

# Nairobi Cancer Registry



## Cancer Incidence Report

Nairobi 2000 - 2002

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Nairobi Cancer Registry  
Kenya Medical Research Institute  
Nairobi, Kenya.

**Cancer Incidence Report**  
**NAIROBI**  
**2000 - 2002**

October 2006

**Report prepared by:**

1. Dr. Mutuma G .Z.  
MBChB, M.Med (Path), Dip.Forens.Med (RCPA), D.M.J (Path).

2. Mrs. Anne Rugutt-Korir,  
BSc. (Hons.) Computer Studies, Dip. Health Records & Information

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## Acknowledgements

The Nairobi Cancer Registry (NCR) acknowledges the enormous support given by the following individuals and organizations. With their continued support, the registry will certainly continue to realize its main objectives.

1. Dr. D. M. Parkin, The President of International Association of Cancer Registries (IACR) and Dr. Paola Pisani, the head, Unit of Descriptive Epidemiology of the International Agency for Research on Cancer (IARC), Lyon, France. IARC has provided financial, moral and technical support to our infant registry. They sent their representatives, Ms. Sharon Whelan and Mr. Andy Cooke to facilitate in the training of our registry personnel in the year 2001 in Nairobi, Kenya. IARC also facilitated the advanced training of the Registry Supervisor in Lyon, France and provided the software and equipment used in the registry. It continues to offer invaluable technical and financial support to our registry.

2. We take this opportunity to thank Dr. James McKearney, International Programmes Officer of the National Cancer Institute (NCI), Office of International Affairs, USA. He availed funds to start the Nairobi Cancer Registry (NCR) and has continued to offer support and guidance to date.

3. Dr Douglas Weed, Director NCI Summer Curriculum in Cancer Prevention, has supported one to two officers each year since the year 2000 to attend the Summer Curriculum Course in Cancer Prevention and Control at NCI. They also funded the international training in September 2002 at KEMRI.

4. The Director, KEMRI Dr. Davy Koech, has been giving support and guidance to the registry since its inception. He not only gave office space to accommodate the registry, but has also been giving financial support as well as allowing members of staff time to attend relevant courses both locally and abroad. His inspiration and assistance encouraged us to continue in this endeavor.

5. We are grateful to the continued support of the Director, Centre for Clinical Research, KEMRI Dr. Monique Wasunna, who warmly welcomed the idea of a cancer registry in her research center and continues to give moral support.

6. The World Health Organization, through the Ministry of Health funded the training held in May 2002 and has provided both technical and financial support to run the registry.

7. The Nairobi Cancer Registry appreciates the continued support and participation of hospital administrations, clinicians and laboratories that provide detailed data required for a population-based cancer registry. In this report we would like to acknowledge all the health institutions (Appendix C) that submit data to NCR. We urge those facilities that diagnose new cancer cases and are not participating, to contact NCR so that all cases are captured and reported.

8. We wish to extend our appreciation to all cancer registrars listed in Appendix A. The registrars have worked hard to abstract the data as required by NCR despite the various challenges encountered. Special thanks to Dr Alice Musibi for her input in preparation and publishing of this report.

9. Finally we thank Dr Russel White of Tenwek Hospital in Bomet - Kenya who assisted in establishing the link with Dr Sanford Dawsey of Cancer Prevention Studies Branch, US -National Cancer Institute. This was the genesis that lead to the establishment of Nairobi Cancer Registry.



## FOREWORD

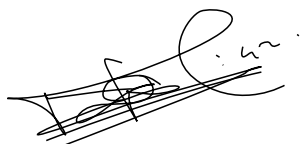
This is the first population-based cancer incidence data publication to be produced by Nairobi Cancer Registry for Nairobi province and its environs. Information in this report is essential for mapping out efforts to reduce the burden of cancer in our country. Users of cancer registry data and services include researchers and institutions involved in the planning of cancer management services, identification of risk factors for use in cancer control, development of screening and prevention programs together with diagnostic and treatment services.

The Nairobi Cancer Registry had its humble beginnings in the year 2001. This was as a result of my efforts together with the support from the Director, Centre for Clinical Research, Dr. Monique Wasunna and the Director KEMRI, Dr. Davy Koech. The National Cancer Institute, Maryland, USA arranged and funded my initial training in Atlanta, Georgia. It also provided funds to start and run the registry for a period of three years. The Unit of Descriptive Epidemiology of International Agency for Research on Cancer (IARC) headed then by Dr. Parkin, supported us at the outset by training staff both locally and internationally. Dr. Parkin visited our registry in the year 2002 and made available, funds to purchase a personal computer for data entry. He also gave us a lot of moral support as well as technical advice.

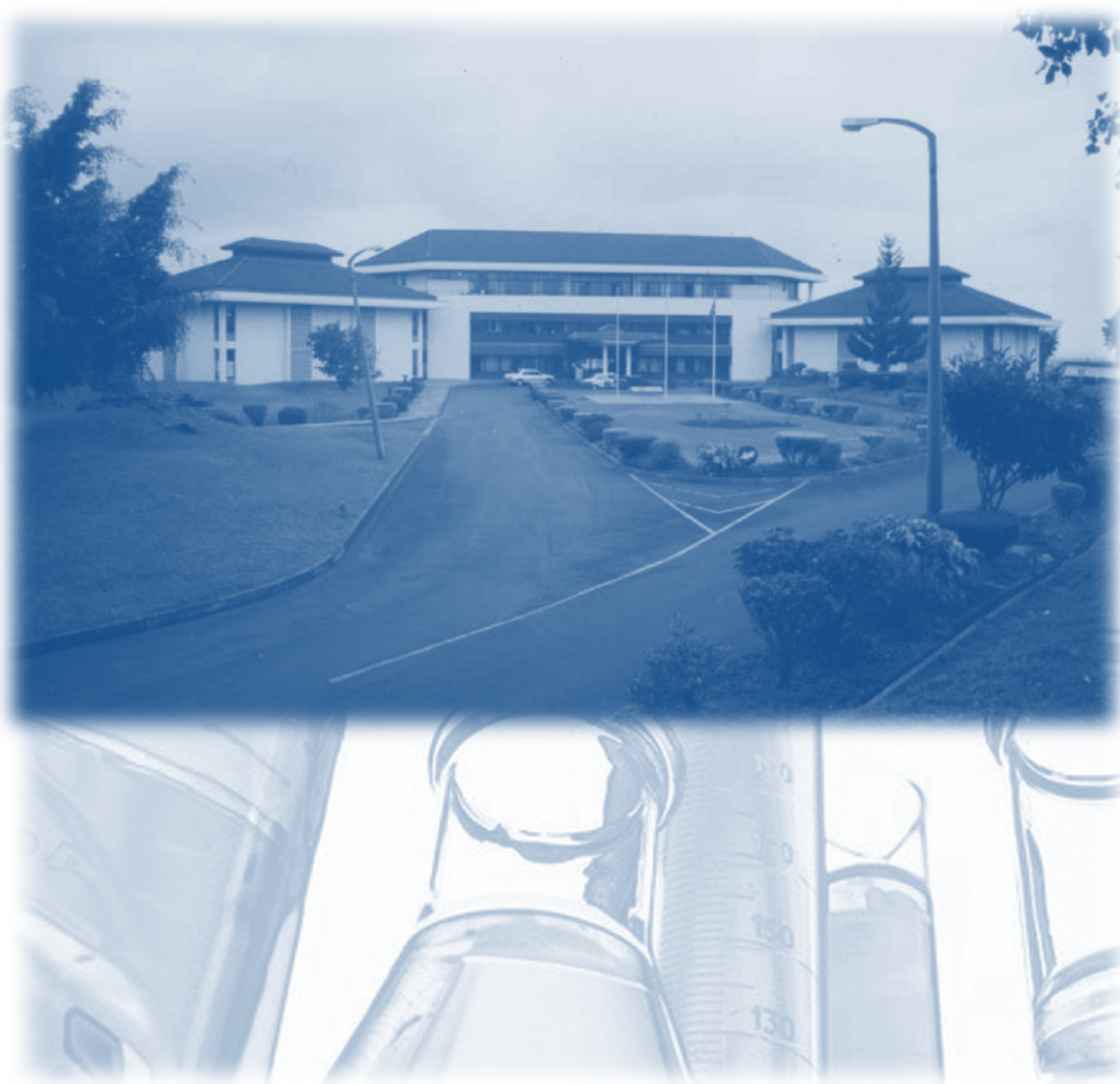
Together with staff from KEMRI, we have been able to get the Cancer Registry running despite many challenges. I wish to acknowledge the cooperation and enormous support from KEMRI, Ministry of Health and World Health Organization – Kenya Country Office. Nairobi Cancer Registry will remain committed to providing quality data and services focusing on improvement of case ascertainment, patient and tumour linkage together with improvement of editing processes through training and application of quality control procedures. Throughout the data collection and analysis process, every effort is made to ensure confidentiality of both patient and health-care facility information.

This being an inaugural report, it is my intention to present the data in a manner that will be easily understood and appreciated by all readers. We welcome and indeed encourage comments and suggestions from the readership that will enable us produce well-presented reports in future.

Thank you.



Dr. Mutuma G. Z.  
Director, Nairobi Cancer Registry  
Head, Pathology & Oncology Research Unit  
KEMRI

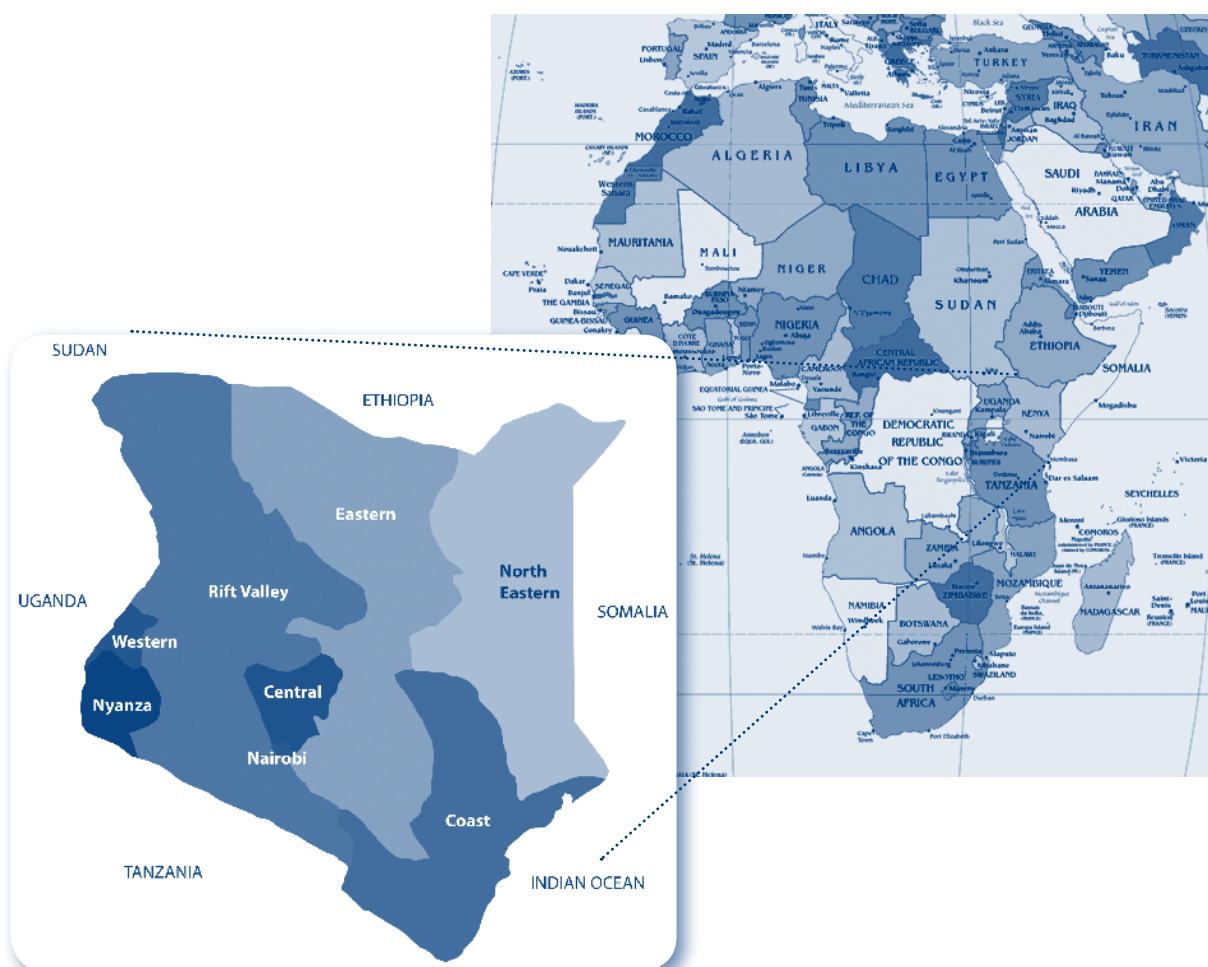


Cover picture: Kenya Medical Research Institute (KEMRI), Headquarters

# **PART I**

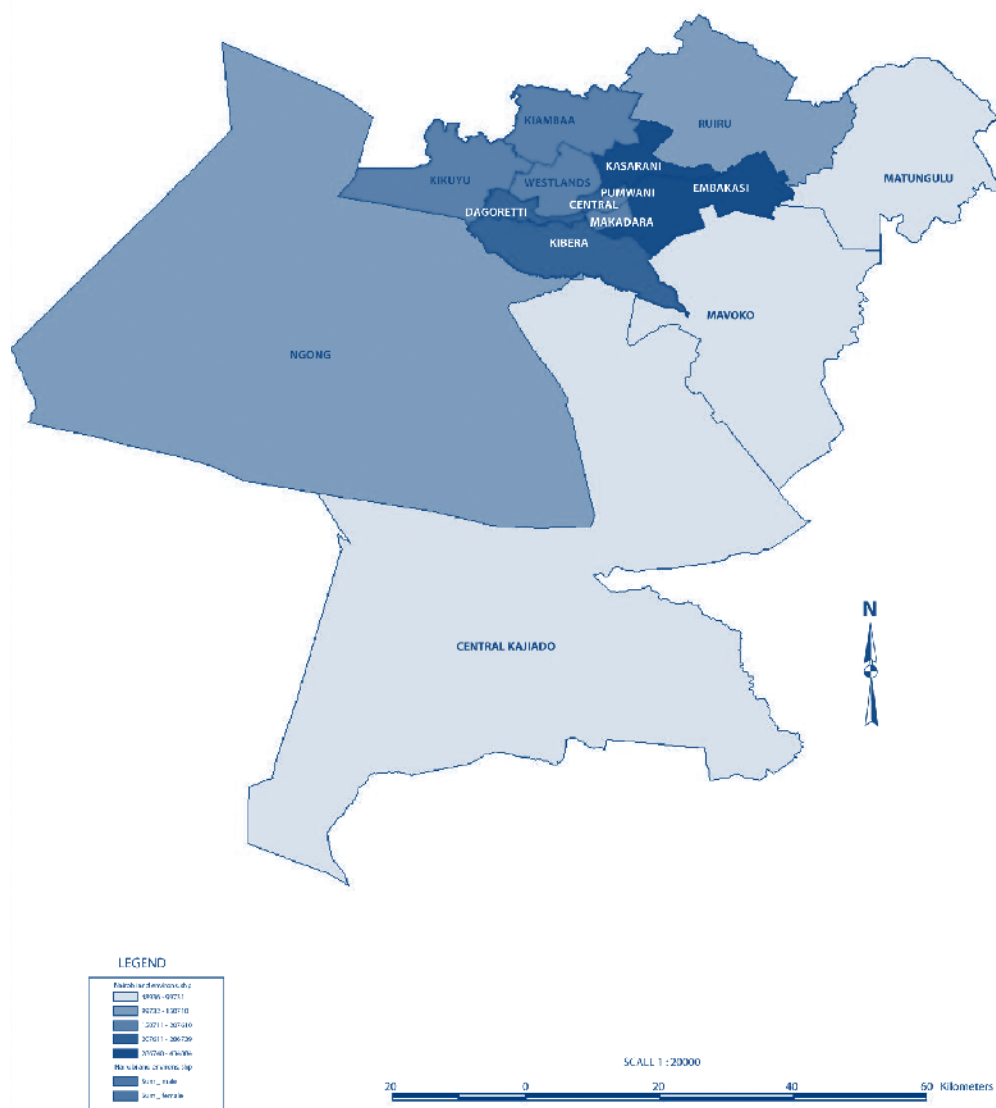
## **OVERVIEW OF THE REGISTRY**

## POSITION AND PROVINCES OF KENYA



## Map of Nairobi and Adjoining Divisions

MAP SHOWING POPULATION DISTRIBUTION OF NAIROBI AND ITS ENVIRONS



Source: Central Bureau of Statistics

## BACKGROUND ON NAIROBI COSMOPOLITAN

Kenya is located in the East African region and has a coastline along the Indian Ocean. The population of Kenya is made up of about 43 ethnic groups broadly divided into Bantus, Nilotics and Cushites. The current population is approximately 30 million.

