

REPORT CANCERS

DIAGNOSED IN THE MAIN
ANATOMOPATHOLOGY AND HAEMATO-
ONCOLOGY SERVICES IN CAMEROON

IN 2021

DIRECTORATE FOR THE FIGHT AGAINST DISEASE, EPIDEMICS AND PANDEMICS
NATIONAL CANCER CONTROL COMMITTEE

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PREFACE



Dr Manaouda Malachie

Cameroon is experiencing a significant increase in the prevalence of non-communicable diseases, including cancers. Each year, several thousand cases of cancer are expected, and the fight against cancer involves several strategies, including promotion, prevention, treatment and epidemiological surveillance.

The surveillance involves data collection with the aim of systematically and continuously collecting relevant data, have them analysed and interpreted. The dissemination of this information will make it possible to take the essential decisions for the well-being of the patient, the improvement of the technical platform and the strengthening of human resources.

In order to carry out permanent monitoring with the view to having a national cancer database, it is necessary and almost urgent to produce a Report of cancers diagnosed in 2021 in the main anatomopathology and hemato-

oncology services in Cameroon. Its mission shall be to present the burden of cancers in terms of number of cases, types of cancers, different targets and age groups involved. This is a specific tool for decision-making in the fight against cancer and for advocacy with the technical and financial partners of the Ministry of Public Health.

This report is part of specific objective No. 5 of the National Strategic Plan for the Prevention and Control of Cancer 2020-2024, which consists of producing, by 2024, strategic information on the epidemiology of cancers. It will strengthen existing reliable and sustainable sources of data collection and use them to improve cancer prevention and care programmes.

This report on cancers diagnosed in 2021, based on data from DHIS2, is therefore the reference document for key players in the fight against cancer. They will work together to achieve the objectives of the national strategic plan for the prevention and control of cancer. Thus, I urge everyone to take ownership of it and contribute to the implementation of the resulting recommendations. I would like to congratulate the entire team that contributed to the drafting of this report.

REPUBLIC OF CAMEROON
 République du Cameroun
 LE MINISTRE
 The Minister
 MINISTRE DE LA SANTE
 PUBLIQUE

Dr. Manaouda Malachie

WORD FROM VITAL STRATEGIES

Non-Communicable Diseases (NCDs) are one of the major health and development challenges of the 21st century, both in terms of the human suffering they cause and their negative impact on the socio-economic fabric of countries, particularly low- and middle-income countries. No government can afford to ignore the growing burden of NCDs.

According to the latest estimates published by the International Agency for Research on Cancer (IARC), 18.1 million new cases of cancer have been diagnosed worldwide. In 2018, 9.6 million people died of cancer, accounting for almost one in six deaths (10 million). This makes cancer the second leading cause of death worldwide; seventy per cent of these deaths occur in resource-limited countries. These data, collected from 185 countries, show that 5.8% of cancer cases are concentrated on the African continent.

« Data For Health Initiative's Data Impact Programme supports these countries in integrating data throughout the decision-making process, leading to better decisions, greater stakeholder engagement and the results of those decisions. Our collaboration with Cameroon focuses initially on institutionalising a data reporting and monitoring system for diagnostic activities, and later for management, post-treatment follow-up and survival evaluation.

Without evidence-based measures, the human, social and economic costs of cancer will continue to rise, and Cameroon may no longer be able to effectively combat this disease.

Making available a first «National Report on the Status of Cancers Diagnosed in Histopathology and Haemato-Oncology Laboratories in 2021» allows for the setting of essential benchmarks to assess change and impact, allowing for temporal comparisons and drawing conclusions by inference from the evidence.

TECHNICAL DRAFTING COMMITTEE

THIS FIRST REPORT IS THE RESULT OF RECOMMENDATIONS, MADE DURING COORDINATION MEETINGS AT THE MINISTRY OF PUBLIC HEALTH, BY THE GENERAL SECRETARY, **PROFESSOR NJOCK LOUIS RICHARD**, ON THE URGENCY OF HAVING INFORMATION ON CANCERS, WHILE WAITING FOR THE EFFECTIVE IMPLEMENTATION OF CANCER REGISTERS.

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ABBREVIATIONS AND ACRONYMS

NCaCC	National Cancer Control Committee
CPC	Centre Pasteur of Cameroon
GDP	Gross Domestic Product
GLOBOCAN	Global Burden Of Cancer
HDI	Human Development Index
HFOSA	Health Facility
HGOPY	Yaounde Gyneco-Obstetrics and Pediatrics Hospital
HSS	Health Sector Strategy
MINEPAT	Ministry of the Economy, Planning and Regional Development
RLAs	Regional and Local Authorities
UNDP	United Nations Development Programme
WHO	World Health Organization
SSS	Stratégie Sectorielle de Santé

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1. GENERAL INFORMATION ON CAMEROON

1.1. Geographical situation

Located at the bottom of the Gulf of Guinea, Cameroon stretches from North to South on about 1,500 km and from East to West on 800 km. It is bordered to the North and North-East by the Republic of Chad, to the East by the Central African Republic, to the South by the Republic of Congo, Gabon and Equatorial Guinea, to the West by Nigeria and the Atlantic Ocean. Cameroon has a surface area of 475,442 km² including 466,050 km² of firm land and 9,600 km² of surface water contained in mouths, creeks and lakes.

Africa in miniature, Cameroon is a country with contrasting relief, made up of mountains, highlands unevenly distributed throughout the country and some narrow plains. The highlands are more frequent in the West, with a mountain range that originates on the Atlantic coast with Mount Cameroon as its highest point (4,070 meters), and which stretches to the Adamawa plateau.

The extension of Cameroon from North to South gives it great geographical and ecological diversity: (i) the Sudano-Sahelian zone (Benoue Valley in the North, Mandara Mountains and plains of the Far North); (ii) the high Guinean savannah zone (high altitude savannah of Adamawa, low savannah of the Centre and East and Tikar plain); (iii) the western highlands zone (Bamileke country and Northwest Grassfields); (iv) the humid forest zone with monomodal rainfall (coastal and maritime region located at the bottom of the Gulf of Guinea encompassing the Littoral and South-West regions).

1.2. Political and administrative organization

Cameroon is a unitary, decentralized and democratic State, with a presidential regime. The 1996 Constitution enshrines the separation of the three powers:

- *The Executive exercised by the President of the Republic and the Prime Minister;*
- *The Bicameral Legislature exercised by the National Assembly and the Senate;*
- *The Judiciary which is exercised through different jurisdictions, the highest of which is the Supreme Court*

The constitution also provides for the decentralization of public management with the creation of regions and Regional and Local Authorities (RLAs).

Administratively, Cameroon is bilingual with two official languages, English and French. It has 10 regions divided into 58 divisions and 360 sub-divisions corresponding to the number of existing councils in Cameroon.

1.3. Economic and demographic situation

1.3.1. Macroeconomic situation

After a particularly difficult year 2020 due to the COVID-19 pandemic, the Cameroonian economy recorded a boom in activities in 2021. The growth rate is estimated at 3.5% against 0.5% in 2020, driven mainly by the dynamics of non-oil activities. Indeed, in 2021 a strong recovery in activities is recorded in the primary (+4.6%, against +0.6% in 2020) and tertiary (+3.6%, against 0.6% in 2020) sectors. The secondary sector, which promoted resilience in 2020, experienced a slight slow down of 0.3 points, to stand at 2.9%. The inflation rate remained below the community convergence threshold of 3%, with a rate of 2.3% against 2.5% in 2020.

During the year 2021, Cameroon experienced a significant performance in terms of investments. With particular regard to public investment, the Government had planned for the 2021 financial year, an allocation of FCFA 1.352 billion in Payment Credits (PC). And in accordance with the Circular of the President of the Republic of 10 July 2020, the priorities of this budget related, among other things, to:

- *The continuation of special investment programmes (African Cup of Nations (CAN) 2022, PLANUT, PTSJ);*
- *The commissioning of major first-generation projects, in particular the finalization of related infrastructure;*
- *The continuation of the implementation of the global response plan against the COVID 19 pandemic;*
- *Strengthening the resources to be allocated to the Regional and Local Authorities, in order to enable them to exercise the powers transferred to them in full autonomy;*
- *The implementation of the reconstruction plan for the regions affected by the crises.*

1.3.2. Demographic situation

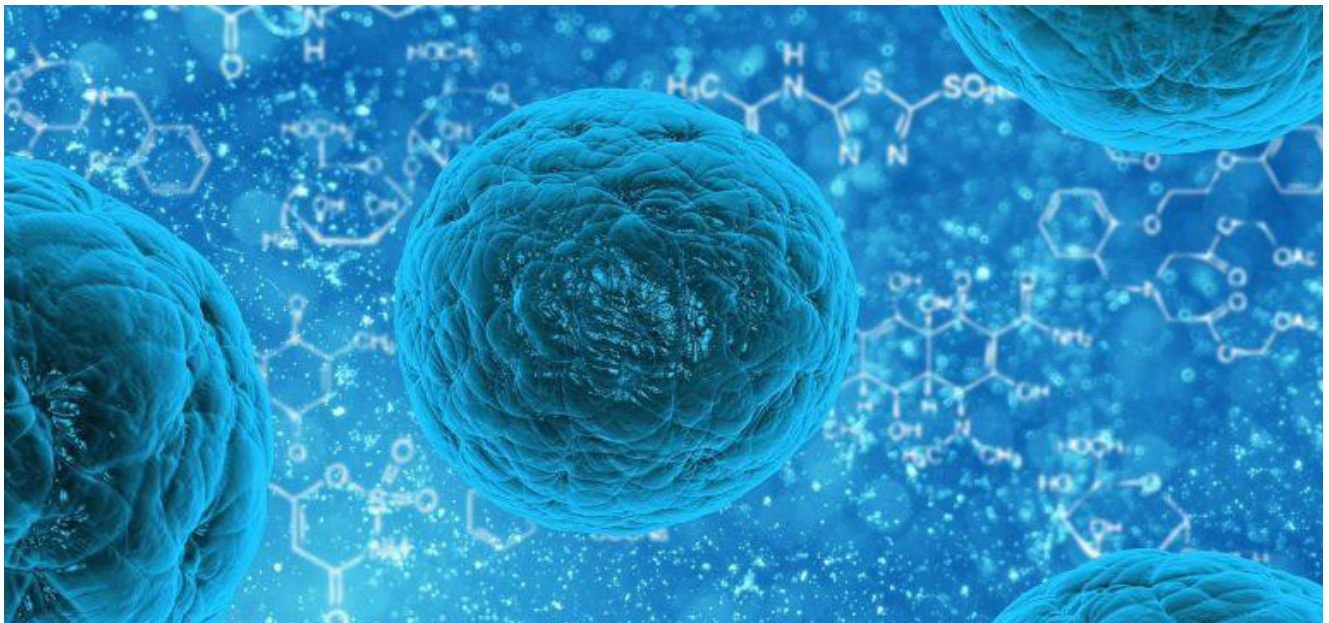
In 2021, the population of Cameroon was estimated at 27,224,262 inhabitants. This population is unevenly distributed over the country: the cities of Douala and Yaounde alone are home to about 20% of the national population. The most populated regions are:

- *Centre (18.7%);*
- *Far North (18%);*
- *Littoral (15.1%);*
- *North (11.0%).*

In 2014, the Cameroonian population was characterized by its extreme youth. The median age of the population was 18.0 years and the average age is 22.5 years. The population under 15 years represents 43.0% of the total population while that under 25 years represents 64.1%. Taking into account the particularities of the profiles of this population should certainly make it possible to ensure that the sharp increase in the young population translates into the achievement of the demographic dividend through:

- *Building the entrepreneurial capacity of young people;*
- *Supporting the creation of decent and well-paid jobs for this category; improving their access to finance; and*
- *The effective participation of young people in political processes.*

The spatial distribution shows significant disparities according to place of residence, between regions and within them. From April 1987 to November 2005, Cameroon's population density increased from 22.6 to 37.5 inhabitants per square kilometer. Urban growth is one of the most striking demographic facts of recent years in Cameroon. Indeed, the rate of urbanization was 28.5% in 1976; it rose to 39.0% in 1987 to reach 48.8% in 2005.



1.4. Organization of the health sector

The health sector in Cameroon is structured in three levels forming a pyramid whose functional relationships are specified in the table below. It has three sub-sectors:

- *A public sub-sector;*
- *A private sub-sector;*
- *A faith-based sub-sector.*

Table 1 : Different levels of the health system

Level	Administrative structures	Skills	Health structures	Dialogue structures
Central	Minister's Office,	<ul style="list-style-type: none"> •Development of concepts, policies and strategies • Coordination • Regulation 	General Hospitals, University Teaching Hospitals, Central Hospitals and Others ranking as such, CENAME, CPC, CHRACERH, LANACOME, CIRCB, NPHO	National Council for Health, Hygiene and Social Affairs
Office of the Secretary of State,	10 Délégations régionales	Technical support to health districts	Regional hospitals and others ranking as such, Specialized Regional Hospital Centres of 2nd referral level, Regional Pharmaceutical Supply Centres	Regional Funds for Health Promotion
Secretariat General,	197 Health Districts	Implementation of programmes	<ul style="list-style-type: none"> • District Hospitals, • Clinics, MHC, IHC, CSA, Doctor's Offices 	COSADI, COGEDI COSA, COGE

(Source : Conceptual framework of the health district supplemented from the decree organizing the Ministry of Public Health of 2013.)

The orientation law on decentralization of 22 July 2004 provides for the transfer of powers and resources to Regional and Local Authorities. In the health sector, Decrees No. 2010/0246/PM of 26 February 2010 and No. 2011/0004/PM of 13 January 2011 specify the procedures for exercising certain powers transferred by the State to municipalities in terms of construction, equipment and management of Integrated Health Centres (IHC) and Medicalized Health Centres (MHC). In addition, the mayors preside over the management committees of District Hospitals (DH) and Medicalized Health Centres (MHC), while those of Regional Hospitals (RH) and Central Hospitals (CH) are entrusted to the Government Delegates to the Urban Communities, now known as city mayors.

2. SITUATION OF CANCERS IN CAMEROON

2.1. Epidemiology of cancers in Cameroon

According to the Global Burden Of Cancer 2020 (GLOBOCAN 2020), about 20,745 new cases of cancer are expected each year; in this same report, cancer is responsible for approximately 13,199 deaths per year with a mortality incidence ratio greater than 63% (Sung et al., 2021). In terms of incidence, women are the most affected with 12,235 new cases each year compared to 8,510 new cases each year among men.

In terms of annual incidence, the main cancers are (Sung et al., 2021) :

- *Breast cancer (4170 new cases);*
- *Cancer of the cervix (2,770 new cases);*
- *Prostate cancer (2,189 new cases);*
- *Lymphomas (1638 new cases)*
- *Liver cancer (775 new cases);*
- *Colorectal cancers (474 new cases).*

2.2. Cancer response mechanism in Cameroon

The National Cancer Control Committee was reorganized by ministerial decision No. 0153/MSP/CAB of 31 January 2002. Placed under the coordination of the Sub-Department for the Fight against Chronic Non-Communicable Diseases, this committee has the following missions:

- *Proposing the policy and strategies for the fight against cancer;*
- *Cancer prevention;*
- *Early detection of cancers;*
- *Treatment and palliative care of cancer patients;*
- *Collecting data on cancers;*
- *Cancer research;*
- *Mobilizing the necessary resources to carry out its activities.*

In 2020, a National Strategic Plan for the Prevention and Control of Cancer (NSPPCCa) 2020-2024 was developed and the main objective of this tool is to reduce morbidity and mortality due to cancer in Cameroon by at least 10%. This National Strategic Plan for the Prevention and Control of Cancer is in line with the 2016-2027 Health Sector Strategy and puts the fight against cancer at the core of national concerns.

2.3. Epidemiological surveillance of cancers

The epidemiological surveillance of cancers, essential for priority decision-making for the fight against cancer, was no longer effective in Cameroon since the cessation of the operation of the cancer registry of the city of Yaounde in 2012. Until 2021, aggregated data on breast, cervix and prostate cancer were collected in HFs through the Monthly Activity Report (MAR) and entered into the DHIS 2.

