBC 64 PO Box 3354, Riyadh 11211 Saudi Arabia Tel: 01-442-3938 Fax: 01-442-3941 Website: www.kfshrc.edu.sa/NCR/ Email: bazarbashi@kfshrc.edu.sa syoung@kfshrc.edu.sa	Chairman: Shouki Bazarbashi, MD Dep. Chairman: Nasser Al Hamdan, MD Admin. Director: Susan Young, CCHRA(C), CTR Registrar: Mohamed Hayder, CTR Epidemiologist: Haya Al Eid, BDS, DFE, CTR Data Manager: Suad O. Arteh, MA
Armed Forces Hospitals Riyadh Military Hospital PO Box 7897, Riyadh 11159 Tel: 01-477-7714 x6747 Fax: 01-477-6743 x6743	Director: Rizq Allah Assiri, MD
Central Region King Khalid University Hospital PO Box 2925, Riyadh 11461 Tel: 01-467-9488/2398 Fax: 01-467-9487	Director: Dahish Ajarim, MD
Eastern Region King Fahd Hospital of the University PO Box 40004, Al Khobar 31952 Tel: 03-896-6741 Fax: 03-869-6741	Director: Prof. Hassan Al Iddrissi, MD
King Abdulaziz University Hospital Faculty of Medicine & Allied Science PO Box 80215, Jeddah 21589 Tel: 02-624-0000 x 18244/18253 Fax: 02-617-1412	Director: Mohamoud Shaheen Al Ahwal, MD
King Faisal Specialist Hospital & Research Center MBC-64 PO Box 3354, Riyadh 11211 Tel: 01-442-3938, 464-7272 x24541	Directors: Shouki Bazarbashi, MD Edward De Vol, PhD

APPENDIX B-2 NCR Board Member Contact Information

Madinah & Northern Region

King Fahad Hospital
Madinah Al Monawarah
Tel: 04-486-1500 x 3760
Fax: 04-836-0951

Director:

Ahmed Tarawa, MD

National Guard Hospitals

King Abdulaziz Medical City (KKNHG)
PO Box 9515, Jeddah 21423
Tel: 02-624-0000 x 4085/4086
Fax: 02-624-0000 x 7242

Director:

Abdulwahab Andejani, MD

Security Forces Hospital

PO Box 3643, Riyadh 11481
Tel: 01-477-4480 x1193
Fax: 01-476-4757, 01477-4480 x3184

Director:

Abdulaziz Saleh Aba Hussein, MD

Southern Region

King Khalid University
PO Box 641, Abha
Tel: 07-224-0711 / 224-7800 x118
Fax: 07-224-0964 / 224-7570

Director:

Hassan Trabulsi, MD

Western Region

King Abdulaziz Hosp. & Oncology Center
PO Box 31467, Jeddah 21497
Tel: 02-637-5555 x2283/2200
Fax: 02-637-9811

Director:

Hadir Meir, MD

APPENDIX C NCR Data Request Form

**NATIONAL CANCER
MINISTRY OF
KINGDOM OF SAUDI**



السجل الوطني للأورام
وزارة الصحة
المملكة العربية السعودية

Request for data from the National Cancer

All requests should be submitted to the attention of the Chairman, Board of Directors, National Cancer Registry, MBC 64, P.O. Box 334, Riyadh, 11211, Saudi Arabia, Fax: 966 1 442 3941

Name: _____

Date Submitted: _____

Department: _____

Hospital: _____

Telephone number: _____

Information Requested:

(Specify patient population, Time period, Year/s, Anatomic site/Histology, Staging information, region, etc.)

Purpose of Request:

(Specify presentation at conference/meeting/publication, clinical/epidemiological study, personal information, etc.)

Collaborators and Co-authors:

Requesters affirmation statement:

I hereby, the requester of the above data affirm that the data given to me by the NCR will be treated with utmost confidentiality in relation to patient's identity. I also affirm that the data given to me will not be presented or published by me or any of my collaborators as an original work but rather can be cited in my presentations and / or publication with acknowledgment to the NCR.

Requester signature: _____

Date: _____

For Official use only:

Request: Approved _____

Denied _____

Chairman NCR Board of Directors Signature: _____

Dr. Shouki Bazarbashi

Date: _____

APPENDIX D Cancer Registration Abstract Form

***MUST REFER TO NCR OPERATING MANUAL**

KINGDOM OF SAUDI ARABIA
MINISTRY OF HEALTH
NATIONAL CANCER REGISTRY
November 2002 (Updated)

1. ACCESSION DATE

d	d	m	m	y	y	y	y	y	y

(Date Abstract Completed, by hand)

CANCER REGISTRATION ABSTRACT

NAME

2. FIRST (Must be filled)	3. FATHER	4. GRANDFATHER	5. FAMILY (Must be filled)

USE NCR ABBREVIATIONS LIST FOR NAMES, PART 11

6. SAUDI ID/ PASSPORT/ IQAMA NUMBER

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

7. Sex

☐

8. DATE OF BIRTH

d	d	m	m	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y

(if only year is known, use 01/07/___)

9. AGE AT DIAGNOSIS

--	--

YEAR(S)

- 1- Male
2- Female
9- Unknown

12. MARITAL STATUS

☐

1. Single
2. Married
3. Divorced
4. Widowed
5. Unknown

10. NATIONALITY

Code

--	--	--

11. Nationality Text

--

13. PERMANENT ADDRESS

Code

--	--	--	--	--	--

14. ADDRESS DETAILS

City:

P.O. Box

Zip Code:

15. TELEPHONE NUMBER

--	--	--	--	--	--	--	--	--	--

16. DATE OF DIAGNOSIS

d	d	m	m	y	y	y	y	y	y

(First time physician states that patient has a malignancy Clinically or Pathologically)

17. TOPOGRAPHY

Code

C			
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18. Topography Text

--

19. MORPHOLOGY/
HISTOLOGY

Code

--	--	--	--

20. Morphology Text

--

21. BEHAVIOR

☐

2. Insitu
3. Malignant/Invasive

22. GRADE

☐

1. Well differentiated/
Differentiated, NOS
2. Moderately differentiated/
Moderately well differentiated
3. Poorly differentiated
4. Undifferentiated / Anaplastic
5. T-cell
6. B-cell/Pre-B/B-precursor
7. Null cell/Non-T-Non-B (for Leukemias only)
8. Natural killer cell
9. Unknown

23. SEER SUMMARY STAGE (EXTENT)

☐

1. In situ
2. Localized
3. Regional by direct extent
4. Regional by lymph node
5. Regional (both 3 and 4)
6. Regional, NOS
7. Distant Metastasis/Systematic Disease
9. Unknown

Details if any:

--

25. BASIS OF DIAGNOSIS

☐

0. DCO (Death certificate only)
1. Clinical
2. Radiology
3. Surgery
4. Lab test

5. Cytology/Hematology
6. Histology of Metastasis
7. Histology of Primary
8. Histology, NOS
9. Unknown

26. REPORTING HOSPITAL

Code

--	--	--	--	--	--

27. Reporting Hospital Text

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28. MEDICAL RECORD NO.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

29. PATHOLOGY SPECIMEN NO.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

30. LAST CONTACT

d	d	m	m	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y	y

31. STATUS

☐

1. Dead
2. Alive
9. Unknown

32. CAUSE OF DEATH

☐

1. Cancer
2. Other
3. Not Applicable
9. Unknown

33. CanReg-4 NO.
(Computer Assigned)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

34. CODER ID #

--	--	--

35. DATA ENTRY ID #

--	--	--

SIGNATURE: _____