Nairobi is the capital city of Kenya, with its current population estimated at about 3.5 million (2005). Although the city is a large cosmopolitan center located in the Central highlands predominantly occupied by Bantus, its population is made up of most of the ethnic groups in the country. Unlike the other provincial cities and towns in Kenya, the population of the city of Nairobi is a fairly good representation of the general population of Kenya.

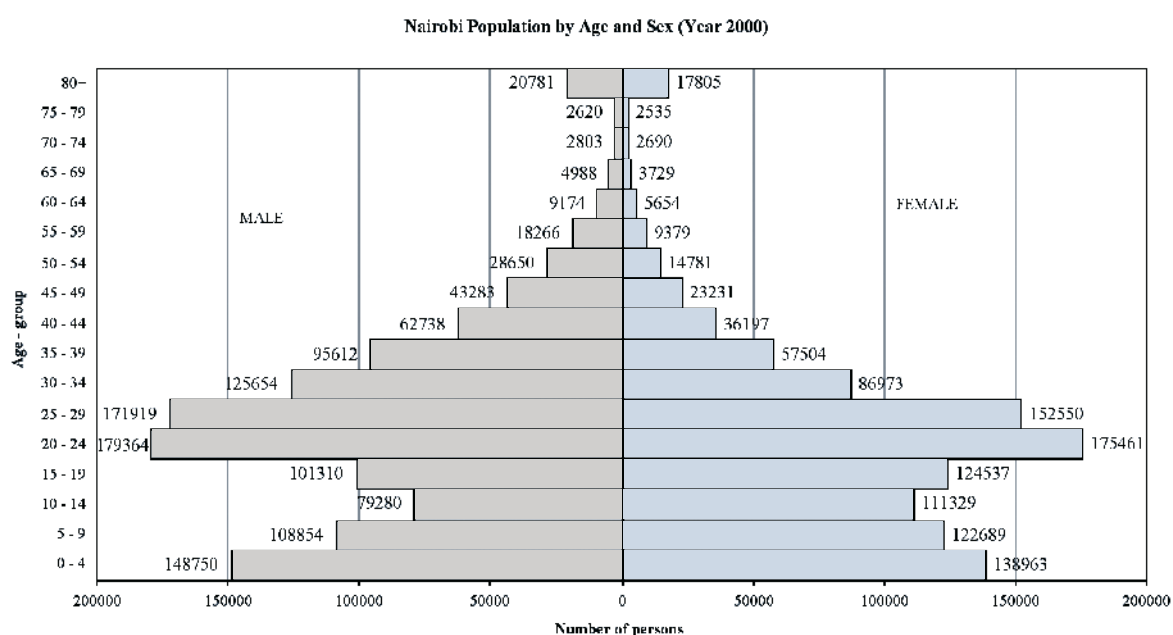


Figure 1. Population Pyramid for Nairobi - 2000 projections

Table 1. Population Distribution for Nairobi by Age and Sex

AGE	2000		2001		2002	
	MALES	FEMALES	MALES	FEMALES	MALES	FEMALES
0 - 4	148750	138963	154723	142762	160030	147290
5 - 9	108854	122689	113674	126460	118035	130912
10 - 14	79280	111329	83163	115235	86747	119804
15 - 19	101310	124537	105377	129400	108989	135047
20 - 24	179364	175461	184655	182778	189019	191242
25 - 29	171919	152550	177067	159138	181331	166743
30 - 34	125654	86973	130311	91066	134380	95770
35 - 39	95612	57504	99293	60369	102535	63653
40 - 44	62738	36197	64848	38033	66651	40136
45 - 49	43283	23231	44707	24461	45916	25866
50 - 54	28650	14781	29732	15622	30680	16581
55 - 59	18266	9379	18999	9909	19650	10513
60 - 64	9174	5654	9541	5878	9867	6138
65 - 69	4988	3729	5205	3857	5402	4006
70 - 74	2803	2690	2950	2800	3086	2928
75 - 79	2620	2535	2774	2707	2919	2902
80+	20781	17805	22594	19647	24376	21704
Unk.Age						
<b>Total</b>	<b>1,204,046</b>	<b>1,086,007</b>	<b>1,249,613</b>	<b>1,130,122</b>	<b>1,289,613</b>	<b>1,181,235</b>

Source: Projections from 1999 Kenya Population Census – Central Bureau of Statistics

TABLE: POPULATION BY AGE-GROUP AND SEX FOR ALL THE DIVISIONS ADJOINING NAIROBI PROVINCE

Age-Group	KIAMBAA			KIKUYU			RUIRU			MATUNGULU			MAVOKO			NGONG			KAJIADO CENTRAL		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 - 4	12,239	12,287	24,526	12,310	11,985	24,295	10,289	9,862	20,151	7,162	6,984	14,146	3,096	2,926	6,022	10,751	10,573	21,324	5,596	5,483	11,079
5 - 9	10,175	10,107	20,282	10,579	10,277	20,856	7,869	8,014	15,883	6,935	6,457	13,392	2,323	2,317	4,640	9,308	8,981	18,289	5,043	4,708	9,751
10 - 14	10,221	10,184	20,405	10,652	10,812	21,464	7,320	7,802	15,122	7,454	7,216	14,670	2,202	2,200	4,402	8,016	8,215	16,231	4,264	3,805	8,069
15 - 19	9,979	11,079	21,058	10,015	11,712	21,727	6,774	8,584	15,358	6,832	5,912	12,744	2,242	2,564	4,806	7,517	8,705	16,222	3,637	3,673	7,310
20 - 24	10,886	12,139	23,025	10,927	12,555	23,482	10,567	11,376	21,943	4,242	4,599	8,841	4,054	3,545	7,599	8,949	9,728	18,677	3,577	3,853	7,430
25 - 29	10,838	10,605	21,443	10,470	10,725	21,195	10,874	9,205	20,079	3,224	3,667	6,891	3,764	2,681	6,445	8,799	7,828	16,627	3,234	3,289	6,523
30 - 34	8,519	7,130	15,649	8,573	7,919	16,492	7,951	5,587	13,538	2,385	2,768	5,153	2,699	1,552	4,251	6,701	5,223	11,924	2,412	2,025	4,437
35 - 39	6,192	5,211	11,403	6,376	5,689	12,065	5,775	3,993	9,768	2,222	2,675	4,897	2,006	1,161	3,167	4,707	3,856	8,563	1,757	1,561	3,318
40 - 44	3,891	3,233	7,124	4,011	3,569	7,580	3,384	2,203	5,587	1,823	2,169	3,992	1,321	644	1,965	3,058	2,451	5,509	1,129	991	2,120
45 - 49	3,032	2,658	5,690	3,321	2,930	6,251	2,536	1,624	4,160	1,562	1,785	3,347	1,018	475	1,493	2,336	1,833	4,169	865	756	1,621
50 - 54	2,681	2,172	4,853	2,903	2,555	5,458	1,770	1,130	2,900	1,207	1,378	2,585	715	266	981	1,709	1,343	3,052	613	547	1,160
55 - 59	1,516	1,505	3,021	1,689	1,636	3,325	854	697	1,551	802	1,009	1,811	389	170	559	1,011	833	1,844	444	392	836
60 - 64	1,116	1,262	2,378	1,206	1,389	2,595	575	464	1,039	821	930	1,751	260	148	408	772	797	1,569	312	318	630
65 - 69	783	876	1,659	803	1,032	1,835	327	332	659	532	680	1,212	160	93	253	479	490	969	204	236	440
70 - 74	589	818	1,407	650	869	1,519	280	321	601	581	734	1,315	160	106	266	434	468	902	214	234	448
75 - 79	419	592	1,011	504	732	1,236	183	219	402	412	413	825	105	52	157	282	290	572	189	135	324
80 - 84	221	418	639	309	509	818	79	131	210	191	298	489	33	31	64	146	175	321	61	83	144
85+	412	724	1,136	461	720	1,181	125	154	279	333	401	734	55	38	93	219	293	512	112	140	252
<b>TOTAL</b>	<b>93,709</b>	<b>93,000</b>	<b>186,709</b>	<b>95,759</b>	<b>97,615</b>	<b>193,374</b>	<b>77,532</b>	<b>71,698</b>	<b>149,230</b>	<b>48,720</b>	<b>50,075</b>	<b>98,795</b>	<b>26,602</b>	<b>20,969</b>	<b>47,571</b>	<b>75,194</b>	<b>72,082</b>	<b>147,276</b>	<b>33,663</b>	<b>32,229</b>	<b>65,892</b>

Source: Central Bureau of Statistics - 1999 Kenya population census



## INTRODUCTION

Cancer is a group of diseases characterized by uncontrolled growth and proliferation of abnormal cells. It is a multifaceted disease known to be caused by both internal and external risk factors including Tobacco, alcohol, numerous chemical substances, radiation, and some infectious organisms. Internal factors, which may predispose one to cancer include, inherited genetic mutations, hormone imbalances, immune-disorder conditions and some metabolic disorders. These causative factors may act together and/or in sequence to trigger or promote the development of cancer after varying periods of time for different types of cancers.

The occurrence of cancer in developing countries is often neglected as a public health problem of major concern because of the occurrence of many infectious conditions, which tend to overwhelm the health-care service sector. This is despite the fact that there has been in the recent past, a notable increase of non-communicable diseases including cancer in the developing countries. Cancer treatment is expensive especially for most African countries and is usually administered through various methods, which include surgery, radiation, chemotherapy, hormonal therapy and immunotherapy, singly or in a variety of combinations.

Cancer registries routinely provide quality data on the incidence and prevalence of cancer in a population, common types of cancer reported and their trends. This allows for effective planning of prevention measures, which include screening programmes and cost effective cancer management. Cancer registry data collected from a given population can also be used in research programmes and for comparisons with other populations in different regions of the world. The

Nairobi Cancer Registry provides data and information on cancer trends in Nairobi city. However, because of the inadequacy or lack of cancer treatment facilities in areas other than Nairobi, a significant part of the cancer registry data comes from patients living outside Nairobi.

Cases of cancer in Kenya have been reported by practicing physicians to be on the rise, a fact reflected by Nairobi Cancer Registry preliminary reports. It is noteworthy to mention that most of the cancer patients seen in Kenya are diagnosed with late stages when treatment is difficult if not impossible. This trend is obviously associated with prolonged morbidity and increased mortality from many preventable and manageable cancers. A few examples include: hepatoma which is preventable through Hepatitis B vaccination; better management of cervical cancer through screening which allows for early detection and timely treatment; lung cancer which may be prevented by avoiding risk factors such as cigarette smoking, Kaposi's sarcoma through reduced transmission of HIV and early treatment of those infected. In order to improve on cancer management, suggestions have been made to have it included in the list of notifiable conditions. This would undoubtedly make a significant contribution to efforts in reducing the burden of cancer and improving outcome.

The rising cases of cancer and the need to control and prevent them, was the motivating factor behind the establishment of Nairobi Cancer Registry (NCR) in 2001 at Kenya Medical Research Institute, Nairobi. However, although registry work has progressed well since 2001, there have been challenging opportunities to improve on the systems used to collect quality data. Apart from hospitals and nursing homes, coverage of all other health-care facilities that are

likely sources of cancer data is yet to be fully achieved. This shortfall in the coverage is mainly due to the challenges encountered by registrars during their case-finding visits as well as setting up of cancer registration processes in these facilities. In order to ensure adequate coverage, efforts are being made to collect data from all designated health-care facilities within Nairobi and its environs.

### HISTORY OF NAIROBI CANCER REGISTRY

Nairobi Cancer Registry was established in the year 2001 after consultations between the National Cancer Institute (NCI) - Office of International Affairs, International Agency for Research on Cancer (IARC), MOH and KEMRI. It is situated at the Centre for Clinical Research (CCR), KEMRI Headquarters, Nairobi.

The registry started with a skeleton staff comprising Dr. Mutuma G.Z., a consultant pathologist assisted by Mrs. Ann Korir as the supervisor and a data entry clerk, Mrs. Catherine Ogeto. Staff from various institutions were later recruited and trained as cancer registrars to carry out cancer case abstraction and registration. Their primary duty in the registry work is to abstract cases from various sources and submit them to the cancer registry office at KEMRI.

The cancer registrars were selected from staff already working in medical records service, laboratory and clinical services. The registrars were recruited from Kenya Medical Research Institute (KEMRI), Ministry of Health (MOH), Kenyatta National Hospital (KNH), University of Nairobi and from a few private hospitals in Nairobi. Training of the registrars was done by KEMRI in collaboration with IARC, World Health Organization (WHO), MOH and the National Cancer Institute (NCI) of the United States of America (USA).

The trained registrars started collecting data on all newly diagnosed cancer cases from the year 2000 in their respective hospitals, laboratories and radiotherapy units. The data was submitted to the registry supervisor for verification and subsequent entry into a computer. The use of CanReg4 software, has allowed for checks on accuracy, duplication and satisfactory completion of the submitted cancer abstract forms.

### Vision

To meet the highest attainable international standards in cancer registration, surveillance and control.

### Mission

To register all cancer cases reported in various health institutions in Nairobi and to avail the data and/or information gathered for policy development and support in cancer research, treatment, control, prevention, and surveillance.

### Objectives

1. To establish and maintain, a population-based cancer registry for Nairobi cosmopolitan.
2. To develop a National Cancer Registry through the establishment of regional registries.
3. To determine the burden and trends of cancer occurrence in Kenya using Nairobi as a representative.
4. To disseminate information on patterns of cancer occurrence in Kenya and participate in National Cancer Control Programmes.
5. To provide quality and reliable cancer data to the Ministry of Health and other health-care providers, educators and planners for effective service delivery.
6. To avail cancer data for research in epidemiological studies, clinical

management, prevention and other related programmes.

7. To liaise with other local and international cancer organizations on cancer research, prevention, control and surveillance.
8. To advocate for policy frameworks that provide support and contribute to effective cancer control and prevention programmes.

#### HUMAN RESOURCES DEVELOPMENT

Members of staff of the Nairobi Cancer Registry have benefited from various trainings relevant to registration and reporting of cancer cases. This has been made possible through training sessions both locally and internationally. Listed below are some of the local and international trainings that the members have participated in.

##### International trainings:

1. Dr. Mutuma G. Zambezi - Director
  - i. National Cancer Institute, Maryland, USA - Summer Curriculum in Cancer Prevention, Control and Surveillance, July 5 to August 4, 2000.
  - ii. Emory University – Atlanta, Georgia USA - Principles and Practices of Cancer Registration, Surveillance and Control, August 14 through 18, 2000.
2. Mrs. Anne Rugutt-Korir - Supervisor
  - i. Zimbabwe National Cancer Registry, Harare. – In-service training on Cancer Registration and Supervision, May 26 to June 1, 2001.
  - ii. IARC Summer school, Lyon, France - Cancer Registration and Applications in Epidemiology; attachment to Thames Cancer Registry, United Kingdom. May 26 to June 20, 2003.
  - iii. Emory University, Rollins School of Public Health, Maryland, U.S.A. Principles and Practices of Cancer Prevention

and Control with attachment to SEER Cancer Registry, July 5 to August 4, 2003.

3. Mrs. Catherine M. Ogeto - Data Entry Clerk
  - i. IARC Summer School in Lyon, France. Cancer Registration and Applications in Epidemiology. May 26 to June 13, 2005.
4. Mrs. Eunika Mbela - Registrar
  - i. Course on Cancer Registration held in Johannesburg, South Africa from 14 to 22 March 2006.

##### Local Trainings:

1. Course on Cancer Registration Techniques, April 23 to 27, 2001.  
This training was held at KEMRI Headquarters, Nairobi and was sponsored by IARC. The facilitators were from IARC, Ms Sharon Whelan and Andy Cooke. The main objective of this training was to initiate cancer registry work in Nairobi, hence equip participants with necessary skills and techniques to extract and register Cancer Cases. A total of twenty (20) participants from Swaziland, Malawi, Zimbabwe, Uganda, Tanzania together with local participants from Eldoret, Ministry of Health Headquarters, Kenyatta National Hospital, The Nairobi Hospital and KEMRI were trained.
2. Course on Cancer Registration Techniques, May 23 and 24, 2002.  
This two-day training was held at KEMRI and sponsored by WHO. Participants were invited from all provincial hospitals, some private hospitals and a few District hospitals in the country. This course aimed at equipping the registrars with the necessary skills to undertake cancer registration in the provinces.

The facilitators were Dr. Mutuma G.Z, Dr. Muchiri Lucy, Mrs. Anne Korir and Mr. Baltazar. The opening ceremony was presided over by Dr. Mutie, the head NCD, WHO (Kenya). In attendance were the Director and Deputy Director – KEMRI, Dr. Koech and Mr. Ngumo respectively.

included local participants from all the provinces in Kenya, and participants from Nigeria, Tanzania, Algeria, Guinea, Gambia and Uganda. The facilitators were representatives of NCI, Prof. John Young Jr. and Mr. Steven Roffers both from Emory University, Rollins School of Public Health, Atlanta Georgia USA.