Since the digitization in the DHIS2 of the registers of the histopathology and hemato-oncology laboratories, individual data relating to diagnosed cancers are now collected. This is the main source of data used in the preparation of this report.

2.4. Interest of the report

In the field of oncology, the weak capacity of the health system to respond effectively to the needs of the population, results in unsatisfactory health indicators with, in particular, high morbidity and mortality (20,745 cases with 13,199 cases of death according to GLOBACAN 2020). These increasingly high numbers of cancer cases make them a real public health problem.

The response of the Cameroonian health system to the problem of cancer resulted in the establishment in 1990, then the reorganization in 2002 of a cancer control strategy organized around a National Cancer Control Committee (NCaCC).

Difficulties persist from primary prevention to tertiary prevention, manifested by the arrival of patients at an advanced stage of the disease; the failure of the epidemiological surveillance of cancers, the absence of cancer data specific to Cameroon, making it possible to better orientate strategies and thus make evidence-based decisions.

In view of all these difficulties, the urgency was to set up a platform adapted to the recording and description of all cancers diagnosed in Cameroon. The data now available make it possible to produce a report presenting the various cancers diagnosed in 2021 in the main anatomopathology and hemato-oncology services in Cameroon.

This report will contribute to the popularization of health information and especially to evidence-based decision-making in the fight against cancer in Cameroon.

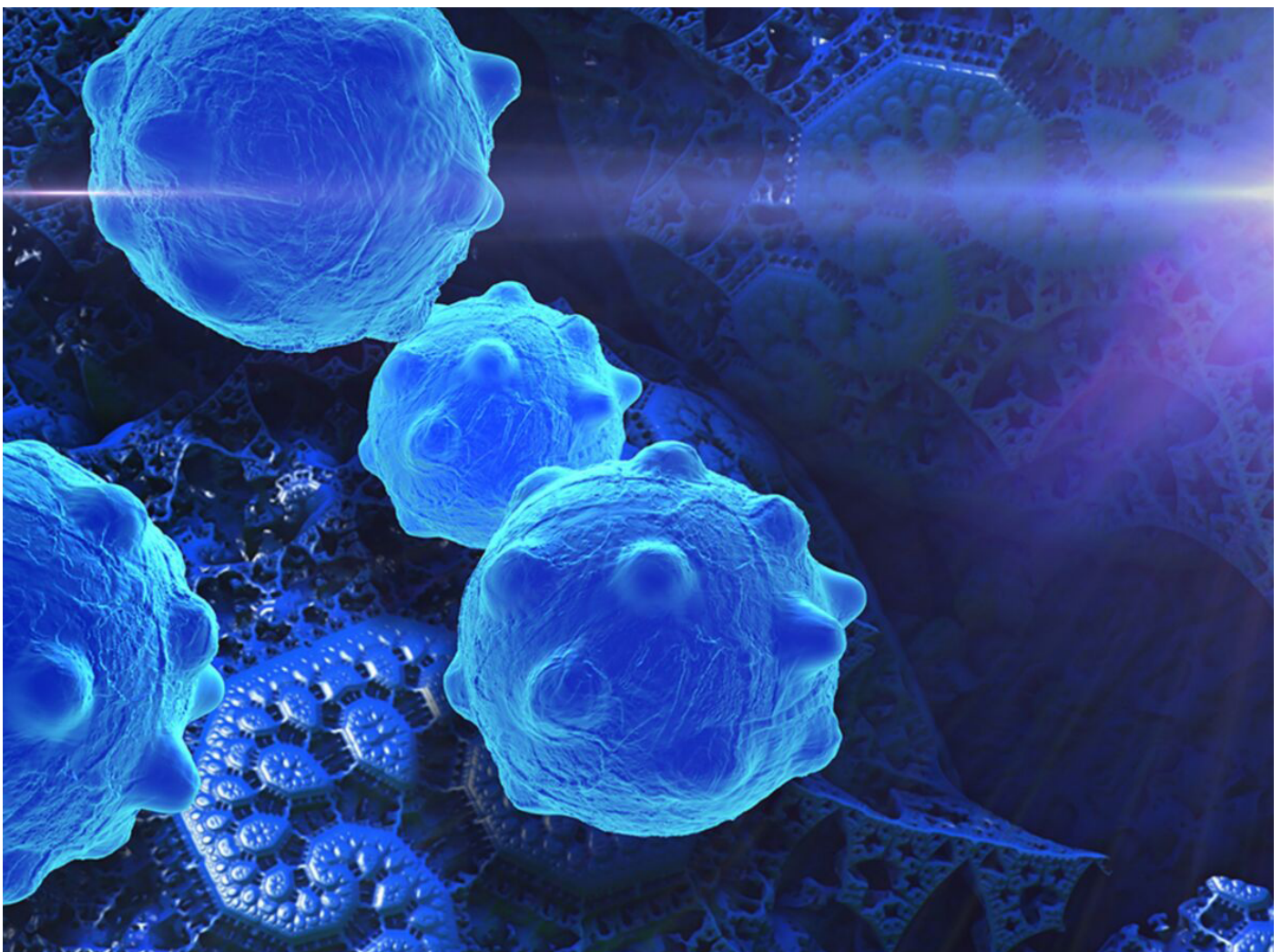
3. OBJECTIVES OF THE REPORT

3.1. Main objective

Study the profile of cancers diagnosed in 2021 in ten main anatomopathology and hemato-oncology services in Cameroon.

3.2. Specific objectives

- Determine the number of cases of diagnosed cancers;
- List the different types of diagnosed cancers;
- List the different organs affected;
- Describe the different types of cancers per facility.



4. METHODOLOGICAL APPROACH

4.1. Data collection process

In April 2021, a workshop for the digitization of cytopathology and hemato-oncology registers was held in Ebolowa, attended by the Health Information Unit, the National Cancer Control Programme, the Centre Pasteur of Yaounde, the Gyneco-Obstetrics and Pediatrics Hospital of Yaounde, the Douala General Hospital, the Douala Laquintinie Hospital, the Bingo Baptist Hospital, and the Mother and Child Centre of the Chantal Biya Foundation of Yaounde.

During the workshop, each of the cytopathology and hemato-oncology services presented their cancer data collection tools and two working groups were set up with the following mission:

- *Develop a harmonized tool for collecting data from cytopathology laboratories;*
- *Develop a harmonized tool for collecting data from hemato-oncology laboratories.*

From the working group, a consensual cancer diagnostic data collection sheet emerged, containing the patient's socio-demographic information, history and diagnosis, according to the International Classification of Diseases (ICD).

The consensus data collection form was digitized in the **“Event” module of the District Health Information Software (DHIS2)**. This electronic form has been linked to all the services concerned, with the possibility of daily entry of individual data for each patient diagnosed. A cancer monitoring dashboard was then set up in the DHIS2.

In July 2021, a second workshop was organized, for the purpose of training the heads of the cytopathology and hemato-oncology laboratories, as well as their data managers, on entering into the DHIS2 of historical data of cancers diagnosed in their respective services, with 2021 as the start date.

This was followed by a coaching operation set up to provide technical assistance to all the services involved, with a view to guaranteeing the completeness and timeliness of the data, which feed into the production of this report.

The digitized cancer data collection form, called «Cancer_Data collection form» is available in the «Event» module of the national DHIS 2, whose URL is www.dhis-minsante-cm.org.

4.2. Limitations of the report

The limitations that can be observed in this report are those related to the variables that have not been entered into the system, due to the fact that they are not collected at the level of the laboratories of these services, but rather exist in the patient's medical record. These include, among others:

- *Sociodemographic variables (profession, religion, division of origin, etc.);*
- *Variables on medical and family history (diabetes, hepatitis, etc.);*
- *The organs concerned in the case of lymphomas;*
- *The stage and grade of the cancer.*

Also, not all hospitals with a cytopathology and hemato-oncology services were involved in the initial process, mainly due to the lack of information on the functionality of the laboratories. These include the laboratories of HGOPEP, CHRACERH, Garoua Military Hospital; as well as some private laboratories, which will be invited to join the process. Finally our data is primarily based on Hospital sources. An important proportions fo patients do not go to hospital, prioritizing traditional treatment with resulting death. Our data is bounded to be incomplet and not reflective of the actual incidence of cancers in the population.

4.3. Definitions of operational terms

Cancer : or malignant tumor is a group of pathologies due to anarchic proliferation of cells linked to a mutation, with progressive loss of characters, invasion of neighboring structures with secondary localization in organs located at a distance in the form of metastases; the process leading to death if nothing is done

Carcinoma : Malignant tumor developed from epithelial cells

Lymphoma : Malignant tumor proliferation of hematopietic cells of the lymphoid lineage

Sarcoma : Malignant tumor developed from connective cells

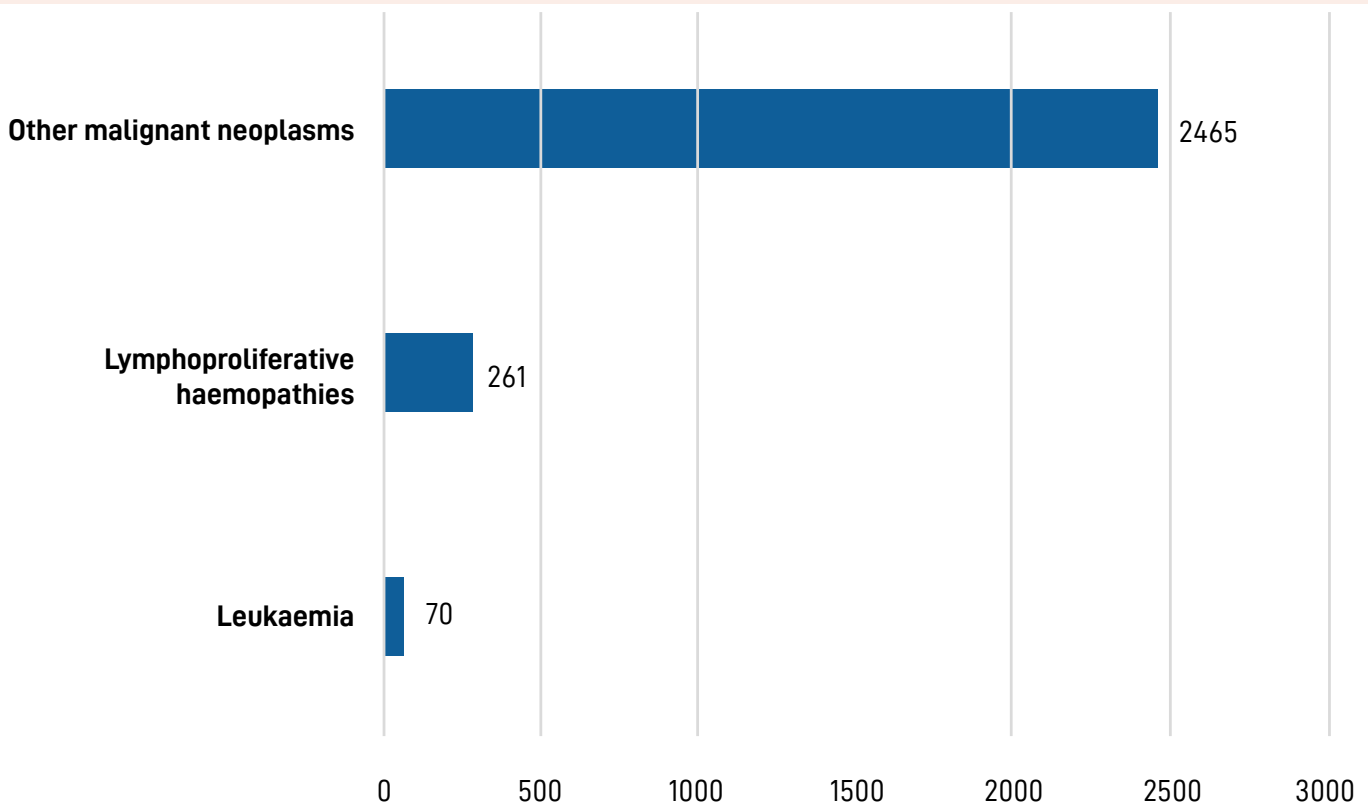
Leukemia : Malignant tumor proliferation of hematopietic cells of the myeloid lineage

5. FINDINGS

5.1. Distribution of cancer patients

Among the 2,796 patients diagnosed in 2021 in the main anatomopathology and hemato-oncology services in Cameroon, 261 patients (representing approximately 9%) were suffering from leukemia, 70 patients (representing approximately 3%) were suffering from lymphoproliferative haemopathies and finally a very large majority of patients (about 88%, or 2465 patients) were suffering from other malignant tumours.

Graph 1: Distribution of patients per type of cancer



The average age of all patients was 49 years with a dispersion of 19 around this value. 50% of the patients were over 50 years old. The youngest patient had not yet reached his first birthday and the oldest was over 100 years old (101 to be exact).

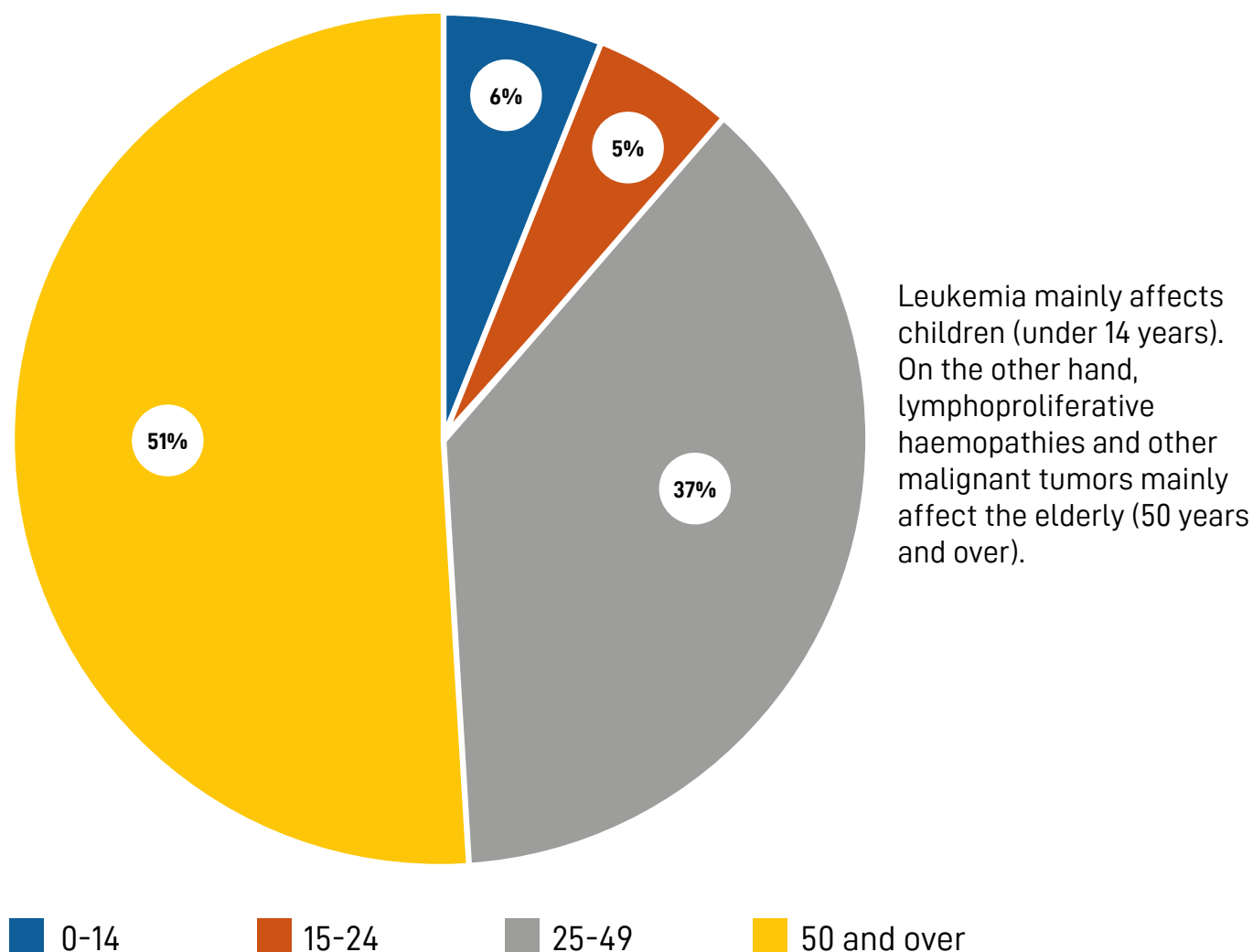
The average age for leukemia cases was 27 years old with a dispersion of 22 years. 50% of leukemia patients were at most 17 years old. The youngest of them was less than a year old and the oldest 76 years old. The average age of patients with lymphoproliferative haemopathies was 37 years with a dispersion of 23 years. 50% of these patients were under 37 years old. The youngest of them was one year old and the oldest 87 years old. With regard to the other malignant tumors, the average age was 51 years with a dispersion of 18 years around this value. 50% of patients with other malignancies were over 51 years old. The youngest patient was less than a year old and the oldest 101 years old.