3. Principles and Practices of Cancer Registration, Surveillance and Control, 16 to 20 September 2002.

This course was held at KEMRI Headquarters, Nairobi and was sponsored by the National Cancer Institute, Maryland, USA. A total of 38 participants were trained. They

# **PART II**

## **MATERIALS AND METHODS**

## DATA ABSTRACTION

From its humble beginning in 1899 as a depot for railway construction materials for the Uganda Railway Company, Nairobi has grown to be the capital city of Kenya with an estimated population of 3.5 million inhabitants. The City is the seat of Government and the hub of political and socio-economic activities in the country. Most training and research institutions as well as private patient-care facilities in the country are situated in Nairobi.

Kenyatta National Hospital (KNH) is both a referral and a teaching hospital for all cadres of health-care workers. The hospital serves approximately two million patients from Kenya and the greater East African region. Besides KNH, there are other major private hospitals and a number of nursing homes.

It is from these health institutions that Nairobi Cancer Registry recruited personnel who underwent training in data abstraction and registration of cancer cases. Personnel from KEMRI as well as Ministry of Health make scheduled visits to other hospitals, nursing homes, medical laboratories and diagnostic centres to extract information on cancer from their health records.

Cancer abstract forms are completed for each new case of a primary tumor reported. For metastatic or secondary tumors, registrars are required to give an indication of the primary site. In cases where the primary site is not mentioned, then the topography code is indicated as 'unknown'. If a patient has more than one cancer, each of them is registered separately as long as it is not a metastasis and this is referred to as 'multiple primaries'. With the use of CanReg4 software, a number of checks are carried out to determine whether the cancer is a duplicate case or a multiple primary.

When a patient is found to have visited more than one facility for treatment of the same tumour, the records are compared and merged. The facility with the earliest date of incidence is retained as first source of registration and the other as a second source.

Once a case has been registered, a mark or sticker with initials NCR (Nairobi Cancer Registry) and the date of abstraction is indicated or affixed onto the patient's medical record to ensure future duplication of the same case-record does not occur. A sample cancer abstract form used for capturing data from hospitals or health facilities is appended at the end of this report.

## DATA VARIABLES

The number of assessment variables used by NCR is based on the international standard variables for all cancer registries. There are various formats that may be used. NCR uses standards provided by the International Agency for Research on Cancer (IARC).

They include:

1. Patient Details: First name, given/maiden name, last name (surname), ID number, age/date of birth, gender, concurrent illness, current residence, place (district) of birth, religion and tribe/ethnicity.
2. Tumour: Incidence date, basis of diagnosis, primary site/topography (ICD-O) code, histology/morphology (ICD-O) code, behaviour, grade and stage at diagnosis (TNM).
3. Treatment(s): Initial and subsequent treatments – surgery, radiotherapy, chemotherapy, hormone therapy & symptomatic.
4. Sources of data: Hospital/laboratory name, hospital number, laboratory report number, date of abstraction
5. Follow-up: Patient status (alive or dead)

as at date of incidence, last date of contact with physician/health-care provider or if dead - date of death and cause of death, hospice number.

A complete NCR abstract form is appended to this report for more details.

## SOURCES OF INFORMATION

The following health institutions currently submit their data to NCR:

### i). Government and Private Hospitals

Registrars collect data from Medical Records Service areas. They use disease index cards and patient-care service registers to identify cancer cases in both in-patient and out-patient departments. However a few hospitals have established computer based disease indices which are also used to identify cancer cases.

### ii). Medical Laboratories

Most of the said government and private hospitals have various specialty laboratories including histology, haematology and cytology. NCR staff visit laboratories that are likely sources of cancer incidence data.

### iii). Radiotherapy Treatment Centers

The radiotherapy units at Kenyatta National Hospital and The Nairobi Hospital - MITC attend to both old and new cancer patients who visit these facilities for radiotherapy services. NCR registrars regularly visit these units and carry out active case abstraction.

### iv). The Nairobi Hospice

The Nairobi Hospice submits data to NCR and in most cases, these are patients referred from KNH and other health-care facilities within and outside Nairobi. The hospice gives up-to-date information on patients' status. This is important for follow up and case assessment purposes.

### v). Vital Statistics - Registrar of Births & Deaths (Death Certificates Office)

This year NCR established a link with Vital Statistics, to access cancer-specific mortality data from the Registrar of Births & Deaths Office. The registrations of cases from death certificates began this year and were therefore not ready in time to be included in this report. In our subsequent reports, we will include cancer-mortality statistics. Data from this source will also be of vital importance in preparing the set-up for cancer survival studies.

NCR intends to widen its data source-base to include:

1. Private clinics - surgical & oncology clinics.
2. All laboratories – histology, cytology, and haematology laboratories.
3. All Medical imaging and diagnostic facilities.
4. Day surgery facilities

A list of all collaborating hospitals, laboratories and other health-care service facilities is appended at the end of this report.

## DATA MANAGEMENT (STORAGE AND RETRIEVAL)

Data is managed using stand-alone computers at the registry and it is anticipated that a local area network will be established to allow staff to work on the registry database simultaneously. It is expected that a simple system of receiving abstract forms electronically from health facilities with Internet access, will be put in place in future. This is intended to ease and speed up submission of abstract forms to the registry. Data is primarily managed through use of CanReg4 software, which also allows for statistical analysis.

Abstract forms submitted from health-care



facilities are kept in box files and shelved in straight numerical order in cabinets. In order to ensure good flow of data/information between the registry and health-care facilities, all cancer registrars are strictly bound by the professional code of observing confidentiality of patient information.

Information users interested in NCR data and information services are required to obtain authority for access to data/information from the Registry Director and are mutually bound to acknowledge the registry in their data usage. In order to maintain confidentiality of facility and patient information, inclusion of facility and patient identification details is restricted.

### COMPUTER APPLICATIONS

The Registry purchased two personal computers that are used to handle all the registry work.

The registry started using CanReg3, a computer software provided by IARC for data entry and processing, and has now been upgraded to the new Windows-based version - CanReg4. The system automatically excludes non-malignant cases in analysis.

The registry makes an effort to collect all cancer cases reported among the residents of Nairobi cosmopolitan. A resident of Nairobi is defined as any individual who lives or works in Nairobi. It should be noted that some of the people who work in Nairobi live in areas that are outside the administrative boundary of Nairobi City. While the quality of data on patient residence is still being studied, there are patients who have been referred from other hospitals for management in Nairobi. For this reason we have not published the incidence rates in this report as consultations are still ongoing with regard to which population the registry should adopt.

### CODING & CLASSIFICATION

The registry uses the International Classification of Diseases for Oncology (ICD-O) third edition, for coding the primary site, histology, behaviour, and grade of cancer. Demographic data is captured using a format, which was prepared for coding residence, place of birth, ethnic group (tribe), hospital/facility of diagnosis along with the other common socio-demographic variables.

In order to provide for international comparisons, the available data has been converted to the International Classification of Diseases and Related Health Problems (ICD – 10) format. However it is worth noting that a small number of cases coded using ICD-O could not be converted due to the inadequacy of the current version of ICD-10. Reports on the morphology of some of the most frequently occurring cancers has been included so as to present a more wholesome picture.

### RESULTS

A large part of the data has been presented in tables. These show both cumulative and single year figures for the three year period of males and females, cancer site occurrence, age distribution and percentages of the most common cancers as well as all registered cases. The ICD-10 format of presentation has been adopted, as this is the standard format that will facilitate comparisons with results from most registries in Africa and other parts of the world. In-situ tumours have been excluded from this report.

During the three-year period under review, a total of 3310 cases were registered, consisting of 1511 (45.6%) male and 1799 (54.3%) female. 213 (6.4%) of these cases were children aged 0 to 14 years.



Cancer of the oesophagus (10.0 %) was the first in single organ cancers among males. This was closely followed by cancer of the prostate (9.4%), stomach (7.1%), Kaposi sarcoma (6.9%), and liver (5.7%). The other major cancers reported among men in Nairobi were non-Hodgkins Lymphoma (4.2%), skin (3.7%) and colon 3.4% (Table 2). Head and Neck group of cancers made up a large proportion comprising 14.8% of male cancers (Table 8). This trend is reflected in the single years for the same period.

The most common cancer reported among women was breast (23.3%), followed by uterine cervix (20.0%), oesophagus (4.4%) and stomach (3.8%). The other major cancers registered among women were ovary (3.3%), skin (2.6%), Kaposi's sarcoma (2.4%), Non-Hodgkins Lymphoma (2.4%), mouth (2.3%) and rectum (2.2%). Head and neck group of cancers accounted for 7.2% of all cancers in women (Table 9).

Squamous cell carcinoma was the most common morphology type for oesophageal cancer comprising 84.6% of all reported cases. For breast cancer, infiltrating ductal carcinoma was the most common morphology type comprising 90.7%. Squamous cell carcinoma was also noted as the most common morphological type of cancer for the cervical cancer making up 86.7% of all cervical cancer cases. Kaposi sarcoma 41.0%, basal cell carcinoma 24.3% and squamous cell carcinoma 9.9% were the most common morphological types for cancer of the skin (Table 7).

## DISCUSSION

Three years is a relatively short period for comments on general trends for any disease, including cancer. However, despite the short period, data collected so far does show a consistency with reports on occurrence of various cancers from other parts of our region.

Table 1 shows the population distribution of Nairobi city as per projections from the Central Bureau of Statistic. Table 2 and 3 shows percentages of all cancers reported in the period 2000 to 2002 both cumulative and single years. The numbers registered clearly indicate that there is an element of under-reporting, which is attributed to the various challenges and limitations stated below. Lack of awareness for the pressing need for cancer prevention together with the financial constraints facing the public health sector, appear to be the overriding challenge.

The relatively high and increasing incidence of oesophageal cancer over the report period is worth noting. The cumulative figures as well as the percentages are on the rise with male to female sex ratio of approximately 2:1. Dietary changes associated with consumption of highly processed and non-traditional foodstuffs together with poor nutrition and tobacco use are likely risk factors, contributing to the rising incidence of oesophageal tumours.

Prostate cancer is ranked second (9.4%) after oesophageal cancers in single organ cancers and affects mainly men from the age of 40 years and above. The incidence notably increases with age, the highest being in the age group of 60 to 75 years which constitutes 80% of the registered cases. Local large scale screening of prostate cancer employing Prostate-Specific Antigen

(PSA) testing and digital rectal examination is yet to be realized. It is recommended that these tests be performed annually for men aged 45 years and above as a means of detecting early onset of the condition which would result in early diagnosis, leading to better management and outcome.

Kaposi sarcoma has been described as having reached epidemic proportions in sub-Saharan Africa following the onset of HIV/AIDS. It is more common in males than in females ranking third and accounting for 6.9% of male cases in the three years under surveillance.

During this period, cancers of the breast (23.3%) and cervix (20.0%) remain the highest occurring cancers affecting women. The incidence of these cancers increase with age starting as early as 20 years. Thus, this shows that among the females in our population, cancers of the breast and cervix uteri comprise about 44 % of all cancers. Although the age distribution of the occurrence of these two cancers is mainly spread between 25 years and 74, they are most common among those in the ages between 40 and 55 years (perimenopause).

Numerous studies have shown that early detection of breast cancer determines outcome and allows for better treatment options. Although data on staging has not been presented in this report, it is apparent that most of the cases are detected late when the disease is well advanced. It has been recommended that women of child-bearing age should have a clinical breast examination by a health care professional once every three years and should perform breast self-examination monthly. Similarly, a Pap smear test together with pelvic examination for women above the age of 20 years, for early detection of cervical cancer.

Cancer of the stomach ranked fourth in both sexes during this period while cancer of the liver is notably a major problem at fifth position among males. Liver cancer is mainly associated with chronic alcohol consumption and infection with hepatitis (B and C) viruses among other factors. These factors are worth noting especially among the urban populations.

Retinoblastoma is the most common tumour among children (less than 5 years of age) in both sexes. Early diagnosis and intervention is critical to the successful treatment of this condition.

## LIMITATIONS AND CHALLENGES

Although the establishment of Nairobi Cancer Registry is indeed a laudable achievement, there is still need to improve on the quality of its services. Challenges facing the cancer registry include:

1. Lack of a well-defined health-care delivery information system that provides for easy access of data on cancer patients
2. Inadequate resources to effectively collect data from all registered sources.
3. Under-reporting of cases: The current list of sources of data for the NCR is incomplete and still growing. A number of facilities are yet to start collaborating by allowing registry personnel access to cancer data. There is an increasing need to cover all sources that generate data including private clinics, nursing homes, pathology, haematology and cytology laboratories. This is a challenging task in view of the limited financial resources.
4. Completeness of cancer abstract forms: A number of abstract forms submitted to the registry are incomplete hence rendering the cases invalid. Important variables are usually left out or vaguely registered. These include variables like age, where letter 'A' is used to indicate

- Adult, missing data on residence, stage at diagnosis among others.
5. Definition of Residence: NCR covers the population of Nairobi. For NCR, a resident has been defined as anyone who works or lives in Nairobi. However, there are many people who work in Nairobi but live in the outskirts of Nairobi and would geographically not be part of Nairobi residents. For this reason, NCR has increased its area of coverage to include all the adjoining divisions surrounding Nairobi province. There are patients who come to Nairobi seeking better treatment and end up giving their relatives residential addresses in Nairobi instead of their actual place of residence. Others who live in Nairobi give their rural home as place of residence. NCR is exploring possibilities of employing the interview method of data collection to curb this hitch.
  6. Data retrieval: NCR utilizes personnel already stationed in various hospitals to fill in cancer abstract forms. Most hospitals still use manual health records filing systems whereby retrieval of information from patient files is a long and time consuming process. With the availability of funds NCR would employ staff to exclusively undertake Cancer Registry work since this is a time consuming exercise.
  7. Epidemiological measures: Given the magnitude of incomplete cases and the issue of residence, NCR has not calculated incidence rates. To a large extent, figures mentioned in this report are relative frequencies or percentages. Similarly, population figures quoted herein are based on 1999 Kenya Population Census Report. Nevertheless consultations are on-going on the possibility of using population projection figures to calculate incidence rates in our future reports.
  8. Use of ill-defined terms that do not carry a clear and common understanding of data to all users.
  9. Lack of minimum datasets that should be used in reporting tumours. Staging/TNM is often not reported by pathologists.

## CONCLUSION

Data on cancer presented in this report clearly shows that cancer is a common disease among Kenyans. This calls for more research and clear policy guidelines in cancer prevention and control.

Since cancer prevention is one of our primary objectives, we have a responsibility to advise people on the benefit of simple lifestyle changes as a means of reducing the risk of cancer. Primary public health education will also help people to spot symptoms associated with cancer and to encourage them to seek medical advice in good time hence early diagnosis and better treatment of the disease.

In order to reduce the burden of cancer in our population, which is already strained by the prevalence of other infectious diseases, good public health policies that support cancer prevention & control activities are necessary. As we endeavor in our effort to provide quality data and information services, a review of how the current public health policy guidelines bears on these efforts and other piecemeal activities in cancer prevention and control, should be made without any further delay.

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## ACRONYMS

NOS	-	Not Otherwise Specified
CanReg	-	Cancer Registration
CCR	-	Centre for Clinical Research
HIV	-	Human Immunodeficiency Virus
IARC	-	International Agency for Research on Cancer
ICD-10	-	International Classification of Diseases – 10th Edition.
ICD-O	-	International Classification of Diseases for Oncology – Third Edition
JICA	-	Japan International Cooperation Agency
KEMRI	-	Kenya Medical Research Institute
KNH	-	Kenyatta National Hospital
MOH	-	Ministry of Health
NCI	-	National Cancer Institute
NCR	-	Nairobi Cancer Registry
USA	-	United States of America
WHO	-	World Health Organization
NASCOP	-	National Aids & STD Control Program
NCD	-	Non-Communicable Diseases

# **PART III**

## **OVERVIEW OF CANCER INCIDENCE**

### MOST COMMON CANCERS

During the report period, breast cancer was the most frequent cancer among females, closely followed by cancer of the cervix uteri. On the other hand, cancers of the head & neck followed by oesophagus and prostate, lead in frequency among males. The pattern of most common cancers varied slightly when one compares single years in the report period.

However it is worth noting that cancers of the breast and cervix uteri comprise a large proportion (43.3%) of all reported cases.

Most Common Cancers for all Cases Registered (2000 - 2002)

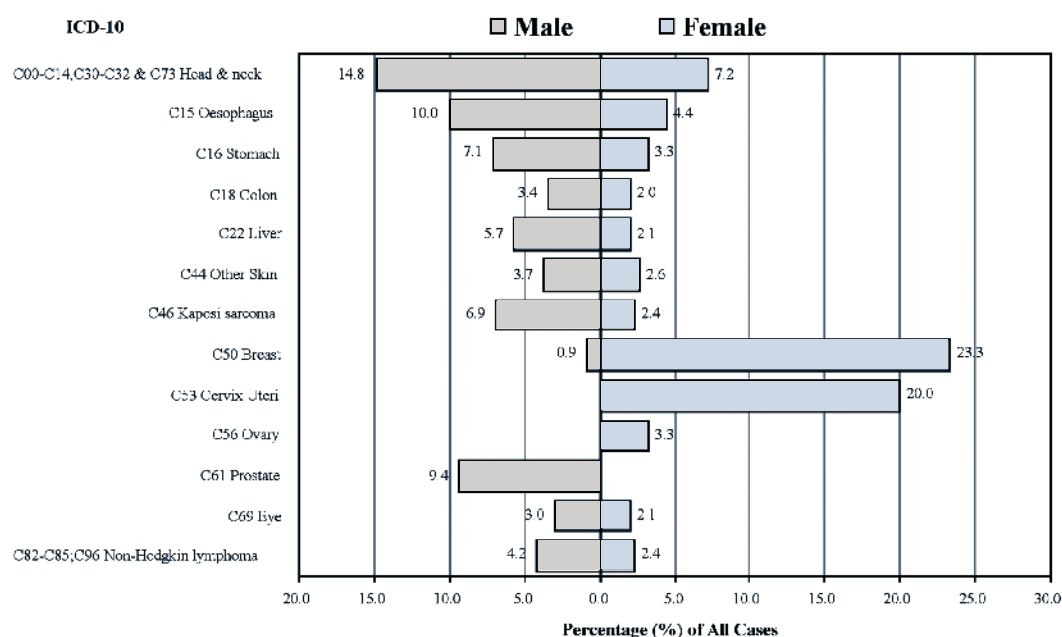


Figure 2. Most Common Cancers for the period 2000-2002

### Most Common Cancers in the Year 2000

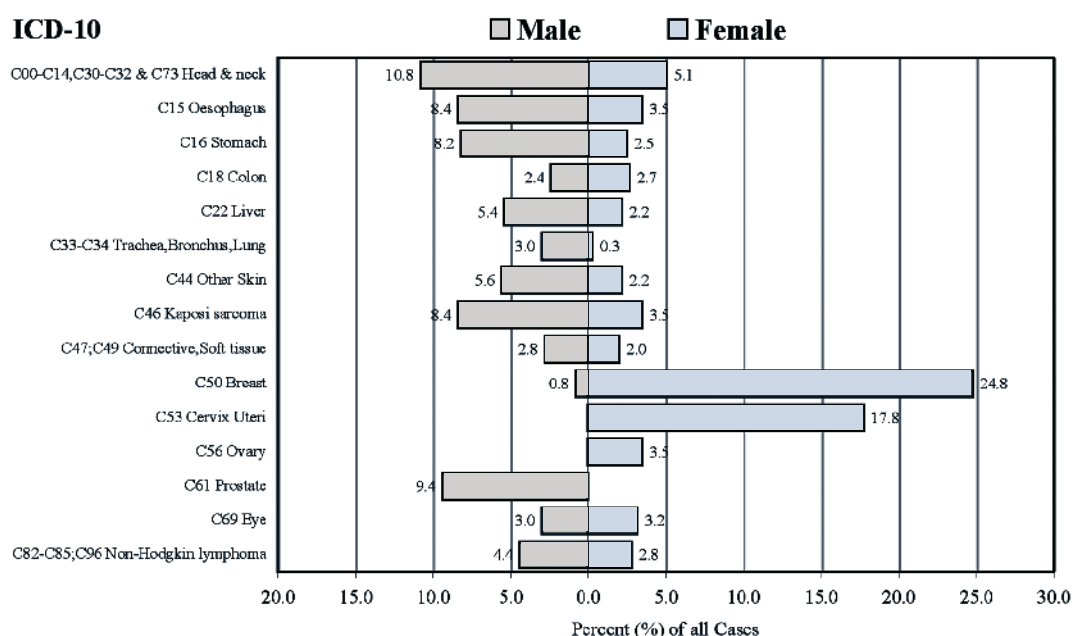


Figure 3. Most Common Cancers in the Year 2000

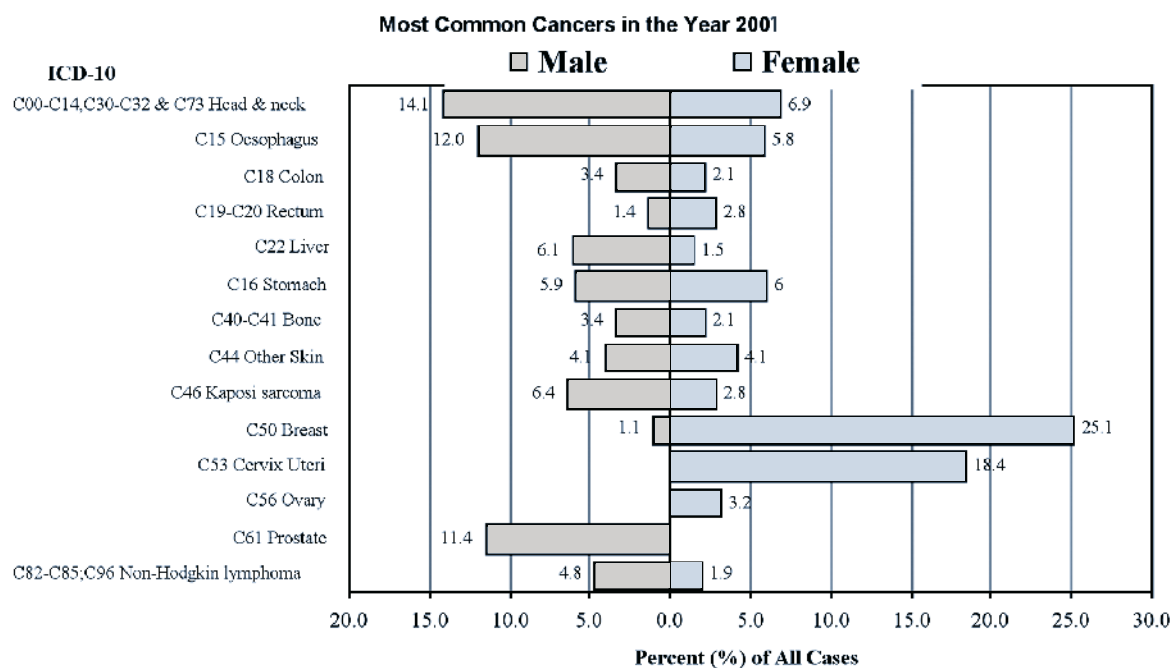


Figure 4. Most Common Cancers in the Year 2001

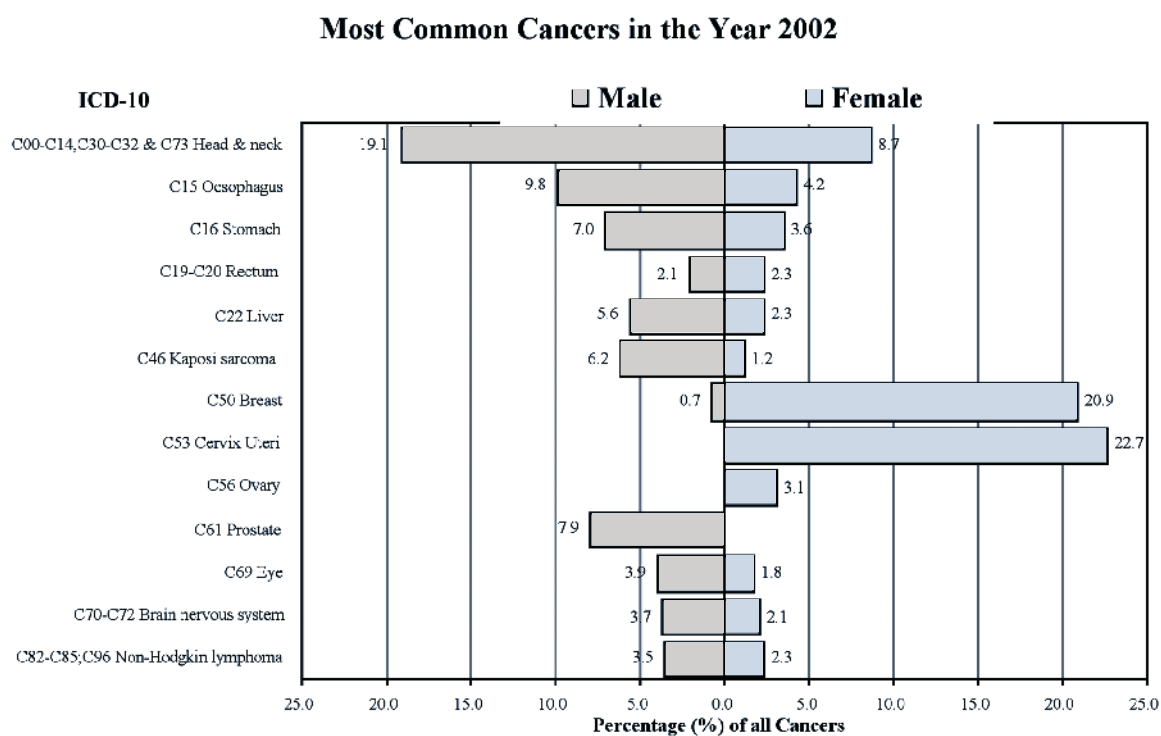


Figure 5. Most Common Cancers in the Year 2002

**Table 2. Cumulative Totals of Cancer Cases by ICD-10 Group and Single Years - Male**

ICD (10)	Primary Site	2000	2001	2002	Site Total
C00	Lip	2	0	0	2
C01-C02	Tongue	4	10	23	37
C03-C06	Mouth	14	18	18	50
C07-C08	Salivary glands	0	2	2	4
C09	Tonsil	0	1	0	1
C10	Other Oropharynx	0	1	1	2
C11	Nasopharynx	10	13	21	44
C12-C13	Hypopharynx	4	1	5	10
C14	Pharynx unspec.	2	1	2	5
C15	Oesophagus	42	53	56	151
C16	Stomach	41	26	40	107
C17	Small intestine	0	3	0	3
C18	Colon	12	15	24	51
C19-C20	Rectum	10	6	12	28
C21	Anus	2	0	3	5
C22	Liver	27	27	32	86
C23-C24	Gallbladder etc.	0	0	1	1
C25	Pancreas	13	5	12	30
C30-C31	Nose, sinuses etc.	8	3	3	14
C32	Larynx	8	12	28	48
C33-C34	Trachea,Bronchus,Lung	15	11	9	35
C37-C38	Other Thoracic organs	1	1	1	3
C40-C41	Bone	12	15	14	41
C43	Melanoma of Skin	5	3	1	9
C44	Other Skin	28	18	10	56
C45	Mesothelioma	0	0	0	0
C46	Kaposi sarcoma	42	28	35	105
C47;C49	Connective,Soft tissue	14	8	18	40
C50	Breast	4	5	4	13
C51	Vulva	0	0	0	0
C52	Vagina	0	0	0	0
C53	Cervix Uteri	0	0	0	0
C54	Corpus Uteri	0	0	0	0
C55	Uterus unspec.	0	0	0	0
C56	Ovary	0	0	0	0
C57	Other Female Genital	0	0	0	0
C58	Placenta	0	0	0	0
C60	Penis	1	1	0	2
C61	Prostate	47	50	45	142
C62	Testis	2	2	2	6
C63	Other male genital	0	0	0	0
C64	Kidney	2	6	6	14
C65	Renal Pelvis	0	0	0	0
C66	Ureter	0	0	0	0
C67	Bladder	10	8	12	30
C68	Other Urinary organs	0	0	0	0
C69	Eye	15	8	22	45
C70-C72	Brain, Nervous system	10	7	21	38
C73	Thyroid	2	0	5	7
C74	Adrenal gland	1	0	0	1
C75	Other Endocrine	1	0	0	1
C81	Hodgkin disease	8	8	9	25
C82-C85;C96	Non-Hodgkin lymphoma	22	21	20	63
C88	Immunoproliferative dis.	0	0	0	0
C90	Multiple Myeloma	7	5	10	22
C91	Lymphoid Leukaemia	5	5	9	19
C92-C94	Myeloid Leukaemia	11	4	4	19
C95	Leukaemia unspec.	1	2	1	4
Other	Other & unspecified	37	27	28	92
	All sites Total	502	440	569	1511
	All sites but C44	474	422	559	1455



**Table 3. Cumulative Totals of Cancer Cases by ICD-10 Group and Single Years – Female**

ICD (10)	Primary Site	2000	2001	2002	Site Total
C00	Lip	1	0	0	1
C01-C02	Tongue	5	7	4	16
C03-C06	Mouth	8	11	23	42
C07-C08	Salivary glands	2	2	6	10
C09	Tonsil	0	0	0	0
C10	Other Oropharynx	0	0	0	0
C11	Nasopharynx	2	4	15	21
C12-C13	Hypopharynx	0	2	0	2
C14	Pharynx unspec.	1	0	1	2
C15	Oesophagus	21	27	31	79
C16	Stomach	15	28	26	69
C17	Small intestine	2	0	0	2
C18	Colon	16	10	10	36
C19-C20	Rectum	9	13	17	39
C21	Anus	4	0	1	5
C22	Liver	13	7	17	37
C23-C24	Gallbladder etc.	4	3	6	13
C25	Pancreas	9	7	9	25
C30-C31	Nose, sinuses etc.	5	2	7	14
C32	Larynx	0	0	1	1
C33-C34	Trachea,Bronchus,Lung	2	2	12	16
C37-C38	Other Thoracic organs	4	0	3	7
C40-C41	Bone	13	10	14	37
C43	Melanoma of Skin	4	3	8	15
C44	Other Skin	13	19	14	46
C45	Mesothelioma	1	1	1	3
C46	Kaposi sarcoma	21	13	9	43
C47;C49	Connective,Soft tissue	12	5	12	29
C50	Breast	149	117	153	419
C51	Vulva	2	1	5	8
C52	Vagina	1	0	2	3
C53	Cervix Uteri	107	86	166	359
C54	Corpus Uteri	7	4	3	14
C55	Uterus unspec.	4	7	5	16
C56	Ovary	21	15	23	59
C57	Other Female Genital	0	0	0	0
C58	Placenta	1	1	3	5
C60	Penis	0	0	0	0
C61	Prostate	0	0	0	0
C62	Testis	0	0	0	0
C63	Other male genital	0	0	0	0
C64	Kidney	4	4	6	14
C65	Renal Pelvis	0	0	0	0
C66	Ureter	1	0	0	1
C67	Bladder	6	3	6	15
C68	Other Urinary organs	0	0	0	0
C69	Eye	19	5	13	37
C70-C72	Brain, Nervous system	14	7	15	36
C73	Thyroid	7	4	7	18
C74	Adrenal gland	0	0	1	1
C75	Other Endocrine	0	0	3	3
C81	Hodgkin disease	10	0	5	15
C82-C85;C96	Non-Hodgkin lymphoma	17	9	17	43
C88	Immunoproliferative dis.	0	0	0	0
C90	Multiple Myeloma	4	2	6	12
C91	Lymphoid Leukaemia	7	3	11	21
C92-C94	Myeloid Leukaemia	1	4	8	13
C95	Leukaemia unspec.	5	3	2	10
Other	Other & unspecified	27	16	24	67
	All sites Total	601	467	731	1799
	All sites but C44	588	448	717	1753

### PAEDIATRIC MALIGNANCIES (2000-2002)

The total number of cancer cases reported in children (ages 0 – 14 years) was 213 accounting for 6.4% of all cases. Cancer of the eye was common in both boys and girls. Retinoblastoma is the commonest cancer for children aged 0 – 4 years.