Table 2 : Characteristics of central tendency and age dispersion of patients

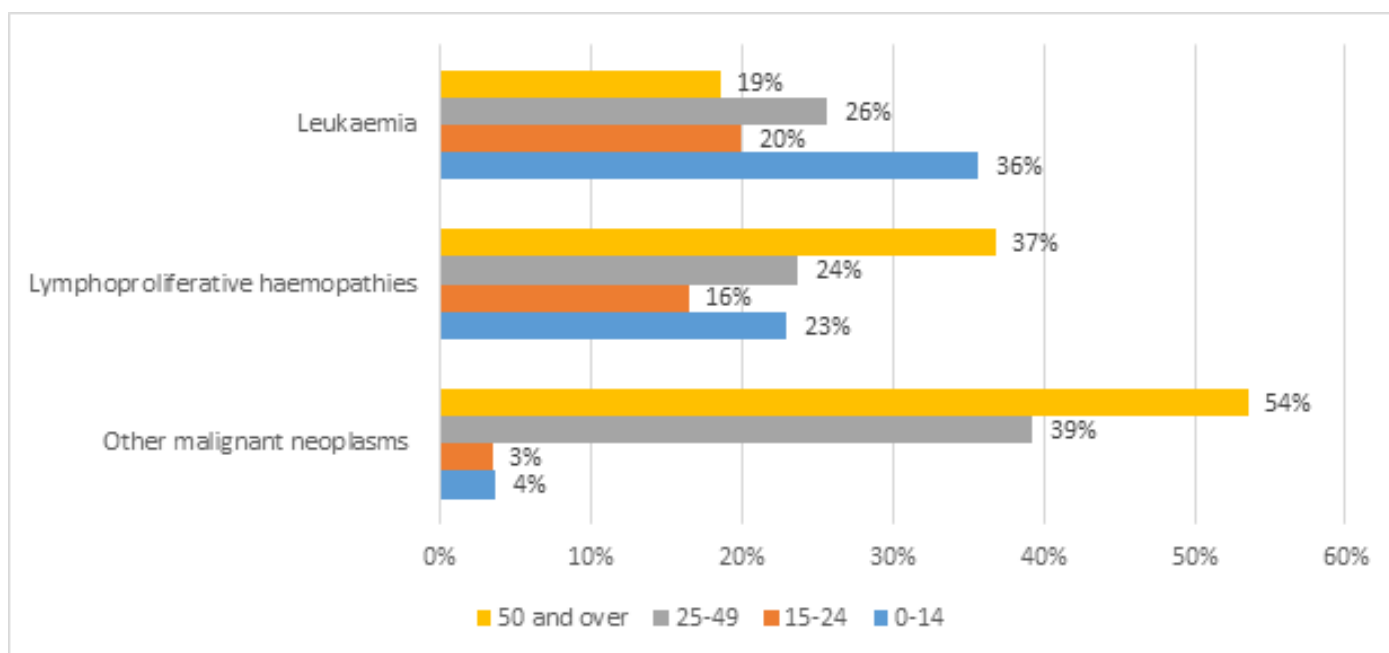
Types of cancer	Average	Median	Standard deviation	Min	Max
Leukaemia	27	17	22	0	76
Lymphoproliferative haemopathies	37	37	23	1	87
Other malignant neoplasms	51	51	18	0	101
All	49	50	19	0	101

Children (under 15 years) accounted for approximately 6% of cancer patients. Teenagers (between 15 and 24 years) represented 5%, adults (between 25 and 49 years) 37% and the elderly (over 50 years old) represented up to 51%.

Graph 2 : Distribution of patients according to age groups

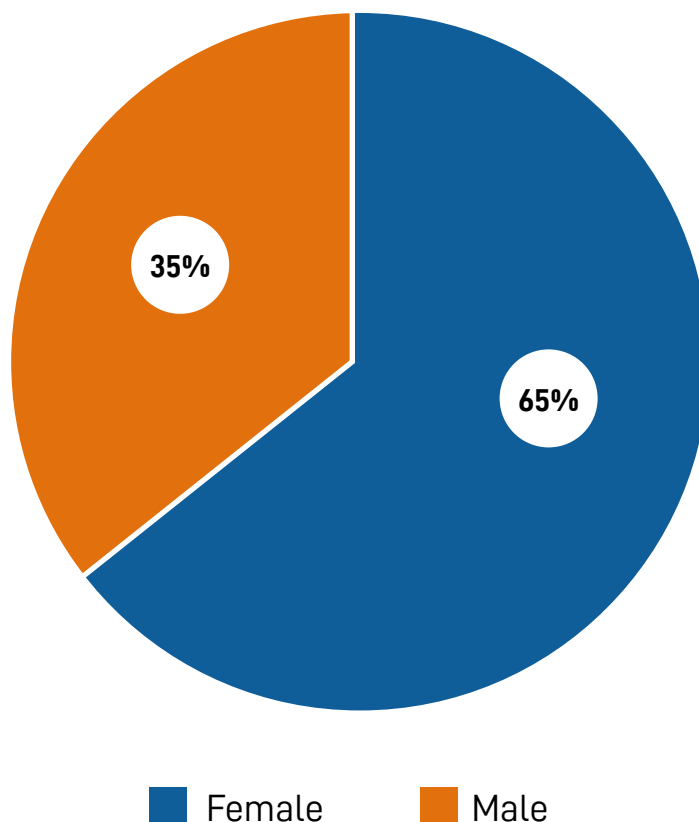


Graph 3 : Distribution of types of cancer according to age

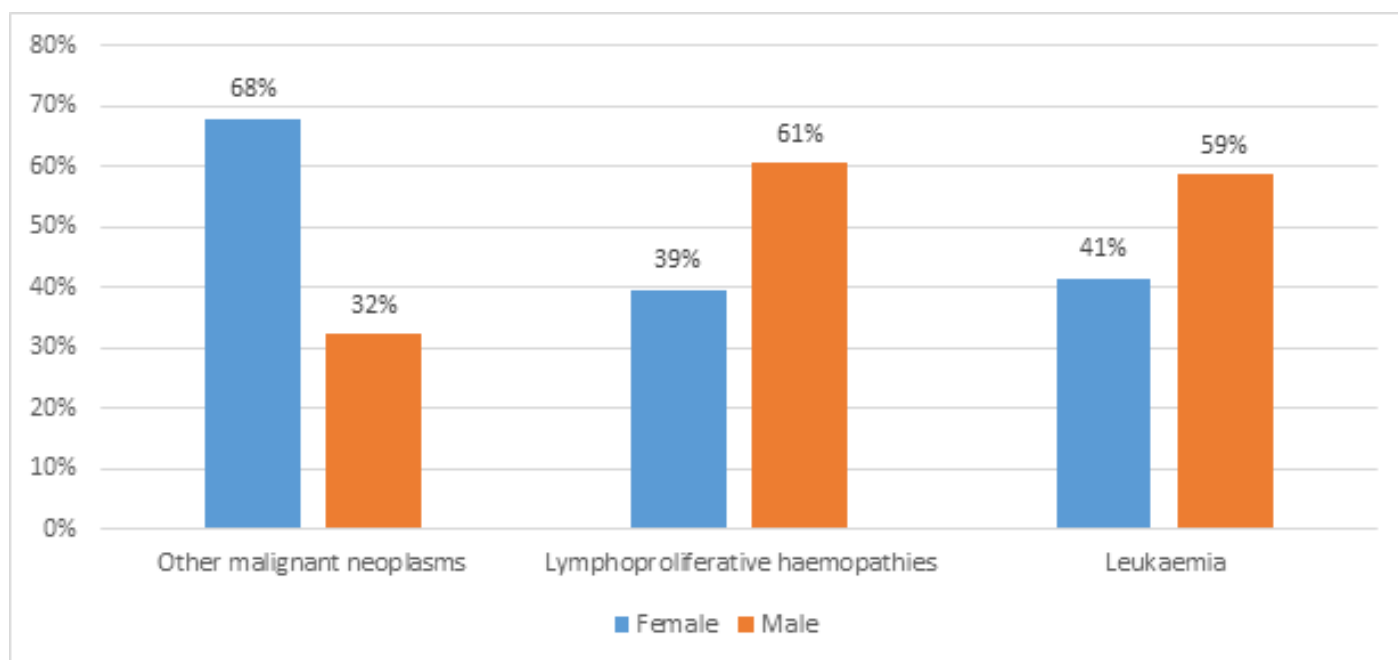


65% of cancer patients were women compared to only 35% men.

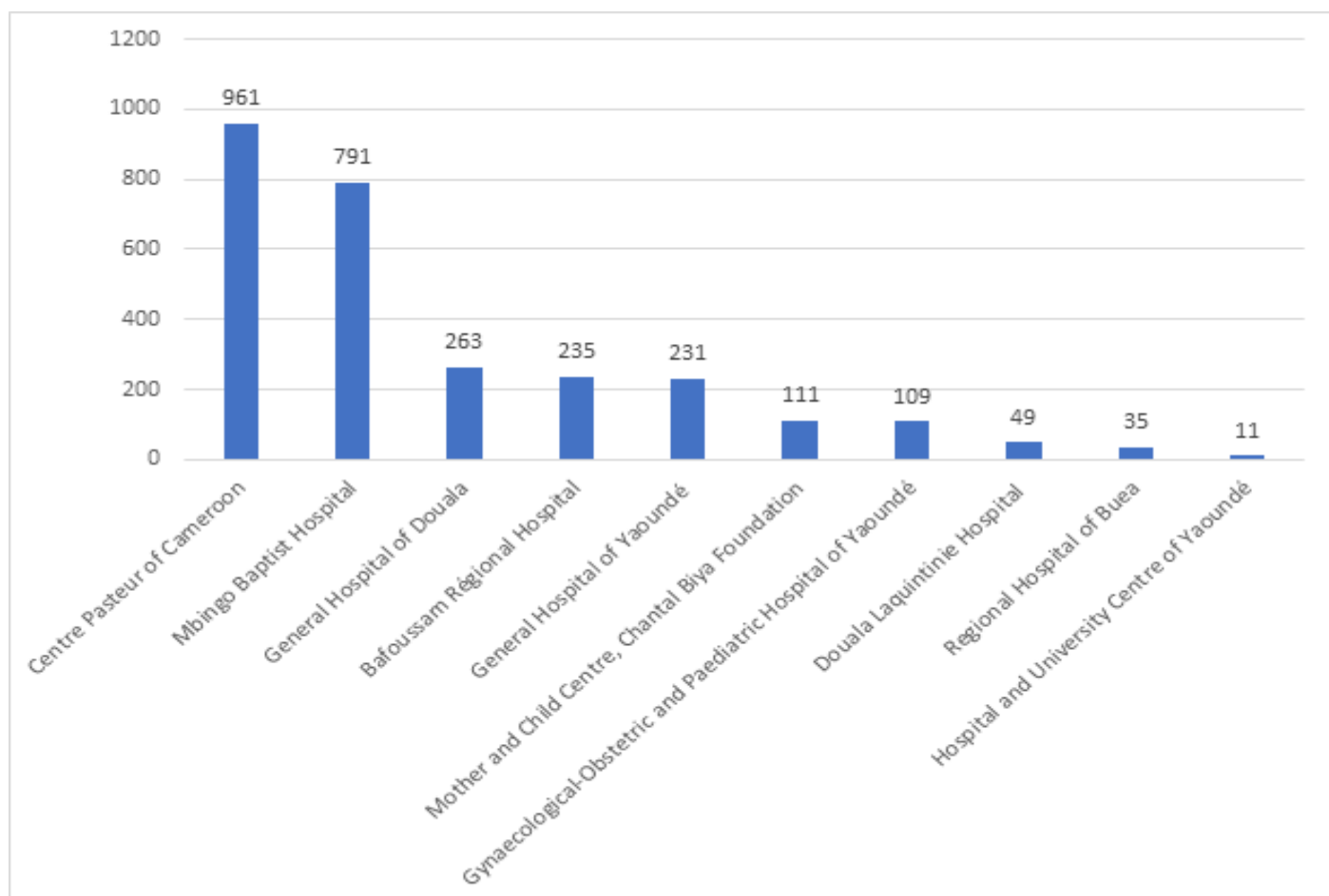
Graph 4 : Distribution of patients according to gender



Of the leukemia patients, 41% were female. 39% of patients with lymphoproliferative haemopathies were women. And finally, 68% of patients with other malignancies were female.

Graph 5 : Distribution of types of cancer according to gender

The pathological anatomy laboratory of the Centre Pasteur of Cameroon was the one in which the highest number of cancers were diagnosed in 2021, followed by that of Mbingo Baptist Hospital.

Graph 6 : Distribution of cancer cases diagnosed according to source laboratory

5.2. Overall distribution of the types of cancers diagnosed in the ten laboratories in 2021

5.2.1. General data

The overall distribution shows a wide variety of cancers diagnosed. They are distributed in various organs.

Among the cancers diagnosed in 2021 in the ten laboratories in Cameroon, breast cancer came first with 652 cases or 23.3%. It was followed by cervical cancer with 392 cases or 14.0%. Prostate cancer ranked third with 206 cases or 7.4%. Next came non-Hodgkin's lymphomas with 7.0% (diffuse non-Hodgkin's lymphomas representing the large share with 4.5% of all cancers), colon cancer 4.6%, and corpus uteri cancer (including endometrium) 3.0%, stomach cancer 2.6%.

Skin cancers, other than melanoma, came in 10th position with 61 cases or 2.2%. Kaposi's sarcoma followed with 57 cases or 2.0% of all cancers.

Secondary cancers (metastases) accounted for 123 cases overall, or 4.4%. They were mainly found in the respiratory and digestive organs (1.6%) then in the lymph nodes (1.5%).