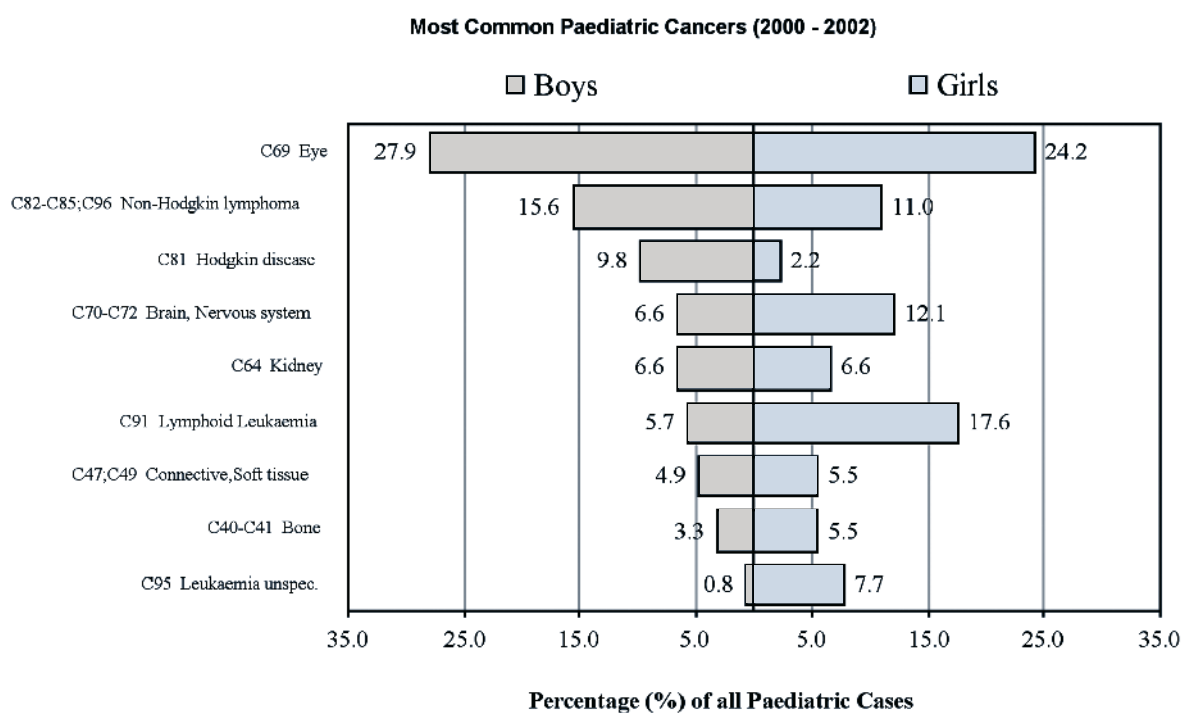


Figure 6. Most Common Paediatric Malignancies (2000 – 2002)

**Table 4. Paediatric Cancer Cases by Age-Groups: - Boys:**

ICD (10th)	Site	0- -4	5- -9	10- -14	All Ages	% of Total
C00	Lip	0	0	0	0	0.0%
C01-C02	Tongue	0	0	0	0	0.0%
C03-C06	Mouth	0	0	0	0	0.0%
C07-C08	Salivary glands	0	0	0	0	0.0%
C09	Tonsil	0	0	0	0	0.0%
C10	Other Oropharynx	0	0	0	0	0.0%
C11	Nasopharynx	0	0	0	0	0.0%
C12-C13	Hypopharynx	0	0	0	0	0.0%
C14	Pharynx unspec.	0	0	0	0	0.0%
C15	Oesophagus	0	0	0	0	0.0%
C16	Stomach	1	0	1	2	1.6%
C17	Small intestine	0	0	0	0	0.0%
C18	Colon	0	0	0	0	0.0%
C19-C20	Rectum	0	0	0	0	0.0%
C21	Anus	0	0	0	0	0.0%
C22	Liver	1	0	0	1	0.8%
C23-C24	Gallbladder etc.	0	0	0	0	0.0%
C25	Pancreas	0	0	0	0	0.0%
C30-C31	Nose, sinuses etc.	0	0	0	0	0.0%
C32	Larynx	0	0	0	0	0.0%
C33-C34	Trachea, Bronchus, Lung	0	0	0	0	0.0%
C37-C38	Other Thoracic organs	1	0	0	1	0.8%
C40-C41	Bone	0	1	3	4	3.3%
C43	Melanoma of Skin	0	0	0	0	0.0%
C44	Other Skin	0	2	1	3	2.5%
C45	Mesothelioma	0	0	0	0	0.0%
C46	Kaposi sarcoma	2	1	0	3	2.5%
C47;C49	Connective, Soft tissue	3	0	3	6	4.9%
C50	Breast	0	0	0	0	0.0%
C60	Penis	0	0	0	0	0.0%
C61	Prostate	0	0	0	0	0.0%
C62	Testis	0	0	0	0	0.0%
C63	Other male genital	0	0	0	0	0.0%
C64	Kidney	7	1	0	8	6.6%
C65	Renal Pelvis	0	0	0	0	0.0%
C66	Ureter	0	0	0	0	0.0%
C67	Bladder	1	2	0	3	2.5%
C68	Other Urinary organs	0	0	0	0	0.0%
C69	Eye	27	7	0	34	27.9%
C70-C72	Brain, Nervous system	0	3	5	8	6.6%
C73	Thyroid	0	0	0	0	0.0%
C74	Adrenal gland	0	0	0	0	0.0%
C75	Other Endocrine	0	0	0	0	0.0%
C81	Hodgkin disease	0	6	6	12	9.8%
C82-C85;C96	Non-Hodgkin lymphoma	1	12	6	19	15.6%
C88	Immunoproliferative dis.	0	0	0	0	0.0%
C90	Multiple Myeloma	1	0	1	2	1.6%
C91	Lymphoid Leukaemia	2	3	2	7	5.7%
C92-C94	Myeloid Leukaemia	1	1	1	3	2.5%
C95	Leukaemia unspec.	1	0	0	1	0.8%
Other	Other & unspecified	1	1	2	4	3.3%
All	All sites Total	50	41	31	122	100.0%
Not C44	All sites but C44	50	39	30	119	97.5%

**Table 5. Paediatric Cancer Cases by Age-Groups: - Girls:**

ICD	Site	0-	5-	10-	All	% of
(10th)		-4	-9	-14	Ages	Total
C00	Lip	0	0	0	0	0.0%
C01-C02	Tongue	0	0	0	0	0.0%
C03-C06	Mouth	0	0	0	0	0.0%
C07-C08	Salivary glands	0	0	0	0	0.0%
C09	Tonsil	0	0	0	0	0.0%
C10	Other Oropharynx	0	0	0	0	0.0%
C11	Nasopharynx	0	0	0	0	0.0%
C12-C13	Hypopharynx	0	0	0	0	0.0%
C14	Pharynx unspec.	0	0	0	0	0.0%
C15	Oesophagus	0	0	0	0	0.0%
C16	Stomach	0	0	0	0	0.0%
C17	Small intestine	0	0	0	0	0.0%
C18	Colon	0	0	0	0	0.0%
C19-C20	Rectum	0	0	0	0	0.0%
C21	Anus	0	0	0	0	0.0%
C22	Liver	0	0	0	0	0.0%
C23-C24	Gallbladder etc.	0	0	0	0	0.0%
C25	Pancreas	0	0	0	0	0.0%
C30-C31	Nose, sinuses etc.	1	0	0	1	1.1%
C32	Larynx	0	0	0	0	0.0%
C33-C34	Trachea,Bronchus,Lung	0	0	0	0	0.0%
C37-C38	Other Thoracic organs	0	0	0	0	0.0%
C40-C41	Bone	1	0	4	5	5.5%
C43	Melanoma of Skin	0	0	0	0	0.0%
C44	Other Skin	0	1	0	1	1.1%
C45	Mesothelioma	0	0	1	1	1.1%
C46	Kaposi sarcoma	0	0	0	0	0.0%
C47;C49	Connective,Soft tissue	5	0	0	5	5.5%
C50	Breast	0	0	0	0	0.0%
C51	Vulva	0	0	0	0	0.0%
C52	Vagina	0	0	0	0	0.0%
C53	Cervix Uteri	0	0	0	0	0.0%
C54	Corpus Uteri	0	0	0	0	0.0%
C55	Uterus unspec.	0	0	0	0	0.0%
C56	Ovary	0	1	0	1	1.1%
C57	Other Female Genital	0	0	0	0	0.0%
C58	Placenta	0	0	0	0	0.0%
C64	Kidney	4	2	0	6	6.6%
C65	Renal Pelvis	0	0	0	0	0.0%
C66	Ureter	0	0	0	0	0.0%
C67	Bladder	0	0	0	0	0.0%
C68	Other Urinary organs	0	0	0	0	0.0%
C69	Eye	17	4	1	22	24.2%
C70-C72	Brain, Nervous system	1	5	5	11	12.1%
C73	Thyroid	0	0	0	0	0.0%
C74	Adrenal gland	0	0	0	0	0.0%
C75	Other Endocrine	0	0	0	0	0.0%
C81	Hodgkin disease	0	0	2	2	2.2%
C82-C85;C96	Non-Hodgkin lymphoma	3	3	4	10	11.0%
C88	Immunoproliferative dis.	0	0	0	0	0.0%
C90	Multiple Myeloma	0	0	0	0	0.0%
C91	Lymphoid Leukaemia	3	7	6	16	17.6%
C92-C94	Myeloid Leukaemia	0	0	0	0	0.0%
C95	Leukaemia unspec.	2	4	1	7	7.7%
Other	Other & unspecified	2	1	0	3	3.3%
All	All sites Total	39	28	24	91	100.0%
Not C44	All sites but C44	39	27	24	90	98.9%

### BASIS OF DIAGNOSIS

The chart below shows the frequency of different methods of diagnosis for the cases registered in the three-year period. Histology is the most common method of diagnosis with 86% of all diagnoses. This indicates that there was more reliance on histology than other methods during this period. Nonetheless there were difficulties that lead to under-reporting of cases from Cytology and Haematology laboratories. This problem is now being addressed.

Table 6. Basis of Diagnosis for all Cases Registered 2000 – 2002

<b>Basis of Diagnosis</b>	<b>No. of Cases</b>	<b>% of Total</b>
Histology	2847	86.0%
Cytology/Haematology	265	8.0%
Clinical only	109	3.3%
Clin.Invest./Ult.Sound	61	1.8%
Unknown	17	0.5%
Death Certificate Only	6	0.2%
Biochem./Immuno. test	5	0.2%
<b>All Cases</b>	<b>3310</b>	<b>100.0%</b>

Table 7, below shows the distribution of the various morphological types for selected common cancers reported in the three-year period. Given that Head & Neck cancers are among the commonest cancers registered, the morphologies for this category has also been presented.

**Table 7. Number and Proportions of Morphological Types for the Most Common Cancers**  
- Male & Female Combined (1999 - 2000)

PRIMARY SITE	ICD-O CODE	MORPHOLOGY	NO. OF CASES	% OF TOTAL
C50 BREAST	8500	Infiltrating duct carcinoma, NOS %	389	90.70%
		Others	40	9.30%
		All cases	429	100.00%
C00-C14;C30-C32&C73	8070	Squamous cell carcinoma, NOS	283	71.70%
HEAD & NECK	8200	Adenoid cystic carcinoma	16	4.10%
	8140	Adenocarcinoma, NOS	14	3.60%
	9140	Kaposi sarcoma	24	6.10%
	8330	Follicular adenocarcinoma, NOS	9	2.30%
		Others	48	12.20%
		All cases	394	100.00%
C53 CERVIX	8070	Squamous cell carcinoma, NOS	305	86.70%
		Others	47	13.30%
		All cases	352	100.00%
C15 OESOPHAGUS	8070	Squamous cell carcinoma, NOS	192	84.60%
		Others	35	15.40%
		All cases	227	100.00%
C44 SKIN	9140	Kaposi sarcoma	91	41.00%
	8090	Basal cell carcinoma, NOS	54	24.30%
	8070	Squamous cell carcinoma, NOS	22	9.90%
	8720	Malignant melanoma, NOS (except juvenile mel	15	6.80%
		Others	40	18.00%
		All cases	222	100.00%
C16 STOMACH	8140	Adenocarcinoma, NOS	142	80.70%
	8070	Squamous cell carcinoma, NOS	8	4.50%
		Others	26	14.80%
		All cases	176	100.00%
C61 PROSTATE	8140	Adenocarcinoma, NOS	138	96.50%
		Others	5	3.50%
		All cases	143	100.00%
C22 LIVER	8170	Hepatocellular carcinoma, NOS	84	70.00%
	8000	Neoplasm, malignant	10	8.30%
	8160	Cholangiocarcinoma	9	7.50%

		Others	17	14.20%
		All cases	120	100.00%
C42 BLOOD	9732	Multiple myeloma	27	26.20%
	9835	Precursor cell lymphoblastic leukemia, NOS	22	21.40%
	9863	Chronic myeloid leukemia, NOS	14	13.60%
	9823	B-cell chronic lymphocytic leukemia/small ly	10	9.70%
	9861	Acute myeloid leukemia, NOS	9	8.70%
	9801	Acute leukemia, NOS	9	8.70%
		Others	12	11.70%
		All cases	103	100.00%
C18 COLON	8140	Adenocarcinoma, NOS	61	71.80%
	8010	Carcinoma, NOS	12	14.10%
		Others	12	14.10%
		All cases	85	100.00%
C61 EYE	9510	Retinoblastoma, NOS	51	62.20%
	8070	Squamous cell carcinoma, NOS	16	19.50%
		Others	15	18.30%
		All cases	82	100.00%
C77 LYMPH NODES	9591	Malignant lymphoma, non-Hodgkin, NOS	26	38.20%
	9650	Hodgkin lymphoma, NOS	16	23.50%
	9140	Kaposi sarcoma	9	13.20%
		Others	17	25.00%
		All cases	68	100.00%

## AGE AND SITE DISTRIBUTION OF CANCER

Table 8. Age and Site Distribution of Cancer Cases – Males (2000-2002)

ICD (10th)	Site	All Ages	Age 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+	% of Total
C00	Lip	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.1%
C01-C02	Tongue	37	2	0	0	0	0	0	5	3	6	6	6	2	2	1	3	6	1	2.4%
C03-C06	Mouth	50	0	0	0	0	0	4	4	3	2	1	5	7	7	5	1	5	6	3.3%
C07-C08	Salivary glands	4	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0	0.3%
C09	Tonsil	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.1%
C10	Other Oropharynx	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0.1%
C11	Nasopharynx	44	1	0	0	0	2	3	4	5	1	7	5	6	5	4	0	1	0	2.9%
C12-C13	Hypopharynx	10	0	0	0	0	0	0	0	0	1	2	3	3	1	2	0	1	0	0.7%
C14	Pharynx unspec.	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	1	0	0.3%
C15	Oesophagus	151	5	0	0	0	0	1	3	5	12	13	19	19	20	16	16	19	19	10.0%
C16	Stomach	107	2	1	0	0	1	0	2	3	4	9	6	9	17	15	7	13	16	7.1%
C17	Small intestine	3	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0.2%
C18	Colon	51	3	0	0	0	0	0	1	0	6	5	8	4	9	7	3	5	0	3.4%
C19-C20	Rectum	28	1	0	0	0	0	2	0	1	1	4	4	2	4	2	3	2	2	1.9%
C21	Anus	5	0	0	0	0	0	0	0	1	0	0	2	0	1	0	1	0	0	0.3%
C22	Liver	86	4	1	0	0	1	1	5	6	12	6	9	6	6	10	7	2	10	5.7%
C23-C24	Gallbladder etc.	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.1%
C25	Pancreas	30	2	0	0	0	0	0	1	1	0	0	0	7	2	5	3	6	3	2.0%
C30-C31	Nose, sinuses etc.	14	0	0	0	0	1	1	0	1	1	3	0	0	0	2	3	2	0	0.9%
C32	Larynx	48	0	0	0	0	0	0	1	0	4	5	10	9	9	9	5	3	2	3.2%
C33-C34	Trachea,Bronchus,Lung	35	0	0	0	0	0	0	0	2	0	3	6	4	2	5	5	4	4	2.3%
C37-C38	Other Thoracic organs	3	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0.2%
C40-C41	Bone	41	2	0	1	3	9	12	3	1	0	1	2	1	1	2	1	1	1	2.7%
C43	Melanoma of Skin	9	0	0	0	0	0	1	3	0	0	2	0	0	0	2	0	1	0	0.6%
C44	Other Skin	56	4	0	2	1	1	0	2	3	2	3	3	5	5	6	9	5	5	3.7%
C45	Mesothelioma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C46	Kaposi sarcoma	105	4	2	1	0	1	2	7	15	25	29	7	4	0	1	2	2	3	6.9%
C47-C49	Connective Soft tissue	40	2	3	0	3	2	5	5	5	3	4	2	2	0	1	1	1	1	2.6%
C50	Breast	13	1	0	0	0	0	0	0	1	0	1	0	0	5	1	0	2	2	0.9%
C60	Penis	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.1%
C61	Prostate	142	10	0	0	0	0	0	0	0	1	3	8	8	6	16	24	26	47	9.4%
C62	Testis	6	0	0	0	0	0	2	0	2	2	0	0	0	0	0	0	0	0	0.4%
C63	Other male genital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C64	Kidney	14	1	7	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0.9%
C65	Renal Pelvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C66	Ureter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C67	Bladder	30	2	1	2	0	1	0	0	0	0	3	1	4	4	2	2	4	4	2.0%
C68	Other Urinary organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C69	Eye	45	2	27	7	0	1	1	1	0	1	2	0	3	0	0	0	0	0	3.0%
C70-C72	Brain, Nervous system	38	0	0	3	5	2	2	3	5	3	2	3	3	3	3	0	1	0	2.5%
C73	Thyroid	7	1	0	0	0	1	0	0	0	0	0	1	1	1	0	0	1	1	0.5%
C74	Adrenal gland	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.1%
C75	Other Endocrine	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.1%
C81	Hodgkin disease	25	1	0	6	6	1	0	2	2	3	0	2	2	0	0	0	0	0	1.7%
C82-C85:C96	Non-Hodgkin lymphoma	63	4	1	12	6	1	3	3	5	10	2	4	5	0	4	1	1	1	4.2%
C88	Immunoproliferative dis.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C90	Multiple Myeloma	22	0	1	0	1	0	0	1	1	5	2	1	2	1	3	4	1	1	1.5%
C91	Lymphoid Leukaemia	19	0	2	3	2	1	1	0	0	0	1	1	2	2	0	1	2	2	1.3%
C92-C94	Myeloid Leukaemia	19	1	1	1	1	4	0	1	1	1	2	0	3	0	0	2	1	0	1.3%
C95	Leukaemia unspec.	4	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0.3%
Other	Other & unspecified	92	6	1	1	2	2	2	5	2	3	10	7	9	14	8	5	7	8	6.1%
All	All sites Total	1511	60	50	41	31	31	45	55	73	94	130	115	137	130	135	113	130	141	100.0%
Nof C44	All sites but C44	1455	56	50	39	30	30	45	53	70	92	127	112	132	125	129	104	125	136	96.3%