Table 3 : General distribution of cancers according to ICD 10

Types of cancer	Size	Percentage (%)
Malignant neoplasms of the breast	652	23,3
Malignant neoplasm of the cervix uteri	392	14,0
Malignant neoplasm of the prostate and penis	206	7,4
Malignant neoplasm of the colon	128	4,6
Non-follicular lymphoma	127	4,5
Malignant neoplasm of the corpus uteri	85	3,0
Malignant neoplasm of the stomach	74	2,6
Malignant neoplasm of other and ill-defined digestive organs	73	2,6

Types of cancer	Size	Percentage (%)
Other specified and unspecified types of non-Hodgkin	62	2,2
Malignant neoplasms of the skin	61	2,2
Secondary malignant neoplasm of the respiratory and digestive organs	45	1,6
Secondary and unspecified malignant neoplasm of the lymph nodes	42	1,5
Hodgkin lymphoma	40	1,4
Malignant neoplasm of the liver and intrahepatic bile ducts	40	1,4
Myeloid leukemia	37	1,3
Malignant neoplasm of the vulva	37	1,3
Malignant neoplasms of ill-defined, other secondary and unspecified sites	36	1,3
Malignant neoplasm of the eye and adnexa	35	1,3
Malignant neoplasm of other and unspecified male genital organs	33	1,2
Kaposi's sarcoma	31	1,1
Kaposi's sarcoma of other sites	26	0,9
Lymphoid leukemia	25	0,9
Malignant neoplasm of the nasal cavity and middle ear	25	0,9
Multiple myeloma and malignant plasma cell neoplasms	23	0,8
Malignant neoplasm of other and unspecified parts of the mouth	23	0,8
Malignant neoplasm of the larynx	22	0,8
Malignant neoplasm of the pancreas	22	0,8
Malignant melanoma of the skin	21	0,8
Malignant neoplasm of the esophagus	21	0,8
Malignant neoplasm of other and ill-defined sites	20	0,7
Malignant neoplasm of the bone and articular cartilage of other and unspecified sites	20	0,7
Malignant neoplasm of the small intestine	19	0,7

Types of cancer	Size	Percentage (%)
Malignant neoplasm of other connective and soft tissue of the vulva	19	0,7
Malignant neoplasm of the spinal cord, cranial nerves and other parts of central nervous system	17	0,6
Malignant neoplasm of other and ill-defined sites in the lip, oral cavity and pharynx	16	0,6
Malignant neoplasm of the brain	16	0,6
Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue	14	0,5
Malignant neoplasm of the bladder	13	0,5
Malignant neoplasm of the anus and anal canal	13	0,5
Malignant neoplasm of the bronchus and lung	13	0,5
Malignant neoplasm of the meninges	13	0,5
Malignant neoplasm of other and unspecified parts of tongue	11	0,4
Malignant neoplasm of other and unspecified major salivary glands	11	0,4
Malignant neoplasm of other connective and soft tissue	11	0,4
Malignant neoplasm of the bone and articular cartilage of limbs	10	0,4
Malignant neoplasm of the accessory sinuses	10	0,4
Malignant neoplasm of the retroperitoneum and peritoneum	10	0,4
Malignant neoplasm of the nasopharynx	9	0,3
Malignant neoplasm of other and unspecified female	8	0,3
Malignant neoplasm of the palate	8	0,3
Malignant neoplasm of the heart, mediastinum and pleura	7	0,3
Unspecified cell leukaemia	6	0,2
Malignant neoplasm of the adrenal gland	6	0,2
Malignant neoplasm of other endocrine glands and related structures	5	0,2

Types of cancer	Size	Percentage (%)
Malignant neoplasm of other and unspecified urinary	5	0,2
Malignant neoplasm of the testis	5	0,2
Malignant immunoproliferative diseases and certain other B-cell lymphomas	4	0,1
Malignant neoplasm of the lip	4	0,1
Malignant neoplasm of the oropharynx	4	0,1
Malignant neoplasm of the peripheral nerves and autonomic nervous system	4	0,1
Follicular lymphoma	3	0,1
Malignant neoplasm of other and ill-defined digestive	3	0,1
Malignant neoplasm of the floor of mouth	3	0,1
Malignant neoplasm of other and unspecified parts of biliary tract	3	0,1
Other specified cell leukemia	2	0,1
Mature T/NK-cell lymphomas	2	0,1
Malignant neoplasm of other connective and soft tissue of connective tissue and of the abdomen	2	0,1
Malignant neoplasm of the gum	1	0,0
Malignant neoplasm of other and ill-defined sites in the respiratory system and intrathoracic organs	1	0,0
Malignant neoplasm of the hypopharynx	1	0,0
Total	2796	100,0

The organs most affected by cancers in 2021 were the breasts and female genital organs (1174 patients, or 47.6%). Then, the digestive organs (323 patients, or 13.1%), the male genital organs (216 patients, or 8.8%) ...

Table 4 : Distribution of organs affected by cancers

Grouping of cancers per organ	Size	Percentage
Malignant neoplasms of the breast and female genital organs	1174	47,6%
Malignant neoplasms of the digestive organs	323	13,1%
Malignant neoplasms of ill-defined, other secondary and unspecified sites	216	8,8%
Malignant neoplasms of the male genital organs	216	8,8%
Malignant neoplasms of the mesothelial and soft tissue	103	4,2%
Malignant neoplasms of the lip, oral cavity and pharynx	91	3,7%
Melanoma and other malignant neoplasms of skin	82	3,3%
Malignant neoplasms of the respiratory and intrathoracic organs	78	3,2%
Malignant neoplasms of the eye, brain and other parts of central	67	2,7%
Malignant neoplasms of the urinary tract	46	1,9%
Malignant neoplasms of the bone and articular cartilage	30	1,2%
Malignant neoplasms of the thyroid and other endocrine glands	25	1,0%
Malignant neoplasms of the lymphoid, hematopoietic and related tissue	11	0,4%
Malignant neoplasms of multiple independent sites (primitive)	3	0,1%
Total	2465	100%

In the age group 0 to 14 years there was a predominance of cancers of ill-defined, secondary and unspecified sites. The last three age groups; 15 to 24 years old, 25 to 49 years old, 50 years old and over have a predominance of cancers of the breast and female genital organs.

Table 5 : Distribution of organs affected by cancer according to age group

Grouping of cancers per organ	Age groups (%)			
	0-14	15-24	25-49	50 and over
Malignant neoplasms of the thyroid and other endocrine glands	4,3	1,2	0,7	1,0
Malignant neoplasms of the mesothelial and soft tissue	9,8	7,0	5,5	2,7
Malignant neoplasms of ill-defined, other secondary and unspecified sites	20,7	17,4	7,7	8,1
Malignant neoplasms of multiple independent sites (primitive)	0,0	0,0	0,2	0,1
Malignant neoplasms of the lymphoid, hematopoietic and related tissue	0,0	3,5	0,3	0,4
Malignant neoplasms of the lip, oral cavity and pharynx	4,3	9,3	3,4	3,5
Malignant neoplasms of the eye, brain and other parts of central	19,6	9,3	1,9	1,7
Malignant neoplasms of the digestive organs	4,3	7,0	10,8	15,8
Malignant neoplasms of the male genital organs	1,1	1,2	1,1	15,4
Malignant neoplasms of the respiratory and intrathoracic organs	2,2	8,1	3,0	3,0
Malignant neoplasms of the bone and articular cartilage	6,5	8,1	0,9	0,6
Melanoma and other malignant neoplasms of skin	6,5	5,8	3,1	3,1
Malignant neoplasms of the breast and female genital organs	3,3	22,1	60,2	43,1
Malignant neoplasms of the urinary tract	17,4	0,0	1,0	1,5
Total	100	100	100	100

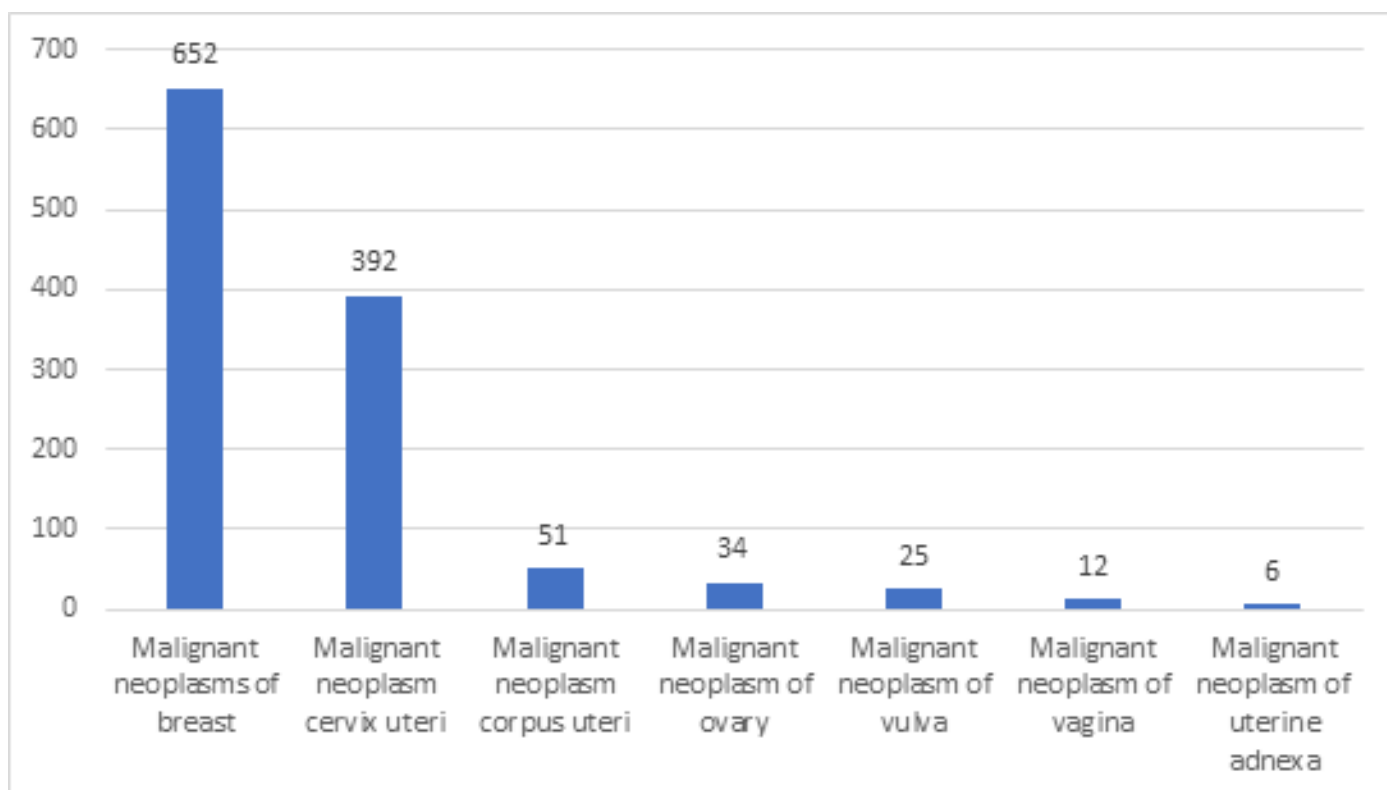
The majority of cancers diagnosed in women were gynecological and breast cancers, while in men these cancers came much more from the male genital organs.

Table 6 : Distribution of organs affected by cancer according to gender

Grouping of cancers per organ	Female (%)	Male (%)	Total (%)
Malignant neoplasms of the thyroid and other endocrine glands	1	1	1
Malignant neoplasms of the mesothelial and soft tissue	3	7	4
Malignant neoplasms of ill-defined, other secondary and unspecified sites	7	13	9
Malignant neoplasms of multiple independent sites (primitive)	0	0	0
Malignant neoplasms of the lymphoid, hematopoietic and related tissue	0	1	0
Malignant neoplasms of the lip, oral cavity and pharynx	2	7	4
Malignant neoplasms of the eye, brain and other parts of central	2	4	3
Malignant neoplasms of the digestive organs	9	22	13
Malignant neoplasms of the male genital organs	0	27	9
Malignant neoplasms of the respiratory and intrathoracic organs	2	5	3
Malignant neoplasms of the bone and articular cartilage	1	2	1
Melanoma and other malignant neoplasms of skin	3	4	3
Malignant neoplasms of the breast and female genital organs	68	5	48
Malignant neoplasms of the urinary tract	1	3	2
Total	100	100	100

5.2.2. Gynecological and breast cancers

Graph 7 : Overall distribution of gynecological and breast cancers



Breast cancer was the leading gynecological cancer with 652 cases of all gynecological cancers, or 55.6%, followed by cervical cancer with 392 cases, or 33.4%. Malignant tumors of the adnexa of the uterus were rare.

Table 7 : Distribution of gynecological and breast cancers according to age groups

Malignant neoplasms of the female genital organs	Age groups (%)				
	0-14	15-24	25-49	50 and over	Total
Malignant neoplasm of the ovary	0,0	8,8	47,1	44,1	100,0
Malignant neoplasm of the vulva	0,0	0,0	52,0	48,0	100,0
Malignant neoplasm of the uterine adnexa	33,3	0,0	33,3	33,3	100,0
Malignant neoplasm cervix uteri	0,0	0,5	40,8	58,7	100,0
Malignant neoplasm corpus uteri	0,0	5,9	31,4	62,7	100,0
Malignant neoplasms of the breast	0,2	1,5	56,7	41,6	100,0
Malignant neoplasm of the vagina	0,0	8,3	41,7	50,0	100,0

Contrary to the general trend for all cancers, the majority of which were found after the age of 50 years, malignant breast tumors are more common in the 25 to 49 age group.

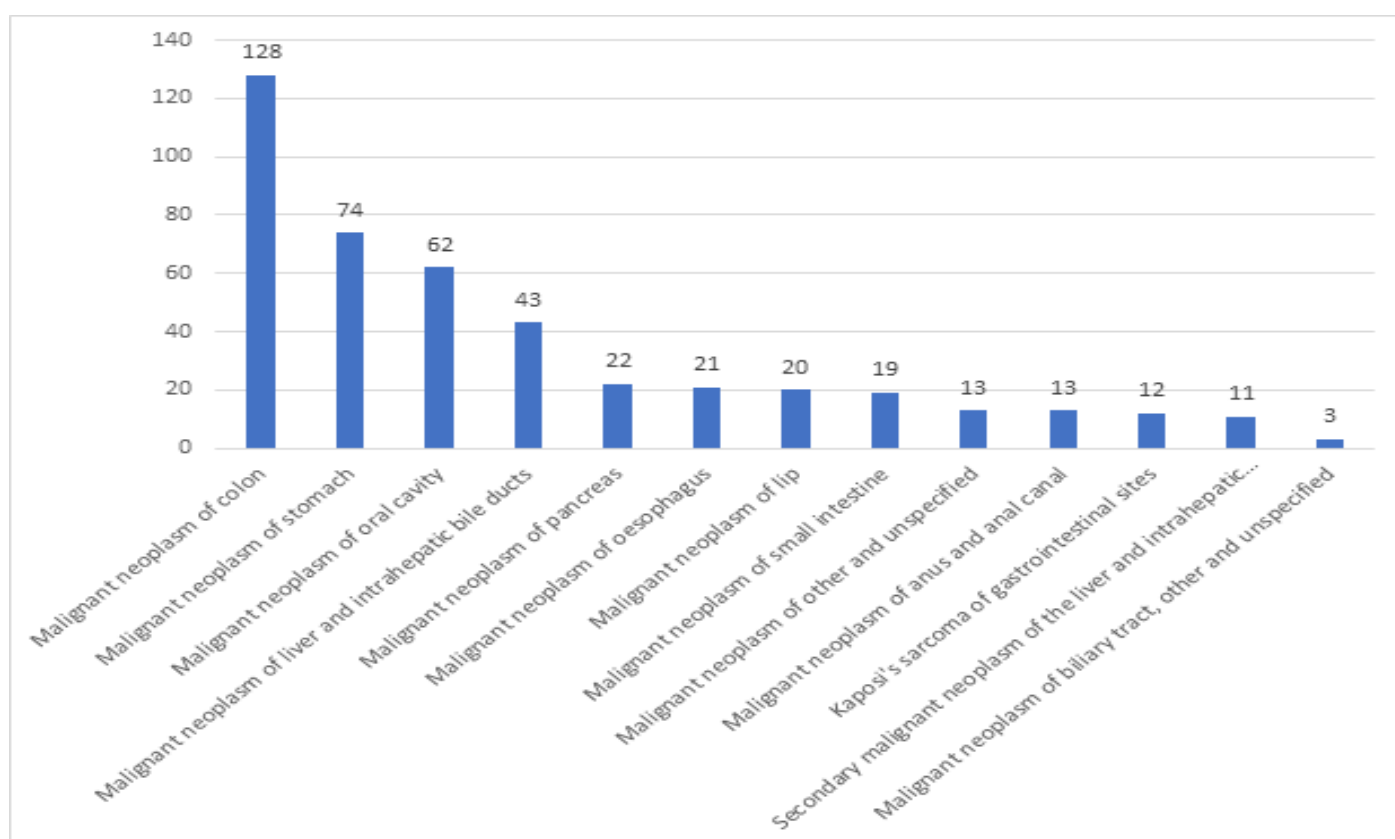
Table 8 : Distribution of gynecological and breast cancers according to histological type

Malignant neoplasms of the female genital organs	Histological type (%)				
	Carcinoma	Adenocarcinoma	Sarcoma	Other	Total
Malignant neoplasm of the ovary	23,5	70,6	0,0	5,9	100,0
Malignant neoplasm of the vulva	92,0	8,0	0,0	0,0	100,0
Malignant neoplasm of the uterine adnexa	16,7	33,3	16,7	33,3	100,0
Malignant neoplasm cervix uteri	88,3	7,7	0,5	3,6	100,0
Malignant neoplasm corpus uteri	58,8	29,4	2,0	9,8	100,0
Malignant neoplasms of the breast	96,9	1,4	0,9	0,8	100,0
Malignant neoplasm of the vagina	83,3	8,3	0,0	8,3	100,0

Carcinomas were found to be the most frequent histological types of malignant tumors in women compared to adenocarcinomas and other malignancies.

However, it is important to note that breast carcinoma is actually an adenocarcinoma for which by convention it has been called "carcinoma". It essentially includes ductal carcinoma and its variants, and lobular carcinoma.

5.2.3. Cancers of the digestive system

Graph 8 : Distribution of cancers of the digestive system

Colon cancers predominated among cancers of the digestive system with 128 cases or 29%, followed by stomach and oral cavity cancers with respectively 74 cases (16.8%) and 62 cases (14.1%). Primary liver cancers come in fourth place.

Table 9 : Distribution of cancers of the digestive system according to age groups

Malignant neoplasms of the digestive organs	Age groups (%)				
	0-14	15-24	25-49	50 and over	Total
Malignant neoplasm of other and unspecified	0,0	15,4	23,1	61,5	100,0
Kaposi's sarcoma of the gastrointestinal sites	16,7	0,0	41,7	41,7	100,0
Malignant neoplasm of the oral cavity	4,8	3,2	35,5	56,5	100,0
Malignant neoplasm of the lip	5,0	25,0	40,0	30,0	100,0
Malignant neoplasm of the anus and anal canal	0,0	7,7	15,4	76,9	100,0
Malignant neoplasm of the stomach	0,0	0,0	27,0	73,0	100,0
Malignant neoplasm of the small intestine	0,0	0,0	26,3	73,7	100,0
Malignant neoplasm of the oesophagus	0,0	4,8	42,9	52,4	100,0
Malignant neoplasm of the colon	0,8	0,8	32,0	66,4	100,0
Malignant neoplasm of the liver and intrahepatic bile ducts	4,7	7,0	39,5	48,8	100,0
Malignant neoplasm of the pancreas	0,0	0,0	40,9	59,1	100,0
Secondary malignant neoplasm of the liver and intrahepatic bile duct	0,0	0,0	27,3	72,7	100,0
Malignant neoplasm of the biliary tract, other and unspecified	33,3	0,0	66,7	0,0	100,0

Cancers of the digestive system were more frequent over the age of 50 years.

Table 10 : Distribution of cancers of the digestive system according to gender

Malignant neoplasms of the digestive organs	Female (%)	Male (%)	Total (%)
Malignant neoplasm of other and unspecified	69,2	30,8	100,0
Kaposi's sarcoma of the gastrointestinal sites	50,0	50,0	100,0
Malignant neoplasm of the oral cavity	41,9	58,1	100,0
Malignant neoplasm of the lip	50,0	50,0	100,0
Malignant neoplasm of the anus and anal canal	38,5	61,5	100,0
Malignant neoplasm of the stomach	48,6	51,4	100,0
Malignant neoplasm of the small intestine	63,2	36,8	100,0

Malignant neoplasms of the digestive organs	Female (%)	Male (%)	Total (%)
Malignant neoplasm of the oesophagus	42,9	57,1	100,0
Malignant neoplasm of the colon	44,5	55,5	100,0
Malignant neoplasm of the liver and intrahepatic bile ducts	48,8	51,2	100,0
Malignant neoplasm of the pancreas	31,8	68,2	100,0
Secondary malignant neoplasm of the liver and intrahepatic bile duct	45,5	54,5	100,0
Malignant neoplasm of biliary tract, other and unspecified	33,3	66,7	100,0

Overall, malignant tumors of the digestive system were more common in males. We noted that the malignant tumors of the small intestine were more frequent in the females.

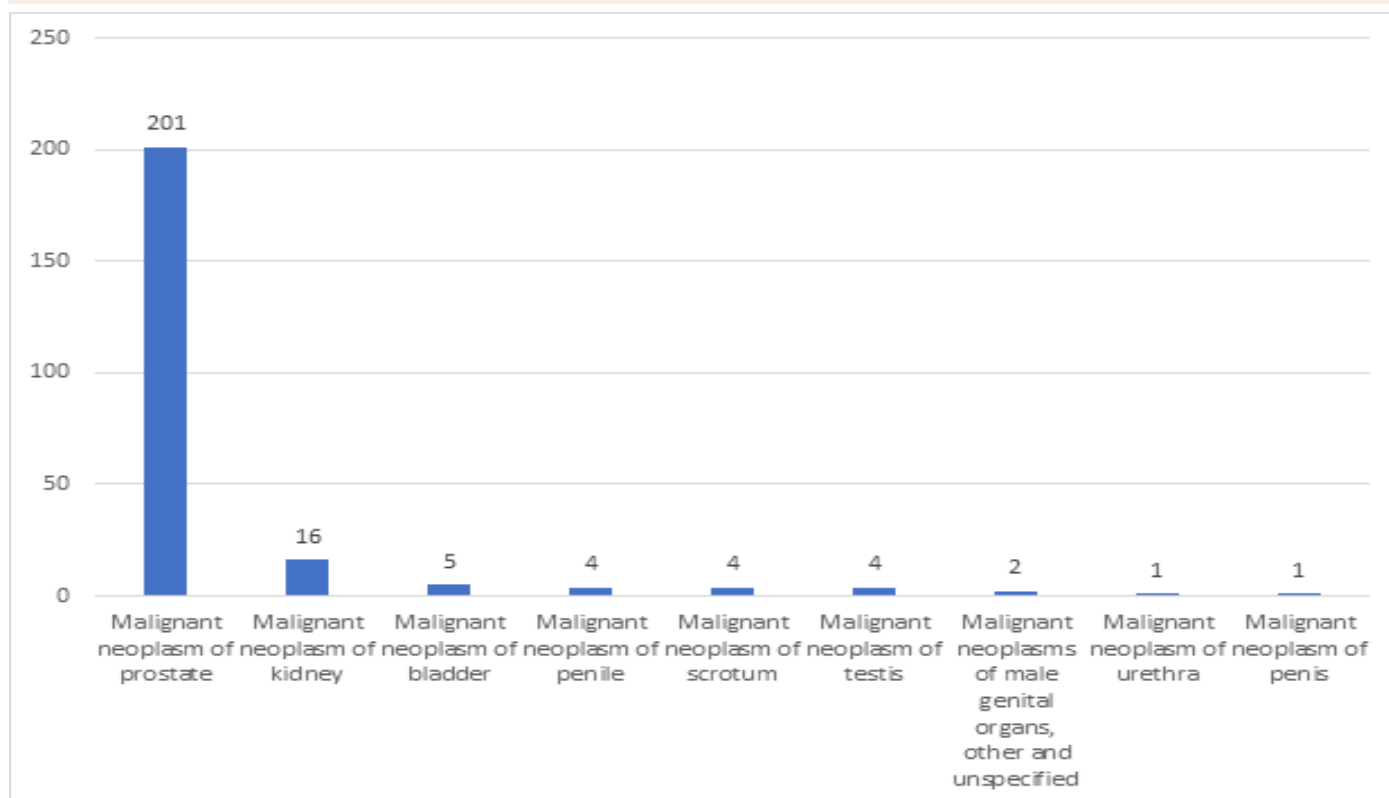
Table 11 : Distribution of cancers of the digestive system according to histological type

Malignant neoplasms of the digestive organs	Histological type (%)				
	Adenocarcinoma	Carcinoma	Sarcoma	Other	Total
Malignant neoplasm of other and unspecified	46,2	15,4	15,4	23,1	100,0
Kaposi's sarcoma of the gastrointestinal sites	0	0	100	0	100,0
Malignant neoplasm of the oral cavity	16,1	62,9	12,9	8,1	100,0
Malignant neoplasm of the lip	5,0	95,0	0,0	0,0	100,0
Malignant neoplasm of the anus and anal canal	53,8	38,5	0,0	7,7	100,0
Malignant neoplasm of the stomach	67,6	12,2	16,2	4,1	100,0
Malignant neoplasm of the small intestine	57,9	26,3	10,5	5,3	100,0
Malignant neoplasm of the oesophagus	9,5	90,5	0,0	0,0	100,0
Malignant neoplasm of the colon	91,4	7,0	0,0	1,6	100,0
Malignant neoplasm of the liver and intrahepatic bile ducts	30,2	60,5	4,7	4,7	100,0
Malignant neoplasm of the pancreas	68,2	31,8	0,0	0,0	100,0
Secondary malignant neoplasm of the liver and intrahepatic bile duct	90,9	9,1	0,0	0,0	100,0
Malignant neoplasm of the biliary tract, other and unspecified	66,7	33,3	0,0	0,0	100,0

Adenocarcinomas predominated in the colon, stomach, small intestine, anus and anal canal. While carcinomas predominated in the oral cavity and esophagus. The majority of liver metastases were adenocarcinomas.

5.2.4. Cancers of the male genito-urinary system

Graph 9 : Distribution of male genito-urinary cancers



The most common malignant tumor in men was prostate cancer with 201 cases or 84.5%. Kidney tumors are poorly represented in men with a frequency of 6.7%.

Table 12 : Distribution of genito-urinary cancers in men according to age groups (in %)

Malignant neoplasms of the male genital organs	Age groups				Total
	0-14	15-24	25-49	50 and over	
Malignant neoplasm of the urethra	0	0	0	100	100
Malignant neoplasm of the prostate	0	0	3	97	100
Malignant neoplasm of the penis	0	0	0	100	100
Malignant neoplasm of the bladder	20	0	40	40	100
Malignant neoplasms of the male genital organs, other and unspecified	50	0	50	0	100
Malignant neoplasm of the penile	0	0	25	75	100
Malignant neoplasm of the kidney	50	0	19	31	100
Malignant neoplasm of the scrotum	25	0	25	50	100
Malignant neoplasm of the testis	0	0	50	50	100

Malignant tumors of the urethra, prostate, verge and penis mainly affected the elderly. Malignant bladder tumor affected 20% of children under the age of 15 years. Malignant kidney tumor affected 50% of children under 15 years old.

Table 13 : Distribution of male genito-urinary cancers according to histological type (in %)

Malignant neoplasms of the male genital organs	Histological type (%)					
	Adenocarcinoma	Carcinoma	Néphroblastoma	Sarcoma	Other	Total
Malignant neoplasm of the urethra	100	0	0	0	0	100
Malignant neoplasm of the prostate	99	1	0	0	0	100
Malignant neoplasm of the penis	100	0	0	0	0	100
Malignant neoplasm of the bladder	60	20	20	0	0	100
Malignant neoplasms of the male genital organs, other and unspecified	50	50	0	0	0	100
Malignant neoplasm of the penile	0	75	0	0	25	100
Malignant neoplasm of the kidney	13	38	44	0	6	100
Malignant neoplasm of the scrotum	0	75	0	25	0	100
Malignant neoplasm of the testis	50	0	0	25	25	100

The most identified histological types among male genito-urinary cancers are adenocarcinomas and carcinomas.

5.2.5. Skin cancers and skin appendages

In 2021, there were approximately 98 cases of malignant skin tumors in the main anatomopathology and hemato-oncology services in Cameroon.

Table 14 : Distribution of malignant skin tumors according to age groups (in %)

Age	0-14	15-24	25-49	50 and over	Total
Malignant neoplasm of the skin	5,1	5,1	42,9	46,9	100,0

Malignant skin tumors mainly affect adults (over 25 years old), representing 89.8% of patients. Patients over 50 years are slightly more represented with a rate of 46.9%.

Table 15 : Distribution of malignant skin tumors according to gender (in %)

Gender	Female	Male	Total
Malignant neoplasm of the skin	57,1	42,9	100,0

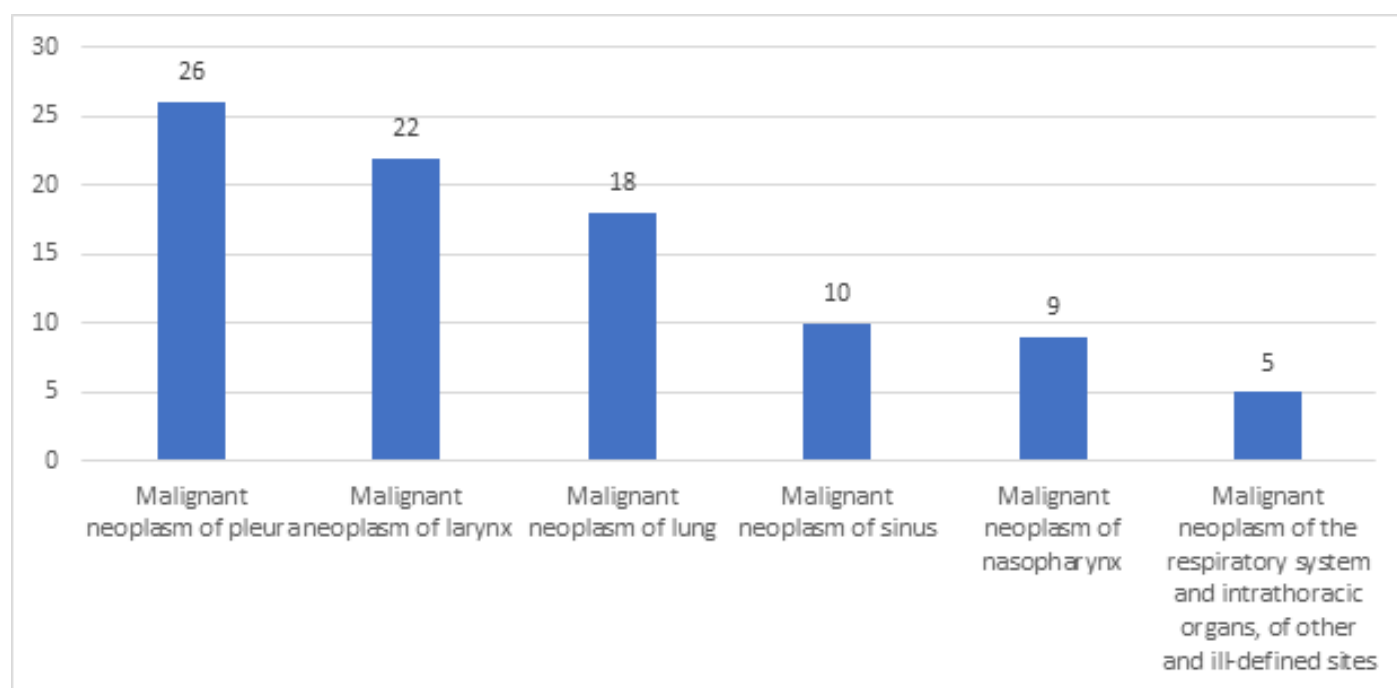
Malignant skin tumors affect both sexes equally with a slight predominance in women.

Table 16 : Distribution of malignant skin tumors according to histological type (in %)

Histological type (%)	Carcinoma	Sarcoma	Melanoma	Adenocarcinoma	Other	Total
Malignant neoplasm of the skin	50,0	34,7	8,2	2,0	5,1	100,0

Carcinomas account for half of all skin cancers. Cutaneous sarcomas represent one third of skin tumors with 34.7%.

5.2.6. Cancers of the respiratory tract

Graph 10 : Distribution of cancers of the respiratory tract according to their site

In 2021, approximately 90 cases of cancer of the respiratory tract were recorded in the main anatomopathology and hemato-oncology services in Cameroon. These respiratory tract cancers are distributed as shown in the table above.