Table 9. Age and Site Distribution of Cancer Cases – Females (2000-2002)

ICD (10th)	All Ages	Age 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+	% of Total
C00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.1%
C01-C02	16	0	0	0	0	0	0	0	1	1	2	1	7	1	2	0	0	2	0.9%
C03-C06	42	1	0	0	0	0	1	1	0	0	2	3	6	8	7	9	1	3	2.3%
C07-C08	10	0	0	0	0	2	0	1	1	1	1	0	3	1	0	0	0	0	0.6%
C09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C11	21	2	0	0	0	5	1	3	0	2	1	2	1	0	3	0	0	1	1.2%
C12-C13	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.1%
C14	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0.1%
C15	79	6	0	0	0	0	1	3	4	2	3	3	9	9	14	6	7	12	4.4%
C16	69	1	0	0	0	0	0	2	2	0	4	7	8	2	12	14	9	8	3.8%
C17	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1%
C18	36	1	0	0	0	0	0	3	2	0	3	5	6	4	4	2	4	2	2.0%
C19-C20	39	7	0	0	0	0	2	0	1	3	1	4	11	3	3	3	0	1	2.2%
C21	5	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0.3%
C22	37	3	0	0	0	0	0	2	2	3	0	3	3	2	3	6	3	7	2.1%
C23-C24	13	0	0	0	0	0	0	0	0	0	1	1	0	3	0	4	0	4	0.7%
C25	25	1	0	0	0	0	0	0	0	0	2	3	1	3	4	3	4	4	1.4%
C30-C31	14	1	1	0	0	1	0	2	1	1	0	1	1	1	3	0	1	0	0.8%
C32	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1%
C33-C34	16	0	0	0	0	0	0	0	0	0	6	2	1	3	2	0	1	1	0.9%
C37-C38	7	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	1	0	0.4%
C40-C41	37	0	1	0	4	5	3	6	3	3	1	2	1	1	4	3	0	0	2.1%
C43	15	0	0	0	0	1	0	1	0	1	1	3	2	0	2	0	1	3	0.8%
C44	46	3	0	1	0	0	1	1	3	1	3	1	6	4	9	3	2	8	2.6%
C45	3	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0.2%
C46	43	2	0	0	0	0	1	12	14	10	3	0	0	0	0	0	1	0	2.4%
C47-C49	29	3	5	0	0	1	1	1	2	2	3	3	1	2	1	1	1	2	1.6%
C50	419	17	0	0	0	0	4	9	43	54	60	45	63	42	25	31	12	14	23.3%
C51	8	0	0	0	0	0	0	0	0	1	0	1	0	0	2	1	1	2	0.4%
C52	3	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0.2%
C53	359	11	0	0	0	0	3	11	31	36	62	51	47	25	30	17	25	10	20.0%
C54	14	1	0	0	0	0	0	0	0	0	0	1	3	3	3	0	1	2	0.8%
C55	16	0	0	0	0	0	1	0	1	2	0	2	2	3	2	2	1	0	0.9%
C56	59	3	0	1	0	2	1	1	5	4	6	7	6	8	5	2	4	4	3.3%
C57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C58	5	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0.3%
C64	14	0	4	2	0	0	0	1	2	0	1	2	0	2	0	0	0	0	0.8%
C65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C66	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.1%
C67	15	1	0	0	0	0	0	0	0	0	1	0	3	4	3	1	0	2	0.8%
C68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C69	37	6	17	4	1	0	0	1	2	1	0	1	1	0	1	1	1	0	2.1%
C70-C72	36	0	1	5	5	3	3	2	2	2	1	4	7	0	0	0	1	0	2.0%
C73	18	0	0	0	0	0	0	0	2	1	3	4	6	2	0	0	0	0	1.0%
C74	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.1%
C75	3	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0.2%
C81	15	1	0	0	2	2	3	2	0	1	1	0	1	0	1	1	0	0	0.8%
C82-C85,C96	43	3	3	3	4	1	2	2	5	2	4	2	1	1	6	2	1	1	2.4%
C88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C90	12	0	0	0	0	1	0	0	1	1	0	1	2	0	1	2	3	0	0.7%
C91	21	0	3	7	6	0	0	0	0	0	0	1	2	0	0	0	0	1	1.2%
C92-C94	13	1	0	0	0	2	1	1	1	2	0	3	2	0	0	0	0	0	0.7%
C95	10	0	2	4	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0.6%
Other	67	2	2	1	0	2	0	0	4	3	9	7	3	7	12	4	7	4	3.7%
All	1799	80	39	28	24	28	32	71	138	143	189	182	219	146	165	123	94	98	100.0%
Not C44	1753	77	39	27	24	28	31	70	135	142	186	181	213	142	156	120	92	90	97.4%

Table 10. Age and Site Distribution of Cancer Cases by Year- Males 2000

ICD (10th)	Site	All Ages	Unk.	Age	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+	% of Total
C00	Lip	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.4%
C01-C02	Tongue	4	1	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0.8%
C03-C06	Mouth	14	0	0	0	0	0	0	3	2	0	0	0	1	3	2	0	0	1	2	2.8%
C07-C08	Salivary glands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C09	Tonsil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C10	Other Oropharynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C11	Nasopharynx	10	1	0	0	0	0	0	0	1	0	0	3	1	2	1	1	0	0	0	2.0%
C12-C13	Hypopharynx	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	1	0	0.8%
C14	Pharynx unspec.	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0.4%
C15	Oesophagus	42	1	0	0	0	0	0	0	3	0	2	1	6	6	5	7	1	4	6	8.4%
C16	Stomach	41	0	0	0	0	0	0	0	1	0	3	4	3	4	7	3	2	8	6	8.2%
C17	Small intestine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C18	Colon	12	1	0	0	0	0	0	0	0	0	4	0	2	1	2	1	0	1	0	2.4%
C19-C20	Rectum	10	1	0	0	0	0	0	1	0	1	1	2	2	0	0	1	0	0	1	2.0%
C21	Anus	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0.4%
C22	Liver	27	2	0	0	0	0	0	1	1	1	3	2	3	0	0	3	4	1	6	5.4%
C23-C24	Gallbladder etc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C25	Pancreas	13	2	0	0	0	0	0	0	0	0	0	0	0	3	1	1	2	2	2	2.6%
C30-C31	Nose, sinuses etc.	8	0	0	0	0	0	1	0	0	1	1	1	0	0	0	2	1	1	0	1.6%
C32	Larynx	8	0	0	0	0	0	0	0	0	0	0	1	1	1	1	3	0	0	0	1.6%
C33-C34	Trachea, Bronchus, Lung	15	0	0	0	0	0	0	0	0	0	0	0	2	2	2	1	3	3	2	3.0%
C37-C38	Other Thoracic organs	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.2%
C40-C41	Bone	12	1	0	1	1	3	3	0	1	0	0	0	1	0	0	1	0	0	0	2.4%
C43	Melanoma of Skin	5	0	0	0	0	0	0	1	2	0	0	0	0	0	0	2	0	0	0	1.0%
C44	Other Skin	28	3	0	0	0	0	1	0	1	2	1	2	1	2	3	3	6	1	2	5.6%
C45	Mesothelioma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C46	Kaposi sarcoma	42	4	0	1	0	1	0	1	4	3	13	9	2	0	0	1	1	1	2	8.4%
C47-C49	Connective Soft tissue	4	1	1	0	0	0	0	0	2	2	2	1	2	0	0	1	1	0	1	2.8%
C50	Breast	4	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0.8%
C60	Penis	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2%
C61	Prostate	47	5	0	0	0	0	0	0	0	0	0	1	2	1	2	5	9	4	18	9.4%
C62	Testis	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0.4%
C63	Other male genital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C64	Kidney	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.4%
C65	Renal Pelvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C66	Ureter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C67	Bladder	10	1	0	0	0	0	0	0	0	0	0	1	0	2	1	1	0	2	2	2.0%
C68	Other Urinary organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C69	Eye	15	1	9	2	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	3.0%
C70-C72	Brain, Nervous system	10	0	0	1	1	1	0	0	3	2	0	1	0	1	0	1	0	0	0	2.0%
C73	Thyroid	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.4%
C74	Adrenal gland	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.2%
C75	Other Endocrine	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.2%
C81	Hodgkin disease	8	0	0	4	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1.6%
C82-C85, C96	Non-Hodgkin lymphoma	22	3	0	3	4	0	1	1	1	1	2	1	1	4	0	1	0	0	0	4.4%
C88	Immunoproliferative dis.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C90	Multiple Myeloma	7	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	2	1	1	1.4%
C91	Lymphoid Leukaemia	5	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	1	0	1.0%
C92-C94	Myeloid Leukaemia	11	1	0	1	1	3	0	0	0	1	0	1	0	2	0	0	0	1	0	2.2%
C95	Leukaemia unspec.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.2%
Other	Other & unspecified	37	6	1	0	0	0	0	0	3	1	1	3	3	5	3	3	1	4	3	7.4%
All	All sites Total	502	38	12	13	13	11	10	11	25	18	35	37	37	45	33	43	40	38	56	100.0%
Not C44	All sites but C44	474	35	12	13	13	11	9	11	24	16	34	35	36	43	30	40	34	37	54	94.4%

Table 11. Age and Site Distribution of Cancer Cases by Year - Females 2000

ICD (10th)	Site	All Ages	Age 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+	% of Total
C00	Lip	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.2%
C01-C02	Tongue	5	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	1	0.8%
C03-C06	Mouth	8	0	0	0	0	0	0	0	0	0	0	1	3	1	2	1	0	0	1.3%
C07-C08	Salivary glands	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0.3%
C09	Tonsil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C10	Other Oropharynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C11	Nasopharynx	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0.3%
C12-C13	Hypopharynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C14	Pharynx unspc.	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.2%
C15	Oesophagus	21	4	0	0	0	0	0	1	3	0	1	2	2	2	4	1	0	1	3.5%
C16	Stomach	15	1	0	0	0	0	1	1	0	0	0	0	2	0	3	4	2	1	2.5%
C17	Small intestine	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.3%
C18	Colon	16	0	0	0	0	0	0	2	0	0	2	1	5	2	3	0	1	0	2.7%
C19-C20	Rectum	9	3	0	0	0	0	1	0	1	0	0	0	2	0	1	1	0	0	1.5%
C21	Anus	4	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0.7%
C22	Liver	13	2	0	0	0	0	0	1	1	1	0	1	0	1	1	1	1	3	2.2%
C23-C24	Gallbladder etc.	4	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0.7%
C25	Pancreas	9	1	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3	1	1.5%
C30-C31	Nose, sinuses etc.	5	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0.8%
C32	Larynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C33-C34	Trachea/Bronchus/Lung	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0.3%
C37-C38	Other Thoracic organs	4	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	1	0	0.7%
C40-C41	Bone	13	0	1	0	3	1	0	1	1	3	0	1	0	1	1	0	0	0	2.2%
C43	Melanoma of Skin	4	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	1	0	0.7%
C44	Other Skin	13	2	0	1	0	0	0	0	1	1	0	0	2	2	2	0	0	1	2.2%
C45	Mesothelioma	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.2%
C46	Kaposi sarcoma	21	1	0	0	0	0	0	7	6	5	2	0	0	0	0	0	0	0	3.5%
C47-C49	Connective Soft tissue	12	3	2	0	0	0	0	0	0	1	0	1	1	1	1	1	0	1	2.0%
C50	Breast	149	10	0	0	0	0	2	2	18	18	26	11	20	13	8	9	6	6	24.8%
C51	Vulva	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0.3%
C52	Vagina	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2%
C53	Cervix Uteri	107	9	0	0	0	0	1	5	9	13	16	7	14	7	12	3	7	4	17.8%
C54	Corpus Uteri	7	1	0	0	0	0	0	0	0	0	0	1	0	0	2	0	1	0	1.2%
C55	Uterus unspc.	4	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0.7%
C56	Ovary	21	2	0	0	0	0	1	1	3	1	3	2	2	0	2	1	2	1	3.5%
C57	Other Female Genital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C58	Placenta	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.2%
C64	Kidney	4	0	0	1	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0.7%
C65	Renal Pelvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C66	Ureter	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.2%
C67	Bladder	6	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	1	1.0%
C68	Other Urinary organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C69	Eye	19	4	9	1	1	0	0	1	2	0	0	0	0	0	0	1	0	0	3.2%
C70-C72	Brain, Nervous system	14	0	0	1	1	2	3	1	0	1	0	2	3	0	0	0	0	0	2.3%
C73	Thyroid	7	0	0	0	0	0	0	0	1	1	0	2	3	0	0	0	0	0	1.2%
C74	Adrenal gland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C75	Other Endocrine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C81	Hodgkin disease	10	1	0	0	0	2	3	2	0	0	0	0	0	0	1	1	0	0	1.7%
C82-C85/C96	Non-Hodgkin Lymphoma	17	3	0	2	1	0	0	1	3	1	1	0	0	1	2	1	0	1	2.8%
C88	Immunoproliferative dis.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C90	Multiple Myeloma	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	1	0	0.7%
C91	Lymphoid Leukaemia	7	0	1	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1.2%
C92-C94	Myeloid Leukaemia	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.2%
C95	Leukaemia unspc.	5	0	1	2	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0.8%
Other	Other & unspecified	27	1	1	1	0	0	0	0	2	1	4	6	1	2	6	2	0	0	4.5%
All	All sites Total	601	51	16	11	8	6	13	31	53	51	59	46	69	44	54	36	27	26	100.0%
Not C44	All sites but C44	588	49	16	10	8	6	13	31	53	50	59	46	67	42	52	34	27	25	97.8%

Table 12. Age, Sex and Site Distribution of Cancer Cases by Year - Males 2001

ICD (10th)	Site	All Ages	Age 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+	% of Total
C00	Lip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C01-C02	Tongue	10	0	0	0	0	0	0	0	1	1	1	2	1	0	0	1	2	1	2.3%
C03-C06	Mouth	18	0	0	0	0	0	0	2	2	0	1	2	0	3	3	0	2	3	4.1%
C07-C08	Salivary glands	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0.5%
C09	Tonsil	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.2%
C10	Other Oropharynx	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.2%
C11	Nasopharynx	13	0	0	0	0	2	0	1	2	1	1	3	0	1	2	0	0	0	3.0%
C12-C13	Hypopharynx	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.2%
C14	Pharynx unspec.	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.2%
C15	Oesophagus	53	3	0	0	0	0	1	0	0	2	4	3	6	6	3	6	10	9	12.0%
C16	Stomach	26	0	1	0	0	0	2	1	0	1	1	2	4	3	3	2	2	4	5.9%
C17	Small intestine	3	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0.7%
C18	Colon	15	1	0	0	0	0	0	0	0	1	3	1	1	3	1	2	2	0	3.4%
C19-C20	Rectum	6	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	0	1.4%
C21	Anus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C22	Liver	27	2	1	0	0	0	0	3	3	4	2	1	3	3	3	2	0	0	6.1%
C23-C24	Gallbladder etc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C25	Pancreas	5	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1.1%
C30-C31	Nose, sinuses etc.	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0.7%
C32	Larynx	12	0	0	0	0	0	0	0	1	0	1	0	5	2	1	0	1	1	2.7%
C33-C34	Trachea,Bronchus,Lung	11	0	0	0	0	0	0	0	1	0	1	2	2	0	2	1	0	2	2.5%
C37-C38	Other Thoracic organs	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2%
C40-C41	Bone	15	1	0	0	1	2	5	2	0	0	0	1	0	0	0	0	1	1	3.4%
C43	Melanoma of Skin	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0.7%
C44	Other Skin	18	1	0	2	0	0	0	1	1	1	0	2	2	1	0	3	3	1	4.1%
C45	Mesothelioma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C46	Kaposi sarcoma	28	0	1	0	0	0	1	0	7	5	8	1	3	0	0	0	1	1	6.4%
C47-C49	Connective-Soft tissue	8	1	1	0	1	1	2	0	0	1	0	0	1	0	0	0	0	0	1.8%
C50	Breast	5	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	1	1.1%
C60	Penis	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2%
C61	Prostate	50	1	0	0	0	0	0	0	0	1	0	1	6	4	5	9	9	14	11.4%
C62	Testis	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0.5%
C63	Other male genital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C64	Kidney	6	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1.4%
C65	Renal Pelvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C66	Ureter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C67	Bladder	8	0	0	2	0	0	0	0	0	0	1	0	0	2	1	2	0	0	1.8%
C68	Other Urinary organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C69	Eye	8	1	5	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1.8%
C70-C72	Brain, Nervous system	7	0	0	0	2	2	1	0	0	0	0	1	1	0	0	0	0	0	1.6%
C73	Thyroid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C74	Adrenal gland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C75	Other Endocrine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C81	Hodgkin disease	8	1	0	0	3	0	0	1	1	0	0	2	0	0	0	0	0	0	1.8%
C82-C85;C96	Non-Hodgkin lymphoma	21	1	0	5	1	0	1	0	2	3	0	2	1	0	3	1	0	1	4.8%
C88	Immunoproliferative dis.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C90	Multiple Myeloma	5	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	0	0	1.1%
C91	Lymphoid Leukaemia	5	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	1	0	1.1%
C92-C94	Myeloid Leukaemia	4	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	0	0	0.9%
C95	Leukaemia unspec.	2	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.5%
Other	Other & unspecified	27	0	0	1	1	1	1	1	1	0	2	1	2	7	3	2	2	2	6.1%
All	All sites Total	440	13	17	12	9	9	15	13	24	23	33	28	46	42	35	36	42	43	100.0%
Not C44	All sites but C44	422	12	17	10	9	9	15	12	23	22	33	26	44	41	35	33	39	42	95.9%

Table 13. Age, Sex and Site Distribution of Cancer Cases by Year - Females 2001

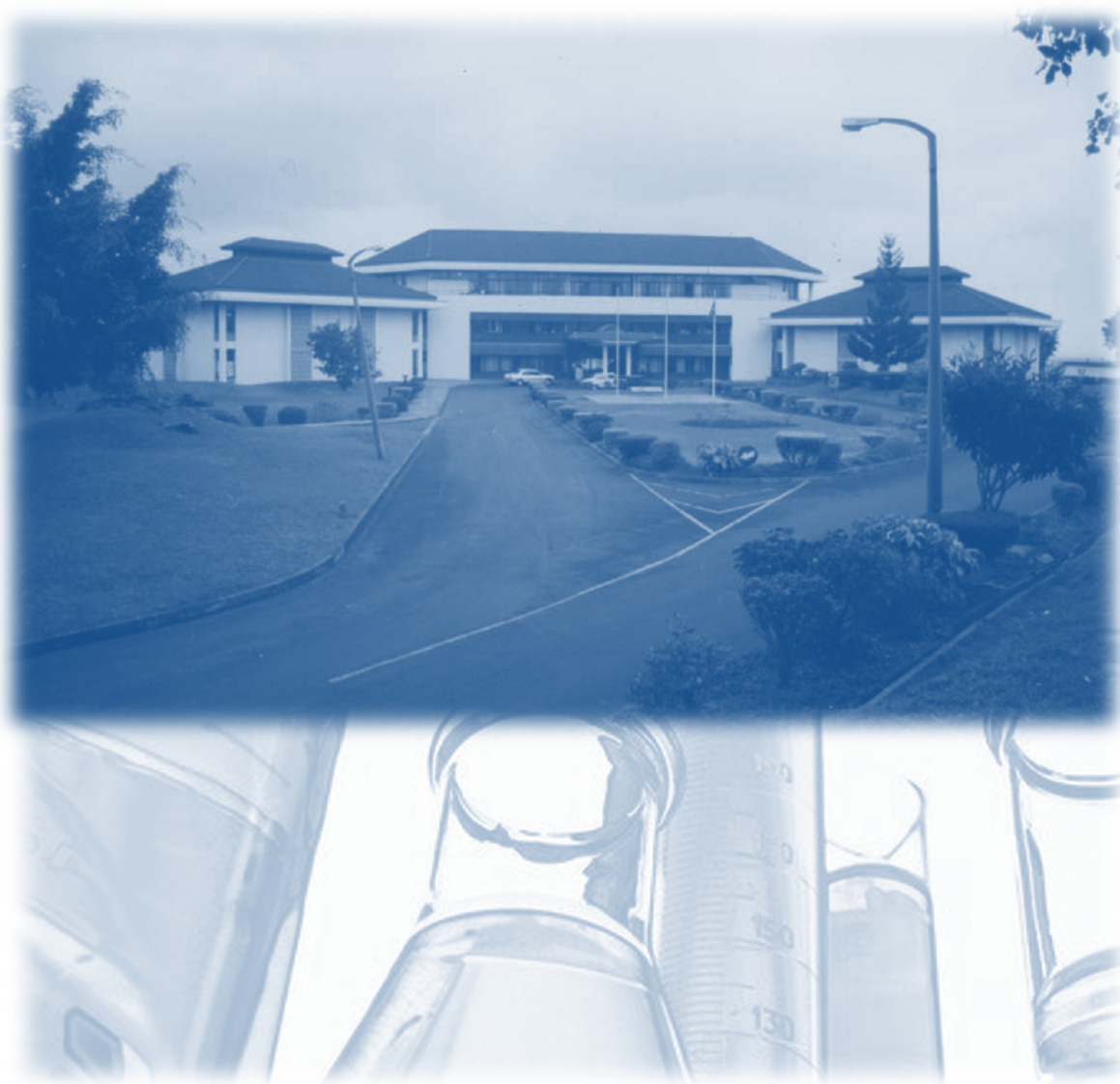
ICD (10th)	Site	All Ages	Age Unk.	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+	% of Total
C00	Lip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C01-C02	Tongue	7	0	0	0	0	0	0	0	0	1	0	0	4	0	2	0	0	0	1.5%
C03-C06	Mouth	11	1	0	0	0	0	0	1	0	0	1	1	0	0	3	3	0	1	2.4%
C07-C08	Salivary glands	2	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0.4%
C09	Tonsil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C10	Other Oropharynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C11	Nasopharynx	4	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0.9%
C12-C13	Hypopharynx	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.4%
C14	Pharynx unspc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C15	Oesophagus	27	0	0	0	0	0	1	1	1	1	1	0	1	2	6	4	3	6	5.8%
C16	Stomach	28	0	0	0	0	0	0	1	0	0	3	2	2	2	6	5	5	2	6.0%
C17	Small intestine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C18	Colon	10	1	0	0	0	0	0	0	2	0	0	2	0	1	0	0	3	1	2.1%
C19-C20	Rectum	13	2	0	0	0	0	1	0	0	1	1	2	2	3	1	0	0	0	2.8%
C21	Anus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C22	Liver	7	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	1	1.5%
C23-C24	Gallbladder etc.	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0.6%
C25	Pancreas	7	0	0	0	0	0	0	0	0	0	1	2	0	1	2	0	0	1	1.5%
C30-C31	Nose, sinuses etc.	2	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0.4%
C32	Larynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C33-C34	Trachea,Bronchus,Lung	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0.4%
C37-C38	Other Thoracic organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C40-C41	Bone	10	0	0	0	1	2	2	0	1	0	1	1	0	0	1	1	0	0	2.1%
C43	Melanoma of Skin	3	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0.6%
C44	Other Skin	19	1	0	0	0	0	1	1	0	0	2	1	2	0	5	0	2	4	4.1%
C45	Mesothelioma	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2%
C46	Kaposi sarcoma	13	0	0	0	0	0	0	3	5	4	1	0	0	0	0	0	0	0	2.8%
C47-C49	Connective Soft tissue	5	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	1	0	1.1%
C50	Breast	117	5	0	0	0	0	1	1	13	16	10	9	20	14	9	11	3	5	25.1%
C51	Vulva	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2%
C52	Vagina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C53	Cervix Uteri	86	1	0	0	0	0	0	2	7	11	17	10	14	8	4	2	5	5	18.4%
C54	Corpus Uteri	4	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0.9%
C55	Uterus unspc.	7	0	0	0	0	0	1	0	1	1	0	0	2	1	1	0	0	0	1.5%
C56	Ovary	15	0	0	0	0	0	0	0	1	3	1	3	1	2	3	1	0	0	3.2%
C57	Other Female Genital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C58	Placenta	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2%
C64	Kidney	4	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.9%
C65	Renal Pelvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C66	Ureter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C67	Bladder	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.6%
C68	Other Urinary organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C69	Eye	5	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1.1%
C70-C72	Brain, Nervous system	7	0	0	1	1	0	0	0	1	1	1	1	1	0	0	0	1	0	1.5%
C73	Thyroid	4	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0.9%
C74	Adrenal gland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C75	Other Endocrine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C81	Hodgkin disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C82-C85,C96	Non-Hodgkin Lymphoma	9	0	0	0	0	1	2	0	0	0	0	1	1	0	3	1	0	0	1.9%
C88	Immunoproliferative dis.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C90	Multiple Myeloma	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0.4%
C91	Lymphoid Leukaemia	3	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.6%
C92-C94	Myeloid Leukaemia	4	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0.9%
C95	Leukaemia unspc.	3	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6%
Other	Other & unspecified	16	1	1	0	0	0	0	0	1	1	2	0	0	2	3	1	3	1	3.4%
All	All sites Total	467	15	5	6	4	6	10	10	35	42	47	43	58	39	54	30	30	33	100.0%
Not C44	All sites but C44	448	14	5	6	4	6	9	9	35	42	45	42	56	39	49	30	28	29	95.9%

Table 14. Age, Sex and Site Distribution of Cancer Cases by Year - Males 2002

ICD (10th)	Site	All Ages	Age 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+	% of Total
C00	Lip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C01-C02	Tongue	23	1	0	0	0	0	0	0	4	2	4	2	1	2	1	2	4	0	4.0%
C03-C06	Mouth	18	0	0	0	0	0	1	0	1	2	0	2	4	2	2	1	2	1	3.2%
C07-C08	Salivary glands	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0.4%
C09	Tonsil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C10	Other Oropharynx	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2%
C11	Nasopharynx	21	0	0	0	0	0	3	2	3	0	3	1	4	3	1	0	1	0	3.7%
C12-C13	Hypopharynx	5	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0.9%
C14	Pharynx unspec.	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.4%
C15	Oesophagus	56	1	0	0	0	0	0	0	3	1	7	4	7	9	6	9	5	4	9.8%
C16	Stomach	40	2	0	0	1	0	0	0	3	0	4	1	1	7	9	3	3	6	7.0%
C17	Small intestine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C18	Colon	24	1	0	0	0	0	0	1	0	1	2	5	2	4	5	1	2	0	4.2%
C19-C20	Rectum	12	0	0	0	0	0	1	0	0	0	1	2	1	3	0	2	2	0	2.1%
C21	Anus	3	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0.5%
C22	Liver	32	0	0	0	0	1	0	1	2	5	2	5	3	3	4	1	1	4	5.6%
C23-C24	Gallbladder etc.	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.2%
C25	Pancreas	12	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	4	0	2.1%
C30-C31	Nose, sinuses etc.	3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0.5%
C32	Larynx	28	0	0	0	0	0	0	0	0	0	2	4	4	6	7	2	2	1	4.9%
C33-C34	Trachea/Bronchus/Lung	9	0	0	0	0	0	0	0	1	0	2	2	0	0	2	1	1	0	1.6%
C37-C38	Other Thoracic organs	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2%
C40-C41	Bone	14	0	0	0	1	4	4	1	0	0	1	0	1	1	1	0	0	0	2.5%
C43	Melanoma of Skin	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.2%
C44	Other Skin	10	0	0	0	1	0	0	0	0	1	1	0	1	1	3	0	1	2	1.8%
C45	Mesothelioma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C46	Kaposi sarcoma	35	0	1	0	0	0	1	3	5	7	12	4	1	0	0	1	0	0	6.2%
C47-C49	Connective/Soft tissue	18	0	1	0	2	1	3	3	0	2	2	2	1	0	0	0	1	0	3.2%
C50	Breast	4	0	0	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0	0.7%
C60	Penis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C61	Prostate	45	4	0	0	0	0	0	0	0	0	0	0	1	0	6	6	13	15	7.9%
C62	Testis	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0.4%
C63	Other male genital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C64	Kidney	6	0	2	1	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1.1%
C65	Renal Pelvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C66	Ureter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C67	Bladder	12	1	1	0	0	1	0	0	0	0	1	1	2	1	0	0	2	2	2.1%
C68	Other Urinary organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C69	Eye	22	0	13	4	0	1	1	0	0	1	2	0	0	0	0	0	0	0	3.9%
C70-C72	Brain, Nervous system	21	0	0	2	2	0	1	0	3	3	1	2	1	3	2	0	1	0	3.7%
C73	Thyroid	5	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	0.9%
C74	Adrenal gland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C75	Other Endocrine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C81	Hodgkin disease	9	0	0	2	0	1	0	1	1	3	0	0	1	0	0	0	0	0	1.6%
C82-C85/C96	Non-Hodgkin lymphoma	20	0	1	4	1	1	1	2	2	5	1	1	0	0	0	0	1	0	3.5%
C88	Immunoproliferative dis.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C90	Multiple Myeloma	10	0	0	0	1	0	0	0	1	0	4	2	0	0	0	2	0	0	1.8%
C91	Lymphoid Leukaemia	9	0	1	2	1	0	0	0	0	0	1	1	1	1	0	0	0	2	1.6%
C92-C94	Myeloid Leukaemia	4	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0.7%
C95	Leukaemia unspec.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.2%
Other	Other & unspecified	28	0	0	0	1	1	1	1	0	2	5	3	2	4	2	2	1	3	4.9%
All	All sites Total	569	9	21	16	11	12	19	17	31	36	60	50	46	55	57	37	50	42	100.0%
Not C44	All sites but C44	559	9	21	16	10	12	19	17	31	36	59	50	45	54	54	37	49	40	98.2%

Table 15. Age, Sex and Site Distribution of Cancer Cases by Year - Females 2002

ICD (10th)	Site	All Ages	Age 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+	% of Total
C00	Lip	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C01-C02	Tongue	4	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0.5%
C03-C06	Mouth	23	0	0	0	0	0	1	0	0	0	1	1	3	7	2	5	1	2	3.1%
C07-C08	Salivary glands	6	0	0	0	0	1	0	1	0	0	1	0	3	0	0	0	0	0	0.8%
C09	Tonsil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C10	Other Oropharynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C11	Nasopharynx	15	1	0	0	0	4	1	3	0	2	0	1	0	0	2	0	0	1	2.1%
C12-C13	Hypopharynx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C14	Pharynx unsp.	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.1%
C15	Esophagus	31	2	0	0	0	0	0	1	0	1	1	1	6	5	4	1	4	5	4.2%
C16	Stomach	26	0	0	0	0	0	0	0	1	0	1	5	4	0	3	5	2	5	3.6%
C17	Small intestine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C18	Colon	10	0	0	0	0	0	0	1	0	0	1	2	1	1	1	2	0	1	1.4%
C19-C20	Rectum	17	2	0	0	0	0	0	0	0	2	0	2	7	0	1	2	0	1	2.5%
C21	Anus	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1%
C22	Liver	17	1	0	0	0	0	0	1	1	2	0	0	2	1	1	5	0	3	2.5%
C23-C24	Gallbladder etc.	6	0	0	0	0	0	0	0	0	0	1	1	0	1	0	3	0	0	0.8%
C25	Pancreas	9	0	0	0	0	0	0	0	0	0	1	0	0	2	2	1	1	2	1.2%
C30-C31	Nose, sinuses etc.	7	0	0	0	0	1	0	0	0	1	0	1	1	1	2	0	0	0	1.0%
C32	Larynx	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.1%
C33-C34	Trachea, Bronchus, Lung	12	0	0	0	0	0	0	0	0	0	5	2	0	2	2	0	0	1	1.6%
C37-C38	Other Thoracic organs	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0.4%
C40-C41	Bone	14	0	0	0	0	2	1	5	1	0	0	0	1	0	2	2	0	0	1.9%
C43	Melanoma of Skin	8	0	0	0	0	1	0	1	0	0	1	1	2	0	0	0	0	2	1.1%
C44	Other Skin	14	0	0	0	0	0	0	0	3	0	1	0	2	2	2	1	0	3	1.9%
C45	Mesothelioma	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.1%
C46	Kaposi sarcoma	9	1	0	0	0	0	1	2	3	1	0	0	0	0	0	0	1	0	1.2%
C47-C49	Connective Soft tissue	12	0	3	0	0	0	1	1	1	0	2	2	0	1	0	0	0	1	1.6%
C50	Breast	153	2	0	0	0	0	1	6	12	20	24	25	23	15	8	11	3	3	20.9%
C51	Vulva	5	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	1	0.7%
C52	Vagina	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.3%
C53	Cervix Uteri	166	1	0	0	0	0	2	4	15	12	29	34	19	10	14	12	13	1	22.7%
C54	Corpus Uteri	3	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0.4%
C55	Uterus unsp.	5	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0.7%
C56	Ovary	23	1	0	1	0	2	0	0	1	0	2	2	3	6	0	0	2	3	3.1%
C57	Other Female Genital	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C58	Placenta	3	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0.4%
C64	Kidney	6	0	2	0	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0.8%
C65	Renal Pelvis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C66	Ureter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C67	Bladder	6	0	0	0	0	0	0	0	0	0	1	0	1	0	3	1	0	0	0.8%
C68	Other Urinary organs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C69	Eye	13	2	7	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1.8%
C70-C72	Brain, Nervous system	15	0	1	3	3	1	0	1	2	0	0	1	3	0	0	0	0	0	2.1%
C73	Thyroid	7	0	0	0	0	0	0	0	1	0	1	1	2	2	0	0	0	0	1.0%
C74	Adrenal gland	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.1%
C75	Other Endocrine	3	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0.4%
C81	Hodgkin disease	5	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0.7%
C82-C85,C96	Non-Hodgkin Lymphoma	17	0	3	1	3	0	0	1	2	1	3	1	0	0	1	0	1	0	2.3%
C88	Immunoproliferative dis.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
C90	Multiple Myeloma	6	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	2	0	0.8%
C91	Lymphoid Leukaemia	11	0	2	3	4	0	0	0	0	0	0	0	1	0	0	0	1	0	1.5%
C92-C94	Myeloid Leukaemia	8	1	0	0	0	2	0	1	0	1	0	2	1	0	0	0	0	0	1.1%
C95	Leukaemia unsp.	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0.3%
Other	Other & unspecified	24	0	0	0	0	2	0	0	1	1	3	1	2	3	3	1	4	3	3.3%
All	All sites Total	731	14	18	11	12	16	9	30	50	50	83	93	92	63	57	57	37	39	100.0%
Not C44	All sites but C44	717	14	18	11	12	16	9	30	47	50	82	93	90	61	55	56	37	36	98.1%