Table 17 : Distribution of cancers of the respiratory tract according to age groups (in %)

Malignant neoplasms of the respiratory organs	Age groups				
	0-14	15-24	25-49	50 and over	Total
Malignant neoplasm of the pleura	0,0	0,0	46,2	53,8	100,0
Malignant neoplasm of the respiratory system and intrathoracic organs or other and ill-defined sites	20,0	20,0	20,0	40,0	100,0
Malignant neoplasm of the larynx	0,0	0,0	36,4	63,6	100,0
Malignant neoplasm of the lung	0,0	5,6	22,2	72,2	100,0
Malignant neoplasm of the nasopharynx	0,0	11,1	33,3	55,6	100,0
Malignant neoplasm of the sinus	0,0	10,0	20,0	70,0	100,0

Generally, these respiratory tract cancers mainly affect the elderly.

Table 18 : Distribution of cancers of the respiratory tract according to gender (in %)

Malignant neoplasms of the respiratory organs	Female	Male	Total (%)
Malignant neoplasm of the pleura	65,4	34,6	100,0
Malignant neoplasm of the respiratory system and intrathoracic organs, or other and ill-defined sites	60,0	40,0	100,0
Malignant neoplasm of the larynx	40,9	59,1	100,0
Malignant neoplasm of the lung	61,1	38,9	100,0
Malignant neoplasm of the nasopharynx	22,2	77,8	100,0
Malignant neoplasm of the sinus	70,0	30,0	100,0

Women were more exposed to malignant tumors of the pleura, lung and sinuses. On the other hand, men were more exposed to malignant tumors of the larynx and nasopharynx.

Table 19 : Distribution of cancers of the respiratory tract according to histological types (in %)

Malignant neoplasms of the respiratory organs	Histological type (%)				
	Adenocarcinoma	Carcinoma	Sarcoma	Other	Total
Malignant neoplasm of the pleura	69,2	30,8	0,0	0,0	100
Malignant neoplasm of the respiratory system and intrathoracic organs, or other and ill-defined sites	20,0	20,0	20,0	40,0	100
Malignant neoplasm of the larynx	0,0	100,0	0,0	0,0	100
Malignant neoplasm of the lung	38,9	44,4	11,1	5,6	100
Malignant neoplasm of the nasopharynx	0,0	100,0	0,0	0,0	100
Malignant neoplasm of the sinus	0,0	90,0	10,0	0,0	100

The most common histological type among respiratory tract cancers was carcinoma.

5.3. Analysis of leukemia and lymphomas

5.3.1. About Services

Table 20 : Number and proportion of cancers in the anatomopathology and haemato-oncology services (in %)

Services	Malignant haemopathies n (%)			Other malignant neoplasm n (%)	Total n (%)
	leukemia	Lymphoproliferative haemopathies			
		lymphoma	myeloma		
Regional Hospital of Buea	0 (0,0)	2 (5,7)	0 (0,0)	33 (94,3)	35 (100,0)
Centre Pasteur of Cameroon	2 (0,2)	94 (9,8)	0 (0,0)	865 (90,0)	961 (100,0)
Yaounde University Teaching Hospital	5 (45,5)	4 (36,4)	2 (18,2)	0 (0,0)	11 (100,0)
Mother and Child Centre, Chantal Biya Foundation	33 (29,7)	40 (36,0)	0 (0,0)	38 (34,2)	111 (100,0)
Yaounde Gynaeco-Obstetrics and Paediatrics Hospital	0 (0,0)	7 (6,4)	0 (0,0)	102 (93,6)	109 (100,0)
Douala General Hospital	23 (8,8)	34 (12,9)	19 (7,2)	189 (71,9)	263 (100,0)
Yaounde General Hospital	0 (0,0)	18 (7,8)	0 (0,0)	213 (92,2)	231 (100,0)
Douala Laquintinie Hospital	0 (0,0)	3 (6,1)	0 (0,0)	47 (95,9)	49 (100,0)
Bafoussam Regional Hospital	0 (0,0)	17 (7,2)	0 (0,0)	218 (92,8)	235 (100,0)
Mbingo Baptist Hospital	7 (0,9)	19 (2,4)	2 (0,3)	764 (96,6)	791 (100,0)
Total	70 (2,5)	238 (8,5)	23 (0,8)	2469 (88,3)	2796 (100,0)

- Of the 2796 cancers, 331 were haematological malignancies, representing 11.8% of cancer cases;
- Lymphomas are the most common haematological malignancies in the 10 diagnostic services with a proportion of 91.1% ;
- Fifty-six of the 70 cases of leukemia were recorded at the CME FCB and at the DGH, representing a proportion of 80%;
- The Mother-Child Centre of the Chantal BIYA Foundation (CME-FCB), the Centre Pasteur of Cameroon (CPC) and the Douala General Hospital (DGH) recorded 168 cases of lymphoma out of 238, representing a cumulative proportion of 70, 5% for the three services;
- The DGH recorded 19 cases of myeloma out of 23 cases, a proportion of 82.6%.

5.3.2. Leukemia according to age groups

Table 21 : Number of leukemia according to age groups

LEUKAEMIA	AGE GROUPS				
	0-14	15-24	25-49	50 and over	Total
ACUTE LEUKAEMIA OF UNSPECIFIED CELL TYPE	2 (33,3)	2 (33,3)	2 (33,3)	0 (0)	6 (100)
MATURE B-CELL LEUKAEMIA BURKITT-TYPE	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)
ACUTE LYMPHOBLASTIC LEUKAEMIA [ALL]	11 (55)	9 (45)	0 (0)	0 (0)	20 (100)
CHRONIC LYMPHOCYTIC LEUKAEMIA OF B-CELL TYPE	0 (0)	0 (0)	0 (0)	4 (100)	4 (100)
CHRONIC LYMPHOCYTIC LEUKAEMIA OF B-CELL TYPE	11 (57,9)	3 (15,8)	2 (10,5)	3 (15,8)	19 (100)
CHRONIC MYELOID LEUKAEMIA [CML], BCR/ABL-POSITIVE	0 (0)	0 (0)	10 (100)	0 (0)	10 (100)
ATYPICAL CHRONIC MYELOID LEUKAEMIA, BCR/ABL-NEGATIVE	0 (0)	0 (0)	1 (100)	0 (0)	1 (100)
OTHER MYELOID LEUKAEMIA	0 (0)	0 (0)	3 (33,3)	6 (66,7)	9 (100)
TOTAL	25 (35,7)	14 (20)	18 (25,7)	13 (18,6)	70 (100)

- Out of a total of 70 cases of leukemia, 25 cases (35.7%) and 18 (25.7%) cases were observed respectively for the age group of less than 15 years and that of 25 to 49 years;
- Twenty-two of the 25 cases of acute leukemia were found in the age group under 15; representing a percentage of 88% of leukemia cases;
- Of the 39 cases of leukemia, 22 (56.4%) were found in the age group under 15 years old;
- All cases of chronic myeloid leukemia (CML) were found in the age group of 25 to 49 years;
- All cases of chronic lymphocytic leukemia were over 50 years old;
- Six of the 9 cases of non-CML myeloproliferative syndromes were over 50 years old, representing a proportion of 66.6%;
- Acute leukemia represented 46 cases (65.7%) out of 70 cases of leukemia.

5.3.3. Leukemia according to gender

Table 22 : Number of leukemia according to gender

LEUKAEMIA	Male	Female	Total (%)
ACUTE LEUKAEMIA OF UNSPECIFIED CELL TYPE	3 (50)	3 (50)	6 (100)
MATURE B-CELL LEUKAEMIA BURKITT-TYPE	1 (100)	0 (0)	1 (100)
ACUTE LYMPHOBLASTIC LEUKAEMIA [ALL]	7 (35)	13 (65)	20 (100)
CHRONIC LYMPHOCYTIC LEUKAEMIA OF B-CELL TYPE	2 (50)	2 (50)	4 (100)
CHRONIC LYMPHOCYTIC LEUKAEMIA OF B-CELL TYPE	10 (52,6)	9 (47,4)	19 (100)
CHRONIC MYELOID LEUKAEMIA [CML], BCR/ABL-POSITIVE	4 (40)	6 (60)	10 (100)

LEUKAEMIA	Male	Female	Total (%)
ATYPICAL CHRONIC MYELOID LEUKAEMIA, BCR/ABL-NEGATIVE	1 (100)	0 (0)	1 (100)
OTHER MYELOID LEUKAEMIA	1 (11,1)	8 (88,9)	9 (100)
Total	29 (41,4)	41 (58,6)	70 (100)

- Out of 70 cases of leukemia, 41 (58.5%) were recorded in men;
- In women, the most frequent leukemia was acute myeloid leukemia (10 cases out of 29, representing 34.4%);
- In men, the most common leukemia was acute lymphoblastic leukemia (13 cases out of 41, representing 31.7%);
- Eight of the 9 cases of non-CML myeloproliferative syndromes were found in men, representing a proportion of 88.8%.

5.3.4. Lymphoid hemopathies according to age groups

Table 23 : Number of lymphoproliferative haemopathies according to age groups

Lymphoproliferative haemopathies		Age groups n (%)				
		0-14	15-24	25-49	50 and over	Total
Hodgkin lymphoma	Mixed cellularity (classical) Hodgkin lymphoma	1 (16,7)	2 (33,3)	1 (16,7)	2 (33,3)	6 (100)
	lymphocyte depleted (classical) Hodgkin lymphoma	0 (0)	2 (66,7)	0 (0)	1 (33,3)	3 (100)
	Nodular sclerosis (classical) Hodgkin lymphoma	1 (12,5)	2 (25)	5 (62,5)	0 (0)	8 (100)
	Lymphocyte-rich (classical) Hodgkin lymphoma	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
	Nodular lymphocyte predominant Hodgkin lymphoma	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)
	Hodgkin lymphoma, unspecified	0 (0)	1 (11,1)	6 (66,7)	2 (22,2)	9 (100)
	Other (classical) Hodgkin lymphoma	2 (16,7)	5 (41,7)	4 (33,3)	1 (8,3)	12 (100)
	Sous total	5 (12,5)	12 (30)	16 (40)	7 (17,5)	40 (100)

Lymphoproliferative haemopathies		Age groups n (%)				
		0-14	15-24	25-49	50 and over	Total
Non-Hodgkin lymphoma	Other non-follicular lymphoma	0 (0)	0 (0)	1 (50)	1 (50)	2 (100)
	Other malignant immunoproliferative diseases	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
	Other specified types of non-Hodgkin lymphoma	1 (12,5)	1 (12,5)	3 (37,5)	3 (37,5)	8 (100)
	Mantle cell lymphoma	0 (0)	0 (0)	1 (50)	1 (50)	2 (100)
	Small cell B-cell lymphoma	1 (4,3)	4 (17,4)	3 (13)	15 (65,2)	23 (100)
	Diffuse follicle centre lymphoma	0 (0)	0 (0)	0 (0)	2 (100)	2 (100)
	Cutaneous T-cell lymphoma, unspecified	0 (0)	0 (0)	0 (0)	2 (100)	2 (100)
	Burkitt lymphoma	29 (63)	10 (21,7)	6 (13)	1 (2,2)	46 (100)
	Diffuse large B-cell lymphoma	4 (12,5)	5 (15,6)	8 (25)	15 (46,9)	32 (100)
	Extranodal marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue [MALT-lymphoma]	0 (0)	0 (0)	1 (50)	1 (50)	2 (100)
	Follicular lymphoma, unspecified	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
	Lymphoblastic (diffuse) lymphoma	12 (60)	2 (10)	2 (10)	4 (20)	20 (100)
	Non-follicular (diffuse) lymphoma, unspecified	1 (50)	0 (0)	0 (0)	1 (50)	2 (100)
	Non-Hodgkin lymphoma, unspecified	7 (14,9)	8 (17)	13 (27,7)	19 (40,4)	47 (100)
	B-cell lymphoma, unspecified	0 (0)	1 (14,3)	4 (57,1)	2 (28,6)	7 (100)
	Sous total		55 (27,9)	31 (15,7)	42 (21,3)	69 (35)

Lymphoproliferative haemopathies		Age groups n (%)				
		0-14	15-24	25-49	50 and over	Total
Waldenström macroglobulinaem	Waldenström macroglobulinaem	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
Myeloma	Multiple myeloma	0 (0)	0 (0)	3 (14,3)	18 (85,7)	21 (100)
	Extramedullary plasmacytoma	0 (0)	0 (0)	1 (50)	1 (50)	2 (100)
	Sous total	0 (0)	0 (0)	4 (17,4)	19 (82,6)	23 (100)
Total		60 (23)	43 (16,5)	62 (23,8)	96 (36,8)	261 (100)

- Of 261 cases of lymphoid haemopathies, 197 (75.4%) were non-Hodgkin's lymphomas and 40 (15.3%) Hodgkin's lymphomas;
- Patients over 50 years of age were 96, representing a proportion of 36.7%
- Four out of 23 patients with myeloma were under 50 years, representing a proportion of 17.3%;
- Sixty patients were under 15 years old, representing a proportion of 22.9%;
- Thirty-three of the 40 cases of Hodgkin's lymphoma were under the age of 49, representing a proportion of 82.5%;
- Burkitt's lymphoma was found in 49 out of 197 patients with non-Hodgkin's lymphoma, representing a percentage of 24.8%;
- Diffuse large lymphoma was found in 32 out of 197 patients with non-Hodgkin's lymphoma, representing a percentage of 16.2%;
- Non-Hodgkin's lymphoma, unspecified, represented 47 cases (23.8%) out of 197 patients with non-Hodgkin's lymphoma.

5.3.5. Lymphoid hemopathies according to gender

Table 24 : Number of lymphoproliferative haemopathies according to gender

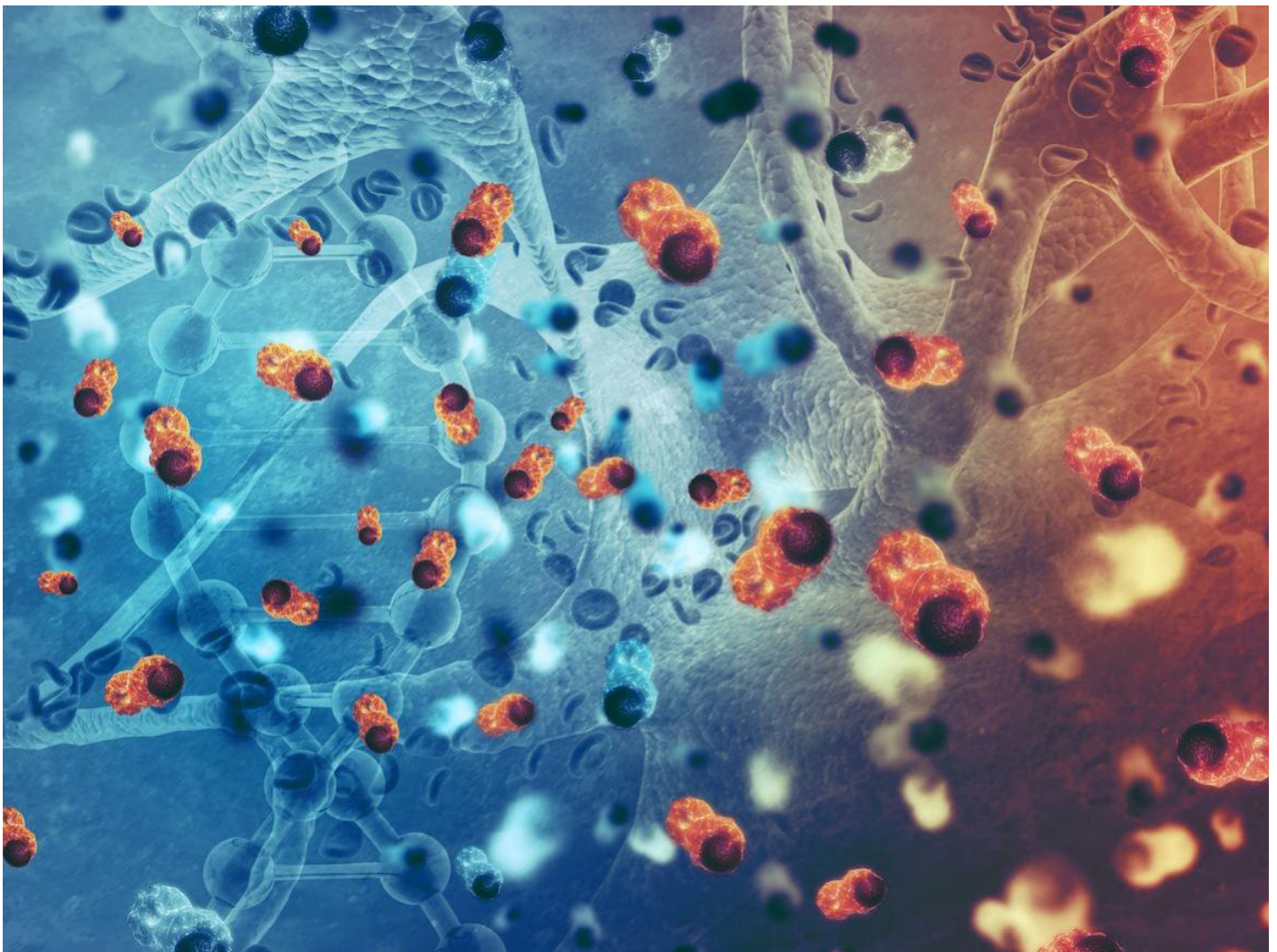
Lymphoproliferative haemopathies		Male	Female	Total (%)
Hodgkin lymphoma	Mixed cellularity (classical) Hodgkin lymphoma	1 (16,7)	5 (83,3)	6 (100)
	lymphocyte depleted (classical) Hodgkin lymphoma	1 (33,3)	2 (66,7)	3 (100)
	Nodular sclerosis (classical) Hodgkin lymphoma	4 (50)	4 (50)	8 (100)
	Lymphocyte-rich (classical) Hodgkin lymphoma	0 (0)	1 (100)	1 (100)
	Nodular lymphocyte predominant Hodgkin lymphoma	0 (0)	1 (100)	1 (100)
	Hodgkin lymphoma, unspecified	5 (55,6)	4 (44,4)	9 (100)
	Other (classical) Hodgkin lymphoma	6 (50)	6 (50)	12 (100)
	Sous total	17 (42,5)	23 (57,5)	40 (100)

Lymphoproliferative haemopathies		Male	Female	Total (%)
Non-Hodgkin lymphoma	Cutaneous T-cell lymphoma, unspecified	1 (50)	1 (50)	2 (100)
	Burkitt lymphoma	0 (0)	1 (100)	1 (100)
	Diffuse large B-cell lymphoma	3 (37,5)	5 (62,5)	8 (100)
	Extranodal marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue [MALT-lymphoma]	0 (0)	2 (100)	2 (100)
	Follicular lymphoma, unspecified	9 (39,1)	14 (60,9)	23 (100)
	Lymphoblastic (diffuse) lymphoma	1 (50)	1 (50)	2 (100)
	Non-follicular (diffuse) lymphoma, unspecified	0 (0)	2 (100)	2 (100)
	Non-Hodgkin lymphoma, unspecified	12 (26,1)	34 (73,9)	46 (100)
	B-cell lymphoma, unspecified	16 (50)	16 (50)	32 (100)
	Lymphome extranodal à cellules B de la zone marginale du tissu lymphoïde associé aux muqueuses [lymphome MALT]	1 (50)	1 (50)	2 (100)
	Lymphome folliculaire, sans précision	1 (100)	0 (0)	1 (100)
	Lymphome lymphoblastique (diffus)	9 (45)	11 (55)	20 (100)
	Lymphome non folliculaire (diffus), sans précision	1 (50)	1 (50)	2 (100)
	Lymphome non hodgkinien, non précisé	18 (38,3)	29 (61,7)	47 (100)
	Lymphomes à cellules B, sans précision	3 (42,9)	4 (57,1)	7 (100)
Sous total	75 (38,1)	122 (61,9)	197 (100)	
Waldenström macroglobulinaem	Waldenström macroglobulinaem	1 (100)	0 (0)	1 (100)
Myeloma	Multiple myeloma	9 (42,9)	12 (57,1)	21 (100)
	Extramedullary plasmacytoma	1 (50)	1 (50)	2 (100)
	Sous total	10 (43,5)	13 (56,5)	23 (100)
Total	103 (39,5%)	158 (60,5)	261 (100)	

Of 261 cases of lymphoid haemopathies, 158 (60.5%) were observed in men. This male predominance was noted in the different subgroups.

FINDINGS

- One tenth of cancers is a haematological malignancy
- Lymphomas are the most common haematological malignancies in the 10 diagnostic services
- In the leukemia group, acute leukemia is more common in people under 15 years, CML in people aged 25 to 49 years and CLL in people over 50 years.
- Three-quarters of lymphoid haemopathies are NHL, half of which are found in humans.



6. CRITICAL ANALYSIS OF CANCER DIAGNOSIS IN CAMEROON

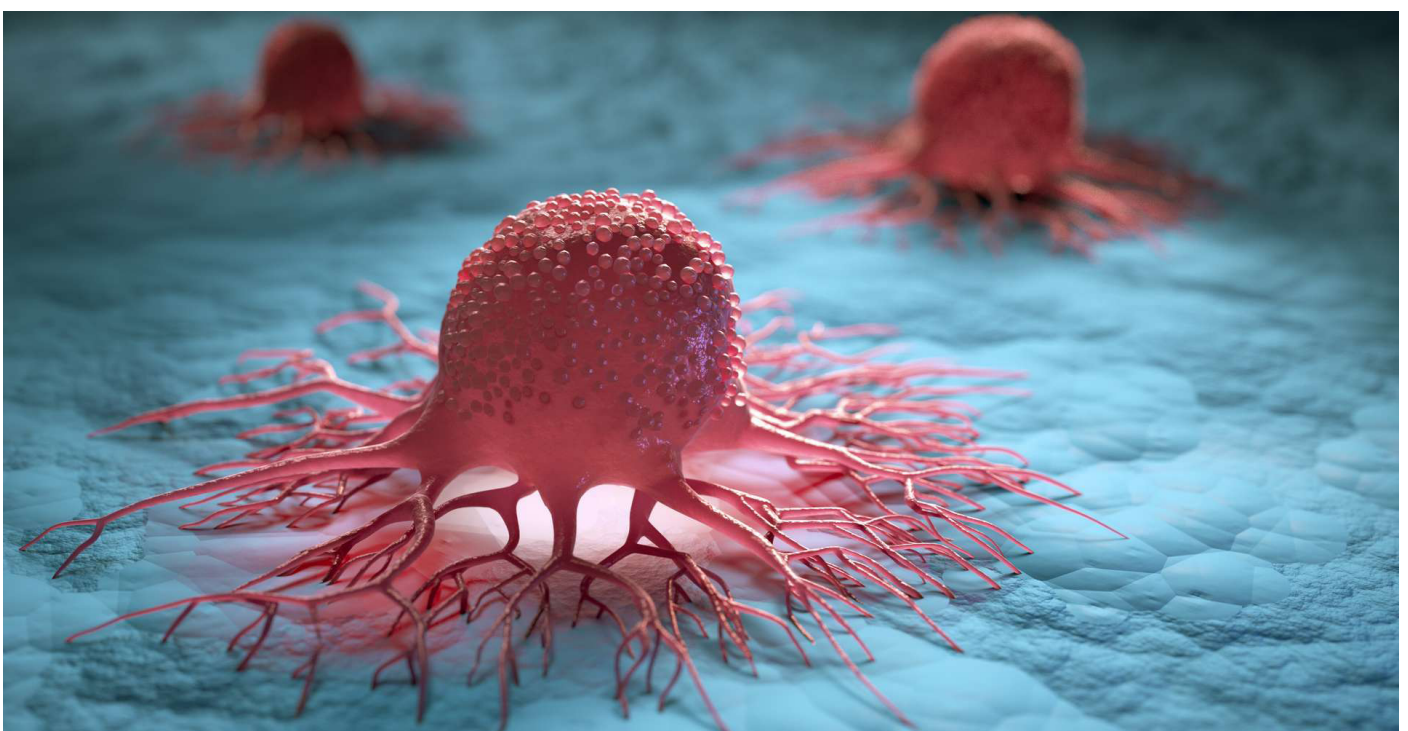
Table 25 : SWOT analysis of cancer diagnosis in Cameroon

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Existence of a national strategic plan for the prevention and control of cancer • Contribution in the response to the need for availability of cancer data. • Development of the very first report covering the main diagnostic services located in several regions of Cameroon • Integration of all cancers with the involvement of haemato-oncologists • Creation and use of a specific form for the collection and entry of cancer data • Multidisciplinary stakeholders for the collection, entry, analysis and writing of information • Availability of funding 	<ul style="list-style-type: none"> • Non-exhaustive report, not all diagnostic centres are taken into account • Poor completeness of the variables collected in the laboratories • Absence of a uniform physical data collection register
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Project to implement Universal Health Coverage • Existence of a 2020-2024 National Strategic Plan for Digital Health • Existence of a 2021-2025 National Strategic Plan for Community Health • Involvement of Technical and Financial Partners 	<ul style="list-style-type: none"> • Absence of resources dedicated to data entry in diagnostic services • Context of insecurity in the North-West, South-West regions and in the northern parts • Socio-cultural barriers to early access to health services

CONCLUSION

Cancer epidemiology faces an increasing demand for information, in particular for evaluating the effectiveness of preventive measures, surveillance of risks within the population and evaluating the effectiveness of care. It is imperative to gradually develop a cancer registry, capable of quantifying the risk of being affected, estimating the prevalence, determining the socio-demographic characteristics of patients, the treatments undertaken, the risk of second tumors, the causes and the place death etc...

The 2021 report of cancers diagnosed in the main anatomopathology and haemato-oncology services in Cameroon is only one step in the long process of producing strategic information on the epidemiology of cancers in Cameroon. Future reports will include, in particular, the extension of data collection to all laboratories operating in the country; but also the addition of new modules, including that of the medical care of patients.



RECOMMANDATIONS

Ministry of Public Health

- Build cancer diagnostic capacities in hospitals

National Cancer Control Committee

- Harmonize the physical registers in the anatomopathology and haemato-oncology services, produce and disseminate them;
- Contribute to the supervision of the collection of cancer data in the anatomopathology and haemato-oncology services in Cameroon through the DHIS2 platform;
- Do a mapping of anatomo-pathology and haematology-oncology services that can diagnose cancers in Cameroon;
- Produce a semi-annual report of cancer data from DHIS 2;
- Strengthen activities to fight leukemia in pediatric services;
- Sensitize, educate, and diagnose lymphoid haemopathies, in particular NHL in men.

Anatomopathology and haematology-oncology services

- Use harmonized cancer data collection registers;
- Regularly inform the DHIS2 platform, in order to improve the completeness and timeliness of the data.

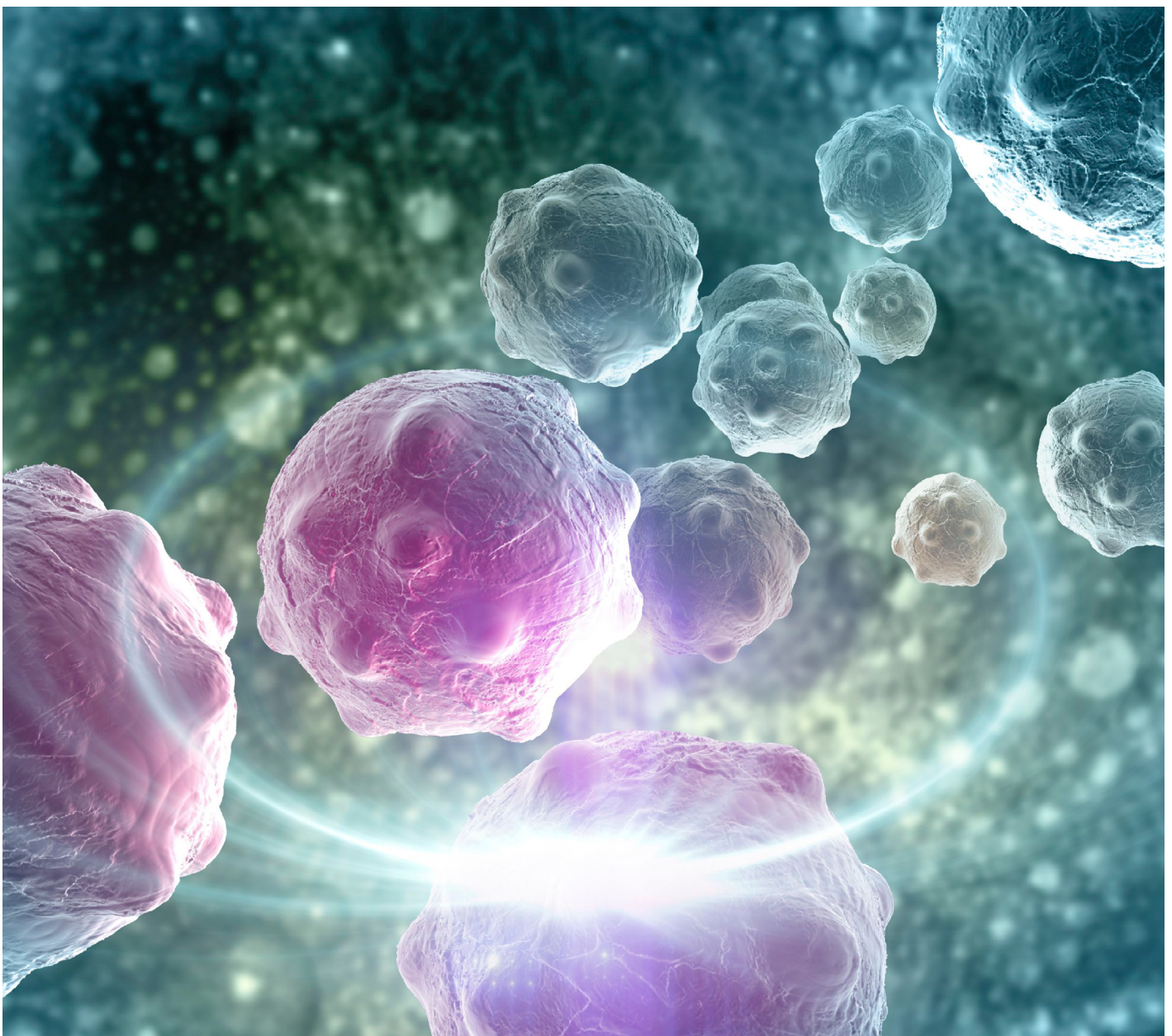
Technical and financial partners

- Support the activities of the National Cancer Control Programme.