Cover picture: Kenya Medical Research Institute (KEMRI), Headquarters



# **PART IV**

## **APPENDICES**

**APPENDIX A - REGISTRARS.****REGISTRY STAFF**

Registry Director	:	Dr. Mutuma G.Z.
Registry Supervisor	:	Mrs. Anne Rugutt-Korir
Data Entry	:	Mrs. Catherine Ogeto Mr. Mohammed Abdi

**Registrars' stations**

Hurlingham Oncology clinic	:	Joseph Omach
KEMRI	:	Connie Mwema Martha Maina
Ministry of Health - HIS	:	Patrick Warutere Felistus Mburu
Kenyatta National Hospital	:	Judy Muriithi Eunia Mbela Wangechi Gacibi Mark Mudenyio
The Nairobi Hospital	:	Nancy Kisia Karanja Mungai Amina Ngotho Mwaniki Kiiru
The Nairobi Hospice	:	John Njiru
The Aga Khan Hospital	:	Peter Odongo
The Mater Hospital	:	Lucy Gathukia
Gertrude Garden Children H.	:	Mohammed Matoye
U.O.N. Dental School	:	Alice Limo Charity Mungai
Avenue Hospital	:	Esther Macharia
Family Options of Kenya	:	Ndwiga Ongubo
Volunteers	:	Angela Mumbi Milton Kirui

## APPENDIX B - CONTACTS

### The NCR Committee members

Dr. Mutuma G. Z.	-	Chairman
Dr. Lucy Muchiri	-	Member
Dr. Musibi A.	-	Member
Dr. Mbui J.	-	Member
Mr. Joseph Omach	-	Member
Dr. Mwangangi B.	-	Member
Dr. Gathere S.	-	Member
Mrs. Anne Korir	-	Secretary

### Physical address of Nairobi Cancer Registry

Center for Clinical Research  
Kenya Medical Research Institute  
Off Mbagathi Road  
Nairobi, Kenya

### Postal address

Nairobi Cancer Registry  
Centre for Clinical Research  
P.O. Box 20778, 00202,  
Nairobi - Kenya.

### Telephone

+254- 020-2722541

### Fax

+254-020-2720030

### Email Address

cancerregistry@kemri.org

## APPENDIX C - REPORTING HEALTH INSTITUTIONS

Hospital administrators, clinicians, laboratories, hospices and other health-care facilities that have courteously provided data required by NCR.

We urge all facilities not listed yet diagnose cancer to contact us so that all cancer cases may be captured. This will enable us curb the challenge of underreporting and highlight the burden of this disease in our country.

### Reporting Health Institutions

Kenyatta National Hospital  
 The Nairobi Hospital  
 The Aga Khan Hospital  
 M. P. Shah Hospital  
 The Mater Hospital  
 University of Nairobi - Dental School  
 The Nairobi Hospice  
 Armed Forces Memorial Hospital  
 Medical Imaging & Therapeutic Centre (MITC)  
 Avenue Hospital  
 Guru Nanak Ramagharria Sikh Hospital  
 Nairobi Women's Hospital  
 Gertrude Gardens Children Hospital  
 Nairobi West Hospital  
 Mbagathi District Hospital  
 Masaba Hospital  
 Family Options of Kenya, Nairobi  
 Nairobi City Council - Registrar of births & deaths  
 Equator Hospital  
 Metropolitan Hospital  
 South B Hospital  
 City Nursing Home  
 Coptic Church Hospital  
 KEMRI Histology Laboratory  
 Acacia Medical Laboratory  
 Nairobi Pathology services  
 Kikuyu Hospital

## APPENDIX D - ABSTRACT FORM

**CONFIDENTIAL**

**NAIROBI CANCER REGISTRY:**

**CANCER ABSTRACT FORM:**

REGISTRY NUMBER

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

A. PATIENT:	1. FIRST	2. GIVEN	3. FAMILY
NAMES			

4. National Identification No. \_\_\_\_\_

5. Age   6. Date of Birth         7. Sex \_\_\_\_ (1=Male 2=Female 9=Unk)

8. Concurrent Illness \_\_\_\_\_

9. Place of Residence \_\_\_\_\_

10. Place of Birth \_\_\_\_\_

11. Tribe \_\_\_\_\_

12. Religion ☐ 1 - Christian 2 - Muslim  
3 - Hindu 4 - Other

**B. TUMOUR:**

13. Incidence date

14. Basis of Diagnosis ☐ 0 - Death cert only  
1 - Clinical only  
2 - Clinic. Invest./ Ultra sound  
4 - Biochem. Immuno test  
5 - Cytology/Haematology  
6 - Histology of metastasis  
7 - Histology of primary  
9 - Unknown

15. Primary Site \_\_\_\_\_ C. \_\_\_\_\_

16. Histology \_\_\_\_\_ M

17. Behaviour ☐

18. Grade ☐

19. Stage ☐

0 - Benign  
1 - Uncertain  
2 - In situ  
3 - Malignant

1 - Well diff 6 - B-Cell  
2 - Moderately diff  
7 - Null Cell  
3 - Poorly diff. 8 - Killer cell

4 - Undifferentiated/Anaplastic  
5 - T-cell  
9 - Unknown

0 - InSitu  
1 - Stage I  
2 - Stage II  
3 - Stage III  
4 - Stage IV  
9 - Unknown

T \_\_\_\_\_  
N \_\_\_\_\_  
M \_\_\_\_\_

**C. TREATMENT: (1=N0; 2=YES; 9=UNKNOWN)**

20. Surgery ☐ Radiotherapy ☐ Chemotherapy ☐ Hormone Therapy ☐ Symptomatic ☐

**D. SOURCES:**

21. Source 1. Hosp. \_\_\_\_\_ Hosp. No. \_\_\_\_\_ SRC date 1 \_\_\_\_\_

22. Source 2. Lab. \_\_\_\_\_ Lab. No. \_\_\_\_\_ SRC date 2 \_\_\_\_\_

**E. FOLLOW UP:**

23. Present Status ☐ 1=Alive 2= Dead

24. Date Last Contact/Date of death: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

25. Hospice No. \_\_\_\_\_ If Dead Cause of Death \_\_\_\_\_

Remarks if any: \_\_\_\_\_

Form filled by \_\_\_\_\_ Date \_\_\_\_\_

**APPENDIX E - REQUEST FOR DATA FORM**

Nairobi Cancer Registry,  
Centre for Clinical Research  
P.O. Box 20778, 00202  
Nairobi.

**REQUEST FOR DATA FROM NCR**

Please Note. (Patients Names or other identification details are not released by NCR)

Name of requester.....Title/Designation.....

Address.....

.....

Tel.....Fax.....

E-mail.....

**Purpose for which data are required**

.....  
.....  
.....  
.....

Description of summary data needed:

(Tick where applicable)

1. Site(s).....

2. Incidence / Mortality

3. Sex a). Male only

b). Female only

c). Both sexes

4. Years.....

5. Specify other variables required.....

6. Specify when data is required .....

**Requesters Declaration**

I hereby, declare that the data given to me by the Nairobi Cancer Registry will not be presented or published by me or any of my collaborators as an original work but rather can be cited in my publications/presentations with acknowledgement to the registry.

Signed.....Date.....

For more information contact:

Dr. Geoffrey Mutuma

Cancer Registry Director,

Tel. +254-020-722541

or

Cell phone. +254-0722-801299

Email: gmutuma@kemri.org

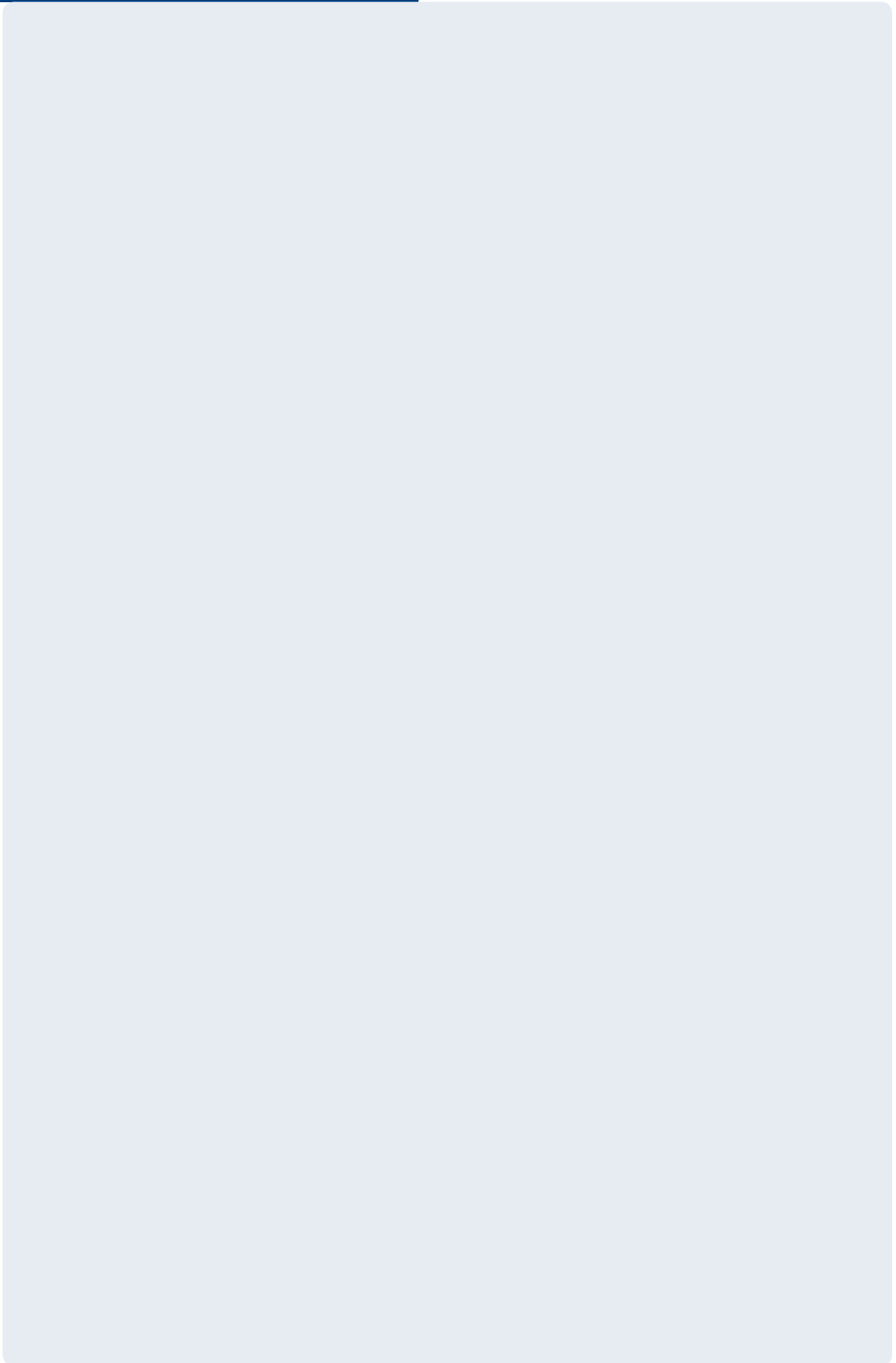
Anne Rugutt-Korir

Cancer Registry Supervisor

Tel. +254-020-722541 Ext. 3344

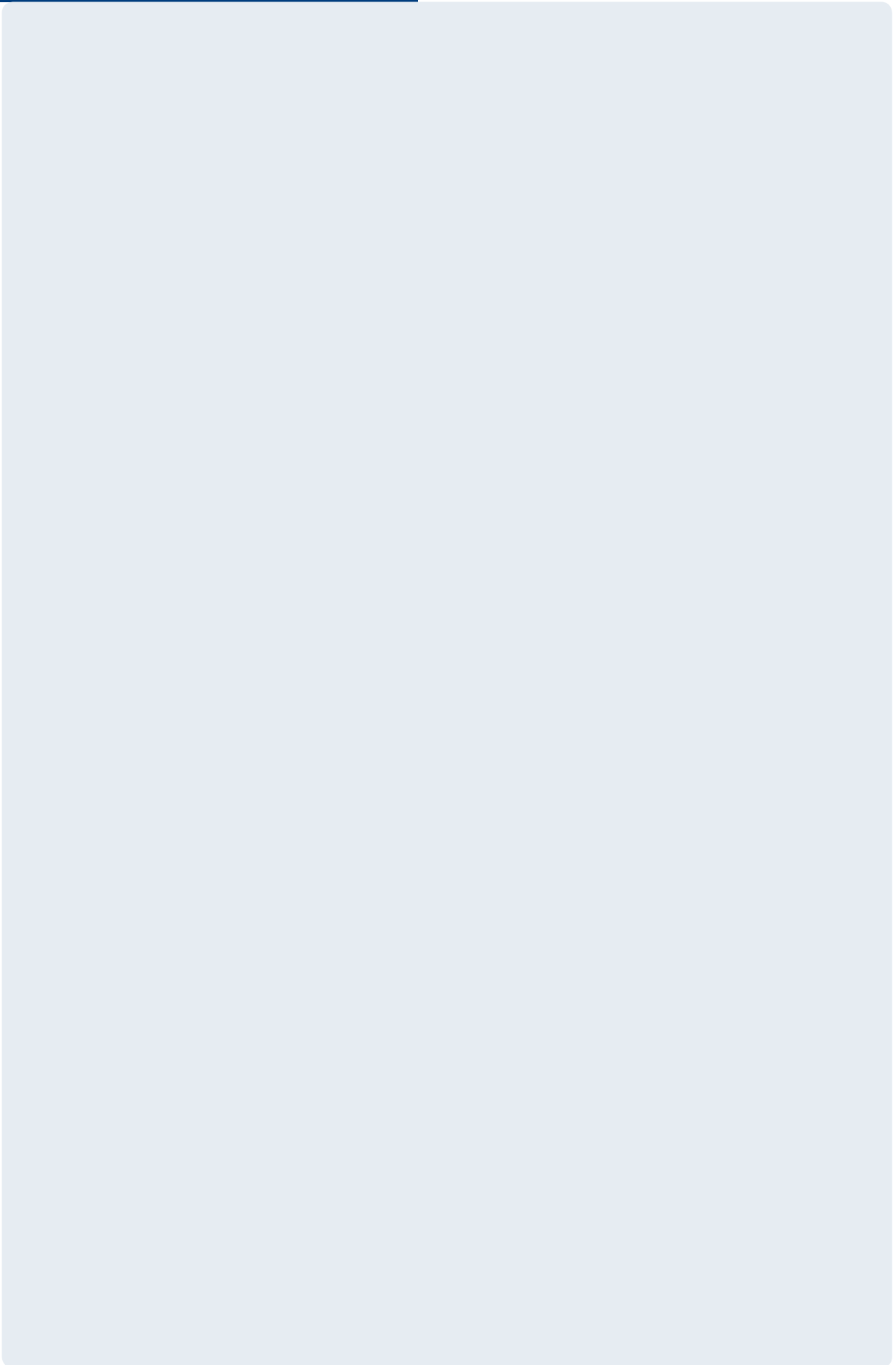
Cell phone. +254-0722-481317

Email: akorir@kemri.org

**NOTES**

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**NOTES**

**COMMENTS:**

Please detach this and send feed back to us using these addresses. We will value your comment for our future reports.

Dr. Geoffrey Z . Mutuma  
Cancer Registry Director,  
Tel. +254-020-722541  
Cell phone. +254-0722-801299  
Email: gmutuma@kemri.org

or

Anne Rugutt-Korir  
Cancer Registry Supervisor  
Tel. +254-020-722541 Ext. 3344  
Cell phone. +254-0722-481317  
Email: akorir@kemri.org



**Neupogen® increases neutrophil count**



**Neupogen® decreases**

- **Antibiotic usage**
- **Hospitalisation**
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INDICATIONS	DOSAGE
Post chemotherapy	5 µg/kg/day S.C. or I.V.
Mobilisation of PBPC's	10 µg/kg/day either as a 24 hour infusion or as a single daily S.C. injection for 6 consecutive days
Severe chronic neutropenia - Congenital neutropenia - Idiopathic/cyclic neutropenia	12 µg/kg/day S.C. 5 µg/kg/day S.C.
Post BMT	10 µg/kg/day I.V.



Roche Products



Ministry of Health  
(MOH)



Kenya Cancer Association  
(KENCASA)



World Health  
Organization  
(WHO)



International Agency for  
Research on Cancer  
(IARC)



National Cancer Institute  
(NCI)