REFERENCES

Ministry of Public Health. (2020). **National Strategic Plan for the Prevention and Control of Cancer.**

Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global Cancer Statistics 2020 : **GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries.** *CA: A Cancer Journal for Clinicians*, 71(3), 209-249. <https://doi.org/10.3322/caac.21660>



APPENDICES

Table 26 : Distribution of all cancers diagnosed in 2022

Types of cancers	Number	Percentage
Malignant neoplasm of the breast, part unspecified, unspecified side	281	10,05
Malignant neoplasm cervix uteri, unspecified	278	9,94
Malignant neoplasm of the left breast, part unspecified	206	7,37
Malignant neoplasm of the prostate	201	7,19
Malignant neoplasm of the right breast, part unspecified	150	5,36
Malignant neoplasm of the exocervix	94	3,36
Malignant neoplasm stomach unspecified	68	2,43
Malignant neoplasm colon, unspecified	58	2,07
Non-Hodgkin lymphoma, unspecified	47	1,68
Burkitt lymphoma	46	1,65
Malignant neoplasm of the lower limb	36	1,29
Secondary malignant neoplasm of l the ymph node, unspecified	35	1,25
Diffuse large B-cell lymphoma	32	1,14
Malignant neoplasm of the rectum	31	1,11
Malignant neoplasm of the skin, unspecified	30	1,07
Malignant neoplasm of the kidney, except renal pelvis	28	1,00
Malignant neoplasm of the liver unspecified	24	0,86
Secondary malignant neoplasm of the pleura	24	0,86
Small cell B-cell lymphoma	23	0,82
Kaposi's sarcoma of the skin	23	0,82
Multiple myeloma	21	0,75
Malignant neoplasm of other parts of nasal cavity	21	0,75
Malignant neoplasm of the uterus, part unspecified	21	0,75
Malignant neoplasm larynx unspecified	21	0,75
Acute lymphoblastic leukaemia [ALL]	20	0,72
Lymphoblastic (diffuse) lymphoma	20	0,72
Malignant neoplasm of the ovary, not specified whether unilateral or bilateral	20	0,72
Acute myeloblastic leukaemia [AML]	19	0,68

Types of cancers	Number	Percentage
Malignant neoplasm of the sigmoid colon	19	0,68
Malignant neoplasm of the endometrium	18	0,64
Malignant neoplasm, primary site unspecified	18	0,64
Malignant neoplasm of the vulva unspecified	17	0,61
Malignant neoplasm pancreas part unspecified	16	0,57
Malignant lesion oesophagus unspecified	15	0,54
Kaposi's sarcoma, unspecified	15	0,54
Malignant neoplasm of the conjunctiva	14	0,50
Malignant neoplasm of the parotid gland	14	0,50
Malignant neoplasm of the thyroid gland	14	0,50
Malignant neoplasm of the cerebrum, except lobes and ventricles	14	0,50
Malignant neoplasm pharynx unspecified	14	0,50
Secondary malignant neoplasm of the bone and bone marrow	14	0,50
Overlapping malignant lesion of the cervix uteri	13	0,46
Malignant neoplasm of the head, face and neck	13	0,46
Malignant neoplasm of the cerebral meninges	13	0,46
Other (classical) Hodgkin lymphoma	12	0,43
Malignant neoplasm of the ovary, unilateral	12	0,43
Malignant neoplasm bronchus or lung, unspecified, unspecified side	12	0,43
Malignant neoplasm of the connective and soft tissue, unspecified	12	0,43
Malignant neoplasm of the vagina	12	0,43
Malignant neoplasm of the abdomen	11	0,39
Malignant neoplasm tongue unspecified	11	0,39
Malignant neoplasm skin of the lower limb, including hip	11	0,39
Malignant neoplasm of the retina	11	0,39
Secondary malignant neoplasm of liver and intrahepatic bile duct	11	0,39
Chronic myeloid leukaemia [CML], BCR/ABL-positive	10	0,36
Hodgkin lymphoma, unspecified	9	0,32
Malignant melanoma of the skin, unspecified	9	0,32
Malignant neoplasm of the eye unspecified	9	0,32
Other specified types of the non-Hodgkin lymphoma	8	0,29
Nodular sclerosis (classical) Hodgkin lymphoma	8	0,29
Kaposi's sarcoma of other sites	8	0,29

Types of cancers	Number	Percentage
Malignant neoplasm of the gallbladder	8	0,29
Malignant neoplasm of the bladder, unspecified	8	0,29
Malignant neoplasm of the duodenum	8	0,29
Overlapping malignant lesion of rectum, anus and anal canal	7	0,25
B-cell lymphoma, unspecified	7	0,25
Malignant neoplasm major salivary gland, unspecified	7	0,25
Malignant neoplasm of the endocervix	7	0,25
Malignant neoplasm bone and articular cartilage, unspecified	7	0,25
Malignant neoplasm of the fundus uteri	7	0,25
Malignant neoplasm peritoneum unspecified	7	0,25
Other specified malignant neoplasms of the lymphoid, haematopoietic and related tissue	6	0,21
Acute leukaemia of unspecified cell type	6	0,21
Mixed cellularity (classical) Hodgkin lymphoma	6	0,21
Malignant melanoma of the lower limb, including hip	6	0,21
Malignant neoplasm of the long bones of the lower limb	6	0,21
Malignant neoplasm of the mandible	6	0,21
Malignant neoplasm of palate unspecified	6	0,21
Malignant neoplasm nasopharynx unspecified	6	0,21
Malignant neoplasm of the maxillary sinus	6	0,21
Malignant neoplasm of the thorax	6	0,21
Secondary malignant neoplasm of skin	6	0,21
Other myeloid leukaemia	5	0,18
Liver cell carcinoma	5	0,18
Malignant neoplasm of the mouth unspecified	5	0,18
Malignant neoplasm adrenal gland unspecified	5	0,18
Malignant neoplasm skin of the scalp & neck	5	0,18
Malignant neoplasm skin of the upper limb, including shoulder	5	0,18
Malignant neoplasm corpus uteri, unspecified	5	0,18
Malignant neoplasm of the upper limb	5	0,18
Malignant neoplasm of the connective and soft tissue of trunk, unspecified	5	0,18
Overlapping malignant lesion of colon	4	0,14
Malignant lesion small intestine unspecified	4	0,14

Types of cancers	Number	Percentage
Chronic lymphocytic leukaemia of the B-cell type	4	0,14
Kaposi's sarcoma of the lymph nodes	4	0,14
Malignant neoplasm of the rectosigmoid junction	4	0,14
Malignant neoplasm craniopharyngeal duct	4	0,14
Malignant neoplasm of the ascending colon	4	0,14
Malignant neoplasm Meckel diverticulum	4	0,14
Malignant neoplasm of the penis unspecified	4	0,14
Malignant neoplasm of the scrotum	4	0,14
Malignant neoplasm of the connective and soft tissue of lower limb, including hip	4	0,14
Malignant neoplasm of the connective and soft tissue of upper limb, including shoulder	4	0,14
Secondary malignant neoplasm of the adrenal gland	4	0,14
Hepatoblastoma	3	0,11
Overlapping malignant lesion of the biliary tract	3	0,11
Lymphocyte depleted (classical) Hodgkin lymphoma	3	0,11
Malignant neoplasm of the anus unspecified	3	0,11
Malignant neoplasm of the urethra	3	0,11
Malignant neoplasm of the vertebral column	3	0,11
Malignant neoplasm submandibular gland	3	0,11
Malignant neoplasm of labium majus	3	0,11
Malignant neoplasm of the cheek mucosa	3	0,11
Malignant neoplasm superior wall of the nasopharynx	3	0,11
Malignant neoplasm skin of other and unspecified parts of face	3	0,11
Malignant neoplasm of the uterine adnexa, unspecified	3	0,11
Malignant neoplasm of the anal canal	3	0,11
Malignant neoplasm of the descending colon	3	0,11
Malignant neoplasm of the body of stomach	3	0,11
Malignant neoplasm of the round ligament	3	0,11
Malignant neoplasm of the connective and soft tissue of head, face and neck	3	0,11
Secondary malignant neoplasm of the intrapelvic lymph nodes	3	0,11
Secondary malignant neoplasm of the brain and cerebral meninges	3	0,11
Secondary malignant neoplasm of the right lung	3	0,11
Secondary malignant neoplasm of the retroperitoneum and peritoneum	3	0,11

Types of cancers	Number	Percentage
Secondary malignant neoplasm of the breast	3	0,11
Malignant neoplasms of independent (primary) multiple sites	3	0,11
Other non-follicular lymphoma	2	0,07
Overlapping malignant lesion of the stomach	2	0,07
Overlapping malignant lesion of the lip, oral cavity and pharynx	2	0,07
Overlapping malignant lesion of the skin	2	0,07
Overlapping malignant lesion of the vulva	2	0,07
Overlapping malignant lesion of the left breast	2	0,07
Overlapping malignant lesion of the connective and soft tissue	2	0,07
Myeloid leukaemia, unspecified	2	0,07
Mantle cell lymphoma	2	0,07
Diffuse follicle centre lymphoma	2	0,07
Cutaneous T-cell lymphoma, unspecified	2	0,07
Extranodal marginal zone B-cell lymphoma of the mucosa-associated lymphoid tissue [MALT-lymphoma]	2	0,07
Non-follicular (diffuse) lymphoma, unspecified	2	0,07
Myelodysplastic and myeloproliferative disease, not elsewhere classified	2	0,07
Malignant melanoma of the ear and external auricular canal	2	0,07
Malignant melanoma of the scalp and neck	2	0,07
Extramedullary plasmacytoma	2	0,07
Kaposi's sarcoma of the gastrointestinal sites	2	0,07
Kaposi's sarcoma of the soft tissue	2	0,07
Kaposi's sarcoma of the palate	2	0,07
Malignant mast cell tumour	2	0,07
Malignant neoplasm of other ill-defined sites	2	0,07
Malignant neoplasm of the hepatic flexure	2	0,07
Malignant neoplasm of the appendix	2	0,07
Malignant neoplasm of the ileum	2	0,07
Malignant neoplasm abdominal oesophagus	2	0,07
Malignant neoplasm cervical oesophagus	2	0,07
Malignant neoplasm thoracic oesophagus	2	0,07
Malignant neoplasm of the middle ear	2	0,07
Malignant neoplasm of the ovary, bilateral	2	0,07

Types of cancers	Number	Percentage
Malignant neoplasm of the lip unspecified	2	0,07
Malignant neoplasm skin of the eyelid, including canthus	2	0,07
Malignant neoplasm of the labium minus	2	0,07
Malignant neoplasm of the pleura	2	0,07
Malignant neoplasm of the head of pancreas	2	0,07
Malignant neoplasm of the ribs sternum clavicle	2	0,07
Malignant neoplasm of other and unspecified cranial nerves	2	0,07
Malignant neoplasm short bones of the upper limb	2	0,07
Malignant neoplasm of the maxillofacial bones	2	0,07
Malignant neoplasm of the pancreatic duct	2	0,07
Malignant neoplasm of the heart	2	0,07
Malignant neoplasm of the bladder neck	2	0,07
Malignant neoplasm of the right nipple and areola	2	0,07
Malignant neoplasm mediastinum, part unspecified	2	0,07
Malignant neoplasm floor of the mouth, unspecified	2	0,07
Malignant neoplasm of the axillary tail of left breast	2	0,07
Malignant neoplasm of the lower-outer quadrant of right breast	2	0,07
Malignant neoplasm of the sphenoidal sinus	2	0,07
Malignant neoplasm of the descended right testis	2	0,07
Malignant neoplasm of the left testis, unspecified	2	0,07
Malignant neoplasm of the connective and soft tissue of abdomen	2	0,07
Malignant neoplasm intestinal tract, part unspecified	2	0,07
Malignant neoplasm of the vestibule of nose	2	0,07
Secondary malignant neoplasm lymph nodes of head, face and neck	2	0,07
Secondary malignant neoplasm of the lung, unspecified side	2	0,07
Secondary malignant neoplasm, unspecified site	2	0,07
Malignant neoplasm, primary site unknown, so stated	2	0,07
Other malignant immunoproliferative diseases	1	0,04
Overlapping malignant lesion of the oropharynx	1	0,04
Overlapping malignant lesion of other and unspecified parts of mouth	1	0,04
Overlapping malignant lesion of the major salivary glands	1	0,04
Overlapping malignant lesion of the male genital organs	1	0,04
Overlapping malignant lesion of the respiratory and intrathoracic organs	1	0,04

Types of cancers	Number	Percentage
Overlapping malignant lesion of the urinary organs	1	0,04
Overlapping malignant lesion of the floor of mouth	1	0,04
Overlapping malignant lesion of the retroperitoneum and peritoneum	1	0,04
Overlapping malignant lesion of the right breast	1	0,04
Overlapping malignant lesion of the breast, unspecified side	1	0,04
Malignant lesion hypopharynx unspecified	1	0,04
Malignant lesion oropharynx unspecified	1	0,04
Mature B-cell leukaemia Burkitt-type	1	0,04
Atypical chronic myeloid leukaemia, BCR/ABL-negative	1	0,04
Lymphocyte-rich (classical) Hodgkin lymphoma	1	0,04
Nodular lymphocyte predominant Hodgkin lymphoma	1	0,04
Follicular lymphoma, unspecified	1	0,04
Waldenström macroglobulinaemia	1	0,04
Malignant melanoma of other and unspecified parts of face	1	0,04
Malignant melanoma of the upper limb, including shoulder	1	0,04
Kaposi's sarcoma of the lungs	1	0,04
Sarcoma of dendritic cells (accessory cells)	1	0,04
Histiocytic sarcoma	1	0,04
Malignant neoplasm urinary organ unspecified	1	0,04
Malignant neoplasm accessory sinus unspecified	1	0,04
Malignant neoplasm endocrine gland unspecified	1	0,04
Malignant neoplasm of the splenic flexure	1	0,04
Malignant neoplasm scapula and long bones of the upper limb	1	0,04
Malignant neoplasm of the orbit	1	0,04
Malignant neoplasm of the ureteric orifice	1	0,04
Malignant neoplasm of the skin of lip	1	0,04
Malignant neoplasm the upper lip inner aspect	1	0,04
Malignant neoplasm of the upper gum	1	0,04
Malignant neoplasm of the uvula	1	0,04
Malignant neoplasm lateral wall oropharynx	1	0,04
Malignant neoplasm posterior wall of the oropharynx	1	0,04
Malignant neoplasm of the posterior wall of bladder	1	0,04
Malignant neoplasm of the central portion of the breast, unspecified side	1	0,04

Types of cancers	Number	Percentage
Malignant neoplasm skin of the ear and external auricular canal	1	0,04
Malignant neoplasm of the skin of trunk	1	0,04
Malignant neoplasm of the tail of pancreas	1	0,04
Malignant neoplasm of the spleen	1	0,04
Malignant neoplasm of the fallopian tube, unilateral	1	0,04
Malignant neoplasm of the peripheral nerves of abdomen	1	0,04
Malignant neoplasm of the peripheral nerves of thorax	1	0,04
Malignant neoplasm of the specified parts of peritoneum	1	0,04
Malignant neoplasm of the right bronchus or lung unspecified	1	0,04
Malignant neoplasm of the peripheral nerves of lower limb, including hip	1	0,04
Malignant neoplasm of the peripheral nerves and autonomic nervous system, unspecified	1	0,04
Malignant neoplasm of the female genital organ, unspecified	1	0,04
Malignant neoplasm short bones of lower limb	1	0,04
Malignant neoplasm of the lymphoid, haematopoietic and related tissue, unspecified	1	0,04
Malignant neoplasm of the external upper lip	1	0,04
Malignant neoplasm laryngeal cartilage	1	0,04
Malignant neoplasm of the clitoris	1	0,04
Malignant neoplasm cortex adrenal gland	1	0,04
Malignant neoplasm of the dome of bladder	1	0,04
Malignant neoplasm of the jejunum	1	0,04
Malignant neoplasm of the parietal lobe	1	0,04
Malignant neoplasm of the left nipple and areola	1	0,04
Malignant neoplasm of the nipple and areola, unspecified side	1	0,04
Malignant neoplasm posterior mediastinum	1	0,04
Malignant neoplasm of prepuce	1	0,04
Malignant neoplasm of the axillary tail of right breast	1	0,04
Malignant neoplasm of the pylorus	1	0,04
Malignant neoplasm of the upper-outer quadrant of breast, unspecified side	1	0,04
Malignant neoplasm of the retroperitoneum	1	0,04
Malignant neoplasm of the frontal sinus	1	0,04
Malignant neoplasm of the central nervous system, unspecified	1	0,04
Malignant neoplasm of the testis, unspecified, unspecified side	1	0,04

Types of cancers	Number	Percentage
Malignant neoplasm of the brain stem	1	0,04
Malignant neoplasm of the soft palate	1	0,04
Secondary malignant neoplasm of other specified sites	1	0,04
Secondary malignant neoplasm of the small intestine	1	0,04
Secondary malignant neoplasm of the ovary	1	0,04
Secondary malignant neoplasm of the bladder and other and unspecified urinary organs	1	0,04
Secondary malignant neoplasm of the lymph nodes of multiple regions	1	0,04
Secondary malignant neoplasm of the inguinal and lower limb lymph nodes	1	0,04
Secondary malignant neoplasm of the mediastinum	1	0,04
Secondary malignant neoplasm of the kidney and renal pelvis	1	0,04
Malignant neoplasm others parts pancreas	1	0,04
Total	2796	100,00



MINISTRY OF PUBLIC HEALTH

SECRETARIAT GENERAL

HEALTH INFORMATIONS UNIT



DIRECTORATE FOR THE FIGHT AGAINST DISEASE, EPIDEMICS AND PANDEMICS
NATIONAL CANCER CONTROL COMMITTEE



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